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**Convergence in ICT industries: A challenge for competition law
authorities**

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Abstract:

This paper discusses the problems and opportunities provided by the emergence of convergence in information and communication technology (ICT) industries in terms of competition law. Convergence relates to the process of digitization and amalgamation of previously distinct services. The digitization of music and movies along with cheap communication and storage and sophisticated movie players has revolutionized these two industries. The same process is underway in cable television. In the future it will affect banking and possibly education and health. The new developments lead to easing entry conditions, which is a fundamental ingredient for markets to operate efficiently. At the same time there are opportunities for vertical and horizontal integration leading to bundling. From the perspective of firms, it presents an opportunity to capture these rapidly emerging and transforming markets and be a market leader. For competition and regulatory authorities, the emerging landscape presents the challenge of market foreclosure and refusal to deal by dominant firms. The trade-off between static and dynamic efficiency is even starker in dynamic ICT industries, which merits special attention, while applying Competition Law to the sector.

Keywords: Competition law, antitrust, ICT, convergence, Competition Act, efficiency

JEL classification: L4, K21, L86, D85

1. Introduction

The Internet has been in the news of late. First came large investments made by Amazon and Flipkart in India, followed later by Snapdeal.¹ Then came the Diwali sale by Flipkart, which promised huge discounts on a large array of products. For a while it seemed that online shopping was about to give their brick and mortar brethren a run for their money. Promise soon turned to acrimony as customers complained that the websites were too slow and that the fantastic discounts offered were more in the realm of the fantasy world.² This was followed by some brick and mortar retailers accusing online retailers of predatory pricing.³ Quite coincidentally there was an article by Paul Krugman that appeared in major Indian newspapers, accusing Amazon in the U.S. of being a monopsony.⁴ Life sure has been interesting on the Information and Communication Technology (ICT) front in India. This paper takes a more sober look at the antitrust issues surrounding ICT products and markets. The problems involved are quite difficult and complex and might be a source of headache to public authorities for some time to come.

As the very name suggests ICT products and markets reside at the junction of Information Technology (IT) and Communication. A website defines ICT as an “umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning.” Another says that in “addition to the subjects included in Information Technology (IT), ICT encompasses areas such as telephony, broadcast media and all types of audio and video processing and transmission.”⁵ In simple terms ICT involves the intermingling of the world of *computers* with that of *telephones* and *broadcasting*⁶. Other terms in vogue are high technology industries or network industries. The ambiguity in terms of definition is, as we shall see, one of the features that are both attractive from a business and policy perspective but troublesome from a regulatory perspective.

To discuss antitrust issues we will therefore have to take a detour through recent developments in telecommunications in India as well as a short exposition on both the economics of competition law and network effects.

2. Recent Developments in Telecommunications

After more than a decade spent riding the voice wave Indian cellular mobile operators have now discovered data. This discovery is less of a coincidence and more due to necessity. Over some time revenues and subscriber numbers from pure voice subscribers have been declining or keeping steady. Even though we do not have anything close to universal access to telephone networks, the increase in the number of subscribers has been either declining or has remained close to zero. Clearly, the remaining population without access to telephone networks are either

¹ Business Standard, 30th July 2014, Business Standard, 31st July, 2014

² Business Standard, 27th January 2015

³ The Times of India, October 8, 2014

⁴ http://www.nytimes.com/2014/10/20/opinion/paul-krugman-amazons-monopsony-is-not-ok.html?_r=0

⁵ <http://foldoc.org/inform>

⁶ A more precise definition would be based on industry classification. The EU definition can be found at [http://www.czso.cz/eng/redakce.nsf/i/ict_sector_list_of_principal_economic_activities_nace_rev_1_1_and_nace_rev_2/\\$File/01_ict_sector_list_of_principal_economic_activities.pdf](http://www.czso.cz/eng/redakce.nsf/i/ict_sector_list_of_principal_economic_activities_nace_rev_1_1_and_nace_rev_2/$File/01_ict_sector_list_of_principal_economic_activities.pdf)

too poor or live in areas too remote to put up towers, possibly both. Thus, telecom operators are betting on higher data usage to compensate for the decline in revenues from voice.

Before we proceed any further we ought to clarify the above remarks and explain some of the terms used. For most of its life the telephone has been used to facilitate conversation over a distance. In common usage this conversation has been designated as voice. With the evolution of the phone, other forms of communication became possible, for example sending short written messages, called Short Messaging Service (SMS). Obviously, SMS is different from voice and should be classified as something else. As phones have evolved further they can now be used to access the Internet and perform other novel tasks. Phones can now be used to send and receive emails and download audio, video and text from the Internet. This form of communication is designated as data since it is transferred as packets through the Internet. We can also transfer voice in the form of packets so that voice could also be termed as data. Voice over Internet Protocol (VOIP) is still not allowed over phones in India though it is allowed between computers.⁷ Thus the primary form of data transmission on phones is material downloaded from the net.

Mobile phones can therefore be used to access the Internet and mobile operators such as Vodafone, Airtel, Reliance and Idea are increasingly providing this access. Access is also available through fixed lines, the traditional home phone, through copper cables in the case of India. However, such access is rare except in metros and large cities. Even though optical fiber cables are available, phone companies have found it difficult to connect it to homes, the so-called last mile problem. Access is also available through Internet Service Providers (ISP) and television cable companies such as Hathway. However, these form a miniscule part of the subscribers to Internet access. Thus it seems, that Internet access will largely be provided through mobile phones and operators in the near future.

Mobile phone operators and the consumers in general face an assorted number of problems. The first is with regard to content. Most of the content is available in English, which is used by a small fraction of people in India. Vernacular content is largely absent. To access the content consumers have to rely on smart phones, which are expensive even though prices are falling rapidly. The interface for accessing the Internet is also in English. Finally, mobile phone operators have to rely on new technologies such as 3G and 4G, which are expensive to roll out. They also have to deal with availability of spectrum, which is limited and expensive. New technologies such as 3G and 4G allow efficient use of spectrum but more spectrum would be useful. Thus, there are numerous challenges to the consumption of data by consumers.

The current consumption of data is largely driven by entertainment in the form of ring tunes and clips of movies. There is some consumption of news, sports and other forms of information. Most of these require some sophistication by users to be able to navigate their phones and get the information in a useable format. Most of the promise of the Internet in terms of provision of government services, banking, education, health and other services are still in their infancy.

One silver lining is the increasing use of applications or apps. These are dedicated programs that reside on a phone and can be used to avail specific services. For example to book a radio taxi

⁷ Other countries do allow VOIP.

service like Meru one can call a dedicated call centre and book a taxi. Alternatively, one can access the net and go to Meru cabs website and make a booking. Further, one can download an app, which resides on the phone that can be used to make a booking in a few simple steps. It is now possible to get a plethora of apps for games, newspapers and entertainment. Apps provide a promising method of allowing access to the Internet for people uncomfortable in English, but as yet most apps cater to the English educated, comfortable with technology part of the population.

Given that data usage is still rather low, it might seem premature to worry about the implications of competition and regulatory law at this point. We, however argue that such complacency is misplaced. There are two sources of worry. One is the nature of ICT markets. These are inherently dynamic in nature and tend to be tippy. The second worry is that Internet access is likely to be provided on mobile phones by mobile operators. Given the concerns with revenues by mobile phone operators they are more likely to try to integrate vertically. The verdict on vertical integration as to its effect on competition is mixed. However, a situation where mobile phone companies own the information highways as well as the modes of transportation could be worrying. It is as if a firm were to own not only the highway but the hotel and the destination you would like to visit. Beyond that, the mode of travel is also determined by it and all other ancillary services would also be provided by it.

It would be useful to understand the technology and some of the underlying economics of mobile telecommunications before we discuss the antitrust issues facing the industry. We shall also provide a brief overview of competition economics so that the uninitiated reader can follow the discussion.

3. The Technology

A casual person may be quite baffled by the various acronyms that seem a part of the technology of cellular mobile telecommunications. We shall give a very simple description of the technology. By now we have all become used to the cell phone tower that dot the landscape. When we make a call we connect to one of these towers and then the call is transported to another tower, which connects to the person who we are calling if that person is also using a mobile phone. In case we want to call a landline or a fixed phone then our call is directed to the network of the operator of the fixed phone who in turn connects the call to the specific subscriber. To access the Internet the phone connects to the nearest tower and then is connected to the servers of the phone company, which in turn is connected to the Internet.

At this point we should make some issues clear. By mobile Internet we refer to accessing the Internet while on the move. Various cellular mobile providers now offer plug and play devices that allow individuals to plug a device in any plug point and provide a Wi-Fi environment. Here only the last mile connectivity is being provided wirelessly. USB dongles on the other hand can be plugged into laptops and thus provide access to the Internet while on the move. This would be classified as mobile Internet even though the access does not require the use of a phone. This is an example of the issue of convergence that we will discuss later. For the moment we should note that the boundaries between phones, computers, television sets is currently getting blurred and this is a tendency that will pick up even more. So mobile Internet should be strictly defined

as being able to access the Internet on the move but it sometimes refers to accessing the Internet wirelessly.

Finally, we will quickly provide an overview of the different generations of technology that have been deployed for mobile services. The first generation of mobile services allowed analog communication. The second generation, 2G allowed digital communication but were still useful for only voice communication. Various technologies such as EDGE were added on to allow data communication. This was followed by 3G, which allows faster data transfer. In India most phones and subscribers use 2G technology while some higher value subscribers have shifted to 3G. 4G Long Term Evolution (LTE) is still in its infancy and is available only on some phones. Please note the importance of smartphones for accessing the Internet on cellular mobile devices. The trend is for technologies to allow greater speeds on succeeding generations and also allows more efficient use of spectrum.

Spectrum refers to the electromagnetic spectrum that is used to propagate radio waves. These can range from a low frequency of 10 KHz to a high of 100 GHz, though Ultra High Frequency Spectrum (UHF) in the range 400 MHz to 4 GHz works best. FM/AM radio, DTH TV and our mobile phones use spectrum to communicate. In India we use the 800 MHz band and the 1800 MHz band for mobile services. There is dearth of spectrum in advanced countries and even in India considering it is a fixed resource. Thus spectrum auctions typically bring in revenues for the government.

4. Network Externalities

It is vital to have an appreciation of network externalities to appreciate antitrust economics and law as it applies to the telecommunications industry specifically and in information and communication technology (ICT) industry generally. We will start by describing externalities as defined by economists. Most acts of consumption or production do not affect others. You can eat and wear whatever you feel (within reasonable limits) and not bother others, provided they are not too sensitive. However, some acts do affect other's enjoyment of goods and services. If you drive badly with one hand permanently on the horn you will affect others. This is an example of an externality. The most well known externality is that of pollution. If the process of production requires a firm to also produce effluents that pollute this is considered an externality. Obviously, externalities can occur in production and in consumption and can be either beneficial or harmful.⁸

Network effects exist when consumers benefit from being a member of a larger network than a smaller one. The New Palgrave says that "network externality has been defined as a change in the benefit, or surplus, that an agent derives from a good when the number of other agents consuming the same kind of good changes."⁹ As an example, other things remaining the same it is usually preferable to live in a large city than a smaller one. You will have access to a larger number of jobs and varieties of employment opportunities. The number of goods and services on

⁸ For a discussion of externalities, see Kalpana Tyagi, Introduction to Law and Economics, Chapter 2 Principles of Micro-Economics Part-III, at page 33, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330259.

⁹ Strictly speaking we should talk in terms of network effects. The term externality should be reserved for situations where the market mechanism fails to account for these effects. Unfortunately, the existing literature has been lax in this regard, see Liebowitz and Margolis (1994)

offer will also be large. Of course the pollution and the commute will be worse but you would be able to connect to a larger number of people both socially and professionally. Interestingly, when an individual decides to move to a city she is not the only person who benefits. The inhabitants of the city also now have a chance to interact with her. Thus the migration to the city provides an external benefit to the residents of the city. After a point though there might be too many people and a new migrant may result in imposing external costs on the inhabitants of the city.

Something similar happens in the case of telecommunication and other networks. A new subscriber to a telephone service can now make calls to everyone else on the network, but everyone else can also now make calls to her. So she is providing an external benefit to all existing subscribers by joining the network. Actually, in the case of telecommunications networks the benefits increase exponentially as the size of the network increases. The same situation holds for social media such as Facebook.

We should note that external benefits in ICT industries could be direct as well as indirect. For instance a particular operating system for computers or mobile devices might become more popular. The increased popularity would lead to more software applications being written for that operating system. This is an example of an indirect network external benefit.¹⁰ The situation will be similar in a whole host of products such as video games, applications (apps) for mobile phones and search engines.

The fact that “success breeds further success” makes markets that feature network externalities “tippy.” A particular market may start with a few competitors but after a point when one producer has a sufficiently large number of subscribers or buyers the size of the network externality is so high that everyone wants to migrate to this network, an example of tipping. This may happen even if the product is inferior to that of competitors or the price higher. In the extreme there could be a winner-take-all situation with only one firm surviving. It is also not possible to predict in advance who the winner in the market will be. We might think that early entrants will have an edge but that may not also turn out to be the case. Orkut was more popular in the social media space, had far more users especially in India and Brazil than Facebook and even though they were launched in the same year and Orkut was eventually brought over by Google, it ultimately lost to Facebook. So, as in the Orkut example there may not be any permanent winners. Facebook managed to eliminate its rival who was much better positioned, through a combination of better products, business strategy, business model and the network effect.

5. Two-sided markets

One of the confounding features of ICT markets is that some products and services are available for free. Consider a recent example from India, which caused some furor among telecommunication companies. The advent of applications such Whatsapp and Viber caused large losses to the Short Message Service (SMS) segment of their operations. These apps allow individuals to send messages to their friends and colleagues through an Internet messenger (IM).

¹⁰ For presence of network effects in the ICT industry and how it led to emergence of Windows as the dominant operating system, see Microsoft I case in the EU and the US by Kalpana Tyagi, Economic Interaction of IPR & Competition Law: A Study of the Microsoft Judgment, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330272.

Previously one could send some text through the SMS service provided by their mobile operator. These new applications allow similar services but without charging customers. Their business models rely on advertisements for revenue. The reason that they can offer services at a low price is because they do not spend much money on infrastructure since they use the internet protocol for sending messages, which made telecom companies that actually lay down infrastructure see red.

Two-sided markets don't exist only on the Internet.¹¹ In fact a brick mortar example can illustrate the concept better. Consider newspapers, newspaper readers and advertisers. Newspapers provide content to readers and advertisement space to businesses that want to advertise. Clearly a larger readership will increase the value of advertising space, which could be achieved in two ways, either by providing better news or by lowering prices or both. Consequently, there is an indirect network effect from the readership side of the market to the advertising side.

It might be optimal for the newspaper reader to charge a lower price for the newspaper in order to capitalize on advertising revenues. The price may be lower than the cost of publishing the newspaper. In the extreme the price may be zero or even negative. Nightclubs and restaurants often provide free drinks for female patrons, which is a negative price: presumably, they more than make up for the loss from their male patrons.

Companies such as Amazon and Flipkart try innovative methods to gain revenues. Note that such markets or platforms are an example of two sided markets. The larger is the number of consumers who buy on these platforms the more the number of sellers who would like to sell here. Buyers don't have to pay for access but sellers do. We can now understand why Flipkart and Amazon would resort to extravagant sales. These are tools to try and increase the size of the network on both sides of the market. We can appreciate why competition authorities would be worried about such behavior because these markets do tend to monopolize but the methods employed to achieve such monopolization can hardly be termed anti-competitive, but more about that later.

6. From MRTP Act, 1969 to Competition Act, 2002

The law governing issues relating to anti-competitive agreements, abuse of dominance and mergers and acquisitions is referred to as Competition Law. The competition law of India, until 2002, was codified in the form of Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act). Until 1991, India was a closed economy, governed by "Command-and-Control laws" and MRTP was one such "Command-and-Control Law". In a "Command-and-Control" economy, the government and only those activities that are allowed by the Government through legislation or statutes, are legal and permissible regulate the activities of an industry. Such an economy is heavily regulated and requires industrial licensing for a large majority of activities, which in turn impacts the growth of private sector vis-à-vis its public counterpart. This in turn has implications on the competitiveness of an economy. The liberalization, privatization and globalization of the Indian economy in 1991, created a need for a set of laws that would promote competition in a

¹¹ For a simple introduction to two-sided markets read Rysman (2009). Evans and Schmalensee (2007) provide an interesting discussion on two-sided platforms.

free market. The regulatory phase of the MRTP Act saw two phases- first from 1969 to 1991 and second from 1991 until 2011, when it was finally, completely repealed and replaced by the Competition Act, 2002. Until 1991, the MRTP Act endeavored to- control mergers and acquisitions that created concentration of economic power beyond a specified threshold; control monopolies; frustrate monopolistic, restrictive and unfair trade practices, that created a barrier to effective competition and cast an adverse impact on consumers. In 1991, when India experienced unprecedented economic reforms, the then competition legislation, viz. the MRTP Act, too was amended to adapt to the requirements of the reformed economic set-up. Accordingly, the amended MRTP Act sought only to prohibit Monopolistic, Restrictive and Unfair Trade Practices. It is noteworthy to mention that from 1991 until 2008, when the legislation on control of concentrations, finally came into effect, the country had no competition provision to regulate mergers and acquisitions leading to a concentration that would create an adverse impact on competition.¹² Restrictive Trade Practices under the MRTP Act, were defined as those practices that had the impact of ‘preventing, distorting or restricting’ competition’.¹³ Activities such as obstruction of ‘flow of capital or resource’ into production or ‘manipulation of prices, or conditions of delivery’ were some of the restrictive practices defined under the Act.¹⁴ Based on the recommendations of the Sachar Committee, 1978¹⁵, unfair trade practices and monopolistic trade practices, were introduced as anti-competitive conduct into the Act by the amendment of 1984. Unfair trade practices were defined as activities such as misleading advertising and false representation, non-compliance with product safety standards, misleading representation of facts about a given product or service, that misled customers into purchasing a particular product.¹⁶ Two years after the 1984 amendment, the Consumer Protection Act, 1986(CPA) came into force, a statute that also dealt with Unfair Trade Practices. Violations of provisions of the CPA were under the jurisdiction of the Consumer Courts, unlike the MRTP act, which was subject to the jurisdiction of Monopolies Restrictive Trade Practices Commission.

Dominance under the MRTP Act was defined on the basis of share of market test that is it was based on the percentage of relevant market share that determined whether a given enterprise was dominant. An undertaking was said to be dominant, when it contributed 25% and above, to the ‘production, supply distribution or control of goods and services’.¹⁷ Immediate fallout of this was on the mergers and acquisition (M&A) activity of a dominant enterprise. Prior to the 1991 amendment, a dominant enterprise could not make a new acquisition or start another business operation, without the prior approval of the Government. Post-1991, however, as the amendment deleted the provision relating to control of concentrations, the concept of dominance, no more had, as profound implications, as the pre-reform era.¹⁸ This facilitated accelerated M&A activity by the dominant enterprises. Multinational Companies seeking entry into the burgeoning Indian markets acquired well-established domestic brands to grow inorganically and gain a quick foothold into the Indian markets. The 1991 amendment also expanded the definition of the term

¹² Srinivasan Chakravarty, *Metamorphoses of Indian Competition Law*, in *The Development of Competition Law Global Perspectives*, ASCOLA Competition Law Series, (ed. Roger Zäch, Andreas Heinemann and Andreas Kellerhals) (March 2010, Edward Elgar Publishing)

¹³ Section 2(o)

¹⁴ *Id*

¹⁵ Sachar Committee(1978), ‘Report of the High-Powered Expert Committee on Companies and MRTP Acts’, Ministry of Law, Justice and Company Affairs, Government of India, New Delhi, August, 1978

¹⁶ Srinivasan Chakravarty, *Metamorphoses of Indian Competition Law*, in *The Development of Competition Law Global Perspectives*, ASCOLA Competition Law Series, (ed. Roger Zäch, Andreas Heinemann and Andreas Kellerhals) (March 2010, Edward Elgar Publishing)

¹⁷ Section 2(d) Definition of dominant undertaking

¹⁸ Dr. S Chakravarty, MRTP Act Metamorphoses into Competition Act, available at < cuts-international.org/doc01.doc>, last accessed 4th February, 2015.

‘undertaking’ to include private as also public sector undertakings. This meant that after the 1991 reform, if a public sector undertaking, such as the then telecommunications incumbent monopoly MTNL engaged in restrictive trade practices, it could be tried under the provisions of the MRTP Act.

The Competition Act 2002, passed by both the Houses of the Parliament and signed by the President of India, came into effect in 2003. However, it took almost a decade before all the provisions of the Act could be brought into force. The Act has the following pillars of performance. First it controls anti-competitive agreements and abuse of dominance, which are collectively referred to as ex-post enforcement and second, it has provisions on control of combinations, the Combination Regulation, also referred to as ex-ante enforcement. The final function of the Competition authority is Competition Advocacy, which incidentally in the case of Indian Competition Act, 2002, was the first pillar to come into force in the year 2003. Provisions relating to ex-post enforcement that is anti-competitive agreements (section 3) and abuse of dominance (section 4) came into force in 2010 followed by the provisions on regulation of combination (section 5 & 6) that became effective in 2011.

6. The New Economy and the Competition Act, 2002

Under the traditional economy, the need to promote competition and alleviate anti-competitive practices, advocated a need for static competition. That is price and quantity-based competition played a central role in the old economy. Traditional sectors such as energy, steel, machinery and chemicals are referred to as the old economy. In these sectors, price and product-based competition plays a pre-dominant role vis-à-vis other more dynamic aspects of competition. The new economy is service-based, which means it is characterized by the use of information, communications and technology and is innovation-led in approach. The innovation-led nature of the new economy means that the dynamic aspects of competition such as innovation, research and development, product differentiation take precedence over the static aspects of competition such as price and quantity. The term ‘new economy’ gained momentum in the year 1983, when it was used on the cover of the Time magazine cover article with the same name, wherein the author described the impact of the transition of the modern economy from traditional and heavy industries to a new technology-based economy.¹⁹ The Competition Act, 2002 as the following discussion will elaborate is not merely an old wine in a new bottle²⁰, rather, it is a new wine in a new bottle that better meets the requirement to promote competition and innovation in the new innovation-led economy.

Before we move further, it is vital to define various types of efficiencies, as ‘efficiency’ plays an instrumental role in the competition law analysis, as opposed to the approach under the erstwhile MRTP Act.²¹ While analyzing the activity of a firm, the competition agencies take into consideration the nature of markets and role of efficiency. Efficiency is principally classified into

¹⁹ Charles P. Alexander, Time Magazine, Monday May 30 1983, The New Economy.

²⁰ See for instance, Dr. S Chakravarthy, MRTP Act Metamorphoses into Competition Act, available at < cuts-international.org/doc01.doc>, last accessed 4th February, 2015.

²¹ For a detailed discussion on interaction between law and economics, the varied goals of the two disciplines that is equity and efficiency and different types of efficiencies such as Pareto and Kaldor Hicks efficiency, see Kalpana Tyagi, Introduction to Law and Economics, Chapter 1 Introduction to Law and Economics, page 2-6, available at file:///C:/Users/Kalpana%20Tyagi/Downloads/SSRN-id2330251.pdf. See also the discussion on Efficiency as a *raison d'être* in Kalpana Tyagi Chapter 2 Principles of Microeconomics Part-1, page 21 available at file:///C:/Users/Kalpana%20Tyagi/Downloads/SSRN-id2330254.pdf.

three categories: allocative, productive and dynamic efficiency. Allocative efficiency means that the marginal benefit derived from a good or service is equal to the marginal cost of producing the same. Productive efficiency in the economic parlance, is said to take place when all the resources in the economy are used efficiently. In other words, when no more output can be achieved from a given set of inputs, and an economy operates on the one of the points on the production possibility frontier (PPF)²², it is said to be productively efficient. An economy is said to be dynamically efficient, when the marginal cost of investing in research and development(R&D), is equal to the marginal output from the investment. The output from R&D is innovation.

Whereas productive and allocative efficiency are static aspects of the competition, dynamic efficiency is a dynamic innovation-led concept. In the old economy, one observes a ‘competition in the markets’, which means that competitors fight for the market share. Perfect competition is the most ideal form of competition in such a market, as there is no dead weight loss²³ in a perfectly competitive economy. It is desirable to regulate the economy in such a manner that it can achieve allocative and productive efficiency. Therefore, the regulators of anti-competitive practices in such a market see monopoly as a negative development and tend to regulate monopolistic and unfair trade practices. In the traditional old economy, the MRTP, 1969 was possibly and to a certain extent, a suitable regulation to control the anti-competitive practices prevalent in the then ‘command and control’ economy.

However, in the new economy, the firms compete on a different dimension. The first to introduce the innovation or the one to introduce the most innovative product or service has a great advantage in capturing the markets. Moreover, competition in such a market is not ‘competition in the markets’; rather it is a ‘competition for the market’. ‘Competition for the market’ means that the most innovative firm is often the one with the largest market share and also the dominant firm in the market. Resulting dominance of the innovating firm, in such an economy is a reward for its innovation. To encourage dynamic competition, it would be counter-productive to regulate monopolies in such an environment. However, as Schumpeter argued in his works, such a monopoly is self-regulated as it is short lived and the monopolist remains one, till a more successful and innovative firm replaces it. Telecommunications industry in the new economy, especially within the converged environment presents one such scenario. In the old economy, when India, had one state run BSNL or MTNL incumbent telecommunications monopolists, their regulation was important to ensure that the consumers were protected from their anti-competitive practices. MRTP, 1969 could have been a suitable and sufficient response in the then closed market. However, in today’s telecommunications environment, with multiple service providers offering value added and diverse services, MRTP could no longer be a suitable solution to the emerging challenges. Moreover, innovation in the market creates competition from multiple products and services in the same relevant market as also the neighboring markets. Fixed-line (though lately in decline) for instance, not only has direct competition from fixed-line as also mobile service providers; but also indirect competition from voice over internet telephone services, chat services and consumer communications such as Skype, VOIP discount etc.

²² For a discussion on and definition of Production Possibility Frontier, see Kalpana Tyagi Chapter 2 Principles of Microeconomics Part-I, page 19-22 available at file:///C:/Users/Kalpana%20Tyagi/Downloads/SSRN-id2330254.pdf.

²³ For a discussion on Dead weight loss, see Kalpana Tyagi Chapter 2 Principles of Micro-Economics Part-III at page 32-33, available at file:///C:/Users/Kalpana%20Tyagi/Downloads/SSRN-id2330259.pdf. See also the section III Producer, Consumer & Total Surplus and Dead Weight Loss on Kalpana Tyagi, Chapter 2 Principles of Micro Economics Part-II, at page 31-32, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2315683.

Moreover, a static analysis wherein fixed lines service providers are viewed as dominant operators, without analyzing the declining nature of this market, as also the emerging competition from related markets, will lead to a factually incorrect competition analysis. The first challenge in the dynamic telecommunications market then is to identify the relevant product and geographic market. Is the relevant product market then only the market for fixed line telephone services or does one include all the possible substitutes for defining the relevant market. As for the relevant geographic market, is the relevant geographic market only the territory of India or is it global in dimension, considering that service providers such as MTNL, BSNL and Airtel not only compete with one another, but also face competition from global players such as Vodafone.

Further, to take an example from the Information Communications industry, Microsoft Windows presents a classic example. When Microsoft introduced its breakthrough product Windows operating system, the product was revolutionary as it offered an excellent graphical user interface and ease of use, features that helped it quickly emerge as the world's dominant operating system. Even after Windows attained dominance in the market for desktop operating systems, Microsoft continued to innovate and launch new updated versions of Windows, to stay competitive in the market for operating systems. It also expanded into the neighboring and related markets with more innovative product and service offerings. Later Microsoft was tried for abuse of its dominant position in both the EU as also the US- the abuse was not in the form of higher prices or lower quality of the operating system. Instead the abuse emerged in the form of creating barriers to entry and excluding competitors from successfully entering the relevant market and the neighboring markets.²⁴ In the US, the Department of Justice (DoJ), started an investigation against Microsoft, alleging that the company illegally attempted to monopolize the market for web browsers, by bundling its Windows OS with the Internet Explorer and entering into 'exclusive unlawful contracts' with the original equipment manufacturers (OEMs). By engaging in such a bundling practice, it was alleged, that Microsoft threatened to eliminate its then major competitor in the web browser market, the Netscape Navigator. The DOJ filed a complaint against Microsoft for violation of Section 1 and 2 of the Sherman Act as also the State Antitrust Laws.²⁵ Shortly thereafter, in the EU, based on a complaint by Sun Microsystems, the European Commission initiated an enquiry against Microsoft and alleged that Microsoft abused its dominant position by refusing to supply interoperability information to its competitors and second, by tying Windows OS with Windows Media Player (WMP), the company attempted to leverage its dominance from the market for OS into the market for WMP.²⁶ In the US, the Microsoft case ended with a settlement decree wherein the company committed to offer interoperability information and unbundle Microsoft Windows with the Explorer.²⁷ In the EU, Microsoft appealed the Commission's decision before the Court of First Instance, which upheld a substantial part of the Commission decision including the €497 million fine imposed on the company²⁸, as also the requirement to provide interoperability information to the competitors

²⁴ For a critical and detailed inter-disciplinary involving economic analysis of law and intra-disciplinary discussion on the tension between intellectual property rights and competition law in the ICT industry, see discussion on the Microsoft I case in the EU and the US by Kalpana Tyagi, Economic Interaction of IPR & Competition Law: A Study of the Microsoft Judgment, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2330272.

²⁵ US v. Microsoft Corporation, 87 F. Supp. 2d.30(D.D.C. 2000)

²⁶ Commission Decision Case No. COMP/C-3/37.792

²⁷ The settlement was entered into force via the District Court final judgment dated 1st Nov. 2002. See State of New York, et al. v. Microsoft Corporation, Civil Action No. 98-1233 (CKK), United States District Court for the District of Columbia.

²⁸ This was the largest fine ever imposed by Commission for anti-competitive practices.

and offer two versions of Windows: one with the media player and the other without the media player. Microsoft was also obliged not to charge more for the Windows version without the media player however, it was free to charge the same price for both the versions- that is the one with the media player and the one without the media player.²⁹

More recently, back home in India, the CCI is investigating an alleged case of abuse of dominance by the worldwide dominant search engine for operating its 'core business of online search and search advertising in a discriminatory manner' and thereby acting to the detriment of consumers.³⁰ On the failure of Google to provide timely information and facilitate investigations into the matter by the Director General, the CCI early last year, found the company liable under section 43 of the Competition Act, 2002 and slapped a fine of ₹ one crore on Google.³¹ Even though a fine of ₹ one crore may be insignificant for a big firm like Google, the fine is nonetheless noteworthy on account of the following two factors. First, in innovation-led sectors, where monopoly of even big firms such as Google and Microsoft, may be short-lived, a delay in investigation by even a matter of few days can cause irreparable harm to the competition in the market. Second, the new Competition Act, offers the possibility to take into account this fast moving nature of the ICT industries and accordingly incorporates procedural and substantive provisions, to ensure an accelerated review taking account of these dynamic industries.

An introspection over the type of anti-competitive practices as illustrated by the preceding examples, that emerge in the new economy such as the ICT industry, vis-à-vis the brick and mortar industries of the old economy, makes it intuitively clear, that such practices are not only difficult to capture from the lens of the MRTP Act, but also the remedies proposed by the erstwhile act would have unsuitable to alleviate the anti-competitive effects and promote innovation in these markets. However, competition policy and the new Competition Act, provides a more suitable tool to capture such anti-competitive practices.

7. Telecommunications and Convergence: Innovation for consumers and challenges for competition policy

In the common parlance, a mention of the word telecommunications signifies telephone, mobile phones and Internet. Basically, telecommunications is exchange of information through electronic means. A new phenomenon that emerged in the world of telecommunications, beginning early 2000's was 'convergence'. Convergence is not just a buzzword or a fancy term. As we will see, the convergence in telecommunications has the potential to revolutionize the economy in an unprecedented manner. Until 1990's, telephone was a medium to call someone and have a conversation with him or her. Television was a means to view the news, the programs and the films broadcast from the television station. Beginning 2000, particularly with the widespread use of computers and mobile phones, a given device no longer performed the 'sole'

²⁹ Judgment of the CFI in Case T201/4, Microsoft Corporation v. Commission of the European Communities, available at <http://curia.europa.eu/juris/showPdf.jsf?docid=67518&doclang=EN>, last accessed 21 March 2015. This is usually referred to as the Microsoft I case.

³⁰ See Case No. 7 of 2012, filed by M/S Consim Info Private Limited & Case No. 30 of 2012 filed by Consumer Unit & Trust Society, available at <http://cci.gov.in/>.

³¹ For a critical discussion on the case and fine, see, Kalpana Tyagi, 'Google's apparent failure to search its own information: CCI fines Google ₹ 1 cr for failure to comply with Show Cause Notice', Corporate Professionals Today, Vol. 30 Issue2, May, 2014, 145-151

function that it initially intended to offer. A mobile phone could now not only be used as a means of calling and connecting with friends and family, but also perform diverse functions such as playing games, recording voice and video, storing information about contacts and surfing on the internet. Within weeks of its June 2007 launch, the first generation iPhone became the largest selling Apple product in the history as also the fastest selling consumer electronics item, that eventually catapulted the company to the top position of the most valuable company on earth. The unprecedented 'Convergence' offered by this new i-product, was one of the key reasons for its unparalleled success.³² The iPhone was considered revolutionary at the time, as it was the first ever truly converged device that offered 'the best media player(widescreen video iPod), a near full function web browser(Safari), e-mail/contacts/calendar'- all together in one cell phone.³³ About three years later, in April 2010, the first iPad was released that further developed on the concept of convergence. iPad offered a camera, video, performed diverse web-based functions such as internet browsing and email, games, navigation, wide range of applications and many other utilities- which could essentially be accessed in one hand-held portable device. Apart from its portability, long battery life, was another great advantage offered by the iPad.

These two i-products not just changed the fortune for Apple, they also brought rapid new product launches and intense competition from competitors like Samsung and Microsoft, competing to gain market share in the billion dollar iPod, iPhone and iPad industry; but what these products fundamentally contributed- was in terms of innovation and convergence. This innovation-led competition from competitors such as Microsoft and Samsung, is what is the Schumpeterian dimension of competition. Convergence, which seemed promising, though muted due to limited product convergence, gained brisk momentum with the launch of these products. Mobile money, mobile banking, e-retail essentially convergence in services, saw triple digit year on year growth, after the launch of these new generation converged devices. Apple with its dynamic innovation quickly emerged as the worldwide dominant firm in the market for smartphones and iPads, till it was soon challenged by 'even more' innovative and reasonably priced products from competitors like Samsung and Microsoft. High profitability, shorter product life cycles and rapid innovation are the result of Schumpeter's theory of creative destruction in action. Look back and imagine, if the MRTP Act could have been suitable for such a dynamic environment, wherein innovation and subsequent dominance of one firm, quickly led to immense and intense competition and more innovation.

8. Indian Competition Act, 2002 and its relevance for the converged telecommunications sector

Section 3 and Section 4 of the Indian Competition Act deal with ex-post competition law abuses. To conduct day to day business transactions, an enterprise enters into various agreements. Section 2(h) of the Indian Contract Act, 1872 states that 'an agreement enforceable by law is a contract'. An agreement needs to be legal and enforceable, so that in case of a breach, the enterprise may approach the courts for enforcement. This creates rule of law and certainty in business transactions. For the consumers as well, legal certainty means greater rights and

³² For a discussion on convergence and the new unprecedented challenges it presents for the Indian Competition authorities, see the opinion piece by Kalpana Tyagi, 'Moving with the times', Indian Business Law Journal, Opinion Vantage Point, March 2015.

³³ Katie Marsal, AmTech: iPhone to become fastest selling Apple product in history, dated 2 July 2007, Monday, available at http://appleinsider.com/articles/07/07/02/amtech_iphone_to_become_fastest_selling_apple_product_in_history.html, last accessed 3rd February 2015

remedies in case of breach. Such an agreement may be between two enterprises that is business to business (B2B) or business to consumer (B2C). Competition Act focuses on the B2B agreements and their consequent impact on competition in the markets. The objective of competition law is to make the markets contestable, in other words more competitive. Harm resulting to consumers is dealt with under the Consumer Protection Act, 1986.

Whether a business practice is anti-competitive, can be analyzed under the *rule of reason* or the *per se* approach. An analysis under the *per se* approach means that all that the authority needs to establish is that the anti-competitive agreement took place and it need establish no further, the impact of such an activity on the relevant market.³⁴

An enterprise may enter into horizontal agreements with its competitors or vertical agreements with the suppliers in the upstream market or retailers and final consumers in the downstream market. Section 3 deals with anti-competitive agreements. According to section 3(3), agreements entered into between enterprises, association of enterprises or persons or association of persons to determine the price of goods or services, limit production or control technical development, investment or provision of services or allocate customers or geographical markets or engage in bid rigging or collusive bidding, are all presumed to have an ‘appreciable adverse effect on competition’. According to section 3(2) such agreements are void. This means that such anti-competitive agreements between competitors at the same level in the supply chain, covering either of the above-enumerated areas are ‘*per se*’ void. In the United States as well, horizontal agreements to fix prices, are *per se illegal* under section 1 of the Sherman Act. ‘*Per se*’ void means that all that the competition authority needs to prove is that such an anti-competitive agreement existed in the first place and it need not go any further to prove or quantify the harm caused by such an agreement. Based on economic theory and years of experience in competition law enforcement, it has been found that horizontal agreements such as to fix prices negatively impact competition and therefore, are considered to be *void ab initio*.³⁵ *Per se* rule is developed with years of experience, once it has been consistently and reasonably observed and the economic theory well substantiates that certain activities have an adverse impact on competition. An agreement to restrict output, raise prices or limit innovation by limiting production or technical development undoubtedly negatively impact product and price based competition and innovation and leads to reduction of consumer welfare and therefore, they are *per se void*. However, vertical agreements such as tying, exclusive supply and distribution agreements, refusal to deal and resale price maintenance need not always be anti-competitive. Consider the example from the case of emerging convergence observed in the telecommunications sector. When Airtel offers its consumers a bundled subscription of mobile phone, landline and internet, it may simply be passing on the efficiencies achieved to its consumers. The customer benefits from more value added services, lower prices and better quality in the form of bundled subscription. Such an agreement may not always be competitive and thus, needs to be analyzed on a case-by-case basis. Another example could be when the enterprise restricts its showroom to display the goods of its competitors or sell below a certain minimum prices. All these acts of price and non-price based restrictions in the downstream market can have reasonable

³⁴ Lee N. Abrams and Jonathan J. Olcott, The Standard of Legality: Per Se or Rule of Reason in Legal Aspects of Selling and Buying (Zeidman Philip F., 2nd ed. 1991) at pp 6-8).

³⁵ Louis Kaplow, On the Meaning of Horizontal Agreements in Competition Law, Discussion Paper No. 691 dt. 05/2011, Harvard Law School, available at http://www.law.harvard.edu/programs/olin_center/papers/pdf/Kaplow_691.pdf, at p.4.

justifications such as avoidance of externalities and elimination of problem of double marginalization. Such agreements are therefore, analyzed under the rule of reason approach.

Three additional points merit attention under section 3 in the backdrop of our discussion competition in the ICT sector. First, even though section 3(3) classifies certain activities as *per se* anti-competitive, it carves an exception in the form of proviso that if there is a joint venture between two or more competitors, such that it can enhance ‘efficiency in production, supply, distribution, storage, acquisition or control of goods or provision of services’, it shall ‘exempted’ from the presumption of illegality. This has significant implications for the research and development activity in the ICT sector, which is often a result of collaboration between competitors or enterprises present at different levels in the value chain. A typical example is a chip. A single silicon chip contains thousands of patents and to further innovation, enterprises need to collaborate and often share their intellectual property rights to engage in R&D. For instance the Japanese wireless operator NTT Docomo and Samsung, with investments from various horizontal competitors and vertical partners such as Fujitsu, Fujitsu Semiconductor, NEC and Panasonic, entered into a 450 million yen joint venture to produce small-sized, low-power consumption and feature rich semiconductor products possessing modem functionality. The objective of the agreement is pro-competitive as it seeks to engage in R&D, create a new more innovation product and challenge the market leader Qualcomm.³⁶ The proviso to section 3(3) in the Indian context, offers such innovation producing and efficiency enhancing joint ventures, the protection from the application of Competition Act and otherwise classifying them as anti-competitive. Second, section 3(5) offers the possibility to impose reasonable restrictions that are necessary to protect his intellectual property rights available under the intellectual property laws. It is often argued that competition law and intellectual property laws may have divergence of objectives. From this perspective, it is often argued that while competition law seeks to promote price and quantity-based competition, intellectual property laws promote innovation. But as we observe from the forgoing discussion on section 3 of the Indian Competition Act such an argument is misleading and our argument in the present paper that the competition law seek to promote innovation-based competition only gets strengthened further by a discussion on the other provisions in the Act.

Section 4 of the Competition Act deals with abuse of dominance, another form of ex-post competition abuse. Section 4(2) defines what all kinds of practices are discriminatory. It is important to mention at the outset that it is not dominance that is punishable under the Act, nor is it regulated under the Competition Act, unlike the erstwhile MRTP Act, instead, is the abuse of such a position that is deemed to be a violation of the Act. The position is similar in the EU, wherein according to established case law, under Article 102, it is not the dominant position that is prohibited, it is only the abuse of such a dominant position that is prohibited under the Article.³⁷

Practices such as margin squeeze, predatory pricing, market foreclosure, leveraging of market power from one market in which the enterprise is dominant to another market with the objective of monopolizing the other market, refusal to deal by a dominant enterprise, hindering technical

³⁶ Josh Ong, Docomo, Samsung team up on smartphone chip venture to challenge Qualcomm, dated 27th December 2011, available at http://appleinsider.com/articles/11/12/27/docomo_samsung_team_up_on_smartphone_chip_venture_to_challenge_qualcomm, last accessed 21st March 2015.

³⁷ Valentina Korah, *An Introductory Guide to EC Competition Law and Practice*, 5th ed., Hart, 1994, at p.83.

development are some of the activities covered under the section 4. The section is particularly relevant for the ICT sector considering that presence of network effects, the markets tend to be tippy and one of the firms quickly tend to emerge as the dominant enterprise as the number of users of a given network or product or service reach a critical mass. This dominance is a desirable feature of the market, as it makes the markets contestable and firms are attracted to capture the market and profit from it. However, such dominance also puts certain obligations on the dominant enterprise.

Dominance has been nimbly well defined in the EU landmark decision in *Hoffmann La Roche*, which applies *mutatis mutandis* to the Indian context. In *Hoffman-La Roche*, the EC court held that dominance referred to “a position of economic strength enjoyed by an undertaking, which enables it to behave to an appreciable extent independently of its competitors, its customers and ultimately of consumers”.³⁸

Dominance under the Indian Competition Act is defined as a position of strength which enables an enterprise to act independently of the competitive forces present in the relevant market and influence the competitors and consumers to its advantage.

In the telecommunications sector, two of the commonly occurring abuses of dominance cases are predatory pricing and margin squeeze.

Margin Squeeze is said to take place, when a vertically integrated enterprise that is dominant in the upstream market and also competing in the downstream market, charges an uncompetitive and high price from its downstream competitors for access to inputs and sets the final price for the end users such that competitors in the downstream market are not able to compete reasonably and effectively with the vertically integrated firm. This consequently negatively impacts competition in the downstream market and may eventually lead to the elimination of competitors. Consider for instance BSNL, a vertically integrated enterprise having the infrastructure such as fixed lines and optical fiber cables, offering last mile connectivity, competes with Airtel in the downstream market for offering broadband to final consumers. And Airtel with no equivalent infrastructure to offer this last mile connection, depends on BSNL in the upstream market for this access. If BSNL offers this infrastructure to Airtel, but at a higher cost or lower quality, such that Airtel is not able to compete effectively with the BSNL in the downstream market, the former is said to engage in margin squeeze. In the EU, a similar case of margin squeeze was recently decided by the European Commission, wherein the Commission fined Slovak Telekom and Deutsche Telekom, its parent company over € 39 million for first refusing to give access to its unbundled local loop under fair conditions to its competitors and secondly engaging in margin squeeze such that competing service providers could not use Slovak Telekom’s legacy telephone network infrastructure without incurring losses.³⁹ The heavy fine imposed for engaging in margin squeeze reflects the severity of such an abuse from a competition law perspective. The decision also additionally highlights, if the parent company has a decisive control then it can also be fined for engaging in such abusive practices.

Predatory pricing has been defined as an offering of goods or services below cost, with a view to reduce competition or eliminate competitors. Predatory pricing has been defined as the strategic

³⁸ Case 85/76, *Hoffman-La Roche & Co. AG v. Commission*, [1979] ECR I-461, at para 38

³⁹ Antitrust: Commission fines Slovak Telekom and its parent, Deutsche Telekom, for abusive conduct in Slovak broadband market, available at http://europa.eu/rapid/press-release_IP-14-1140_en.htm, last accessed 22 March 2015.

foreclosure of the market by the enterprise for a sufficiently long period of time with the objective of ‘weakening or eliminating its competitors’ and ‘preventing market entry by potential competitors’.⁴⁰ Whether a firm actually engaged in predatory pricing, or whether it was a genuine business strategy on the part of the firm to establish itself in the relevant market or to ‘meet the competition’, is a highly technical question that needs to be decided based on the factual circumstances, legal standards, economic theory as also accounting methods employed. Consider for instance the two-sided markets in online Internet based services, that led to great innovation in the Internet as also many valuable services freely available to the consumers. As a consumer, the user does not pay for Google search, while he simultaneously tremendously benefits from the services offered by the search engine in terms of information provided by a single mouse click. The Google in turn makes money from its advertising funded business model. The two-sided nature of the market, just makes the economics of the ICT industry different from other brick and mortar structures and therefore, call for a different competitive analysis to find the appropriate theory of harm. On the issue of predatory pricing, the CCI recently came out with a landmark decision which was subsequently upheld by the Competition Appellate Tribunal (COMPAT) and the Supreme Court of India. In the said decision, the Commission found NSE’s pricing practice to be predatory and exclusionary in nature as it charged zero transaction fees to attract customers to the newly introduced CD segment and the impact of such a zero fee policy, in the opinion of the Commission was to eliminate the only other competitor MCX-SX. The decision though highly controversial⁴¹, is nonetheless, important as it lays a clear precedent on how issues relating to predatory pricing will in future be evaluated by the Competition authority. The significance of the decision is all the more relevant for the ICT sector, as both the ICT and stock exchange services experience network effects⁴².

On ex-ante enforcement, section 5 and section 6 are the relevant provisions that deal with the control of combinations. According to section 5, a merger or an acquisition that crosses the financial thresholds prescribed therein or an acquisition of control, shares, voting rights or assets or direct or indirect acquisition of control in an identical business activity, in the which the acquirer already has controlling rights, needs to be notified to the Commission for approval. Section 6 makes any combination that causes or is likely to cause an appreciable adverse effect on competition in India, void. The procedure followed while enforcing section 5 and 6 is laid down in the CCI(Procedure in regard to the transactions of business relating to combinations) Regulations, 2011. Schedule I of the Combination Regulation exempts certain categories of transactions from notification, as they are presumed to ‘ordinarily not likely to cause an appreciable adverse effect on competition’.

For a determination, whether a given combination is likely to have appreciable adverse effect on competition in India, the transaction first needs to be notified to the Commission. The Commission then performs its competitive analysis. Competitive analysis typically includes the following steps. Identification of the relevant product and geographic markets is the first step in the exercise. If the combined market share of the merging firms crosses the prescribed threshold,

⁴⁰ Kevin Coats, Competition Law and Regulation of Technology Markets, at page 59.

⁴¹ For a critical analysis of the decision, see Kalpana Tyagi, ‘Under-pricing costs NSE heavily- Dominance abused by NSE by resorting to predatory pricing policy: CAT’, Corporate Professionals Today, Vol. 31 Issue 4, October 16-31, 2014, 354-361.

⁴² See National Stock Exchange v. Competition Commission of India, main order available at <http://www.cci.gov.in/May2011/OrderOfCommission/MCXMainOrder240611.pdf>. See also the dissenting minority judgment, for an articulate economic and accounting discussion of the issue of predatory pricing in the market for stock exchange services, a network industry, available at <http://www.cci.gov.in/May2011/OrderOfCommission/MCXDissentOrder240611.pdf>.

then the resulting combination is found to be dominant. To alleviate the competition concerns raised in the statement of objections, the parties may propose remedies such that competition in the relevant market will be restored. Recently cleared merger by the CCI between Sun Pharmaceutical Industries Limited and Ranbaxy Laboratories Limited, clearly presents the approach of the Commission in three to two mergers⁴³ and how merger remedies⁴⁴ can be used an effective instrument to restore competition in the market and acquiring clearance for a merger transaction. In its competitive assessment, the CCI found that the proposed transaction was a three-to-two merger in the six of the forty-nine relevant markets identified- the market for Tamsulosin+ Tolterodine, Rosuvastatin+Ezetimibe, Leupropelin, Terlipressin, Olanzapine+Fluoxetine, Levosulpride+Esomeprazole.⁴⁵ The Commission finally cleared the merger, subject to an exhaustive set of divestiture remedies in each of these six relevant markets, as also the market for Olmesartan+Amlodipine+Hydrochlorothiazide.⁴⁶ Even though Sun-Ranbaxy was a highly complicated merger transaction leading to the reduction of number of competitors from 3 to 2 and 4 to 3 in many of the relevant markets identified, the transaction was cleared on submission of clear-cut merger remedies that would restore competition in the markets. The significance of this merger decision in the pharmaceuticals merger for prospective merger transactions in the ICT sector is noteworthy. First, as the Sun-Ranbaxy decision shows, when a merger leads to monopoly in certain markets, the CCI does not prohibit it outright, rather, it performs its economic analysis to take account of the transient nature of the dominance in these innovation-led sectors such as pharmaceuticals and ICT and second, well drafted proposal combination proposal with clearly defined remedies to alleviate the competition concerns, can facilitate quick clearance of otherwise problematic combinations.

As the telecommunications sector opens up and convergence presents unprecedented opportunities in terms of growth and higher revenues, concentrations through mergers and acquisitions and joint ventures to collaborate for research and development as also capture the potential markets, are legitimate business strategies for attaining inorganic growth. Considering the presence of network effects in the sector, inorganic growth through these instruments on one hand may facilitate quick acquisition of markets and competition law should facilitate this to promote price and innovation-led competition in these markets. But the situation also presents a paradox. Due to this very network-driven nature of the industry, as the firms quickly attain dominance, the provisions of section 4 on abuse of dominance endow certain responsibilities on these firms to share their facilities to promote competition in the markets.

Conclusion

The digital revolution has been responsible for the introduction of new products and new models of business. It has provided access to services such as banking to a large number of consumers

⁴³ When the number of effective competitors in the relevant market are reduced from three to two due to a proposed merger that combines two of these three largest market players, it is said to be a three-to-two merger.

⁴⁴ Merger remedies are commitments submitted by the parties to the Commission, that seek to alleviate the competition concerns raised in the Commission's competitive assessment of the proposed transaction.

⁴⁵ See Markets with appreciable adverse effect on competition Para 21, Order dated 5th December 2014 under Section 31(7) of the Competition Act, 2002 in the proposed concentration between Sun Pharmaceuticals Industries Limited and Ranbaxy Laboratories Limited, available at <http://www.cci.gov.in/May2011/OrderOfCommission/CombinationOrders/C-2014-05-170.pdf>, last accessed 22nd March 2015

⁴⁶ Modification to the proposed combination Para 37-76, , Order dated 5th December 2014 under Section 31(7) of the Competition Act, 2002 in the proposed concentration between Sun Pharmaceuticals Industries Limited and Ranbaxy Laboratories Limited, available at <http://www.cci.gov.in/May2011/OrderOfCommission/CombinationOrders/C-2014-05-170.pdf>, last accessed 22nd March 2015

who could not be served by the brick and mortar versions of these businesses. The process of digitization has revolutionized industries such as music and in the process of doing so for newspapers and books. Hitherto distinct industries such as network television and computers are merging and disrupting old business models.

At one level there is the promise of new services and access to services such as health, banking and government services. On the other distinct services are merging into each other and the threat of dominance through bundling is increasing. This poses new challenges to regulatory authorities dynamic as new models of business and new products are constantly being tried out and old businesses are at risk of being wiped out. So new challenges are emerging and regulatory authorities are at the risk of always being behind the curve. This fact raises further challenges for public authorities, which have to be faced and new models developed.

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