POLICY ROUNDTABLES

Merger Review in Emerging High Innovation Markets

2002

Introduction

The OECD Competition Committee debated merger review in emerging high innovation markets in June 2002. This document includes an executive summary and the documents from the meeting: an analytical note by Mr. Gary Hewitt for the OECD, written submissions from Australia, Brazil, the European Commission, Finland, Japan, Korea, the Netherlands, Spain, the United Kingdom, the United States, as well as an aide-memoire of the discussion.

Overview

In many high innovation markets competition will tend to be more “for the market” than “in the market”. A special analytical framework is neither necessary nor desirable for merger review in innovation intensive markets. Market definition and assigning market shares are particularly challenging tasks in rapidly changing sectors.

The ability and incentive to exclude or restrict rivals deserves prime attention in reviewing mergers in high innovation markets. In dealing with anticompetitive mergers in high innovation markets, there is good reason to question the traditional preference for a structural as opposed to a behavioural remedy. Instead, a highly customised use of behavioural remedies, sometimes accompanied with a required divestment, may be the best way to address potential competition problems in such markets.

The complexity of mergers in high innovation sectors may require rethinking the merger review process (i.e. strict time limits), increasing sector specific expertise in competition authorities, and taking pro-active steps to prepare for mergers in high innovation markets.

Related Topics

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MERGER REVIEW IN EMERGING HIGH INNOVATION MARKETS

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FOREWORD

This document comprises proceedings in the original languages of a Roundtable on Merger Review in Emerging High Innovation Markets, which was held by the Competition Committee in June 2002.

It is published under the responsibility of the Secretary General of the OECD to bring information on this topic to the attention of a wider audience.

This compilation is one of several published in a series entitled "Competition Policy Roundtables".

PRÉFACE

Ce document rassemble la documentation dans la langue d'origine dans laquelle elle a été soumise, relative à une table ronde sur l'Examen des Fusions sur les Marchés émergents très innovants, qui s'est tenue en juin 2002 dans le cadre du Comité de la concurrence.

Il est publié sous la responsabilité du Secrétaire général de l'OCDE, afin de porter à la connaissance d'un large public les éléments d'information qui ont été réunis à cette occasion.

Cette compilation fait partie de la série intitulée "Les tables rondes sur la politique de la concurrence".

OTHER TITLES

SERIES ROUNDTABLES ON COMPETITION POLICY

1.	Competition Policy and Environment	OCDE/GD(96)22
2.	Failing Firm Defence	OCDE/GD(96)23
3.	Competition Policy and Film Distribution	OCDE/GD(96)60
4.	Competition Policy and Efficiency Claims in Horizontal Agreements	OCDE/GD(96)65
5.	The Essential Facilities Concept	OCDE/GD(96)113
6.	Competition in Telecommunications	OCDE/GD(96)114
7.	The Reform of International Satellite Organisations	OCDE/GD(96)123
8.	Abuse of Dominance and Monopolisation	OCDE/GD(96)131
9.	Application of Competition Policy to High Tech Markets	OCDE/GD(97)44
10.	General Cartel Bans: Criteria for Exemption for Small and Medium-sized Enterprises	OCDE/GD(97)53
11.	Competition Issues related to Sports	OCDE/GD(97)128
12.	Application of Competition Policy to the Electricity Sector	OCDE/GD(97)132
13.	Judicial Enforcement of Competition Law	OCDE/GD(97)200
14.	Resale Price Maintenance	OCDE/GD(97)229
15.	Railways: Structure, Regulation and Competition Policy	DAFFE/CLP(98)1
16.	Competition Policy and International Airport Services	DAFFE/CLP(98)3
17.	Enhancing the Role of Competition in the Regulation of Banks	DAFFE/CLP(98)16
18.	Competitition Policy and Intellectual Property Rights	DAFFE/CLP(98)18
19.	Competition and Related Regulation Issues in the Insurance Industry	DAFFE/CLP(98)20
20.	Competition Policy and Procurement Markets	DAFFE/CLP(99)3
21.	Regulation and Competition Issues in Broadcasting in the light of Convergence	DAFFE/CLP(99)1

22.	Relationship between Regulators and Competition Authorities	DAFFE/CLP(99)8
23.	Buying Power of Multiproduct Retailers	DAFFE/CLP(99)21
24.	Promoting Competition in Postal Services	DAFFE/CLP(99)22
25.	Oligopoly	DAFFE/CLP(99)25
26.	Airline Mergers and Alliances	DAFFE/CLP(2000)1
28.	Competition in Local Services (Roundtable in October 1999, published in July 2000)	DAFFE/CLP(2000)13
29.	Mergers in Financial Services (Roundtable in June 2000, published in July 2000)	DAFFE/CLP(2000)17
30.	Promoting Competition in the Natural Gas Industry (Roundtable in February 2000)	DAFFE/CLP(2000)18
31.	Competition Issues in Electronic Commerce (Roundtable in October 2000)	DAFFE/CLP(2000)32
32.	Competition and Regulation Issues in the Pharmaceutical Industry (Roundtable in June 2000)	DAFFE/CLP(2000)29
33.	Competition Issues in Joint Ventures (Roundtable in October 2000)	DAFFE/CLP(2000)33
34.	Competition Issues in Road Transport (Roundtable in October 2000)	DAFFE/CLP(2001)10
35.	Price Transparency (Roundtable in June 2001)	DAFFE/CLP(2001)22
36.	Competition Policy in Subsidies and State Aid	DAFFE/CLP(2001)24
37	Portfolio Effects in Conglomerate Mergers	DAFFE/COMP(2002)5
38	Competition and Regulation Issues in Telecommunications	DAFFE/COMP(2002)6

TABLE OF CONTENTS

EXECUTIVE SUMMARY

By the Secretariat

Considering the discussion at the roundtable, the written submissions and the Secretariat's issues paper, a number of key points emerge:

(1) In many high innovation markets competition will tend to be more "for the market" than "in the market".

The Secretariat's issue paper contained the following list of prominent characteristics of innovation intensive markets:

- high R&D intensity and dependence on intellectual property rights (IPRs) coupled with a closely related heavy reliance on human instead of physical capital;
- a high degree of technical complexity;
- rapid technological change and short product cycles;
- increasing returns to scale;
- important network effects (i.e. buyers are better off the more buyers there are); and
- significant compatibility and standards issues.

The stronger these features, especially the latter three, the more competition may assume a "winner take all" character. High innovation markets will tend to have clear market leaders. At the same time, however, the position of market leader could be highly dependent on continued superiority in innovation, and "dominant" firms may be unable over the long run to make much in the way of supra-competitive profits.

(2) A special analytical framework is neither necessary nor desirable for merger review in innovation intensive markets.

The traditional merger review analytic, as described in various countries' merger guidelines can be used to assess the competitive effects of any merger because it organises and considers all the relevant factors and is flexible concerning the weight attached to each. In any case, a special approach to mergers in high innovation markets would require a formal definition of what constitutes such a market. Since such a definition would be very difficult to clearly set out and apply, the result could be a considerable increase in legal uncertainty.

Those promoting a special framework for merger review in high innovation markets tend to argue that the standard paradigm overly concentrates on market definition, market shares and derived predictions about price changes, all the while neglecting to pay sufficient attention to how a

merger might affect innovation. While that critique is worth bearing in mind, it is also true that the empirical basis for a wholesale re-think is lacking.

Following Schumpeter's work there has been a long and somewhat inconclusive debate on the relationship between innovation and market power. That debate indicates that some rather ill-defined level of market power is good for innovation (because it increases the chances that high development costs will eventually be recovered), but outright monopoly or unassailable dominance probably is not. This indicates that mergers to monopoly or mergers strongly increasing the probability of anticompetitive exclusion should be blocked. It also indicates the need for caution in assessing claims that the benefits of expected innovation should override concerns over increased market power. Less competition post-merger could translate into less pressure to innovate.

(3) Although competition officials attending the roundtable shared a consensus that the traditional merger review framework *should be applied to innovation intensive markets, they also emphasised that doing so requires some customisation in approach.*

The need for customisation was particularly noted as regards: defining markets and assigning market shares; assessing the significance of changes in market structure; giving proper weight to benefits consumers reap through innovation; assessing the ability of merging parties to exclude or restrict competitors; and designing appropriate remedies.

(4) Market definition and assigning market shares are particularly challenging tasks in rapidly changing sectors.

The data necessary to define markets based on substitutability may be very scarce in markets featuring complex, rapidly changing products. In addition, the traditional hypothetical monopolist approach to framing the substitutability issue may require re-thinking in the case of high innovation markets. That framework focuses on what consumers would do in response to small but significant non-transitory increases in prices (i.e. the SSNIP test). Customers may, however, be much more oriented towards comparing product performance than prices in highly product differentiated, innovation intensive markets. In addition, in an attempt to gain the whole market and thereby benefit from significant economies of scale and/or network effects, the merging parties may temporarily be engaging in very low pricing. Under such conditions, there could be a kind of inverse "cellophane fallacy" leading the SSNIP test to indicate an unduly narrow instead of overly broad market.

When it comes to assigning market shares, the problems only get worse. Competition authorities recognise that potential competition must be accounted for in determining how a merger could change market shares. But in the case of rapidly changing markets it is especially difficult to identify potential competitors and to estimate their ability to increase supply and thereby restrict supra-competitive pricing.

Related to the market definition and shares issue is what to do when the "market" most affected appears to concern the research and development lying behind new products. The US has sought to address this issue with the "innovation market" concept. As described in the 1995 United States Department of Justice and Federal Trade Commission, Antitrust Guidelines for the Licensing of Intellectual Property, an innovation market consists of the R&D directed to particular new or improved goods or processes and the close substitutes for that R&D. The US acknowledges that there appear to be very few cases where innovation markets are truly pertinent, and even in those instances a more traditional approach would probably produce the

same result. Nevertheless, the innovation market concept is the closest competition authorities appear to have come to devising a special approach to merger review in innovation intensive markets.

(5) Even if they are accurately estimated, merger induced changes in market shares are probably poorer predictors of changes in durable market power in innovation intensive markets than they are in slower changing markets. Moreover, as previously noted, the effect of changes in market power on innovation are not well understood.

Competition authorities generally take a close look at merger induced changes in market shares in order to form a preliminary view as to the merger's likely competitive effects. As already noted, however, in many high innovation markets, there will be a clear market leader with or without the merger under review. At the same time, however, the identity of the market leader may be liable to quick changes as a result of successful innovation by a rival. In addition, many of the products in innovation intensive markets are, except for technological obsolescence, durable and that can have a significant effect on competition. A software supplier, for example, may have something approaching the entire market, yet be effectively constrained from raising price because potential buyers could opt instead to continue using their older, somewhat less sophisticated versions of the product.

In short, in innovation intensive markets estimated changes in market shares could have limited predictive value concerning the probability of post-merger anticompetitive pricing. The same holds true when it comes to making a link between market shares and innovation. As noted above, even the relationship between market power, for which market share is an imperfect proxy, and innovation is somewhat uncertain.

Although there may well be a need to replace market shares as an initial screen for identifying potentially anticompetitive mergers, a suitable substitute has yet to be found. In its place there may be a growing tendency to adopt a "first principles" approach whereby attention is focused from the outset on how a merger might assist the parties to improve profitability in ways harming buyers. Attractive as such an approach might seem, it leaves largely unanswered the question of how to allocate a competition authority's limited enforcement resources.

Instead of jettisoning the traditional initial screen based on market shares, it might be better to supplement it by considering other readily ascertainable data. That could include things like the degree of recent instability of market shares, the rate of growth of the market, and estimates of the rate of technological change. The higher these indicators, the greater the probability that the merger should be cleared without an in-depth analysis.

(6) Due to a high degree of product differentiation and the potential for leapfrogging based on radically new technology, mergers in high innovation markets may have little potential to produce anticompetitive co-ordination. The same cannot be said concerning their potential for anticompetitive unilateral effects especially as regards mergers joining complements (including standard vertical mergers). The ability and incentive to exclude or restrict rivals deserves prime attention in reviewing mergers in high innovation markets.

Significant economies of scale and network effects in high innovation markets could translate into significant first mover advantages that can be enhanced through mergers. Some of these are straightforward efficiency advantages that normally benefit consumers. Others may be linked to increased ability to exclude or restrict rivals. Sometimes such ability may centre on the use of intellectual property rights and standards. On other occasions it may be based on "gatekeeper"

power exercised through the terms on which competitors are granted access to hard to duplicate networks such as those found in fixed line telephony. Finally the power to exclude or restrict rivals may be created through tying or bundling of complementary goods.

In rapidly changing high innovation markets, it might be very difficult to assess how a merger affects the power to exclude or restrain rivals. It nonetheless remains of critical importance in estimating the merger's competitive effects, especially since the power to exclude or restrict would likely affect both static and dynamic efficiency, i.e. the flow of future innovations.

(7) *In dealing with anticompetitive mergers in high innovation markets, there is good reason to question the traditional preference for a structural as opposed to a behavioural remedy. Instead, a highly customised use of behavioural remedies, sometimes accompanied with a required divestment, may be the best way to address potential competition problems in such markets.*

Monitoring compliance with behavioural remedies is resource intensive and problematic, leading to a general preference for structural remedies in merger cases. But in high innovation markets, the most important productive resources are often human capital and IPRs. A transfer of such assets is inherently difficult and, at least in the case of IPRs, may well require an ongoing relationship between transferor and transferee. The same applies to remedies granting access to hard to duplicate networks. An ongoing relationship between transferor and transferee means the competition authority's remedy must include a monitoring and supervisory function. It would be highly unwise to assume that the transferor would overlook its self-interest and willingly continue to help strengthen a competitor.

However, monitoring and supervision of either a behavioural or structural remedy might not be required for a long period of time. Rapidly changing technology could readily cause the post-merger market to evolve in an unexpected direction rendering the remedy superfluous. Such reasoning lay behind the European Commission's remedy in the Vodafone case (i.e. mandated access to Vodafone's network was limited to three years), and the remedy applied in Brazil's Telesp/Nutec case (again a three year limit to mandated access).

In addition, the intent of a merger remedy is to undo the anticompetitive effect of the transaction. That is not the same thing, especially in rapidly changing markets, as ensuring that competition will continue at pre-merger levels. Such an evolution was not guaranteed in the pre-merger situation, and lies beyond what a merger remedy should properly aim for. This too argues in favour of time limited rather than indefinite behavioural remedies.

Behavioural remedies involving creative approaches to licensing and access arrangements are not the only kind of customisation one can imagine in dealing with potentially troublesome mergers in high innovation markets. There is also the possibility of ordering joint ownership by competitors of certain critical assets, or mandating conditions making joint ownership attractive to the merging parties (e.g. Spain's Movilpago case). It may also be possible, at least in some jurisdictions; to adjust for the high level of uncertainty involved in high innovation markets by adopting contingent structural remedies. Canada has apparently done this in a number of cases where parties agreed to divest certain crown jewel assets should competition problems develop within a certain period of time after a merger.

(8) *Several delegates advocated reviewing merger decisions to see how things actually worked out.*

It was argued that such reviews would increase understanding of how markets function and would help elucidate and spread best practice, especially as regards remedial measures for anticompetitive mergers in high innovation markets.

(9) *The complexity of mergers in high innovation sectors may require rethinking the merger review process (i.e. strict time limits), increasing sector specific expertise in competition authorities, and taking pro-active steps to prepare for mergers in high innovation markets.*

These points were especially stressed by the Netherlands. As a result of working with various regulatory bodies, the Netherlands Competition Authority was much better prepared to expeditiously review two high profile mergers in innovation intensive sectors.

SYNTHÈSE

par le Secrétariat

Un certain nombre de points ressortent à la lumière des débats tenus lors de la table ronde, des contributions écrites et de la note de discussion du Secrétariat :

(1) *Dans beaucoup de marchés très innovants, la concurrence a tendance à s'exercer sur la totalité du marché plutôt que sur les parts de marché.*

Le document de référence du Secrétariat attribuait aux marchés très innovants les caractéristiques suivantes :

- haute intensité de R-D et forte dépendance vis-à-vis des droits de propriété intellectuelle et, par conséquent, du capital humain plutôt que physique ;
- complexité technique ;
- évolution technologique rapide et produits à cycle de vie court ;
- économies d'échelle ;
- effets de réseau importants ;
- influence de la compatibilité et des normes de concurrence.

Plus ces caractéristiques sont marquées (en particulier les trois dernières), plus la concurrence peut s'apparenter à un jeu du tout ou rien. Aussi les marchés très innovants se caractérisent-ils généralement par une très nette prédominance du numéro un sur le marché. Toutefois, dans le même temps, la position de numéro un dépend fortement du maintien de l'avance en matière d'innovation, et les entreprises "dominantes" risquent de ne pas pouvoir bénéficier longtemps de superbénéfices.

(2) *Il n'est ni nécessaire ni souhaitable d'employer un cadre d'analyse spécial pour l'analyse des fusions dans les marchés très innovants*

L'analyse traditionnelle des fusions, telle que la décrivent les lignes directrices de nombreux pays dans ce domaine, peut être appliquée pour évaluer les incidences d'une fusion sur la concurrence car elle permet de sérier et d'examiner tous les facteurs pertinents et de pondérer chacun de ces facteurs avec une certaine souplesse. Pour que l'on puisse appliquer une analyse spécifique aux marchés très innovants, encore faudrait-il disposer d'une définition rigoureuse de ces marchés. Mais une telle définition serait si difficile à élaborer et à appliquer que l'incertitude juridique s'en verrait considérablement accrue.

Les partisans d'un cadre d'analyse spécifique aux fusions dans les marchés très innovants font souvent valoir que l'analyse traditionnelle attache une trop grande importance aux concepts de définition du marché, de parts de marché, ainsi qu'aux prédictions qui en découlent sur le comportement des prix, alors qu'elle ne prête pas suffisamment attention à la manière dont une fusion peut influer sur l'innovation. Si cette critique doit être prise en compte, il faut aussi rappeler qu'il n'existe pas de base empirique pour une refonte complète de l'analyse.

Dans le prolongement des travaux de Schumpeter, la relation entre innovation et puissance de marché a fait l'objet d'un débat prolongé qui n'a pas permis de trancher véritablement la question. Il ressort toutefois qu'un certain niveau (mal défini) de puissance de marché est un facteur favorable pour l'innovation (car ceci augmente les chances de récupérer éventuellement les coûts importants d'un développement), mais qu'un monopole incontestable ou une domination invulnérable ne l'est pas. Cela signifie qu'il convient d'interdire les fusions qui conduisent à la formation d'un monopole ou qui accroissent la probabilité d'exclusion anticoncurrentielle. Cela signifie également que la prudence est de mise lorsqu'on évalue les assertions selon lesquelles les avantages de l'innovation escomptée priment sur les risques liés à la puissance de marché. Un fléchissement de la concurrence peut se traduire par une moindre pression à innover.

(3) *Les responsables de la concurrence qui participaient à la table ronde s'accordent à dire que le cadre traditionnel d'analyse des fusions doit être appliqué aux marchés très innovants, tout en soulignant qu'il convient d'adapter quelque peu la démarche.*

C'est précisément au niveau des étapes suivantes que le cadre traditionnel d'analyse des fusions devra être adapté : définition du marché et attribution des parts de marché ; évaluation des changements de la structure de marché ; évaluation des bienfaits de l'innovation pour les consommateurs ; évaluation de la capacité de l'entité fusionnée à exclure ou entraver les concurrents ; mise au point des mesures correctrices.

(4) *La définition du marché et l'attribution des parts de marché constituent des opérations particulièrement délicates dans les secteurs en rapide évolution.*

Dans les marchés de produits très complexes et évolutifs, il peut être très difficile d'établir les données nécessaires pour définir les marchés, qui s'appuient sur les possibilités de substitution des produits. D'ailleurs, peut-être faudrait-il remettre en question l'hypothèse traditionnelle des possibilités de substitution dans le cas des marchés à haute innovation. Cette hypothèse se fonde sur ce que feraient les clients en cas d'augmentation faible mais sensible des prix (test de situation en prix relatifs, en anglais SSNIP test, pour *small but sugnificant non transitory increase in price*). Or, dans les marchés de produits très différenciés et à forte intensité d'innovation, les clients ont tendance à comparer les performances des produits plutôt que les prix. De plus, pour s'approprier l'ensemble d'un marché et bénéficier ainsi d'importantes économies d'échelle et/ou d'effets de réseau, l'entité fusionnée peut pratiquer temporairement une politique de très bas prix. Dans ces conditions, il se produit l'inverse du phénomène appelé "cellophane fallacy", c'est-à-dire que le test SSNIP indique un marché exagérément étroit, et non exagérément large.

Les difficultés sont encore plus grandes pour l'attribution des parts de marché. Selon les agences de la concurrence, pour déterminer l'impact d'une fusion sur les parts de marché, il faut tenir compte de la concurrence potentielle. Mais dans le cas de marchés particulièrement évolutifs, il est particulièrement difficile de recenser les concurrents potentiels et d'évaluer leur capacité à accroître l'offre, limitant ainsi les possibilités de superbénéfices.

En liaison avec les problèmes de définition du marché et de parts de marché, il faut également déterminer les mesures à prendre lorsque le « marché » le plus affecté est celui des activités de recherche développement qui participent à la création de nouveaux produits. Pour résoudre ce problème, les États-Unis ont créé le concept de « marché d'innovation ». Selon les *Antitrust Guidelines for the Licensing of Intellectual Property,* produites par le Département de la justice et la Federal Trade Commission, un marché d'innovation se compose de la R&D orientée vers la création de produits ou de procédés nouveaux, et des proches substituts de cette R&D. Les États-Unis reconnaissent qu'il existe peu de cas où ce concept de marchés d'innovation est vraiment pertinent, et que même dans ces exemples, on obtiendrait probablement le même résultat avec la démarche traditionnelle. Il reste que c'est avec ce concept de marché d'innovation que les autorités de la concurrence s'approchent le plus de l'application d'une méthode spécifique aux marchés très innovants pour l'examen des fusions.

(5) *Même si l'on évalue correctement les changements de parts de marché qui résultent des fusions, cela ne permet probablement pas de prédire les évolutions durables de la puissance de marché dans les marchés très innovants avec la même exactitude que dans les marchés plus traditionnels où les choses évoluent moins vite. De plus, on ne connaît pas bien la manière dont les changements qui affectent la puissance de marché influent sur l'innovation.*

Les autorités de la concurrence examinent les effets des fusions sur les parts de marché afin d'avoir une première idée des conséquences probables des fusions. Toutefois, rappelons le, dans les marchés très innovants, le numéro un possède souvent une avance très nette sur ses concurrents avant même que la fusion examinée intervienne. Mais il peut tout aussi bien perdre cette domination si un concurrent lance une innovation qui marche. De plus, les produits à forte intensité d'innovation sont souvent des biens durables – abstraction faite de l'obsolescence technologique – ce qui n'est pas sans conséquences pour la concurrence. En effet, un éditeur de logiciel par exemple, qui détient la presque totalité de son marché ne peut pas augmenter les prix à sa guise car les acheteurs potentiels risquent de se contenter des anciennes versions du produit, même si elles sont moins sophistiquées.

Bref, dans les marchés très innovants, l'estimation de l'impact d'une fusion sur les parts de marché n'est pas un bon indice de la probabilité de prix anticoncurrentiels après la fusion. Il en va de même du lien de cause à effet entre les parts de marché et l'innovation. Comme nous l'avons vu précédemment, même la relation entre puissance de marché d'une part – dont la mesure des parts de marché ne rend compte qu'imparfaitement – et l'innovation d'autre part, n'est pas tout à fait certaine.

Même s'il peut apparaître indiqué de prendre autre chose que les parts de marché comme critère préliminaire pour déterminer les fusions potentiellement anticoncurrentielles, reste à trouver quelle mesure utiliser. On peut préférer la méthode des « principes premiers» qui s'attache à déterminer dans quelle mesure la fusion peut permettre aux entités d'améliorer leur rentabilité au détriment des clients. Cette démarche, plus séduisante au premier abord, ne résout pas, loin de là, la question de savoir comment répartir les ressources limitées des autorités de la concurrence.

Aussi, plutôt que d'écarter trop rapidement le critère préliminaire des parts de marché, il serait peut être plus astucieux d'y adjoindre un certain nombre d'autres éléments faciles à établir. Par exemple, le degré d'instabilité des parts de marché observé récemment, le taux de croissance du marché, ou l'estimation du rythme de l'évolution technologique. Plus ces indicateurs sont élevés, plus il est probable que la fusion peut être autorisée sans nécessiter une analyse plus approfondie.

(6) *Étant donné la forte différentiation des produits et le potentiel offert par les toutes nouvelles technologies pour bondir en avant, les marchés très innovants sont peu susceptibles de donner lieu à des pratiques de coordination anticoncurrentielle. On ne peut pas en dire autant des effets anticoncurrentiels unilatéraux, surtout lorsque les fusions concernent des produits complémentaires (ce qui est notamment le cas des fusions verticales). La possibilité et la tentation d'exclure ou d'entraver des concurrents sont fortes et requièrent la plus grande vigilance de la part des autorités de concurrence dans l'examen des fusions.*

Dans les marchés très innovants, les économies d'échelle et les effets de réseau importants se traduisent souvent par un avantage majeur au premier entrant, qui peut être encore accentué par les fusions. Il en résulte des gains d'efficience normaux qui bénéficient généralement aux clients, mais aussi parfois une capacité accrue à exclure ou entraver les concurrents. Cette capacité peut s'appuyer sur l'utilisation des droits de propriété intellectuelle ou sur des normes. Une société peut aussi exploiter une position de « gardien » de l'accès au marché parce qu'elle contrôle les moyens d'accès de ses concurrents à des réseaux qui ne seraient difficiles à dupliquer, comme le réseau de téléphonie fixe. Enfin, une société peut se mettre en position d'exclure ou d'entraver ses concurrents en recourant à des pratiques de vente groupée ou par lots de produits complémentaires.

Du fait du rythme rapide d'évolution des marchés très innovants, il peut être très difficile d'établir l'impact d'une fusion sur la capacité d'une société à exclure ou à entraver ses concurrents. C'est pourtant extrêmement important pour prédire les effets anticoncurrentiels de cette fusion, dans la mesure où la capacité à exclure ou à entraver joue sur à la fois l'efficience statique et sur l'efficience dynamique (c'est-à-dire sur le flux futur d'innovations).

(7) *S'agissant des fusions anticoncurrentielles dans les marchés très innovants, il y a lieu de remettre en question la préférence traditionnelle pour une solution structurelle plutôt que comportementale. Le choix de solutions comportementales sur mesure, parfois assorties de l'obligation de céder une ou plusieurs activités, peut être la meilleure stratégie face à des risques sur la concurrence dans ces marchés.*

Le contrôle de la bonne application des mesures comportementales est une tâche délicate qui demande beaucoup de ressources, ce qui explique la préférence générale pour les solutions structurelles dans les cas de fusion. Mais dans les marchés très innovants, les ressources productives les plus importantes sont souvent le capital humain et les droits de propriété intellectuelle (DPI). Le transfert de tels actifs est par nature difficile et peut nécessiter une relation suivie entre la source et le destinataire du transfert, surtout pour les DPI. Il en va de même des solutions qui portent sur l'accès à des réseaux difficiles à dupliquer. Une relation suivie entre la source et le destinataire du transfert signifie que la solution imposée par l'autorité de la concurrence doit inclure des fonctions de surveillance et de supervision. Il serait en effet naïf de croire que la société contrainte à céder ses actifs va continuer à contribuer de son plein gré au renforcement d'un concurrent, au détriment de ses propres intérêts.

Mais la surveillance et la supervision d'un remède de comportement ou de structure ne doivent pas forcément durer indéfiniment. Il y a de fortes chances pour que l'évolution rapide des technologies induise une transition du marché vers une configuration toute différente qui rende le remède superflu. C'est le raisonnement appliqué par la Commission européenne dans l'affaire Vodafone (l'obligation d'accès au réseau de Vodafone est limitée à trois ans) et par les autorités du Brésil dans l'affaire Telesp/Nutec (ici, aussi, obligation d'accès pendant trois ans).

De plus, le propos des mesures d'accompagnement des fusions est d'annuler l'effet anticoncurrentiel de la transaction. Cela ne signifie pas, surtout dans des marchés à évolution rapide, qu'il faille retourner au statu quo ante. Le maintien de la configuration concurrentielle n'était nullement certain dans la situation d'avant la fusion, et n'était d'ailleurs pas l'objectif des mesures d'accompagnement des fusions. Ces arguments plaident en faveur des solutions comportementales temporaires plutôt que des mesures définitives.

Les mesures correctrices comportementales intégrant des dispositifs novateurs en matière d'autorisations et d'accès ne constituent pas le seul type de solutions sur mesure applicables aux fusions à risque dans les marchés très innovants. Il est possible d'imposer la propriété conjointe de certains actifs critiques par les concurrents, ou de créer des conditions rendant cette propriété conjointe plus intéressante pour les entités qui fusionnent (voir l'affaire Movilpago en Espagne). Il peut également être possible, dans certains pays, de compenser la forte incertitude qui règne dans les marchés très innovants par des mesures structurelles conditionnelles. C'est l'option qu'a prise le Canada à plusieurs reprises, en demandant aux parties de s'engager à céder certains actifs phares au cas où des problèmes de concurrence apparaîtraient pendant une certaine période à la suite de la fusion.

(8) *Plusieurs délégués sont partisans d'un réexamen des décisions prises en matière de fusion pour voir comment les choses évoluent effectivement.*

Certains soulignent que ces réexamens aideraient mieux comprendre le fonctionnement des marchés et permettraient de définir des pratiques exemplaires qui pourraient être diffusées, en particulier des mesures correctrices des fusions anticoncurrentielles dans les marchés très innovants.

(9) *La complexité des fusions dans les secteurs très innovants peut nécessiter de modifier le processus d'examen des fusions (limites de durée strictes), de renforcer les compétences sectorielles spécifiques des autorités de la concurrence et de prendre des mesures d'anticipation en prévision des fusions dans les marchés très innovants.*

Les Pays-Bas ont particulièrement insisté sur ces derniers points. Grâce à une collaboration avec différents organes de régulation, l'autorité néerlandaise de la concurrence était bien mieux préparée et a pu traiter sans délai deux importantes affaires de fusion dans des secteurs d'innovation.

BACKGROUND NOTE

By the Secretariat

In 1950 not one of the 100 highest valued firms spent more than five percent of revenues on R&D, and in 1970 only nine of the top 100 exceeded this level. But in 1999, 38 of the 100 highest valued firms spent at least five percent of revenue on R&D, with 22 firms spending more than ten percent.[1]

1. Introduction

Merger review necessarily requires competition agencies to predict how markets are likely to evolve in the future. This exercise becomes considerably more difficult when a merger occurs in an "emerging market", i.e. one that is rapidly changing and growing due to significant innovation. Such markets will be referred to below as "high innovation" or "innovation intensive" markets, and taken to include what are commonly referred to as "high tech" and "new economy" markets.

In some circles there is considerable doubt that competition agencies are up to the task of applying antitrust laws to high innovation markets and a related doubt about whether such interventions are even warranted. Teece and Coleman (1998), for example, state that:

> …we do not believe the antitrust agencies anywhere in the world are at present well equipped to deal with competition policy in high-technology industries…. The very nature of competition, the definition of industries, the basis of competitive advantage, the effects of "restrictive" practices and the nature of economic rents are all different in the context of innovation. The costs of error are great….
>
> The good news is that the cost of inaction is not high, and pales next to the costs and likelihood of error where innovation is rapid. In high technology, we observe competition orders of magnitude fiercer than in industries where the agencies have in the past found problems. We have little doubt in the eventual self-corrective capacities of markets in such contexts, even in the presence of networks. (846-847)

While typically expressing confidence that antitrust law is sufficiently flexible to meet the challenges posed by high innovation markets, competition officials have admitted that caution is needed in these sectors and some different approaches might be necessary.[2]

This issue paper is intended to promote discussion of the special issues raised by merger review in high innovation markets. In the next section, some leading characteristics of high innovation markets are delineated, including some thoughts about their implications for competition in such markets. This is followed by sections focusing on: competition policy objectives; preliminary screening for possible anticompetitive effects; assessing threats to competition; and remedies. Various issues for discussion addressed to Member competition agencies are suggested in each section.

2. High Innovation Markets – characteristics and competition

The following list of salient characteristics of high innovation markets is an amalgam of what can be found in Balto and Pitofsky (1998), Evans and Schmalensee (2001), Lind et al. (2002), and Teece and Coleman (1998). Most of the characteristics and their competitive implications are almost definitional, i.e. they flow directly from the need to produce a stream of competitive innovations. They are frequently, but not always, found together:

- high R&D intensity and dependence on intellectual property rights (IPRs) and a closely related high degree of reliance on human instead of on physical capital;

- rapid technological change and short product cycles;

Innovation is constant and frequently incremental, but there can also be basic changes ("paradigm shifts") unleashing what Schumpeter referred to as a gale of creative destruction.

- increasing returns to scale;

Continuing innovation and an emphasis on accumulating and using new knowledge means that fixed, frequently sunk, costs are high and marginal costs low.

- important network effects;

Network effects arise when the value of the products to consumers increases with the number of buyers, both because of demand side economies of scale (e.g. a telephone network is more valuable the more persons connected to the network) and because complementary products will be better and cheaper the larger the number of buyers of the basic product (e.g. computer operating systems).

The network effects take on greater importance if larger networks are permitted to deny interconnection to smaller ones (or are allowed to charge very high prices for access), and if there are significant buyer switching costs. This leads to the next important characteristic.

- compatibility and standards may play a key role in competition; and

- a high degree of technical complexity.

The above list of characteristics can have important effects on the style of competition in high innovation industries. Competition will tend to focus more on product performance than on price.

In some high innovation markets, network effects, switching costs and possibly other factors almost guarantee that the market will evolve, sometimes quickly, to dominance or even monopoly. In such markets, competition occurs primarily at the early stages as companies fight for the market. Geroski (2002) characterises such "competition for the market" as follows:

> At bottom, it is about establishing a standard and imposing it on the market. This means, in effect defining what the product is, what it works well with and what consumers should expect when they use it. A firm that is able to do this and keep control of that standard is often referred to as a 'first mover' and is usually thought likely to benefit from various 'first mover advantages' which protect it from imitative entrants who, in due course, try to compete in the market. In the

context of a standard, first mover advantages arise whenever control over the design plus accumulated production experience or scale related cost savings give rise to cost differences between incumbents and entrants, when pre-emptive investments in product specific plant or in controlling scarce inputs raise entry hurdles for followers, and when network externalities create large collective switching costs for consumers who may, in any case, have formed habits of purchase or a degree of brand loyalty to the first mover. All of these factors work towards disadvantaging imitative entry, giving the champion of the winning standard an opportunity to amortise the fixed costs involved in establishing that standard (and, perhaps, to earn some monopoly profits as well) after that standard has been established. Competing to establish a market is therefore about using a new standard to generate a long term stream of rents: the prize is not the standard but the first mover advantages which can come with establishing, and then monopolising, it. (66)

2.1 Suggested issues for discussion

2.1.1 If you have merger guidelines, please describe any specific arrangements, approaches, checklists etc. they may contain to deal with mergers in high innovation markets. What constitutes a "high innovation market"?

2.1.2 What are your views on the general advisability of working out special arrangements, published or not, for dealing with mergers in high innovation markets?

3. Competition Policy Objectives – static versus dynamic efficiency emphasis

As already noted in the introduction, it is sometimes argued that in high innovation markets, competition is sufficiently fast paced that there is no time for application of competition laws. In addition, competition officials may face special difficulties in these markets because of their technological complexity. It could be a major challenge to determine what consumers are looking for in the products they buy and what constitutes competitive advantage in high innovation markets. Some commentators also maintain that competition laws are unnecessary because market power in such industries, though pervasive, is typically undermined reasonably quickly by other innovations. In many cases, such reasoning could amount to wishful thinking. Geroski (2001, 73-77) provides two reasons for believing that competition for the market is an imperfect substitute for competition in the market. Broadly paraphrased they are:

- The two forms of competition exert different kinds of pressure, i.e. price competition promotes technical efficiency and competition for the market compels firms to be efficient in innovating.

- There may be two sets of firms acting as competitors in and for the market, i.e. the imitators and the innovators, having two different sets of skills and outlooks.

Geroski argues that the overlap between these two sets of firms is far from complete because:

- First, innovative entry involves producing new products or services, and, for this reasons it usually also involves a different business design… Since developing or assembling new skills is always harder (and more risky) than acquiring skills that are already being used

somewhere in the market, those firms who choose to do so are likely to be different from those who settle for the familiar.

- Second, firms who have already acquired the skills needed for producing and selling the established standard may be more than a little reluctant to make investments in new skills that effectively make their existing, rent earning skills obsolete.

Some authors have suggested that merger review, at least when applied to high innovation markets, tends to pay too much attention to price competition and trying to ensure that enterprises are under pressure to make a maximum contribution to allocative and technical efficiency. Hard to assess dynamic or innovative efficiencies may be de-emphasised or restricted to the part of the analysis dealing with possible offsetting efficiency effects and/or taken into account only when suitable remedies are being devised. Such a treatment of dynamic efficiency would make little sense in markets where consumers may have considerably more to gain through innovation than through lower priced existing products.[3]

Some commentators go beyond taking the view that dynamic efficiencies deserve greater attention in merger review, at least in high innovation sectors. They seem to believe that there may be a trade-off between static and dynamic efficiency in such markets. This stems from ideas generally traced to Schumpeter that market power is basically good for innovation. That hypothesis has been subjected to a good deal of theoretical questioning and empirical testing. A recent review of the theory and empirical evidence relating to competition, innovation and productivity growth found, *inter alia*, that:

> The claim that market concentration is conducive to innovation does not appear to be supported by recent empirical findings. Motivated by Schumpeter's conjecture that large firms in concentrated markets have advantage in innovation, many empirical studies have investigated the relation between market concentration and innovation. On the whole, however, there is little empirical support for the view that large firm size or high concentration is strongly associated with a higher level of innovative activity.

A large number of empirical studies confirm that the link between product market competition and productivity growth is positive and robust.[4]

The bottom line for merger review seems to be that evidence purporting to show that a merger will improve the capacity to innovate does not necessarily constitute good reason to believe that post-merger innovative performance will improve. For that to happen, capacity and incentives to innovate must be examined and high levels of concentration may dull rather enhance those incentives.

All this is not to say, however, that evidence of high short term profitability in high innovation markets should be taken as indicating that competition is already weak and the merger should therefore be subjected to a good deal of scrutiny. Companies competing on the strength of their innovations must be able to earn a return commensurate with the risks they have borne and also to re-coup the losses they make on occasional failures with the profits they make on significant successes. In innovation intensive markets profitability may sometimes have to be very high on successful products to compensate for the risks involved in undertaking substantial and continuous innovation.

In examining the proper objectives of merger review in high innovation markets, it may be wise to consider the substantive test that is applied. Lind et al. (2001, 129) argue in favour of adopting a substantial lessening of competition threshold since:

> …it provides a more useful focus than that of dominance because often markets will have a dominant firm in any case. For many mergers in the new economy the relevant question is

whether a merger will strengthen or weaken competition in the process of determining the dominant firm.

In sum, merger review has a role to play in high innovation markets to ensure that acquisitions do not short circuit competition for the market and/or produce dominant positions that are unnecessarily difficult to displace. Allowing such mergers would amount to denying consumers significant benefits during the competitive phase, including the exercise of significant influence over the product features that the winning firm eventually offers. Merger review also has a contribution to make in terms of assuring that existing products are produced and marketed as efficiently as possible.

3.1 Suggested issues for discussion

3.1.1 Should competition law merger provisions allow competition agencies to make tradeoffs between static and dynamic efficiency effects (e.g. refrain from blocking a merger that will raise prices on existing products, or slow their decline, but will simultaneously make a significant positive impact on innovation)? If such tradeoffs are made, how certain and well defined should future innovations have to be, i.e. how close to being actual products?

3.1.2 If your competition agency has had to make a static/dynamic efficiency trade-off in one or more mergers, please describe the nature of the tradeoffs and how they were handled.

4. Preliminary screening for possible anticompetitive effects

To avoid wasting scarce enforcement resources and causing other economic losses through forcing merging parties to wait for antitrust clearance, many competition agencies apply a screen and quickly approve or abstain from challenging mergers that pass through. The screen typically consists of calculating pre- and post-merger concentration levels. This requires making at least a preliminary market definition, identifying firms in the market and then calculating market shares. It turns out that defining the market and deciding which firms to include in it could be unusually difficult in innovation intensive markets.

High innovation markets are often characterised by competition on performance rather than price and this points to highly differentiated products, and buyers being unwilling to switch to other products in response to a small post-merger price increase. This tends to make it difficult to apply the standard technique for identifying relevant substitutes.[5] To try to overcome that difficulty, it has been suggested that the process of identifying relevant markets should be expanded somewhat. For example, Teece and Coleman (1998, 853-857) argue that hypothetical changes in performance should be included alongside possible changes in price when defining suitable substitutes. They acknowledge, however, that it may be difficult to identify suitable performance attributes.

There is another difficulty that could be encountered when using hypothetical price increases as a means of identifying appropriate substitutes. It could be the case that merging parties are currently making low profits or even losses and rivalry appears to be directed to winning the whole market in order to reap important first mover advantages, i.e. competition is for the market rather than in the market. Under such circumstances, assuming that the merging parties are more aggressively trying to buy market share through temporarily low prices than are their competitors, the application of a standard market definition approach may produce a misleadingly narrow market.[6]

The problems encountered in market definition certainly are aggravated when competition switches from being primarily competition in the market to competition for the market. Paul Geroski (2001, 62-63) has aptly noted that:

> Competition authorities normally assess the degree of competition in markets by looking at substitution possibilities. The search for substitutes typically involves looking for goods or services which are 'similar' to the product in question: similar on the supply side means that producers of some other product can easily switch to producing this one, while similar on the demand side means that consumers regard the other product as similar to this one and would be willing to switch to those others if faced by only modest price differences. It is natural to call this way of thinking about competition an assessment of the degree of competition in markets. It is basically about assessing the strength of imitation as a force disciplining pricing in the market.
>
> The basic problem with assessing the degree of competition in markets is where to draw the line between what is and what is not a substitute. One (of several) difficulties which arise in this context is entry: actual competitors are, somehow, more tangible and more obviously a threat than are 'could be' potential entrants. Another problem is that some potential substitutes are only genuine substitutes if producers or consumers are willing to do something quite different, if they are willing to incur what might be large switching costs or large set up costs in order to consume or produce the substitute. Thus, these 'substitutes' are and are not substitutes – they are in the sense that they meet the same basic needs, but they are not in the sense that they do so in quite a different way. If they were widely adopted by consumers and producers, these 'substitutes' are likely to make the market look very different – adopting one of them involves not just displacing one product variant by another, it may also change many recognisable features of the operation and infrastructure of the current market.

Once a market has been defined, the next step is to decide which sellers are in it. This too could be quite difficult. What should one do with a firm known to be working on innovations that will permit it to enter the market in a relatively short time? If the firm is counted as being in the market, what market share should it be given? These questions are symptomatic of a deeper issue. Even if one has reasonable confidence that market shares reflect what is currently known about the market, how reliable are they as indicators of future market shares and competitive vitality of the firms included in the market? The more innovation intensive the market, the more this question becomes difficult to answer. In high innovation markets, the real competitive constraint on merging parties is not so much lower pricing by rivals as the introduction by them or new entrants of a significantly better product.

There is another reason that a simple look at market shares may lead to unreliably high estimates of market power in some high innovation markets. These are markets featuring goods that, except for technological obsolescence, are highly durable, e.g. software. A company may be selling virtually the whole of the current market for a newly innovated program or operating system yet be effectively constrained in its pricing by many prospective buyers having the alternative of simply continuing to use their older less advanced versions of the same product.[7]

Recognising the difficulties inherent in applying concentration based screens to merger review in high innovation markets, some have advocated a different approach that would largely by-pass making a rigorous market definition and calculating market shares. This is sometimes referred to as a "first principles" approach because it centres attention from the outset on whether or not the merger will assist the parties to improve their profits in ways that harm consumers. The first principle approach would shift the focus away from identifying substitutes towards more directly considering abilities and incentives to innovate.

Even if a first principle approach is indeed advisable in high innovation markets, there arguably remains a need for some kind of pre-screening to avoid devoting scarce enforcement resources to mergers not likely posing real threats to competition. One way to proceed might be to consider the seemingly narrowest markets within which the merging parties sell, and then asking a series of questions. Is the rate of productivity improvement and/or innovation well above average in those "markets"? Is there also evidence that the market leader's market share (or at least that of its leading product) has rapidly changed over time? Is the market growing rapidly? Are there significant network effects as regards the principal products of the merging firms and if so, is interconnection common? Are switching costs low and likely to remain so? Are standards important and are they open or closed (i.e. proprietary) in nature? Are several firms, other than the merging parties, committing a lot of resources to R&D? Do knowledgeable industry observers consider the outcome of the current struggle to innovate to be in doubt?[8] Do the merging firms have a record of engaging in anticompetitive conduct? The answers to these questions might indicate that even if concentration levels were high (assuming a conservatively drawn market), dynamic competition is sufficiently vigorous that the merger is quite unlikely to have anticompetitive effects and should be cleared without further examination. If that is not the case or other factors point in the opposite direction, it will be necessary to investigate further how the merger might affect consumer interests.

4.1 Suggested issues for discussion

4.1.1 What modifications, if any, does your competition agency make in applying the traditional merger screen, i.e. calculating pre- and post-merger concentration levels, to transactions in high innovation markets?

4.1.2 If your competition agency makes preliminary estimates of the anticompetitive effects of a merger based on an approach that does not focus on calculating pre- and post-merger concentration levels, please describe how such estimates are made and kindly provide actual case examples.

5. Assessing Threats to Competition

5.1 Co-ordinated effects (i.e. replacing competition with various forms of co-operation)

There may be less reason to be concerned about co-ordinated effects in high innovation markets compared with slower changing markets. There are three reasons for this. First, firms could generally be more heterogeneous in high innovation markets making it more difficult for competitors to agree on what would be mutually beneficial arrangements. Second, it may be extremely difficult to monitor and agree to reduce the kind of competition that firms are most concerned about in innovation intensive markets, i.e. the speed and nature of innovation. R&D levels could perhaps be agreed and monitored, but that is far different from trying to control the de-stabilising effects of innovations resulting from R&D. Third, anticompetitive co-ordination is usually thought to be unstable unless some means can be found to punish cheaters. These three issues become more important the more competition is for rather in the market.[9]

Although standard co-ordinated effects, e.g. jointly raising price, may not be as much of a problem in high innovation markets, joint agreements to set up proprietary, closed standards could come to the fore. In some circumstances, mergers could play a role in facilitating such agreements especially if they are used to secure the co-operation of a maverick competitor.

5.2 Unilateral effects

Here too the distinctive nature of high innovation markets shows up in terms of implications flowing from competition for instead of in the market. As already noted, markets characterised by such competition tend to be moving towards dominance or even monopoly and competitors will have strong incentives to find ways to exclude competitors in order to tip the market towards their offerings and shorten the period of time in which competition is intense. Competition officials will therefore have to pay close attention to how a merger might change incentives and abilities to engage in practices tending to exclude rivals or to raise their costs. This includes things like tying and bundling, exclusive dealing, foreclosing access to vital raw materials or distribution systems, price discrimination, and predatory pricing. Sometimes the main anticompetitive risks of such practices could fall outside the markets where merging parties currently operate.[10]

In addition to examining the way a merger might change incentives and abilities to exclude competitors, unilateral effects analysis should also consider how price raising effects in high innovation markets might be different than in slower changing sectors. Lind et al. (2001, 121) believe that mergers will tend to induce greater price increases in situations where there are high pre-merger margins. This may be based on the assumption that high margins are typically associated with there being a small number of competitors, i.e. oligopolists. The smaller that number, the more a merger will tend to increase concentration and the size of the expected post-merger price jump (assuming Cournot behaviour). Lind et al. (2001, 121) also discuss the impact of the high levels of product differentiation likely to be found in high innovation markets. On the one hand, a high degree of product differentiation reduces the impact of a merger on incentives and ability to raise prices because it reduces overlap among the products brought under common ownership. At the same time, however, a high degree of product differentiation reduces the price constraining power exercised by the merging parties' rivals.

It may be argued that neither co-ordinated nor unilateral effects are really important in innovation intensive markets if there are good reasons to believe that, with or without the merger, competition for the market will eventually result in dominance or even monopoly. This is a false argument. Consumers can gain considerable benefits during the initial highly competitive stage. Moreover, an early wave of mergers could short circuit consumer influence on which of the competing products or associated standards eventually prevail in the market.

5.3 Direct effects on innovation

Co-ordinated and unilateral effect analysis tends to focus more on incentives rather than abilities to compete and how the merger will change those. In high innovation markets, attention should also be devoted to how a merger might alter the capacity of merging parties and their competitors to innovate. There are no shortcuts to estimating such effects. Detailed analysis of ability to innovate based on past behaviour and present resources is required. This necessitates obtaining a good working knowledge of what consumers are looking for and how sellers seek to build and maintain competitive advantage. Intellectual property rights might be critical in some markets, while in others the crucial factor is speed and reliance on secrecy.

It could happen that a merger will facilitate the adoption of a new standard in an industry, for instance by creating a firm that is large enough or possesses enough of the relevant IPRs to impose a *de facto* standard on the market. This effect could also arise if the merger helped resolve a hold out problem in relation to critical IPRs.

Generally speaking, the adoption of a standard could tend to reduce or eliminate competition for the market, but at the same time could stimulate competition in the market. The latter effect will of course depend somewhat on whether the standard is open or is instead proprietary and closed. Which of these effects dominates is an open question to be answered on a case by case basis.[11] Lind et al. (2002, 108) point out though that:

> …one time when standardisation is clearly preferred is when a failure to standardise means the product would never 'take-off'. This could be because of blocking patents, or consumer resistance to moving to a new standard. This is most likely to be an issue when there are significant switching costs for consumers in changing standards, or a high perceived risk of being stranded with an unsuccessful new technology.

Some jurisdictions, notably the US, have developed the concept of innovation markets and have applied it in a small number of mergers. Lind et al. (2001, 53) described this approach but came to the conclusion that it is best confined to situations where no markets for affected products yet exist, i.e. all the potential competitors are still engaged in R&D.[12]

Michael Porter (2001) has illuminated an additional factor that could have an important impact on innovation. He has explained and to some extent demonstrated that geographic clustering, even in markets which antitrust analysis would regard as global, could have a critical influence on productivity growth. This is apparently because local as contrasted with international competition provides an exceptional stimulus to productivity growth. He identifies two major contributions of local competition:

- Incentive and informational benefits: the immediate presence of a rival stimulates greater comparison, improvement, and upgrading versus competing with a firm in a foreign country. Companies that compete at home are better prepared to compete with foreign rivals abroad.

- Positive externalities: geographic proximity of rivals generates otherwise unattainable positive externalities, such as specialised labour pools, knowledge spillovers, specialised supplier formation, etc…. (929-930)

A third reason why local as opposed to distant competition might have more beneficial efficiency enhancing effects is that it helps owners ensure that managers exert maximum effort. There are fewer excuses available for poor performance if the bench mark is a local as opposed to a foreign firm.

Porter's emphasis on the importance of local competition even in globalised industries runs squarely against the idea that mergers should be permitted in order to create national champions having the resources to innovate and then to compete in world wide markets. Such mergers might destroy more than enhance innovative abilities and incentives.

5.4 Barriers to entry

As in more traditional sectors, barriers to entry could prove critical in estimating the pro- or anticompetitive potential of mergers in high innovation markets. They could be analysed in the traditional way as regards firms who are essentially imitators, but some special factors or emphases should perhaps be borne in mind as regards firms engaging in cutting edge innovation.

In innovation intensive markets, competition agencies must determine what resources are necessary to innovate successfully in an affected market, and how quickly they can be obtained and assembled, and on what terms. They must also give careful attention to how easy it would be for buyers to

switch from the merging parties to new entrants. It might turn out, for example, that network effects combined with significant switching costs act as powerful barriers to entry protecting incumbents. Working in the other direction, it could happen that due to a dependence on human rather than physical capital, the resources needed to successfully innovate can be quickly obtained by luring away qualified staff from other firms.

5.5 Efficiencies

Efficiencies claimed in relation to high innovation markets would be roughly the same as those encountered in mergers in more stable markets. The main difference would be that efficiencies related to the innovative process could prove to be both more important and difficult to assess than efficiencies related to existing products. They are more important because of their on-going nature. This is in contrast to, for example, once over gains resulting from reducing administrative overheads.

When a merger joins two firms that are both making heavy investments to develop, for instance, an AIDS vaccine, an important trade-off presents itself. On the one hand, fewer resources might be spent developing the vaccine if the merger goes ahead. On the other hand, considerably more time might elapse before the vaccine is perfected, especially if the merger brings together companies that happen to be leaders in drugs designed to control AIDS symptoms. This kind of a trade-off could exist in many competition for a market situations.

Difficult efficiency issues could also arise when a merger facilitates the adoption of a standard. Whether or not such an effect should be counted as efficiency would depend on two factors: would the standard tend to promote or reduce competition; and are there less anticompetitive means of achieving the same result.

Many competition agencies do not count efficiencies on the positive side of the ledger in assessing mergers unless such efficiencies are specific to the merger in the sense that they could not be realised with less risk to competition if the merger were blocked. This might be particularly difficult to establish in high innovation markets. Strategic alliances seem to be widespread in such markets and would apparently reduce competition less than a merger. In addition, many countries have especially liberal provisions for judging the permissibility of agreements among competitors when those are restricted to R&D joint ventures. These too would be less restrictive of competition than a merger.

5.6 Suggested issues for discussion

5.6.1 Does your experience tend to support or refute the idea that co-ordinated effects will not often be a problem in high innovation markets? Please explain citing examples if possible.

5.6.2 What are the commonest ways that mergers in innovation intensive markets import a risk of facilitating the exclusion of competitors? Please provide examples.

5.6.3 Please provide examples, if you have any, of applying the innovation market concept in merger review. Was this application motivated by jurisprudential considerations or because the concept adds something that cannot be dealt with just as well using references to potential competition?

5.6.4 Please provide examples, if you have any, of reviewed mergers in innovation intensive markets where network effects played an important role in the analysis. What factors did you consider in deciding whether or not such effects constituted a significant barrier to entry?

5.6.5 Please provide examples from high innovation markets, of non-horizontal mergers where you found significant threats to competition and outline what the threat consisted of.

5.6.6 Are there any important differences as regards the information sources your agency depends on (e.g. do competitors play a larger or smaller role?) when analysing the competitive effects of mergers in high innovation as contrasted with slower evolving markets? Please explain.

6. Remedies

The argument that innovation intensive markets are so dynamic that market power will be sufficiently quickly eroded without antitrust intervention is sometimes bolstered with the view that antitrust remedies may do more harm than good, i.e. they are more like "blunt axes" than "surgeon's knives".[13]

This criticism seems difficult to accept given evidence that competition agencies are showing flexibility in high innovation sectors by, among other things, relaxing their normal preference for structural rather than behavioural or mixed structural-behavioural solutions to perceived problems. For example, according to Balto and Pitofsky (1998, 151):

> Licensing remedies are relatively common in the US, and have the potential, if well constructed, of allowing firms to achieve the synergies of a merger unimpeded, while still maintaining the potential for competition.

To the extent licensing remedies require an ongoing relationship between licensor and licensee in order to produce the desired effect on competition, they may also need post-merger monitoring, hence be somewhat akin to behavioural remedies. A good example of this can be found in the merger between Glaxo and Burroughs Wellcome. This transaction allegedly would have led to a reduction in competition to develop an oral drug to treat migraines. Baer (1998, 5) describes the remedy designed to prevent that from happening:

> The consent order settling this case required the divestiture of Wellcome's world-wide research and development assets for non-injectable drugs. Divestiture as a remedy in innovation markets requires special care because the success of research and development efforts often depends on a complex array of expertise and sustained knowledge. It may be necessary to require on-going obligations beyond divestiture to assure that the purchaser has some probability of successful completion of the research effort. In Glaxo, for example, the order imposed significant obligations on Glaxo to assist the acquirer in its efforts to continue the research and development effort successfully. Glaxo had to provide information, technical assistance, and advice to the acquirer about the R&D efforts, including consultation with and training by Glaxo employees knowledgeable about the project.

Such an order necessarily implicated the US FTC in some form of monitoring to ensure the terms were complied with.

Monitoring may also be required in novel solutions involving remedies that will apply only if there are certain post-merger market developments. This could be appealing in situations where a merger promises important synergies but also poses uncertain risks to competition. Lind et al. (2002) observe that:

> On the one hand the authorities do not want to block mergers unnecessarily, particularly if there are efficiencies associated with the merger that are likely to benefit consumers. On the other hand the authorities do not want to allow mergers that lead to markets tipping in a manner that causes consumer detriment. There is no easy solution to this problem. However, one potentially useful approach may be to deal with uncertainty by allowing mergers to proceed, but with undertakings that create options that come into force should the merged firm become dominant. For example, it may be possible to gain undertakings from the merged firm guaranteeing that it will maintain open standards and interfaces in the event that the market tips post-merger, with this requirement being triggered by the firm exceeding an agreed market share. (152 – reference omitted)

It would seem highly advisable that such contingent remedies spell out exactly how market shares will be calculated.

Returning to mandatory licensing as a possible remedy in merger cases, imposing such a remedy requires a competition agency to balance possible short term efficiency gains against potential long term losses through discouraging investment in alternative IPRs.[14] That trade-off largely centres on the tricky question of setting the appropriate royalty rate. A number of other license terms will also necessitate close attention, especially those restricting the licensee from competing in ways that would be available even if no access were given to the licensed technology. In addition, difficult issues could arise concerning terms affecting competition between the licensor and licensee, such as grantbacks and pooling arrangements, and agreements not to challenge the validity of the licensor's IPRs.

Instead of mandatory licensing as a way to open up a market threatened by a merger, terms can be imposed which have the effect of reducing the extent of IPR coverage. This is one way to view what was done in the Borland/Ashton-Tate merger. This merger brought together the two leading producers of personal computer database managers (Paradox and dBASE). The US Department of Justice conditioned the acquisition by requiring Borland to agree "…to forgo enforcement of potential copyright claims over the "look and feel" of the dBASE software and to use its best efforts to settle Ashton-Tate's copyright infringement litigation based on these claims."[15] By requiring this, the US DOJ effectively reduced the scope of the merging firms' IPRs.

Partial forfeitures of IPRs could have different effects than mandatory licenses. This is primarily because mandatory licensing normally leaves the licensor some discretion in choosing licensees. One might expect such licensors to choose weaker competitors and those more likely to engage in imitative competition rather than intense rivalry as regards the next generation of innovation.[16] Partial forfeiture potentially opens the door somewhat wider than that.

As things actually worked out in Borland/Ashton-Tate, the restriction on IPR litigation apparently paved the way for Microsoft to acquire technology from one of the dBASE "clones" and eventually build a dominant position in the market. In answer to the possible criticism that the remedy in this case did not go far enough and merely exchanged one monopoly for another, Fazio and Stern (2000) made some remarks of general relevance to designing remedies in high innovation markets:

> …the antitrust and industrial organisation communities have long recognised that the government should not be in the business of micromanaging the path of technical change. Instead, the

> government must strive to protect overall competition while preserving each firm's individual incentives to innovate, letting consumers choose among competing technologies.

The Borland remedy accomplished this result. Not only did the remedy open up a window of competition, but it provided explicit incentives to firms to develop superior technologies that were still largely backwards-compatible. Moreover, the remedy ensured that the type of competition (i.e., innovation versus price based) was determined by market forces, along with the underlying cost and returns of different investments, rather than simply by governmental mandate. (70, references omitted)

It seems reasonable to expect that in high innovation markets, or at least those characterised by competition for the market, the main threat to competition raised by a merger will revolve around possible exclusionary conduct facilitated by a merger. When these concerns centre on the emergence of a company that will enjoy "gatekeeper" status to some essential infrastructure, competition agencies can be expected to give serious thought to blocking the merger. The gatekeeper issue is especially problematic in markets prone to tip towards dominance for reasons related to network effects, economies of scale, etc. In an October 2000 address at the Fordham Corporate Law Institute, the European Commission's Mario Monti discussed a number of mergers in high innovation markets and commented that:

> …the Commission has taken action each time that it has identified that a gatekeeper concern was likely to arise in the short or the medium term. In most cases, however, the problems could be limited in time or scope and solutions have been found through granting access to competitors. When, however, the problem could not be resolved, like in MCI-Worldcom/Sprint, a prohibition was the only possible outcome.[17]

6.1 Suggested issues for discussion

6.1.1 Please give examples tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers.

6.1.2 Please provide examples of contingent remedies adopted in relation to mergers in innovation intensive markets. What steps did you take to clarify the future situations in which the remedies would be triggered?

6.1.3 Please give examples of remedies that were customised to deal with mergers in innovation intensive markets.

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NOTES

1. Evans and Schmalensee (2001, 5, references omitted).

2. See for example Monti (2001b). After acknowledging the enormous benefits brought about by the "new economy", Monti noted the argument that in rapidly changing markets there is no role for competition regulators because the market will self-correct, and in any case change is too rapid to allow competition authorities to make timely decisions. Monti answered this with:

> I do not subscribe to this view. The general nature of the competition rules gives them an important advantage over most other legal rules, because they apply to the factual circumstances of a particular case, no matter how quickly industries develop or change. This allows them to keep pace with technological developments, in a way that more specific regulatory frameworks cannot. (3)

Monti went on to note that market power can become entrenched in the new as well as old economy. This reinforced what he said in another speech where he noted, *inter alia*¸ the importance of merger review in preventing monopolisation by gatekeepers, i.e. those controlling access to important networks. See Monti (2001a, 1608-1611).

The Chairman of the United States Federal Trade Commission has recently affirmed that merger review, applied cognizant of limited enforcement experience in the high-tech sector, has a role to play in rapidly evolving markets. He also urged that in industries where there is fierce competition and winners enjoy a "(perhaps short lived) monopoly", these winners should not be allowed to merge with actual or potential competitors. This echoes Monti's concern that market power may prove more durable in high tech markets than is sometimes conceded. See Muris (2001, 5).

3. According to Porter (2001, 934):

> Because of its direct effect on productivity growth, the most important goal for society is a healthy process of dynamic improvement, which requires innovations in products, processes, or ways of managing. If the rate of dynamic improvement is healthy, over time this dominates static technical and allocative efficiency concerns. (emphasis added)

> Because of the qualifier, i.e. "over time", this statement would be difficult to refute. It seems clear, however, that there will be high innovation markets where the statement is true over any reasonable time period, while in others static efficiency concerns tend to dominate the welfare calculus except over periods of time that are too long to be reflected in merger review.

4. OECD (2002, 5).

5. In the words of Lind et al. (2002, 56):

> Furthermore, the SSNIP procedure for market definition is focused on "small" price changes whereas competition in new economy markets focuses much more on product features that have proven to be of enormous value to consumers. These differences in features or functionality are often of such value that they totally dominate small changes in prices.

6. Lind et al. have pointed out that the cellophane fallacy could sometimes work in reverse or produce what they call a "dynamic fallacy":

> Consider a firm with a product in a market where there is rapidly changing technology; where there are network effects and gaining a large market share and a large installed base of users is important; and where the threat of new entrants is very real. This firm may well price its product substantially below

> what it could charge if it were attempting to maximise profits in the short run rather than in the long run. In other words, it is pricing below the price that would maximise short run profits. This is a situation believed to occur frequently in the industries of the new economy where network effects are significant. In some cases we see firms giving away their products…
>
> However, even where firms are earning substantial profits, it often appears that many firms are not fully exploiting their short term pricing power. What this suggests is that if one applied the SSNIP procedure using the current price as is typical in competition cases, one might find in many cases that the relevant product market would be as narrow as the product of the firm in question. [Lind et al. (2002, Part I, 55)]

This line of argument begs a question. If "many firms" are engaged in the unusually low, basically temporary pricing, then relative prices would not be distorted in a way that would bias the identification of pertinent substitutes through posing a hypothetical small price increase. The "dynamic pricing fallacy" would seem to be a problem only when merging parties or firms suspected of anticompetitive conduct are the principal practitioners of a strategy of pricing low in order to obtain a high market share and associated first-mover advantages.

7. This of course assumes that the seller is unable to price discriminate between buyers new to the market and those who already own some version of the product.

8. Some of these factors were discussed by Evans and Schmalensee (2001, 25). See also Porter (2001).

9. Lind et al. (2002, Part I, 124) note that:

> In the extreme case of a 'winner-take-all' race, there can be no possibility of co-ordination between competitors. When the equilibrium outcome is for only one to survive, the only viable strategy is competing to win. Thus where competition is for the market, mergers that reduce the number of players cannot lead to joint dominance concerns.

10. For a flavour of the "leveraging" issues at stake here, see Rubinfeld (1998, 877-891).

11. For a discussion of the general antitrust problems posed by standards in high technology industries, see Balto and Pitofsky (1998, 596-603).

12. Gilbert and Tom (2001, 50) seem to support that view:

> …innovation market analysis can be a useful tool where a merger or practice affects goods and services that do not yet exist, or affects the quality-adjusted price of goods and services in markets where firms are not actual or potential competitors. (reference omitted).

13. See Teece and Coleman (1998, 845).

14. For a discussion of this trade-off, see Lind et al. (2002, 96-101).

15. Fazio and Stern (2000, 49, reference omitted).

16. See ibid., 65-66.

17. Monti (2001a 1610).

NOTE DE RÉFÉRENCE

Par le Secrétariat

En 1950, aucune des 100 entreprises les mieux valorisées ne consacrait plus de cinq pour cent de son revenu à la R&D et, en 1970, elles n'étaient encore que neuf. En 1999, en revanche, 38 des 100 plus fortes valorisations dépensaient au moins cinq pour cent pour leur R&D, dont 22 y consacrant plus de dix pour cent[1].

1. Introduction

Pour examiner correctement les fusions, les organismes de contrôle de la concurrence doivent tenter d'anticiper l'évolution des marchés. L'exercice se complique singulièrement quand l'opération a pour cadre un « marché émergent », c'est-à-dire caractérisé par une innovation intense ainsi que des mutations et une croissance rapides. Les « marchés très innovants » englobent ce que l'on a coutume d'appeler les « marchés de haute technologie » et les « marchés de la nouvelle économie ».

Dans certains milieux, la capacité des organismes de contrôle de la concurrence à faire appliquer la législation antitrust sur les marchés très innovants suscite de nombreuses interrogations, voire des doutes sur le bien-fondé de telles interventions. Teece et Coleman (1998) déclarent par exemple :

> ...nous ne pensons pas que les autorités antitrust, dans quelque pays que ce soit, aient aujourd'hui les moyens de traiter les problèmes de concurrence dans les secteurs de haute technologie [...]. La nature même de la concurrence, la définition des secteurs, la base des avantages comparatifs, l'effet des pratiques « restrictives » et la nature des rentes économiques sont radicalement différents dans un environnement innovant. Toute erreur y a un coût élevé....
>
> La bonne nouvelle est que l'inertie, en revanche, ne coûte pas cher, voire très peu cher par rapport aux erreurs susceptibles d'être commises dans un contexte marqué par une innovation rapide. Quand il s'agit de haute technologie, la concurrence est d'un tout autre ordre que celle qui se livre dans les secteurs ayant jusqu'ici attiré l'attention des organismes de contrôle. Nous sommes confiants dans les capacités d'autocorrection des marchés dans de ce type de contexte, même quand il existe des réseaux. (846-847).

Tout en considérant généralement que la législation antitrust est assez souple pour s'adapter aux marchés très innovants, les autorités de la concurrence admettent qu'une certaine prudence est de mise et que des approches différentes peuvent être nécessaires[2].

Le présent document de synthèse doit favoriser le débat sur les questions particulières soulevées par l'examen des fusions sur les marchés très innovants. La prochaine section décrit certaines caractéristiques de ces marchés, accompagnées de quelques réflexions concernant leur impact sur la concurrence. Les sections suivantes abordent en priorité les objectifs de la politique de la concurrence, l'identification préliminaire des effets anticoncurrentiels possibles, l'évaluation des menaces pour la

concurrence, et les mesures correctrices. Chaque section mentionne les sujets de discussion proposés aux autorités de contrôle de la concurrence des pays Membres.

2. Marchés très innovants – caractéristiques et concurrence

La liste ci-dessous, qui énumère les principales caractéristiques des marchés très innovants, reprend différents éléments trouvés dans Balto et Pitofsky (1998), Evans et Schmalensee (2001), Lind *et al*. (2002) et Teece et Coleman (1998). La plupart des caractéristiques et leurs conséquences sur la concurrence sont quasiment des définitions ; elles découlent directement de la nécessité de produire un flux d'innovations compétitives et sont souvent citées ensemble, même si ce n'est pas systématique.

- haute intensité de R&D et forte dépendance vis-à-vis des droits de propriété intellectuelle, et, par conséquent, du capital humain plutôt que physique ;

- évolution technologique rapide et produits à cycle de vie court ;

L'innovation est constante et progressive mais des changements fondamentaux (changements de paradigmes) peuvent aussi s'opérer et déclencher une vague de destruction créatrice (Schumpeter).

- économies d'échelle ;

En raison du caractère permanent de l'innovation et de l'importance d'accumuler et d'utiliser de nouvelles connaissances, les coûts fixes (souvent irrécupérables) sont élevés, contrairement aux coûts marginaux.

- effets de réseau importants ;

Il y a effet de réseau lorsque la valeur des produits de consommation augmente avec le nombre d'acheteurs, non seulement du fait d'économies d'échelle du côté de la demande (pour un réseau téléphonique, par exemple, la rentabilité est proportionnelle au nombre de raccordements) mais aussi parce qu'un produit complémentaire voit sa qualité progresser et son prix baisser quand le nombre d'acheteurs du produit de base augmente (exemple des systèmes d'exploitation des ordinateurs).

Les effets de réseau prennent de l'importance si des réseaux plus développés sont autorisés à empêcher l'interconnexion de réseaux plus modestes (ou ont le droit de facturer des droits d'accès extrêmement élevés) et s'il est onéreux pour l'acheteur de changer de réseau. Il en découle une autre caractéristique importante :

- influence significative de la compatibilité et des normes sur la concurrence ;

- complexité technique considérable.

Les caractéristiques énumérées ci-dessus peuvent avoir des effets notables sur le style de concurrence qui se livre dans les secteurs très innovants. La concurrence aura tendance à être axée plutôt sur les performances des produits que sur leur prix.

Sur certains marchés très innovants, les effets de réseau, les coûts de transfert d'un réseau à l'autre et d'autres facteurs impliquent presque forcément une évolution, quelquefois rapide, vers une situation de domination ou de monopole. Sur ces marchés, la concurrence se livre principalement au

moment où les entreprises cherchent à se placer. Geroski (2002) dépeint cette « concurrence pour le marché » :

> Au départ, il s'agit de créer une norme et de l'imposer sur le marché. Il faut pour cela définir ce qu'est le produit, ce avec quoi il fonctionne le mieux et ce que les utilisateurs peuvent en attendre. Une entreprise qui en est capable et sait garder la mainmise sur sa norme est souvent désignée comme un « précurseur », généralement réputé en position de bénéficier de divers avantages liés à ce statut de pionnier et le protégeant des entrants qui finiront par vouloir le concurrencer. S'agissant de normes, le précurseur est avantagé quand le fait de contrôler la conception et d'avoir accumulé de l'expérience dans la production ou réalisé des économies d'échelle génère des coûts différents pour l'entreprise en place par rapport aux entrants, quand une entreprise empêche l'entrée de successeurs sur le marché en investissant par anticipation dans une usine hautement spécialisée ou en contrôlant les rares moyens de production disponibles, et quand les externalités de réseau impliquent des coûts de transfert collectif élevés pour les consommateurs qui, en tout état de cause, ont pu développer des habitudes d'achat chez le précurseur ou une certaine fidélité à ses marques. Tous ces facteurs contribuent à désavantager les entrants qui voudraient imiter le précurseur, donnant ainsi à l'inventeur de la norme la possibilité d'amortir les coûts fixes engagés pour son élaboration (et, peut-être, de réaliser certains gains monopolistiques par la même occasion). La concurrence pour la création d'un marché consiste par conséquent à se servir d'une nouvelle norme pour générer une série de rentes à long terme : la récompense à la clé n'est donc pas la norme mais les avantages de précurseur qui peuvent découler de son invention, puis de son exploitation monopolistique.

2.1 Suggestions de discussion

2.1.1 Si des lignes directrices sur l'examen des fusion existent, pouvez-vous décrire les dispositions, approches ou listes de contrôle particulières qu'elles prévoient pour traiter les fusions sur les marchés très innovants. Que désigne le terme « marché très innovant » ?

2.1.2 Que pensez-vous en général des dispositions spécifiques, publiées ou non, destinées à traiter le cas des fusions sur les marchés très innovants ?

3. Objectifs de la politique de la concurrence – efficience statique/efficience dynamique

Comme il a été dit dans l'introduction, certains considèrent que les marchés très innovants suscitent une concurrence dont le rythme est trop rapide pour qu'une réglementation puisse effectivement s'appliquer. En outre, les autorités de contrôle de la concurrence peuvent rencontrer des difficultés propres à la technicité de ces marchés. Déterminer ce que recherchent les consommateurs quand ils achètent et ce qui constitue un avantage comparatif sur les marchés très innovants peut constituer un défi majeur. D'autres commentateurs encore affirment que le droit de la concurrence est inutile car s'il est vrai qu'un pouvoir de marché peut s'étendre à tout un secteur, il est généralement assez vite neutralisé par l'émergence d'autres innovations. De nombreux cas montrent que les tenants de cette analyse refusent en fait de voir la réalité. Geroski (2001, 73-77), qui avance deux raisons l'incitant à croire que la concurrence pour le marché est un substitut imparfait de la concurrence réelle, s'exprime à peu près en ces termes :

- Ces deux formes de concurrence exercent des pressions différentes : la concurrence par les prix favorise l'efficience technique tandis que la concurrence pour le marché oblige les entreprises à être efficientes sur le plan de l'innovation.

- Il existe sans doute deux sortes d'entreprises se livrant concurrence sur et pour le marché : celles qui imitent et celles qui innovent. Leurs compétences et leurs perspectives sont différentes.

Geroski affirme que les deux catégories sont loin de se recouper :

- Premièrement, les entreprises entrantes innovantes veulent offrir des produits ou des services inédits, ce qui implique généralement un plan stratégique original [...]. Développer ou réunir de nouvelles compétences est toujours plus difficile (et risqué) qu'acquérir des compétences existantes, déjà mises en œuvre par d'autres. Il est donc probable que les entreprises qui innovent sont différentes de celles qui se positionnent en terrain familier.

- Deuxièmement, les entreprises ayant déjà acquis les compétences nécessaires à la production et à la commercialisation d'une norme de produits bien établie hésiteront vraisemblablement à investir dans de nouvelles compétences qui, de facto, rendraient obsolètes leurs compétences existantes, génératrices de rentes. (74)

Selon certains auteurs, l'examen des fusions dans le cadre de marchés très innovants tend à accorder trop d'importance à la concurrence par les prix et aux pressions à exercer sur les entreprises pour optimiser l'efficience allocative et technique. Les efficiences dynamiques ou d'innovation, difficiles à estimer, peuvent ne pas se voir accorder tellement d'importance ou n'être analysées qu'au moment de traiter d'éventuels effets compensateurs ou de concevoir des mesures correctrices adéquates. Un tel traitement de l'efficience est inapproprié quand sont en jeu des marchés où le consommateur a vraisemblablement plus à gagner avec l'innovation qu'avec une baisse de prix des produits existants[3].

Certains commentateurs vont plus loin, considérant que les efficiences dynamiques méritent davantage d'attention, au moins dans les secteurs d'intense innovation. Persuadés de l'existence d'un possible compromis entre efficience statique et efficience dynamique sur ces marchés, ils paraissent généralement inspirés par Schumpeter pour qui le pouvoir de marché est fondamentalement favorable à l'innovation, une théorie qui a suscité quantités d'interrogations théoriques et de tentatives de vérifications empiriques. Un travail récent reprenant les théories et les éléments empiriques concernant la concurrence, l'innovation et les gains de productivité a établi, entre autres, le constat suivant :

> L'argument voulant que la concentration du marché conduise à l'innovation ne semble étayé par aucune observation récente. Inspirées par [...] l'hypothèse de Schumpeter selon laquelle, sur les marchés concentrés, les grosses entreprises auraient intérêt à innover, de nombreuses études empiriques ont examiné la relation entre concentration et innovation. Globalement, pourtant, extrêmement peu d'éléments empiriques confirment la corrélation entre, d'une part, la taille importante des entreprises ou la forte concentration d'un marché et, d'autre part, une innovation intense.

Nombre d'études corroborent une corrélation fortement positive entre concurrence pour un marché de produits et croissance de la productivité[4].

Pour les autorités chargées d'examiner les fusions, les éléments tendant à montrer qu'une fusion améliorerait la capacité à innover ne signifient pas forcément que la fusion favorisera l'innovation

proprement dite. La capacité et les incitations à innover doivent être examinées et des niveaux élevés de concentration peuvent atténuer plutôt que renforcer ces incitations.

Pour autant, les éléments qui attestent une forte rentabilité à court terme sur les marchés très innovants n'indiquent pas systématiquement un affaiblissement de la concurrence qui imposerait un examen spécialement rigoureux des fusions. Les entreprises se concurrençant via leur puissance d'innovation doivent pouvoir espérer un retour proportionnel aux risques encourus et compenser leurs échecs ponctuels par quelques succès très rémunérateurs. Sur les marchés très innovants, il peut falloir une rentabilité extrêmement élevée sur quelques produits pour compenser les risques inhérents à une innovation riche et permanente.

Pour étudier les objectifs propres à l'examen des fusions sur les marchés très innovants, il serait peut-être souhaitable de réfléchir au sondage de corroboration utilisé. Lind et al. (2001, 129) préconise un abaissement substantiel du seuil de concurrence car :

> …il fournit un point de référence plus utile que la domination dans la mesure où il est fréquent que les marchés soient de toute façon dominés par une entreprise. Pour de nombreuses fusions dans les secteurs de la nouvelle économie, la question pertinente est de savoir si l'opération renforcera ou affaiblira la concurrence dans le processus de détermination de l'entreprise dominante.

Pour résumer, le rôle de l'examen des fusions sur les marchés très innovants est de veiller à ce que les acquisitions ne court-circuitent pas la concurrence pour le marché et/ou ne produisent pas des positions dominantes qui seraient inutilement difficiles à défaire. Autoriser ces fusions reviendrait à empêcher les consommateurs de bénéficier des avantages significatifs inhérents à la phase concurrentielle, y compris d'exercer une influence déterminante sur les caractéristiques de produits qui seront finalement proposées par l'entreprise gagnante. L'examen des fusions doit également contribuer à assurer une production et une commercialisation aussi efficientes que possible des produits existants.

3.1 Suggestions de discussion

3.1.1 Le droit de la concurrence doit-il prévoir des dispositions spécifiques pour l'examen des fusions afin que les autorités compétentes puissent définir un compromis entre les effets d'efficience statique et dynamique (éviter par exemple l'interdiction d'une fusion qui ferait augmenter les prix des produits existants, ou en ralentirait la baisse, mais qui aurait en même temps un impact significativement positif sur l'innovation) ? Si de tels compromis existent, quel degré de certitude et de précision les futures innovations doivent-elles présenter, c'est-à-dire dans quel délai doivent-elles aboutir à l'apparition de nouveaux produits ?

3.1.2 Si votre organisme de contrôle de la concurrence a dû définir des compromis entre efficience statique et efficience dynamique pour une ou plusieurs fusions, pouvez-vous en décrire la nature et les conséquences ?

4. Identification préliminaire de possibles effets anticoncurrentiels

Pour ne pas gaspiller des ressources déjà insuffisantes et occasionner de nouvelles pertes économiques en obligeant les parties concernées à attendre une autorisation, de nombreux organismes de

contrôle de la concurrence appliquent un critère de sélection préliminaire et approuvent ou se dispensent d'examiner les fusions ayant franchi cette première étape. La sélection en question consiste à calculer les niveaux de concentration avant et après fusion, ce qui nécessite donc au moins de définir grossièrement le marché, d'identifier les entreprises en présence et de calculer les parts de marché respectives. Or définir le marché et décider des entreprises à y inclure peut se révéler exceptionnellement difficile sur les marchés très innovants.

Ces marchés favorisent souvent plus une concurrence par les performances que par les prix, d'où des produits extrêmement différenciés et des acheteurs susceptibles de rester fidèles à un produit malgré une petite hausse de prix liée à une fusion. La technique classique d'identification des substituts tend alors à devenir plus compliquée à utiliser.[5] Pour tenter de remédier à cet inconvénient, il a été suggéré d'élargir un peu le processus d'identification des marchés pertinents. Par exemple, Teece et Coleman (1998, 853-857) préconisent de tenir compte des éventuelles modifications de performances en plus des éventuelles variations de prix pour définir les substituts. Ils admettent néanmoins qu'il peut être difficile d'identifier des attributs de performance adéquats.

Se servir de hausses de prix hypothétiques pour identifier les substituts appropriés peut poser un autre problème. Il peut arriver que des candidats à une fusion aient une rentabilité faible, ou soient déficitaires, que la concurrence vise en fait à contrôler l'ensemble du marché pour bénéficier des avantages importants liés au statut de précurseur, et qu'il s'agisse donc en réalité d'une concurrence pour le marché lui-même. Dans un tel contexte, si les parties à la fusion tentent de gagner une part de marché en se montrant plus offensives et en baissant temporairement leurs prix, l'application d'une définition classique peut amener à définir un marché trompeusement étroit[6].

Les problèmes de définition du marché sont assurément aggravés lorsque la concurrence change de nature pour devenir une concurrence pour le marché lui-même. Paul Geroski (2001, 62-63) a noté avec justesse que:

> normalement, les autorités de la concurrence évaluent le degré de concurrence en étudiant les possibilités de substitution. L'identification des substituts consiste généralement à rechercher des biens ou services « similaires » au produit considéré : sur le plan de l'offre, cela signifie que les fabricants d'un autre produit peuvent facilement se mettre à fabriquer le produit en question ; sur le plan de la demande, cela signifie que les consommateurs considèrent les deux produits comme équivalents et seraient prêts à passer de l'un à l'autre si l'écart de prix était modeste. Il est naturel de voir dans cette façon de réfléchir à la concurrence une évaluation du degré de concurrence au sein du marché. Fondamentalement, il s'agit d'évaluer la puissance d'imitation comme une force disciplinant les prix.
>
> Pour évaluer le degré de concurrence sur un marché, le problème de base est donc de tracer la frontière entre ce qui est et ce qui n'est pas un substitut. Une des (multiples) difficultés rencontrées dans ce contexte est l'arrivée de nouvelles entreprises : dans une certaine mesure, les concurrents existants représentent une menace plus tangible et plus manifeste que les entrants « potentiels ». Un autre problème réside dans le fait que certains substituts possibles ne peuvent devenir de véritables substituts que si les fabricants ou les producteurs sont prêts à modifier un peu leur comportement, à engager des coûts de transfert ou de préproduction éventuellement importants pour consommer ou produire le substitut. Par conséquent, ces substituts sont des substituts sans l'être : ils le sont car ils répondent aux mêmes besoins de base mais ne le sont pas car ils n'y répondent pas de la même manière. Dans l'hypothèse où ils seraient adoptés par la masse des consommateurs et des fabricants, ces « substituts » risqueraient de modifier profondément le marché – l'adoption d'un de ces produits ne reviendrait pas seulement à

remplacer une variante par une autre mais modifierait aussi de nombreuses caractéristiques du fonctionnement et de l'infrastructure du marché.

Une fois qu'un marché a été défini, il faut déterminer quelles entreprises en font partie. Cette étape peut elle aussi s'avérer difficile. Que décider pour une entreprise dont on sait qu'elle prépare des innovations pour obtenir l'accès au marché dans un délai relativement court ? Si elle est considérée comme déjà sur le marché, quelle part lui attribuer ? Ces questions cachent une interrogation plus fondamentale. Même si l'on peut raisonnablement croire que les parts de marché reflètent l'état des connaissances sur ce marché, en quoi sont-elles un indicateur fiable des parts futures et de la vitalité concurrentielle des entreprises présentes ? Plus l'innovation est intense, plus il est difficile de répondre à cette question. Sur les marchés très innovants, la pression concurrentielle effectivement exercée sur les candidats à une fusion réside moins dans l'abaissement des prix des concurrents que dans la mise sur le marché, par ces concurrents ou de nouveaux entrants, d'un produit sensiblement plus performant.

Il existe une autre raison pour laquelle l'examen des parts de marché peut conduire à surestimer à tort les pouvoir de marché sur les marchés très innovants. Ces derniers sont en effet des marchés de biens extrêmement durables (logiciels par exemple), abstraction faite du problème de l'obsolescence technologique. Une entreprise peut couvrir virtuellement tout le marché avec un nouveau programme ou système d'exploitation, tout en n'étant pas libre de pratiquer le prix souhaité parce que de nombreux utilisateurs potentiels peuvent aussi choisir de continuer à utiliser la version qu'ils ont déjà, même ancienne[7].

Conscients qu'il était difficile d'examiner les fusions sur les marchés très innovants en utilisant des critères de concentration, certains ont préconisé une approche faisant largement l'impasse sur toute définition rigoureuse du marché et sur le calcul des parts de marché. Cette approche, quelquefois appelée méthode des « principes premiers », s'attache avant tout à déterminer si la fusion contribuera à accroître les gains des parties au détriment des consommateurs. L'accent n'est plus tant sur l'identification de substituts que sur l'examen des capacités et des incitations à innover.

Bien qu'une telle approche soit souhaitable pour les marchés très innovants, une certaine forme de présélection reste nécessaire pour éviter de mobiliser inutilement des ressources déjà insuffisantes en examinant des fusions sans réel danger pour la concurrence. Par exemple, on peut se baser sur les marchés apparemment les plus étroits où les candidats à la fusion vendent leurs produits et poser une série de questions. Le rythme d'accroissement de la productivité et/ou de l'innovation est-il très supérieur à la moyenne sur ces « marchés » ? Des éléments attestent-ils que la part de marché détenue par l'entreprise en tête du marché (ou au moins par son produit phare) a évolué rapidement ? Le marché connaît-il un essor rapide ? Existe-t-il des effets de réseau significatifs au niveau des principaux produits des candidats à la fusion et, le cas échéant, les interconnexions sont-elles fréquentes ? Les coûts de transfert sont-ils bas et susceptibles de le rester ? Les normes sont-elles importantes et sont-elles brevetées ou non (c'est-à-dire exclusives) par nature ? Recense-t-on plusieurs entreprises, en dehors des parties à la fusion, qui consacrent des ressources importantes à la R&D ? Des observateurs qualifiés du secteur concerné ont-ils des doutes quant à l'issue de la lutte pour l'innovation qui se joue ?[8] Les entreprises candidates à la fusion ont-elles des antécédents de comportement anticoncurrentiel ? Les réponses à toutes ces questions peuvent indiquer que, en dépit de niveaux de concentration élevés (en supposant un marché de définition étroite), la concurrence dynamique est assez vigoureuse pour exclure quasiment tout effet anticoncurrentiel et autoriser la fusion sans autre examen. Dans le cas contraire et si d'autres facteurs suggèrent qu'il en va autrement, il devient nécessaire d'approfondir l'examen pour déterminer en quoi la fusion peut menacer les intérêts des consommateurs.

4.1 Suggestions de discussion

4.1.1 Le cas échéant, comment votre organisme de contrôle de la concurrence modifie-t-il les critères de sélection traditionnels (calcul des niveaux de concentration avant et après la fusion) pour traiter les transactions sur les marchés très innovants ?

4.1.2 Si votre organisme de contrôle de la concurrence se livre à une estimation préliminaire des effets anticoncurrentiels d'une fusion sans se fonder sur un calcul des niveaux de concentration avant et après la fusion, pouvez-vous décrire le mode d'estimation et citer quelques cas concrets ?

5. Evaluer les menaces pour la concurrence

5.1 Effets de coordination (remplacement de la concurrence par diverses formes de coopération)

Il y a peut-être moins lieu de s'inquiéter des effets de coordination sur les marchés très innovants que sur les marchés connaissant une évolution plus lente, et ce pour trois raisons. Premièrement, les entreprises sont généralement plus hétérogènes sur les marchés très innovants, ce qui rend plus difficiles les arrangements entre concurrents destinés à se procurer des avantages mutuels. Deuxièmement, il peut être extrêmement difficile de surveiller et d'accepter de réduire le type de concurrence dont les entreprises s'inquiètent le plus sur ces marchés, à savoir la vitesse et la nature de l'innovation. Il est envisageable de définir et de surveiller des niveaux de R&D mais cela ne revient pas du tout au même que d'essayer de contrôler les effets déstabilisants des innovations issues de la R&D. Troisièmement, les coordinations anticoncurrentielles sont généralement réputées instables, sauf à trouver les moyens de sanctionner les tricheurs. Plus la concurrence vise le marché lui-même, plus ces trois aspects sont importants[9].

Bien que les effets de coordination classiques (hausses de prix concertées, par exemple) ne soient pas un problème majeur sur les marchés très innovants, des accords visant à instaurer des normes brevetées exclusives peuvent être passés. Dans certaines circonstances, les fusions peuvent contribuer à faciliter de telles ententes, surtout quand elles visent à s'assurer la coopération d'un concurrent jouant les francs-tireurs.

5.2 Effets unilatéraux

A cet égard aussi, les marchés très innovants se distinguent des autres par ce qu'implique la concurrence pour le marché et non au sein du marché. Répétons-le, les marchés caractérisés par ce type de concurrence tendent à évoluer vers des situations de domination, voire de monopoles, les concurrents étant fortement incités à trouver les moyens d'évincer les autres pour capter le marché au profit de leurs produits et abréger la période durant laquelle la concurrence est intense. Les autorités de contrôle de la concurrence doivent donc être très attentives à la façon dont une fusion peut modifier les incitations et les capacités à s'orienter vers des pratiques visant à exclure les concurrents ou faire augmenter leurs coûts (ventes liées ou offres groupées, accords de vente exclusive, fermeture de l'accès à des matières premières ou des systèmes de distribution indispensables, prix discriminatoires ou d'éviction, etc.) Il arrive que les principaux risques anticoncurrentiels entraînés par ces pratiques menacent d'autres marchés que celui des candidats à la fusion[10].

En plus d'examiner les effets possibles d'une fusion sur les incitations et les capacités à évincer les concurrents, ceux qui analysent les effets unilatéraux devraient étudier les répercussions différentes

qu'ont les hausses de prix sur les marchés très innovants et sur les marchés qui évoluent plus lentement. Lind et al. (2002, 121) pensent que les fusions tendent à induire des hausses de prix plus importantes quand les marges avant fusion sont élevées. Ce raisonnement s'appuie peut-être sur le postulat que les marges élevées sont généralement caractéristiques de marchés de type oligopolistique, c'est-à-dire où les concurrents sont très peu nombreux. Plus leur nombre est restreint, plus une fusion tend à accroître la concentration et l'ampleur de la hausse des prix prévisible après la fusion (en supposant un comportement Cournot). Lind et al. (2001, 121) évoquent aussi l'impact des fortes différenciations de produits que l'on peut observer sur les marchés très innovants. S'il est vrai qu'un degré élevé de différenciation réduit l'impact d'une fusion sur les incitations et la capacité à relever les prix car il diminue les redondances parmi les produits proposés par l'entité fusionnée, il est également vrai qu'une forte différenciation diminue le pouvoir d'action sur les prix des entreprises en concurrence avec cette entité.

Certains feront valoir que ni les effets de coordination ni les effets unilatéraux n'ont vraiment d'importance sur les marchés très innovants quand il existe de bonnes raisons de penser que, avec ou sans fusion, la concurrence pour le marché se soldera de toute façon par une position dominante, voire un monopole. L'argument ne tient pas. En effet, les consommateurs peuvent escompter des avantages considérables durant la phase initiale de concurrence intensive. En outre, une vague de fusions précoce peut court-circuiter l'influence des consommateurs sur les produits ou les normes qui finiront par s'imposer.

5.3 Effets directs sur l'innovation

L'analyse des effets de coordination et des effets unilatéraux tend à étudier davantage les incitations que les capacités à être compétitif et la façon dont une fusion peut influer sur ces deux aspects. En ce qui concerne les marchés très innovants, il convient aussi de s'intéresser à la manière dont une fusion peut modifier la capacité d'innovation des candidats à la fusion et de leurs concurrents. Comme il n'existe pas de méthode rapide pour estimer ce genre d'effets, une analyse fouillée de la capacité d'innovation, fondée sur le comportement passé et les moyens actuels, est indispensable. Ceci nécessite de bien connaître la demande des consommateurs et la méthode des entreprises vendeuses pour acquérir et conserver des avantages comparatifs. Sur certains marchés, l'arme décisive réside dans les droits de propriété intellectuelle (DPI), tandis qu'ailleurs ce sont la vitesse et la protection du secret.

Il peut arriver qu'une fusion facilite l'adoption d'une nouvelle norme par un secteur, par exemple en donnant naissance à une entreprise assez importante ou propriétaire de suffisamment de DPI pour imposer une norme *de facto*. Un phénomène identique est peut être observé quand une fusion contribue à résoudre un problème persistant lié à des DPI capitaux.

En général, l'adoption d'une norme peut avoir tendance à réduire ou supprimer la concurrence pour le marché mais elle peut simultanément stimuler la concurrence au sein du marché. Ce dernier effet dépend naturellement dans une certaine mesure de la nature de la norme : brevetée (et exclusive) ou non. La prédominance de l'un ou l'autre effet ne peut être estimée qu'au cas par cas[11]. Lind et al (2002, 108) soulignent néanmoins que

> …la normalisation peut être clairement privilégiée quand elle conditionne absolument le « décollage » d'un produit. La normalisation peut échouer si les brevets sont bloqués ou si les consommateurs sont réticents à adopter une nouvelle norme, problème qui se pose surtout quand ils sont confrontés à des coûts de transfert élevés ou considèrent que le risque d'être pénalisés par une nouvelle technologie peu performante est élevé.

Certaines autorités, notamment aux États-Unis, ont créé le concept de marchés de l'innovation et l'ont appliqué à un petit nombre de fusions. Lind et al. (2001, 53) ont décrit cette approche mais sont parvenus à la conclusion qu'elle convient surtout aux situations où aucun marché n'existe encore pour les produits en question, c'est-à-dire où tous les concurrents potentiels en sont encore au stade de la R&D[12].

Michael Porter (2001) a mis en lumière un autre facteur susceptible d'influer fortement sur l'innovation. Il a expliqué, et dans une certaine mesure démontré, que la formation de grappes géographiques, même sur des marchés que les autorités de la concurrence considéreraient comme mondiaux, peut contribuer de manière décisive à accroître les gains de productivité. Ceci provient apparemment du fait que la concurrence locale, au contraire de la concurrence internationale, stimule remarquablement la croissance de la productivité. Selon Porter, la concurrence locale aurait essentiellement deux avantages :

- Amélioration des incitations et de l'information : la proximité des concurrents favorise plus les comparaisons, les progrès et le perfectionnement qu'une concurrence avec l'étranger. Les entreprises confrontées à des concurrents locaux sont mieux préparées à la concurrence internationale.

- Externalités positives : la proximité géographique des concurrents génère des externalités inenvisageables autrement : concentrations de main-d'œuvre spécialisée, retombées en termes de savoir, émergence de fournisseurs spécialisés, etc. […] (929-930)

Un troisième facteur explique pourquoi la concurrence locale stimule mieux l'efficience qu'une concurrence géographiquement plus éloignée : les actionnaires peuvent veiller plus facilement à ce que les dirigeants déploient le maximum d'efforts. Les mauvais résultats sont en effet moins excusables quand les performances qui servent de références sont locales et non étrangères.

En insistant sur l'importance de la concurrence locale même dans les secteurs mondialisés, Porter contredit absolument l'hypothèse selon laquelle les fusions devraient être autorisées pour permettre l'émergence de leaders nationaux dotés des ressources nécessaires à l'innovation puis à la compétition internationale. Selon lui, de telles fusions risquent plus de détruire que de renforcer les capacités et les incitations à innover.

5.4 Barrières à l'entrée

Comme dans les secteurs plus traditionnels, les barrières à l'entrée peuvent constituer un élément décisif pour estimer l'impact pro/ou anticoncurrentiel d'une fusion sur un marché très innovant. Concernant les entreprises qui se contentent pour l'essentiel d'imiter, on peut se limiter à une analyse classique ; quand il s'agit d'entreprises véritablement pionnières, en revanche, les autorités de la concurrence devraient peut-être garder à l'esprit certains facteurs ou éclairages particuliers.

Sur les marchés très innovants, les organismes de contrôle de la concurrence doivent déterminer les ressources indispensables au succès de l'innovation, la rapidité avec laquelle elles peuvent être obtenues et réunies et à quelles conditions. Ils doivent aussi évaluer soigneusement la facilité avec laquelle les acheteurs pourraient se détourner des deux entreprises qui fusionnent au profit de nouveaux arrivants. Il peut arriver, par exemple, que la conjugaison d'effets de réseau et de coûts de transfert élevés agisse comme une puissante barrière à l'entrée, protégeant ainsi les entreprises déjà installées. Un autre scénario est également possible : en raison d'une dépendance vis-à-vis du capital humain plutôt que physique, les ressources indispensables au succès de l'innovation peuvent être obtenues rapidement en débauchant des personnels qualifiés en poste dans des entreprises concurrentes.

5.5 Efficiences

Les efficiences attribuées aux fusions sur les marchés très innovants semblent globalement identiques à celles observées sur des marchés moins mouvants. La principale différence réside peut-être dans le fait que les efficiences liées au processus d'innovation paraissent supérieures et plus difficiles à évaluer que celles liées à des produits existants. Elles sont supérieures en raison de leur persistance et s'opposent ainsi aux gains ponctuels tirés, par exemple, d'une réduction des frais généraux.

La fusion de deux entreprises qui investissent massivement pour élaborer, par exemple, un vaccin contre le VIH, appelle un arbitrage délicat. On peut considérer qu'autoriser la transaction permettrait d'utiliser moins de ressources pour arriver au résultat mais on peut aussi estimer que cela risquerait d'allonger les délais, surtout quand les candidats à la fusion sont de grands laboratoires qui produisent des médicaments contre les symptômes du SIDA. De nombreux cas de concurrence pour un marché peuvent aboutir à ce type de dilemme.

Des problèmes d'efficience épineux peuvent aussi surgir quand une fusion facilite l'adoption d'une norme. Avant de considérer ou non cette évolution comme une efficience, il faut répondre à deux questions : la norme favorisera-t-elle ou affaiblira-t-elle la concurrence ? existe-t-il des moyens moins anticoncurrentiels pour parvenir au même résultat ?

Pour nombre d'organismes de contrôle de la concurrence, les efficiences ne sont pas à mettre dans les aspects positifs d'une évaluation, sauf si elles sont véritablement spécifiques à une fusion dans la mesure où son interdiction ne permettrait pas d'obtenir ces efficiences avec moins de risques pour la concurrence. Ce point peut se révéler particulièrement difficile à établir sur les marchés très innovants. Les alliances stratégiques semblent courantes sur ces marchés et seraient apparemment moins préjudiciables à la concurrence que des fusions. En outre, de nombreux pays appliquent des critères particulièrement peu restrictifs pour autoriser ou interdire des accords entre concurrents se limitant à des coentreprises de R&D, moins dangereuses pour la concurrence que des fusions.

5.6 Suggestions de discussion

5.6.1 Votre expérience tend-elle à confirmer ou infirmer l'hypothèse selon laquelle les marchés très innovants ne seront pas souvent confrontés au problème d'effets de coordination ? Si possible, citez des exemples à l'appui.

5.6.2 Quels sont les cas les plus fréquents où une fusion sur un marché très innovant risque de faciliter l'éviction de concurrents ? Pouvez-vous citer des exemples à l'appui ?

5.6.3 Si possible, citez des exemples d'application du concept de marché de l'innovation dans le cadre de l'examen d'une fusion. L'application du concept procédait-elle de considérations liées à la jurisprudence ou du fait que ce concept implique des aspects qu'il est impossible de traiter avec la même rigueur en se référant simplement à la concurrence potentielle ?

5.6.4 Si possible, citez des cas d'examens de fusions sur un marché très innovant pour lesquels les effets de réseau ont constitué un facteur d'analyse important. Quels facteurs avez-vous pris en considération pour déterminer si ces effets représentaient ou non une barrière importante à l'entrée ?

5.6.5 Pouvez-vous citer des exemples de fusions non horizontales sur des marchés très innovants dont vous avez considéré qu'elles représentaient une menace significative pour la concurrence et pouvez-vous préciser en quoi consistait cette menace ?

5.6.6 Existe-t-il des différences notables sur le plan des sources d'information utilisées par votre organisme (contribution plus ou moins importante des entreprises concurrentes, par exemple) selon que l'analyse des effets concurrentiels concerne des fusions sur des marchés très innovants ou des fusions sur des marchés en mutation moins rapide ? Pouvez-vous expliciter ?

6. Mesures correctrices

Pour certains, les marchés très innovants sont si dynamiques que les puissances sur le marché déclinent avec une rapidité suffisante, rendant inutile l'intervention des autorités antitrust. D'autres vont jusqu'à considérer que les mesures antitrust peuvent faire plus de mal que de bien car elles manquent considérablement de précision[13].

Cette critique est assez contestable car divers éléments attestent que les autorités de la concurrence savent faire preuve de souplesse pour les fusions touchant des secteurs très innovants : entre autres, elles privilégient moins systématiquement les solutions structurelles par rapport aux solutions comportementales ou mixtes. Par exemple, d'après Balto et Pitofsky (1998, 151) :

> Aux États-Unis, les mesures correctrices fondées sur des contrats de licence sont relativement répandues. Bien conçues, elles peuvent permettre aux entreprises concernées de fusionner librement et de dégager les synergies prévues, tout en préservant le potentiel de concurrence.

Comme ces mesures impliquent une relation constante entre concédant et concessionnaire pour produire l'effet voulu sur la concurrence, elles peuvent aussi nécessiter un suivi après la fusion et donc s'apparenter à une solution comportementale, ainsi que l'illustre bien la fusion entre Glaxo et Burroughts Wellcome. Cette transaction avait été considérée comme une menace pour la concurrence dans le secteur des antimigraineux. Baer (1998, 5) décrit la mesure correctrice élaborée pour éviter cette situation :

> Aux termes du jugement convenu, Wellcome devait être dessaisi de ses actifs internationaux de R&D dans le domaine des médicaments non injectables. S'agissant des marchés de l'innovation, la solution du dessaisissement est à utiliser avec précaution car le succès des efforts de R-D repose souvent sur un ensemble complexe de compétences d'experts et de connaissances constamment tournées vers l'innovation. Il peut être nécessaire de fixer des obligations en plus du dessaisissement pour que l'acquéreur ait effectivement des chances de voir aboutir ses efforts de recherche. Dans l'affaire Glaxo/Wellcome, par exemple, le tribunal a imposé d'importantes obligations à Glaxo afin qu'il assiste l'acquéreur dans ses efforts et que les travaux de R&D continuent dans de bonnes conditions. Glaxo a dû fournir des informations, une assistance technique à l'acquéreur et le conseiller dans ses choix de R&D, ce qui comprenait notamment des consultations et des formations par des salariés de Glaxo très au fait du projet.

Un certain suivi par la FTC des États-Unis a naturellement été nécessaire pour assurer le respect de la décision.

Un suivi est également indispensable lorsque des solutions originales, prévoyant des mesures correctrices uniquement en cas d'évolution défavorable du marché, sont retenues. Cette option est intéressante quand une fusion promet des synergies substantielles mais comporte des risques mal définis pour la concurrence. Lind et al. (2002) font le constat suivant :

> Les autorités ne veulent pas interdire inutilement des fusions, en particulier quand elles peuvent générer des efficiences potentiellement avantageuses pour le consommateur, mais elles ne veulent pas non plus autoriser des opérations conduisant à un effondrement du marché préjudiciable au consommateur. Il n'y a pas de solution simple à ce dilemme mais une méthode potentiellement efficace existe : autoriser les fusions tout en les assortissant de dispositions qui n'entrent en vigueur que si la nouvelle société (issue de la fusion) vient à dominer le marché. Par exemple, on peut exiger de la nouvelle société qu'elle s'engage à proposer des normes et des interfaces brevetées au cas où le marché s'effondrerait après la fusion et dès que sa part de marché dépasserait un pourcentage donné. (152, références non mentionnées)

Il serait extrêmement souhaitable que ces mesures conditionnelles s'accompagnent d'une description détaillée du mode de calcul des parts de marché.

Pour en revenir à la solution des licences imposées, cette mesure exige des organismes de contrôle de la concurrence un arbitrage entre de possibles gains d'efficience à court terme et des pertes potentielles à long terme liées au fait que les concurrents de la nouvelle entité sont dissuadés d'investir dans d'autres DPI[14]. Cet arbitrage est largement déterminé par la question épineuse du montant des redevances. Un certain nombre d'autres clauses doivent aussi être examinées avec soin, en particulier celles qui interdisent au concessionnaire certaines formes de concurrence auxquelles il pourrait recourir même sans avoir accès à la technologie sous licence. En outre, des questions délicates relatives aux conditions de la concurrence entre concédant et concessionnaire peuvent se poser : accords de rétrocession, dispositions de mise en commun de ressources et accords de non-contestation de la validité des DPI du cédant.

Au lieu d'ouvrir un marché menacé par une fusion en imposant la solution des licences, il est possible de dicter des conditions visant à réduire le domaine d'application des DPI. On peut considérer que la décision concernant la fusion Borland/Ashton-Tate allait en ce sens. Au moment de la fusion entre les deux principaux éditeurs de gestionnaires personnels de bases de données informatisées (Paradox et dBASE), le ministère américain de la Justice a fixé une condition à l'opération. Borland devait renoncer aux poursuites concernant d'éventuelles contrefaçons de la présentation générale du logiciel dBASE et s'efforcer de trouver un règlement aux actions en violation menées par Ashton-Tate[15]. Ce faisant, les tribunaux américains ont effectivement réduit la portée des DPI détenus par la nouvelle société née de la fusion.

La déchéance partielle des DPI peut ne pas avoir les mêmes effets que les licences imposées. Premièrement parce que cette deuxième solution laisse au concédant une certaine liberté pour choisir ses concessionnaires, l'incitant vraisemblablement à sélectionner des concurrents plus faibles et plus susceptibles de vouloir l'imiter que de lui livrer une concurrence acharnée pour créer les produits de la génération suivante[16]. La renonciation à une partie des DPI a des conséquences potentiellement plus importantes.

Dans le dossier Borland/Ashton-Tate, la restriction des droits de poursuite pour contrefaçon semble avoir permis à Microsoft d'acquérir la technologie voulue à partir d'un « clone » de dBASE puis de

prendre une position dominante sur le marché. A ceux considérant que les mesures prises ont été insuffisantes et n'ont conduit qu'à substituer un monopole à un autre monopole, Fazio et Stern (2000) opposent quelques remarques générales sur les mesures correctrices destinées aux marchés très innovants :

> …Les autorités antitrust et les associations professionnelles ont admis depuis longtemps que l'État n'avait pas à intervenir au niveau microéconomique pour modifier la trajectoire du progrès technique. Il doit plutôt veiller à protéger la concurrence à une échelle globale, en préservant les incitations de chaque entreprise à innover et en laissant les consommateurs faire leur choix entre les technologies concurrentes.

Le jugement Borland est parvenu à ce résultat. Il a non seulement ouvert une voie à la concurrence mais aussi explicitement incité les entreprises à développer des techniques plus avancées et, dans une large mesure, rétrocompatibles. De plus, il a veillé à ce que la concurrence (par l'innovation et non par les prix) soit déterminée par le marché, - ainsi que les coûts et rendements relatifs aux différents investissements - et non simplement par l'État. » (70, références non mentionnées.)

Sur les marchés très innovants ou simplement caractérisés par une concurrence des entreprises pour le marché lui-même, on peut raisonnablement estimer que la menace principale liée aux fusions est le comportement d'éviction de la concurrence potentiellement facilité par ces opérations. Quand l'émergence d'une entreprise qui bénéficierait du statut de « contrôleur d'accès » à certaines infrastructures essentielles est à craindre, les autorités de la concurrence devraient sérieusement envisager l'interdiction de la fusion. Ce problème du contrôle d'accès se pose tout spécialement pour les marchés sur lesquels des positions dominantes ont tendance à apparaître en raison d'effets de réseau, d'économies d'échelle, etc. Dans son discours d'octobre 2000 au Fordham Corporate Law Institute, le commissaire européen Mario Monti avait évoqué un certain nombre de cas de fusions sur des marchés très innovants et observé que

> …la Commission avait agi chaque fois qu'un « contrôleur d'accès » risquait d'émerger à court ou moyen terme. Dans la plupart des cas, cependant, les problèmes avaient pu être réduits dans le temps ou leur portée limitée et des solutions avaient été trouvées qui assuraient l'accès des concurrents à la technologie. Toutefois, lorsqu'il n'avait pas été possible de remédier aux problèmes, comme dans le cas du dossier MCI-Worldcom/Sprint, la seule solution avait été l'interdiction[17].

6.1 Suggestions de discussion

6.1.1 Pouvez-vous donner des exemples confirmant ou infirmant l'hypothèse selon laquelle, si les marchés sont suffisamment innovants, il n'y a pas lieu de s'inquiéter des fusions ?

6.1.2 Pouvez-vous citer des mesures conditionnelles décidées après l'examen de fusions sur des marchés très innovants ? Comment avez-vous défini les situations qui déclencheraient l'activation de ces mesures ?

6.1.3 Pouvez-vous fournir des exemples de mesures correctrices spécialement adaptées aux cas de fusions sur des marchés très innovants ?

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NOTES

1. Evans et Schmalensee (2001, 5, références non mentionnées.)

2. Voir par exemple Monti (2001b). Après avoir reconnu les immenses avantages de la « nouvelle économie », Monti a répondu à l'argument selon lequel les organismes de contrôle de la concurrence n'ont pas à intervenir sur les marchés connaissant une évolution rapide car ces marchés-là s'autocorrigent et qu'il est de toute façon impossible de prendre des décisions en temps opportun :

   « Je ne souscris pas à ce point de vue. La nature générale des règles gouvernant la concurrence leur confère un avantage important sur la plupart des autres règles en cela qu'elles s'appliquent aux éléments factuels d'un cas donné, quel que soit le rythme d'évolution du secteur concerné. Ces règles sont donc plus en phase avec le progrès technologique que celles formulées dans des cadres réglementaires plus spécifiques. » (3)

   Ensuite, Monti a fait observer que les pouvoirs de marché pouvaient tout aussi bien s'installer et perdurer dans la nouvelle économie que dans les secteurs plus traditionnels, renforçant ainsi un argument avancé dans un précédent discours qui insistait, entre autres, sur l'importance d'examiner les fusions pour prévenir la constitution de monopoles par des « contrôleurs d'accès » (à d'importants réseaux). Voir Monti (2001a, 1608-1611).

   Le président de la Commission fédérale du commerce (FTC) des États-Unis a récemment affirmé que l'examen préalable des fusions a sa place dans les marchés en mutation rapide bien qu'il faille être conscient de l'expérience limitée en matière de respect de la législation dans le secteur de la haute technologie. Il a également insisté avec force pour que, dans les secteurs caractérisés par une concurrence féroce et dominés par des acteurs en situation (peut-être éphémère) de monopole, ces acteurs-là ne soient pas autorisés à fusionner avec leurs concurrents existants ou potentiels. Cette exhortation fait écho aux préoccupations de Monti liées au fait qu'un pouvoir de marché apparaissant sur un marché de haute technologie peut perdurer plus longtemps qu'on ne l'admet quelquefois. Voir Muris (2001, 5).

3. D'après Porter (2001, 934) :

   > « En raison de son effet direct sur la croissance de la productivité, l'objectif premier de la collectivité est un processus de perfectionnement dynamique vigoureux se traduisant par une innovation au niveau des produits, des process ou des modes de gestion. Avec le temps, un rythme de perfectionnement dynamique soutenu peut prendre le pas sur les problèmes d'efficience statique technique et allocative. » (C'est nous qui mettons les italiques.)

   La précision avec le temps rend cette affirmation difficilement contestable. Toutefois, s'il existe des marchés très innovants pour lesquels cette affirmation se vérifie dans un laps de temps raisonnable, il est d'autres cas où les problèmes d'efficience statique tendent à dominer le calcul du bien-être, sauf sur des périodes de temps trop longues pour être prises en compte pendant l'examen d'une fusion.

4. OCDE (2002, 5).

5. Selon les termes de Lind *et al.* (2002, 56) :

   > « De plus, la procédure « SSNIP » (*small but significant non transitory increase price* ou « augmentation de prix faible mais significative et non temporaire ») de définition des marchés concerne de « petites » modifications des prix alors que la concurrence dans les secteurs de la nouvelle économie est davantage axée sur des caractéristiques de produits très fortement valorisées par les consommateurs. Ces écarts de caractéristiques ou de fonctionnalités sont souvent considérés comme tellement capitaux par les utilisateurs qu'ils priment complètement les petites variations de prix. »

6. Lind *et al.* suggèrent que l'erreur dite « *cellophane fallacy* » fonctionne quelquefois à l'envers ou produit ce qu'ils nomment une « illusion dynamique » :

> « Soit une entreprise proposant un produit sur un marché connaissant des mutations techniques rapides, où il existe des effets de réseau, où gagner une part de marché et une base d'utilisateurs existante est important, et où l'entrée de nouvelles entreprises constitue véritablement une menace. L'entreprise peut tout à fait vendre son produit à un prix inférieur à ce qu'elle facturerait si elle souhaitait maximiser ses gains à court terme plutôt qu'à long terme. Autrement dit, c'est justement en baissant ses prix qu'elle peut maximiser ses gains à court terme. Ce cas de figure est considéré comme fréquent dans les secteurs de la nouvelle économie où les effets de réseau sont importants. Il arrive même que les entreprises fassent cadeau de leurs produits. [...]
>
> Toutefois, même parmi celles qui dégagent des bénéfices substantiels, nombreuses sont celles qui ne semblent pas exploiter complètement leur pouvoir de fixation des prix à court terme. Ceci suggère que si l'on applique la procédure SSNIP en utilisant le prix courant comme c'est souvent le cas, il arrive fréquemment que le marché de produits soit aussi étroit que le produit de l'entreprise en question [Lind *et al.* (2002, partie I, 55)]. »

Ce type d'argument élude tout de même une question. Si de « nombreuses » entreprises pratiquent temporairement et exceptionnellement des prix bas, il n'y a pas de distorsion des prix relatifs susceptible de biaiser une identification des substituts basée sur l'hypothèse d'une petite hausse des prix. L'« illusion dynamique » ne pose problème que si des parties à une fusion ou des entreprises soupçonnées de comportement anticoncurrentiel sont les principaux acteurs d'une stratégie de prix bas visant à obtenir une grosse part de marché et les avantages du précurseur y afférents.

7. Ceci suppose naturellement que le vendeur ne soit pas en mesure de pratiquer des prix différents pour les « nouveaux utilisateurs » et pour ceux possédant une version moins évoluée.

8. Au sujet de certains de ces facteurs, voir Evans et Schmalensee (2001, 25). Voir également Porter (2001).

9. Lind *et al.* (2002, Part I, 124) notent que

> « dans le cas extrême où le vainqueur est en mesure de rafler toute la mise, aucune coordination n'est possible entre les concurrents. Lorsque les forces en présence font qu'un seul peut survivre, la seule stratégie jouable est celle de la compétition. Par conséquent, si la concurrence vise le marché lui-même, les fusions qui réduisent le nombre des acteurs ne peuvent pas faire craindre une domination collective du marché. »

10. Au sujet de cet « effet de levier » très particulier, voir Rubinfeld (1998, 877-891).

11. Au sujet des problèmes généraux de concurrence posés par les normes dans les secteurs de haute technologie, voir Balto et Pitofsky (1998, 596-603).

12. Gilbert et Tom (2001, 50) semblent penser que

> « […] l'analyse fondée sur le concept des marchés de l'innovation peut être utile lorsqu'une fusion ou une pratique concerne des produits et des services qui n'existent pas encore ou affecte le prix ajusté en fonction de la qualité de biens et de services vendus sur des marchés où les entreprises ne sont concurrentes ni en réalité ni en théorie. » (Références non mentionnées.)

13. Voir Teece et Coleman (1998, 845).

14. Au sujet de cet arbitrage, voir Lind *et al.* (2002, 96-101).

15. Fazio et Stern (2000, 49, références non mentionnées).

16. Ibid., 65-66.

17. Monti (2001a, 1610)

QUESTIONNAIRE SUBMITTED BY THE SECRETARIAT

(Editor's note – the following questions, included in the Secretariat's Issues Paper, was used to structure some of the country submissions)

1. Introduction

(No specific questions or issues for discussion was suggested for this section).

2. High Innovation Markets – characteristics and competition

1. *If you have merger guidelines, please describe any specific arrangements, approaches, checklists etc. they may contain to deal with mergers in high innovation markets. What constitutes a "high innovation market"?*

2. *What are your views on the general advisability of working out special arrangements, published or not, for dealing with mergers in high innovation markets?*

3. Competition Policy Objectives – static versus dynamic efficiency emphasis

1. *Should competition law merger provisions allow competition agencies to make tradeoffs between static and dynamic efficiency effects (e.g. refrain from blocking a merger that will raise prices on existing products, or slow their decline, but will simultaneously make a significant positive impact on innovation)? If such tradeoffs are made, how certain and well defined should future innovations have to be, i.e. how close to being actual products?*

2. *If your competition agency has had to make a static/dynamic efficiency trade-off in one or more mergers, please describe the nature of the tradeoffs and how they were handled.*

4. Preliminary screening for possible anticompetitive effects

1. *What modifications, if any, does your competition agency make in applying the traditional merger screen, i.e. calculating pre- and post-merger concentration levels, to transactions in high innovation markets?*

2. *If your competition agency makes preliminary estimates of the anticompetitive effects of a merger based on an approach that does not focus on calculating pre- and post-merger concentration levels, please describe how such estimates are made and kindly provide actual case examples.*

5. Assessing Threats to Competition

1. *Does your experience tend to support or refute the idea that co-ordinated effects will not often be a problem in high innovation markets? Please explain citing examples if possible.*

2. *What are the commonest ways that mergers in innovation intensive markets import a risk of facilitating the exclusion of competitors? Please provide examples.*

3. *Please provide examples, if you have any, of applying the innovation market concept in merger review. Was this application motivated by jurisprudential considerations or because the concept adds something that cannot be dealt with just as well using references to potential competition?*

4. *Please provide examples, if you have any, of reviewed mergers in innovation intensive markets where network effects played an important role in the analysis. What factors did you consider in deciding whether or not such effects constituted a significant barrier to entry?*

5. *Please provide examples from high innovation markets, of non-horizontal mergers where you found significant threats to competition and outline what the threat consisted of.*

6. *Are there any important differences as regards the information sources your agency depends on (e.g. do competitors play a larger or smaller role?) when analysing the competitive effects of mergers in high innovation as contrasted with slower evolving markets? Please explain.*

6. Remedies

1. *Please give examples tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers.*

2. *Please provide examples of contingent remedies adopted in relation to mergers in innovation intensive markets. What steps did you take to clarify the future situations in which the remedies would be triggered?*

3. *Please give examples of remedies that were customised to deal with mergers in innovation intensive markets.*

QUESTIONNAIRE SOUMIS PAR LE SECRÉTARIAT

(Note du rédacteur – quelques soumissions écrites font référence aux questions suivantes, comprises dans la Note sur les Questions à Examiner du Secrétariat)

1. Introduction

(Il n'y avait pas de questions ou sujets à discuter suggérés pour cette section).

2. Marchés très innovants – caractéristiques et concurrence

1. Si des lignes directrices sur l'examen des fusion existent, pouvez-vous décrire les dispositions, approches ou listes de contrôle particulières qu'elles prévoient pour traiter les fusions sur les marchés très innovants. Que désigne le terme « marché très innovant » ?

2. Que pensez-vous en général des dispositions spécifiques, publiées ou non, destinées à traiter le cas des fusions sur les marchés très innovants ?

3. Objectifs de la politique de la concurrence – efficience statique/efficience dynamique

1. Le droit de la concurrence doit-il prévoir des dispositions spécifiques pour l'examen des fusions afin que les autorités compétentes puissent définir un compromis entre les effets d'efficience statique et dynamique (éviter par exemple l'interdiction d'une fusion qui ferait augmenter les prix des produits existants, ou en ralentirait la baisse, mais qui aurait en même temps un impact significativement positif sur l'innovation)? Si de tels compromis existent, quel degré de certitude et de précision les futures innovations doivent-elles présenter, c'est-à-dire dans quel délai doivent-elles aboutir à l'apparition de nouveaux produits ?

2. Si votre organisme de contrôle de la concurrence a dû définir des compromis entre efficience statique et efficience dynamique pour une ou plusieurs fusions, pouvez-vous en décrire la nature et les conséquences ?

4. Identification préliminaire de possibles effets anticoncurrentiels

1. Le cas échéant, comment votre organisme de contrôle de la concurrence modifie-t-il les critères de sélection traditionnels (calcul des niveaux de concentration avant et après la fusion) pour traiter les transactions sur les marchés très innovants ?

2. Si votre organisme de contrôle de la concurrence se livre à une estimation préliminaire des effets anticoncurrentiels d'une fusion sans se fonder sur un calcul des niveaux de concentration avant et après la fusion, pouvez-vous décrire le mode d'estimation et citer quelques cas concrets ?

5. Evaluer les menaces pour la concurrence

1. *Votre expérience tend-elle à confirmer ou infirmer l'hypothèse selon laquelle les marchés très innovants ne seront pas souvent confrontés au problème d'effets de coordination? Si possible, citez des exemples à l'appui.*

2. *Quels sont les cas les plus fréquents où une fusion sur un marché très innovant risque de faciliter l'éviction de concurrents? Pouvez-vous citer des exemples à l'appui ?*

3. *Si possible, citez des exemples d'application du concept de marché de l'innovation dans le cadre de l'examen d'une fusion. L'application du concept procédait-elle de considérations liées à la jurisprudence ou du fait que ce concept implique des aspects qu'il est impossible de traiter avec la même rigueur en se référant simplement à la concurrence potentielle ?*

4. *Si possible, citez des cas d'examens de fusions sur un marché très innovant pour lesquels les effets de réseau ont constitué un facteur d'analyse important. Quels facteurs avez-vous pris en considération pour déterminer si ces effets représentaient ou non une barrière importante à l'entrée ?*

5. *Pouvez-vous citer des exemples de fusions non horizontales sur des marchés très innovants dont vous avez considéré qu'elles représentaient une menace significative pour la concurrence et pouvez-vous préciser en quoi consistait cette menace ?*

6. *Existe-t-il des différences notables sur le plan des sources d'information utilisées par votre organisme (contribution plus ou moins importante des entreprises concurrentes, par exemple) selon que l'analyse des effets concurrentiels concerne des fusions sur des marchés très innovants ou des fusions sur des marchés en mutation moins rapide ? Pouvez-vous expliciter ?*

6. Mesures correctrices

1. *Pouvez-vous donner des exemples confirmant ou infirmant l'hypothèse selon laquelle, si les marchés sont suffisamment innovants, il n'y a pas lieu de s'inquiéter des fusions ?*

2. *Pouvez-vous citer des mesures conditionnelles décidées après l'examen de fusions sur des marchés très innovants? Comment avez-vous défini les situations qui déclencheraient l'activation de ces mesures ?*

3. *Pouvez-vous fournir des exemples de mesures correctrices spécialement adaptées aux cas de fusions sur des marchés très innovants ?*

AUSTRALIA

Note – This submission is organised around some of the headings and questions contained in the Secretariat's issue paper, reprinted here at pages 59-60.

1. High Innovation Markets – characteristics and competition

1.1 If you have merger guidelines, please describe any specific arrangements, approaches, checklists etc, they may contain to deal with mergers in high innovation markets

Section 50 of the Trade Practices Act 1974 (the Act) generally prohibits mergers or acquisitions which would have the effect or likely effect of substantially lessening competition in a substantial market.

The Australian Competition and Consumer Commission (ACCC) has issued guidelines which outline its administration and enforcement policy for dealing with mergers under the Act. The guidelines are not intended to set out a prescriptive response to specific mergers. They are intended as a guide only as each merger proposal requires analysis of the specific market characteristics and their interaction.

1.2 Market Definition

Market definition is an integral part of the ACCC's competition analysis. The Act does not give an exhaustive definition in relation to the concept of a market apart from what is provided in section 4E:

> For the purposes of this Act, unless the contrary intention appears, "market" means a market in Australia and, when used in relation to any goods or services, includes a market for those goods or services and other goods or services that are substitutable for, or otherwise competitive with, the first-mentioned goods or services.

The ACCC includes in its market definition a time dimension. This refers to the period over which substitution possibilities should be considered. The ACCC recognises that competition and substitution are dynamic processes.

There is also support from the Australian Courts for the contention that the market does not necessarily have to involve an actual trade in goods or services. Australian courts have ruled that a market can exist if there is the potential for close competition even though none in fact exists[1].

The guidelines note that in some cases mergers may occur between firms which are involved in the development or production of new products where no trade currently exists. The guidelines further note that such a merger may have a substantial effect on potential competition.

1.3 Merger Factors

Subsection 50(3) of the Act provides that a number of factors must be taken into account in determining whether the acquisition would have the effect, or be likely to have the effect, of substantially lessening competition in a market. One of these factors requires that the dynamic characteristics of the market, including growth, innovation and product differentiation be considered.

The ACCC's guidelines provide direction on how the ACCC is likely to consider the dynamic characteristics of the market in the context of a merger proposal. The guidelines provide:

- Whether a market is growing or declining can have significant implications for the potential erosion of market power over time. Markets which are characterised by rapid product innovation may see market leaders rapidly replaced. However, in some differentiated product markets, first mover advantages and brand loyalty can resist such advances. Historical information on changing market shares will be informative here.

- Technological changes may change market boundaries or lower barriers to imports or new entry in the foreseeable future. New technology may increase supply side substitution between products, facilitate global distribution of services, or facilitate new small scale entry into a market.

- A merger may involve the acquisition of technology, intellectual and industrial property and/or research and development facilities, which may in turn affect the competitive dynamics of the relevant market. For example, the acquisition of a fledgling entrant with a new product and/or technology by an incumbent firm may prevent or hinder the injection of new competition into the market. By contrast a merger may combine complementary technologies in such a way as to create a stronger competitor and enhance competition in the market.

1.4 What constitutes a high innovation market?

The concept of an innovation market defined in terms of research and development directed to the creation of new goods or improvements in existing goods or processes is a major departure from Australian merger guidelines. Australian merger guidelines have considered markets in the context of the exchange of goods or services. While it is the case that the Australian merger guidelines take account of the fact that it is sometimes relevant to include vertically integrated output which is not exchanged between buyers and sellers in a product market, the guidelines consider this issue in the context of being able to identify the relevant functional markets.

Many markets might include a range of alternative arrangements including vertical integration, long term contractual arrangements and spot exchange but in all circumstances, Australian merger guidelines involve the notion of an identifiable product. Analysis of 'innovation markets' involve examining the likely path of development that might create future markets.

The ACCC would generally agree that in markets where there is high innovation there are a number of identifiable characteristics, as identified in the Issues Paper. To this list, it might be reasonable to add another factor: a greater degree of vertical integration than in traditional industries.

1.5 What are your views on the general advisability of working out special arrangements, published or not, for dealing with mergers in high innovation markets?

At the present time the ACCC is likely to take a cautious view with regard to working out special arrangements for dealing with mergers in markets involving high innovation. In its merger guidelines the ACCC already takes into consideration in its definition of markets the concept of potential competition and includes a time dimension that recognises that competition and substitution are dynamic processes. Section 50(3) of the Trade Practices Act 1974 specifically requires the ACCC to take into account the dynamic characteristics of the market.

It is difficult to conceptualise the appropriate special arrangements. The optimum level of innovation is difficult to determine. It is not necessarily the case that more R&D is better than less if for example patent races lead to excessive duplication. Similarly there is conflicting empirical evidence of the existence of scale economies in R&D inputs and outputs. A major difficulty is that the anticompetitive effects that arise from increased concentration in markets with high levels of innovation are likely to be found in future product markets not in the present markets. The need to identify future product markets and the characteristics of such markets is a particularly complex matter.

There are also significant practical problems associated with developing special arrangements for mergers in high innovation markets. One of the more difficult is identifying the boundaries in terms of the firms in the market. Innovations may often come from firms in unrelated product markets. For example, in some circumstances users may be a major source of innovation.

In many R&D and innovation markets there is also an element of secrecy that does not exist in many standard products markets. Neither the regulatory agency nor the firms may be aware of the extent of the innovative activity being undertaken. It may be difficult to measure the extent of competitive innovation in such a secretive market.

Consequently if market participants are not aware of the extent of innovative activity, measurement of the extent of the potential reduction in that activity from a merger, and the likely response of others to a reduction in such activity would be extremely difficult to quantify and analyse.

There also may be some doubt as to whether Australian courts would accept the idea of an innovation market. In many circumstances where there is a high level of innovation, there are often high transactions costs associated with vertical separation. Consequently the R&D and innovation being undertaken in-house may not enable the delineation of separate functional markets. Under such conditions it may be that Australian courts would be reticent to accept the idea of a specific market for innovation.

Of course in some circumstances, R&D is not undertaken via vertically integrated structures. In Australia, much R&D is undertaken by public and semi public institutions. These organisations often sell their R&D output to others to commercialise. While such vertical separation might assist in the notional development of R&D markets, practical problems of market delineation would still exist.

2. Competition Policy Objectives – static versus dynamic efficiency emphasis

2.1 Should competition law merger provisions allow competition agencies to make tradeoffs between static and dynamic efficiency effects (e.g. refrain from blocking a merger that will raise prices on existing product, or slow their decline, but will simultaneously make a significant positive impact on innovation)? If such tradeoffs are made, how certain and well defined should future innovations have to be, i.e. how close to being actual products?

The ACCC acknowledges the importance of dynamic efficiency effects and their ability to enhance consumer welfare in the longer term.

The ACCC's guideline state that the extent to which any efficiency enhancing aspects of a merger may impact on the competitiveness of markets is relevant in the context of section 50. Where a merger enhances the efficiency of the merged firm, for example by achieving economies of scale or effectively combining research and development facilities, it may have the effect of creating a new or enhanced competitive constraint on the unilateral conduct of other firms in the market, or it may undermine the conditions for coordinated conduct.

The guidelines further provide that if efficiencies are likely to result in lower (or not significantly higher) prices, increased output and/or higher quality goods or services, the merger may not substantially lessen competition. The ACCC does require, however, strong and credible evidence that such efficiencies are likely to accrue and that the claimed benefits for competition are likely to follow.

The Act also provides the ACCC with the flexibility, through the authorisation process, to consider dynamic efficiency effects even where competition is not enhanced by the proposed merger. Pursuant to Part VII of the Act the ACCC can grant immunity to businesses from legal proceedings by itself or private parties concerning conduct that would otherwise be illegal where there is sufficient public benefit. Authorisation may be granted conditionally and/or may be granted subject to statutory undertakings provided by the applicant. The Commission has generally identified the following matters which could constitute public benefits:

- fostering business efficiency;
- promotion of competition in industry;
- improvement in the quality and safety of goods and services and expansion of consumer choice; and
- economic development, e.g. in natural resources, through encouragement of exploration, research and capital investment.

It may be that a merger which involved a trade-off between static and dynamic efficiency effects would be most suited to the authorisation process whereby it is possible for the ACCC and the Australian Competition Tribunal to exempt particular conduct on public benefits grounds. Trade-offs whereby short term price increases are weighed up against likely positive innovation benefits might be acceptable.

2.2 If your competition agency has had to make a static/dynamic efficiency trade-off in one or more mergers, please describe the nature of the tradeoffs and how they were handled

Not applicable.

3. Preliminary screening for possible anticompetitive effects

3.1 What modifications, if any, does your competition agency make in applying the traditional merger screen, i.e. calculating pre-and post-merger concentration levels, to transactions in high innovation markets?

In assessing the likely effect of a merger or acquisition, the ACCC has organised the statutory factors into a five stage evaluation process. The steps are:

- Market definition. In establishing the market boundaries, the ACCC seeks to include all those sources of closely substitutable products, to which consumers would turn in the event that the merged firm attempted to exercise market power. A market involves four dimensions namely: product, geographic, functional and time.

- Market concentration ratios are assessed. If the market concentration ratio falls outside the Commission's thresholds, the ACCC will determine that a substantial lessening of competition is unlikely. The ACCC considers the post-merger combined market share of the four largest firms (CR4) and will examine the matter further if the CR4 is over 75 percent and the merged firm will supply at least 15 percent of the relevant market. Alternatively, if the merged firm will supply 40 percent or more of the market, the ACCC will want to give the merger further consideration.

- Potential or real import competition is considered. The ACCC's Merger Guidelines have adopted an indicative position of not opposing mergers where a sustained and competitive level of imports has been at ten percent or more of the market. However, even though the ACCC has set this as an indicative level, it is not the historical share of imports that is significant, but their potential to constrain the price and output decisions of the merged entity.

- Barriers to entry to the relevant market. If the market is not subject to significant barriers to new entry, incumbent firms are likely to be constrained by the threat of potential entry and to behave in a manner consistent with competitive market outcomes.

- Other factors which are outlined by the Act (s50(3)) include whether the merged firm will face countervailing power in the market, the dynamic characteristics of the market and whether the merger will result in the removal of a vigorous and effective competitor.

The ACCC does not modify this approach in relation to merger proposals in high innovation markets. It should be noted however, that the concentration thresholds are used as a screening device only. Acquisitions resulting in concentration levels above the thresholds are not considered to give rise automatically to a substantial lessening of competition. Rather, the thresholds establish the need for further qualitative evaluation of market conditions. The ACCC must have regard to the merger factors outlined above and may have regard to other factors which it considers may impinge on the competitive dynamics of the particular market.

By way of example, the ACCC may not oppose a merger which crosses the concentration threshold if there is evidence of low barriers to entry. Accordingly, in an innovative market where the industry is highly reliant on human instead of physical capital, where there are short product cycles and/or there is evidence of recent entry the ACCC may allow the proposed merger to proceed.

In industries characterised by high levels of innovation, it is possible that market shares of industry participants may fluctuate rapidly and by large amounts, as new products with superior qualities quickly replace products containing an older technology. As a consequence reliance on market share statistics alone as an indicative measure of competition might lead to inappropriate conclusions.

3.2 If your competition agency makes preliminary estimate of the anticompetitive effects of a merger based on an approach that does not focus on calculating pre-and post-merger concentration levels, please describe how such estimates are made and kindly provide actual case examples

Not applicable.

4. Assessing Threats to Competition

4.1 Does your experience tend to support or refute the idea that co-ordinated effects will not often be a problem in high innovation markets? Please explain citing examples if possible

The merger guidelines list the following factors which the ACCC consider affect the likelihood of coordinated conduct:

- a small number of firms increases the likelihood that firms will recognise mutual benefits from cooperation, and makes it easier to reach an agreement and detect cheating;
- the absence of potential entrants or fringe competitors makes it less likely that coordinated conduct will be undermined;
- inelastic demand increases firms' returns from coordination versus competition;
- product homogeneity makes it easier to reach an agreement and easier to detect deviations;
- firm homogeneity, similarity of cost and other conditions, e.g. vertical integration, product lines or production capacity, affecting the interests of rivals makes it easier to reach an agreement;
- posted prices or open bids, i.e. transparency of prices, make monitoring an agreement easier;
- vertical relationships may enable price signalling or price monitoring downstream;
- size and frequency of purchases affects firms' incentives to cooperate or compete; and
- industry associations and fora may facilitate the flow of information on prices and outputs between market participants and/or may facilitate them reaching an agreement.

Accordingly, in markets where there is a high degree of product differentiation through the introduction of new technology and frequent entry and exit the likelihood of coordinated conduct is reduced.

The likelihood of coordinated conduct however must be considered in the context of each particular merger proposal. In its consideration of the proposal by Vodafone to acquire Cable & Wireless Optus' (CWO) mobile division the ACCC was concerned that the similarity in market shares of Vodafone/CWO and Telstra, the two major players in mobile telecommunication services, might facilitate coordinated behaviour. In this case the merged entity would have had more than 50 percent of subscribers, and together with Telstra they would have 98 percent of all mobile phone subscribers. It had further been suggested that such a duopoly structure might diminish the ability and incentive of smaller players to develop competing technology such as the expansion of 3G networks.

4.2 What are the commonest ways that mergers in innovation intensive markets import a risk of facilitating the exclusion of competitors? Please provide examples if possible

Competitors may risk exclusion from some high innovation markets in circumstances where the merger parties control essential infrastructure, such as spectrum or cable networks. The ACCC was concerned about this possibility when assessing auctions of 2GHz spectrum in Australia which was suitable for 3G applications. The ACCC considered that the inability to access spectrum as an absolute barrier to entry into the market for mobile telecommunications services.

This risk applies equally to circumstances where the merger results in the merged entity controlling the necessary intellectual property which is the source of further innovations.

A number of markets where there are high levels of innovation are also markets where network effects are significant. The combination of high levels of innovation and substantial network effects are likely to make merger analysis complex. It is possible in some circumstances that mergers between firms with relatively low market share may lead to network externalities which rapidly tip the industry towards dominance by the merged firm.

Even where there is a high level of innovation from smaller market participants, it may take some substantial amount of time to overcome the technology and network benefits of the dominant incumbent.

4.3 Please provide examples, if you have any, of applying the innovation market concept in merger review. Was this application motivated by jurisprudential considerations or because the concept adds something that cannot be dealt with just as well using references to potential competition?

The ACCC has not applied the innovation market concept in any merger analysis conducted to date.

4.4 Please provide examples, if you have any, of reviewed mergers in innovation intensive markets where network effects played an important role in the analysis. What factors did you consider in deciding whether or not such effects constituted a significant barrier to entry?

The ACCC has not dealt with any merger proposals where network effects played the definitive role in the analysis. However, in a number of recent mergers, merger parties have indicated in their submissions that positive network externalities would be put at risk if the ACCC opposed the merger.

One of the difficulties the ACCC has had in examining the effects of a particular proposal has been to clarify from the parties the nature of the network effects. In some instances parties have labelled basic economies of scale and scope as network effects.

The proposal in 2000 by Telstra, Australia's largest telecommunications company to acquire the residential consumer dial-up Internet business of OzEmail generated some minor discussion of network effects.

Telstra's rationale for the acquisition was described simply as a desire to obtain more customers and provide increased opportunities to sell on-line advertising and e-commerce opportunities via its web site.

In its analysis of the merger factors, the ACCC found some disagreement on market share statistics. In a rapidly growing market experiencing considerable innovation this is not surprising. Customers were sampling offers of a large number of ISPs, each of whom provided different offers in terms of price and service quality.

However, there was no doubt that the acquisition involved the largest firm acquiring the second largest ISP, which would have given Telstra somewhere between 40 and 50 percent of the market. The next largest provider had a share of between three and six percent.

Telstra argued that barriers to entry were low, as evidenced by the more than 700 ISPs in the market at the time. Market inquiries found that there was little evidence to suggest that these very small ISPs were growing. Further, the very small ISPs had high churn rates and little brand loyalty, unlike the two main players in the market.

Vertical integration was raised as an issue by a number of opponents to the merger. Telstra controls the local loop and has a strong market position in the provision of wholesale or backbone services to ISPs (around 60 percent).

Network effects were raised in a number of submissions, but generally in the context that the additional subscriber base might give the merged firm the ability to secure on-line content on an exclusive basis. The ACCC tended to see this issue more in terms of leveraging market power in ways which might be anticompetitive rather than network effects.

The crucial elements leading to the ACCC's decision to oppose the acquisition were standard market structure issues rather than particular concerns about anticompetitive network effects.

4.5 Please provide examples from high innovation markets, of non-horizontal mergers where you found significant threats to competition and outline what the threat consisted of

Note the response above.

4.6 Are there any important differences as regards the information sources your agency depends on (e.g. do competitors play a larger or smaller role?) when analysing the competitive effects of mergers in high innovation as contrasted with slower evolving markets? Please explain

In conducting an assessment of a contentious merger proposal the ACCC will generally conduct market inquiries with the following groups:

- competitors;
- suppliers;
- customers;
- industry associations;
- government agencies and departments;
- overseas agencies;
- consumer groups; and
- trade unions.

Increasingly, the ACCC has sought specialist advice from industry experts in regard to mergers in high innovation markets. The ACCC acknowledges that expert advice in relation to mergers in highly technical industries can be of assistance in understanding the dynamics of the particular industry, how the industry is likely to evolve and the likelihood of new entry into the market.

In highly innovative industries, the nature of competition and competitors can change rapidly. It is often useful to seek expert advice as to likely new technologies and applications which might impact on competitiveness.

5. Remedies

5.1 Please give examples tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers

The ACCC has no examples which would tend to prove or disprove the proposition that there is no need to be concerned about mergers if markets are sufficiently innovation intensive.

The ACCC would always analyse mergers on a case by case basis. While past examples might be of some value, the very nature of markets with high levels of innovation would tend to suggest that past experience would have limited precedent value in any current analysis.

Concentration is still significant. While the relationship between concentration and innovation is not clear, there still sees to be general support for the argument that rivalry stimulates innovation. Mergers that have been opposed in Australia in markets where high innovation occurred have typically involved concentration levels sufficient to generate concerns under merger guidelines.

5.2 Please provide examples of contingent remedies adopted in relation to mergers in innovation intensive markets. What steps did you take to clarify the future situations in which the remedies would be triggered?

Not applicable.

5.3 Please give examples of remedies that were customised to deal with mergers in innovation intensive markets

Not applicable.

NOTE

[1] *Queensland Wire Industries Pty Ltd v Broken Hill Property Co. Ltd* (1989), ATPR 40-925.

BRAZIL[1]

1. Introduction

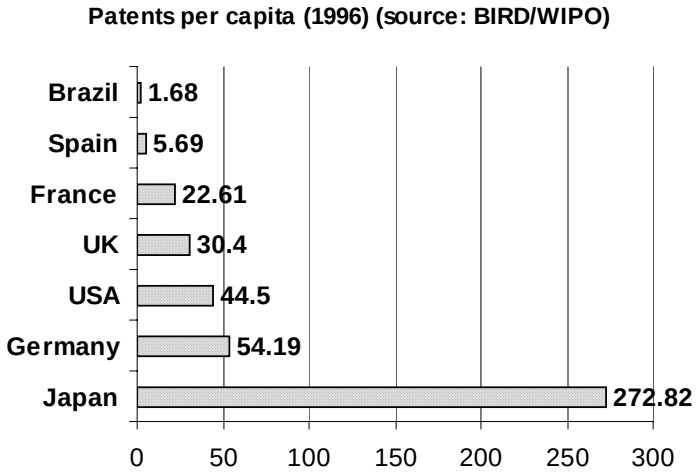
As an increasing share of products and services owes their existence to the inner works of the knowledge-based-economy, antitrust practitioners worldwide realize the importance of bringing into consideration the implications of innovation to competition analysis. In recent years, the antitrust community has spent a considerable effort in determining *1*) the main characteristics of innovation and its relationship to competition issues; *2*) if antitrust practices must be fixed in the light of this relationship; and *3*) if so, what form these fixes should assume.

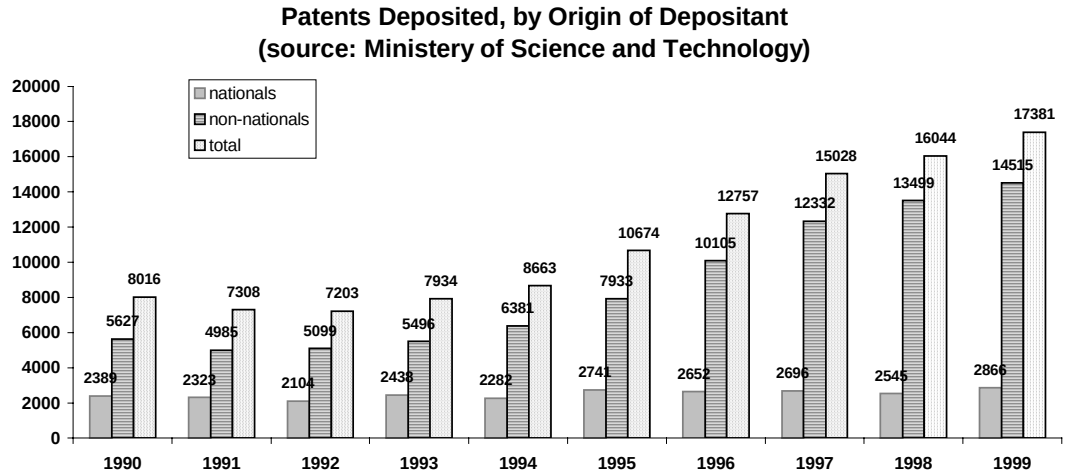
Sharing the opinion about the importance of these issues with its counterparts in the developed world, Brazilian competition authorities have been aware of the threats posed by the speed of technological innovation to antitrust analysis, when it is done without the necessary grain of salt about long-assumed conventions. Notwithstanding, some considerations about specific features of the Brazilian economy should be reviewed before we proceed to the discussion.

2. Technological Dynamics of the Brazilian Economy

2.1 The Brazilian National System of Innovation

Many analysts consider the concept of National Innovation Systems as a starting point to examine a national economy from the viewpoint of its technological dynamic. In short, National Innovation Systems can be described as the set of institutions within the structure of a national economy that determine the innovative performance of that economy.[2] Although Brazil has a consolidated academic infrastructure, most of R&D has not been related to industrial research or even to innovations that can reach the market, being mostly academic in nature. R&D spending by the private sector is still very low. As a result, endogenous conception of technology is not very high and so Brazilian innovation markets have been very much populated by foreign firms doing business in Brazil. As we can see at the graph below, the number of patents[3] per capita in Brazil is very low, compared with developed world nations:





The number of patents issued by nationals has increased, but not as fast as the total level of patents deposited in Brazil, following the opening of Brazilian markets since the Plano Real:

Brazilian firms have not invested much in R&D, and foreign firms doing business in Brazil have still preferred to source technology produced by their facilities located in other countries. As a result, Brazil's technological balance faces increasing deficits, since the country's spending on technology licensing is still much greater than the earnings from Brazilian technology sold abroad:

Finally, Brazilian spending on R&D has still been mainly determined by the government, with the result that most of it has not reached the market as technologically innovative products and services, being mostly academic in nature:

2.2 Innovation and Competition in Brazil

Notwithstanding the picture drawn above, we should add that, given the internationalisation of the Brazilian economy, there has been a fierce competition in high innovation markets. The time lag between the first appearance of a new technology and its introduction into the Brazilian market has been as small as that in most advanced countries by now. Besides, Brazil has developed a good level of protection to intellectual property, and enjoys a great internal market with exigent and sophisticated consumers,

which contributes to enhancing competition in innovation. And albeit slowly, some sectors have also exhibited a healthy degree of innovative activity from local firms, as it has been the case of biotechnology and agribusiness sectors. The net result is that the Brazilian antitrust system has experienced increasing levels of demand for the analysis of merger cases where innovative activity is a critical factor. In the next section we first present the general state of art of the analysis in innovative markets at Seae[4], and then we discuss some actual cases.

3. Merger reviews in high intensive technology markets in Brazil – General Ideas

Merger review in technology intensive markets has followed the same approach used in other economic sectors in Brazil. In 1999, Seae published a horizontal merger review guide, and in 2000 this guide was reviewed. Since then, the guide has been used both in Seae and in SDE. Roughly, the methodology applied to merger reviews by Brazilian authorities resembles other documents with the same purpose used worldwide, to mention: Relevant market definition, market share calculation, evaluation of market entry, import goods availability, rivalry, possibility of coordination among players and efficiency derived from the operation.

Although there has been no specific formal arrangement to deal with mergers in high innovation markets in general, some cases may draw some attention. For instance, more often than not, a small market share held by a company may not reflect the absence of harmful impacts to competition as a result of an operation. If such a company shows a high potential to innovate, even if the merger does not add much market share to the buyer (considering it is a market leader, for example), it is not unlikely that the result would be an incentive to reduce the rate of innovation and, therefore, in the "competition for the market".

Accordingly, when evaluating market entry conditions, Seae has sought to identify specific market barriers. As has been observed, market segments with high rates of innovation have prompted "competition for the market" or, in other words, incentives for players to once define a pattern and then attempt to impose it. For instance, in the pharmaceutical sector, this imposition may be implemented by means of a patent. In the software sector, this can be exerted when there is a massive use of a product by consumers, prompting positive network externalities. Hence, if a firm can impose its pattern, it may achieve market dominance (or monopoly), that can only be challenged through another innovation.[5]

In this sense, barriers associated not only with high R&D investment costs, but also with the existence of patents, network externalities and churn costs can be strong constraints to entrance in high innovation markets. As it has been broadly known, on the one hand, the higher the cost of entry to a firm, the smaller the probability, but, on the other hand, the higher the expected returns, the higher the probability of entry. Therefore, markets characterised by a constant necessity of high amounts of R&D investments, associated with uncertainty of returns, are less probable to receive new entrant firms. The same can be said of markets where the cost to break network externalities is very high. In such a case, the development of a new product, even of a higher quality, would not be sufficient to keep a new player in the market.

Regarding the evaluation of anticompetitive impacts derived from mergers in high innovation markets, Seae has focused on the analysis of possible unilateral effects. This strategy is based on the observation that, in these markets, firms and their products tend to be heterogeneous. In addition, other variables such as the pace and nature of innovation are difficult to control, raising the cost of monitoring and bringing uncertainty to results.

An exception to this approach, however, is the case of Internet portals and certain kinds of e-commerce arrangements. For example, collaborative e-procurement portals, that sometimes assume the form of an association of firms with the purpose of buying inputs to their business, can sometimes encourage the formation of cartels, mainly when buying firms are monopsonists. This is less of a problem when the portal deals with MRO goods, but can be of concern if it trades very specific assets. Critical to the evaluation of risk, in these cases, is the flow of information between the associated firms and if there are good procedures to audit the portal software.

Seae also has acknowledged the importance of taking into account the dynamic efficiencies brought by a merger. Notwithstanding, Seae´s merger review procedures do not single out this kind of efficiencies as a separate issue. Our guidelines instead stress four points that must be reviewed in the analysis of efficiencies: First, efficiencies must derive from the operation, i.e., they are considered only if there is evidence that they could not be achieved by other means. Second, the benefits of increased efficiencies must be shared with consumers. Third, they must be observable by reasonable means of analysis. Last, efficiencies must come from real economy of resources, not from purely "redistributive" effects. Although these four conditions are not equally easy to determine in the case of dynamic efficiencies, in Seae´s approach, once carefully examined, both static and dynamic efficiencies can be captured as well, presuming a convenient adaptation of investigative questions asked to merging parties (and, of course, competitors, suppliers and clients, when necessary).

The need of structural and behavioral remedies are well known concepts in the antitrust community. In general, due to the monitoring costs incurred in the enforcement of behavioral remedies, antitrust agencies favor structural ones. However, innovative markets are a dangerous terrain to keep allegiance to traditional practices, because the changing nature of technology can easily overcome any apparent market power arising in the short run. A better approach would be the application of "contingent" remedies, i.e., remedies that would be enforced only if some given condition occurred. This has been seen as a suitable alternative in markets where a high degree of technological innovation appears to reduce the risk of anticompetitive behavior. For example, in Brazil, the once feared near-monopolist in the data communications backbone business, Embratel (MCI/Worldcom), has now been confronting fierce competition in this market from other firms, including local telecoms.

4. Case Studies

In this section, a brief summary of actual cases is provided to illustrate some of the issues addressed in this paper.

4.1 Merger between a telecommunications operator and an Internet service provider (ISP), recommending remedies that apply several issues addressed in this roundtable[6]

Telesp (Telefonica Group), the buyer, is the main provider of fixed telephone lines in the State of São Paulo. The company emerged with the privatisation process that took place in the telecommunications sector in Brazil at the end of the nineties.[7] By force of Brazil's General Telecommunications Law (LGT)[8], until the end of 2001, Telesp would have only one new competitor in its operating area, also called an "attacker". This new player held only a tiny share of the market by the time the merger was reviewed.

Nutec, the acquired company, operated nationwide as an Internet Service provider (ISP), offering standard Internet connections plus a handful of services such as web space for online advertisement, e-mail accounts, hosting and others. Nutec was part of a Telecommunications Group that operated only in Southern Brazil and was not present in São Paulo.

Considering the relevant market of telecommunications infrastructure, Seae observed that fixed lines have been the most used infrastructure to reach Internet users in the so called "last mile" in Brazil, and hence the operation of ISPs in the State of São Paulo depended heavily on the inputs offered by Telesp.

Although the merger did not involve horizontal market concentration, Seae regarded possible anticompetitive effects in the market of telecommunications infrastructure derived from the operation, especially from a vertical integration between the parties. The evaluation focused on two main issues: Market foreclosure and extension of market dominance. On the one side, market foreclosure was taken in the light of a necessary two-level entry by non integrated companies, meaning that a potential entrant firm, in order to compete, would possibly have to enter both the upstream and downstream markets. Extension of market dominance was seen as a possible way to harm competition given the market power of Telesp in São Paulo. The main point here was to evaluate possible discrimination towards non-integrated ISPs, such as, for example, posing obstacles to access main inputs (fixed lines) or forcing a price squeeze on downstream competitors (ISPs).

Seae issued a technical opinion recommending not to block the operation, but conditioned the approval on a general non-discrimination commitment by the parties for a period of three years. The suggested commitment proposed not only the right to access the telecom infrastructure by non-integrated companies, but also intended to avoid favoured treatment being given to the acquired ISP in other matters.

The proposed conditions (remedies) to the merger are in line with a view that does not focus exclusively on calculating pre- and post merger concentration levels, but also examines the stage of technical development of the market sector involved and allow some time for new technological developments. In the particular case, although no one could forecast precisely when, it was clear that innovation would bring perfect substitutes to the inputs solely offered by the buyer to ISPs. Accordingly, information gathered during the analysis showed that new technologies such as wireless communication could in time replace fixed lines in the last mile. Moreover, by the time of the analysis, "IP protocol", largely used by Internet companies, started to be almost ubiquitous not only in existing networks, such as the ones owned by cable TV companies, but also in others such as the ones owned by electric companies. Therefore, the review of this merger showed that, in addition to the traditional view, Seae regarded, as equally important, the dynamics of the market.

4.2 Merger between a mobile telecommunications company and an Internet solutions provider[9]

PT Multimédia, the buyer, is a subsidiary of Portugal Telecom, a Telecom operator. The group controls Telesp Cellular, a major player in the mobile communications market in the State of São Paulo and has minor stakes in other telecommunications companies in other parts of Brazil.

Zipnet, the acquired company, is an Internet solutions provider whose activities before the operation were mainly directed to companies in the provision of dedicated access to the Internet, hosting and other minor services.

The evaluation of the merger did not reveal evidence of possible harm to competition in terms of horizontal market concentration. The research showed the companies operated in different relevant markets. It displayed, however, a possible vertical integration, since the telecom could use the services of the Internet provider to power its mobile communications. Through a standard analysis, Seae found that this integration did not raise concerns to competition, due to the fact that there were other companies in both up and downstream markets, besides the soon expected entrance of companies in the mobile phone services market, after a governmental action for new licenses.

Seae issued a technical opinion recommending no restrictions to the operation. In the analysis, the competition authority considered that a possible cooperation between the parties did not present a harm to competition. As it was observed, data transmission using mobile phones was, by the time of the operation, a very incipient service, counting a number of competing companies in the market.

As in other parts of the world, these companies were struggling to show customers the benefits of using a mobile handset to send and receive messages and other services. While making their services popular, several players in the market had to grant credits to customers free of charge and convince consumers to buy new handsets properly adapted to mobile data communication plus a handful of new information services. However, despite the efforts of the companies, even though free of charge, the service did not meet demand as expected.

Moreover, at the time of the merger, the "wireless application protocol – WAP", a popular standard used to establish wireless communication had not yet been consolidated. Therefore, in hindsight, it seemed that the "competition in the market" had not yet been established, for companies were in the stage of "competing for the market", not raising concerns. Merger between two software companies.

In mergers where the relevant markets affected include software products, it has been already a standard procedure at Seae to investigate the possibility of network effects, as well as analysing carefully the increased market power of incumbents that can translate in attempts of practices like tying.

One example was the merger between Microsoft and Visio Corporation, a software company specialised in diagramming tools. These tools have many applications in business, and was not substitutable by the conventional illustration, artwork, or presentation softwares commercialised by Microsoft at the time. Although network effects were not a concern, since most diagramming softwares work with a multiplicity of formats, there were concerns about the ability of Microsoft to tie the Visio tool to the Office suite. The merger was approved without further restrictions once Microsoft provided guarantees that Visio products would be commercialised also in a stand-alone version.

4.3 Evaluation of an Internet portal[10]

Covisint defines itself as "a global solutions provider partnering with the automotive industry". In fact its is a collaborative association doing business through an Internet Portal that provides collaborative product development, procurement and supply chain management. Covisint was founded by DaimlerChrysler, Ford, General Motors, Nissan, Renault, Commerce One and Oracle, and later, PSA Peugeot Citroën also joined the initiative.

In this case the main concern of Seae was about the possibility of anticompetitive practices allowed by collaborative portals: collusion, foreclosure, monopsony power and the exclusion of competitors in the market for marketplaces. To mitigate these effects Seae has in fact developed a set of standard remedies involving *a*) guarantees to the suppliers that they can still do business outside the portal; *b*) the prohibition of contractual mechanisms that preclude the access to other portals; *c*) the proposal of independent audits to verify the integrity of the portal software (to prevent backholes); *d*) the need to inform antitrust authorities about any change in the ownership or function of the portal.

NOTES

1. Text prepared by Cleveland Prates Teixeira (Deputy Secretary at the Secretariat for Economic Monitoring, Minitry of Finance), Luís Henrique D'Andrea (General Coodinator, Substitute, for Commerce and Services Affairs), and Marcelo de Matos Ramos, Competition Law Officer.

2. The concept of national innovation systems (NIS) rests on the premise that understanding the linkages among the actors involved in innovation is key to improving technology performance. Innovation and technical progress are the result of a complex set of relationships among actors producing, distributing and applying various kinds of knowledge. The innovative performance of a country depends to a large extent on how these actors relate to each other as elements of a collective system of knowledge creation and use as well as the technologies they use. These actors are primarily private enterprises, universities and public research institutes and the people within them. The linkages can take the form of joint research, personnel exchanges, crosspatenting, purchase of equipment and a variety of other channels. There is no single accepted definition of a national system of innovation. (National Innovation Systems, 1997, OECD)

3. The number of patents, taken in isolation, clearly is not a powerful enough indicator to describe a NIS, but we think its convenient to our purposes in this paper.

4. The *Brazilian System of Competition Defense (*"Sistema Brasileiro de Defesa da Concorrência" - *SBDC)* integrates assignments from three different administrative bodies: the Secretariat of Economic Monitoring (SEAE), of the Minister of Finance, the Secretariat of Economic Law (SDE), of the Ministry of Justice and the Administrative Counseling for Economic Defense.

5. In the case of network externalities, breaking a monopoly depends on costs related to incentives given to consumers to stop using a product.

6. Merger n.º 08012.006253/99-46. Parties: *Telefônica Interactiva S/A*, *RBS Administração e Cobrança S/A and Nutec Informática S/A.*

7. In 1997, the government inaugurated a privatisation process meant to dissolve the monopoly of a state owned group of 28 companies, broadly known as the Telebras System. The General Licensing Plan (PGO), one of a set of six legal documents that hold the regulatory basis for the development and modernisation of fixed telephony in Brazil, provides the entry conditions in the fixed telephony market for the last mile (or local loop) until the end of 2001. The Plan divides the country in four regions and limits competition to two locals and two long distance telecommunications providers per region. The operations of these companies (the privatised-incumbent company plus a new player) are submitted to strict contract terms in each region. A duopoly was also enforced in the international long distance. In after 2002, these rules will be lifted and new competitors allowed.

8. Approved by the National Congress on July 16 1997.

9. Merger n.º 08012.002429/00-14. Parties: *PT Multimédia - Serviços de Telecomunicações* e *Multimédia SGPS, S/A* and *Zip Net S/A.*

10. Merger n.º 08012.000001/01-16. Parties: DaimlerChrysler AG, General Motors Corporation, Ford Motor Company, Renault S.A., Nissan Motor Co. Ltd., Peugeot S.A., Oracle do Brasil Sistemas Ltda. e Commerce One Inc.

BRAZIL

Luís Fernando Rigato Vasconcellos[1]

HIGHLY INNOVATIVE MARKETS AND ANTITRUST ANALYSIS SOME IMPLICATIONS FOR THE ANALYTICAL FRAMEWORK OF MERGER REVIEW[*]

1. Introduction

Competition in many traditional industries focuses on price/output choices by firms including product/service diversification, sales and advertising strategies among other short-run choice variables.

On the other hand there are dynamic entrepreneurship activities in which such a competitive strategy plays a secondary role. In these new activities, called here new-economy or dynamic industries, firms usually engage in a dynamic competition process where the core objective is to dominate the entire market, killing rival firms. The central decision in such situations is the amount of investment in R&D or in expensive infrastructure such as networks and human capital. Through these investments companies seek to obtain the pattern product or technology and win a significant market share.

The main objective of this paper is to examine some specific features of highly innovative markets and their implications for antitrust policies, notably with respect to the review of mergers adopted by many antitrust authorities through the world.

Certainly, the analysis promoted by antitrust agencies turns out to be quite complicated when an innovative market is under scrutiny, since the analysis focuses on the future behaviour in strongly volatile markets.

The main goal of this work is not to construct a comprehensive theory of cost-benefit analysis of mergers in highly innovative industries. We aim instead to preliminarily assess the challenges that these new-economy companies present for antitrust agencies particularly those operating in developing nations.

2. Some theoretical aspects

In many modern industries the innovation process dictates dynamic efficiency of firms and determines the conditions under which competition takes place. In such sectors competition is, in its nature, a battle for the market rather than a battle in the market. In other words, the main concern of new-economy firms is the conditions that would lead them to sweep up the market, instead of a step-by-step competition where the firm gradually obtain market share through price/outcome competition.

This competitive process implies that firms engage in a dynamic competition for market leadership which could generate a monopolist (winner-take-all industries), while the traditional process lead them to the usual price/output competition where incremental innovation take places in spite of the efforts to generate status quo–destroying innovation as in the first case.

Naturally, the traditional antitrust analysis should change when dealing with new-economy industries, since changes in technological state must be taken into account. In a general sense, the analysis must assess the present value of costs and benefits or the net welfare gain or loss of a merger regarding dynamic industries. This is surely a harder task than the situation involving relative well-established markets.

According to Evans and Schmalensee (2001)[3], the so-called new-economy industries usually present the following key characteristics, briefly resumed below:

2.1 Low marginal and high fixed costs

Usually firms in dynamical markets invest large amounts in R&D as an effort to arrive first at the product that could change the market in a drastic way. As mentioned, this new product or technology could bring them market leadership and constitute the core of dynamic competition. Another actual situation is the one in which firms invest heavily to create and operate large networks.

In other words this situation also implies that such industries present increasing returns of scale at a wide range of output production. That could explain at least in part why some companies distribute their products at very low price or for free for a long period of time.

2.2 Labor and human capital intensity

Several new-economy companies have a high participation of high-quality human capital which at some degree also explains the high fixed costs presented. Many times this skilled labor is used to develop elaborate products or to handle some kind of complex infrastructure. These industries show high participation of intangible (human) capital in the development phase of production process as well as in its operational phase.

2.3 Network and system effects

Another important feature in highly innovative industries is the presence of network externalities. In fact, many new sectors such as computer software, the Internet and telephony present this kind of externality, which occurs if the value of the network to an individual increases either directly or indirectly with the number of consumers.

This effect depends not only on physical features as in the local telephony and credit card industry, but could also be of a“virtual” nature as in the computer operational system (or the software industry in general) for example.

In such industries, to be the leader could mean own the entire market. In this sense firms that are not in such position generally do not have the opportunity to get there, unless it comes up with a drastic innovation This is the main reason why firms maintain their efforts to produce innovations and sustain a process that brings potential positive effects on intertemporal consumers welfare.

Once the market leadership has been obtained it could be maintained by incremental innovation, although the threat from other firms frequently makes them to maintain their innovation efforts.

Another usual technical feature of such industries is the presence of system effects accordingly with the value of some component of a system (for example a computer operational system) depends on the existence of complementary components. As an illustration, the value of a computer operational system such as Windows or Linux surely depends on the availability of application developed for that platform.

2.4 "Winner – take – all" races

As seen in the above features there is a high probability that the winner of a technological innovation race will obtain large market shares and earn high profits. Occasionally the company could become a monopolist, depending on the nature of the innovation and on the transitional costs for consumers to change from the old to the new product/technology.

Such phenomena arise mainly due to two reasons: the network effects that create high incentives for firms to conquer as many customer as possible, and second, due to large scale effects at firm level because of its high fixed costs. In this sense the increase in firms' sales enable them to reduce average cost and to make profits even charging low prices.

2.5 High profitability of industry leaders

In order to support the high investments in R&D and the high fixed cost of the productive infrastructure creation and/or operation, the profits derived from the innovation should be sufficiently high to overcome the investment expenses.

In an economic sense, the return of such innovation should be greater than the competitive market return, in other words, the innovation should guarantee certain degree of market power to yield a supra-competitive ex post rate of return.

3. Implication to antitrust economic analysis

In this section we analyze the provisions of the horizontal merger guidelines issued jointly by the Secretariat of Economic Law - SDE (Ministry of Justice) and the Secretariat for Economic Monitoring – SEAE (Ministry of Finance), taking into account the new analytical dimensions imposed by new-economy industries, specially their dynamic characteristics.

3.1 Diagram 1 – SDE/SEAE Horizontal Mergers Guidelines

Diagram 1 briefly describes the structure of a merger analysis executed by both Secretaries. The process follows a traditional step-by-step structural framework that seeks to preliminarily assess whether or not a merger is able to harm competition through a first look in the market share concentration produced by the operation. Further analysis includes also assessment of the probability of market power anticompetitive use, efficiency analysis and a welfare balance between the costs and benefits from the merger.

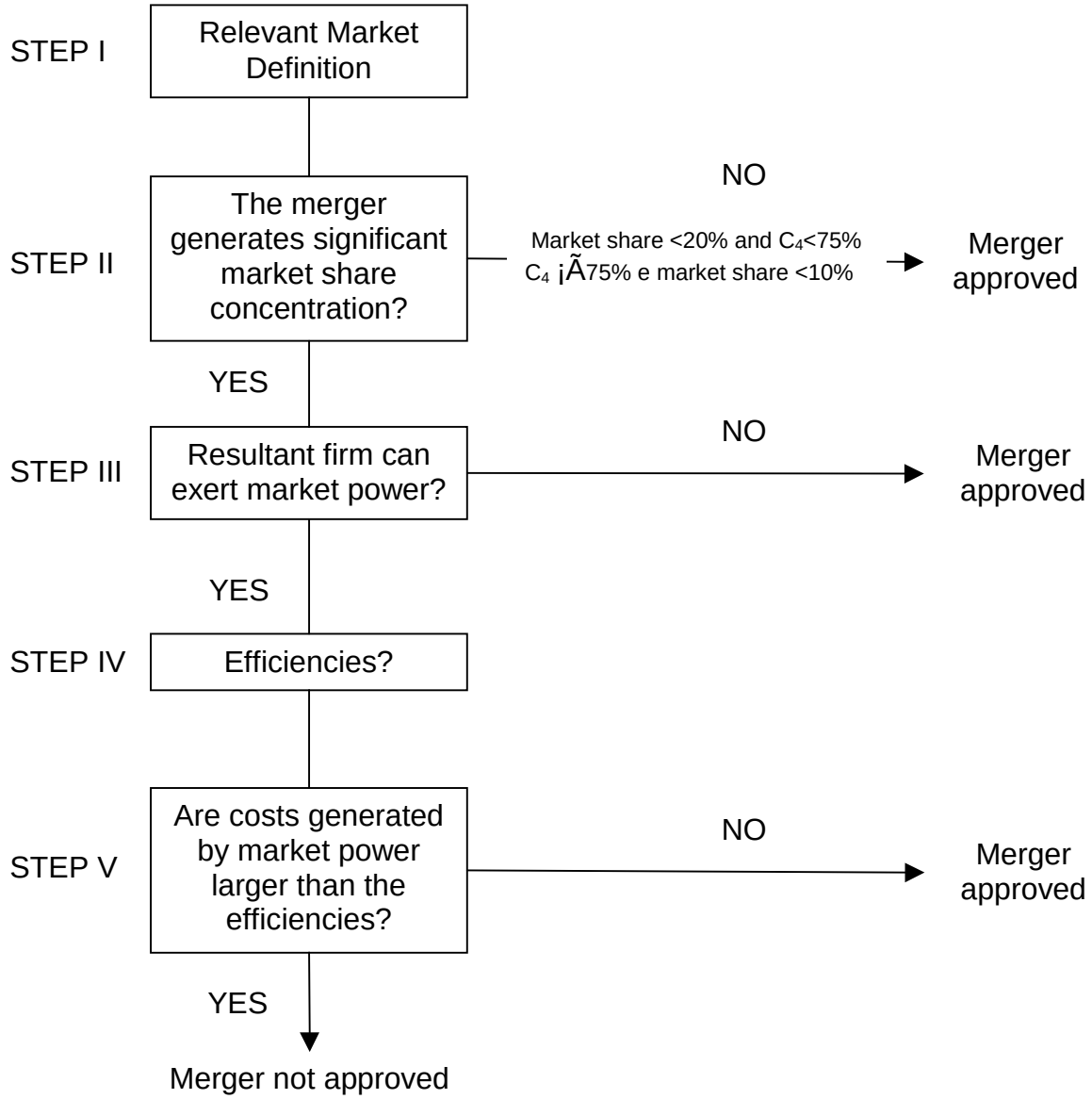
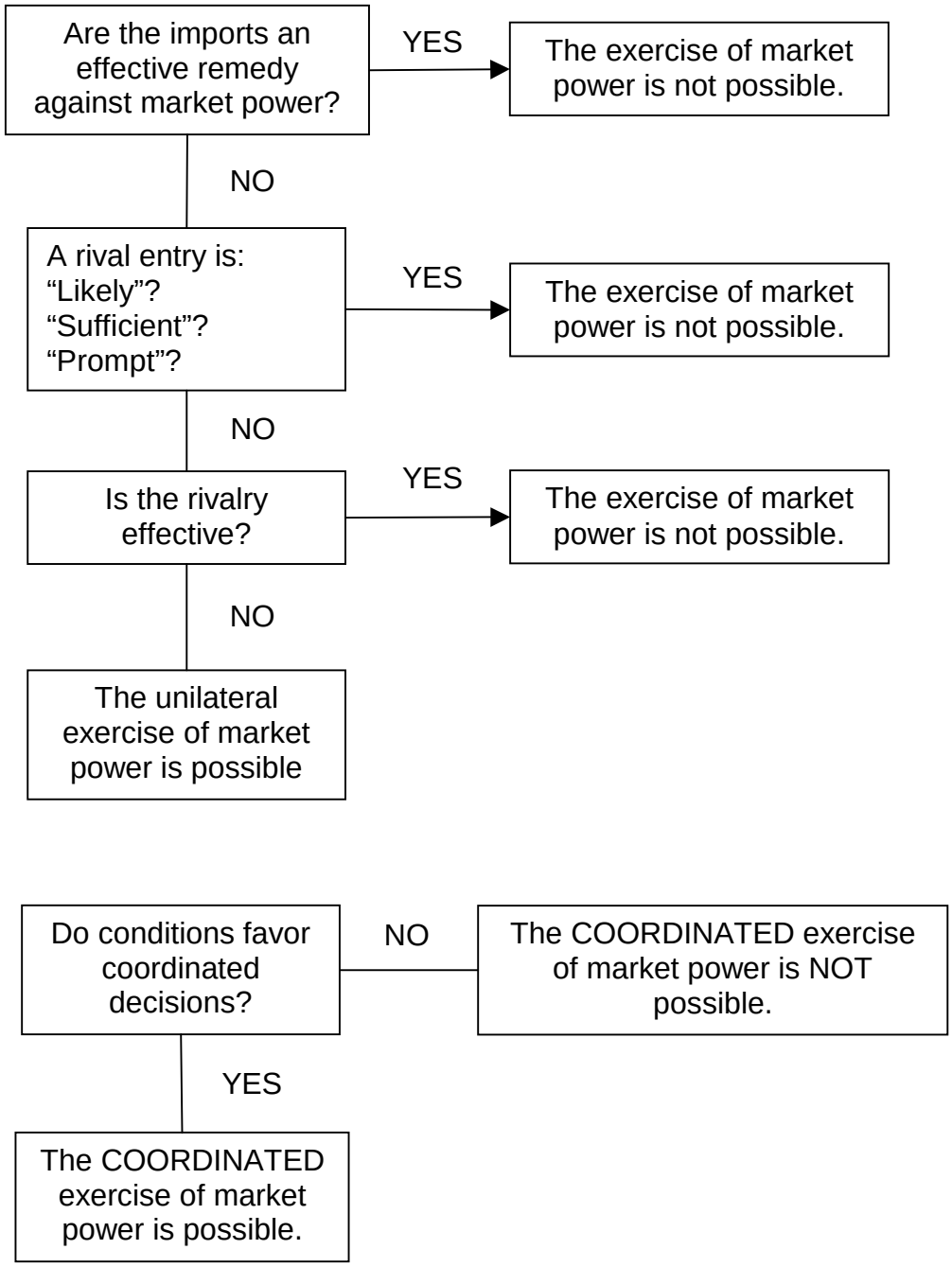


Diagram 2 describes in detail Step III of the analysis. In this segment, the effectiveness of imports as a disciplinary device contesting the market is analyzed together with the existence of entry barriers and the effectiveness of entrant firms and finally the probability of coordinated market dominance between the parties involved in the operation.

3.2 Diagram 2 – SDE/SEAE Step III

3.2.1 Steps I, II and III



The characteristics of highly innovative industries mentioned above certainly bring to light new issues concerning antitrust preoccupations. In fact, traditional antitrust analysis departs from the perfect competition model to determine how distant a merger (or conduct) could be from this ideal model. This analysis pays particular attention to whether firms have large market shares and to the possibility of exertion of market power in an anticompetitive way (in the company market(s) or any other related market).

In this sense, the typical antitrust analysis deals only with the static dimension of competition, since that is usually enough for the examination of stable industries that do not present any dramatic structural change due to some kind of creative destruction process (in the Schumpeterian sense). However, there are many concerns regarding the differences between static and dynamic antitrust analysis applied to new-economy industries.

First, statically competitive market structure in most cases does not persist in new-economy industries, where leading companies could set prices well above marginal costs and enjoy high rates of return even when dynamic competition is very intense.

Although static competition is less important in new-economy industries, the relevant factor to explain its economic performance is the intensity of dynamic competition, not its short-run market power that is frequently threat by other firms – an important issue that is not considered by traditional antitrust analysis.

At second place, the exercise of short run market power in new-economy industries should not be viewed as a signal of market failure sufficient to harm consumers, as it is customarily considered in traditional analysis. In contrast to that idea, short-run market power could be seen as a necessary condition to guarantee high returns that could support the innovative effort. Thus the use of market-share to preliminarily assess the probability of market-power ought to be re-addressed in the examination of mergers in innovative industries since a large market-share is somewhat "justifiable" in such markets.

Finally, but not less important, the high return rate obtained by leading firms in dynamic markets also should not be viewed as an indicator of market failure. As described, companies normally set prices well above marginal cost as a measure to support the innovational efforts.

According to these new dimensions some strategies adopted by merger analysts might be reviewed, for example, the existence of market power in an industry engaged in static competition should be verified and go through some sort of antitrust scrutiny such as the verification of: *i*) existence of substitute goods/services on the demand and supply sides and an examination of the extent to which these substitutes actually constrain the pricing ability of the firms; *ii*) the existence of entry barriers to new firms; and *iii*) the relationship between the prices charged and costs, among other factors.

In contrast, companies in new-economy industries are constrained primarily by dynamic competition, a situation in which an essential element of market power analysis is the examination of actual and potential threats to leading firms, i.e. antitrust agencies should address the probability of a technological race in the short-run that threatens the market dominance of the leading firm. Additional attention must be paid to evaluate if the threat of another race is enough to discipline the market behavior of leading firms forcing them to continue investing in new products to avoid losing market leadership.

Although market shares provide a useful tool in antitrust analysis of static markets (since they provide an easy preliminary assessment of market power), such analytical tool is less meaningful in the case of dynamic markets, because in such context a very small number of firms frequently have extremely high market shares so that traditional analysis always implies a need for the strongest antitrust remedy.

The second important concern regarding market share criteria in new-economy antitrust cases is that static market power endowment is not something that firms can rely on. Actually, the important disciplinary device is the existence of rivals that are investing in R&D and could produce an innovation first. Certainly, these firms are much less susceptible to pricing and production decisions than traditional industries such as steel making or cement production.

In summary, the features of new economy industries impose a target change in the antitrust analysis in order to consider dynamically cost-benefits welfare analysis. In other words, the rule of reason must also be applied to access the dynamic features of such industries.

3.2.2 Steps IV and V – Efficiencies and Rule of Reason

Although the application of the rule of reason usually demands a lot of time, the highly intensive technological progress imposes that such analysis be done in a short period of time in order to get the expected results. In fact, as things in such industries change very quickly the risk that the initial conditions observed in the beginning of the analysis suffer a dramatic change compromising the comparability between ex ante and ex post merger states.

Antitrust agencies will probably never have the required time to perform the adequate analysis nor the sound knowledge to promptly understand a changing markets. In this way it would probably be better to design some presumptive and structured rules of reason that reflect new-economy realities.

4. Conclusion

The main conclusion resulting from the previous discussion is that dynamically innovative industries impose challenges to the enforcement of the law by antitrust agencies obligating them to perform a complex dynamic welfare balance to assess the benefits and costs of a merger (or a conduct) that take place in innovative markets.

The balance of a merger relates, as in many other sectors, to the consumer welfare losses stemming from high market concentration that could lead, in the case of dynamic industries to monopoly formation or consolidation and, on the other hand, the long-run potential benefits of such merger in such markets, namely the maintenance of a vigorous process of innovation production assured by supra-competitive profit rates.

Both issues imply that authorities will deal with a large amount of uncertainty in order to correctly assess the important questions that arise in the analysis of mergers: to what extent should concentration be permitted in order to allow innovative companies to obtain extra-competitive profits? Are these larger profits truly necessary to fund high-end innovation? Is the innovation an event truly dependent on effort or is it just a stochastic phenomenon?

Certainly many innovative industries have extremely high fixed costs. Nevertheless attention should be paid to the fact that Schumpeterian innovations are extremely rare events. In this sense many innovations presented as Schumpeterian nowadays are in fact slight upgrades to former products.

The Secretariat of Economic Law recently analyzed a case regarding a financial assistant software program developed by a Brazilian software house that directly competes with Microsoft Money.

The software house accused Microsoft of practicing two violations: *i*) a public bid in which Microsoft freely distributed several copies of its financial assistant to two important official banks using a controversial contractual modality that obscured the bidding process and *ii*) the tying of the program Money to the suite Microsoft Office Small Business (which contains the well-known and best-selling programs Excel and Word).

Following its technical analysis the Secretariat of Economic Law understood that Microsoft effectively abused its dominant position irregularly distributing Money to Brazilian official banks, and more important to the present discussion, the tying of Money to the Office suite also was considered anticompetitive since it only has increased entry barriers without presenting any consistent efficiency improvement to the personal financial assistant users or to the users of Office. That is, tying did not increase the functionality of the set of programs.

Attention should be paid to the potential dynamic competition and the cost structure of highly innovative sectors, however the effective existence of one or more companies competing is still better than the existence of a single monopolist. In other words, effective competition is better than the threat of potential competitors.

As said before, merger reviews in innovation-intensive markets impose difficulties to antitrust agencies due mainly to the dynamic nature of such industries. This means that authorities might deal with a lot of cases that will demand sufficiently flexible rules in order to correctly assess the costs and benefits of mergers between such companies.

NOTES

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* This discussion paper represents preliminary work, circulated to encourage discussion. Citation and use of such a paper should take account of its provisional character. Comments are welcome.

This paper does not represent the Brazilian government position in any of the subjects here mentioned.

3. Evans, David S. and Schmalensee, Richard – Some economic aspects of antitrust analysis in dynamically competitive industries. NBER Working Paper 8268, May 2001.

FINLAND

Note – This submission is organised around some of the headings and questions contained in the Secretariat's issue paper, reprinted here at pages 59-60.

2. High innovation Markets – Characteristics and Competition

2.1 If you have merger guidelines, please describe any specific arrangements, approaches, checklists etc. they may contain to deal with mergers in high innovation markets. What constitutes a "high innovation market"?

The merger guidelines published by the Finnish Competition Authority (hereafter FCA) in September 1998 do not contain any specific sections dealing with the assessment of mergers in innovation markets. The guidelines generally state that mergers must be assessed with consideration to the future development of the market. The assessment of future products and the effects on innovation markets will therefore form a part of the general assessment of mergers. The FCA applies the dominance test, i.e. the FCA assesses whether the merger will create or strengthen a dominant position as a result of which competition would be significantly impeded in the Finnish market or in a substantial part thereof. The test is prescribed in Article 11d of the Competition Act (480/1992, revised by Act 303/1998).

The FCA's current approach in the assessment of the effects of future products is that future products are taken into account as if they were actual products. So far, the FCA has applied this approach in only two cases, i.e. in the Sonera, Yleisradio/Digita case (Case No. 1010/81/99, decision of 17 April 2000) and in the Sonera/LSP case (Case No. 1202/81/00, decision of 3 June 2001) which will be discussed in more detail in the answers below. The approach could be applied due to the fact that the FCA had sufficient information in order to be able to assess the effects of the future product. The assessment of the competitive effects of future products is not, however, unproblematic. Possible difficulties are connected to the inevitable uncertainties. In the early stages of R&D, the outcome of the process, i.e. the future product, is not always sufficiently clear.

In the FCA's case practice, innovation markets have not been considered to form separate product markets. The FCA's approach in defining relevant markets is identical to that of the European Commission. The difficulty is whether the provisions of the Competition Act are a sufficiently effective means to intervene in such cases where competition concerns are identified solely in the future market, i.e. the proposed merger is otherwise unproblematic. The future effects of the merger have to have an influence on the actual markets in order for the FCA to conclude that the concentration will create or strengthen a dominant position as a result of which competition would be significantly impeded. In the current situation, the FCA is not able to conclude that the creation or strengthening of a dominant position is established in the innovation markets due to the fact that they do not form a separate product market.

Another difficulty generally connected to the assessment of the effects on innovation is the extent of the likelihood that the competition authority should demonstrate. In the pharmaceutical industry, for example, the assumptions of launching dates and the probability of success of the R&D efforts can be

made on the basis of the different phases of clinical tests for the new products. The assessment is, however, hampered by the uncertainty factors associated with testing.

As stated above, the FCA does not consider innovation markets to form separate relevant markets. However, for any possible definition of innovation markets the FCA agrees that the definition established in chapter 3.2.3 of the Antitrust Guidelines for the Licensing of Intellectual Property issued by the US Department of Justice and the Federal Trade Commission could be considered as a possible alternative for such delineation.

3. Competition Policy Objectives – Static versus dynamic efficiency emphasis

3.1 Should competition law merger provisions allow competition agencies to make tradeoffs between static and dynamic efficiency effects (e.g. refrain from blocking a merger that will raise prices on existing products, or slow their decline, but will simultaneously make a significant positive impact on innovation)? If such tradeoffs are made, how certain and well defined should future innovations have to be, i.e. how close to being actual products?

The second part of the dominance test, i.e. the significant impediment of competition, provides a basis for dynamic approach for the assessment of mergers. A merger will be prohibited only if the harmful competitive effects on competition are either wide-ranging or long-lasting. This provision, therefore, allows the FCA to take into account possible efficiency effects. The dynamic approach could be interpreted in a way that a short-term market power is allowed to be established if it is clear that it will be lost in the near future e.g. through the measures taken by actual or potential competitors or through the forthcoming change in the market.

The FCA recognises that the key impetus for any innovation is the profits that materialise when the product is launched. These profits cover the costs of R&D of those products that were launched as well as of those products that failed. Without these future profits, innovation activity will not be carried out or would be carried out in a much narrower scale. The problem is, however, whether this innovation enhancing effect should permit a dominance to be established. And if it should, what is the time frame for allowing a dominance to exist without harming competition in the market.

3.2 If your competition agency has had to make a static/dynamic efficiency trade-off in one or more mergers, please describe the nature of the tradeoffs and how they were handled

The FCA has assessed the effect on innovation in the Sonera, Yleisradio/Digita case in which Sonera acquired the joint control of Digita, previously 100 percent owned by Yleisradio, the national public service broadcasting company. Sonera is the largest telecommunications operator in Finland. Digita is the provider of different services related to broadcasting. In particular, Digita holds a dominant position in the market for national TV transmission services. The parties were considered to be active in different markets. The vertical and horizontal effects would only be realised in the future. The FCA stated that as a result of the proposed merger, a dominant market position of Sonera and Digita would have been created or strengthened in several markets. The merger would, for example, have provided Sonera with extraordinary competitive advantages. Sonera would have become a superior “multinet operator” receiving a permanent lead in the development of products and services compared to its competitors. Another concern was that the development of the market was dependent on the services provided by Digita and these services would, as a result of the merger, not be submitted to other parties in the market. The parties claimed that the merger would result in efficiency gains and should be cleared by the FCA. These claimed

gains consisted of the synergy effects on innovations enabling the parties to provide new routes for data transmission. The FCA stated that the merger was not necessary for such innovation. According to the FCA, R&D activity did not require that Sonera have a joint control in Digita and in the distribution network. The FCA stated further that the foreclosure effect of the proposed merger would have reduced innovation activity and innovation competition, and therefore would have blocked market entry of highly developed network and technical services as well as by any services related to the content. The FCA stated that contrary to the parties' claims, a dynamic efficiency would only result if Digita was able to co-operate equitably with other parties in the market. The harmful effects were considered to be so wide-ranging or long-lasting that they could not be balanced with any claimed efficiency gains. The FCA prohibited the merger but the Market Court (previously the Competition Council) cleared it with conditions. The merger was later abandoned by the parties as a result of the conditions set by the Competition Council.

4. Preliminary screening for possible anticompetitive effects

4.1 What modifications, if any, does your competition agency make in applying the traditional merger screen, i.e. calculating pre- and post-merger concentration levels, to transactions in high innovation markets?

The FCA does not calculate any pre- or post-merger concentration levels like HHI. As concerns the general framework for the assessment of mergers that is carried out by the FCA, please, see answer IV/2 below.

The effects on innovation markets will be assessed in the context of general effects of the mergers, i.e. how the market will be affected and what are the consequences that could be seen in the foreseeable future. The FCA assesses the effects of future products by estimating them as actual products and estimating the future market shares for these products. These future products might have the effect of increasing the market power of the merged entity.

4.2 If your competition agency makes preliminary estimates of the anticompetitive effects of a merger based on an approach that does not focus on calculating pre- and post-merger concentration levels, please describe how such estimates are made and kindly provide actual case examples

The starting point of the appraisal of mergers is the market position of the concentration. This position consists of the assessment of the market share of the merged entity as well as competitive advantages. A large market share is the first assumption of market power. This assumption is either strengthened or weakened by the existence of possible company- or industry-specific competitive advantages. The concentration's market position is then compared to the competitive constraints established by the competitors, buyer power, and potential competition analysed in the context of entry barriers.

In the Sonera, Yleisradio/Digita case the parties had potential horizontal overlaps in the future markets for service systems of digital distribution network. These markets were in the forming stage and the overlaps would be realised when the network of Digita, and, for example, the third generation mobile communication network of Sonera could be used to transfer the same information or other data. It was assumed that this network would act as a significant distribution network for different types of Internet related services. The merger was considered to strengthen Sonera's position in that market. In addition, Sonera possessed inventions that would increase the functionality of the networks. The Market Court stated

in its decision that the substantial competitive effects emerged in the markets in which Sonera and Digita already had a dominant position.

The statement of the Market Court confirms the approach stated in answer II/1 that the future effects of the merger must have an influence on the actual markets in order for the FCA to conclude that the concentration will create or strengthen a dominant position as a result of which competition would be significantly impeded.

5. Assessing Threats to Competition

5.1 Does your experience tend to support or refute the idea that co-ordinated effects will not often be a problem in high innovation markets? Please explain citing examples if possible

According to the FCA, co-ordinated effects do not usually form competition concerns in innovation markets.

5.2 What are the commonest ways that mergers in innovation intensive markets import a risk of facilitating the exclusion of competitors? Please provide examples

The exclusion of competitors could take a form of the portfolio of IP assets. The owner of the portfolio has a reduced incentive to give competitors the access to technologies. Competitors might therefore be forced to exit the market.

In the Sonera, Yleisradio/Digita case, the FCA stated that the development of the market was dependent on the services provided by Digita and these services would not, as a result of the merger, be submitted to other parties in the market. Sonera would, therefore, be in a position to affect the way the other market players were able to compete in the market for digital television and digital radio. In this case the foreclosure effects would have reduced innovation activity and innovation competition, and therefore would have blocked the market entry of highly developed network and technical services as well as of any services related to the content.

5.3 Please provide examples, if you have any, of applying the innovation market concept in merger review. Was this application motivated by jurisprudential considerations or because the concept adds something that cannot be dealt with just as well using references to potential competition?

The effects of mergers on innovation were discussed in the Sonera, Yleisradio/Digita case. One of the reasons that the FCA used the concept of innovation was due to the fact that according to the parties the merger would have resulted in efficiency gains consisting of synergy in innovation activity. The effects on innovation could also have been dealt by referring to potential competition.

5.4 Please provide examples, if you have any, of reviewed mergers in innovation intensive markets where network effects played an important role in the analysis. What factors did you consider in deciding whether or not such effects constituted a significant barrier to entry?

The FCA has assessed the network effects in the Sonera/LSP case. Sonera is the largest telecommunications operator in Finland and LSP is a municipal telephone company that has activities in

11 municipalities in Finland. The FCA stated that the effects the merger had in the market for data transmission and Internet services and for telecommunications services provided for large companies as well as in the market for long distance and international telecommunications services were due to the network effects reflected on the markets in which the FCA found a creation or strengthening of a dominant position to be established. These markets consist of, for example, markets for leasing the line of subscribers of the telecommunications network and the markets for leasing backbone networks. Due to the network effects, the market power of the merging parties would have been further enhanced in these markets.

Generally it could be stated that the barriers to entry may consist of the requirement of simultaneous entry to different levels of production and the distribution chain.

5.5 Please provide examples from high innovation markets, of non-horizontal mergers where you found significant threats to competition and outline what the threat consisted of

Please, see answers III/2 and IV/2 above.

5.6 Are there any important differences as regards the information sources your agency depends on (e.g. do competitors play a larger or smaller role?) when analysing the competitive effects of mergers in high innovation as contrasted with slower evolving markets? Please explain

There are no differences regarding the information sources in analysing the competitive effects of mergers whether the merger takes place in high innovation markets or slower evolving markets. The FCA generally submits the requests for information to the third parties of the market, i.e. customers, competitors, and suppliers.

According to the FCA the most valuable source of information on the effects of mergers on innovation is the material that the merging parties themselves have prepared concerning e.g. R&D of products. The information that is available from the third parties of the market might be important but the case practice has clearly shown the importance of the actual plans of the merging parties. To receive this information from the merging parties the FCA usually submits a request for information. Third parties may have somewhat limited knowledge of the transaction which again may hinder them from analysing the competitive effects of the merger properly.

6. Remedies

6.1 Please give examples tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers

As a general rule, mergers in innovation intensive markets should seldom cause competition concerns. However, at least in theory, one can not completely rule out a possibility of an anticompetition feature in these mergers. This could be related to the first mover situations.

The first mover might obtain a market position that allows it to dictate the future development of the market. This kind of “anticompetitive” first mover advantage removes uncertainties and the dynamic nature of the innovation, which are usually the reasons for not being concerned about the mergers in the innovation market. The said advantage therefore leads to the change of market conditions.

Therefore, the possible future adverse effects on competition should not be excluded from the appraisal, even if they cannot be seen concretely at present.

6.2 Please provide examples of contingent remedies adopted in relation to mergers in innovation intensive markets. What steps did you take to clarify the future situations in which the remedies would be triggered?

In the Sonera, Yleisradio/Digita case the FCA considered the proposed commitments insufficient to remedy the competition concerns assessed. The parties committed themselves, for example, to co-operate with other market players in the fields of R&D and testing concerning the co-ordination of technical services and solutions. They also committed to provide consulting services to other market players. These commitments were among the several commitments that the Market Court accepted as remedies in its decision clearing the merger.

6.3 Please give examples of remedies that were customised to deal with mergers in innovation intensive markets

The commitment to co-operate in R&D given in the Sonera, Yleisradio/Digita case could be assessed as one of the remedies applied in innovation intense markets in order to provide other market players with equitable access to R&D activity.

The most typical remedy in innovation intensive markets is, however, the licensing remedy in which the licenses are made available to the other market players.

JAPAN

1. Introduction

Corporate competition has become more vigorous in recent years due to the globalisation of the economy and the progress of information technology. To cope with this change, mergers and acquisitions (hereinafter referred to as "M&As") in the hi-tech innovation market of Japan could grow more numerous in the future.

Analyses of mergers in hi-tech innovation markets must take careful account of the rapidly changing conditions found in such markets.

In this paper, we explain how the Antimonopoly Act is enforced with respect to M&As in Japan's hi-tech innovation market.

2. How the Antimonopoly Act treats M&As in the hi-tech innovation market

- The Antimonopoly Act obliges companies of a certain scale to give prior notice to the Fair Trade Commission when planning M&As (mergers, splits, acquisitions of business, etc.).

- The Fair Trade Commission investigates the notified M&A, to decide whether or not it substantially restrains competition in a particular field of trade. If it is judged that competition will be restrained, the Commission orders the M&A to be prohibited, the disposal of assets, and so on.

- The Fair Trade Commission produces and publishes the Guidelines on M&As to clarify what types of M&A would substantially restrain competition in a particular field of trade, and examines M&As on the basis of these Guidelines as well.

3. How M&As in the hi-tech innovation market are to be investigated

- The Guidelines on M&As make no stipulation to the effect that M&As in the hi-tech innovation market are to be treated any differently to those in any other market.

  Noting that most of the factors considered in the Guidelines are also observed in the hi-tech innovation market, these are therefore useful in studying ways of investigating M&As in the hi-tech innovation market.

- When investigating the M&As, the Commission makes an overall consideration of a number of factors, including barriers to entry and the prevalence of imports in the market, as well as market shares and the ranking, before judging whether the M&A substantially restrains competition. Therefore, the M&A is not judged solely on the basis of market shares and the

ranking, although these factors are basic indicators that show the market standing of the companies concerned when making this judgement.

– When calculating market share, the Guidelines on M&As basically use the most recent market share of the companies concerned. In doing so, the Guidelines state that "if the M&A is expected to cause substantial changes in market shares due to recent trends in sales volumes and amounts, changes in user tastes and preferences, and other factors, this point is taken into consideration to determine the impact on competition". In the hi-tech innovation market, this point shall be considered when changes in the market share are particularly pronounced.

  Specifically, technical innovation shortens product cycles. This plus current stages in various product cycles must be considered in judging the significance of current market shares and market rankings when analysing M&As in high-tech innovation markets.

4. A recent case (FY1999): Establishment of a joint investment company for DRAM business by NEC Corporation and Hitachi, Ltd

4.1 Outline of the case

4.1.1 Outline of the consultation

NEC Corporation (hereinafter referred to as "NEC") and Hitachi, Ltd. (hereinafter referred to as "Hitachi") planned to establish in December 1999, a joint investment company (with NEC and Hitachi each holding a 50 percent share) to engage in the development, designing and so forth of next generation DRAMs including 256 megabit DRAMs, with a view to enhancing management efficiency and increasing their competitiveness in the DRAM business that constitutes the main product line of semiconductor memories. The companies were planning to consolidate the marketing activities of their DRAM business into the new company by the end of 2000 and to consolidate their manufacturing activities in 2001.

4.1.2 Outline of DRAM and its market

Since the DRAM is a product item whose storage capacity increases every few years (i.e. there is a short product cycle), it is of vital importance for DRAM manufacturers to accelerate the development and the commercialisation of next generation DRAMs. While the relative positions and shares of DRAM manufacturers in the market greatly varies with the generation of DRAM and the stage of the product cycle, DRAM prices are found to substantially fall in a short period of time.

4.2 Views with respect to the Antimonopoly Act

4.2.1 Particular field of trade

In this case, it was concluded that DRAMs in the domestic market would constitute a particular field of trade.

4.2.2 Impact on competition

The combined share of the two companies concerned in the total value of DRAM sales in Japan was 30 percent and this was larger than the share of any competing company. However, when the following circumstances were comprehensively considered, it was determined that the proposed establishment of a joint investment company would not be substantially to restrain competition in the field of trade defined in *(1*).

- There were several domestic and foreign manufacturers whose respective shares in the total sales value in the domestic market were more than ten percent.

- In addition to foreign manufacturers already holding certain shares in the domestic market, other foreign influential manufacturers whose sales records in Japan were still relatively insignificant at the moment were also planning to step up DRAM sales activities in Japan in the future.

- Whereas users attached importance to the price aspect in selecting their supplier because DRAMs could serve a wide range of applications, purchase prices major PC manufacturers in the world paid for DRAMs greatly influenced price negotiations with users. Moreover, DRAM users were major PC manufacturers, who had strong bargaining power in the price negotiation.

KOREA

1. Korea's Merger Regulation in High Innovation Markets - Current Developments

In the late 1990's, the new economy made its appearance as a central topic of the international economy and simultaneously emerged as an important issue in Korea alongside the boom in venture capital companies. Despite recent opinions denying the concept and effects of the so-called new economy following the erosion of venture company stock prices and economic recession, there seems to be little disagreement on how revolutionary developments in information and communications technology, which is believed to have triggered the emergence of the new economy, have brought about a paradigm shift in the economic system.

Above all, the most significant change has been the relatively shrinking importance of traditional production factors such as land, labour or capital, and the rising centrality of knowledge and information as a source of competitiveness and wealth creation. While the importance of knowledge and information as a production factor is becoming evident across industries overall, it appears particularly clear in high innovations markets such as those of information and communications.

A common characteristic of market participants in high innovation markets is that they concentrate investment in R&D and are highly dependent on intellectual property rights and human resources, precisely because knowledge and information are such crucial production factors. In addition, rigorous efforts in R&D of firms generate rapid technological innovation and shorten the product cycles of existing products while creating a business environment where market players unable to promptly respond to changes cannot avoid being weeded out.

It has been understood that such characteristics of high innovation markets can have profound effects on the shape of competition. With free market entry by firms developing new technologies, it has opened the possibility of dynamic competition in which the dominant position enjoyed by existing market players collapse and earlier leading market players are replaced by new ones. As the majority of businesses devote all their efforts towards the development of new technologies, this has opened the possibility of returning benefits to consumers by supplying diversified products and lowering their prices.

If high innovation markets fulfilled only the above mentioned positive functions, they could serve as a highly beneficial driving force for reform in Korea's markets where monopolistic market structures prevail. However, as many are already aware, high innovation markets also have inherent anticompetitive elements. That is, market properties such as network effects and switching costs, which are commonly found in high innovation markets, operate as types of barriers to entry and result in a market tendency to entrench the market dominance of 'first movers'. Furthermore, first movers can maintain their dominant position by monopolising intellectual property rights as the key to generating knowledge and information, or by controlling networks through which knowledge and information are distributed.

The Korea Fair Trade Commission has been coping through various policies to prevent such potential adverse effects. First of all, the KFTC established the "Review Guidelines on the Unjust Exercise of Intellectual Property Rights in 2000". The aim of establishing these guidelines was to provide a specific

guide for application of competition law so that exercising intellectual property rights would not stray from its original purpose of encouraging investment by firms and, in contrast, be used to hinder market competition for products or technology. Furthermore, the KFTC set up another regulation, which stipulates that the firms who own essential facilities for production and sales in upstream or downstream markets, should not limit access to their facilities by other firms.

Even in terms of merger assessment, the KFTC has clarified its policy directions of ensuring long term competition by taking account of the dynamic efficiencies brought on by technological innovation. However, there have been no merger cases that could be viewed as significant in such terms in Korea's high innovation markets. Although there have been numerous cases of mergers among small scale venture capitalist companies, none have been of much importance to competition policy. As a consequence, the KFTC has no separate merger assessment regulations or guidelines for high innovation markets in particular.

Effectively, setting separate guidelines for merger assessment in high innovation markets is accompanied by difficulty because distinguishing high innovation markets from other markets is not an easy task. While the merger case of Korea's mobile communications companies, which is introduced in the following, bears many characteristics typical of high innovation markets, it still cannot be considered a typical high innovation market as such. Though the merger was assessed according to existing guidelines, this case should provide meaningful lessons in merger assessment of high innovation industries in that the various characteristics relevant to high innovation markets were taken into account in the review process.

2. A Merger Case Analysis in the Mobile Communications Market (SK Telecom/Shinsegi Telecom)

2.1 Outline of the Merger Case

In late 1999, the mobile communications company which was 1st in terms of market share calculated on the basis of subscriptions (i.e. what is henceforth denoted as 'market share') took over the 3rd company. The number one firm, SK Telecom held a 42.7 percent of the market towards the end of 1999 while the number three firm Shinsegi Telecom held 14.2 percent market share.

In this case, the KFTC defined the relevant market to include cellular and personal communication services (PCS). As for IMT-2000, it was excluded from the definition of the market because it was not in operation. Communications by mediums such as landline and the Internet were also viewed as irrelevant to the market definition because they were immobile. The results revealed that, besides the two cellular communications companies SK and Shinsegi Telecom, there were three other PCS providers competing in the mobile communications market: Korea Telecom Freetel Co., LG Telecom and Hansol M.com.

The KFTC reached the conclusion that the merger by SK with Shinsegi was anticompetitive. First of all, by merging with Shinsegi, SK Telecom triggered the expected 'conditions of competition restraint' as described by the Monopoly Regulation and Fair Trade Act (MRFTA), since SK Telecom reached a post-merger market share of 60 percent. This is because, under the MRFTA, if the no.1 company's market share exceeds 50 percent or if the total market share of the top three companies exceeds 75 percent, it is presumed to be an anticompetitive merger. In particular, a substantial level of customer concentration was expected to deepen with SK Telecom's reinforced market dominance arising from the network effects which are characteristic of the mobile communications market. Furthermore, the KFTC also recognised the existence of entry barriers stemming from factors such as frequency restrictions, high

costs of initial investment and obtaining technology. Finally, there were concerns over the possibility of cellular services monopolising the demand for cellular phones. By using its monopolistic power in that area, SK Telecom could force mobile phone suppliers to develop and sell cellular phones above PCS phones, which could result in accelerating concentration of subscriptions to SK Telecom by those users with a strong preference for newly developed models.

Meanwhile, SK Telecom argued that the efficiency derived from the merger outweighed the anticompetitive effects. In other words, the merger could generate enormous efficiency by combining existing communications networks and avoiding overlapping investment in R&D. Although the KFTC did partially recognise the efficiency enhancing effects, it did not approve the firm's argument on the basis that the parallel operation of the two firms' communications networks is unavoidable and that the effects of reducing R&D costs was not so significant.

Founded on such judgement, the KFTC ordered corrective measures against SK Telecom. The corrective measure demanded that SK Telecom reduce its market share to 50 percent within one year. The measures also limited the quantity of mobile phones SK Telecom could purchase from its subsidiaries within a certain period, so that it would not depend entirely on the subsidiary for the purchase of mobile phones.

2.2 Analysis of Competition Issues in the Merger

2.2.1 The mobile communications market contains traditional market characteristics in addition to numerous high innovation markets ones

Although no definite concept of high innovation markets exists, the mobile communications market matches many of the characteristics typical of most high innovation markets. To begin with, speedy technological innovation enables the market for mobile communications to undergo rapid changes in the services they provide. Granted it has only been 20 years since mobile telephones came into regular use, the market which was initiated through the use of cellular phones was quickly taken over by PCS and mobile services are expected to be largely substituted by IMT-2000 beginning this year. Admittedly, cellular services were momentously transformed from its initial analog type to the digital and, as a consequence, analog services are not provided in Korea. The speed of technological innovation has also consistently increased, enabling PCS to dominate half the market in only five years since its introduction. What is more, necessary technological innovations are actively supported by consistent investment in R&D.

In particular, the mobile communications market is a typical case of a market giving rise to network effects, which are an important feature of high innovation markets. With growing numbers of subscribers comes a greater number of people who can be contacted through the network, resulting in ever increased value for existing subscribers and generating demand side economies of scale which, in turn, attracts even more subscriptions. Since the cost of building network services for each subscriber is reduced as more people subscribe, supply side economies of scale exist which allow firms to dominate an advantageous competitive position before others in the market.

Yet the mobile communications market lacks other properties also characteristic of high innovation markets. For example, it is believed that performance or product differentiation generally plays a greater role than pricing as a means of competition in high innovation markets, but in the mobile communications market, the traditional competition tool of pricing is also very actively utilised. Despite the difficulty of direct price differentiation in Korea, because mobile communication service charges are subject to government regulation, there are many cases in which price differentiation takes place

effectively through provision of subsidies for mobile phone purchases. Due to excess subsidies, serious concerns have been raised over the financial structure of mobile communications firms.

Moreover, it is hard to find the same magnitude of increasing returns to scale in the mobile communications market as are seen in markets for software or drug development. While substantial development costs are necessary in software and drug development, once the products have been developed, the production costs are close to zero with a tendency towards very low marginal costs. Similarly, the mobile communications market also generates increasing returns to scale, since initial investment costs are high but, once the service network is constructed, marginal costs decline with the rise in subscriptions. Nevertheless, the increasing returns to scale identified in the mobile communications market are more similar to the effects of the economies of scale and network externalities found in network industries than the results recognised in high innovation markets.

2.2.2 The traditional merger assessment approach is still valid in the mobile communications market

Discussions on merger review in innovation intensive markets frequently include the argument that traditional methods of merger assessment are often inadequate in high innovation markets. Since competition is centred on product differentiation rather than pricing, existing ways of defining markets in terms of demand substitution possibilities after price increase, is considered unsuitable. Even if market shares could be determined, future market structure can vary to such a great extent that it is difficult to evaluate future market dominance on the basis of market share distribution at the time of merger.

Such arguments are partially correct in the mobile communications market because it also contains characteristics of high innovation markets. Since analog cellular phones could only carry audio transmissions, they were helpless to defend the market against PCS which could carry data transmissions as well as voice. However, the quality difference between cellular service and PCS no longer exists as cellular services have been allowing users to send data as well by adopting the digital system after taking several steps in technical innovation. This is why price competition is now possible. Needless to say, it is a fact that the mobile communications market provides low price elasticity since the switching costs for subscribers is high. It is difficult to conclude that such differentiation of services renders market definition impossible. In sum, the possibility of defining the mobile communications market through traditional approaches still stands.

Once the high stability of market share structure in the mobile communication market is considered, a scheme assessing market dominance on the basis of market share at the time of merger can also have significance. Attention should also be paid to barriers to entry such as inherent network effects and the need to obtain government permits. These issues will be further developed below in discussing their relationship to dynamic competition.

2.2.3 The possibility of new market entry through technological innovation is limited in the mobile communications market

Dynamic competition can most typically be found in situations where incumbents are deprived of their dominance and overtaken by new entrants who are equipped with new technologies and develop superior products differing significantly from existing products. Even if a firm holds a dominant position in the market at a certain time, it is unlikely to maintain that position indefinitely while constantly exposed to rapidly changing technological innovation. As such, if a certain firm has maintained market dominance for a long time, it can be seen as proof of its intensive efforts towards technological development.

Recognising dynamic competition in the broad sense could narrow the scope to which competition law can be applied.

The possibilities for dynamic competition are always present in the mobile communication market because it contains many factors pertinent to high innovation markets. In fact, it has only been five to six years since PCS was introduced, but its subscription levels compose over 50 percent of the mobile communications market share. In Korea, mobile phone services were first introduced in 1984 and PCS was introduced ten years after cellular phones, in 1996, but it currently holds a market share equal to that of cellular service providers. To go one step further into the future, when IMT-2000 services are popularised to allow multi-media transmission of audio, data and visual signals through mobile phones, they are expected to capture a large portion of the existing mobile communications market.

Still there are numerous elements limiting dynamic competition in the mobile communications market. First, there are constraints on factor critical to providing mobile phone services, i.e. frequently resources, and service providers must receive permits to access the necessary frequencies. Government permits can result in delays to market entry even when entrants possess sufficient capacity and technology. Most countries tend to comprehensively distribute their limited frequency resources in a specified period and this amounts to governments determining the point at which new firms are allowed to enter the market.

Second, entry to the mobile communications market is made difficult by very high initial investment costs, which are necessary to construct a service network. Third, owing to inherent network effects, there is the risk that over-concentration of subscribers will be exacerbated in the resultant company whose number of subscribers will grow significantly after a merger. As a matter of fact, according to a survey conducted by a public opinion research firm called Mind Share with regard to the SK Telecom merger, network effects were clearly visible. While the survey revealed that the ratio of users intending to cancel service subscription was lowest among SK Telecom clients, the rate of potential users hoping to subscribe to the same firms was overwhelmingly high.

Fourth, corporate mergers in the mobile communications market have a tendency to provide merged companies with strong incentives and abilities for excluding competitors or raising entry costs. In the SK Telecom merger case, the KFTC was concerned over the distribution network advantage and monopoly position in cellular phone demand, both of which SK Telecom would secure after the merger. Similar concerns have frequently become a reality. For instance, cases were discovered where a mobile communications firm entering a supply contract with a mobile phone manufacturer, banned the latter from supplying products to any 3rd party at a lower price. Furthermore, while issuing membership cards through a collaboration between the card company and mobile communications firm so as to secure new subscribers and maintain existing ones, mobile communications firms were found to impose contract conditions on partner card companies prohibiting them from co-operating with other competing communications service providers.

Fifth, it is also possible to exclude competitors from the mobile communications market by using predatory pricing. In Korea, firms cannot raise or lower service fees directly because of the service charge regulation run by the government, but indirect price competition takes place through subsidisation of mobile phone purchases. In fact, there has recently been a move towards imposing institutional bans on excess competition in subsidies for mobile phone purchases for fear of deteriorating finance in mobile communications firms. The factors discussed above compose the circumstances under which the leading market player can further reinforce its market dominance in the mobile communications market and, therefore, there is a higher chance that dynamic competition will be limited as a result.

2.2.4 Imposing corrective measures in the mobile communications market was a very difficult task

Corrective measures were unavoidable since the anticompetitive harm resulting from the above mentioned merger was extensive, but determining the appropriate corrective measures was not so easy. The KFTC's decision to allow the merger, while ordering corrective measures for SK Telecom to reduce its market share to 50 percent, was an attempt by the KFTC to take into account the characteristics in the network industry of mobile communications services and simultaneously minimise the harms arising from restraints to competition. These corrective measures were based on the MRFTA, limiting the market share of the top firm to 50 percent. However, they also faced a great deal of criticism. Primarily, the orders could not easily be fulfilled. In order to carry out the conditions of the corrective measures, SK Telecom needed to force their subscribers to cancel their contracts and this could also infringe on the rights of those customers. There was also those who argued that competition restraints could not be fully corrected simply by limiting market share without undertaking structural separation.

3. Conclusion

The above discussion has examined the possible anticompetitive effects accompanying mergers in the mobile communications market by drawing attention to the case of SK Telecom. While the mobile communications market contains many high innovation market characteristics such as rapid technological development, at the same time, it still displays traditional market characteristics since pricing remains an important means of competition and increasing returns to scale are more a result of concentrated capital than of intellectual resources.

In spite of the possibilities for dynamic competition through technological innovation, dynamic competition in the mobile communications market is greatly limited by factors such as network effects and barriers to entry. Such factors allow a merger between mobile communications firms to be used as a powerful tool for further strengthening the market position of an already dominant firm.

Viewed in this context, the merger assessment process can play a key role in preventing obstacles to competition in the mobile communications market. Instead of focussing too much on potential dynamic competition of high innovation markets, competition authorities should rigorously conduct merger reviews by concentrating on possible restraints on competition.

Meanwhile, methods of assessing mergers using traditional market definition and market share calculation continue to be valid in the mobile communications market. However, we do need to take into consideration the fact that large scale integrations with neighbouring communication service markets are being pursued subsequent to recent technological innovation. The possibility of substituting cable with mobile markets is now expanding and the distinction between different services is becoming obsolete. Clearly a great many cable telephones are being replaced by mobile phones with advances in mobile communications and cable/mobile multi-function telephones are appearing in the market. There is a need to seek new approaches to market definition which reflect these trends. With the increasing frequency in the number of mergers between firms operating different areas of communication service, it is also necessary to investigate the possible emergence of portfolio effects when a firm extends its market dominance in an existing communication service market to new markets of related services.

SPAIN

1. The concept of high innovation markets. Specific provisions in the Spanish competition legislation. Opinion on the need to define specific rules on merger control in these markets

The economic literature has identified a number of features that characterise high innovation markets, which usually correspond to "new economy" industries (software, hardware, internet-based business, biotechnology). These are the following:

- Intellectual property: new economy industries produce intellectual property through large investments on R&D, whose results give rise to technological change. Intellectual Property Rights play a key role in the competitive strategy of firms. In addition they imply high sunk and fixed costs.

- Innovation: innovation is the driving force of competition. In some high innovation industries competition is a race to develop a new product or to replace an older one with a drastic innovation. This is competition for the market, of a Schumpeterian type.

- Economies of scale: high innovation industries have large fixed costs, due to investments on intellectual property. This feature creates a tendency to concentration.

- Sunk costs.

- Compatibility and standards: they are extremely relevant due to the network effects in these markets.

- Network effects, that means that the value of the network to one consumer rises with the number of users, which could lead to a situation where a winner takes all. Once a product has become the most popular is difficult for the competitors to make consumers switch, even when the product offered is better.

The Spanish competition legislation does not specify any special provision for merger control in high innovation markets. However, the Spanish Competition Authority when assessing a merger in these markets has taken the previous features and their implications into account.

Regarding the pertinence of developing specific rules for these industries, for the time being they have not been perceived as necessary. The Spanish merger control regime is flexible and applied case-by-case, and its enforcement has not diverged from merger assessment in more traditional industries.

The Spanish test aims at preventing a merger from hindering the maintenance of effective competition in the market. It assesses the effects of a merger on the competition conditions as a whole. The competitive position of a firm in the market is analysed taking into account all the competitive constraints it may face which can effectively discipline its behaviour and a likely exercise of market power.

The objective of merger control is to prevent a structural change, originated by a merger that could limit effective and potential competition. This objective is fully applicable to high innovation markets. In this regard, there is no difference between the traditional and the new economy.

2. The objectives of competition policy: static versus dynamic efficiency

The trade off between static and dynamic efficiencies relies on the assumption that market power promotes innovation. The innovative activity must be rewarded with supra competitive profits, which means setting prices above the competitive level. But market power may also encourage the adoption of anticompetitive and exclusionary conducts to alter the result of the competitive race.

Although the complete analysis of a merger should include the effects of the transaction on innovation that does not mean that the dynamic efficiency arguments always justify clearing the transaction.

It is necessary to consider whether the transaction is the only means to develop the technology concerned and whether the transaction places the resulting firm in a situation in which it can employ its technological advantage to limit competition.

3. Preliminary assessment of anticompetitive effects

Under the Spanish merger legislation there is no preliminary assessment of anticompetitive effects of a transaction. Once the notification is submitted, the SDC starts the first phase of the procedure that requires carrying out a complete analysis of the transaction.

In the Spanish scheme, market shares are not the only determinative element in the analysis of a transaction in the new economy. In fact, in some cases it has been impossible to calculate the market shares because the market concerned was completely new. Therefore, the analysis must be qualitative rather than quantitative. This analysis takes into account the possibility that the resulting firm -which will usually have a monopoly position due to the existence of network effects, innovation, the cost structure, etc. – will use that position to limit competition through whatever predatory or anticompetitive conduct.

4. Assessment of threats to competition

4.1 Co-ordinated effects

The experience of the Spanish Competition Authority in mergers taking place in high innovation markets is limited. There have been few cases in these industries. All notified transactions concerning these markets have been authorised, some of them with conditions. At least in the cases analysed by the Spanish Competition Authority, no threat to competition was perceived, neither unilateral nor coordinated effects, except for the cases authorised with conditions where the transactions could have given rise to unilateral effects.

It seems that the most important threat for competition of horizontal mergers are unilateral effects and the possibility that the resulting firm will be able to undertake exclusionary conducts to limit actual and potential competition.

Collusion is more complex in these markets. They are characterised by a high degree of concentration and by equilibrium with a small number of firms. Notwithstanding that, the incentives to "get all the market" are strong and undermine the sustainability of collusion.

4.2 Exclusionary conducts

Exclusionary conducts include predation, bundling, tying and exclusive dealing. These concerns may arise when a transaction creates a firm with market power and there are not sufficient competitive constraints to discipline the future conduct of the firm.

The resulting firm will be able to undertake this kind of conduct if it has a series of competitive advantages not available for competitors, such as its production capacity, the range of products it can offer, brand portfolio, financial strength, technology, available resources, degree of vertical integration, distribution networks and exclusive contracts.

Access to technology in markets characterised by intense innovation is extremely important to determine the competitive capacity of a firm. If the resulting firm has a technology superior to its competitors, it may use the technological advantage to foreclose the market for competitors.

In a high innovation market, the development of new products is vital for the competitive strategy. Therefore the effects of innovation on competition either for the market or in the market need to be taken into account. There are many ways to employ technological advantage to exclude competitors.

Another important factor is the consequences for competition of network effects. Larger networks offer a higher value added than small networks. Access conditions to dominant network may be critical for competition and may allow a firm to keep its leadership through time, blocking competition.

At any rate, the analysis on how the transaction alters the incentives of operators to undertake anticompetitive conducts has to be made case by case.

4.3 Examples of application of the concept of innovation markets

This concept has never been applied in Spain.

4.4 Examples of transactions where network effects have been important for assessment.

One example is the transaction between TELEFÓNICA MÓVILES (a mobile operator) and BBVA (a bank) to create a joint venture named MOVILPAGO to develop and commercialise an electronic means of payment through usingmobile telephones.

The market affected by this transaction was that of electronic means of payments where the new product competes directly with credit cards, offering similar services through different mediums.

In that market there were no significant administrative or technical barriers to entry. However, there were other barriers to entry, mobile operators which could see their market share reduced if they were not able to offer the same services as MOVILPAGO simultaneously to TELEFONICA MOVILES.

These barriers were the following:

- Non-existence of technological standards at a national or international level accessible to operators concerning the means of payments through the mobile telephone.

- The patent corresponding to the technology MOVILPAGO was owned by a firm participated at 50 percent by the main operator in mobile telephony in Spain which would licence the technology on payment of the corresponding royalty to the operators that requested it.

- The respective market position of partners conferred them a privileged position thanks to their clients base unsurpassable by any other operator.

- The partners' financial capacity and implantation would create favourable expectations on the part of consumers and users which would seek for joining the system which have the highest probabilities to success and to become widely used.

- The partners are in position to dedicate large amounts of resources to launch and spread the new product and to take advantage of their large network distribution and branches to commercialise and distribute the product without incurring high costs.

- The fact that TELÉFONICA MÓVILES, the largest operator in this sector, launches this payment system could have turned MOVILPAGO into the most popular means of payment through the mobile telephone.

Due to these threats to competition, the Council of Ministers finally authorised the transaction but subject to conditions. The Spanish Competition Authority obliged the parties to open their system to competitors.

This decision led the parties to start negotiations with other groups, such as BSCH (one of the largest Spanish banks) and Airtel/Vodafone that had developed a similar platform.

The new firm MOBIPAY was the result of these negotiations. MOBIPAY means the consolidation of an open standard, which is a reference in the market of electronic means of payments through the mobile telephone. It combines banking expertise with possibilities offered by new technology.

Afterwards, AMENA, the third mobile operator, joined the system.

At present, MOBIPAY INTERNACIONAL is testing the system in Valladolid and new international partners are expected to join the system that could contribute to consolidate the standard in markets other than the Spanish one.

5. Remedies

Market forces are not always strong enough to discipline dominant operators' behaviour. This applies to both traditional and high innovation markets.

The fact that competition is for the market and rests on innovation does not mean that market power does not exist in high innovation markets and that dominant operators cannot undertake strategic conducts to limit competition both for and in the market.

In the Spanish case, the conditions imposed in merger cases in these markets have had the objective of establishing the conditions that guarantee a level playing field and free competition in the future in emergent sector by the means of open systems in order to prevent consumers from been deprived of other offerings of similar services.

THE NETHERLANDS

1. Introduction

This paper is the Netherlands contribution to the Competition Committee mini-roundtable (June 002) regarding merger review in "emerging" or innovation intensive markets. Both the applicability and relevance of existing competition policy and law to merger review in markets known to be innovation intensive will be debated. We want to share the Dutch experience in applying merger review to markets where innovation is of particular importance.

We are requested to include detailed descriptions of mergers reviewed in these markets indicating the competition issues raised and remedies applied, where relevant.

The Netherlands Competition Authority ("NMa") at present has no policy specifically addressing merger review in dynamic markets or markets driven by innovative forces. However, the NMa has evaluated the competitive significance of a number of transactions in markets that, in general terms, conform to the characteristics of innovation intensive markets. A brief description of some of these mergers is given in this document. Our input is not so much academic; it focuses on providing an overview of the numbers of notified transactions and how these were analysed and evaluated within the existing policy framework, without any special provision for innovative intensive markets. No specific attention would, however, be given to allocative and productive efficiency vis-à-vis dynamic considerations and to remedies, as will be explained in the document.

2. Merger control in the Netherlands: Procedural and analytical issues

The Netherlands Competition Act[1] ("the Act") prohibits the realisation of a concentration before the director-general has been notified of the intention to do so and has approved the intended transaction.[2] The process followed by the NMa in its assessment of these concentrations involves two possible "stages".

During the first or initial stage the director-general must, within four weeks of receipt of a notification, give notice as to whether a licence is required for the proposed concentration. If this initial investigation leads to the conclusion that there is no reason to believe that a dominant position would be created or strengthened as a result of the proposed transaction, the NMa informs the relevant parties that no licence is required. Conditions may also be imposed. This stage shall be referred to in the rest of this document as the "initial stage".

Notifications must include such information as is required by general administrative order.[3] The director-general may require the parties to provide further information in the event of non-compliance with the provisions of Clause 1, or if the information provided is insufficient for the purpose of the assessment of a notification. The initial term of four weeks[4] is suspended as from the day on which the director-general requires further information pursuant to Article 35, Clause 2 of the Act, until the day on which such information is provided.

The director-general may also determine that a licence is required for a concentration if he has reason to assume that a dominant position that significantly restricts competition in the Dutch market, or a part thereof, could be created or strengthened as a result of that concentration (the so-called "licence stage" of an investigation). The realisation of a concentration, to which notification that a licence is required pursuant to Article 37, Clause 1 relates, is prohibited without such a licence. The licence may also be issued subject to restrictions; conditions may be attached to a licence.

The licence stage inevitably requires the submission of more detailed information by the parties, as well as a more in depth evaluation of the competition issues, as well as the market testing thereof. The NMa has 13 weeks to complete its investigation during the licence stage.

The NMa also has in place a so-called "fast track procedure", applicable where it is evident that the competition issues of a particular deal are insignificant or minimal. This procedure may, for instance, be followed where there is no overlap between the activities of parties, or where the combined market share of the parties in all relevant markets are below a certain percentage, provided that the relevant markets have previously been defined. In these cases the NMa's decision is communicated in a much-abbreviated format. Thus, there are no specific arrangements, approaches or checklists regarding mergers in innovation intensive markets, but generic parameters are used for expedited decisions, regardless of the specific characteristics of any market.

From the above it is evident that, from a legal or procedural perspective, the NMa's approach to transactions in high innovation markets does not differ from its assessment of transactions in less innovative markets. The only obvious difference is that, given the technological complexity of mergers in high innovation markets and thus difficulties in defining markets, more time and resources could be required in these cases. In the analytical process the measuring of concentration levels (pre- and post merger market shares) are only a first step. Specific attention is afforded to the characteristics of the relevant market(s) in question, including entry, growth, innovation and product differentiation. Both actual and potential competition is taken into consideration. Market testing of information with, *inter alia*, competitors, customers and industry observers and experts is a common phenomenon. It cannot be said that there are important differences as regards the information sources that the NMa relies on when analysing the competitive effects of mergers in high innovation markets. The amount of consultation depends on the complexity of a particular case.

3. Quantification of transactions

Generally applying the salient characteristics of high innovation markets to the situation in the Netherlands during the period 1998 to 2001, reveals that approximately ± ten percent of all mergers notified could (possibly) be categorised as concentrations in high innovation markets. These transactions can very broadly be subdivided into two categories: (*i*) Information Technology ("IT") and (*ii*) Telecomm.

Table 1: Number of notified transactions in the IT and Telecomm sectors in the Netherlands during the period 1998 – 2001[5]

Sector	Number of mergers					
	1998 - 2001	%	1998	1999	2000	2001
Information Technology	40	70	8	5	13	14
Telecomm	17	30	4	6	2	5
Total	57	100	12	11	15	19

All of the above transactions were approved in the initial stage of investigation - none required a licence. This means that, ignoring the time periods when parties had to submit additional information after notification, the transactions were all approved within 28 calendar days from notification.

4. Sectors

4.1 Information Technology

The vast majority (± 70 percent) of notified mergers in the Netherlands in markets regarded (in general terms) as innovation intensive relates to the IT-markets.

The IT-services industry is known to be a fragmented one with many different service activities and with vendors from multiple backgrounds. These service providers range from technology owners, to payroll processing firms, to Internet services pure-play start-ups. Some service providers are focussed on integrating new applications (integrators), others concentrate on increasing the speed of operations (networkers) or add design and ebusiness strategy (Internet pure plays) or supply temporary workforce. At first glance these providers appear to have little in common with each other.

Technology innovation and the pace of change within existing markets makes it difficult to assess to what extent these services compete and how future competition could impact on existing markets. Innovation is fuelled by changes in ways of doing business, the way people consume products, the way companies market themselves, and the ways in which competitors enter a given market. It is acknowledged that it is difficult for a competition authority to stay abreast of all new developments, changing references and values shaping an industry as dynamic as the IT-sector.

As reflected in Table 1 above, the NMa has during the first four years of its existence (since 1998) evaluated 40 IT-related cases. From the onset the IT-market has been acknowledged to be a multi-faceted, dynamic and continuously evolving one, making not only for a complex, but also a highly technical environment. This makes it difficult to determine which products and services actually compete in the marketplace.

Looking at market delineation in these cases during the past years, what can be noted is that the framework within which these evaluations has taken place, has also changed and developed with time. In the first cases, the overall IT-market was segmented depending on the actual activities of the parties involved within the context of a broad IT-market.

Since 1998 IT-services, on the one hand, and the selling of hardware and software, on the other hand, have been considered as two distinct relevant markets.[6] These markets have been further segmented. However, different classifications, terminology and definitions of IT-services have been used by market participants, in various reports of independent industry analysts and in decisions of the European Commission and of the NMa.

The NMa has analysed various sub-categories of services depending on the availability of information and the circumstances of a specific transaction. In its more recent decisions the NMa has identified seven or more sub-segments of IT-services given the nature of the activities of the IT-companies[7]. Other industry analysts, such as Gartner, categorise IT-services into five sub-segments[8]. To date, the question of whether or not these sub-segments should be seen as separate relevant markets, has been left "open". Regardless of the market definition adopted[9] (broadly or narrowly defined), no past

transaction in the view of the NMa would have lead to the creation or strengthening of a dominant position in these markets.

However, although the IT-services market has been segmented into these broad sub-categories of services, some services rendered do not fit into a specific existing category or fit into more than one existing category. This inevitably complicates the evaluation process. The NMa in those cases where parties provide services that do not fit the previously identified categories has relied on parties' best estimates of their market positions. These estimates have of course been tested in the market with competitors and independent analysts.

The above approach shows that the NMa to date has been flexible and accommodating regarding a closer segmentation of the overall market for IT-services, allowing parties to make use of the available information of the different industry analysts. In other words, parties have made use of either a five sub-category delineation, as identified by analysts such as Gartner, or a seven sub-sector classification used by others.

The International Data Corporation (IDC) also uses a segmentation of services in thirteen so-called "competitive service categories"[10]. Five distinct service activities or categories are also identified.[11] The IDC, on a yearly basis, provides an overview of the IT-services markets in the Netherlands, differentiating various IT-services market segments and providing market share information. The IDC highlights the most important developments (issues and events) in the main area of the Dutch IT-services market during each period. The yearly report also reflects the general trends shaping the industry and presents the arising opportunities and challenges. The profiles of the top 10 IT-services players are included in the analysis.

Not surprisingly, all the notified transactions in the IT-services markets have been cleared during the initial stage of investigation. Compared to some other European markets, the IT-services market in the Netherlands is a relatively well developed one. According to the IDC[12] new trends and contract forms are accepted at a relatively early stage in the Netherlands and the industry is a services driven one. Many local IT-service vendors hold a strong position in the market. Systems integration is the largest segment within the competitive services categories, while application outsourcing, business process outsourcing and desktop management are among the smaller segments.[13] The larger participants in the IT-services market include Atos Origin, Cap Gemini Ernst & Young, Getronics, CMG, PinkRoccade and IBM Global Services, with many smaller companies also participating.

4.2 Internet Access

With reference to the market for Internet access, the NMa and the Independent Post and Telecommunication Authority ("OPTA") jointly published a report[14] in 2001 that makes interesting reading. This report provides an analysis of the markets for Internet access. It fulfils a useful and clarifying role and is an excellent example of the technological complexity of many developing markets and the amount of research required for appreciating the competition issues at hand.

In the said report a conceptual distinction is made between Internet access services on the one hand, and network access services on the other hand. Internet access services are understood to include the services supplied to consumers and business users in order to acquire Internet access. Network access services are defined as those services that the providers of Internet access must purchase from the network owners (telephone network, cable network) in order to be active on the Internet access market(s). The demand for network access services is in part dependent on the demand for Internet access services. For example: in order to offer broadband Internet access services, Internet Service Providers (ISPs) require

network access services on broadband networks. A further distinction is made in network access services between 'wholesale' network access services for other providers of network access and 'retail' network access services from Internet Service Providers.

Chapter 2 of the report deals with the demand and supply factors. For Internet access services, a summary is given of the types of ISPs, the types of subscriptions, the types of users (consumers and business users), switching costs, and the effects of price changes. For network access services, a number of variations of narrowband and broadband network access are explained. This includes a description of the possibilities for network access via the cable and via the telephone network, including xDSL[15].

Chapter 3 of the report contains a description of the regulatory framework relevant for the NMa and OPTA. For OPTA, this is the Telecommunications Act[16] and the related 'lower' regulations. For the NMa, this is the Competition Act.

In chapter 4 of the report it is concluded that a distinction can be made between four relevant (product) markets with reference to Internet access. The report concludes that there are separate markets for (*i*) broadband[17] Internet access and narrowband[18] Internet access, and (*ii*) broadband network access and narrowband network access. The broader the bandwidth of an Internet access service, the more data-intensive Internet applications it can support. The distinction between broadband and narrowband Internet access services can therefore be made on the basis of the Internet applications that can be facilitated by a specific service, or on the basis of the speed of data transmission which can be realised by such a service.

With reference to the broadband Internet access markets and the broadband network access markets, it is concluded that the current state of affairs does not appear to give any reason for distinguishing between Internet access services made available via the xDSL networks or the cable networks.

With reference to the geographic determination of these markets, it is concluded that the narrowband Internet access market and the narrowband network access market are both national markets by nature. According to the report the geographic market for broadband Internet access is in principle national. An exception to this rule could occur in a situation in which it is not probable that xDSL will be rolled out in a certain region and the coverage area of a cable operator is basically the same as that region. In a situation of that type, the market for broadband Internet and network access could be local or regional, by which the cable ISP would not experience competition from the xDSL ISPs.

It is important to recognize that the dynamics of the relevant markets could lead to market definitions that can change over the course of time.

Chapter 5 of the report analyses the competitive situation in the possible relevant markets. In terms of narrowband Internet and network access markets, it is evident that KPN in the Netherlands holds a very strong position. Nearly all narrowband Internet traffic is connected to KPN's fixed network by means of network access services. It is also evident that KPN holds a considerable share of the market for narrowband Internet access services. The fact that KPN is a vertically integrated player that is active in both the narrowband network access market and the narrowband Internet access market, adds to the strength of its position.

The analysis concludes that on the market for broadband Internet access, cable ISPs and xDSL ISPs compete with one another in areas where both xDSL and cable have been rolled out or in which it is probable that xDSL will be rolled out. At the time it was evident that the ISPs affiliated with the cable operators, hold a considerably larger share of the market for broadband Internet access from a national perspective than the ISPs offering Internet access via xDSL. Market data indicates, however, that the

number of xDSL connections is steadily increasing. With reference to the supply of network access services via xDSL, several network providers are currently active. Various market parties questioned, however, indicated that they have experienced problems in receiving access to KPN's exchanges.

In the following section a brief description is given of the UPC - PrimaCom merger case in which the market for Internet access was at issue. This case illustrates that the determination of what constitutes substitutes and competitive advantage could be a very difficult exercise in high innovation markets.

4.2.1 Case 2425/UPC - PrimaCom

In case 2425/UPC – PrimaCom[19] both parties offered Internet and network access services and were considered strong players in the market. The investigation (finalised in the initial stage) looked both at actual and potential competition in order to define the relevant product and geographic markets and to evaluate the position of the merging parties in those markets. The current position of UPC and PrimaCom could be placed in perspective with due regard to the explosive rise of Internet access services and the prognosis that this growth would continue.

The investigation focused on three markets: (*i*) the market for distribution of radio and television signals (RTV-signals) via cable networks, (*ii*) the market for Internet access services, and (*iii*) the market for network access services. In previous evaluations of all these markets the merging parties were all relatively small players compared to the likes of UPC - PrimaCom.

As already mentioned, there are no special arrangements for assessing transactions in high innovation markets in the Netherlands. However, as explained above the NMa, in co-operation with OPTA, had researched and analysed the markets for Internet and network access services and had published the results thereof. This research, which delineated the markets for Internet access services, helped tremendously in quickly defining the relevant markets in the case at hand.

At the time of the investigation it was concluded that broadband Internet access services and narrowband Internet access services constituted different markets.[20] It could, however, not be conclusively said that broadband xDSL and broadband Internet access services via cable were substitutable.[21] Broadband Internet access services via xDSL had only been introduced in mid 2000. The above-mentioned report on Internet access left the latter item "open" for discussion, since it could not be predicted in what way/direction the market would develop in the future. At the time of the merger investigation it was still not clear if users view these services as substitutable. Why certain users preferred one service to the other, and to which extent, was not evident. Whether and how user-preferences may change in future was also rather unpredictable. However, evidence showed that since its introduction xDSL has rapidly grown. It could thus be expected that xDSL would in future exert competitive pressure on broadband Internet access services.

4.3 Telecomm

The NMa in its first four years of operation has had a reasonable number of notified mergers relating to the telecomm sector. As is evident from Table 1, these transactions comprise ± 30 percent of the mergers relating to innovation intensive markets. Approximately half of these cases related to the distribution of radio and television signals, the provision of pay-per-view television and data communication via cable networks. A large portion of these transactions, more specifically, involved mobile telecommunication services.

The markets for distribution of radio and television signals and the provision of pay-per-view television, Internet access and data communication are all still developing rapidly. This of course makes it difficult to define these markets. However, most assessments by the NMa have revealed that the parties' market shares are insignificant from a competition perspective, irrespective of the market definition (i.e. whether broadly or narrowly considered). As in many other cases, the parties provided the NMa with best estimates of the size of these markets and their individual market shares, given various possible market definitions, and often supported by data of independent market analysts. These estimates were, as is the norm, market tested with other industry participants.

The following section deals with three merger investigations relating to the telecomm sector.

4.3.1 Case 2697/Debitel - Talkline

The Dutch mobile telephone environment is rapidly changing with new players joining in the battle. The market structure for mobile telecommunication services is characterised by providers of network services (operators), service providers and dealers. At the time of notifying the transaction[22] involving Debitel Nederland and Talkline Nederland, two companies provided mobile telecom network services in the Netherlands, i.e. KPN and Libertel, with a number of other companies being licensed for a national or regional mobile networks. The independent service providers (in this case Debitel and Talkline) buy "time" from the network operators (in this case KPN and Libertel). The market for service providers in the Netherlands is one of ample competition with at least ten service providers participating in the market.

The investigation showed that from the perspective of the end-user, no distinction needed to be made between the integrated and independent service providers. The assessment required no more precise definition of the relevant markets - the parties' market shares being insignificant from a competition perspective irrespective of the market definition. The market definitions were again left "open". It was left undecided if "prepaid" and "postpaid" (contract) services constitute one relevant market, or whether a distinction should be made with regard to groups of customers (business users or individual users), or whether the geographic market should be considered to be national or broader.

4.3.2 Case 2425/UPC - PrimaCom

As regards the distribution of radio and television signals via cable, the Netherlands Telecommunications Act stipulates that for each geographical area of supply, only one licence should be issued for the exploitation of a cable network. As a result, operators of cable networks within specific geographic areas do not compete with each other.

However, in this case the geographic dimension of the market for the distribution of RTV-signals via cable networks, could not be conclusively determined due to proposed new European guidelines regarding access to electronic communication networks. At the same time the Dutch Government was revisiting current communication legislation to bring it (more) in line with new Open Network Provision directives[23]. Considering only the immediate situation, the geographic dimension of the market could be taken as regional, coinciding with the service areas of the cable companies. Assuming that the relevant geographical markets were regional, the service areas of UPC and Primacom did not overlap since each distributor of RTV-signals in the Netherlands had it's own regional service area. However, due to the proposed new guidelines, the geographic market for RTV-programmes (packages) and related services could very well become broader in the future.

4.3.3 Case 1878/Digitenne

Defining markets and deciding which firms to include in those markets could present a major challenge in innovation intensive markets, as is evident from the following case.

In case 1878[24] the parties[25] proposed a joint venture (Digitenne Holding) to exploit frequency channels for Digital Video Broadcasting Terrestrial (DVB-T)[26]. The parties to the joint venture were: a distributor of (analogue) signals of data, radio and television via airwaves (NOZEMA), a supplier of a wide range of technical services for audio-visual productions (NOB), and the largest provider of telecomm services in the Netherlands (KPN). The government would have, in the near future, allotted licences for frequency channels for DVB-T (so-called multiplexes).

For a number of years the parties carried out research on the possibilities of providing DVB-T in the Netherlands. DVB-T affords an efficient organisation of "frequency" space, enabling the transmission of more data within the same frequency channel. The major advantages of DVB-T are: efficient use of frequency space (more programmes through the same channel), the possibility of rendering data services as well as more traditional broadcasting services, and technologically much improved quality of service for the consumer.

This case is a good example of the fact that anticompetitive issues could also fall outside of the market(s) where the parties currently operate. In this intricate case, the NMa had to look well into the future. The assessment thereof was made easier and expedited since the NMa a year prior to this notification advised the ministry organising the auction of the DVB-T licences on competition related issues. Thus, the NMa had already assessed the environment in which DVB-T would be provided, including from which existing technologies (and market participants) competitive pressure could be expected. The advocacy role of the NMa proved invaluable in the evaluation of the proposed deal when filed at a later stage.

After investigation it was concluded that the proposed transaction would not at present or likely in the future lead to the creation or strengthening of a dominant position from either a horizontal or vertical perspective. However, it was difficult to assess to which extent the transaction would have implications for the future competition in markets on which the joint venture and its parent companies where, at the time of notification, not active, but on which they may deploy activities in the future.[27]

For an initial period, the licence-holder of DVB-T would have used the multiplexes mainly for the provision of television signals. It could be expected that the development of other (interactive) services for DVB-T for the time being would have remained in its infancy. It was also expected that the development of DVB-T would go hand in hand with services provided via other infrastructures, such as cable, satellite and telecomm networks. It could be said that DVB-T might even result in increased competition between infrastructures (cable, satellite and telecommunication networks) in future. The evidence indicated that DVB-T provides an alternative for the provision of broadcasting services, now offered primarily via cable and, as could be expected, in the future also via other infrastructures. It was, therefore, concluded that DVB-T forms part of the relevant market for the provision of television and television-related signals.

The other markets, on which the joint venture and its parent companies may well become active in future, were regarded as dynamic and rapidly developing. It was concluded that the joint venture would face competition from cable companies (that are well established in the market) offering services largely comparable with that of the DVB-T licence-holder.

5. Efficiencies and remedies

No provision is made in the Netherlands Competition Act for a trade-off between the effects on competition and (potential) efficiencies associated with a particular transaction. Thus, the relevance of efficiency gains in markets that could be regarded as innovation intensive has never been considered. Therefore, no further comments would be provided on the issue of whether merger provisions should allow for trade-offs between static and dynamic efficiency or whether dynamic efficiencies deserve greater attention in merger review in high innovation sectors.

With regards to the mergers in innovation intensive markets reviewed in this document, remedies were never devised to address competition concerns.

6. Conclusion

Predicting how markets would evolve in the future certainly becomes a daunting if not impossible task in markets that are growing rapidly and constantly changing due to innovative forces. However, the general nature of competition rules implies judging each individual case on its own merits and the circumstances prevailing at that time. Development and changes within a specific sector or relevant market can thus be considered in the evaluation of the specific transaction's significance from a competition perspective.

Some critics, however, maintain that the application of competition law to markets where innovation is of particular importance is unwarranted and thus unnecessary. The difficulties inherent in applying traditional merger review in high innovation markets have to be recognised. A consideration of only structural issues (market concentration and shares) certainly does not suffice. Merger evaluation in these markets market can be extremely complex. First, it is difficult to assess competition in the market (substitution possibilities from a demand and supply-side perspective) and, second, it is difficult to evaluate the importance of competition for the market (the extent to which firms are efficient in innovation). A "first principles" approach would require directly considering the abilities and incentives to innovate. The evaluation process is further complicated by adding to the equation an analysis of future competition from products and firms not yet active in a specific market, but with the potential to enter in the foreseeable future.

It holds true that competition officials often face special difficulties in assessing mergers in high innovation markets because of their technological complexity. One way of addressing this issue, at least during the interim phase when it has not yet been decided if specific policy provisions are warranted, is to build expertise and specialisation on these markets within the agency itself. This would allow for better dealing with the technological complexities and timely decision taking.

The issue at this juncture from our perspective is not so much whether interventions in high innovation markets by competition authorities are at all warranted (although there certainly are plausible arguments to support this view). We would be in favour of a more cautious approach and focus our efforts on how a competition agency like ours could equip itself to better deal with mergers in innovative intensive markets within the shortest possible time frame. This undoubtedly requires some degree of flexibility. The necessity of modified or revised approaches, and if regarded as needed, the situations to which these approaches could or should be confined, need further deliberation. In other words, the NMa is at this stage open to the idea of debating specific provisions for dealing with mergers in high innovation markets. The issue of whether or not such provisions should be published is not specifically relevant for us at this stage.

NOTES

1. Act of 22 May 1997.

2. Article 34 of the Act.

3. Article 4.4 of the General Administrative Law Act applies.

4. Referred to in Article 34 and Article 37, Clauses 1 and 3 of the Act.

5. See Annual Reports of the NMa, 1998 - 2001.

6. See, for example, the NMa's decisions in the following cases: 1218/*Econocom - EDS Product Services* of 11 February 1999 and 1366/O*rigin - Akzo* of 28 June 1999.

7. The seven segments are: IT-management services; business management services; software development and integration; IT and business consulting; software maintenance and support; hardware maintenance and support; and education & training.

8. The segmentation used is: operational services (day-to-day system management); application management services (processes and methodologies for maintaining, enhancing and managing software applications); help desk management services; business continuation services (back-up facilities, communication equipment); and asset management services (reporting of financial and asset information).

9. The NMa has also delineated the market with regard to various groups of customers.

10. The IDC distinguishes the following 13 service categories: custom application development; application outsourcing; business process outsourcing; desktop management; hardware support & installation; information systems consulting; information systems outsourcing; network consulting & integration; network management services; processing services; software support & installation; systems integration; and training & education.

11. The categories are: IS consulting; implementation; operations; support; and training.

12. "IT Services Market & Trends in the Netherlands 2000", February 2001.

13. "IT Services Market & Trends in the Netherlands 2000", IDC, February 2001.

14. Available on the web-site of the NMa: www.nma-org.nl.

15. xDSL is an umbrella term for various technologies. ADSL (Asymmetric Digital Subscriber Line) is the most current technology. This technology is characteristically asymmetric; this is a point-to-point technology and therefore provides reserved access. This means that the use of Internet access services by a certain end-user would have no negative effect on the speed of Internet access services for other users.

16. Act of 19 October 1998, amended on 14 October 2001.

17. For example: video applications are extremely data-intensive and they therefore require broadband connections.

18. Narrowband access is also known as dial-up access, i.e. the user can accesses the net via the normal (analogue) telephone network. For practical reasons, the NMa/OPTA used the following working definition in the consultation document: the term *narrowband* Internet access is applied to networks which

have a maximum data transmission speed for internet access, for both downloading and uploading, that is less than or equal to 128 Kbps.

19. Case 2425/*UPC - PrimaCom*, approved on 4 July 2001 in the initial stage.

20. Also see the decision of the European Commission in case COMP/M.1845 - AOL/TIME Warner.

21. In the analysis the NMa considered, *inter alia*, the characteristics of each service and the combinations of distinctive features thereof, cost factors, including set up and switching costs, and prices.

22. Case 2697/*Debitel - Talkline*, approved on 16 October 2001 in the initial stage.

23. Directive Number 90/387/EEC of 28 June 1990.

24. Case 1878/*Digitenne*, approved on 2 April 2001 in the initial stage.

25. The parties were Naamloze Vennootschap Gemengd Bedrijf "Nederlandsche Omroep-Zender-Maatschappij" ("NOZEMA"), Nederlands Omroepproduktie Bedrijf ("NOB"), KPN Telecom and Cahanoves Beheer.

26. A new technological standard for the digital transmission of television-related signals.

27. These markets, according to the parties, were: the distribution of television and television-related signals; digital interactive television services; and technological services for digital reception.

UNITED KINGDOM

1. Introduction

This paper presents the UK's experience of merger assessment in high innovation markets. Merger review in the UK is a two-phase process. The Office of Fair Trading (OFT) is the first stage investigator, making an initial assessment of the implications of the merger for competition. In the event that the OFT identifies possible anticompetitive effects arising from the merger, the Director General of Fair Trading can recommend to the Secretary of State for Trade and Industry that the merger be referred to the Competition Commission. The Competition Commission, as the second stage investigator, then carries out an in-depth analysis of the merger and recommends to the Secretary of State for Trade and Industry whether or not the merger should be allowed to proceed and the nature of any conditions/remedies that might be placed on the parties.

The UK merger legislation, however, is currently changing. The implications of the new "Enterprise Bill" are highlighted in the paper accordingly. Finally, whilst the paper aims to give an overview of the UK merger process, it should be noted that specifically it has been prepared by the OFT.

2. High innovation markets – characteristics and competition

2.1 Merger guidelines

The UK's non-statutory merger guidelines,[1] do not refer to specific arrangements, approaches or checklists to deal with mergers in high innovation markets. The UK does not adopt a rigid or mechanistic approach to assessing the implications for competition of mergers. The guidelines are flexible; they can be and are easily adjusted to account for innovation.

Further, the OFT has commissioned a number of research reports on competition and innovation that inform the debate. These include "Innovation and Competition Policy" (March 2002) prepared by Charles River Associates;[2] "E-commerce and its implications for competition policy" (August 2000) prepared by Frontier Economics;[3] and "Consumer savings arising from competition policy" (forthcoming) prepared by S. Davies and A. Majumdar, another OFT discussion paper where innovation and competition were addressed in one of the chapters. These are available to inform the OFT's consideration of mergers in high innovation markets.

2.2 Advisability of special arrangements

The UK is currently able to consider the implications of/for innovation in its merger assessment. In most instances, this supplements the standard static economic analysis via references to potential competition in industries that may not necessarily be "innovation intensive", for example in the merger between two chemical companies discussed in paragraph 28.[4] However in industries that are more

obviously characterised by innovation, this has taken a leading and integral role in the analysis, for example in the Microsoft/Telewest[5] and the BSkyB/Hilton Group[6] mergers. If appropriate, it would also be possible to define the relevant market as an innovation market, in line with the 'innovation markets approach' used in the US. Consequently, the UK merger guidelines are sufficiently flexible not to necessitate working out special arrangements for dealing with mergers in high innovation markets.

In our view it would anyway be difficult and confusing to have different and rigid approaches to merger review: one for static industries and one for innovative industries. For instance, it is difficult to define a static versus an innovative industry. It seems preferable to have a single flexible approach. To this end, individuals preparing submissions should bear in mind that the OFT considers innovation when making its assessment of mergers.

3. Competition policy objectives – Static versus dynamic efficiency

3.1 Trade-offs between static and dynamic efficiency effects

UK merger policy involves an intrinsically forward-looking process of analysis which has the flexibility to take into account the dynamic (or long term) implications of a merger as well as the static (or short term) considerations. The effect of a merger in the static market today will often help to determine the future nature of competition.

It is important to recognise that competition occurs on more than one level and that the interactions between the levels are heightened in high innovation industries. It is useful to think in terms of there being three, inter-related markets in which competition takes place:

- innovation/R&D market;
- information/technology market;
- product market.

Competition in the product market may help to improve static efficiency and this has often been the focus of competition policy (including mergers). Increasingly, however, competition in the innovation/R&D market and the information/technology market, and thus issues of dynamic efficiency, has been subject to scrutiny in merger analysis. Ideally, merger analysis should look forward to see how decisions in one market impact on the other markets.

There is no consensus among economists as to exactly how the interactions between these three markets work. The Schumpeterian or Austrian school of thought suggests that the profit incentive firms need in order to innovate will be achieved by a more concentrated market.[7] In this way, a trade off can exist between static and dynamic efficiency. It is thus imperative that decisions made by competition agencies in the interests of static efficiency do not constrain competition in the information/technology or the innovation/R&D markets. However, more recent theory and empirical evidence indicates that competition in the product market can enhance dynamic efficiency. The intuition behind this is the idea that competitive firms have a very strong incentive to innovate in order to "escape" competition.[8]

These two opposing views indicate that it can be extremely difficult in practice to identify whether or not a static/dynamic efficiency trade off exists. In reality, the interactions between markets and the incentives that firms face will depend on a number of factors specific to a particular industry and point

in time. Whether or not a static/dynamic trade off exists and should be taken into consideration in a merger case will need careful, in-depth analysis on a case by case basis, including an analysis of the nature of innovation i.e. whether it is drastic or non-drastic. [9]

If it were possible to identify that, in a particular merger case, a static/dynamic efficiency trade off existed, then competition authorities would still need to be cautious in applying such a trade off. While it may be possible to establish a theoretical case for clearing a merger because of benefits in the innovation/R&D market, in practice there is often considerable uncertainty surrounding what effects on dynamic efficiency a merger might have.

It should be noted that a static/dynamic trade-off could also exist in the other direction i.e. it is possible to have a merger situation that does not have adverse static effects but does have adverse effects on dynamic efficiency. More generally, mergers can harm innovation as well as enhancing it. Any detrimental implications a merger might have on innovation may potentially be far more serious than any reductions in price competition. For example, competition agencies should recognise the possibility of a merger tipping the market to create a deep-rooted monopoly that will distort the development of future competition, particularly in the innovation market.

3.2 Cases involving a static/dynamic efficiency trade-off

As explained above, UK merger regulation is flexible enough to allow issues of dynamic efficiency and competition in innovation markets to be taken into consideration. Hence there are numerous examples of mergers in which dynamic efficiency and innovation have been taken into consideration in the analysis. However, there are few illustrations of actual trade-offs between static and dynamic efficiency being made.

One good example involved the market for betting through interactive digital television (iDTV). This merger in a high innovation industry would have resulted in a monopoly that might have been unnecessarily difficult to displace. The case involved the setting up of a 50:50 joint venture (the JV) between BSkyB and Hilton Group to develop a fixed odds betting business linked to Sky Sports channels on the digital satellite platform. The JV was to offer interactive "in-vision" betting in which viewers could place bets on the events that they were watching. This was a new, innovative way of providing betting services. On the narrowest possible market definition therefore (i.e. that for interactive "in-vision" betting services) the parties would have initially had 100 percent of the market through the JV, although there was no increment arising from the merger.[10] It was expected that other betting companies would seek to find alternative routes into the market. However, at such an early stage in the development of the industry, it was impossible to say how effective these new routes might be.

The case was referred to the Competition Commission. One of the main concerns in this merger was a five-year period of exclusivity for the rights to betting associated with Sky Sports channels and the Sky Sports Internet site. The parties argued that this period of exclusivity was integral to the venture. While recognising the need to reward innovation, the worry was that this five year period may have been excessive and restrictive of competition; the Director General's advice to the Secretary of State for Trade and Industry stated:

> "First-mover advantage alone is not usually a reason for viewing a merger as potentially anticompetitive, since it can be a proper reward of risk or innovation. Investments to develop new services are generally to be encouraged, as they should benefit consumers, but there is a question whether the degree of protection afforded by the five-year period of exclusivity in the case at hand may be excessive and restrictive of competition."[11]

This case also demonstrates the point made above about certainty of future innovations. One of the reasons the merger was referred was due to the lack of certainty about new innovations developing and whether the JV would have an adverse effect on the evolution of competition within this market. The advice said that:

> "The JV's exclusivity provisions, which the parties claim are integral to the venture, may result in a less competitive evolution of interactive betting services than would otherwise be the case. Whether or not competitive disciplines from elsewhere in the market for betting would remove this potential adverse effect is hard at this stage to judge."

In summing up, the Director General concluded that:

> "This proposed joint venture presents a dilemma. In some respects it may enhance innovation and competition in the wider betting market. But its exclusivity provisions pose possible risks to the development of competition in interactive betting (which is forecast to be a large market within the next few years) and in the acquisition of sports rights. These risks require a more thorough examination which the Competition Commission is best placed to undertake."[12]

The decision to refer this case involved careful analysis of both the static and dynamic effects of the merger. Following the reference the parties abandoned the merger, so that the fuller investigation of issues which the Competition Commission would have made did not take place. It is, however, worth noting that a non-exclusive deal was subsequently reached. Finally, this case also illustrates the wider point that dynamic benefits may be felt in other relevant economic markets.

4. Preliminary screening for possible anticompetitive effects

4.1 Modifications in applying the traditional merger screen

It is important to place this issue in the context of UK merger legislation. Under the Fair Trading Act 1973, there are two ways in which a merger can qualify for investigation:[13]

- The assets test: the gross value of the world-wide assets being taken over exceeds £70 million.[14]

- The share of supply test: the merged enterprises will together either supply or acquire goods or services of a particular description and will – after the merger takes place – supply or acquire 25 percent or more of those goods or services, in the UK as a whole or in a substantial part of it.

These tests do not involve defining the relevant economic market at the outset and therefore reduce the risk of not investigating a merger in a high innovation industry simply because of spurious market definition.

As explained in paragraph 1, the OFT acts as a first stage investigator in a merger case. In the event that the OFT identifies possible anticompetitive effects arising from a merger, it can decide to recommend to the Secretary of State for Trade and Industry that the merger be referred to the Competition Commission, which will carry out a more in-depth analysis of the merger situation. In this way, the OFT acts as a "preliminary screen" for mergers. The OFT does not apply a screen solely consisting of calculating pre- and post-merger concentration levels when deciding whether or not to advise that a merger

should be referred to the Competition Commission. Market shares and concentration levels (HHIs) are looked at, where possible, in all merger cases, but are typically seen as one of a number of relevant factors to the competitive analysis of a merger.

In certain cases involving high innovation industries or markets where competition is for the market rather than in the market, it might become clear that market share data and concentration levels do not provide an accurate reflection of market power. Accordingly, in these cases, less emphasis will be placed on market shares and concentration levels.

4.2 Preliminary estimates of the anticompetitive effects of a merger

As explained above, the OFT typically includes concentration levels in its analysis of mergers cases but will not always place too much emphasis on them. It is recognised that defining a relevant market may be particularly difficult in a high innovation industry and that market share figures, even where a relevant market has been defined, could change rapidly and may therefore not be a good indication of medium-long term market power.

In the BSkyB/Hilton Group merger, four possible market definitions were identified and analysis of the competitive effects on each market was carried out. The difficulties associated with relying on market shares were referred to explicitly in the Director General's advice to the Secretary of State for Trade and Industry:

> "Given that iDTV betting is a new and evolving market segment, market share figures are not reliable and it is more difficult to determine the likely effects of the JV than with a merger in a more mature market."[15]

Market shares and pre- and post-merger concentrations will only be able to capture static effects. This was recognised in a case involving exchanges trading financial securities, where it was noted that market shares may not be a very good indication of power. In this industry, market shares were a reflection of the fact that the exchanges do not really compete directly in the short term. Competition within this market is probably best characterised "dynamically". Exchanges compete for customers dynamically though innovation, rules, cost reductions etc. In the longer term, exchanges do compete for customers and even for customers of different products. For this case, the competition analysis was done looking at both a static market – in which separate product markets were identified for different financial products – and a dynamic market – in which one product market was defined as being that for exchanges. Here, the static product market definition was narrower than the dynamic product market definition.

The difficulty of defining a relevant market in an innovation intensive industry and therefore being able to use this definition to assess pre- and post-merger concentrations was also highlighted in the proposed acquisition by BSkyB of British Interactive Broadcasting Holdings Limited.[16] This case involved three relevant product markets: the supply of digital interactive services, the supply of Pay TV and the wholesale supply of premium film and sport channels. It was argued that the relevant market definition may need to change as the market evolved. Specifically, it was thought that there was possibility of a narrower market definition developing over time, although this was unlikely to occur in the near future for the majority of interactive services.

Finally, Tessenderlo's acquisition of the Widnes Plant and business of Atofina UK Ltd[17] gave the merged enterprise a combined share of EU sales of Phenylacetic Acid (one of the relevant markets identified) of in excess of 90 percent, with an increment of 40 percent. Nonetheless, the OFT advised not to refer this case as there appeared to be potential entrants to the market for Phenylacetic Acid.

Manufacturers of penicillin were understood to be able to reduce or eliminate their reliance on the use of Phenylacetic Acid through innovation. In this case, it was recognised that innovation was likely to change the market structure rapidly and high market shares were likely to be transitory, indicating that the merger was unlikely to have anticompetitive effects.

5. Assessing threats to competition

5.1 Co-ordinated effects

The conditions generally prevalent in innovation intensive markets – severe economies of scale, lack of capacity constraints, "tippy" markets, highly differentiated products - are not particularly conducive to collusion. This may be why there has been relatively little discussion of co-ordinated effects in OFT assessments of mergers in high innovation markets. Likewise, there have been very few OFT cartel investigations in high innovation markets. This may be indicative that co-ordinated effects are less likely in high innovation industries.

In some cases, the OFT has recognised that the presence of technological change reduces the threat of price co-ordination in the product market. For example, the proposed merger between Neopost and Ascom Holding[18] would reduce the number of major suppliers of postal franking machines in the UK from three to two. The merged enterprise, together with Pitney Bowes, would account for 83-93 percent of sales of franking machines in the UK, with broadly symmetrical shares. The OFT thus identified the risk of tacit collusion post-merger.

The proposed merger was arguably taking place during a period of technological innovation in the franking machine market. The US postal service was seeking to take advantage of digital technology and ink-jet printing to switch to the use of two dimensional bar-code postmarks known as information based indicia (IBI). There was also the possibility in the future of using networked digital technology for Internet applications, which, for example, would allow franking machines to communicate with postal and carrier systems. The OFT noted the argument that, in this context of innovation, it would be difficult for Neopost/Ascom Holding and Pitney Bowes to sustain tacit collusion since, for example, there may be new opportunities to grow sales. The Competition Commission is currently considering this issue in its examination of the case.[19]

Certain features of innovative markets, therefore, make certain types of collusion less likely. There remains the risk, for example, of market sharing in the information/technology or in the innovation/R&D markets. Indeed there is substantial focus in all Guidelines on IP licensing (including the draft UK Guidelines)[20] on trying to prevent restrictions that might facilitate collusion, illustrating that the possibility of co-ordinated effects in innovative markets has certainly not been excluded.

5.2 Risk of facilitating the exclusion of competitors

One of the most common ways that mergers in innovation intensive markets import a risk of facilitating the exclusion of competitors appears to be through vertical foreclosure. Innovation intensive markets often involve complementary products that are in vertically related markets. Companies that are dominant in one market might seek to merge with a firm established in a vertically related market. The merged entity might then be able to exploit complementarities between its portfolio of goods to foreclose the downstream market to other players. This will have a particularly significant impact when competition

is for the market as it may lead the market to tip towards a firm that would not otherwise have gained such a dominant position.

The issue of vertical foreclosure was considered in the Microsoft/Telewest case, the BSkyB/Hilton Group case and a case involving the software industry. Each of these cases is described in more detail below.

Horizontal mergers in high innovation markets may also exclude competitors by using the enhanced position in the primary market to foreclose vertically related markets. For example, Vivendi's proposed acquisition of a shareholding in BSkyB[21] involved the bringing together of their two different conditional access technologies (SECA and NDS respectively), which together accounted for more than 60 percent of all pay-TV subscribers within the EC. In addition to the concern that potential convergence between the systems might stifle future competition in the conditional access technology market, the Competition Commission identified other possibilities for excluding competitors. Specifically, SECA could cease to provide competing platform operators with the necessary support for conditional access technology, and thus foreclose the market for pay-TV platforms. This could be facilitated if the merger situation allowed information about the strategy or performance of other pay-TV platforms, acquired from involvement in supply of conditional access technology, to be made available to BSkyB.

5.3 Applying the innovation market concept in merger review

The UK has not applied the innovation market concept in merger review in the strict sense of defining the relevant market as a market for R&D, assessing the competitive effects of incentives to invest in R&D, and efficiencies resulting from a combination of R&D activities. However, the OFT has analysed at least two cases in which innovation played the key role.

First, the OFT considered the acquisition by Microsoft of a 23.6 percent interest in the UK cable operator Telewest. This involved two vertically linked innovative sectors; the supply of software for digital TV set boxes and the supply of cable delivery platforms. The Director General considered the possibility that Microsoft could foreclose the market for set top box software but concluded that, given the evidence available, the risk was "speculative". On this basis the merger was not referred to the Competition Commission. It was not considered necessary to define a market for R&D in order to capture the important dynamic features of this industry. Similarly, it would not have been possible to assess the case by simply using references to potential competition because there were uncertainties as to how the industry would develop and how exactly potential competitors might enter the market. Entry through innovation in a quickly evolving industry could change not only the number of competitors in the market, but also the relevant market itself. The static idea of a contestable market is difficult to apply in these circumstances.

Second, in the proposed joint venture between BSkyB and the Hilton Group Plc, the OFT considered a possible market definition of interactive 'in-vision' betting services, in which the parties would have had 100 percent. In this framework, as already noted, the Director General considered incentives and rewards for innovation as well as the possible anticompetitive effects of particular exclusivity clauses, and concluded that the case was best investigated by the Competition Commission. As before, it was judged unnecessary to define an R&D market in order to properly examine the dynamic effects of this merger. Also as before, it was not possible to have used references to potential competition because the industry was evolving rapidly.

The applications of the merger guidelines chosen in these two cases were not motivated by jurisprudential considerations because, as noted in paragraph 3, the UK guidelines are flexible.

5.4 Mergers in innovation intensive markets where network effects played an important role in the analysis

Network externalities occur when the utility that a user derives from consumption of the good increases with the number of other agents using the good.[22] A critical mass of users can "tip" the market to a monopoly provider. When switching costs are high, consumers can become "locked in" to a particular technology, which may represent a significant barrier to entry.

Network effects played an important role in the OFT's analysis of the merger between Microsoft and Telewest. Microsoft was innovating in software for set-top boxes, but had not yet established itself in this sector. Users (platform operators such as Telewest) chose the software package according to the number and quality of applications that could run on it. Network externalities then arise because increasing adoption of the software package of one developer will increase the incentive for writers of applications software to write for the same software developer's operating systems. This positive feedback will reinforce demand for the original software package. Consequently the market may "tip" towards a monopoly software supplier. In addition, once the written (technical) code is written into a network, the system is difficult to change. To switch software supplier would thus be costly and time consuming. In this case network effects were therefore viewed as a considerable barrier to entry into the market for set-top boxes, which Microsoft would have to overcome.

Conversely, as discussed below, the OFT considered the possibility that network effects may actually help Microsoft to foreclose the market for set-top box software at some point in the future. Briefly, Microsoft's set top box software was to be based on their operating system for PCs (in which a significant amount of human capital had already been invested) and there were considerable commonalties that could allow for tipping effects in Microsoft's favour.[23]

5.5 Non-horizontal mergers with significant threats to competition

There have been a few examples in which non-horizontal mergers in high innovation markets have raised competition concerns. As discussed above, vertical foreclosure appears to be one of the most common ways in which firms in innovative industries are able to exclude competitors.

The proposed joint venture between BSkyB and the Hilton Group (Ladbrokes) discussed earlier would have established the following vertical links:

- A link between the provision of interactive digital television (iDTV) channels and services to the betting services provided on digital satellite television. The JV agreement contained exclusivity clauses relating to betting through BSkyB sports channels while simultaneously viewing the channel, and betting through BSkyB's Internet website.

- A link between the leading provider of digital pay TV and premium sports channels (BSkyB) and a leading betting company (Ladbrokes).

In respect of the first vertical link, the OFT considered the scope for foreclosure of the market for iDTV betting. One question was the ease with which the non-Sky channels could launch betting services on digital satellite. This appeared to be limited, in the first instance, due to BSkyB's intention to charge a fee from any operator that wished to link a betting service to one of its channels. Another question was the ability of digital cable and digital platform operators to launch their own betting services linked to sports channels. This also appeared to be limited in the short run due to technical issues.

In respect of the second vertical link, Ladbrokes would have brought significant management expertise in betting, and would have every incentive to promote the service to new customers. Additional advantages may thus have accrued to BSkyB above those already present. Ultimately this may have given BSkyB the ability to bid for a higher amount for premium sports rights. This may have affected competition for premium sports right and, in turn, for pay TV subscribers.

As already mentioned, this merger was referred to the Competition Commission but was set aside and a non-exclusive deal was subsequently reached.

In addition, the OFT considered the Microsoft's acquisition of a stake in Telewest, the UK cable operator. Microsoft was seeking to establish itself upstream in the development of software for set-top boxes. Telewest was active downstream in the provision of the cable platform. The potential threats to competition were as follows:

- Once Microsoft had a marketable product it might seek to exercise its influence over Telewest (not sourcing software from Microsoft at the time) in an attempt to substitute its own product. However this alone would not give Microsoft market power in the market for software for digital set-top boxes.

- Some third parties were concerned about Microsoft's ability to foreclose competition in the applications market and associated services.

- There was at least the theoretical possibility, given its other strengths, that Microsoft could at some point in the future foreclose the market for software for digital set-top boxes. Microsoft had leading position in other areas of software development, and it was possible, but not certain, that PC and desktop software would converge.

These vertical concerns, in a dynamic and innovative market where the upstream and the downstream technologies were evolving rapidly and the pattern of consumer demand was difficult to predict, were viewed in this instance as "speculative". Consequently the case was not referred to the Competition Commission.

One further example of a case raising vertical foreclosure issues involves the software industry and is discussed in paragraph 60 below.

5.6 Differences as regards information sources when analysing mergers in high innovation as contrasted with slower evolving markets

In all merger cases the OFT gathers additional information from various sources such as customers, competitors, other government departments, trade associations, market research and the Internet.

When considering mergers in high innovation markets, the OFT is likely to use these information sources to address different questions. For example, how the industry is expected to develop, which firms are innovating and the probability of success, how quickly innovations are expected to come on the market etc are all issues that are likely to be explored. Competitors are likely to be in the best position to judge these issues and therefore may play a slightly more significant role than in the analysis of a static market.

However, competitors might have incentives to block the merger in order to prevent the formation of a stronger competitive force in the innovation/R&D market. Indeed, it is recognised that there is potentially bias in many information sources.

6. Remedies

6.1 Examples tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers

While it may be true that in certain cases, "innovation intensive markets are so dynamic that market power will be sufficiently quickly eroded without antitrust intervention", this will certainly not apply in all cases. It is extremely difficult to judge when a market might be sufficiently innovation intensive to justify non-intervention.

Remedies for mergers in innovation intensive industries can be particularly difficult to design, given the inherent uncertainties in predicting how a market is going to evolve and therefore what precise effect the remedy is going to have. However, whilst the issue of finding a suitable remedy is a difficult one, this cannot justify a blanket policy to ignore remedies in high innovation markets where it is believed a merger will have anticompetitive effects. Each case must be analysed on an individual basis and a conclusion reached as to whether market power is likely to be eroded sufficiently quickly and if not, whether any suitable remedies exist.

It is also important to stress, as above, that the adverse effects of a merger on innovation could potentially be more damaging than any reductions in price or other forms of static competition. It might therefore be argued that competition authorities need to be more concerned about adverse effects in innovation intensive industries than in other industries where any potential harm is to static competition. Thus remedies in innovation intensive markets might be of particular importance.

The type of innovation may influence the difficult assessment of whether the market is sufficiently innovation intensive to justify non-intervention. It is important to make a distinction between what might termed as "drastic" and "non-drastic" innovation. Drastic innovation refers to an innovation that is so superior to existing products (or processes) that a new entrant to the market or one with relatively low market share will be able to leapfrog over the technological leader and push that leader out of the market.[24] Not all innovation will be drastic. Some innovations will simply involve a step change in which technological laggards are simply able to catch-up, not overtake the technological leaders.[25] Thus it is also possible that there are some markets that are continually dynamic, and others that go through an innovative phase before maturing. Again, this demonstrates the need to carefully assess the nature of innovation before concluding what impact a merger will have on dynamic and in turn static competition.

The proposed acquisition by Tessenderlo Chemie SA of the Widnes Plant and business of Atofina UK Ltd, discussed in paragraph 28, serves as good example of where it was believed that market power would be quickly eroded as innovation was expected to widen the market and constrain market power. It was therefore thought that no intervention was needed.

Where high switching costs exist, perhaps because of network effects, it may not be worthwhile for a customer to switch to a new product, even when it is technologically superior. This is more likely to be the case in high innovation industries characterised by non-drastic innovation. In these cases, market power may not erode quickly enough to justify non-intervention by competition authorities.

A good example of this is of a case involving the software industry. This particular segment of the software industry was characterised by high innovation, but the innovation had tended to be more incremental than drastic. The market involved several complementary and vertically integrated products. Switching costs in the upstream market implied that customers were locked in to the technology offered by the leading firm. A competitor offering an incrementally technologically superior product would not have been able to erode market power. The competition concern in this case was that once merged, the parties would be in a position to foreclose a vertically related downstream market by refusing to continue to base their software on open standards.

One possible remedy in this case would have been to force the merging parties to keep their software on an open standard or at least licence others to allow for interoperability between the vertically integrated products of different vendors.

6.2 Examples of contingent remedies adopted in relation to mergers in innovation intensive markets

Innovation has not been the prime focus in the majority of the mergers looked at in this paper, despite the fact that they have been in innovation intensive markets. It is perhaps for this reason that the remedies sought to address the competition concerns in these mergers have not tended to be specifically customised or to be contingent on any future levels of product development. Instead, the remedies have tended to focus on solving other, more static competition concerns.

The Competition Commission's recommendations have nevertheless recognised that there is a need to monitor developments in innovative markets. For example, in the merger between NTL Incorporated and Cable & Wireless Communications Plc, involving the operation of cable telephone and pay TV services, there was considerable uncertainty about the potential competition from other platforms, including the new use of the ordinary telephone network. The Competition Commission recommended clearance, but its report stated that:

> "Should NTL – or the cable industry in general – prove to have market power in future, the industry is already subject to a regulatory structure with the powers to examine such issues at that time to remedy any adverse effects that may be seen to have arisen." [26]

6.3 Examples of remedies that were customised to deal with mergers in innovation intensive markets

Again, remedies in UK merger cases have not tended to be customised for high innovation industries. However, the example of the merger in the software industry given above illustrates how a remedy might be implemented to tackle the specific issues arising from a merger in an innovation intensive market. In this case, a licensing remedy would have allowed the parties to exploit synergies from having a wider portfolio of goods (that might enabled them to innovate by combining these products) whilst at the same time preventing any loss of static competition in the downstream market.

7. Conclusion

This paper has offered an insight into the UK's experience of merger review in high innovation markets. There have actually been few UK cases where it was appropriate to place innovation at the forefront of the analysis, partly because many mergers in innovative industries are caught under the

European Community Merger Regulation (ECMR) rather than national legislation. Innovation issues are not confined to innovation intensive markets and analysis of innovation is typically carried out in conjunction with, rather than instead of, standard economic analysis of a merger case.

Many of the cases examined in this paper have involved issues of vertical foreclosure. This appears to be a common way through which merging firms are able to exploit complementarities typically associated with innovative industries to their own advantage. Other cases have involved a static/dynamic efficiency trade-off. Here the interactions between the different levels of competition need careful, in depth analysis on a case by case basis. One important difficulty is the inherent uncertainty surrounding future innovations.

Whilst the Competition Commission recognises the need to monitor developments in innovative industries in its merger recommendations, the remedies adopted in these sectors do not seem to be especially customised or to be contingent on any future levels of product development. This reflects the general line that innovation has rarely been the prime focus of UK merger investigations.

To sum up, the UK competition agencies are well aware of the challenges associated with merger review in innovation intensive markets and have commissioned various research reports on this topic in order to inform the analysis. Although the OFT does not follow a prescriptive approach to analysing innovative markets, the legislation is flexible enough to allow a thorough examination of complex static and dynamic issues.

ANNEX: SUMMARY OF MERGERS DISCUSSED IN THIS PAPER

Parties	Date of OFT recommendation	Market	Innovation issue
Neopost/Ascom Holding	December 2001	Postal franking machines	Co-ordinated effects unlikely due to innovation
BskyB/Hilton Group	September 2001	Interactive digital television betting	Vertical foreclosure in innovative market Static/dynamic efficiency trade-off
Tessenderlo Chemie/Atofina UK	July 2001	Acid	Innovation giving rise to potential competition
Microsoft/Telewest	November 2000	Software for digital TV set top boxes	Vertical foreclosure in innovative market Network effects
BskyB/British Interactive Broadcasting	September 2000	Digital interactive services, Pay TV and the wholesale supply of premium film and sport channels	Vertical foreclosure Cross subsidisation
Vivendi/BSkyB	November 1999	Pay TV services	Exclusion of competitors
NTL/Cable & Wireless Communications	November 1999	Cable telephone and pay TV services	Need to monitor innovative industry
Advice not published	Advice not published	Software	Vertical foreclosure in innovative market Licensing remedy may be appropriate
Advice not published	Advice not published	Exchanges	Static and dynamic analysis

NOTES

1. http://www.oft.gov.uk/business/mergers/merger+-+publications.htm

2. http://www.oft.gov.uk/News/Publications/Leaflet+Ordering.htm

3. http://www.oft.gov.uk/News/Publications/Leaflet+Ordering.htm

4. Tessenderlo's acquisition of the Widnes Plant and business of Atofina UK Ltd. See http://www.oft.gov.uk/business/mergers/advice/clearances+and+referrals/widnes.htm

5. http://www.oft.gov.uk/business/mergers/advice/clearances+and+referrals/microsoft.htm

6. http://www.oft.gov.uk/Business/Mergers/Advice/Clearances+and+referrals/BSKYB-Hilton.htm

7. N.B. this is a different argument to the need for high profits in existing markets to fund innovation.

8. Aghion, Harris, Howitt and Vickers "Competition, Innovation and Growth with Step-by-Step Innovation" *Review of Economic Studies* 2001, Vol 68 Issue 3.

9. When a drastic innovation occurs, a firm that innovates will push other firms out of the product market. This is explained in more detail in section VI below.

10. There was no increment because this was a completely new market.

11. http://www.oft.gov.uk/Business/Mergers/Advice/Clearances+and+referrals/BSKYB-Hilton.htm

12. http://www.oft.gov.uk/Business/Mergers/Advice/Clearances+and+referrals/BSKYB-Hilton.htm

13. The OFT does not have to reach a final view on jurisdiction, it only needs to have a belief. The Competition Commission ultimately recommends to the Secretary of State for Trade and Industry whether the merger qualifies for investigation under the Fair Trading Act.

14. The Enterprise Bill is set to replace the world-wide assets test with an UK turnover test. The initial threshold is proposed to be £45million, with special provisions for money-handling organisations such as banks and credit institutions.

15. http://www.oft.gov.uk/Business/Mergers/Advice/Clearances+and+referrals/BSKYB-Hilton.htm

16 http://www.oft.gov.uk/Business/Mergers/Advice/Advice+on+undertakings/British+Sky+Broadcasting+htm

17. http://www.oft.gov.uk/business/mergers/advice/clearances+and+referrals/widnes.htm.

18. http://www.oft.gov.uk/business/mergers/advice/clearances+and+referrals/neopost+sa.htm

19. The expected date of publication of the Competition Commission report is late May/ early June 2002.

20. Intellectual Property Rights – a Draft Competition Act 1998 Guideline November 2001. Available at http://www.oft.gov.uk/

21. http://www.competition-commission.org.uk/reports/440vivendi.htm#summary

22. S.Borenstein "The evolution of U.S. Airline Competition", *The Journal of Economic Perspectives* (1992)

23. An interesting application of the issue of network effects and tipping is in B2B markets. The EC has looked at this in a paper "B2B E-Marketplaces: A New Challenge to Existing Competition Law Rules?", presented at the Conference "Competition Law and the New Economy" at the University of Leicester, 12th-13th July 2001.

24. This is of course the Schumpeterian idea of creative destruction.

25. Aghion, Harris, Howitt and Vickers "Competition, Innovation and Growth with Step-by-Step Innovation" *Review of Economic Studies* 2001, Vol 68 Issue 3.

26. http://www.competition-commission.org.uk/reports/437ntl.htm#summary

UNITED STATES

Competition analysis in high innovation markets is an area of growing importance, as evidenced by the increasing predominance of "new economy" markets, the "knowledge economy," and waves of mergers in industries characterised by high technology. The Secretariat's Issues Paper on merger analysis in high innovation markets raises a number of important questions for discussion. We will address the issues raised in the Secretariat's Paper from the perspective of our experience in analysing mergers in such markets.

1. Competition Policy in High Innovation Markets

As noted in the Secretariat's Issues Paper, high innovation markets can have a number of characteristics that are not as prevalent in other industries, such as a high level of research and development (R&D) activity, the importance of intellectual property, rapid change, increasing returns to scale, network effects, standards issues, and a high degree of technical complexity.[1] These characteristics, in turn, can affect the nature of competition. Competition may focus on non-price attributes, such as performance characteristics, rather than price. Innovation itself may be an important form of competition, as firms strive to differentiate themselves or develop a new generation of products and services.

The implications of these characteristics for competition analysis do not all run in the same direction. Rapid change, for example, can increase the difficulty of predicting future market conditions and may make collusion less likely, as can non-price competition.[2] Factors such as standardisation and network effects, on the other hand, lend stability to the market and can contribute towards market dominance.[3] In addition, non-price competition issues may not be as readily addressed by traditional models that focus on price and output.[4]

Further complicating the analysis is the possibility that rapid technological change does not necessarily translate into rapid change in the market. The PC microprocessor industry, for example, is characterised by rapid technological change, but change in market structure has been slower. Nor does a high level of R&D necessarily translate into short product cycles and rapid entry. Consider, for example, the pharmaceutical industry, where product development can take a long time, and the regulatory approval process can further delay commercialisation. Similarly, some aerospace and defense markets, while clearly characterised by high technology, involve long lead times to market.[5]

These examples serve to illustrate that assertions of antitrust irrelevance in high-tech markets – because change is too rapid, the markets are self-correcting, and, in any event, the markets are too complex and the technology too difficult to understand – sweep far too broadly.[6] Investigations have found that market power can be illegally accumulated and abused in high tech industries as it can in more traditional industries. Even among products and industries where competition is based on innovation, dominance in one generation may enable a firm to gain exclusive control over critical inputs that would enable monopoly power to be carried over from generation to generation without regard to the relative merit of later generation products. Dominance may also persist due to large sunk costs, network effects, an installed base of customers, and other entry barriers.[7] Antitrust, therefore, not only is relevant to high tech markets, it is essential to preventing abuses of market power. Further, competition spurs innovation.[8] The

characteristics of high-tech markets do suggest, however, that antitrust laws should be applied cautiously, informed by the facts of the specific situation. That is not unique to high innovation markets, however. Merger analysis in any market, whether or not high-tech, is highly fact-specific.

The Secretariat's Issues Paper asks about "the general advisability of working out special arrangements, published or not, for dealing with mergers in high innovation markets." While high innovation markets may have some characteristics that are not as prevalent in other industries, experience to date has not suggested a need for special rules or special arrangements.[9] The analysis must take into account the particular characteristics of high innovation markets – just as it must in any other industry – but the analytical methodologies are essentially the same as they are for other markets.[10] The US antitrust agencies apply the analytical principles outlined in their Merger Guidelines.[11]

In the mid-1990s, the US antitrust agencies supplemented the Merger Guidelines in one significant way, however. They developed and applied an "innovation market" analysis specifically to address the possibility that some mergers may adversely affect innovation in ways that are not addressed by more traditional merger analysis.[12] In that context, an innovation market refers to one of several potentially relevant markets (along with "goods markets" and "technology markets") in which to analyse the likely competitive effects of a merger or acquisition.[13] Certainly, the recognition that innovation may be important to understanding the competitive impact of particular mergers is an important insight. Moreover, the concept of an "innovation market" raises interesting and provocative questions for enforcers. Nevertheless, as discussed in Part III of this paper, the agencies' adoption of innovation market analysis has been the subject of some criticism.[14]

Mergers can also promote, rather than hinder, dynamic efficiencies, of course. In that context, the Secretariat's Issues Paper asks whether a trade-off should be allowed between static and dynamic efficiency effects – i.e., whether potential dynamic efficiency benefits from a merger should be allowed to counterbalance adverse near-term price effects. There are no hard and fast rules for addressing a situation of that nature. It is a complicated issue, but one that is not unique to high-tech markets. The issue may be equally important, if not more so, when a proposed merger in an otherwise static industry promises to generate dynamic efficiency benefits, for the merger may induce beneficial industry-wide changes.

In many cases the issue can be resolved through the choice of remedy. Often, a partial divestiture or licensing arrangement will be sufficient to resolve a near-term competitive concern while permitting the remainder of the transaction, and attendant efficiencies, to go forward. It usually is not necessary to block the entire merger. Innovation market cases are not unique in this regard. Where such a remedy is not possible, of course, difficult issues arise. For example, the Secretariat's Issues Paper asks, *"If such tradeoffs are made, how certain and well defined should future innovations have to be, i.e., how close to being actual products?"* That is a critical question since, as a matter of logic, any such balancing would have to take into account the likelihood and magnitude of future benefits,[15] the degree of certainty and magnitude of near-term consumer harm, and the difference in timing of the two events,[16] and weigh effects that may be qualitatively different, such as near-term price increases and future quality improvements. The analysis is intrinsically difficult.[17] Whether such a trade-off should be undertaken involves broader issues of public policy. Some FTC staff in the recent past have been unwilling to permit "competition in an existing market [to] be sacrificed so that the companies could more effectively compete in a different market several years in the future."[18] They took the position that dynamic efficiencies must generate benefits in the present goods market, not some future market, within two years.[19]

2. Assessing Threats to Competition

2.1 Calculating Market Shares

The Secretariat's Issues Paper asks whether competition agencies modify traditional merger screens, such as calculation of pre- and post-merger concentration levels, in analysing transactions in high innovation markets. It sometimes is appropriate to do so, but not always. In some cases, pre- and post-merger concentration levels are useful pre-merger indicators of a transaction's possible effect on competition, even in high innovation markets.

In other cases, where the focus of the competition analysis is on the firms' R&D positions, innovation, or future product development, market shares may not be the best predictors of the future. In such cases the agencies have looked at different factors to make preliminary assessments of a merger's impact on a highly innovative market. For example, in certain biotechnology or pharmaceutical cases where no product has yet reached the market, market share information is not likely to be very useful. Instead, FTC staff often looks to other indicators of future competitive significance, such as the companies' positions in the Food and Drug Administration (FDA) approval process. In matters involving next-generation defense or aerospace products, FTC staff may look at the companies' investment levels, R&D progress, experience in previous generation products, and success in related markets.

Determining market shares was a challenge in the 1998 DOJ and EU investigations of MCI/WorldCom (discussed below) involving the Internet because there was no commonly accepted method and there were legitimate questions about the accuracy of each method. The DOJ and EU examined market shares using a variety of methods: shares of overall Internet industry revenues generated by Internet Service Providers (ISPs) connected to a specific backbone; percentage of ISPs connected to a specific backbone versus the total number of ISPs connected to all of the backbones combined; Internet traffic originating, terminating, or otherwise traversing an Internet backbone's network (a measurement of size and significance of a backbone relative to other competitors); a revised revenue share that attempted to eliminate the double counting and irrelevant revenues; the number and type of Internet Points of Presence ("POPs") on a backbone's network; the number of circuits connecting customers to a backbone (which would correct for differences in customer size/significance); the number of "routes advertised" (or terminating IP addresses) - the density of a provider's network and web of customers; and, finally, the number, type, and significance of each network's customers. By any measure of market share, none of which was perfect, MCI/WorldCom would be the dominant player in the market, and substantially larger than any other player.

2.2 Nature of threats to competition/Competitive Effects Theories

We discuss in this section certain of the competitive effects issues raised in the Secretariat's Issues paper – unilateral vs. co-ordinated effects, exclusionary effects, network effects, and competitive effects of non-horizontal mergers. We then discuss possible information sources for determining whether a high-innovation merger will result in harm to competition. Innovation market analysis – and whether the term "innovation markets" adds anything useful to merger analysis – are discussed in Part III of this paper.

2.2.1 Co-ordinated versus unilateral effects

The agencies' merger cases in innovation-intensive markets to date have principally focused on the likelihood of unilateral conduct and exclusionary effects. While we agree generally that collusion may be more difficult in high innovation markets, we do not rule out that theory of harm.[20]

2.2.2 Exclusionary effects

Several FTC cases have alleged that the merger may facilitate the exclusion of competitors. This has occurred in both horizontal and vertical mergers. In Ciba-Geigy,[21] for example, the merger with Sandoz Ltd. involved, in part, a consolidation of competing portfolios of intellectual property relating to gene therapy. Pre-merger, both firms stood as licensing opportunities for third parties wishing to engage in both the development and commercialisation of gene therapy products. The merger would have removed that option for third parties, leaving them to deal with a single licensing entity with changed incentives and thereby affecting the terms on which they could license intellectual property, if licenses were available at all.[22] The merger also would have made it potentially more difficult to invent around the parties' patents.[23]

2.2.3 Network effects

Network effects were important to the DOJ's analysis of the competitive effects of WorldCom Inc's acquisition of MCI Communications. The investigation focused on the Internet backbone market and on how the merger would affect the industry. The Internet, at its very core, is a way of interconnecting different computer networks; in other words, the Internet is a way of making different computer networks compatible. The key to the Internet is that any Internet Service Provider (ISP) supplies access to the entire Internet. Without this interconnection, the Internet would lose much of its value because the network effects would be lost.

The area of most significant competitive concern was the provision of Internet backbone services, or the provision of ubiquitous connectivity to the Internet. The merger would have combined two of the four leading nation-wide or world-wide Internet backbones; MCI and WorldCom were the leading providers of wholesale Internet transmission services to ISPs and of dedicated access services to large businesses. The investigation focused on what effect this combination, which would have created a dominant player in the provision of backbone services, would have had upon interconnection and access to the various networks that make up the Internet. The DOJ also examined whether the merger would give rise to market power through the powerful network effects that characterise the Internet.

While there have been changes in the Internet market since the investigation, at that time the providers of Internet connectivity could be classified as a loose hierarchy broken down into roughly four tiers.[24] At the top were nation-wide (or world-wide) Internet backbones, which provide nation-wide Internet services using extensive owned or leased fibber facilities. They generally have peering[25] arrangements or private peering connections with the other national backbone providers and are "transit-free," so they do not have to rely on transit agreements. UUNET (owned by WorldCom) and iMCI are examples of these large national backbone providers. The second group of providers are national Internet backbone networks that use facilities leased from underlying fibber telecommunications providers, but which pay transit fees to one or more national backbone providers. A third group comprises the Regional or local ISP Internet connectivity providers, which lease some regional or local network fibber facilities and equipment and interconnect with other small providers at the public Network Access Points. They typically purchase transit backbone services from any of the national backbone providers. The last group

is made up of ISPs that do not have a network, but instead rely on others for wholesale Internet connectivity services.

Given this complex and highly technical web of relationships, and the highly dynamic nature of a market characterised by rapid technological change, defining a relevant product market was a challenge. Discussions with competitors, customers, industry experts, and the parties, revealed that there seemed to be a national backbone market.[26] This market was highly concentrated, with several significant competitors including UUNET, iMCI, and Sprint. The merger would have combined the facilities, personnel, and, perhaps most importantly, the customer bases of iMCI and UUNET, the two top backbone providers. The combined entity would have been by far the largest single nation-wide backbone and Internet connectivity provider with an overall majority of customers (web sites, ISPs, and dedicated access corporate customers) connected to the Internet. Post-merger market shares for Internet connectivity ranged from 40-75 percent, depending on what measure of market share was used.[27]

In addition to a concern that the merger would facilitate tacit collusion, the DOJ was concerned about what effect it would have on the existing network. Prior to the MCI/WorldCom merger, no single backbone provider reached a disproportionate amount of destinations on the Internet relative to other major players. There was a rough equality, with each backbone provider depending on the other. Each backbone provider, therefore, had an incentive to support efficient interconnections because its failure to do so would have caused such a degradation of quality that it risked losing customers to the other networks. That incentive would change, however, if the two largest backbone providers were combined. But the MCI/WorldCom merger threatened to create a very large network with a huge size disparity. By representing a majority of the Internet customers, MCI/WorldCom would have been more valuable and been more important as a point of interconnection for other Internet providers, which would otherwise lose access to a great deal of the Internet. MCI/WorldCom would have far less need to depend on the other backbones than those backbones would have to depend on it. By giving MCI/WorldCom a disproportionately large customer base, the merger would have changed MCI/WorldCom's incentives from favouring compatibility toward favouring incompatibility. Recognising this, there was widespread industry concern about the effects of the merger on peering arrangements and on interconnection prices.

MCI/WorldCom's changed incentives would have increased the likelihood that it would attempt to tip the market by charging existing peers for interconnection or by degrading the quality of interconnections. MCI/WorldCom would have been able to do this, either through unilateral action, or through collusion with the only remaining player with a significant market share. The disproportionate dependence that other backbones would have had on MCI/WorldCom would have given it bargaining leverage to dictate the pricing and terms of interconnection. MCI/WorldCom could have begun charging peers for interconnection to its network, either all at once or on an individual peer-by-peer basis (by picking off the smallest rivals first), raising the costs of its rivals. MCI/WorldCom then could have chosen either to raise its own prices with that of its rivals, or to keep its price lower and let the market tip towards it, possibly leading to monopoly control of the Internet. Or MCI/WorldCom could have degraded the quality of its competitor's interconnections to its network. It could have done this either actively or passively, by not investing in the interconnections needed to keep up with the massive growth, and it could done this either to all competitors or on an individual basis. Interconnection points are constantly upgraded to keep up with the exponential growth of Internet traffic; any slowdown in the upgrading of these points would have serious effects on the quality of the connection. While this strategy would lower the quality of service for all networks, rivals' networks would suffer more degradation, allowing MCI/WorldCom either to increase its own prices, reflecting its better quality, or to gain market share. Again, with this strategy the market could have tipped to MCI/WorldCom, giving it monopoly control of the Internet. Under either scenario, WorldCom would have been able to purchase, through its acquisition of iMCI, market power and gain a monopoly, or at least a dominant, position in Internet backbone services.

Interconnection of multiple firms is not always the best or least costly way of achieving network efficiencies, but the history of interconnection in this industry suggests that it was in this case. Moreover, the parties failed to present any evidence suggesting that interconnection was inefficient or that it would be more efficient for MCI/WorldCom to be a monopoly provider. At this early, but critical stage where the development of cost-based pricing and other terms and conditions for interconnection are expected to be developed through bargaining among the industry's participants, allowing one player to achieve dominance through acquisition could have had an irreversible anticompetitive impact on this market. So the options were either to try to block the merger or find another way to address the competitive concerns.

Since entry was not going to constrain a dominant MCI/WorldCom, any remedy had to create a viable competitor that would replace iMCI as a principal player in the national backbone market. The only way this was possible was through the divestiture of MCI's entire Internet business. The relief was not intended to preclude MCI/WorldCom from eventually achieving a monopoly position. The DOJ believed it was possible that the market would tip in the future. However, if that happened, it wanted to be sure it was because the company out-competed the other networks, and not because it had purchased customers via merger.

2.2.4 Non-horizontal mergers

A number of vertical merger cases in the defense industry have raised anticompetitive concerns of a different nature. Firms in the industry historically have had complex horizontal and vertical relationships in numerous separate projects. The principal concerns have not been with total foreclosure or requiring two-level entry, but rather with strategic use of information gained in one project to obtain competitive leverage in other projects. As a result of a vertical acquisition, a firm may relate to a rival as both a horizontal competitor and a customer or supplier. In its position as customer or supplier, the merged firm may gain access to competitively sensitive information concerning its horizontal competitors. Competition may be affected in several ways. If, for example, the merged firm gains access to competitively sensitive information that reduces its uncertainty about a competitor's bids in a downstream market, the merged firm may be able to bid less aggressively in that market. In addition, by gaining access to its competitors' proprietary design information, long-run innovation may suffer as rivals would be less willing to invest in R&D because its vertically integrated rival could free-ride off its efforts.[28] Similarly, if the non-integrated firm believes that it faces exclusion or discrimination from the integrated firm, it may choose to withdraw from the market or compete less aggressively.[29]

2.3 Information Sources

When we're determining if innovation competition will be harmed, we first attempt to understand what drives the innovation. Does it come from existing players? Customers? Component suppliers? Collaborators? How has the innovation occurred? Do each of the players have an equal role? Are some leaders and others followers? In other words, we look for the market-specific, firm-specific facts about innovation. To do that, we consider the current market structure; the pace, predictability, and history of innovation in the market, as well as the historical innovation role of each firm; the relative capabilities of the merging firms; and the effect of the loss of variety. We learn this through interviews with competitors, potential entrants, and other industry experts. We also look to see if innovation requires specific and unique assets that are not easily acquired, but can nonetheless be reliably identified. Specialised assets will vary across industries but can include key physical assets, experience, production ability, or even, as in many high-tech industries, intellectual property.

After determining the likely source of innovation, we then attempt to answer the following questions: Does the merger affect incentives to perform R&D? Will overall R&D spending decrease? What will happen to the efficiency of the R&D effort? Will the merger affect the diversity of likely innovations? Does the merger result in vertical integration giving the merged firm an incentive to exercise an in-house bias? In other words, we strive to define whether the merger changes the rate or type of innovation.

Many mergers that enhance efficiency can enhance innovation by creating a more effective innovator. There are some instances where R&D truly is redundant and, after a merger, some of those resources could be put to better use in other fields. It's also possible that other merger efficiencies could free up resources to be used for R&D. Combining innovators also may be beneficial when either the different innovation strategies being pursued are complementary, so that a combination of the two would create a better final product, or when the firms have complementary core competencies, such as a merger between a company with strengths in marketing and distribution and a firm strong in innovative design. These pro-innovation mergers generally occur in situations where the innovation path is predictable, where the merging firms pursue similar strategies, and where there are few fringe players.

Other mergers that reduce duplication can diminish innovation and have social costs. By reducing the number of firms, you reduce the likelihood of achieving the most efficient outcome. The more attempts there are, the greater the chance that someone will get it right. Determining what the effect will be is the difficult and challenging task of the antitrust enforcer.

The Secretariat's Issues paper asks whether there are there any important differences regarding the information resources agencies depend on when analysing the competitive effects of mergers in high innovation as contrasted with slower evolving markets – e.g., do competitors play a larger or smaller role? Sources of information may vary to some extent depending on the nature of the investigation and the issues being investigated. For example, where the issue focuses on the R&D efforts of the merging companies and market-wide, the firms competing in the market likely would have more and better information than would customers, particularly as to relatively early stages of the development process. On the other hand, where the issue focuses on existing product competition or the potential entry of products in a regulatory approval pipeline, such as pharmaceuticals, customers also may be knowledgeable sources of information.

3. Innovation Markets

Traditionally, innovation has been viewed as a simple output of R&D spending; the more money that is invested in R&D, the greater the amount of innovation. Under the traditional view, all innovation is viewed as the same, no matter which firm engages in it or what the market structure is. Recent economic literature on innovation looks more closely at how innovation works, focusing on whether innovation is firm or market-specific. That is, different types of firms and different market structures create different types of innovation and at different paces. Even if two firms are attempting to achieve the same goal, they will approach this effort in different ways, making different choices along the way. Knowledge varies among firms in a market, and each firm has its own innovation strategy. Thus, the number of firms in a market will affect the number of judgements about promising innovation strategies, which in turn will affect the type and pace of innovation. Under this dynamic view, innovation is driven by the flow of ideas within a firm and between rivals, not simply by the amount of R&D spending.

Some may argue that the R&D efforts at multiple firms are redundant and inefficient. While this may be true in some circumstances, duplication often means pursuing different strategies to reach the same goal, and it can get you there sooner with greater certainty. Duplication is not necessarily or even inherently wasteful, and it can be especially useful in high-tech and emerging growth industries where the

best innovation strategy is often unpredictable. Or in the words of one economist, "[g]iven uncertainty, multiple R&D efforts in competing firms may be the most effective way to explore the technology space."[30] It is a matter of judgement as to the extent that one R&D effort duplicates another, and even small differences can make one attempt successful and another a failure.

There is increasing evidence that a firm's size and position within the market affects the nature and the type of innovation it is engaged in.[31] This is because firms are differentiated by their size, position in the market, and core competencies, and because each firm will innovate so as to capitalise on its strengths. A large firm's main strengths are that it has the scale economies in research or in complementary activities, like manufacturing and distribution, to enable it to bring an invention to the marketplace, as well as having a greater ability to finance R&D. It is also more bureaucratic and stable. To utilise fully its strengths, it needs the path to innovation to be predictable. Innovation may be sweeping and fast, but it needs to be predictable.

Small firms, on the other hand, are more entrepreneurial and can respond more quickly to unexpected opportunities. At the same time, they have fewer resources to spend on R&D; are more likely to fail; and because of a lack of strong manufacturing and distribution channels are less likely to have the resources to bring the invention to the market.

There are also significant differences in the way established leaders in an industry innovate as compared to challengers. This is because leaders have different goals and strengths than challengers. Leaders tend to innovate to reinforce their positions or to enhance their core competencies. For example, they may attempt to use their innovations to maintain strict, possibly proprietary standards. Typically, market leaders focus on incremental innovation - improving their current products in a "bells and whistles" fashion, making incremental improvements to their products to cement their market dominance. These improvements can be significant, but they are not likely to change the status quo.

Market leaders are often constrained by institutional commitments to existing products or production methods that by necessity impact their innovation strategy. These commitments can be firm-specific skills, investments in complementary assets, customer expectations, patent holdings, or even a preference for an established way of doing business. They also have to be concerned about the possibility of cannibalising existing products. Having less to gain from a radical, new design than a challenger, they are less likely to pursue disruptive technologies or to embrace new innovations that would threaten their dominance.[32]

New firms or challengers, on the other hand, are looking for opportunities to upset the leader's position and to change radically the competitive situation, eliminating or diminishing the leader's market dominance. What they strive to do is overthrow the status quo by destroying or undercutting the leader's competence. They do this by creating new fields of technology or new skills where the leader does not have expertise or an established position. They are more willing or able to venture into completely new and untested directions because they have less of a vested interest in the current technology and are not tied to sunk investments in obsolete technologies. While they are more likely to fail, they are also more likely to provide the great technological leap forward that the dominant firm is unwilling to embrace. It is through this "leap-frog" competition that they are able to establish themselves.[33]

3.1 Criticism of Innovation Market Analysis

The Secretariat's Issues Paper asks whether application of the innovation market concept in merger review was "motivated by jurisprudential considerations or because the concept adds something that cannot be dealt with just as well using references to potential competition."[34]

The adoption of innovation market analysis has been subject to considerable criticism. This criticism reflects the fact that there are no clean answers as to how market structure is related to innovation – or, for that matter, how R&D expenditures are related to innovation. For example, economist Richard Rapp takes issue with the premises that (*1*) an increase in R&D concentration is likely to reduce the amount of R&D undertaken, and (*2*) reducing the amount of R&D is likely to diminish innovation.[35] Rapp notes that "[t]he connection between market structure and innovation has been debated by economists for decades without resolution."[36] Rapp relies in part on a 1992 article by FM Scherer for the proposition that "the effects of firm size and concentration on innovation appear not to be important."[37] Rapp also argues that there is no clear connection between R&D inputs and innovation,[38] that it is difficult to monopolize the capacity to innovate,[39] and that product and technology markets are sufficient to deal with concerns relating to loss of R&D competition.[40]

Rapp correctly points out that a crucial aspect of innovation market analysis is the identification of the specialised assets or characteristics needed to compete successfully in the market and the firms that possess them. His criticism is that the antitrust agencies have not articulated a "policy" to guide the analysis so that it is predictable.[41] Specialised assets will vary across industries, of course, but the essential analytical criterion is that the specialised assets or characteristics be reliably identified. Examples include key physical assets, experience, production ability, and, as in many high-tech industries, intellectual property. Whether any such assets are needed in a particular market requires a case-specific analysis, but the inquiry is relatively straight-forward. That is not to suggest that the analysis is necessarily easy. It is difficult to predict, for example, whether innovative, market-transforming entry might come from firms currently engaged in a different market. That possibility counsels caution in applying innovation market analysis, and the inquiry may have to extend beyond current market participants.

Although there may be answers to particular questions raised by Rapp, Rapp is certainly correct in highlighting the lack of certainty in this area. This is not to say that we do not worry about R&D competition or competition to develop new products. It does suggest, however, that any merger-specific concerns we have should be narrowly focused on situations where there is enough development that we have some idea of what is likely to be produced from the R&D, who are likely to be the players competing to produce the future products, and that the merger is likely to reduce this future competition in a significant way. In such situations, the existing Merger Guidelines framework generally would appear to suffice, without frequent resort to the "innovation market" concept. Moreover, we believe that various merger enforcement actions of recent years that employed the "innovation market" term could in all likelihood legitimately have been brought using the tools of traditional analysis. (There may, nevertheless, be situations where insights drawn from "innovation market" analysis would prove helpful.)

3.2 Ciba-Geigy/Sandoz

Consider, for example, the FTC's 1997 challenge of Ciba-Geigy's proposed acquisition of Sandoz. This case marked new ground in alleging an innovation market for a new class of medical therapies – gene therapy products for the treatment of cancers and various other medical conditions.[42] There were no such products licensed by the FDA at the time. The complaint noted that the first products would not be available until the year 2000, but that the market could grow to $45 billion by the year 2010. The technology at issue involves the treatment of disease through manipulation of genetic material and insertion or reinsertion into a patient's cells. Although there were many firms doing pioneering research into gene therapies for various disease states, the merging firms were two of only a few entities with the intellectual property rights and other assets necessary for commercialisation of such therapies. The firms' combined position in gene therapy research was so dominant that other firms doing research in this area needed to enter into joint ventures or contract with either Ciba-Geigy or Sandoz in order to have any hope of commercialising their own research efforts. Competition between the two firms made possible such

ventures or contracts on reasonable terms. Without competition, the combined entity could have appropriated much of the value of other firms' research, leading to a substantial decrease in such research. The merger therefore would have diminished both the incentives and the ability of other firms to develop competing products. In addition, and very importantly, there was direct competition between the two companies with respect to specific therapeutic products.[43] Given this direct competition in particular product markets, and the specialised nature of the research involved, we believe that this case easily could have gone forward without reliance on an innovation market.

Consider as well other FTC pharmaceutical cases alleging an innovation market, including Baxter Int'l, Inc., Dkt. C-3726, 123 F.T.C. 904 (1997) (consent order) (Baxter and Immuno were two of only a few companies seeking FDA approval for fibrin sealant, a product derived from blood plasma that controls bleeding in surgical procedures, in US market with no current producers); Upjohn Co., Dkt. C-3638, 121 F.T.C. 44 (Feb. 8, 1996) (consent order) (Upjohn and Pharmacia were two of only a few firms in advanced stages of developing topoisomerase I inhibitors, which are drugs used in conjunction with surgery to treat colorectal cancer); and American Home Products, 119 F.T.C 217 (Feb. 14, 1995) (consent order) (merger between two of three developers of rotavirus vaccines). Given the nature of the direct product market competition in these cases, they too likely could have proceeded without resort to innovation market terminology.

3.3 Digital Equipment/Intel

In the computer industry, an innovation market was one of three that was cited as raising concerns arising from a 1997 transaction between Digital Equipment Co. and Intel, involving Digital's Alpha microprocessor. The microprocessor market is another in which recent successful innovation had been limited to only a few firms, and Digital and Intel were aggressive rivals for next generation products. In addition, Digital's Alpha microprocessor was a significant competitor both to Intel's Pentium microprocessor and to Intel's next generation IA-64 microprocessor. In May of 1997, both firms sued each other for patent infringement by their respective products. In October of 1997, the companies settled the suits by agreeing to broad patent cross-licenses, the sale of Digital's microprocessor production facilities to Intel, and an agreement that Intel would produce Alpha microprocessors for Digital, which retained the intellectual property rights to Alpha.

The FTC was concerned that this agreement would have reduced competition in three separate markets: *1*) the manufacture and sale of high-performance, general purpose microprocessors capable of running Windows NT in native mode; *2*) the manufacture and sale of all general purpose microprocessors; and *3*) the design and development of future generations of high-performance, general purpose microprocessors. In each of those markets, Digital's Alpha chips happened to be the highest performing and most technologically advanced threat facing Intel's own microprocessors. The Commission was concerned that Alpha would not remain competitively viable under the original terms of the agreement. Intel could have interfered with Digital's supply of Alpha chips and Digital might not have had the incentive to continue actively to develop and promote Alpha.

To resolve these concerns, the Commission entered into a consent order under which Digital would license the Alpha architecture to Samsung and AMD or other suitable partners so that they would be able to produce and develop Alpha chips.[44] Digital also agreed to begin the process of certifying IBM as a foundry for Alpha chips, thus establishing a manufacturing alternative to Intel. This relief preserved the Alpha chip as a viable product and a competitor to Intel's microprocessors.[45] Given the product specificity of the competitive concerns here, we believe, once again, that this case probably could have gone forward without resort to the innovation market concept.

3.4 Halliburton/Dresser

The DOJ's complaint challenging the Halliburton/Dresser merger alleged that the merger would result in increased prices and decreased quality for logging-while-drilling ("LWD") tools and services for oil and natural gas drilling projects, as well as in decreased competition in the development and improvement of LWD tools. LWD services provide information to oil and gas companies about the formations through which the companies are drilling, whether there is oil in the formations, and the ease with which oil can be extracted. Total world-wide revenues for LWD services in 1997 exceeded $500 million.

The LWD market was characterised by a few dominant companies, known as the Big Four (Schlumberger, Halliburton, Dresser, and Baker Hughes), and a number of smaller fringe players. Historically, the pattern of innovation had been that one of the Big Four (or its predecessor) developed a new LWD tool, improvements for that tool, and then an even more advanced model. After these innovations, the smaller companies would either buy an older generation of the tool from one of the Big Four, or they would spend several years attempting to create their own versions of the tool. By the time the smaller companies had created their own versions, the Big Four had created something new. In the history of the LWD market, no firm outside the Big Four had entered the LWD market with a major innovation. Under these facts, it was clear that the Big Four had specialised innovation assets that no other firm possessed, and the merger would have combined two of the only four major innovators.

Even though the firms promised to increase R&D spending if allowed to merge, the DOJ believed there was a significant anticompetitive problem for two main reasons. First, there was no single innovator among the Big Four. The breakthrough innovations were spread out among the group, so that all four of the companies had recent significant innovations. Second, and more importantly, Dresser and Halliburton had two very different innovation strategies. They approached R&D in significantly different ways. Dresser did little or no pure research (in the sense of expending funds purely to gain knowledge and not to develop a commercial product) and was less concerned about being the first to market with a new innovation. It preferred to learn from the mistakes of others. Halliburton, on the other hand, did more pure research and was more concerned about being the first one in the market. The merger threatened to eliminate one of these approaches, decreasing the chance of successful innovation. It also would have reduced the incentive for the merged firm to innovate and to improve similar, competing tools that the merged firm might deem redundant since it owned both.

The consent decree addressed innovation. It required Halliburton to sell its entire LWD business, including its manufacturing, R&D, sales and service capabilities. The divestiture focused on the specialised assets that were required for innovation. By creating a company with these specialised assets--a wide scope of tools with the capability to operate on a world-wide scale - the divestiture allowed another firm to enter the competition for innovation in this particular sector, ensuring competition in this high-tech industry. Once again, product-specific concerns lay at the heart of this transaction, even where loss of R&D competition was an area of concern; indeed, the DOJ's complaint made no reference to an "innovation" market.

3.5 Lockheed Martin/Northrop Grumman

The DOJ's 1998 challenge to the $11.6 billion proposed acquisition of Northrop Grumman by Lockheed Martin was at that time the largest merger ever challenged by the federal government, and was, to a large extent, an effort to preserve innovation competition. In the complaint, the DOJ alleged that the merger would have resulted in unprecedented vertical and horizontal concentration in the defense industry, which would have substantially lessened, and in several cases eliminated, competition in major product

markets critical to the national defense. Lockheed and Northrop were two of the leading suppliers of military aircraft and electronic systems in the United States. The merger would have resulted in Lockheed's obtaining a monopoly in airborne early warning radar, electro-optical missile warning systems, directed infrared countermeasures systems, the SQQ-89 antisubmarine warfare combat system, and fibber-optic towed decoys. It would have reduced the number of competitors from three to two in high-performance fixed-wing military airplanes, on-board radio-frequency counter measures, stealth technology, and remote mine-hunting systems. And it would have had vertical effects in numerous projects, such as the combination of Lockheed's airframe with Northrop's fire-control radar. While the complaint alleged significant price effects, the principal driver of the challenge was the merger's effect on innovation.

Innovation was the key for several reasons. First, due to the Pentagon's weapons acquisitions cycle, most of the critical competitive events occur at a very early stage, when costs and prices are extremely uncertain. What is competitively significant is the quality of the design (or the inventiveness of the idea) and the likely success of its implementation.[46] Second, innovation is often achieved in response to external military threats that change rapidly and are unpredictable, requiring the maintenance of a number of firms with the capability of innovating to meet future national security challenges.[47] Third, maintaining diversity of firms is also critical, since maintaining a strategically important technological lead requires, in part, cutting-edge innovations that incumbents are less likely to encourage.[48]

In deciding whether to challenge a merger that would have led to only two competitors, the DOJ considered the amount of teaming in the military aircraft industry. Had this acquisition been consummated, the resulting firm would have been the prime contractor for thirteen aircraft platforms out of nineteen, and would have participated with its only competitor in virtually every aircraft in production. For example, on the F-22 Lockheed controls 67 percent of the platform, and Boeing the remaining 33 percent. On the F/A-18, Boeing controls 60 percent and, after the merger, Lockheed would have controlled the rest.

The complaint alleged one "technology market"[49] - stealth. This merger would have combined the two stealth leaders and the only two companies to have produced stealth aircraft. Letting the merger go through would have resulted in a duopoly of two fairly equal firms which share a large numbers of joint projects, in contrast to maintaining three players with different strengths and capabilities. While there is obviously a high degree of uncertainty with any attempt to predict the future, the anticompetitive harm that would have resulted from the merger would have lasted for a very long time, perhaps indefinitely.

4. Remedies

The Secretariat's Issues paper asks for examples "tending to prove or disprove the proposition that if markets are sufficiently innovation intensive, there is no need to be concerned about mergers." In our view, that statement cannot be supported as a categorical proposition. The number of antitrust actions in high-innovation markets demonstrates that a high level of innovation intensity does not, in itself, obviate antitrust concerns.

The Secretariat's Issues Paper also asks for examples of "contingent remedies" adopted in relation to mergers in innovation-intensive markets. The agencies sometimes include a "crown jewel" provision that requires divestiture of a different package of assets from what a respondent was originally required to divest (and is typically to be divested by a trustee appointed by the agency), if the respondent fails to divest the original asset package on time or does so in a manner or condition that does not comply with the order (there may be other circumstances that can trigger possible trustee appointment in a given case).[50] A crown jewel is appropriate where there is a risk that, if the respondent fails to divest the original divestiture package on time or if the original divestiture falls through for some reason, a divestiture trustee

may need an expanded or alternative package of assets to accomplish the divestiture remedy. This may be because another buyer may need a bigger (or different) package of assets to make the divestiture viable and competitive, or because it will likely be faster and easier for the trustee to sell a bigger, more complete package of assets later on. In several orders involving mergers in the pharmaceutical industry, the FTC has employed a crown jewel provision that required the divestiture of alternative or additional assets in the event that the acquirer of divested assets failed to bring a product to market by a certain date or discontinued its development.

The Secretariat's Issues Paper further asks for examples of remedies that were customised to deal with mergers in innovation-intensive markets. As a general matter, the remedy in every case is tailored to the particular fact situation. That said divestiture as a remedy in innovation markets requires special care because the success of R&D efforts often depends on a complex array of expertise and sustained knowledge. It may be necessary to require on-going obligations beyond divestiture to assure that the purchaser has some probability of successful completion of the research effort. In MCI/WorldCom, discussed above, various conditions were imposed to ensure that the new competitor after the divestiture would have the ability effectively to compete. In Glaxo, the order imposed significant obligations on Glaxo to assist the acquirer in its efforts to continue the R&D effort successfully. Glaxo had to provide information, technical assistance, and advice to the acquirer about the R&D efforts, including consultation with and training by Glaxo employees knowledgeable about the project. The divestiture was a success in this case since both Glaxo and the acquirer of its intellectual property now have oral migraine drugs on the market. With the required assistance from Glaxo, the acquiring firm, Zeneca, received complete FDA approval in only 15 months.

In addition, merger efficiencies may affect the choice of remedy. For example, in Ciba-Geigy, a licensing remedy was preferred over divestiture because of the problems of separating ongoing R&D projects that involved a number of joint efforts with third parties.[51] Then-Commissioner Azcuenaga dissented as to the licensing aspect of this order, noting that divestiture would cure the anticompetitive problem in a "simple, complete, and easily reviewable" manner. The majority of the Commission determined that the gene therapy research efforts would be too difficult to disentangle from the merging firms, and divestiture would thus "not only … hamper efficiency but also could be less effective in restoring competition if it led to co-ordinated interaction or left the divested business at the mercy of the merged firm."[52] Thus, while divestiture is certainly an easier remedy to impose and monitor, it may not always be the most effective way of restoring competition.

Finally, the dynamic nature of high-innovation markets and the possible short duration of market power may counsel a shorter duration for some remedial orders.[53] For example, in the AOL-Time Warner merger, the negotiated decree lasts for only five years, while the typical decree lasts for ten.[54]

NOTES

1. Issues Paper at 3-4.

2. *See, e.g.*, David A. Balto, *Antitrust Enforcement in the Clinton Administration*, 9 Cornell J.L. & Pub. Pol'y 61 (1999) ("This increased emphasis on nonprice competition in high tech industries can be procompetitive. Because the range of nonprice attributes is infinite, competitors may find nonprice collusion more difficult than collusion over price.") Balto goes on to note that although nonprice collusion may be difficult, experience shows that it does occur and can have serious anticompetitive consequences, citing *United States v. Automobile Mfrs. Ass'n.*, 1969 Trade Case. (CCH) P72,907 (C.D. Cal. 1969) (consent decree). *See also* William E. Kovacic, *Merger Policy in a Declining Defense Industry*, 36 Antitrust Bull. 586-88 (1991) (describing how technological dynamism and rivalry to achieve qualitatively superior weapon systems reduces possibilities for successful co-ordination between defense suppliers); Dennis A. Yao & Susan S. DeSanti, *Innovation Issues Under the 1991 Merger Guidelines*, 61 Antitrust L.J. 505, 514-17 (1993).

3. *See, e.g.*, Federal Trade Commission Staff Report, Anticipating the 21st Century: Competition Policy in the New High-Tech, Global Marketplace, Volume I, Ch. 9 at 3 (May 1996), available at <http//:www.ftc.gov/opp/global.htm> ("the combination of demand-side scale economies and consumer switching costs may render dominance of a firm in control of an interface standard unusually enduring and give reason for more careful attention to anticompetitive practices."); *but see* Timothy J. Muris, *GTE Sylvania and the Empirical Foundations of Antitrust*, 68 Antitrust L.J.899, 907-908 (2001) (noting lack of empirical evidence supporting strong version of network effects theory).

4. *See* Thomas B. Leary, Commissioner, Federal Trade Commission, *The Essential Stability of Merger Policy in the United States*, Prepared Remarks for Joint U.S./E.U. Conference on Guidelines for Merger Remedies (Paris, France, Jan. 17, 2002), available at <http://www.ftc.gov/speeches/leary/learyuseu.htm> ("for some products or services, competitive harm cannot be adequately captured by a traditional focus on price and output – issues of 'quality' or 'variety' are also significant."); Thomas B. Leary, *The Significance of Variety in Antitrust*, 68 Antitrust L.J. 1007 (2001); see also William E. Kovacic & Dennis E. Smallwood, *Competition Policy, Rivalries, and Defense Industry Consolidation*, 8 J. Econ. Perspectives 91, 99-100 (1994) (describing awkward fit between analytical methodology prescribed in federal horizontal merger guidelines and qualitative variables relevant to evaluating the capability of aerospace and defense firms).

5. *See* William B. Burnett & William E. Kovacic, *Reform of United States Weapons Acquisition Policy: Competition, Teaming Agreements, and* Dual-Sourcing, 6 Yale J. on Reg. 249, 268 (1989) (describing long development process for high technology weapon systems); See *also* Thomas B. Leary, Commissioner, Federal Trade Commission, *Antitrust Law as a Balancing Act*, Prepared Remarks for The Tenth Annual Seattle Computer Law Conference (Seattle, Washington, Dec. 17, 1999), available at <http://www.ftc.gov/speeches/leary/leary991217.htm> (noting that predictions of change do not always come true, and also that high-tech industries are not the only ones that can be characterised by easy entry and rapid change); Thomas B. Leary, Commissioner, Federal Trade Commission, *The Patent-Antitrust Interface*, available at <http://www.ftc.gov/speeches/leary/ipspeech.htm> ("It is not obvious . . . that high tech industries, thus defined [with network effects], will evolve more quickly than other industries.").

6. *See Allen-Mylan, Inc. v. IBM*, 33 F.3d 194, 211 (3d Cir. 1994) ("IBM also contends that price reduction and product improvement are inconsistent with the existence of monopoly power. But rapid technological progress may provide a climate favourable to increased concentration of market power rather than the opposite. Moreover, a decline in price does not necessarily imply an absence of monopoly power; a fair profit might have been made at even lower cost to users."); *See also* William E. Kovacic, *Competition Policy in the Postconsolidation Defense Industry*, 44 Antitrust Bull. 421, 432-34 (1999) (describing benefits of rivalry among defense contractors in promoting innovation to achieve superior weapons designs); Robert Pitofsky, *Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property*, 68 Antitrust L.J. 913, 918-19 (2001) ("It is true that successful high-tech companies are often aggressive in price and innovation, but competition is still important, if only because it is likely

that consumers would be better off with two or three aggressive companies, assuming the market can support more than one, rather than a single dominant firm.").

7. *See, e.g.*, Robert Pitofsky, *Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property*, 68 Antitrust L.J. 913, 916 (2001); David Balto & Robert Pitofsky, *Antitrust and High-Tech Industries: The New Challenge*, 606 PLI/Pat 513, 517 (2000).

8. *See, e.g.*, William E. Kovacic, *Antitrust After Microsoft: Upgrading Public Competition Policy Institutions for the New Economy*, 32 U. West L.A. L. Rev. 51 (2001) (describing role of competition policy in technologically dynamic industries); Robert Pitofsky, *Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property*, 68 Antitrust L.J. 913, 919 (2001) ("Competition may be especially important where innovation is concerned, in order to preserve a diversity of approaches which will often prove essential to advance knowledge and discovery. The history of innovation since the monolithic AT&T was broken up is some evidence that innovation is more likely to strive in the presence of competition than in its absence.").

9. Apart from not having been shown to be necessary, special rules would raise problems of application, such as the determination of whether a particular transaction or market qualifies for special treatment. Unpublished special arrangements, in particular, are inadvisable as a matter of policy. The U.S. antitrust agencies strive for a policy of transparency, to the extent permitted by constraints of maintaining confidentiality of competitively sensitive information.

10. *See, e.g.*, Timothy J. Muris, Chairman, Federal Trade Commission, *Antitrust Enforcement at the Federal Trade Commission: In a Word – Continuity*, Prepared Remarks Before American Bar Association, Antitrust Section Annual Meeting (Chicago, Illinois, August 7, 2001) ("Merger analysis in "high tech" industries is not fundamentally different than in other industries. The basic Guidelines analysis can be applied. We should proceed, however, cognizant of our lesser experience in high tech industries."); Thomas B. Leary, Commissioner, Federal Trade Commission, *Antitrust Law as a Balancing Act*, Prepared Remarks for The Tenth Annual Seattle Computer Law Conference (Seattle, Washington, Dec. 17, 1999) ("it is not necessary to develop new antitrust principles to deal with so-called "high tech" industries; what is required is a discriminating application of familiar principles to the special facts of a "high tech" environment") (emphasis in original).

11. United States Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines* (Rev. April 8, 1997) (hereafter "Merger Guidelines").

12. *See* Richard J. Gilbert and Steven C. Sunshine, *Incorporating Dynamic Efficiency concerns in Merger Analysis: The Use of Innovation Markets*, 63 Antitrust L.J. 569 (1995) ("A merger that has adverse effects on innovation could affect prices and products in markets where the merging firms do not compete premerger and even in markets where the merging firms are not likely potential competitors.").

13. While the innovation market concept is not discussed in the Merger Guidelines, it is discussed in the Antitrust Guidelines for the Licensing of Intellectual Property, which post-date the Merger Guidelines. *See* United States Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property* § 2.2 n.9 (April 6, 1995) (hereafter "Intellectual Property Guidelines"). The Intellectual Property Guidelines recognise that a number of different markets may be relevant in assessing the competitive effects of transactions involving intellectual property: goods markets, markets for technology, or markets for research and development, also referred to as "innovation markets." Intellectual Property Guidelines § 3.2. *See also* Dennis A. Yao & Susan S. DeSanti, *Innovation Issues Under the 1991 Merger Guidelines*, 61 Antitrust L.J. 505, 510 (1993) (identifying three markets as relevant to innovation issues: today's product market, the future product market, and the R&D market).

14. *See, e.g.*, Richard T. Rapp, *The Misapplication of the Innovation Market Approach to Merger Analysis*, 64 Antitrust L.J. 19 (1995); George A. Hay, *Innovations in Antitrust Enforcement*, 64 Antitrust L.J. 7 (1995); *see also* Robert J. Hoerner, *Innovation Markets: New Wine in Old bottles?*, 64 Antitrust L.J. 49 (1995).

15. Claims of dynamic efficiencies, like any other, are evaluated under the standards set forth in section 4 of the agencies' Horizontal Merger Guidelines. Efficiencies must be *merger-specific* (*i.e.*, not practicably obtainable absent the merger, through other means such as a licensing arrangement or a joint venture), *cognisable* (*i.e.*, they may not arise from anticompetitive reductions in output), reasonably *verifiable*, and *"must be of a character and magnitude such that the merger is not likely to be anticompetitive in any relevant market."* Merger Guidelines § 4 (revised April 8, 1997).

16. It may be appropriate to apply a present value analysis to expected future outcomes.

17. *See, e.g.*, 4A Areeda, *et al.*, Antitrust Law ¶ 975g (noting "truly formidable" proof problems in determining innovation economies).

18. *See* Richard G. Parker & David A. Balto, *The Merger Wave: Trends in Merger Enforcement and Litigation*, 55 Bus. Law. 351, 387 (1999). *See also* Robert Pitofsky, Then-Chairman, Federal Trade Commission, *The Nature and Limits of Restructuring in Merger Review*, Remarks before Cutting Edge Antitrust Conference (New York, N.Y., Feb. 17, 2000), available at <http://www.ftc.gov/speeches/pitofsky/restruct.htm> ("Where the claimed efficiencies relate to portions of the deal not affected by the restructuring, analysis becomes more complicated. First, the staff ordinarily would not have investigated the other efficiencies and will have little more than the parties' assertions that such efficiencies will occur and will produce procompetitive results. As many have noted, efficiencies are much easier to assert than to prove. Second, in the market where the assets overlap, and where by definition the restructuring does not produce a fully adequate restoration of competition (if it did there would be no need to turn to the efficiencies issue), consumers will be deprived of the benefits of competition so that consumers in a different market, or the shareholders of the merging corporations, can profit. I would not say that efficiencies in these other markets would never be taken into account, but surely they should be viewed with a skeptical eye.").

19. *See* Parker & Balto, *supra*, at 387. Parker and Balto discuss a recent investigation in which the parties argued, in part, that the transaction would achieve significant efficiencies from more effective competition against alternative technologies that might eventually challenge the parties' products at both the low and high ends of the market. They state that the parties' argument was not acceptable to the staff, for the following reasons:

> First, available evidence suggested that, while the alternative technologies represented plausible long-term competitive threats, they would not have attained a significant position in the market within two years. Under such circumstances, the parties' efficiencies claim was equivalent to a suggestion that competition in an existing market should be sacrificed so that the companies could more effectively compete in a different market several years in the future. Even if the parties were correct that their future competitiveness would have been enhanced, this argument was insufficient because the price was a sacrifice of competition in an existing market. The parties were also unable to show that continuing improvements on existing technology would not be sufficient to meet the competitive threat. In fact, the recent history of technological rivalry and innovation among the firms led the Commission staff to believe that a healthy market for products using their technology would persist for a significant period of time.

20. Firms have been charged with collusion regarding R&D activity. See *United States v. Automobile Mfrs. Ass'n.*, 1969 Trade Case. (CCH) ¶ 72,907 (C.D. Cal. 1969) (consent decree).

21. *Ciba-Geigy Limited* (*sub nom. Novartis AG*), Dkt. C-3725, 123 F.T.C. 842 (1997) (consent order) (Comm'r concurring in part and dissenting in part).

22. *See Ciba-Geigy Limited,* Dkt. C-3725, 123 F.T.C. 842 (1997), Separate Statement of Chairman Robert Pitofsky and Commissioners Janet Steiger, Roscoe B. Starek, III and Christine A. Varney; *see also Ciba-Geigy Limited,* 1966 WL 743359 (F.T.C.), Analysis of Proposed Consent Order to Aid Public Comment.

23. *Id.*

24. This method of describing the Internet industry is not uniformly accepted and it is certainly not perfect, but it does provides a useful conceptual framework in describing key differences between the major players and how the players are related. It is possible to describe the market in many different ways, but describing the market differently does not affect the competitive analysis.

25. A peering agreement is a bilateral agreement that allows two networks to exchange and terminate each other's traffic. It is a co-operation agreement where the two networks say, "I'll take your traffic if you take mine." It is important to note, however, that peering agreements refer only to traffic being delivered to an address on one of the two networks. The agreements do not allow one network to pass off traffic meant for a third network. For example, Network A peers with Network B and Network B peers with Network C, but Network A does not peer with Network C. Network A therefore cannot send traffic to Network C through its peering relationship with Network B.

26. The EU and the FCC both determined that there was a national backbone market. The parties, on the other hand, argued that the market was considerably broader and included all participants in the provision of Internet access and, since the underlying fibber facilities are the same, all voice telecommunications.

27. The parties, of course, disputed that estimate, claiming that they had only 20 percent of the Internet backbone market. They calculated market share based on a percentage of revenue. They included all revenues related to the Internet which means that they included revenue from sources other than their backbone services and double counted other revenue, such as revenues for ISPs who buy connectivity from others, thereby increasing the significance of their competitors' market share and diluting MCI/WorldCom's.

28. *See* Richard G. Parker & David A. Balto, *The Merger Wave: Trends in Merger Enforcement and Litigation*, 55 Bus. Law. 351, 394 (1999) ("Commentators have observed that where a firm knows that its competitors can 'free-ride' on its innovations, the incentive to innovate may be seriously dampened.").

29. *Id.*

30. Stan Metcalf, "The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives," in Handbook of the Economics of Innovation and Technological Change 446 (P. Stoneman ed. 1995)*; see also* William E. Kovacic, *Transatlantic Turbulence: The Boeing-McDonnell Douglas Merger and International Competition Policy*, 68 Antitrust L.J. 805, 821 (2001) (describing benefits of maintaining a diversified base of weapons suppliers amid conditions of extreme technological uncertainty).

31. *See* Michael L. Bushman & Philip Anderson, "Technological Discontinuities and Organisational Environments," 31 Administrative Science Quarterly 439 (1986), reprinted in Robert A. Burgelman & Modesto A. Maidique, Strategic Management of Technology and Innovation (2d ed. 1996); James M. Utterback, Mastering the Dynamics of Innovation (1994); F.M. Scherer & David Ross, Industrial Market Structure and Economic Performance (3rd ed. 1990).

32. Pierre Dussauge Stuart Hart & Bernard Ramanantsoa, Strategic Technology Management 14 (1992); Bushman & Anderson, supra note 6 (distinguishing competence-destroying and competence-enhancing innovations); Peter Swann & Jas Gill, Corporate Vision and Rapid Technological Change: The Evolution of Market Structure 15 (1993) (explaining that "[c]ompetence-enhancing innovations need not be minor, and indeed can represent 'order of magnitude' improvements in technology, but the key is that they do not render obsolete those skills that were used to develop the previous generation of technology"); Clayton M. Christensen, The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (1997)

(asserting that established firms find it extremely difficult to pursue a rapidly evolving "disruptive technology" that is not yet mature enough to serve current customers).

33. Numerous economic studies document that leap-frog innovations are most often created by niche players or by firms attempting to upset the dominant firms. In an analysis of 46 case studies in industries with shattering innovations, James M. Utterback found that most of the leap-frog innovations came from new firms. *See* Utterback, *supra* note 2; see also Scherer & Ross, *supra* note 2 (listing historical examples where new challengers, without ties to old or accepted technology, were responsible for revolutionary products/processes).

34. The first case involving the current innovation market approach was the 1993 U.S. Department of Justice challenge of the merger of the Allison Transmission Division of General Motors and ZF Friedrichshafen, AG, essentially the world's only manufacturers and innovators of medium and heavy automatic transmissions for trucks, buses, and other commercial and military vehicles. The complaint alleged that the GM-ZF combination would diminish competition not only in the production and sale of current products but also in a world-wide innovation market for the technological design, development and production of automatic transmissions for heavy vehicles. *United States v. General Motors Corp.*, No. 93-530 (D. Del filed Nov. 16, 1993) (consent judgement).

35. Richard T. Rapp, *The Misapplication of the Innovation Market Approach to Merger Analysis*, 64 Antitrust L.J. 19, 27-37. (1995).

36. *Id.* at 27.

37. *Id.* at 28, citing F.M. Scherer, *Schumpeter and Plausible Capitalism*, 30 J. of Economic Literature 1416, 1421 (1992).

38. Rapp, *supra*, at 33-36.

39. *Id.* at 36-37.

40. *Id.* at 37-46.

41. *See id.* at 36-37.

42. *Ciba-Geigy Ltd.*, Dkt. C-3725, 123 F.T.C. 842 (1997) (consent order). *Business Week* reported that the FTC's enforcement action "shows a new savvy among trustbusters about high-tech competition." *A Booster Shot for Gene Therapy*, Bus. Wk., Jan. 20, 1997, at 92.

43. The remedy in this case was designed to protect competition both in the particular products in which the two firms competed and the broader market for gene therapy research and development. For the specific therapeutic products of the two firms, the order required the licensing of certain key intellectual property rights held by the combined firm, and also required that an acceptable buyer be identified "up front." Rhone Poulenc Rorer was identified as the licensee before the order was accepted by the Commission. For the broader gene therapy research and development market, the order required the companies to grant gene therapy researchers non-exclusive licenses to certain essential gene therapy technologies that would otherwise have provided a bottleneck to the research of others.

44. *Digital Equipment Corp.*, Dkt. C-3818 (July 14, 1998) (consent order).

45. In other electronic products, *Sensormatic Electronics Corp.*, 119 F.T.C. 520 (1995) (consent order), alleged reduction of competition in research and development of disposable source labels to be used with electronic article surveillance systems installed in retail stores as theft prevention devices. Knogo, the acquired firm, had been developing its SuperStrip technology for possible use as a disposable source label would be imbedded in goods or packaging at the manufacturing or distribution level, thereby obviating the

need for retailers to install labels themselves. Sensormatic has been developing one of its proprietary technologies for potential use as a source label.

46. Office of the Under Secretary of Defense for Acquisition & Technology, U.S. Department of Defense, "Report of the Defense Science Board Task Force on Antitrust Aspects of the Defense Industry Consolidation," at 28 (Apr. 1994).

47. *See* Kovacic, *Competition Policy*, *supra* note 6, at 434-35 (describing benefits to defense purchasing agencies of maintaining rivalry between at least two suppliers in environment characterised by "often unpredictable shifts in global political conditions and changing technology").

48. *See* id. at 433-34 (discussing "the value of maintaining a three-firm configuration in individual weapons industry segments, particularly where one firm has a reputation for pursuing novel approaches to solving specific problems").

49. "Technology markets consist of the intellectual property that is licensed ... and its close substitutes - that is, the technologies or goods that are close enough substitutes significantly to constrain the exercise of market power with respect to the intellectual property that is licensed."

50. The use of "crown jewel" provisions is not unique to high-innovation mergers.

51. *See Ciba-Geigy Limited*, Dkt. C-3725, 123 F.T.C. 842 (1997), Separate Statement of Chairman Robert Pitofsky and Commissioners Janet Steiger, Roscoe B. Starek, III and Christine A. Varney.

52. *Id.*

53. *See* Thomas B. Leary, Commissioner, Federal Trade Commission, *The Patent-Antitrust Interface*, available at <http://www.ftc.gov/speeches/leary/ipspeech.htm> ("This is an issue that clearly needs to be addressed when considering remedies.")

54. See Federal Trade Comm'n, Statement of Policy with Respect to Duration of Competition and Consumer Protection Orders, (Aug. 9, 1995), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,320.

EUROPEAN COMMISSION

1. Merger Policy in High Innovation Markets

High innovation markets can be defined as markets that are rapidly changing and growing due to significant innovation. “Rapid change” and “growth due to significant innovation” have been a hallmark of markets relating to the “new economy”. The development and convergence of electronic and communication technologies or media – such as the Internet – is rapidly changing the ways in which many markets operate and has spawned the creation of new innovative business models and markets.

The importance of innovation and its potential to change completely the competitive situation in a market is, however, not limited to the “new economy”. Some traditional industries may also be characterised as high innovation markets. An example would be the pharmaceutical industry, where market growth is also mainly driven by innovation and where market positions may change rapidly when new innovative products replace older therapeutic solutions.

In the last years, the European Commission has gained experience in the assessment of mergers in high innovation markets through a number of cases. These experiences allow the formulation of the following general observations on merger policy in high innovation markets:

First, the Commission’s experience does not support the proposition that there is no need to be concerned about mergers, if markets are sufficiently innovation intensive. It has not found that competition is largely “for the market” and that market power is undermined quickly by other innovations. It has to the contrary intervened in a number of merger cases, which threatened to create or strengthen a non-transient dominant position in markets that can be characterised as high innovation markets.

Second, the Commission does not consider that there is a need for special arrangements for dealing with mergers in high innovation markets. Due to their general nature, the competition rules apply to the factual circumstances of a particular case, no matter how quickly industries develop or change. This allows them to keep pace with technological developments in a way that more specific regulatory frameworks cannot.

This does not mean, of course, that the competition rules can be applied without regard to the specific nature of high innovation markets. Difficult judgements have to be made – allowing an operation to go through could close a new market completely, whilst prohibiting or imposing conditions on another could stifle innovation and prevent technical progress. Making these judgements requires an understanding of the underlying technology and a close following of market developments.

The European Commission has so far not published merger guidelines. However, it adopts and publishes a written decision in every case which is notified under its Merger Regulation. These decisions form an extensive body of case law which contains guidance on the assessment criteria that have been applied in past mergers, including those in innovation markets.

2. Preliminary screening for possible anticompetitive effects

In all merger cases, including those in high innovation markets, market definition remains a cornerstone of the competition assessment. In the exercise of market definition care needs to be taken to ensure that the specific characteristics of high innovation markets are reflected.

This requires, for instance, that antitrust agencies take account of technological change and re-examine the findings of previous cases to ensure that results are still valid. An example is the market for provision of top-level or universal (Internet) connectivity. This market was first defined and analysed in the assessment of the 1998 merger between WorldCom and MCI[1] where the Commission found that the operation would have created a dominant position on this market.[2] When MCI WorldCom notified their subsequent merger with Sprint[3] in 2000, they argued that the market definition used by the Commission in the WorldCom/MCI decision needed to be reconsidered given the dramatic changes during the last few years in the Internet sector. These alleged changes were, in particular, the liberalisation of the EC telecommunications markets with the resulting increase in the number of European Internet service providers (ISPs) and content providers; increased used of multihoming (the use of at least two connectivity providers to obtain Internet connectivity); content delivery techniques (such techniques enable the regulation and limitation of the flow of Internet traffic that is exchanged over the Internet) and lowered leased line prices. As a result, the parties argued, the Internet could not be identified as being hierarchical and European ISPs were no longer dependent on the largest (US) Internet connectivity providers to obtain global Internet connectivity.

In view of the rapid technological developments in the Internet, the Commission analysed these claims carefully. The result of the investigation showed, however, that none of the factors raised by the notifying parties had had any significant impact on the structure of the market. The Commission acknowledged that there had been some decrease in the dependence on top-level connectivity providers and that due to increased European content and build out of European networks, more Internet traffic was intra-European. However, even the largest European Internet connectivity providers were still very dependent on the top-level providers for global connectivity and were unable to place any competitive constraint on the top-level providers. The Commission concluded that the Internet had maintained its hierarchical structure and the relevant market for the purposes of the assessment of the case was the market for the provision of top-level or universal (Internet) connectivity.

Another challenge consists in assessing the impact of products which are not yet on the market but which are at an advanced stage of development. Such an analysis is a constant feature of the Commission's decisions in the pharmaceuticals industry, where these products are called pipeline products.

As noted in the Ciba-Geigy/Sandoz[4] decision, research and development projects in the pharmaceutical sector undergo three different phases of clinical testing: Phase I marks the start of clinical testing on humans, currently some eight to ten years before a product is marketed. Statistically, projects in phase I generally have no more than a ten percent chance of being successful. Phase II, some four to five years before the product is marketed, involves working out the proper dose for the patient and defining the areas of application. The success of phase II is generally acknowledged to be approximately 30 percent. Phase III, starting three years before the product is marketed, involves establishing the product's effectiveness on larger groups of patients. The risk of failure in phase III is reported to be over 50 percent.

The potential for these products to enter into competition with other products which are either at the development stage or already on the market can be assessed by reference to their characteristics and intended therapeutic use. The Commission has to look at R&D potential in terms of its importance for existing markets, but also for future market situations.

In so far as research and development must be assessed in terms of its importance for future markets, the relevant product market can only be defined in a less clear cut manner than in the case of existing markets. Market definition can be based either on the existing product markets or it can be guided primarily by the characteristics of future products as well as by the indications to which they are to be applied.

Once the market has been defined, market shares can be calculated. The informational role of these market shares is, however, lower than in static markets. The exercise of market power in high innovation markets often requires not only a strong position in today's market, but also high barriers to entry. The most important of these barriers are first mover advantages and network externalities which may tend to result in current market power being maintained, rather than being transient.

The possible importance of these dynamic effects makes it difficult to formulate prescribed rules, for instance on acceptable pre- and post-merger concentration levels, which can be used for preliminary screening. A currently high market share in a dynamic market does not necessarily indicate the presence of market power today and a currently low market share may not rule out its absence in the near future.

3. Assessing threats to competition

The Commission's experience does not support the proposition that there is no need to be concerned about mergers, if markets are sufficiently innovation intensive. In particular vertical integration situations and the ensuing market foreclosure effects have been a source of concern in innovation markets.

Vertical integration reinforces the new entity's position at one level of the supply chain, and may thus foreclose other suppliers' access to one or more vertically related markets. In addition, it often changes the economic incentives of the merging companies, leading to a substantial change in the functioning of the market.

In particular where access to networks is essential for the provision of a wide range of services, the so-called 'gatekeeper' effects can become a major concern. The Commission has been confronted with such 'gatekeeper' effects resulting from both horizontal and vertical operations.

The prohibited MCI WorldCom/Sprint[5] concentration is a good example of a case where the gatekeeper effect is produced by a horizontal overlap, i.e. the combination of two operators' networks. The Commission's investigation showed that MCI WorldCom had the leading position as a provider of top-level Internet connectivity, with Sprint being one of its main competitors. The investigation also showed that the merger would, through the combination of the merging parties' extensive networks and large customer base, have led to the creation of a company of such absolute and relative size compared to its competitors that both competitors and customers would have been dependent on the new company for universal Internet connectivity. This would have allowed the merged company to behave independently of both its competitors and customers and given it the ability to control technical developments, raise prices and discipline the market by selective degradation of its interconnections with competitors. The Commission therefore concluded that the merger, as originally notified, would have raised serious competition concerns by creating a dominant position or strengthening the dominant position of WorldCom in the global market for the provision of top-level Internet connectivity. Given the hierarchical structure of the Internet and the global nature of the market, this would have affected consumers everywhere in the world.

Foreclosure effects may also arise as a result of vertical integration, especially where one of the merging parties enjoys significant market power in an upstream or downstream market. In the America

Online Inc (AOL)/Time Warner case[6] the Commission was concerned that AOL, because of the merger with Time Warner (which in turn had planned to merge its music recording and publishing activities with EMI), and because of its European joint ventures with Bertelsmann, would have controlled the leading source of music publishing rights in Europe. AOL is the leading Internet access provider in the US and the only such provider with a pan-European presence. Time Warner is one of the world's biggest media and entertainment companies with interests in television networks, magazines and book publishing, music, filmed entertainment and cable networks. The concentration created the first Internet vertically integrated content provider, distributing Time Warner's branded content (music, news, films, etc.) through AOL's Internet distribution network.

Because of AOL's structural and contractual links with Bertelsmann, the new entity would also have had preferred access to Bertelsmann's content and, in particular, to its large music library. As a result, the new company would have controlled the leading source of music publishing rights in Europe, a market of which one third is held by Time Warner and Bertelsmann together. In these circumstances it was likely that the new entity would have become dominant in the emerging market for Internet music delivery online by becoming a 'gatekeeper' and thus being able to dictate the conditions for the distribution of audio files over the Internet. It would also have been possible for the new entity to format Time Warner's and Bertelsmann's music in such a way as to be compatible only with AOL's music player (Winamp), but not with competing music players. On the other hand Winamp would have been able to play the music of competing record companies which generally use non-proprietary formats. Thus, because of the technical limitations of other players, the new entity would also have been able to impose Winamp as the dominant music player.

These examples highlight that the importance of analysing the possibility of foreclosure and exclusionary strategies in high innovation markets. They are a possible source of concern, if one of the parties possesses significant market power in an upstream and/or downstream market.

4. Remedies

If the assessment gives rise to competitive concerns, remedies may be an appropriate means to remove them, while maintaining the efficiencies generated by the operation. The Commission's experience with remedies in high innovation markets shows that they need to be customised to take account of the specific nature of the markets concerned. The solution may not consist in a classical divestiture remedy, but in the lowering of entry barriers.

An example for this is provided by the Vodafone/Mannesmann case[7]. In this case, the remedy aimed at solving the problems with the emerging seamless pan-European mobile telecommunications service market for corporate customers and the markets for pan-European wholesale roaming. These concerns were addressed by undertakings which gave other mobile operators the possibility of providing these services to their customers by using the integrated network of Vodafone Airtouch/Mannesmann. Owing to rapid developments in the sector, the award of third generation UMTS licences and the fact that competitors will try to build up alternative infrastructures, the commitments have been limited to a period of three years.

This case also highlights that competition authorities do not need to accept situations of temporary market power. Such situations may be addressed through remedies which are limited in time.

Another example for the use of temporary remedies is the Vivendi/Canal+/Seagram case[8]. One of the competition concerns raised by this merger related to the emerging pan-european market for portals and the emerging market for online music. By adding Universal's music content to Vivendi's multi-access

portal (Vizzavi) the transaction raised serious concerns as to the creation of a dominant position on these markets. This problem was remedied by Vivendi's offer to give rival portals access to Universal's online music content for five years.

Experience also shows that careful assessment of the effectiveness of previous remedies is necessary in order to ensure effective future enforcement action. This is again highlighted by the Commission's experience in the market for provision of top-level or universal (Internet) connectivity. In the WorldCom/MCI decision, the Commission had accepted the divestiture of an MCI Internet business to remedy its concerns. In MCI WorldCom/Sprint, the parties proposed to divest a Sprint Internet business from Sprint's other activities. This undertaking was broadly similar to the undertaking accepted by the Commission. However, drawing from the experience gained from this divestiture and from the investigation in the MCI WorldCom/Sprint case, the Commission found that the proposal was insufficient to resolve the competition concerns resulting from the merger. In particular, the Commission found that the proposal failed to ensure with enough certainty that the remedy would restore effective competition in the market for top-level Internet connectivity. The parties withdrew their proposed remedies at a late stage in the proceedings.

5. Conclusions

Merger assessment in high innovation markets requires a dynamic analysis that takes account of the specific nature of competition in these markets. The European Commission's experience suggests that the current competition rules provide a framework that is sufficiently flexible in order to deal with this challenge. This framework consists in particular of the following elements:

- market definitions that reflect the specific characteristics of high innovation markets;
- a preliminary merger screen that puts less emphasis on today's market shares and more emphasis on barriers to entry and dynamic effects;
- a competition analysis that analyses the possibility of foreclosure and exclusionary strategies;
- remedies that are customised to deal with mergers in innovation intensive markets.

NOTES

1. Case M.1069 (8.7.1998).

2. The operation was cleared following a commitment by the parties to divest the Internet business of MCI and thus remove the overlap.

3. Case M.1741 (28.6.2000).

4. Case M.737 (17.7.1996).

5. Case M.1741 (28.6.2000).

6. Case M.1845 (11.10.2000).

7. Case M.1795 (12.4.2000).

8. Case M.2050 (13.10.2000).

SUMMARY OF THE DISCUSSION

1. Is there a need for a special approach?

The Chairman noted that most contributions indicated an absence of specific guidelines or provisions for reviewing mergers in high innovation markets, i.e. markets experiencing a high rate of innovation. In addition, the innovation market concept does not seem to be widely used. Merger analysis in high innovation markets generally looks, following a traditional rule of reason approach, at the impact of the merger on present or future product market competition. Yet the assessment of mergers in high innovation markets presents some specific problems. Market shares are very poor indicators of present or future competition because the definition of relevant markets changes over time and market shares tend to be highly unstable. Although unilateral effects do not seem to be a major source of concern due to extensive product differentiation in innovation intensive industries, co-ordinated effects or vertical foreclosure are significant issues. Devising appropriate merger remedies is particularly difficult and complex in rapidly changing markets.

The Chairman noted that the Dutch contribution emphasises a number of difficulties faced by competition authorities dealing with mergers in innovation intensive sectors (i.e. about ten percent of all mergers reviewed in the Netherlands). Defining relevant economic markets is particularly difficult in sectors characterised by product (or service) differentiation, rapidly evolving technologies, and convergence of technologies. The contribution presents the Digitenne case as an example of this difficulty.

The contribution from the Netherlands also raises an important question: "…how a competition agency… could equip itself to better deal with mergers in innovation intensive markets…." (para. 58). It adds, and this view seems to be quite different from those expressed in other contributions: "The necessity of modified or revised approaches, and if regarded as needed, the situations to which these approaches could or should be confined, need further deliberation." (para. 58). This contrast with the view generally held by the other contributions; i.e. that no specific approach was needed for merger review in high innovation markets. The Chairman asked the Netherlands for further details about the need for a specific approach to merger review in innovation intensive markets.

A delegate from the Netherlands stressed that they actually do not believe a special analytical approach is required for assessing mergers in high innovation markets.

Although Dutch experience shows that merger assessments in such markets are at times complex and challenging, it also demonstrates that all mergers in markets traditionally seen as highly innovative have been approved in a relatively short time, i.e. within the initial "notification phase". Existing procedures are sufficiently flexible to deal with these types of transactions on a case-by-case basis.

The Netherlands Competition Authority (NCA) believes that improvements could be made, however, to existing time limitations and assessment methodologies. Some degree of sectoral specialisation within the agency might help in dealing with mergers in high innovation markets, a good example being the aforementioned Digitenne case. Sector specialisation helps staff better understand the technological and other complexities featured in mergers in high innovation markets.

The Netherlands also stressed the desirability of a pro-active approach to competition problems in high innovation markets. Such an approach which would help establish a good network of expertise to draw from, both internally and externally, and would facilitate timely anticipation of potential mergers. This is the main point to draw from the Digitenne case.

As explained in the written contribution, the Digitenne transaction was approved without going to the "second phase" of merger assessment. The time and effort saved would not have been possible, had the NCA not previously provided competition advice to the Ministry responsible for regulating this sector. The NCA thus anticipated a notification and prepared itself for it well in advance.

One reason the NCA does not particularly favour a modified or revised approach to mergers in the high technology sector is that it would be difficult to define the situations where such an approach would be warranted. Three significant obstacles would have to be overcome. First, the criteria to be applied would have to be clear and transparent. Second, the situations and relevant markets to which they apply would have to be determined. And third, given that every transaction is different, one would have to decide if a specific deal qualifies according to the specified criteria.

The Netherlands concluded by stressing two main issues. First, there is no need for a broad policy revision. Second, and more importantly, there is probably a need to improve time frames and methodologies within the existing policy framework by *inter alia* having sector specialists and a pro-active approach.

The Chairman commented that the United Kingdom contribution extensively discusses high innovation market characteristics (e.g. economies of scale, lack of capacity constraints, tipping effects, highly differentiated products), and emphasises the importance of foreclosure concerns. It takes the view that the UK merger regulation is flexible enough to assess mergers in high tech industries without having to resort to the concept of innovation markets. The contribution discusses several interesting cases including the B Sky B/Hilton Group merger and the Microsoft/Telewest case, which raise concerns of vertical foreclosure. The Chairman invited the UK to comment on these and other issues.

A delegate from the United Kingdom's Office of Fair Trading (OFT) noted that it uses a single flexible approach to assess mergers in all sectors, focusing on both potential static and dynamic effects. The UK has not found it necessary to define a market for R&D in order to capture important dynamic effects in high innovation markets.

Although the UK has not had many cases where innovation played a leading role in the competitive effect analysis, innovation was the focus of attention in the BskyB/Hilton Group and the Microsoft/Telewest mergers.

The BskyB case involved real time betting using digital TV. The merger joined the UK's main satellite pay-TV service offering a range of broadcasting including important sports channels, and a leading betting company. The parties initially would have enjoyed a 100 percent market share. The delegate noted that this case illustrates the need to balance reward to innovation and a widening of consumer choice against the risks entailed with allowing a good deal of exclusivity. At such an early stage in the product development it was difficult to assess the ability of other firms to remove the potential for adverse vertical foreclosure effects. The OFT referred the merger to the Competition Commission. The parties then decided to abandon the transaction, although a non-exclusive deal was subsequently reached.

The delegate stressed the possibility that the adverse effects of a merger on innovation in a high tech industry could be potentially more damaging than a reduction in price competition in a static market.

The Chairman stated that in Australia the concept of an innovation market is rarely used for both economic and legal reasons. The merger guidelines "…involve the notion of an identifiable product." (para. 10) and innovation is not really a product. This raises the question of whether the guidelines could usefully be revised or whether one does not need to use the innovation market concept to assess mergers in emerging industries. Clearly the ACCC believes that the traditional tool of "potential competition" and the like are sufficient to address mergers in high innovation markets.

In its discussion of the potential threats to competition of mergers in high innovation markets, Australia's contribution suggests, as does the UK contribution, that the likelihood of co-ordinated effects in high tech industries is reduced because of the diversity of products. However, it discusses the acquisition by Vodafone of the mobile division of Cable & Wireless Optus, and it mentions that there was a concern with possible co-ordinated effects in this merger in the mobile phone market. This is one of the few instances in the contributions where the possibility of co-ordinated effects is explicitly mentioned. The Chairman invited Australian comment regarding the "innovation market" analytic, and why the ACCC considered that there could be a risk of co-ordinated behaviour in the Vodafone merger.

An Australian delegate noted that there is no exhaustive definition of "market" in Australia's competition legislation. The only section specifically considering the concept refers to a market for goods and services. But the market definition given in the legislation does refer to a time dimension so there is a possibility of some development based on that. Australian courts have indicated that a market does not have to involve an actual trade in goods and services, and could exist as soon as there is a potential for competition. But the concept of an innovation market in the sense of R&D directed to the creation of new goods would not likely be accepted by the courts and does not feature in the Australian merger guidelines.

It is difficult to conceptualise the approach to innovation markets. The problems begin with determining the optimal level of innovation. It is not always the case that more is better than less R&D. For example in some patent races, the result could be unnecessary duplication. There is also the difficult issue of deciding who is participating in the market. New products can come from firms in quite unrelated markets. There is also an important secrecy problem. Neither the regulatory agencies nor suppliers are aware of all the innovation activity underway. How then could one estimate how much a merger might reduce innovation activity?

Its rejection of the innovation market approach does not mean the ACCC is unconcerned about R&D competition or rivalry leading to new product markets. Instead the ACCC sides with many of the country contributions and the Secretariat's background paper in noting that a somewhat customised approach is needed in high innovation markets. Standard concentration measures and barriers to entry need to be applied differently. A case by case approach is necessary. Australia is considering modifying its guidelines, which already explicitly consider potential competition, to take account of special difficulties in markets characterised by high levels of innovation or high reliance on IPR.

The Vodafone case is a good example of the Australian approach. Cable Wireless/Optus was the 2nd largest player and Vodafone was the third. Their merger would have given Vodafone more than 50 percent of the Australian mobile telecommunications market and made it the largest firm, i.e. ahead of Telstra. The enlarged Vodafone plus Telstra would have had more than 98 percent of the market. The parties argued that new technology, i.e. third generation telephony, could quickly change that. But even in markets experiencing rapid technological change, there can be competition concerns. In this case there was concern that very high market shares plus slowing growth rates would cause the two market leaders to reduce their investments in new technology. It was sobering to note that new entrants in 2nd generation technology had found it very difficult to take market share from the leaders. Most of the new entrants subsequently failed or withdrew.

The merger was dropped before the ACCC reached a decision because Cable & Wireless/Optus was taken over by a Singapore company. In all probability, the concept of innovation market would not have been the key factor in the ACCC analysis; i.e. the decision would have turned on fairly standard concerns about co-ordinated behaviour within a duopoly.

The Chairman noted that in addition to vertical foreclosure and co-ordinated effects there is also the issue of network effects. In its discussion of the nature of threats to competition from mergers in innovation intensive sectors, the United States contribution contains a detailed discussion of network effects and how they were dealt with in the WorldCom/MCI merger.

A United States delegate said that WorldCom/MCI involved the same theories as were applied later in the aborted MCIWorldCom/Sprint merger. There was close co-ordination with the EC and similar conclusions were reached. Nation-wide tier one Internet backbone provision was the market. Competitors in this market are mutually dependent since they must inter-connect to provide a complete network. The four leading tier one suppliers were substantially larger than the rest of the market; WorldCom and MCI were the two leading providers. These companies shared an incentive to provide high quality interconnections to each other. They did this through "peering arrangements" which were provided "transit free", i.e. zero interconnection fee. But post-merger, MCI/WorldCom would be twice as large as its nearest rival. Competition officials feared post-merger introduction of transit fees and lower quality of service provided to rivals. Network effects would have been strengthened with the effect of possibly tipping the market in favour of MCI/WorldCom.

The US delegate emphasised that the theory of competitive harm in WorldCom/MCI did not depend on a notion that the emerged entity would achieve greater efficiency and use that to win business from its rivals. Instead the concern was that MCI/WorldCom would effectively exclude or disadvantage rivals through higher interconnection fees and/or degraded services.

The remedy applied in WorldCom/MCI was divestiture of MCI's Internet backbone business which ended up going to Cable & Wireless. This was problematic for reasons the delegate was unsure of. A year later when the MCIWorldCom/Sprint merger was analysed, MCIWorldCom's share had grown while Sprint remained the 2nd largest player although its market share had declined. Cable & Wireless and GTE had both declined substantially. The combined MCIWorldCom/Sprint market share would have been about 53 percent, five times larger than the nearest competitor. Divestiture would have been an unsatisfactory remedy considering what happened regarding the previous MCI asset sales to Cable and Wireless. The transaction was therefore opposed and the parties abandoned it.

[The Chairman later returned – see below - to the United States, focusing on the fact that its contribution was unique in identifying a specific approach to innovation intensive markets.]

2. The importance of customised remedies

The Chairman commented that many contributions, including one from the European Commission, mention difficulties in devising workable remedies in high innovation markets. The EC also noted that horizontal and vertical mergers in innovation intensive industries are especially worrisome if there are important gatekeeper effects (i.e. a potential to exclude competitors). The EC refers to two cases: MCIWorldCom/Sprint, which is relevant to the gatekeeper effect issue; and the Vodafone/Mannesmann case, which illustrates the EU Commission's point on merger remedies.

A European Commission delegate stated that gatekeeper effects and resulting foreclosure have been a major source of concern in some EC cases involving high innovation markets. Such effects may be occasioned by vertical integration reinforcing the new entity's position at some point in the supply chain

and granting it the power to foreclose competitors at various levels. In addition vertical integration could alter the economic incentives of the parties leading to substantial changes in how markets function. Where access to networks is essential for the provision of a wide range of services, the gatekeeper effect can be a major concern.

The EC has confronted gatekeeper effects in both horizontal and vertical transactions. The MCIWorldCom/Sprint case is a good example of where the gatekeeper effect is produced by a horizontal overlap. This case, bearing a close resemblance with the WorldCom/MCI merger, was examined in close collaboration with the US. The market was defined as the provision of top level Internet connectivity. The EC found that MCIWorldCom still had a leading position in the market despite the remedies adopted in the WorldCom/MCI merger and Sprint was one of its main competitors. The combination of the parties' large networks and customer base would have created a company of such absolute and relative size that both competitors and customers would have been dependant on the new company for universal Internet connectivity.

Anticompetitive foreclosure effects were feared in MCIWorldCom/Sprint, mainly because the merged entity would have been able to raise rivals' interconnection costs and/or reduce the quality of such interconnection. It would also have enjoyed a unique power to determine new technical developments for advanced Internet services. Enhanced network effects would have resulted in a faster deterioration in the relative attractiveness of competitors, thereby reinforcing the dominant position of the merging firms.

Further regarding remedies, the EC delegate noted that an earlier merger case (Vodafone-Airtouch/Mannesman) involving two leading suppliers of mobile phone services showed that remedies must and can be customised to suit specific markets. Sometimes the remedy can take the form of lowering barriers to entry. In Vodafone, concerns were raised in the emerging market for pan-European seamless mobile telephony services. There was a growing demand for such services by internationally mobile customers, in particular large corporations. The merger would have given the new entity a uniquely large footprint in Europe, with sole control of mobile operators in eight EU member states and joint control in three more. Through this large footprint, it appeared that the merged entity would have been in a unique position to build an integrated network and provide advanced seamless European services. Its competitors would not have been able to duplicate this in the short to medium term, i.e. three to five years. The merger was finally cleared following undertakings to provide access to the merging parties competitors so that they too could provide pan European advanced seamless service. This remedy is particularly interesting because due to anticipated developments in the sector (i.e. the award of UMTS licences for 3rd generation telephony) it was limited to a period of three years. This example highlights that competition authorities do not have to accept situations of temporary market power. They can respond with temporary remedies.

The Chairman noted that the discussion was getting to the heart of the matter, i.e. what should be changed if anything in merger review in high innovation sectors. One possible change would be to alter the traditional preference for structural over behavioural remedies. He recalled that the Brazilian competition authorities extensively address the issue of remedies in their contribution and state: "In general, due to the monitoring costs incurred in the enforcement of behavioural remedies, antitrust agencies favour structural ones. However, innovative markets are a dangerous terrain to keep allegiance to traditional practices, because the changing nature of technology can easily overcome any apparent market power arising in the short run." (para. 15). The Brazilians therefore favour the use of "contingent" remedies. They also present a case concerning the acquisition of a nation-wide Internet service provider (ISP)(*Nutec*) by the dominant fixed line provider in the State of Sao Paolo. A time limited contingent remedy was used in this case to address the competition problem. This complements what the EC had presented. He called on Brazil for further information about remedies in general and Telesp/Nutec in particular. The Chairman noted in passing that a recently received supplementary Brazilian submission

from the Ministry of Justice provided a good overview of some of the distinctive characteristics of high innovation markets and of the Brazilian horizontal merger guidelines.

A Brazilian delegate stated that merger remedies are difficult to design for three reasons: markets can change quickly; the competition authority does not have control of all relevant variables; and there is a need to reduce monitoring costs.

Another Brazilian delegate discussed the details of the Telesp/Nutec case, a merger between the dominant fixed line telecommunications provider in Sao Paolo (Telesp had more than 90 percent of the market), and a nation-wide ISP. This case was analysed as a vertical integration in the market for telecommunications infrastructures. Fixed lines have been the most frequently used infrastructure for last mile Internet connection, so the ISPs in Sao Paolo depend largely on services provided by Telesp. The Telesp/Nutec case raised important issues of potential foreclosure and extension of market dominance. There were also concerns about the possibility of discrimination against non-integrated ISPs.

The remedy recommended in Telesp/Nutec was that the parties agree for three years to provide non-discriminatory access to non-integrated ISPs. This remedy was based on three key considerations: the probability of technological change that could produce a wider relevant product market; the ongoing change in telecommunication regulation that could lead to a larger geographic market; and the lack of precise non-discrimination rules in Brazil's existing telecommunication regulation.

The Brazilian delegation also described a merger between two software providers, Microsoft and Visio Corporation, a software company specialised in diagramming tools. The competition authority was concerned about possible network effects and tying problems. Visio's tools have many applications in business, and were not substitutable by the conventional illustration, artwork, or presentation softwares commercialised by Microsoft at the time. Although network effects were not at issue, since most diagramming softwares work with a multiplicity of formats, there were concerns about the ability of Microsoft to tie the Visio tools to its Office suite. The merger was approved without further restrictions once Microsoft provided guarantees that Visio products would be commercialised also in a stand-alone version.

The Chairman moved next to Korea citing it as a good example of a country in which standard merger analysis is applied to mergers in innovation intensive sectors. In its contribution, the Korean delegation details the SK Telecom/Shinsegi Telecom case, a 1999 merger in which the mobile communication company with the largest market share took over the third largest mobile company. The Chairman thought that Korea shared the view of other delegations that devising appropriate corrective measures can be difficult in mergers occurring in high innovation markets. He invited comment on that point as well as discussion of Korea's SK Telecom/Shinsegi Telecom case.

A Korean delegate began by explaining why standard merger analysis was applied to a merger in the innovation intensive mobile communications market.

Although no definite concept of high innovation markets exists, the mobile communications market matches many of the characteristics typical of most such markets. In particular it features rapid technological innovation and important network effects.

But the mobile communications market lacks other properties also characteristic of high innovation markets. For example, it is believed that performance or product differentiation generally plays a greater role than pricing as a means of competition in high innovation markets, but in the mobile communication market, the traditional competition tool of pricing is also very actively used. In Korea, due to price regulation, price competition largely takes place as subsidised provision of hand-sets. Such price

competition has been so severe that there are serious concerns about the financial viability of mobile communications firms. Moreover, it is hard to find definite increasing returns to scale in the mobile communications market similar to those found in markets for software or other knowledge intensive industries. Finally, the market share structure in the mobile communications market shows considerable stability due to high barriers to entry including network effects and the need to obtain government frequency permits. Because of all these characteristics, traditional merger assessment based on market share analysis is believed to be still valid in the mobile communications markets.

The delegate discussed the difficulties of devising appropriate mergers in high innovation sectors by discussing the SKTelecom/Shinsegi Telecom case.

In late 1999, SKTelecom, Korea's largest mobile communications company (42.7 percent market share) took over Shinsegi, the third largest operator (14.2 percent of the market). In this case, the KFTC defined the relevant market to include cellular and personal communication service (PCS). In addition to the merging parties, there were three other providers competing in the mobile communications market.

The KFTC concluded that the merger was anticompetitive. First of all, by merging with Shinsegi, the dominant position of SKTelecom was highly strengthened, leading to a nearly 60 percent market share. Secondly, its share was projected to increase post-merger due to network effects. Thirdly, the KFTC recognised the existence of the earlier mentioned entry barriers. Moreover, mergers in the mobile communications market have a tendency to provide merged companies with strong incentives and abilities to exclude competitors or raise entry costs.

The KFTC decided to allow the merger but ordered SKTelecom to reduce its market share to 50 percent within one year from the decision date. A merger is regarded as anticompetitive by law if the merged entity will have more than a 50 percent market share. The KFTC's order was heavily criticised. Primarily, this was because it was difficult to execute. SK Telecom was put in the position of having to force their subscribers to cancel contracts. There were also arguments that competition restraints could not be fully corrected simply by limiting market share without undertaking structural separation.

The delegate believed that the KFTC's remedy was a kind of second best option. It was an attempt by the KFTC to take into account network characteristics and to try to preserve the efficiencies generated by the merger. In addition the regulation of Korea's mobile communication market had the effect of limiting the KFTC's options, i.e. some of the anticompetitive effects arguably could be controlled by regulation. In particular, since the Ministry of Information and Communication obliges service providers to inter-connect with other providers, the KFTC would have found it difficult to order a divestiture in this case.

Proceeding to the Japanese contribution, the Chairman noted that Japan relied on standard merger review for mergers in innovation intensive sectors. Its contribution mentioned that: "The Guidelines on M&As make no stipulation to the effect that M&As in the high-tech innovation market are to be treated any differently to those in any other market." (para. 1). However, it adjusts its analysis to the specifics of the high tech sector. In particular, in mergers in markets featuring very short product life cycles, it is important to take into account the instability of market shares. The Japanese contribution illustrates this point by presenting the case of a joint venture by NEC and Hitachi to engage in the development, design etc. of 256 megabit DRAMs. Japan was requested to provide more detail on this case and its general approach to mergers in high innovation markets.

A delegate from Japan began by noting that merger review in high innovation markets must take account of rapidly changing market conditions. He also stated that in Japan there have been few merger cases in high innovation markets although more are expected. Japanese merger guidelines state that if a

merger will cause substantial changes in market shares in the near future due to recent trends in sales volumes, changes in user tastes and other factors, these aspects will be considered in determining the competitive impact. This clearly applies to high innovation markets featuring rapid changes in market shares.

The NEC/Hitachi joint venture, in which both parties had 50 percent of the shares, was intended to engage in the development, design and so forth of next generation DRAMs including 256 megabit DRAMs. The parties hoped for enhanced management efficiency and increased competitiveness in the DRAM business. The parties together held a 30 percent share of DRAM sales in Japan, which was larger than the share of any competing company. However, when the following circumstances were comprehensively considered, it was determined that the proposed establishment of a joint investment company would not be substantially restrain competition in the pertinent field of trade:

- there were several domestic and foreign manufacturers whose respective market shares exceeded ten percent;
- several foreign manufacturers were planning to enter the Japanese DRAM market; and
- the prices paid by major world-wide PC manufacturers for DRAMs greatly influenced price negotiations with users, some of whom enjoyed substantial buyer power.

3. Greater importance of static and dynamic efficiency tradeoffs in high innovation markets

The Chairman commented that delegation after delegation claims that no special analysis is needed for merger review in high innovation markets. Nevertheless, most go on to describevarious adjustments they make for such mergers including those needed to make appropriate tradeoffs between static efficiency and increased innovation. Australia mentioned this in its oral presentation. In addition Finland presented a very interesting case illustrating this point, i.e. the Sonera, Yleisradio/Digita case. This concerned a proposed joint venture by Sonera (Finland's largest telecommunications operator) and Yleisradio (the national public service broadcasting company). The parties claimed the merger would encourage innovation in providing new routes for data transmission over third generation mobile telephones.

The Finnish Competition Authority (FCA) worried that foreclosure effects might result in reduced competition in innovation and less innovation being conducted. Conditions were imposed on the merger by the FCA and the Market Court. The parties dropped their plan to establish the joint venture possibly because they were unwilling to live with the conditions imposed on them. An interesting question is what has happened to innovation activity and innovation competition after the parties abandoned their project? Has innovation been harmed because the merger did not take place?

A delegate from Finland explained that this complex case involved digitalised TV broadcasting, a transmission network and the related infrastructure. For Sonera, the largest Finnish telecom operator, it was crucial to maintain access to digitalised networks in order to enhance its position in mobile telephony through providing data transmission services etc. At the same time it should be mentioned that Digita had a monopoly in terrestrial broadcasting. The FCA concluded that initially there probably was no competition problem due to a lack of horizontal and vertical overlaps, but such overlaps could possibly occur in the near future. There was evidence that Sonera could strengthen its dominant position in mobile phones through joint control of Digita. The parties claimed that potential problems were small compared to possible efficiency gains. The FCA came to a different view and opted to block the joint venture. It noted that there were other companies interested in making the same innovation Sonera was seeking to

introduce. If the joint venture went through, those competitors would be forced to share their secrets with Sonera because of a need to assure compatibility with its broadcasting network. In addition the joint venture's claimed efficiencies could be obtained in less anticompetitive ways, e.g. through creating another joint venture outside of Sonera's control. The Market Court decided to allow the joint venture subject to some significant conditions. Rather than accept those conditions, the parties abandoned the transaction. Sometime later a French company took over Digita and provided the needed expertise for the pertinent innovations.

The Chairman noted similarities between the Finnish case and one presented in the Spanish contribution, i.e. a joint venture between a bank and Spain's largest mobile phone operator (paras. 21-35). The transaction was proposed in order to foster an important innovation, i.e. payments made through the mobile phone network. The joint venture was eventually authorised by the Council of Ministers with creative conditions being applied. Along the way, the Spanish Competition Authority obliged the parties to open their evolving system to competitors. The Chairman called on Spain to explain the risks posed by the transaction, describe its forward looking remedy, and review subsequent developments.

A Spanish delegate described the transaction as the creation of a joint venture, Movilpago, between Telefónica Móviles, the largest Spanish mobile operator and BBVA (Banco Bilbao Vizcaya Argentaria), one of the largest Spanish banks, to develop and commercialise an electronic means of payments using the mobile telephone.

The principal competition concerns in this case stemmed from difficulties other companies would experience in seeking to compete with Movilpago. Because of network effects, they would probably have to affiliate with the first mover and that in turn raised potential problems because the joint venture partners would enjoy a favoured position. This stemmed from their control over the evolution of the communication protocol or set of rules governing the exchange of information between Movilpago and any other mobile operator. This protocol, patented by Movilpago, would remain secret. Several months were required for competitors outside the system to meet all the technical requirements to connect to Movilpago. The length of this period would depend on Movilpago's willingness to co-operate; i.e. there was a potential for anticompetitive delays. There was also a risk arising from Telefónica being able to bundle the services of Movilpago with its own products.

The transaction was approved by the Council of Ministers in November 2000 but subject to the following conditions:

- A 3-month moratorium on the commercialisation of Movilpago.

- Movilpago must provide prompt access to requesting mobile operators and financial entities, including supplying them with all the technical protocols within a month. It also has to notify the Service for Defence of Competition (SDC) concerning access requests, and the terms of access conditions including royalties charged.

- Movilpago has to respect the principles of neutrality and non-discrimination in their relations with requesting operators.

- In publicity and promotion, Movilpago was obliged to make plain that it is a system that can be used from any mobile operator or financial network adhering to the system.

- No particular operator can appear in Movilpago publicity for a year after the start of commercialisation.

- Movilpago cannot sign exclusive distribution contracts with distributors; i.e. the distributors remain free to commercialise other systems.

- Movilpago cannot enter into exclusive relationships with consumers.

- Movilpago is not allowed to offer volume discounts to any operator for a year from the commercial launch of the system.

The phase involving SDC surveillance has ended. Movilpago has respected all the conditions imposed by the Council of Ministers. Other operators have joined the system and the joint venture is owned by four mobile operators (40 percent of capital), six banks (40 percent) and several payment systems, such as VISA (20 percent). So the remedy appears to have succeeded.

The Chairman rounded out the discussion by referring to the only contribution outlining a specific approach to high innovation sectors. In particular, he noted that the United States has made the most use of the innovation market concept in merger review. The Chairman wished to know whether US experience in considering competitive effects on innovation as well as on more traditional product or technology markets lead to a stricter rather than more liberal approach to mergers in high-innovation markets. The answer may be negative given that the US contribution notes that whatever can be achieved through resort to the innovation market concept could just as well be captured through analysing potential competition. The Chairman got the impression that US case law was moving away from the innovation market concept, and he elicited comment as to why that was happening.

A United States delegate pointed to the upcoming 20th Anniversary of the 1982 Merger Guidelines and noted that its hypothetical monopolist paradigm for market definition is theoretically sound and implementable. The innovation market concept was introduced into the US in its 1995 intellectual property guidelines. Before and since that time the US has reviewed many mergers in high innovation sectors. Even prior to the 1995 intellectual property guidelines, merger reviews included concerns about networking effects, "tipping," and competition for the market rather than within the market.

The delegate stated that the US does not have a stricter or more liberal approach to mergers in high innovation markets. Following adoption of the 1982 Guidelines, the US has always required a fact-based theory of competitive harm. The US has not relied strictly on structural presumptions. Market definition and market shares constitute the beginning of the analysis, not the end.

The US contribution could be read as critical of the innovation market concept, but the delegate stressed that there has been no change in enforcement policy. Clear official statements and case decisions demonstrate continuity in enforcement. Mr. Muris, the FTC's Chairman, stated in a summer 2001 speech that merger enforcement in high-tech industries is not fundamentally different from enforcement in other industries. The basic guidelines can be applied. However, the US proceeds cognisant of having less experience in high innovation markets.

It is well accepted that if there are well defined product or technology markets and innovation related to those markets, the competitive issues are rather straight forward. If one has a competitive problem in actual products or technology and the companies are also engaged in developing technology to improve those products or technology, market definition can proceed using conventional approaches.

Innovation markets deal with a different situation, one where the issue is not an actual product or technology market and actual or potential competition in that market. Quoting from the 1995 IPR guidelines, an innovation market: "… consists of the R&D directed to particular new or improved goods or processes and the close substitutes for that R&D."

There have been few instances where innovation markets have been an issue. But innovation markets have featured in consent orders entered into by both US competition authorities. Innovation markets have been criticised - see for example the cite to Richard Rapp's article in the US contribution.

Part of the concern in Rapp's article is that defining markets and calculating market shares automatically leads to enforcement decisions. But that is simply wrong. The Merger Guidelines clearly stated that this is merely the start of the analysis - an enforcement decision must be based on a fact-based theory rather than structure alone. The delegate acknowledged, however, that Rapp is probably correct in noting that the relationship between structure and performance is likely more reliable in bricks and mortar than in high innovation markets. Be that as it may, there should not be a strong presumption from structure to adverse performance in either kind of market.

The US delegate believed that various enforcement actions in recent years employing the "innovation market" concept could in all likelihood have legitimately been brought using the traditional analytical tools. In limited circumstances something like innovation markets may be useful, i.e. where it is difficult to trace R&D to an existing product or technology market.

Concern about competition in R&D goes back to promulgation of the National Co-operative Research Act where there was concern about consortia of major competitors in important industries engaged in joint research. The issue was how many competitors should be allowed to get together even to do relatively basic research. The US has had few if any enforcement issues related to that.

Measuring shares in innovation markets can be problematic, but the delegate did not wish to over-emphasise the importance of shares either in bricks and mortar or innovation intensive markets. The number of significant competitors is important. Two to one mergers and "three to two" in a well-defined market setting (e.g. the baby food case) are likely to be highly problematic whether or not "high innovation" is a central issue.

The delegate supported the UK's point, made in its written discussion of Microsoft/Telewest (see para. 36), that enforcement decisions involving technology and innovation should not be speculative. He also agreed with the UK's view that although exclusion is a viable and common theory that may be applied to mergers in high innovation sectors, it should be applied with care. Competitor concerns about exclusion could be motivated by anticompetitive behaviour, but could also be linked to fears about a competitor becoming more efficient. The US spends a lot of time speaking with sophisticated, knowledgeable buyers and gives their views trump status over those of competitors. The US also seeks the views of truly independent third party experts.

With respect to enforcement policy in high innovation as in other sectors, transparency is important and the US is working to increase this. In this the delegate applauded the EC's written merger decisions. The US will remain cautious about enforcement actions in high innovation markets but will not shirk from doing so where there is a proper factual basis.

To help ensure good merger decision-making, efforts must be made to study the effects of past enforcement or non-enforcement actions. The US Federal Trade Commission is now engaging in retrospective studies to shed light on this issue.

4. General discussion

Having touched bases with all the contributing countries, the Chairman returned to the Netherlands to see how, if at all, its views concerning the need for a broad policy review or a modified approach to mergers in high innovation markets may have changed as a result of the roundtable's discussion.

A Netherlands delegate commented that although many jurisdictions have encountered problematic cases requiring complex assessment and remedies, everybody agrees that their legislation is flexible enough to address the specific issues faced. None of the other delegations addressed, however, the issues stressed in the Netherlands contribution, i.e. the need for using sector specialists and a pro-active approach to high-innovation markets. Aware of the special characteristics of high innovation markets, the Netherlands feels that being ahead of developments in high innovation markets could be of tremendous advantage when mergers are notified.

A BIAC delegate stressed that competition policy should be used to promote not hinder innovation. The delegate was pleased to hear government delegates acknowledging the challenges presented by mergers in high innovation markets, and the consequent need for caution in reviewing them. He made supporting references to past and present heads of the US FTC. In particular the delegate noted that Chairman Pitofsky, in a speech in Scottsdale Arizona in 1999, made it clear that competition agencies should be particularly cautious in intervening in situations where innovation could be adversely affected. Allan Greenspan was also reported, in a 1998 Wall Street Journal article, as saying: "I would feel very uncomfortable if we inhibited various different types of mergers or acquisitions on the basis of some presumed projections as to how markets would evolve", and particularly in technology industries, "…history is strewn with people making projections that have turned out to be grossly inaccurate."

The delegate noted that Pitofsky's and Greenspan's views are well borne out in recent events in a number of high tech markets. WorldCom for example no longer enjoys anywhere near the market power that antitrust authorities were rightfully concerned about several years ago. These markets change very rapidly.

The delegate supported the Secretariat's issues paper reference to: the challenges that ought to be faced in addressing high innovation markets; the degree of caution required; and the unique characteristics involved such as network effects. One individual who has written extensively on this issue, referred to in the Secretariat's paper, was Michael Porter (see para. 33ff). The delegate recommended Porter's views as worthy of attention because of his special focus on innovation and productivity. The delegate also appreciated the Secretariat paper's focus on the need to show flexibility in remedies and its reference to monitoring and the use of behavioural remedies as alternatives to the traditional structural remedies. That note is also echoed in the EC's paper and amplified in a case referred to by an US delegate, i.e. the Microsoft/Telewest case. The delegate commented that Canada used the monitoring mode in assessing mergers where their potential efficiencies and anticompetitive effects were very difficult to ascertain and weight. In some instances in the late 1980s, Canada coupled monitoring with a specific right to take action, including ordering divestment of a crown jewel, should anticompetitive effects appear in future. The delegate believed that in some difficult situations this was superior to taking immediate action that might inhibit innovation and market growth.

Another BIAC delegate added his support to those arguing that traditional antitrust analytics do not need to change as regards application to innovation or high tech market mergers. He noted, however, that the US Merger Guidelines paradigm does apply quite differently to high innovation markets beginning with market definition. In WorldCom/MCI, the merger review unearthed a market for Internet backbone infrastructure. With respect to AOL/Time Warner, the notion that there is an Internet service and content

provider market was something that evolved in the course of the analysis. As regards pharmaceutical markets, the delegate was troubled by the notion of therapeutic substitutes. He also noted the inherent difficulties in dealing with markets in relation to R&D, particularly basic R&D, and reminded delegates that there are very few cases like Sandoz/Ciba Geigy (i.e. no products on the market or very close to introduction).

The delegate pointed to problems of identifying the state of play and the players in innovation intensive markets, as well as difficulties identifying market shares, even where there are products on the market. In WorldCom/MCI there were many ways in which shares could have been identified: revenues; ISP connections; fibre capacities; and importance of ISP connections. At the end of the day, particularly looking at the EC statement, there was no apparent need to decide between these different share concepts because there was a market power problem no matter which was employed. When one gets to pure R&D mergers, even the US Merger Guidelines have indicated that one should look at the number of competitors as well as shares, i.e. shares are less important.

According to the BIAC delegate, business would agree that presumptions based on structural analysis are much less powerful in high tech and R&D markets than in other markets (may not be powerful there either). As Rapp pointed out, the SSNIP [small but significant non-transitory increase in price] test used in market definition does not work in high tech, high innovation markets. The delegate wondered whether it would be possible to assess instead the probability of a significant non-transitory decrease in innovation. Poor enforcement decisions could have an important chilling effect on innovation. The use of licensing and help as in Ciba Geigy/Sandoz makes perhaps more sense than outright blocking a merger. In any case, even divestments may not be successful, e.g. the WorldCom/MCI merger.

In closing, the delegate stressed that merger review in high innovation markets can raise global issues, and there is a need to continue to promote greater international convergence and transparency. Such convergence could be assisted by follow-up analysis of mergers. A retroactive study of Internet backbone provision cases might be interesting. A broader look at IPRs and competition policy interface could also be useful.

5. Chairman's closing remarks

The Chairman highlighted two common features found in many contributions. First, there is no need for new concepts for high-innovation mergers, but specific features such as greater instability and difficulties in predicting the future in fast changing markets had to be acknowledged. Second, there is recognition that price competition and static efficiency might be less important for progress than innovation. Michael Porter stressed that last point and the Chairman wondered whether there was a trade-off between price competition and the development/promotion of innovation. He also wondered whether the concept of innovation market clearly focused on competition for innovation. The Chairman was sceptical about whether competition for innovation is the best way to get innovation, noting that the link between the traditional concept of competition and innovation has been the subject of much discussion and might be worth revisiting. In any case, the Chairman thought it might be time to bid good bye to the innovation market concept while retaining the basic methodology.

Concerning remedies, the Chairman referred to a recent seminar held in Paris. The news from that seminar was not very encouraging as regards the adequacy of merger remedies and leads to two questions. If we are not good in general in fashioning remedies, are we better at doing it in high tech markets? Is there even more risk in being wrong in such markets? One way to lower the risks would be to shy away from structural remedies as being too complicated and uncertain in their effects, and rely instead on shorter term behavioural remedies.

The Chairman felt strongly that competition authorities should review the effects of their remedies, both structural and behavioural. That would include examining whether parties have complied with any conditions imposed and also whether such conditions contributed positively to innovation and competition.

RÉSUMÉ DE LA DISCUSSION

1. Une approche spécifique est-elle nécessaire ?

Le Président observe, à la lumière des contributions des pays, que la plupart n'ont pas de lignes directrices ou de dispositions spécifiques pour l'examen des fusions dans les marchés très innovants - c'est à dire les marchés caractérisés par une succession rapide d'innovations. De plus, le concept de marchés très innovants ne semble pas très utilisé. L'analyse des fusions dans les marchés très innovants revient généralement, selon la logique habituelle, à observer l'impact de la fusion sur la configuration actuelle ou future de la concurrence sur le marché. Pourtant, l'évaluation des fusions dans les marchés très innovants présente des problèmes spécifiques. Les parts de marché représentent de bien piètres indicateurs de la configuration future de la concurrence, car le contour des marchés pertinents est très fluctuant et que les parts de marchés sont généralement très instables. Grâce à la forte différentiation des produits dans les secteurs très innovants, les effets unilatéraux ne sont pas une préoccupation majeure, mais les effets coordonnés ou l'éviction verticale constituent véritablement des problèmes. Il est particulièrement difficile de concevoir les parades efficaces aux fusions ; cela est d'autant plus complexe que les marchés évoluent rapidement.

Le Président note que la contribution des Pays-Bas met en lumière plusieurs difficultés qui se posent aux autorités de la concurrence lorsqu'elles travaillent sur les fusions dans les secteurs très innovants (soit environ 10 pour cent des fusions examinées aux Pays-Bas). La définition du marché pertinent est particulièrement difficile dans les secteurs caractérisés par des produits (ou des services) très différentiés, par des technologies en évolution rapide, et par la convergence des technologies. La contribution présente l'affaire Digitenne pour illustrer cette difficulté.

La contribution des Pays-Bas soulève également une question importante : " comment une agence de la concurrence… peut-elle s'armer pour apporter une meilleure réaction aux fusions dans les marchés très innovants.." (paragraphe 58). Cette même contribution poursuit, tranchant en cela avec d'autres intervenants, "Il faudrait examiner plus avant la nécessité d'appliquer des approches modifiées ou révisées selon les situations" (paragraphe 58). Des autres contributions, il ressort plutôt qu'il ne faut pas d'approche spécifique pour les marchés très innovants. Le Président demande aux Pays-Bas de développer de manière plus détaillée la nécessité d'une approche spécifique de l'examen des fusions pour les marchés très innovants.

Un délégué des Pays-Bas précise qu'en réalité son pays ne croit pas à la nécessité d'une approche analytique spéciale pour évaluer les fusions dans les marchés très innovants.

Bien que l'expérience des Pays-Bas montre que l'évaluation des fusions dans ces marchés peut être complexe et difficile, il en ressort aussi que toutes les fusions dans des marchés généralement considérés comme très innovants ont été approuvées dans des délais relativement brefs, c’est-à-dire pendant la phase initiale de "notification". Les procédures existantes sont suffisamment flexibles pour être appliquées au cas par cas à ce type de transactions.

L'Autorité de la concurrence des Pays-Bas (NCA) pense toutefois que des améliorations pourraient être apportées, notamment au niveau des délais et des méthodes d'évaluation. Une certaine spécialisation sectorielle au sein de l'autorité de la concurrence permettrait de mieux traiter les cas de fusion dans les marchés très innovants, comme en témoigne l'affaire Digitenne citée précédemment. Une spécialisation sectorielle permettrait une meilleure compréhension des enjeux technologiques et autres, que posent les marchés très innovants.

Les Pays-Bas soulignent également qu'il est souhaitable d'avoir une démarche d'anticipation face aux problèmes de concurrence dans les marchés très innovants. Cela facilite l'établissement d'un bon réseaux d'experts dans lequel puiser, en interne et en externe, et permet une anticipation suffisante des fusions potentielles. C'est la principale leçon à tirer de l'affaire Digitenne.

Comme il est expliqué dans la contribution écrite, la transaction Digitenne a été approuvée sans nécessiter la "deuxième phase" de l'évaluation des fusions. Ce gain de temps et de travail n'aurait pas été possible si la NCA n'avait pas préalablement adressé des recommandations au ministère de tutelle. La NCA a ainsi anticipé une notification et s'y est préparée très à l'avance.

L'une des raisons pour lesquelles la NCA n'est pas très favorable à une approche modifiée ou révisée aux fusions dans le secteur des hantes technologies est qu'il serait difficile de définir les situations dans lesquelles cette approche serait nécessaire. Il y a trois obstacles de taille à surmonter. Premièrement, les critères à appliquer devraient être clairs et transparents. Deuxièmement, il faudrait déterminer les situations et les marchés pertinents auxquels elles s'appliquent. Troisièmement, sachant que chaque transaction est différente, il faudrait décider si chaque transaction spécifique répond aux critères prévus.

Les Pays-Bas concluent en soulignant deux points. D'abord, une révision en profondeur de la politique n'est pas nécessaire. Deuxièmement, il serait souhaitable d'améliorer les délais et les méthodes dans le cadre existant, notamment en ayant recours à des spécialistes sectoriels et en suivant une démarche d'anticipation.

Le Président précise que la contribution du Royaume-Uni comporte un examen approfondi des caractéristiques des marchés très innovants (notamment : économies d'échelles, absence de contraintes de capacité, effets de basculement, produit extrêmement différentiés), et souligne l'importance des problèmes d'éviction. La réglementation des fusion au Royaume-Uni y est décrite comme suffisamment flexible pour évaluer les fusions dans les secteurs de haute technologie sans qu'il faille recourir au concept de marchés très innovants. Cette contribution étudie plusieurs cas intéressants comme la fusion entre BSkyB et Hilton et l'affaire Microsoft-Telewest, qui posent des problèmes d'éviction verticale. Le Président invite le Royaume-Uni à prendre la parole, notamment pour évoquer ce problème.

Un représentant de l'Office of Fair Trading (OFT) du Royaume-Uni note que son agence applique une méthode unique souple pour évaluer les fusions dans tous les secteurs et étudier leurs effets potentiels tant statiques que dynamiques. Le Royaume-Uni n'a pas jugé nécessaire de définir un marché pour la R&D pour cerner les effets dynamiques importants dans les marchés très innovants.

Le Royaume-Uni n'a pas connu beaucoup de cas dans lesquels l'innovation jouât un rôle central dans l'analyse d'impact sur la concurrence, mais l'innovation était au cœur de la thématique dans l'analyse des fusions BskyB-Hilton et Microsoft-Telewest.

L'affaire BskyB concernait les paris en temps réel par télévision numérique. La fusion projetée devait rapprocher le principal service britannique de télévision à péage par satellite, qui propose un bouquet de programmes comportant d'importantes chaînes de sport, avec la principale société de jeux. Les parties auraient bénéficié au départ de 100 pour cent de parts de marché. Le délégué note que ce cas illustre

l'équilibre à trouver entre la nécessité de récompenser l'innovation et l'élargissement de l'offre proposée aux consommateurs, avec les risques liés à une quasi exclusivité. A un stade aussi précoce de développement du produit, il était difficile d'évaluer la capacité d'autres sociétés à surmonter les effets d'éviction verticaux. L'OFT a saisi la Competition commission (commission de la concurrence). Les parties ont alors décidé de renoncer à la transaction, bien qu'un accord de non-exclusivité ait été trouvé par la suite.

Le délégué note que les effets sur l'innovation d'une fusion dans un secteur de hautes technologies peuvent être plus négatifs que ceux d'une réduction de la concurrence sur les prix dans un marché statique.

Le Président indique qu'en Australie le concept de marché innovant est rarement utilisé, pour des raisons tant économiques que juridiques. Les lignes directrices sur les fusions (Merger guidelines)"… font intervenir la notion de produit identifiable" (paragraphe 10); or, l'innovation n'est pas un produit. Cela pose la question de l'utilité d'une révision des lignes directrices, à moins que le concept de marché innovant ne soit inutile pour l'évaluation les fusions dans les secteurs émergents. L'ACCC estime clairement que l'outil traditionnel de la "concurrence potentielle" suffit pour analyser les fusions dans les marchés très innovants.

Dans son analyse des menaces potentielles à la concurrence que représentent les fusions dans les marchés très innovants, l'Australie suggère dans sa contribution, tout comme le Royaume-Uni, que le risque d'effets coordonnés dans les industries de hautes technologies est probablement atténué par la diversité des produits. Toutefois, l'acquisition de la division mobile de Cable & Wireless Optus par Vodafone est évoquée, ainsi que le risque d'effets coordonnés dans le marché de la téléphonie mobile. Les contributions citent un certain nombre d'exemples dans lesquels la possibilité d'effets coordonnés est explicitement mentionnée. Le Président invite l'Australie à commenter son analyse de la notion de "marché innovant" et à indiquer pourquoi l'ACCC estime qu'il existe un risque de comportements coordonnés dans la fusion Vodafone.

Un délégué de l'Australie indique qu'il n'existe pas de définition exhaustive du "marché"' dans la législation australienne. La seule section qui fasse spécifiquement référence à ce concept concerne un marché de biens et services. En revanche, la définition du marché contenue dans la législation comporte un élément temporel : une évolution est donc possible à partir de là. Les tribunaux australiens ont indiqué qu'un marché ne porte pas nécessairement sur du commerce de biens et services, et qu'il peut y avoir marché dès lors qu'il y a une possibilité de concurrence. Mais le concept de marché innovant au sens de R&D orientée vers la création de produits nouveaux ne serait probablement pas retenu par les tribunaux et ne figure pas dans les lignes directrices australiennes en matière de fusion.

Il est difficile de conceptualiser l'approche des marchés très innovants. La première difficulté est toujours de déterminer un niveau optimal d'innovation. En matière de R&D, les résultats ne sont pas toujours à la hauteur de l'effort fourni. Par exemple certaines courses au brevet, peut aboutir à des doublons. Reste la difficulté de déterminer quels sont les acteurs du marché. De nouveaux produits peuvent provenir d'entreprises qui opèrent dans des marchés très différents. Le problème de la confidentialité est également important. Ni les agences de réglementation ni les fournisseurs ne sont au courant de toutes les activités d'innovation qui ont lieu en ce moment. Dans ces conditions, comment peut-on estimer dans quelle mesure une fusion entraverait l'innovation ?

Ce n'est pas parce qu'elle ne retient pas la notion de marché innovant que l'ACCC ne se soucie pas de la concurrence ou de la rivalité en matière de R&D dans la création de nouveaux marchés de produits. L'agence estime en revanche, à l'instar de plusieurs contributions de pays, qu'une approche "sur mesure" serait de mise dans les marchés très innovants. Les mesures habituelles de la concentration et des obstacles à l'entrée doivent être appliquées différemment. Il faut aborder les situations au cas par cas.

L'Australie envisage de modifier ses lignes directrices, qui envisagent déjà la notion de concurrence potentielle, pour tenir compte de difficultés propres aux marchés très innovants ou présentant une forte dépendance vis-à-vis des DPI (droits de propriété intellectuelle).

L'affaire Vodafone illustre parfaitement l'attitude australienne. Cable Wireless-Optus était le deuxième acteur du marché, suivi en troisième place par Vodafone. Avec cette fusion, Vodafone aurait contrôlé plus de 50 pour cent du marché de la téléphonie mobile en Australie, surclassant ainsi Telstra. A eux deux, Vodafone en périmètre élargi et Telstra auraient totalisé plus de 98 pour cent du marché. Les parties faisaient valoir que la nouvelle technologie (la téléphonie de troisième génération) pourrait rapidement changer la donne. Mais même les marchés où les évolutions technologiques sont rapides peuvent connaître des problèmes de concurrence. Dans l'affaire Vodafone, il était à craindre que la combinaison de parts de marché très élevées et d'un ralentissement des taux de croissance ne conduise les deux acteurs à réduire leurs investissements dans les nouvelles technologies. Il est instructif de rappeler combien il avait été difficile aux nouveaux entrants dans la téléphonie de nouvelle génération de gagner des parts de marché des acteurs installés. La plupart d'entre eux se sont retirés ou ont fait faillite.

Le projet de fusion a été abandonné avant la décision de l'ACCC car Cable & Wireless-Optus a été racheté par une société de Singapour. Selon toute probabilité, le concept de marché innovant n'aurait pas été un facteur déterminant dans l'analyse de l'ACCC ; la décision aurait été fondée sur des critères plus classiques de comportements coordonnés au sein d'un duopole.

Outre l'éviction verticale et les effets coordonnés, le Président rappelle qu'il faut aussi évoquer le problème des effets de réseau. Dans son étude de la nature des menaces que représentent les fusions pour la concurrence dans les secteurs très innovants, la contribution des États-Unis comprend un examen détaillé des effets de réseau et de la manière dont ils ont été appréhendés dans l'affaire de la fusion WorldCom-MCI.

Un délégué des États-Unis indique que l'affaire WorldCom-MCI faisait intervenir les mêmes théories que celles qui ont été appliquées par la suite dans la fusion MCIWorldCom-Sprint. La coordination avec l'Union européenne a été étroite et des conclusions similaires ont été tirées. Le marché était celui de la fourniture de dorsales Internet dans tout le territoire des États-Unis. C'est un marché dans lequel les concurrents dépendent fortement les uns des autres puisqu'il leur faut travailler en interconnexion pour pouvoir offrir à leurs clients une couverture de l'ensemble du réseau. Les quatre plus gros fournisseurs de premier rang étaient de poids à peu nettement plus élevés que les autres concurrents ; WorldCom et MCI occupaient les deux premiers rangs. Ces quatre acteurs avaient tout intérêt à ce que les interconnexions entre eux soient de grande qualité. Cela se faisait par le biais d'accords d'échange de trafic ("peering arrangements") sans paiement de redevances d'interconnexion. Mais après la fusion, MCI-WorldCom aurait été deux fois plus gros que son principal concurrent. Les autorités de la concurrence redoutaient que le nouvel ensemble ne se mette à exiger des redevances d'interconnexion et à fournir à ses rivaux des services de moins bonne qualité. Les effets de réseau auraient été renforcés par l'éventualité d'un basculement du marché en faveur de MCI-WorldCom.

Le délégué des États-Unis souligne que dans l'affaire WorldCom, la notion d'atteinte à la concurrence ne reposait pas sur le fait que l'entité nouvelle parviendrait à une plus grande efficience et l'utilisait pour prendre des clients à ses concurrents. Le problème était que MCI-WorldCom allait de fait exclure ou désavantager ses concurrents en imposant des redevances d'interconnexion ou un service dégradé.

La solution choisie dans le dossier WorldCom-MCI a été d'imposer la cession par MCI de son activité dorsale Internet, qui a fini par tomber dans l'escarcelle de Cable & Wireless. Le délégué ne saurait dire avec certitude pourquoi cette solution a posé des problèmes. Un an plus tard, quand la fusion entre

MCI WorldCom et Sprint a été analysée, la part de MCI WorldCom avait progressé, Sprint demeurant le deuxième acteur du marché, malgré une part de marché réduite. Cable & Wireless et GTE avaient tous deux perdu beaucoup de terrain. La part de marché de l'ensemble MCI WorldCom-Sprint aurait été d'environ 53 pour cent, soit cinq fois supérieure à celle de son premier concurrent. La cession apparaissait comme une mauvaise solution au vu de l'expérience de la cession par MCI d'actifs à Cable & Wireless. Les pouvoirs publics se sont donc opposés à la transaction, et les deux parties renoncèrent.

[Le Président est revenu sur la contribution des États-Unis dans la suite des débats, soulignant qu'elle était la seule à proposer une approche spécifique pour les marchés très innovants.]

2. De l'importance de concevoir des actions correctrices sur mesure

Le Président note que beaucoup de contributions, notamment celles de la Commission européenne (CE), font état de difficultés à élaborer des actions correctrices réalisables dans les marchés très innovants. La CE indique également que les concentrations horizontales et verticales dans les secteurs très innovants sont particulièrement préoccupantes lorsqu'il existe d'importants effets de contrôle d'accès (possibilité pour l'acteur dominant d'empêcher l'entrée de concurrents). La CE évoque deux dossiers : le cas MCI WorldCom-Sprint et le cas Vodafone-Mannesmann, pour illustrer le point de vue de la Commission sur les actions correctrices.

Un délégué de la Commission européenne indique que les comportements de contrôle de l'accès et l'éviction qui en découle ont représenté un sujet de préoccupation majeur dans certains dossiers dont elle a été saisie concernant des marchés très innovants. Ces effets peuvent être occasionnés par des concentrations verticales qui renforcent la position du nouvel ensemble à un certain point de la chaîne d'approvisionnement, ce qui va lui permettre d'exclure des concurrents à différents niveaux. En outre, l'intégration verticale peut altérer les enjeux économiques pour les parties, ce qui peut bouleverser le fonctionnement du marché. Lorsque l'accès à un réseau est essentiel pour fournir une large gamme de services, les comportements de blocage peuvent poser de graves problèmes.

La Communauté européenne a été confrontée à des comportements de contrôle d'accès associés à des concentrations horizontales et verticales. Dans l'affaire MCI WorldCom-Sprint, cet effet de contrôle d'accès provenait d'un chevauchement horizontal. Ce dossier, qui présentait de fortes similitudes avec le rapprochement WorldCom-MCI, a été examiné en étroite collaboration avec les États-Unis. Le marché a été défini comme étant la fourniture de connexités Internet de niveau supérieur. La Commission européenne a établi que MCI WorldCom détenait toujours une position dominante sur le marché malgré les mesures correctrices prises lors de la fusion entre WorldCom et MCI, et que Sprint était l'un de ses principaux concurrents. L'importance des réseaux et des bases de clientèles des deux parties aurait abouti à la création d'un ensemble d'une taille absolue et relative telle qu'il aurait placé les concurrents comme les clients en situation de dépendance pour bénéficier d'une connexité Internet universelle.

Si des effets d'éviction anticoncurrentiels étaient à craindre d'un rapprochement MCI WorldCom-Sprint, c'est surtout parce que la nouvelle entité aurait été en mesure d'accroître les redevances d'interconnexion de ses rivales ou d'abaisser la qualité des interconnexions. Le nouvel ensemble aurait en outre bénéficié d'une puissance de marché unique pour peser sur les nouvelles options techniques pour les services Internet avancés. L'accentuation des effets de réseau aurait conduit à une détérioration plus rapide de la compétitivité relative des concurrents, renforçant ainsi la position dominante de l'entité fusionnée.

Toujours au chapitre des actions correctrices, le délégué de la Communauté européenne note que par le passé, le dossier de fusion Vodafone-Airtouch-Mannesmann, qui faisait intervenir deux acteurs majeurs de la téléphonie mobile, a démontré que ces actions peuvent et doivent être adaptées en fonction

des différents marchés. Il arrive que ces mesures prennent la forme d'un abaissement des obstacles à l'entrée. Dans l'affaire Vodafone, des inquiétudes pesaient sur le marché naissant des services unifiés pan-européens de téléphonie mobile. Une demande croissante venait des clients à forte mobilité internationale, notamment des grandes entreprises. Avec la fusion, le nouvel ensemble aurait bénéficié d'une couverture considérable en Europe, puisqu'il aurait été fournisseur unique des opérateurs de téléphonie mobile dans huit pays membres de l'Union et fournisseur conjoint dans trois autres. Grâce à cette couverture, cette entité aurait bénéficié d'une position unique pour construire un réseau intégré et fournir des services avancés "sans couture" sur toute l'Europe. Aucun concurrent n'aurait été en mesure d'en faire autant à court ou moyen terme (trois au quatre ans). La fusion a été autorisée, mais elle a été assortie de mesures visant à assurer l'accès aux concurrents de l'entité fusionnée, de manière à leur permettre à eux aussi de fournir des services avancés "sans couture" sur toute l'Europe. Les mesures correctrices appliquées ici sont intéressantes parce que, étant donné ce qui se préparait dans le secteur, à savoir l'attribution des licences UMTS pour la téléphonie de troisième génération, elles étaient limitées à une période de trois ans. Cet exemple illustre le fait que les autorités de contrôle de la concurrence n'ont aucune raison de tolérer, même provisoirement, des situations de puissance de marché. Elles peuvent tout à fait prendre des mesures temporaires.

Le Président remarque que le débat touche maintenant au cœur du sujet, c'est-à-dire à la question de savoir s'il faudrait changer quelque chose dans l'examen des fusions dans les secteurs très innovants et si oui, quoi. On pourrait par exemple remettre en question la préférence traditionnellement donnée aux mesures structurelles au profit des actions touchant au comportement des protagonistes. Il évoque la contribution des autorités de contrôle de la concurrence du Brésil, dans laquelle il est longuement question des action correctrices et qui précise : "En général, étant donné les coûts liés à la surveillance de l'exécution des actions correctrices, les agences antitrust préfèrent les mesures structurelles. Pourtant, dans les marchés très innovants il peut être dangereux de s'en tenir aux pratiques classiques car grâce à son caractère évolutif, la technologie permet facilement de contourner une puissance de marché apparente à court terme. » (paragraphe 15). Les pouvoirs publics brésiliens préfèrent par conséquent les mesures "contingentes". Cette contribution présente également une affaire concernant l'acquisition d'un fournisseur Internet national (Nutec) par la société dominante de fourniture de lignes fixes dans l'État de Sao Paolo. Dans ce dossier, le problème de concurrence a été traité par une mesure temporaire. Cette remarque va dans le sens de l'intervention de la Communauté européenne. Il demande au Brésil de donner des précisions sur les actions correctrices en général et sur le dossier Telesp-Nutec en particulier. Le Président profite de l'occasion pour noter qu'on trouve dans une contribution supplémentaire du ministère de la Justice du Brésil une excellente présentation des particularités des marchés très innovants et des lignes directrices brésiliennes en matière de fusions horizontales.

Un délégué du Brésil note que les actions correctrices à appliquer en cas de fusion sont difficiles à élaborer pour trois raisons : les marchés évoluent rapidement ; l'autorité de contrôle de la concurrence n'a pas prise sur toutes les variables pertinentes ; il faut diminuer les coûts de surveillance.

Un autre délégué du Brésil détaille l'affaire Telesp-Nutec, qui concernait une fusion entre le fournisseur dominant de lignes de télécommunications fixes à Sao Paolo (Telesp contrôle plus de 90 pour cent du marché) et un fournisseur d'accès national. Ce dossier a été analysé comme une concentration verticale dans le marché des infrastructures de télécommunications. Comme les lignes fixes sont le premier moyen utilisé au Brésil pour la liaison du dernier kilomètre, les fournisseurs d'accès dépendent en grande partie des services assurés par Telesp. La fusion Telesp-Nutec représentait un risque sérieux d'éviction et d'extension d'une position dominante sur le marché. D'autres craintes étaient liées à la possibilité de pratiques discriminatoires envers des FAI non intégrés.

L'action correctrice recommandée dans cette affaire a été de demander aux parties de s'engager pendant trois ans à assurer un accès non discriminatoire aux FAI non intégrés. Cette solution répondait à

trois considérations : une évolution de la technologie permettrait probablement d'élargir le marché pertinent en termes de produits ; le remaniement en cours de la réglementation des télécommunications brésiliennes allait étendre la portée géographique du marché; la réglementation actuelle des télécommunications au Brésil ne contenait pas de règles précises contre les pratiques discriminatoires.

La délégation du Brésil revient ensuite sur un cas de rapprochement entre deux éditeurs de logiciels, Microsoft et Visio Corporation, spécialisé dans les logiciels de diagrammes. L'autorité de contrôle de la concurrence redoutait des effets de réseau et des problèmes de vente liée. Les produits Visio ont de nombreuses applications professionnelles et ne pouvaient être remplacés par les logiciels traditionnels d'illustration, de dessin et de présentation proposés par Microsoft à l'époque. Les effets de réseau n'étaient pas en cause, puisque la plupart des logiciels de diagramme utilisent des formats très différents, mais il y avait lieu de s'inquiéter que Microsoft ne fournisse les outils Visio dans le cadre de sa suite bureautique Office. Microsoft s'est engagé à commercialiser les logiciels Visio également sous forme de produits séparés, à la suite de quoi le rachat a été autorisé sans autre restriction.

Le Président se tourne alors vers la Corée, qui représente, selon lui, un bon exemple de pays qui applique la méthode générique d'examen des fusions même lorsqu'il s'agit de secteurs très innovants. Dans sa contribution, la délégation coréenne revient sur l'affaire SK Telecom-Shinsegi Telecom, un dossier de 1999 dans lequel la première société de télécommunications mobiles sur le marché a racheté la troisième. Le Président suppose que la Corée pense, comme d'autres délégations, que l'élaboration des mesures correctrices appropriées peut être difficile dans les fusions qui se produisent sur les marchés très innovants. Il invite les délégations à s'exprimer sur ce point ainsi que sur le dossier SK Telecom-Shinsegi Telecom.

Un délégué de la Corée explique d'abord pourquoi la méthode générique d'examen a été appliquée à une fusion dans les télécommunications mobiles alors qu'il s'agissait pourtant d'un marché innovant.

Bien qu'il n'existe pas de définition exacte des marchés très innovants, celui des télécommunications mobiles réunit beaucoup des caractéristiques propres à ces marchés. Il se caractérise notamment par la rapidité de l'innovation technologique et l'importance des effets de réseau.

En revanche, les marchés très innovants possèdent généralement d'autres caractéristiques que n'a pas celui des télécommunications mobiles. Par exemple, on considère que sur les marchés très innovants la performance ou la différentiation des produits joue généralement un plus grand rôle dans la concurrence que le prix, alors que dans le marché des télécommunications mobiles, les prix jouent pleinement leur rôle traditionnel comme critère de concurrence. En Corée, du fait de la régulation des prix, la concurrence sur les prix prend surtout la forme de fourniture subventionnée de mobiles. Cette concurrence est si âpre qu'elle fait peser des inquiétudes sur la viabilité financière des sociétés de télécommunications mobiles. De plus, il est difficile de trouver des économies d'échelle comme dans les autres marchés à forte composante de savoir. Enfin, la structure du marché est extrêmement rigide du fait de barrières à l'entrée comme les effets de réseau et la nécessité d'obtenir des licences de l'État pour utiliser les fréquences. Du fait de ces caractéristiques, l'analyse des parts de marché est considéré comme adaptée à l'examen des fusions dans les marchés des télécommunications mobiles.

Le délégué explique en quoi il est difficile d'élaborer des mesures correctrices appropriées dans les secteurs très innovants en prenant l'exemple le dossier SK Telcom-Shinsegi Telecom.

Fin 1999, SK Telecom, le premier acteur des télécommunications mobiles en Corée (42,7 pour cent de parts de marché) rachète Shinsegi, le troisième opérateur (14,2 pour cent du marché). Dans cette affaire, la KFTC avait défini le marché pertinent comme incluant les services cellulaires et les services

télécommunications personnelles. Outre ces deux acteurs, le marché des télécommunications mobiles comptait trois autres concurrents.

La KFTC a conclu que cette fusion portait préjudice à la concurrence. D'abord, en se rapprochant de Shinsegi, SK Telecom renforçait considérablement sa position dominante, puisque le nouvel ensemble aurait totalisé 60 pour cent de parts de marché. De plus, sa part aurait encore augmenté après l'opération du fait des effets de réseau. En outre, la KFTC reconnaissait l'existence des obstacles à l'entrée évoqués précédemment. Enfin, dans le marché des télécommunications mobiles, lorsque des entités fusionnent, elles ont tendance à exclure leurs concurrents et à augmenter les coûts d'entrée sur le marché, et généralement elles ont les moyens de le faire.

La KFTC a décidé d'autoriser la fusion, mais en exigeant que SK Telecom ramène sa part de marché à 50 pour cent dans l'année suivant la décision. La loi prévoit en effet qu'une fusion est considérée comme anticoncurrentielle si le nouvel ensemble se retrouve contrôlant plus de 50 pour cent du marché. La décision de la KFTC a été vivement critiquée. D'abord elle était difficile à appliquer. SK Telecom se trouvait tenue de forcer des abonnés à résilier à leur contrat. Par ailleurs, de nombreux observateurs estimaient que les obstacles à la concurrence ne peuvent être corrigés par une simple limitation de la part de marché, sans entreprendre de séparation structurelle.

En adoptant cette solution, la KFTC avait selon le délégué voulu ménager la chèvre et le chou. L'agence de la concurrence entendait tenir compte des caractéristiques du réseau tout en préservant les économies d'échelle promises par la fusion. En outre, les options de la KFTC étaient limitée du fait même de la régulation du marché des télécommunications mobiles en Corée : on pouvait avancer que certains des effets anticoncurrentiels pouvaient être contrecarrés par cette régulation. En particulier, dans la mesure où le Ministère des télécommunications et de l'information contraint des fournisseurs de services à s'interconnecter avec leurs concurrents, la KFTC aurait trouver difficile d'imposer une cession dans ce cas.

Le Président passe alors à la contribution du Japon, notant que ce pays applique les méthodes classiques d'examen des fusions pour les secteurs très innovants. "Les principes directeurs en matière de fusions-acquisitions ne comportent aucun élément qui aurait pour effet de traiter différemment les fusions-acquisitions lorsqu'elles ont lieu dans un marché innovant et de hautes technologies", précise cette contribution (paragraphe 1). Toutefois, l'analyse doit être adaptée en fonction des particularités du secteur des hautes technologies. Notamment, dans les fusions qui ont lieu dans des marchés de produits dont le cycle de vie est très court, il est important de tenir compte de l'instabilité des parts de marché. La contribution du Japon illustre cette assertion en présentant l'exemple d'une entreprise conjointe NEC Hitachi visant à élaborer, concevoir de la mémoire vive DRAM de 256 Mb. Le Japon est invité à apporter davantage de précisions sur ce dossier et sur son attitude générale en matière de fusion dans les marchés très innovants.

Un délégué du Japon note avant tout que l'examen des fusions dans les marchés très innovants doit tenir compte des mutations rapides que connaissent les marchés. Il indique également que le Japon n'a connu jusqu'ici qu'un petit nombre de fusions dans les marchés très innovants, mais que l'on s'attend à voir davantage d'opérations dans l'avenir. Les principes directeurs en matière de fusion précisent que si une fusion est appelée à bouleverser la configuration des parts de marché à brève échéance du fait de l'évolution récente du volume des ventes, des changements de goûts des utilisateurs et d'autres facteurs, ces aspects seront examinés dans la détermination de l'impact concurrentiel. Cela vise clairement les marchés très innovants dans lesquels les parts de marché évoluent rapidement.

Le partenariat NEC-Hitachi, dans lequel chacune des deux parties détenait 50 pour cent des actions, avait pour objectif d'élaborer et concevoir la nouvelle génération de DRAM, notamment des DRAM de 256 Mb. Les deux sociétés espéraient améliorer l'efficience de la gestion et leur compétitivité

dans le marché de la DRAM. A elles deux, elles totalisaient 30 pour cent de parts de marché au Japon, soit plus qu'aucun autre acteur du secteur. Toutefois, après examen des éléments suivants, il a été déterminé que l'établissement d'une entreprise conjointe ne représenterait pas un préjudice important pour la concurrence dans le marché pertinent :

- plusieurs fabricants nationaux et étrangers détenaient plus de 10 pour cent du marché ;

- plusieurs fabricants européens projetaient de pénétrer le marché japonais de la DRAM ;

- les prix payés par les grands constructeurs mondiaux d'ordinateurs pour la DRAM influençaient considérablement les négociations sur les prix avec les usagers, dont certains jouissaient d'une importance puissance d'achat.

3. Optimiser le gain d'efficience statique et dynamique dans les marchés très innovants

Le Président note que les unes après les autres, les délégations indiquent qu'une méthode d'analyse des fusions spécifique n'est pas nécessaire pour les marchés très innovants. Toutefois, la plupart d'entre elles décrivent les divers ajustements qu'elles apportent pour traiter ces opérations, notamment celles qui offrent d'importants avantages en termes d'efficience statique et d'innovation. C'est un point que développe l'Australie dans sa présentation orale. La Finlande présente également un dossier très intéressant qui va dans le même sens : l'affaire Sonera Yleisradio-Digita. Ce dossier concernait un projet de fusion entre Sonera (premier opérateur de télécommunications finlandais) et Yleisradio (la société nationale de radiodiffusion de service public). Les deux parties assuraient que leur rapprochement stimulerait l'innovation car il créerait de nouvelles voies de transmission de données pour les téléphones mobiles de 3e génération.

L'autorité finlandaise de contrôle de la concurrence (FCA) redoutait que des effets d'éviction ne résultent de la réduction de la concurrence en innovation, pénalisant ainsi l'innovation. Des conditions ont été imposées par la FCA et le tribunal de commerce. Si les parties ont renoncé à établir leur filiale conjointe, c'est probablement en raison de ces conditions qui leur étaient imposées. On peut se demander quelles conséquences a eu l'abandon de ce projet sur l'activité d'innovation et sur la concurrence en innovation. L'innovation a-t-elle souffert du fait que l'opération n'a pas abouti ?

Un délégué de la Finlande explique que ce dossier complexe concernait la diffusion de télévision hertzienne numérique, un réseau de transmission et l'infrastructure associée. Pour Sonera, premier opérateur de télécommunications finlandais, il était crucial de maintenir l'accès aux réseaux numérisés pour renforcer sa position dans la téléphonie mobile en assurant des services de transmission de données, etc. Dans le même temps, il faut préciser que Digita bénéficiait d'un monopole dans la radiodiffusion terrestre. La FCA a conclu qu'au départ il n'y avait probablement pas de problème de concurrence puisqu'il n'existait pas de chevauchements horizontaux et verticaux, mais que de tels chevauchements pourraient apparaître à brève échéance. Il était évident que Sonera pouvait renforcer sa position dominante dans la téléphonie mobile en contrôlant conjointement Digita. Les deux parties assuraient que les problèmes éventuels étaient minimes au regard des gains d'efficience attendus. La FCE est parvenue à une conclusion différente et a décidé de bloquer l'opération. Elle a indiqué que d'autres sociétés étaient désireuses d'apporter la même innovation que Sonera. Si la filiale conjointe voyait le jour, ces concurrents seraient contraints de communiquer leurs secrets à Sonera pour assurer la compatibilité avec son réseau de radiodiffusion. En outre, les gains d'efficience promis par la filiale conjointe pouvaient être obtenus en usant de moyens moins nocifs pour la concurrence, notamment en créant un autre coentreprise indépendante de Sonera. Le tribunal de commerce a décidé d'autoriser l'opération mais de l'assortir de conditions non négligeables.

Plutôt que d'accepter ces conditions, les parties ont renoncé à ce projet. Quelques temps plus tard une société française a racheté Digita et a apporté l'expertise nécessaire pour les innovations pertinentes.

Le Président note que l'affaire finlandaise présente des similitudes avec un dossier évoqué dans la contribution de l'Espagne. Il s'agissait d'une coentreprise entre une banque et le premier opérateur de téléphonie mobile en Espagne (paragraphes 21 à 35). Cette transaction avait pour but de permettre une innovation importante : des services de paiement via le réseau de téléphonie mobile. L'opération a été autorisée par le Conseil des ministres, sous réserve de certaines conditions innovantes. Entre temps, l'autorité espagnole de contrôle de la concurrence a contraint les parties à ouvrir leur système à leurs concurrents. Le Président demande à l'Espagne d'expliquer les risques associés à cette transaction, de décrire l'action correctrice préventive qu'ils ont appliquée et de rendre compte de ce qui s'est produit par la suite.

Un délégué de l'Espagne explique qu'il s'agissait d'une coentreprise, Movilpago, entre Telefonica Moviles, le premier opérateur mobile espagnol, et BBVA (Banco Bilbao Vizcaya Argentaria), l'une des plus grandes banques du pays, qui avait pour but de développer et de commercialiser un système de paiement électronique par téléphone mobile.

Les principaux problèmes de concurrence posés par cette opération concernaient les difficultés que rencontreraient les autres sociétés si elles tentaient de concurrencer Movilpago. L'effet de réseau les contraindrait probablement à s'affilier au premier entrant, ce qui pouvait poser des problèmes car les partenaires de la coentreprise jouiraient alors d'une position favorable. En effet, ils contrôlaient le protocole de communication et son évolution - l'ensemble des règles régissant les échanges d'informations entre Movilpago et les autres opérateurs de mobiles. Ce protocole, breveté par Movilpago, demeurerait secret. Il faudrait plusieurs mois aux concurrents pour répondre à toutes les spécifications techniques nécessaires pour se connecter à Movilpago. Ce délai dépendrait en outre de la bonne volonté de Movilpago : il existait donc un risque de retards anticoncurrentiels. L'autre risque était que Telefonica fournisse les services de Movilpago en même temps que ses propres produits.

En novembre 2000, la transaction a reçu l'aval du Conseil des ministres, sous réserve des conditions suivantes :

- Un moratoire de 3 mois était imposé avant le lancement de Movilpago.

- Movilpago devait dans de brefs délais accorder l'accès au système aux opérateurs de mobile et aux entités financières qui en faisaient la demande, et leur communiquer tous les protocoles techniques sous un mois. Il devait également signaler à l'autorité de contrôle de la concurrence (SDC) toutes les demandes d'accès qui lui parvenaient ainsi que les conditions et les modalités d'accès consenties, notamment le montant de la redevance exigée.

- Movilpago devait respecter les principes de neutralité et de non-discrimination dans leurs relations avec les opérateurs qui demandaient l'accès.

- Movilpago était tenue d'indiquer clairement dans ses publicités et promotions que son système est compatible avec tous les opérateurs de téléphonie mobile et tous les réseaux bancaires participants.

- Les publicités pour Movilpago ne doivent mentionner aucun opérateur pendant l'année qui suit le lancement commercial du système.

- Movilpago n'a le droit de passer aucun contrat d'exclusivité avec un distributeur : les distributeurs demeurent libres de commercialiser les autres systèmes.

- Movilpago n'a pas le droit de nouer des relations d'exclusivité avec ses clients.

- Movilpago n'a pas le droit d'accorder de réductions sur les gros volumes à un opérateur pendant l'année suivant le lancement commercial du système.

La période d'observation par la SDC est arrivée à son terme. Movilpago a respecté toutes les conditions imposées par le Conseil des ministres. D'autres opérateurs ont adhéré au système et la coentreprise est maintenant la propriété conjointe de quatre opérateurs de téléphonie mobile (40 pour cent du capital), de six banques (40 pour cent) et de plusieurs systèmes de paiements, notamment VISA (20 pour cent). Les mesures correctrices ont ainsi rempli leur rôle.

Le Président conclut cette discussion en rappelant que seule une contribution fait état d'un traitement différent des opérations dans les secteurs très innovants. En particulier, il note que les États-Unis sont le pays qui utilise le plus le concept de marché innovant dans l'examen des fusions. Le Président souhaiterait savoir si, au regard de l'expérience des États-Unis et à l'examen des effets concurrentiels dans les marchés très innovants et dans les marchés de produits et de technologies plus traditionnels, le traitement des fusions dans les marchés très innovants n'apparaît pas plus strict que dans les autres secteurs. La réponse pourrait bien être négative, dans la mesure où la contribution des États-Unis indique que les résultats auxquels on aboutit en recourant au concept de marché innovant peuvent être aussi bien obtenus par le biais d'une analyse de la concurrence potentielle. Le Président a le sentiment que la jurisprudence américaine tend à s'écarter du concept de marché innovant et demande aux États-Unis de commenter l'évolution actuelle.

Un délégué des Etats-Unis note que, vingt ans après la promulgation des principes directeurs (Merger guidelines) de 1982, le modèle hypothétique de monopole et de définition du marché reste théoriquement valable et pratiquement réalisable. La notion de marché innovant est apparue aux États-Unis avec les lignes directrices de 1995 sur la propriété intellectuelle. Auparavant, et depuis lors, les États-Unis ont examiné de nombreux cas de fusions dans les secteurs très innovants. Avant même la publication des lignes directrices de 1995 sur la propriété intellectuelle, l'examen des fusions tenait compte de concepts tels que les effets de réseau, de "basculement", et la concurrence portant sur la totalité d'un marché au lieu de s'exercer au sein de celui-ci.

Le délégué déclare que l'attitude des États-Unis n'est ni plus sévère ni plus libérale pour les fusions dans les marchés très innovants. Après l'adoption des Merger guidelines de 1982, les États-Unis ont toujours exigé que la thèse du préjudice économique soit étayée par des éléments concrets. Les États-Unis n'ont jamais basé leurs conclusions uniquement sur les présomptions structurelles. La définition du marché et des parts de marché constituent le point de départ de l'analyse, et non son aboutissement.

Il faut comprendre la contribution des États-Unis comme critique vis à vis du concept de marché innovant, mais le délégué souligne qu'il n'y a pas eu de changement au niveau de l'exécution des décisions. Les déclarations officielles et les décisions judiciaires démontrent qu'il y a eu au contraire continuité. M.Muris, Président de la Federal Trade Commission (FTC), a déclaré dans une allocution de l'été 2001 que l'application de la loi n'est pas fondamentalement différente dans les industries de hautes technologies de ce qu'elle est dans les autres secteurs. Les lignes directrices fondamentales peuvent être appliquées. Toutefois, les États-Unis ne nient pas que leur expérience est moindre dans les marchés très innovants.

Il est établi que s'il existe une définition claire du produit ou des marchés de technologies et de l'innovation qui s'y rapporte, les problèmes de concurrence sont assez simples. S'il se pose un problème de

concurrence au niveau des produits ou des technologies et que des sociétés s'emploient aussi à développer des technologies pour améliorer ces produits, la définition du marché peut être établie suivant les méthodes classiques.

Sur les marchés très innovants, la situation est différente : dans ce contexte, le problème ne concerne pas tant le marché d'un produit ou d'une technologie et la concurrence réelle ou potentielle sur ce marché. D'après les lignes directrices de 1995 sur la propriété intellectuelle, un marché très innovant "se compose de la R&D orientée vers des produits ou des processus nouveaux ou améliorés et les substituts très proches de cette R&D".

Les marchés très innovants n'ont constitué un problème que dans un petit nombre de cas. Toutefois la notion de marchés très innovants est évoquée dans plusieurs jugements d'expédient rendus par les deux autorités de concurrence américaines. Ce concept n'est pas à l'abri des critiques (voir par exemple la référence à l'article de Richard Rapp dans la contribution des États-Unis).

Une partie de la problématique développée par Rapp est que la définition de marchés et le calcul des parts de marché conduisent automatiquement à des décisions exécutoires. Mais c'est une contrevérité. Les Merger guidelines précisent clairement que cela ne constitue que le point de départ de l'analyse : toute décision doit être fondée sur une théorie basée sur les faits, non sur la structure seule. Le délégué convient toutefois que Rapp a raison lorsqu'il note que la relation entre structure et performance se vérifie plus clairement dans les marchés de produits traditionnels que dans les marchés très innovants. Cela étant, il ne faut pas pour autant en déduire qu'il existe une relation systématique entre la structure et les performances, sur l'une ou l'autre de ces catégories de marchés.

Le délégué des États-Unis estime que ces dernières années, les différentes actions de régulation reposant sur le concept de "marché innovant" auraient probablement pu être décidées à partir des outils d'analyse traditionnels. Dans un petit nombre de cas, le concept de marché innovant peut être utile, notamment lorsqu'il est difficile de retracer les travaux de R&D qui ont conduit à la création d'un marché de produit ou de technologie.

On a commencé à se préoccuper de la concurrence dans la R&D depuis la promulgation de la loi sur la coopération de recherche nationale (National Co-operative Research Act), à propos de recherches conjointes menées par des consortiums composés de protagonistes du marché. On se demandait alors combien de concurrents il convenait d'autoriser dans un projet de recherche même relativement fondamentale. Il y a eu aux États-Unis peu de mesures de régulation dans le cadre de ce problème.

La mesure des parts de marché dans les marchés très innovants peut être délicate, mais selon le délégué, il faut se garder d'y attacher trop d'importance, que ce soit dans les marchés traditionnels ou dans les marchés très innovants. Le nombre de concurrents de poids est important. Des problèmes se posent dans deux cas sur trois pour les marchés bien définis, (comme l'affaire des aliments pour bébé), que la notion de "marché innovant" soit ou non centrale à l'analyse.

Le délégué partage le point de vue développé par le Royaume-Uni dans sa présentation écrite sur le dossier Microsoft-Telewest (voir paragraphe 36) : les actions de régulation concernant la technologie et l'innovation ne sauraient s'appuyer que sur des spéculations. Il est également d'avis que, bien que l'exclusion soit une hypothèse viable et commune qui peut s'appliquer aux fusions dans les secteurs très innovants, il faut la manipuler avec précaution. La contestation des fusions par des concurrents au motif qu'ils redoutent d'être victimes d'exclusion peut effectivement être motivée par des pratiques anticoncurrentielles, mais elle peut aussi être liée à la crainte de voir un concurrent devenir plus efficient. Les pouvoirs publics passent beaucoup de temps à s'entretenir avec des candidats au rachat adroits et bien

informés et attachent plus de poids à leurs opinions qu'à celles des concurrents. Les États-Unis recueillent aussi les vues de tiers indépendants experts.

S'agissant de la politique en matière d'actions correctrices coercitives dans les secteurs très innovants comme dans les autres marchés, la transparence est un élément essentiel et les États-Unis s'emploient à l'améliorer. En cela, le délégué approuve la pratique des décisions écrites de la Communauté européenne. Les États-Unis vont demeurer prudents en matière d'actions correctrices dans les marchés très innovants mais n'hésiteront pas à intervenir lorsque des éléments factuels l'exigeront.

Pour veiller à ce que les politiques en la matière soient pertinentes, il faut étudier les effets des décisions passés, qu'elles aient abouti ou non à une action. La FTC procède actuellement à des études rétrospectives pour éclairer ce point.

4. Discussion

Après ce tour de table des pays qui ont présenté des contributions, le Président se tourne de nouveau vers la délégation des Pays-Bas et lui demande si à la suite des débats elle a changé d'avis sur la nécessité d'un examen général des politiques ou d'un changement d'approche des fusions dans les marchés très innovants, et si oui, de quelle manière.

Un délégué des Pays-Bas note que, si de nombreuses juridictions ont rencontré des situations délicates dans lesquelles l'évaluation était difficile et les actions correctives complexes à élaborer, tout le monde convient que la législation est suffisamment flexible pour s'adapter aux différents cas. Toutefois, les autres délégations n'ont pas abordé un aspect évoqué dans la contribution des Pays-Bas : la nécessité de recourir à des spécialistes sectoriels et d'avoir une attitude d'anticipation face aux marchés très innovants. Étant donné les caractéristiques particulières de ces marchés, les Pays-Bas sont convaincus que si les autorités ont un temps d'avance sur les événements qui s'y produisent, elles peuvent être beaucoup plus efficaces lorsque des fusions sont annoncées.

Un délégué du BIAC rappelle que la politique de la concurrence doit être utilisée pour promouvoir l'innovation et non pour la freiner. Ce délégué a apprécié d'entendre les délégués des États convenir des difficultés posées par les fusions dans les marchés très innovants, et souligner que la plus grande prudence est de mise pour les examiner. Il rend hommage aux dirigeants passés et actuels de la FTC. Il note en particulier que, dans une allocution prononcée à Scottsdale (Arizona) en 1999, le Président Pitofsky rappelait avec insistance que les agences de la concurrence doivent être particulièrement vigilantes dans leurs interventions qui risquent de pénaliser l'innovation. D'après un article du Wall Street Journal, Alan Greenspan aurait également déclaré "Je serais très ennuyé si nous empêchions différents types de fusions et d'acquisitions en se fondant sur des conjectures quant à l'évolution des marchés" et particulièrement dans les secteurs de technologie "l'histoire regorge de cas où des individus ont fait des projections qui se sont révélées totalement fausses."

Le délégué note que des événements récents survenus dans plusieurs marchés de hautes technologies justifient amplement les propos de Pitofsky et Greenspan. WorldCom par exemple est bien loin de détenir la puissance de marché que les autorités anti-trust redoutaient de le voir prendre il y a quelques années. Ces marchés connaissent des bouleversements extrêmement rapides.

Ce délégué approuve le document de référence du Secrétariat dans les passage qui font référence aux problèmes qui doivent être pris en compte en matière de marchés très innovants ; au degré de précaution nécessaire ; aux caractéristiques spécifiques que ces marchés peuvent présenter, comme les effets de réseau. Le document du Secrétariat cite les propos de Michael Porter, qui a beaucoup travaillé sur ces questions (voir paragraphe 33ff), soulignant l'intérêt des analyses de Porter, car elles sont

particulièrement centrées sur l'innovation et la productivité. Le délégué apprécie également que le document du Secrétariat insiste sur l'importance de la flexibilité dans les actions correctives et évoque l'aspect surveillance et le recours aux actions comportementales comme alternative aux mesures structurelles classiques. Les mêmes idées sont développées dans le document de la Communauté européenne, et trouvent une illustration dans le dossier présenté par un délégué des États-Unis, l'affaire Microsoft-Telewest. Le délégué note que le Canada a pratiqué la surveillance dans l'évaluation des fusions lorsque les gains d'efficience et les effets anticoncurrentiels étaient difficiles à appréhender et à quantifier. Dans quelques cas, à la fin des années 80, le Canada a combiné une action de surveillance avec un droit spécifique d'intervention pouvant aller jusqu'à la cession forcée d'un "joyau de la couronne" - c'est-à-dire une entité-phare du groupe - au cas où des effets anticoncurrentiels se manifesteraient par la suite. Le délégué estime que dans quelques situations particulièrement délicates, de telles solutions étaient préférables à des mesures immédiates qui risquait d'entraver l'innovation et la croissance du marché.

Un autre délégué du BIAC s'associe aux intervenants qui affirment qu'il n'est pas nécessaire de modifier l'analyse anti-trust classique pour traiter les cas de fusion dans les marchés très innovants ou de hautes technologies. Il note toutefois que le système des Merger guidelines des États-Unis entraîne une application assez différente pour les marchés très innovants, à commencer par la définition des marchés. Dans l'affaire WorldCom-MCI, l'examen de la fusion s'est traduit par la création d'un marché des dorsales (infrastructure principale du réseau Internet). S'agissant du dossier AOL-Time Warner, la notion de marché de service et de contenu Internet a évolué au fil de l'analyse. Pour le marché des produits pharmaceutiques, le délégué se dit troublé par la notion de substituts thérapeutiques. Il insiste également sur les difficultés inhérentes aux marchés dans lesquels la R&D joue un rôle prépondérant, particulièrement la recherche fondamentale, et rappelle aux délégués que les cas comparables à l'affaire Sandoz-Ciba Geigy (produits non présents sur le marché ou dont l'introduction est imminente) sont extrêmement rares.

Le délégué mentionne les difficultés qu'il y a à définir la situation du marché et de ses acteurs dans les secteurs très innovants, ainsi qu'à évaluer les parts de marché, même lorsque les produits existent sur le marché. Dans le dossier WorldCom-MCI, il existait un large éventail de méthodes pour y parvenir : par le chiffre d'affaires, par le nombre des connexions de FAI, par la capacité de fibre optique, ou par l'importance des connexions de FAI. Au bout du compte on sait, notamment à la lumière de la déclaration de la CE, que le choix de la méthode d'évaluation des parts n'était pas très important puisqu'il existait un problème de puissance de marché, quelle que soit la méthode employée. S'agissant des fusions de R&D pure, même les Merger guidelines des États-Unis précisent qu'il faut considérer le nombre de concurrents autant que les parts de marché (les parts sont moins importantes).

Selon le délégué du BIAC, les entreprises conviennent que les hypothèses fondées sur une analyse structurelle sont beaucoup moins opérantes dans les marchés de hautes technologie et dans les marchés de R&D que dans les autres types de marché (où elles ne sont pas forcément très pertinentes non plus). Comme le souligne Rapp, le test SSNIPP (small but significant non-transitory increase in price) utilisé pour la définition des marché n'est pas applicable dans les marchés de hautes technologie et les marchés innovants. Le délégué demande s'il serait possible plutôt d'évaluer l'éventualité d'une diminution sensible de l'innovation. Les décisions des pouvoirs publics, si elles sont mal avisées, peuvent provoquer un gel des innovations. La solution des licences imposées combinée à l'obligation d'assistance, comme dans l'affaire Ciba Geigy-Sandoz, a probablement été plus constructive que ne l'aurait été une interdiction pure et simple de la fusion. Même les cessions imposées ne sont pas toujours efficaces (voir l'exemple de la fusion WorldCom-MCI).

Pour conclure, le délégué souligne que l'analyse des fusions dans les marchés très innovants peut soulever des enjeux au niveau mondial ; il est donc important d'œuvrer pour une plus grande convergence internationale et une plus grande transparence en la matière. L'un des moyens de contribuer à cette convergence est de pratiquer des analyses des fusions a posteriori. Une analyse rétrospective des dossiers

concernant la fourniture de dorsales Internet pourrait à cet égard être fructueuse. Porter un éclairage plus large sur les relations entre les DPI et la politique de la concurrence pourrait également être intéressant.

5. Conclusion du président

Le Président met en évidence deux principes qui se retrouvent dans de nombreuses contributions. Premièrement, il n'est pas nécessaire de créer de nouveaux concepts pour les fusions dans les marchés très innovants, mais il faut tenir compte des caractéristiques spécifiques à ces marchés en rapide mutation, notamment leur grande instabilité et le manque de visibilité sur l'avenir. Deuxièmement, on reconnaît que la concurrence sur les prix et l'efficience statique sont moins cruciales au progrès que l'innovation. Ce dernier point a été développé par Michael Porter et le Président se demande s'il existe un moyen terme entre concurrence sur les prix et promotion de l'innovation. Il se demande également si le concept de marché innovant est véritablement centré sur la concurrence dans l'innovation. Le président doute que la concurrence pour l'innovation soit le meilleur moyen de promouvoir l'innovation, notant que le lien entre la concurrence au sens classique du terme et l'innovation a été abondamment commenté et mériterait qu'on le réexamine. En tout état de cause, le Président pense qu'il est temps de dire adieu au concept de marché innovant, pour en revenir à la méthodologie fondamentale.

S'agissant des mesures correctrices, le Président évoque un séminaire qui s'est tenu récemment à Paris, dont il ressortait que ces mesures correctrices ne produisent pas de bons résultats, et qui débouchait sur deux questions. Si nous ne parvenons pas très bien à élaborer des mesures correctrices, sommes nous moins mauvais lorsqu'il s'agit de marchés de hautes technologie ? Et ce, même s'il y a encore plus de risque à se tromper dans ces marchés ? Pour atténuer ce risque, on pourrait commencer par écarter les mesures structurelles, trop complexes et incertaines dans leurs effets, et leur préférer les mesures comportementales à plus court terme.

Le Président pense que les autorités de contrôle de la concurrence feraient bien d'examiner les effets des mesures, tant structurelles que comportementales, qu'elles ont prises. Il faudrait voir, d'une part si les parties se sont pliées aux conditions imposées, et d'autre part si ces conditions ont effectivement joué un rôle positif sur l'innovation et sur la concurrence.