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The Internet: A black hole releasing new stars. Business models and regulation

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20TH ITS BIENNIAL CONFERENCE
THE NET AND THE INTERNET. EMERGING MARKETS AND POLICIES

The Internet: A black hole releasing new stars. Business models and regulation.

Pier Luigi Parcu and Maria Luisa Stasi

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Abstract

The Internet ecosystem is rapidly and constantly expanding. In numerous sectors, the Internet has acted as a “black hole”, attracting the majority of transactions and leaving less and less space to the offline businesses. Among others, the Internet has dematerialized physical assets and services, lowered down of the production and distribution costs, strongly contributed to the diffusion of the “free” goods and services, multiplied the multi-sided markets and caused a shift from supply-driven systems toward demand-drive ones. All these features have impacted the traditional ways of performing economic activities. In order to cope with the disruptive effect of the Internet, firms have transferred their business online, adapted and evolved their business models or created completely new ones. Often, the outcome of such transformations creates frictions with the traditional regulatory environment where the businesses take place, and decision-makers and enforcers must deal with unprecedented challenges. In order to efficiently regulate the online markets, decision makers and regulators might need to undergo the same process that firms were called to perform: transfer and adapt the rules to the online world. While accomplishing this change, it might also be that, in some cases, it will be more efficient to set completely new rules instead of trying to stretch the old tools to newly created online businesses.

1. Introduction

The Internet ecosystem is in rapid and constant expansion. By the end of 2014, about 3 billion people around the globe will be using the Internet, that is, roughly 40% of the world's population.¹ In addition, current statistics show that about 50% of Internet users have bought products or services online;² these numbers give an idea of the continuously growing importance of the Internet for industry and business.

The Internet has dematerialized physical assets and services, lowered production and distribution costs, made a strong contribution to the diffusion of "free" goods and services and multiplied multi-sided markets. In many economic sectors, the Internet acts as a "black hole", attracting the majority of transactions and leaving ever less space to offline businesses and other traditional ways of performing economic activities.

In order to cope with the disruptive effect of the Internet on pre-existing businesses, traditional firms have had to react to survive. In practice, they have three options: to transfer their business online as it stands, to adapt their business models to the digital world, or to create completely new businesses online.

In each case, the changes have been driven by the particular features of the markets and the market dynamics activated by the Internet. The outcome of such transformations often creates profound tensions with the regulatory environment where pre-existing businesses used to operate, thus confronting decision-makers and rules' enforcers with unprecedented challenges.

This paper investigates how businesses and regulators have reacted to the highly innovative but often disruptive effect of the Internet, and tries to present a number of policy indications for the future development of the economic exploitation of the Internet.

After this introduction, the paper is structured as follows. It starts, in section 2, with a brief description of the economic impact of the Internet revolution on traditional businesses and it proposes a new taxonomy of online economic activities. It identifies three main categories of online firms: (i) Survivors, firms that tried to survive the changes brought by the Internet by simply transferring their traditional business online; (ii) Adapters, firms that tried to adapt to the new ecosystem not only by going digital, but also by modifying their business models in a variety of ways; (iii) and Stars, firms which have used the innovative features of the Internet to create new ground-

¹ ITU, The World in 2014: ICT Facts and Figures, at: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2014-e.pdf>, (last accessed: 27 October 2014).

² According to Eurostat data, the percentage rises to about 60% in the European Union; see: <http://www.ecommerce-europe.eu/news/2013/10/eurostat-releases-figures-on-online-shopping-in-europe> (last accessed: 27 October 2014).

breaking businesses and become new business stars. A number of significant cases are analyzed for each category and common features are recognized.

In section 3, the focus is then narrowed down to the disruptive and revolutionary effects of the Internet on the communications and media markets, analyzing how these effects have altered their specific dynamics and characteristics. Here again, firms' reactions to these changes are examined and common trends are detected. In this way the business models that appear better placed to exploit the opportunities introduced by the new scenario and demonstrate better prospects for long-term survival within the Internet environment are identified.

Using the same methodology, section 4 analyzes and classifies regulatory and competition models presently applied to traditional and Internet communications and media markets. In cases of businesses which simply migrated online (survivors), governments and watchdogs may be able to regulate market dynamics by applying old tools *as they are* to the online dimension. In cases where firms adapted or evolved their business models (adaptors), and cases of newly created businesses (stars), regulators are called on to perform a more difficult exercise. Here, it is necessary to identify the general idea of traditional regulation, its core value and principles, and to determine how regulatory tools can be applied to the changing market and business dynamics. The question then is, in a pyramid of regulatory interventions which strategy and what tools are best suited to attain the desired objectives, and to who should be applied adapted rules or new rules be addressed? A short conclusion follows.

2. The Internet revolution: *pars destruens* and firms' reactions

Never before has a new technology experienced such rapid growth as the Internet. Europe's Internet penetration, today the highest worldwide, will reach 75% at the end of 2014, bringing the European Union closer to its Digital Agenda Goals for broadband access.³ In the Americas about 65% of the population currently uses Internet, the second highest penetration rate in the world. In the Asia Pacific region, the rate is over 35% (what in absolute numbers means around 45% of the world's Internet users). In Africa, almost 20% of the population will be online by the end of 2014, double the figure for 2010.⁴

³ The Digital Agenda for Europe has set three targets related to broadband access, two of which refer to broadband coverage: (i) all homes should have access to broadband of at least a basic quality by 2013, and (ii) all homes should have access to high-speed broadband of at least 30 Mbps by 2020. See: <http://ec.europa.eu/digital-agenda/fast-and-ultra-fast-internet-access-analysis-and-data> (last accessed: 27 October 2014).

⁴ ITU: *the World in 2014: ICT Facts and Figures*, op. cit..

Internet connection comes in different speeds, with fixed, mobile or other networks. Fixed broadband is now growing very slowly, whilst mobile broadband uptake continues to grow at double-digit rates throughout the world.⁵ Another important trend is the move, especially in developed countries, towards fixed-mobile integration. In general, the relative unimportance of the specific medium of transport of Internet content commoditizes traditional networks and inevitably reduces their economic value.

The vast base of Internet users has encouraged businesses to innovate in order to offer an ever-evolving array of online products and services. Different business players characterize the Internet. From a vertical industrial perspective, the Internet can be seen as a three-level silo: network operators at the bottom, equipment, device and application manufacturers in the middle, and content and service providers at the top. What follows examines all levels, and looks at the relationships between them.

Internet is not the first technology to have a strong impact on global economy and on previous ways of doing business. Since the Industrial Revolution, the world has experienced several steep peaks in productivity and economic growth fuelled by technological leaps: steam engines, telephones, cars, airplanes, computers, all brought about significant changes in the way of performing tasks and have all triggered completely new types of businesses, disrupting many more traditional ones. However, Internet technology is particularly powerful because it is a strongly pervasive technology. It introduces new ways of communicating, sharing and using information, which in turn enable major innovations and new dynamics in very different and apparently quite distinct industries and markets. In many sectors, the Internet is changing the value chains, disrupting traditional commercial relationships and enabling new forms of competition to an unexpected extent. It also creates new customers' expectations, obliging firms to continuously develop and adapt business models, services and even physical products.

⁵ Fixed-broadband penetration grew by 4.4% globally in 2014. The slowdown is mostly evident in the developing countries and especially in Africa, where the penetration rate will be lower than 0.5% by the end of the year. Europe's fixed-broadband penetration is much higher compared with other regions and almost three times as high as the global average (28% compared with 10%). On the other side, mobile-broadband uptake continues to grow everywhere at double-digit rates. By the end of 2014, 32% of the global population has had access to mobile-broadband – five times the penetration rate of five years ago (2009). The number of mobile cellular subscriptions worldwide has reached 7 billion, corresponding to a penetration rate of 96%; more than half of these (3.6 billion subscriptions) have been in the Asia-Pacific region. Contrary to what happens for the fixed connections, Africa leads in mobile-broadband growth with a rate of over 40% - twice as high as the global average. By the end of 2014, mobile-broadband penetration in Africa has reached almost 20%, up from less than 2% in 2010 (ITU: *The World in 2014: ICT Facts and Figures, cit.*) In Europe the average penetration rate has approached 60%. However, penetration rates overall in Europe lags behind markets such as the US and Japan, although there are several European countries with penetration rates over 100% (GSMA data, see: Mobile Economy Europe 2013, at: <http://gsmamobileeconomyeurope.com/> last accessed: 27 October 2014).

This explains why, on the one hand, the Internet is generating immense value,⁶ yet is doing so through a highly disruptive process. Unfortunately, a relevant part, or most, depending on the sector, of the acquired revenue on the Internet is subtracted from traditional ways to produce and distribute offline, thus creating the progressive and massive disappearance of entire areas of economic activity⁷. In this sense, the Internet exercises an impressive gravitational pull, obliging firms to make substantial changes in their businesses in order to avoid disappearing altogether.

The Internet has lowered marginal costs of both production and distribution processes and has allowed for a massive dematerialization of physical assets and services. In some cases the dematerialization has affected both the product or service provided and the distribution channels; while in others, it has simply created more efficient and economic online channels of distribution.

The sharp drop in marginal costs allows suppliers on the Internet to sell at a lower or negligible price. In so doing, they strongly compete with firms operating in the traditional way, challenging the latter's economic viability and changing the industry as a whole. The Internet has also created the conditions for the widespread diffusion of free goods and services on many markets. This is because it has expanded the opportunities for intermediation among different groups of agents and has generated a number of businesses where the costs incurred to provide a product or service to one group are more than compensated through the reliance of the provider on the satisfaction and financing of another group. In other words, the Internet has multiplied the so-called "two-sided or multi-sided" markets.⁸

On a different theme, the Internet is also significantly changing the balance between suppliers and customers and the latter's expectations. It has created fairly open trading regimes, giving customers more choices and providing responses to a range of disparate needs. Today, supply alternatives are easily accessible and more transparent; therefore, traditional firms are currently exposed to increasing competition. Moreover, the Internet has enhanced the opportunities for interactions

⁶ For example, Internet advertising revenues in the U.S. reached \$11.6 billion for the first quarter of 2014, marking a 19% increase over the same period in 2013 (Interactive Advertising Bureau (IAB) and PwC US, at: http://www.iab.net/about_the_iab/recent_press_releases/press_release_archive/press_release/pr-061214#sthash.HVsRA7Ru.dpuf (last accessed: 27 October 2014). Global digital music revenues amounted to US\$ 5.9 billion in 2013, 4.3% more than the previous year (IFPI Digital Music Report 2014, at: <http://www.ifpi.org/resources-and-reports.php#/digital-music-report.php> (last accessed: 27 October 2014). Global online travel and tourism sales are steadily growing and are expected to reach US\$830 billion in 2017 (Euromonitor International, see more at: <http://www.marketwired.com/press-release/global-online-travel-and-tourism-sales-to-reach-us830-billion-in-2017-1885494.htm>, last accessed: 27 October 2014).

⁷ Meaningful examples of this phenomenon are traditional travel agencies, newspapers (an emblematic case is the Italian magazine *L'Europeo*, which closed in 2013 after more than 50 years since it was founded), music labels. Another example concerns commercial broadcasters: due to the increasing diffusion of online TV services and also due to the dimension gained by the Internet advertising, they are suffering of a consistent decrease of revenues (Analysys Mason).

⁸ "A market is two-sided if the platform can affect the volume of transactions by charging more to one side of the market and reducing the price paid by the other side by an equal amount; in other words, the price structure matters, and a platform must design it so as to bring both sides on board." Rochet and Tirole, *Platform Competition in Two-Sided Markets*, 2003.

between suppliers and consumers, giving the latter the opportunity to combine the product or service they are interested in by themselves.

Finally, the Internet has questioned the common parameters used to measure the value of transactions. Within the Internet ecosystem, very often the absence of monetary value does not necessarily correspond to the absence of economic value. In a number of cases, the price of the good or service can be seen in less direct non-monetary forms, such as customers' attention and information on their interests and preferences. This, in turn, allows firms to design targeted and more efficient advertising and sale activities. In this specific perspective, the Internet has completely revolutionized the way of doing marketing, and in the Internet ecosystem the importance of personal data is continuously growing. The ability to gather data and to find an efficient way of monetizing their use is one of the major challenges for firms operating online.

While dealing with the disruptive impact that the Internet has had on traditional markets and businesses, it is worth mentioning the sharing economy phenomenon. By facilitating the circulation of information and the interconnections among users, and therefore by making it cheaper and easier than ever to match supply and demand, the Internet has dramatically enhanced the opportunities of sharing choices and requests among consumers. By sharing, users are able to significantly cut down costs, which are divided among a wide group. Moreover, with the sharing model users often do not need to "own" the goods anymore, as long as they can buy the service when they need it. Furthermore, users in a sharing economy become more involved in the demand-supply dynamics of the market, since they can act as suppliers, customers, or both, and have the chance to influence how and at what cost the goods or services are offered, and to personalize them to their own needs.

Thus the Internet has had a strong impact on offline markets and businesses: by pervading all stages of the value chain, and by reshaping the forms of interaction among the different market players, the Internet has condemned an ever-increasing number of traditional businesses to death, substituting them with new ones. This has forced traditional firms to cope with a number of challenges that, in many cases, rendered their previous business models totally unviable. Firms have reacted to the strong gravitational pull of the Internet in three main ways: (i) some have tried to survive by simply transferring their business online; (ii) others have adapted to the new ecosystem not only by going digital, but also by modifying their business models in a variety of ways; (iii) finally, some firms have used the innovative features of the Internet to create innovative businesses and to become new business stars.

Looking at the first category of reactions, in some cases firms have simply gone digital, dematerializing both, the product (or service) they provide and the distribution channels. As a result,

they currently operate online only. In the UK, Germany, Spain and Italy, a good example of this category is DirectLine, a new insurance company that sells insurances and financial services directly to customers only over the Internet. Another example is the bank ING Direct, which provides all its banking and financial services online in over twenty countries worldwide.

In other cases, firms have maintained the offline business and created a parallel one online. As final prices may differ depending on the channel of distribution, the major risk for these firms is the cannibalization of their offline business by an unavoidably aggressive low-price strategy by an online one business. Examples of this transformation are multinational clothing firms such as Nike, Adidas, Zara and many others: while keeping their dedicated stores, they have also developed powerful online sale channels.

Most of the times, however, in addition to transferring their business online, firms have also substantially modified and adapted to the different playing field set by the Internet, in order to take advantages of the new situation instead of being pushed out of the game altogether.

A first example is the evolution of the “bricks-and-mortar” travel agencies. With the widespread diffusion of the Internet, many airlines and other travel companies began to sell their goods directly to passengers. Travel agencies have thus gradually ceased to function as mediators, and their market size experienced a sharp downturn. Thus, in this sector, the Internet has left very little chance of long-term survival to traditional firms. In order to react to this disruptive effect, travel agencies have developed an online presence on their own by creating travel websites, with detailed information and online booking capability. Firms such as Booking.com, eDreams, Opodo, and many others, have set up a comparison engine for end customers and offer one-stop solutions for hotel booking and ticket purchase.

Amazon is a similar case. Bookselling is an old business, but Amazon has been able to take advantage of the Internet to transform the industry radically. Using the Internet, Amazon has found a new channel to reach customers, thus eliminating the traditional retail distribution and developing a direct relationship with suppliers. It has used its unique software to create a virtual bookstore with millions of titles. However, the revolutionary capacity of Amazon has gone well beyond this. In 2007, it launched Kindle, a series of e-book readers that enable users also to shop, download, browse and read newspapers, magazines, blogs and other digital content. With Kindle, Amazon has led the explosion of the e-book business, which already accounts for 14.5% of all publishers’ revenues.⁹ In addition, Amazon has pioneered the so-called “collaborative filtering”: it has used input on

⁹ Association of America Publishers, <http://www.publishers.org/resources/> (last accessed: 27 October 2014).

customer's interests (items purchased, viewed, demographic data, subject preferences, etc.) to generate lists of recommended items for each individual.

Although there is a striking difference between the business run by Amazon and traditional bookselling this remains mostly the adaptation and evolution of an old business and *not* the creation of a new one. Overall, the product remains the same, although eventually in a different support (e-books). What changes dramatically is the modality of offering the service: more choice, more personalization, and lower prices. The fact that Amazon has expanded into the sale of non-book items, becoming a virtual window for a range of information, products and online services, and that it is now one of the major players in the cloud computing infrastructure services market, does not change the picture for this analysis.

Finally, a number of firms are listed which sensed the potential of the Internet and taken advantage of the new scenario in order to create innovative businesses and to become business stars. However, before this it should be made clear that this last category does not have clear-cut boundaries; this means that various examples can be identified in the grey area between the adaptation of an old business and the creation of a new one. In order to draw a line between categories, the focus is placed on the firms' core business and the cases selected as innovatory are those that appear: (i) to have no, or at least no close, predecessors in the offline world, and (ii) to exist basically because of the impact of the Internet on traditional businesses and societal behavior.

In the light of all this, a good example of the third category is eBay. Auctions date back to Greek and Roman times, but eBay has pioneered and internationalized an automated online auctioning among a potentially unlimited number of people located all around the globe. eBay has also become an industry-platform, building an ecosystem of third-party companies that use its facilities as a sale channel. In this sense, eBay has used the Internet to become an online mall aggregating a huge number of sellers, and mediates in the purchase-sale transactions of all types of goods and services. Browsing and bidding on auctions is free, but sellers are charged a transaction fee for the right to sell their goods on eBay.

The fact that the Internet has made it easier for people to interact, and to match supply and demand, the feature exploited by eBay, has stimulated the appearance of a number of firms that act as matchmakers, allocating resources where they are needed and taking a small cut in return. Airbnb, Buzzcar, Uber, are all good examples: they apply similar business models based on the sharing principle. Because it was the Internet which created the conditions for the development, sustainability and diffusion of these new businesses, in a way these experiments can be considered as small business stars created by the Internet.

The last example to mention is the group buying business model used by firms such as Groupon.com and others. Groupon.com is one of the most successful buying sites and acts as middleman and negotiates with vendor discounts that are partially passed on to consumers. Membership of the site is free, and Groupon.com sends a daily offer to all its members specifying the conditions at which they can buy the offers. Normally, vendors offer attractive discounted prices if a minimum of purchases is reached, buyers then receive a coupon that they can exchange with the product or service at the conditions specified in the offer while Groupon.com makes money by charging a commission to coordinate the service. It is another example of new business made possible thanks to the potential of the Internet. What makes the business economically viable is the capacity to bring together a very high number of potential consumers, in order to exploit their aggregate buying power to put pressure on vendors in order to achieve better prices.

Although all with their specific features, the examples listed have at least one point in common: they would have not been viable without the innovative opportunities of interactions created by the Internet and they could have never reached such rates of success outside the Internet ecosystem. Aggregation and scale capacity are essential concepts in this category, and often help in making the distinction line between an adaptation or evolution of a traditional business and the creation of a totally new one.

	MARKET EXAMPLES	
TRANSFER ONLINE	Dematerialization/	DirectLine
	Online channel of distribution	ING Direct Zara Nike
ADAPTATION/ MODIFICATION	Aggregation	Amazon
	Personalization	eDreams
	Scale	
CREATION OF NEW BUSINESS	Platformization	eBay
	Intermediation	Airbnb
	Personalization	Uber
	Scale	Groupon.com

The following section analyzes the specific disruptive effects and the innovations that the Internet has introduced in traditional communications and media markets. It concentrates on the new dynamics established within these markets, once again looking at how firms have reacted to these changes and trying to identify common trends and best business practices.

3. The effects of the Internet revolution on communications and media markets and firms' reactions to the new ecosystem

There is an obvious sense in which communications and media markets are the natural cradle for the Internet economic activity. The widespread diffusion of the Internet and the advances made in technology determine the quantitative and qualitative increase of the services and contents available through all kinds of electronic communication networks.

From a quantitative perspective, in 2013 the global data traffic over fixed networks was about 527 exabyte, +27% if compared with the previous year, while the traffic over mobile networks was roughly 15 exabyte, +81% if compared with data from 2012.

From a qualitative perspective, the availability of broadband networks gives stakeholders the opportunity to offer an ever-increasing variety of digital services and contents. In addition, the morphology of traffic is changing: the transmission of data has been overtaken by the audiovisual content which is the future challenge for all players in the sector.¹⁰ In this sense, the wide accessibility of devices and applications, as well as the proliferation of social networks, has given rise to a new kind of user-generated content, completely unexpected only a few years ago.

Moreover, the massive dematerialization provoked by the Internet allows players to by-pass the wholesale and retail levels and to reach end-users directly. This means that service and content providers can compete directly and even by-pass network providers altogether. In this sense, the Internet has created the conditions for substituting services and contents that before were available only through traditional channels (i.e. telecommunication networks and broadcasting) with similar services and contents delivered over the Internet.

For example, the traditional voice service is currently subject to the competitive pressure of voice-over-IP services such as Skype, Viber or Google Voice; the SmS service is being substituted with the instant messaging applications such as WhatsApp, WeChat, or Facebook Messenger. The result is a

¹⁰ The transmission of audiovisual content is also rapidly expanding for mobile devices. By 2016 the mobile networks should process 4749 petabytes of video every month, which is +90% if compared with the available data for 2011. See: AGOCM, *Relazione Annuale 2014*, at: <http://www.agcom.it/relazioni-annuali> (last access: 27 October 2014). In addition, CISCO forecasts reveal that in 2018 video will count for 69% of the mobile data traffic. See: CISCO VNI Mobile, 2014.

clear drop in the use of traditional services, and thus the loss of revenue sources for the Telcos.¹¹ Furthermore, the technical potential created by the Internet is changing the way people interact and communicate; this is why social networking such as Facebook, Twitter, LinkedIn, Instagram, etc., are at least partially competing with the services of traditional Telcos. There is a similar pattern in the media sector. Online newspapers are progressively substituting paper ones¹², and the video and television online services are gaining consumers at the expenses of traditional services, for both linear and non-linear content¹³.

Another sector-specific effect of the Internet revolution has been to overcome the conventional division within the communications and media universes; in fact, the boundaries between communication, information and entertainment services have now totally blurred. Technological developments have created the conditions for the different actors to change their market role and to modify the relationships with the other players.

In the communications and media sector the sources of revenue are diversified and firms are inevitably exposed to more competition than before. In this complex ecosystem connectivity, intermediation and data processing become key factors.

Once the user has access to the Internet, voice calls, texts messages and videos are basically free, music and films can be downloaded or streamed for a very low or even zero cost, and much editorial content can be accessed without any extra payment. Moreover, technological developments allow consumers to decide when and where to benefit from the services, allowing them to shift their consumption in time and/or space. This is why universal and especially in mobility connectivity is so valuable.

Because of the proliferation of services and contents that can be offered over the Internet, firms in the communications and media industry tend to establish themselves as platforms, with the aim of linking all components of the ecosystem and intermediating among different actors. In so doing, successful firms become gatekeepers of the system and are able to influence the general level of prices and the relationships among players. The capacity of intermediation and internalization of externality among different groups becomes a fundamental asset for companies.

¹¹ Looking at data, the consumption of voice services over traditional telecommunications channels is decreasing both over fixed and over mobile; the same is true for the sms services. In Spain, for example, in the period 2011-2012, the minutes of voice services consumed over fixed networks passed from 64 to 61 billion, those over mobile networks from 71 to 70 billion and the number of sms sent passed from 8 to 6 billion. Over the same period, in Brazil, the numbers were 181 to 172 billion minutes for the fixed and 310 to 277 billion for the mobile. However, it is difficult to calculate what these data mean in terms of loss of revenues; in fact, the revenues of the telecom sector have been nearly stable over the last years, although the number of players has increased due to the reduction of entry barriers. See: Ofcom, *International communications market report 2013*, at: <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr13/international/> (last accessed: 27 October 2014).

¹² Ofcom, *International communications market report 2013*, *op. cit.*

¹³ Ofcom, *International communications market report 2013*, *op. cit.*

Furthermore, the Internet has led to a huge increase in the amount of data on customers that players can collect. The ability to process such data is extremely relevant; it allows firms to take advantage of the broad interaction opportunities within the ecosystem, to profile consumers and personalize offers, and therefore to become much more attractive for advertisers. Briefly, the ability to effectively process data allows firms to monetize data ownership in a number of ways.

The technical and market convergence between communications and media markets, the multiplication of services and players, the strengthening of the interdependence among them, the diffusion of integrated offers and the platformization of companies are all direct effects of the Internet revolution that influence the competition dynamics within the electronic communications and media industries. Firms currently compete symmetrically, that is, with players that have their core business at the same level of the value chain, and asymmetrically, that is, with firms mainly active at different levels. Moreover, competition can take place both among different platforms and/or within the same platform.

In what follows, without pretending to be exhaustive, the way that pre-existing communication and media firms have reacted to these changes and which business models and strategies are better placed to exploit the new market scenario are examined. It should be noted that the three categories of reactions identified in the previous section are still applicable to the communications and media ecosystem, although some adjustments are needed.

The first category, that is migrating business online as it stands, appears to be very residual in this industry. Actually, a number of newspapers and magazines have stopped paper distribution and are now only available online. However, as will be seen below, in most of the cases, while migrating to the online world, most media companies attempted to modify their product in order to create more value or monetize it more effectively.

The same is true for traditional linear and non-linear broadcasting services, which while migrating online tend to modify their business models to offer more comprehensive and customized services. Examples can be found in all national markets, BBC and CNN are probably the most striking cases.

It has been argued that the process of national and/or cross-border consolidation should be added to the first category of reactions, especially in Europe. In fact, the reasoning behind this appears to be the same as the one that drives firms to transfer their business online in the first place: to withstand the impact of the Internet by preserving traditional ways of doing business through cost reductions via consolidation and economies of scale.

This is partially the case of a number of European Telcos, which are trying to broaden their consumer base, to increase their scale and hence to better resist the competitive pressure of other industry

actors, by acquiring direct and close competitors. However, especially in cases where the merger only has effects on one national market, the regulatory/competition authorities scrutinize these trends closely in order to guarantee that the increase of market power of the merging entities does not create competition concerns or harm consumers, or that at least such risks are counterbalanced by merger-specific efficiencies passed on to consumers.

Good examples of the Telcos' consolidation process on a national basis are the mergers between O2 Ireland and Hutchison 3G UK in Ireland and between Telefónica Deutschland and E-Plus in Germany. Both concentrations have been recently approved by the European Commission, which gave its clearance conditional upon commitments packages presented by the parties that were considered to guarantee a competitive scenario notwithstanding the fact that the number of mobile operators active on the respective countries would have lowered from four to three.¹⁴

Another direction that the consolidation process appears to take, again especially within the European Union, is a cross-border one. In this case, firms move towards an international dimension, which allows them to invest more in the networks and to better compete with OTT players, which usually have global offers. This direction seems to be more in line with the goals of a European Single Market for telecommunications established by the European Union. A good example is Deutsche Telekom, the German incumbent, which in June 2014 purchased GTS Central Europe, the company that provides communications services in the Czech Republic, Romania, the Slovak Republic and Hungary. Another example is Telenor, a Norwegian operator present in Sweden and Denmark, which in 2013 expanded its scope to take in the Bulgarian market by acquiring Cosmo Bulgaria Mobile.

Consolidation, and thus the need to safeguard the market position in order to withstand stronger competitive pressure is not an exclusive move on the part of networks providers. Broadcasters are also pursuing this strategy, especially within the US market, where the convergence between communications and media sectors appears to be at a more advanced stage than in the EU. For

¹⁴In the Hutchison 3G (H3G) and Telefónica Ireland (O2 Ireland) merger (case M.6992), the merging parties offered a package enabling MVNO entry on the Irish market. This includes the sale on "attractive terms" of up to 30% of the combined entity's network capacity in the form of dedicated bandwidth to each MVNO, on a fixed payments (as opposed to usage) model. Each MVNO will be required to take "significant" minimum capacity for at least five years. The combined entity will provide technical assistance and ancillary services. In order to enable such MVNOs to eventually become network operators in their own right, H3G also committed to divest spectrum. The commitment is "up front" in character, in that the transaction cannot complete until at least one MVNO agreement has been entered into. The combined entity also committed to maintain the existing network sharing agreement between Eircom and O2 Ireland, on improved terms. This secures Eircom's options in terms of coverage and the roll-out of new services, such as 4G and thus ensures the continued competitiveness of Eircom. In the Telefónica Deutschland and E-Plus merger in Germany (case M.7018), the commitments package submitted by Telefónica is composed by three parts: (i) Telefónica commits to sell, before the acquisition is completed, up to 30% of the merged company's network capacity to one or several (up to three) MVNO(s) in Germany at fixed payments; (ii) Telefónica commits to offer to divest radio wave spectrum and certain assets either to a new MNO entrant or subsequently to the MVNO(s) who will have taken up the network capacity thanks to the first part of the commitments; and finally, (iii) Telefónica commits to extend existing wholesale agreements with Telefónica's and E-Plus' partners (i.e. MVNOs and Service Providers) and to offer wholesale 4G services to all interested players in the future.

instance, Time Warner Cable and Comcast are awaiting the authorization for their merger from the US federal antitrust authority, while Virgin Media has recently been acquired by the US company Liberty Global.

Looking now at the second category of firms' reactions to the impact of the Internet, adaptation, it appears to be quite large. Going back to the online newspapers, the *Financial Times* can be mentioned, which while going online has substantially enriched its content, adding specialized sections, blogs, video, tools of users' involvement; therefore, the product it offers to subscribers cannot be thought to be the same as the paper version of the *Financial Times* one could buy at kiosks. The cases of the *Wall Street Journal* and *The New York Times* are similar: more content, better differentiated and more interactive, partially available under freemium models.

Another example of a very successful adaptation and evolution of the daily newspaper business is the *Huffington Post*, the American online news aggregator and blog founded in 2005 by Arianna Huffington. The *Huffington Post* can be classified as a very successful adaptation of an old business, almost a new creation, because it distances itself from the journalist-readers dichotomy typical of the traditional press and is mainly based on the interaction between them (via comments to the articles) and on user-generated content (via a vast number of blogs). Both these elements became possible only because of the Internet.

With regard to the video content services, Netflix is an emblematic case. This US-based firm started with enabling customers to order DVD on-line and have them delivered at home by Permit Reply Mail. Thus, back in the 1990s, Netflix simply transferred the DVDs renting business online. However, Netflix's capacity to adapt to and take advantage of the transformations caused by the Internet went well beyond that: in February 2007, the firm delivered its billionth DVD and began to add other services to its portfolio by introducing the provision of video-on-demand via the Internet. Currently, the old DVDs rental amount to a truly minor part of the firm's revenues; on the contrary, its streaming library is constantly expanding and it includes a growing element of Netflix original content. It is true that in this case, the border between adapting a traditional business and creating a new one is blurred. However, the criterion used to decide on the prevalent feature should be whether or not it is possible to identify a — at least partial — competing service offline, in this case, "traditional" satellite and cable pay TV businesses.

Another successful business model commonly used by firms to adapt to the new communications and media ecosystem is vertical integration, both intra-sector and inter-sector. This form of industry convergence can stimulate a reconfiguration of the value chain through the addition, by acquiring other firms, of new activities to the core business. This goal can also be reached by developing new

in-house capacity but it is more rapidly achieved cooperating closely with other players. Thus, in this scenario, it is for companies to orchestrate their relationships carefully with players from different market segments, in order to expand and complete their offer.

For example, Telcos started to buy cable operators with the aim of bundling their names and enlarging their customers' base for a more inclusive triple-play offer of telephone, television and Internet services. One significant European example is Vodafone, which in September 2013 acquired Kable Deutschland, the largest cable television operator in Germany. Shortly afterwards Vodafone also bought the Spanish company ONO, which offers its residential customers broadband communications and entertainment services. On the other side of the Atlantic, the telecommunications giant AT&T seems to be moving in the same direction with the acquisition, in July 2014, of Direct TV, the US second largest cable/satellite provider after Comcast.

The pull towards integration has been felt by software providers and device manufacturers as well. For example, in May 2011, Microsoft acquired the VoIP service provider Skype, and, in September 2013, it brought the Nokia's mobile telephone business.

Vertical integration does not always take place via mergers. Sometimes, different players enter into strategic, and generally transnational, partnership agreements. This sort of alliance gives competitors the opportunity to impose technological standards and to become market pioneers by creating lock-in effects.

One example is the series of agreements among Telcos and online music players.¹⁵ To mention just a few, Spotify, the largest music streaming service provider in Europe, has entered into partnership agreements with Telia Sonera, the Swedish telecommunications incumbent, in Sweden, and with Vodafone in a number of other European countries. In the UK, O2, the telecommunications operator part of the Telefónica group, is in partnership with the start-up MusicQubed to provide O2Tracks, the premium music service for mobiles. More recently, Telefónica has entered into an agreement with Napster, the cross-platform online music store, to bundle offers to its customers.

Another layer of partnerships involves the provision of video services, and thus the integration broadband-broadcasting. For example, in the UK Vodafone gives an option of free Netflix or Sky Sports Mobile TV for their LTE customers.

However, in some cases the Telcos have tried to compete on the broadcasting markets not via alliances with broadcasters but through the direct acquisition of premium content, which has

¹⁵ In Europe, there are currently over 50 active partnerships among Telcos and online music service providers. See: M. Mulligan and K. Jopling (eds.), *Building the New Business Case for Bundled Music Services – A Media Consulting report commissioned by Universal Music* (July 2013), at: <http://musicindustryblog.files.wordpress.com/2013/10/building-the-new-business-case-for-bundled-music-services.pdf> (last accessed: 27 October 2014).

acquired a strategic value in recent years and which currently constitutes an essential asset for competing in this market segment. One of the first examples is BT UK that in 2012, in response to the rapid expansion of Virgin Media and SKY in the broadband market, invested in the purchase of the Premiership rugby rights in order to offer attractive packages of bundled services and to acquire new customers. The move paid off, and BT has pursued this strategy ever since¹⁶. Since 2008, Orange, the French telecommunications company, acts in a similar way and provides a live TV service offering films, television series and documentaries, buying the rights from Warner Bros and HBO. Since then Orange has added a number of sport channels, a film channel and video-on-demand and remote storage services from the catalogue of available contents on the main French free-to-air channels.

All these examples depict the common trend towards vertical integration among players. To recap, firms try to enlarge their customer base and to withstand competitive pressure of new and traditional market actors by bundling their services to those of a company competing at a different level of the value chain. Furthermore, mergers, partnership and commercial agreements provide the right incentive to invest in the launch of products and services which require new technology. One major example is 4G in mobile communications, which allow users to access video and music contents on streaming via smartphone. Another meaningful example is smart TV, which, among other things, has introduced the offer of the so-called social TV services.

Moreover, the provision of integrated services allows firms to diversify their revenue sources and to set up different price strategies. Players can offer flat rates, usage-based and freemium mechanisms, thus targeting each customer's specific willingness to pay. Furthermore, some operators leave users to compose their own preferred package of services and to pay accordingly¹⁷.

Irrespective of the pricing strategy used, the provision of multiple-play offers is a way for firms to move towards the concept of acting as industry platforms. In this process, different players can apply leverage on their specific strategic assets. Telecoms operators can take advantage of the direct management of the networks, the capillary presence over the territory, and direct contact with a vast client base. Broadcasters can exploit the quality of contents and their advanced system of management of advertising. Device manufacturers can influence the way the services are made

¹⁶ Recently, BT has acquired the exclusivity rights for 350 matches of the Champions League and UEFA for the 2015-2016 season, (<http://sport.bt.com/sportfootball/football/bt-sport-wins-all-live-uk-tv-rights-to-champions-league-and-europa-league-S11363847946944>, last accessed: 27 October 2014).

¹⁷ A good example is Vodafone's initiative in Italy called "Scegli tu", which allows customers to combine the different parts of the package of services offered by Vodafone in the way they prefer, and to pay accordingly. See: <http://www.vodafone.it/portal/Privati/Supporto/Tariffe/Ricaricabili-e-abbonamenti/Opzioni-Scegli-Tu> (last accessed: 27 October 2014).

available. Finally, service providers can count on their ability to process [personal/customer] data and to personalize offers.

The third category of firms' reaction in communications and media markets encompasses those that have been able to exploit the potential of the Internet to create original businesses and to become business stars.

The first and most famous name is of course Google. Set up in 1998, the firm started as a simple search engine company and went on to develop its proprietary search technology to navigate the Internet. Thus, Google's core business, i.e. online search, has solved a basic question that was not there, and that could have been imagined before the web revolution: how to find things in the labyrinth of the Internet, with its millions of websites, documents and all kinds of online content. Google used a link-based approach to develop a proprietary algorithm which proved extremely valuable to users. But economically the most powerful response that Google gave was another: it found an effective way to make money with the Internet, by revolutionizing the advertising businesses and redesigning the relationships between advertisers and Internet users. Moreover, Google adopted a business model that transformed its Internet search technology into an industry platform. As platform leader, and in order to beat its competitors, Google has constantly invested in creating the economic incentives for its ecosystem members to develop complementary innovations and to keep doing so over time.

Google is a striking example of how the Internet can create a business star. As mentioned, the Internet built up the firm's marketplace; therefore, without the Internet, Google would not have been able to put in place its business at all. Moreover, the business success of the Google model is strictly linked to a number of specific features of the Internet. Without the global presence of the Internet, and without the potentially unlimited opportunities it provides to access, create and share online content, Google's business would not have been so effective and successful. Today, Google is the richest company in the world with a capitalization of about USD 400 billion, vastly superior to huge [traditional] businesses that have existed for decades or centuries¹⁸.

In addition, since its appearance in 1998, Google has expanded its scope of activity providing an ever growing range of Internet-related services and products, both by developing in-house capacity and by acquiring other companies. Within the communications and media ecosystem, it is currently present, more or less intensively, in all sectors of the industry. The acquisition of YouTube in 2006,

¹⁸ On this point, we share the view of some economists who affirm that, in order to estimate the value of the companies' activities and to compare them, the amounts saved on their respective bank accounts should be taken out of the picture. See, for example: Rolfe Winkler, *Big Apple, Bigger Google*, at: <http://blogs.wsj.com/moneybeat/2013/06/25/big-apple-bigger-google/> (last accessed: 27 October 2014).

enabled Google to compete directly with video and music content providers. In 2011 the purchase of Motorola Mobility allowed it to continue to offer the operating system Android free of charge, and thus to be a relevant player at the device and application manufacturing level. The creation of the social network Google+ allows it to compete with its more direct competitors, the service providers. Finally, Google is now moving towards the network providers' level: Google Fiber initiative aims to provide super-fast connectivity in a number of U.S. cities; in addition, the firm is working to build and help run wireless networks in emerging markets such as sub-Saharan Africa and South East Asia, connecting a billion or more new users to the Internet. In the case of Google, the potential of vertical integration, the platformization and the winner-takes-all mechanisms, so common in the industry at stake, are exploited to a maximum.

A second example of new business stars released by the Internet is constituted by the two major social network firms: Facebook and Twitter. Facebook is larger, with more than 900 million individual users. It started by offering an online platform where users could create their own content (profiles) and share it with other users. It then acted as a platform leader, creating incentives to develop and offer an increasing variety of products and services (applications) over its social network. To this end, in March 2014, Facebook acquired WhatsApp, one of the most globally widespread cross-platform mobile messaging applications, for roughly US\$19 billion; most probably, what has driven the transaction is Facebook's intention to incorporate the application to the Facebook platform and thus to offer it to all its users, lowering their incentives to switch to a competing service.

The strategy was designed to lead the platform and to create lock-in effects and is justified by Facebook's monetization channel: the company makes profits primarily through advertising, and therefore, direct and cross-side network effects play a vital role in the Facebook business model.¹⁹ On the one hand, the more users Facebook has, the more attractive it becomes for new users to join the network. On the other hand, the more users that create a profile on Facebook, the more companies will be interested in advertising their products and services on it.

Overall, the Facebook business model has many similarities with that of Google. Both operate on multi-sided markets; both adopted the platform model, and both are platform leaders. They both offer their service for free and make money from advertising. To keep increasing the number of

¹⁹ An extremely significant example comes from the Facebook managers' declarations a few days before the start of the last Football World Cup. They announced that they had identified 500 million users with an interest in football, based on links they had clicked on or pages they had liked (this is almost double Twitter's total monthly active user base of 255 million). That transformed Facebook in the "biggest stadium in the world", a global audience for advertisers to target during the World Cup. For more info, see: <http://www.ft.com/intl/cms/s/0/119fa1b8-edd6-11e3-8a000144feabdc0.html?ftcamp=crm/email/201469/nbe/USBusiness/product#axzz347vJ9bcC> (last accessed: 27 October 2014).

users is for both the greatest challenge, and for both, data constitute the essential resource: the more data they are able to gather about their users, the stronger become their appeal towards advertisers.

This considered, we could extend to Facebook the same conclusions we reached for Google: Facebook is a business star created by the Internet, without the latter, the former's business model simply would have not been feasible.

COMMUNICATIONS AND MEDIA MARKETS		
TRANSFER ONLINE	Dematerialization	BBC
	Consolidation	CNN Teléfonoica/E-Plus H3G/O2 Ire Time Warner/Comcast Virgin Media/Liberty Global
ADAPTATION/ MODIFICATION	Personalization	<i>Financial Times</i>
	Vertical Integration	<i>Huffington Post</i>
	Scale	Netflix Microsoft/Skype Spotify/TeliaSonera
CREATION OF NEW BUSINESS	Platformization	Google
	Vertical Integration	Facebook
	Intermediation	Twitter
	Lock-in	
	Scale	

4. Putting new business models into the regulatory context: a possible future scenario

Over the last decade the communications and media industry has changed radically due to the impact of the Internet. In responding to this significantly different marketplace, firms have migrated their business online and tried to consolidate their market position, modified or adapted their

business models, or have sensed the potential of the Internet and taken advantage of the new scenario to create pioneering and innovative businesses stars.

However, businesses do not operate in abstract contexts; therefore, migrations, adaptations, evolutions or new creations need to deal with the set of rules that discipline firms' activities as well as the specific sector in which they operate. In some cases, compliance is a smooth process, but in others the innovative features of the modified or newly created business can cause deep friction with existing law and regulations.

Some of the more frequent risks of friction concern the massive use of personal data. There is a great deal of debate on establishing which kind of data firms can collect, how they can do it and how they can process and use such data. The answer to these questions affects society as a whole. On the one hand, it shapes the boundaries of individuals' rights; and on the other, data have become an essential asset for many businesses, so that restricting or enlarging access to them has a high economic impact on firms' chances of competing or entering a market. Finally, a lack of consumer data or a fear of possible legal reprisals for using such data can hinder product innovation.²⁰

Taxation is a second major front. The dematerialization effect brought about by the Internet has made the geographic dimension of the market largely obsolete. Transactions take place online, therefore it is difficult to define where profits are generated. It is easy for Internet businesses to circumvent the territorial source principle of taxation by shifting profits to places where taxation is lower. The issue is not easy to solve; in fact, Internet businesses create a clear conflict between the concept of "permanent establishment", on which tax rules are based, and the digital presence of firms in one country or another. When traditional businesses move online there is the risk of losing conventional tax revenue for national states, and at the same time, new online born business are even more difficult to tax.²¹

²⁰ In order to resolve these problems, in some cases, we have seen the rise of self-regulation initiatives, while in others, the issue is dealt by independent authorities which can adopt more or less stringent approaches, and impose opt-in or opt-out options for consumers. However, it seems that globally, we are far from a satisfying regulatory equilibrium among conflicting interests.

²¹ Some significant examples of attempts to react to this risk at the regional level are: (i) the OECD's Tax Challenges of the Digital Economy related to Action 1 of the BEPS Action Plan; (ii) the decision by the European Commission to appoint a digital working group, which had until the summer 2014 to produce proposals on internet taxation. Among the actions taken at national level, we can point, among others: (i) Italy: in January 2014, the parliament approved a bill requiring Italian companies to buy their internet ads from locally incorporated firms instead of the tax-haven subsidiaries that many transact with today. However, the law probably violates a central EU tenet that companies can buy and sell across national borders. Therefore, the government has delayed implementation, while it co-ordinates with other EU countries. (ii) France has also been buzzing with internet-tax proposals: in 2013 the government commissioned four official reports on the subject. The first, in January, suggested taxing firms on the personal data they collect from online users. In May it proposed a 1% tax on the sale of smartphones and other devices that display content. France already levies a "culture tax" on cinemas, broadcasters and internet-service providers, to subsidise the making of French films and TV shows. In September an independent committee took position against any unilateral taxation of online activities; but in December an official

A number of other particular features of the Internet businesses challenge competition rules. The enormous reduction of production and distribution costs has increased the number of goods and services offered free on the markets. Free businesses can conflict with traditional fee-based ones and raise antitrust concerns. In generic terms, they destroy the basic assumption on which competition assessment is based: firms compete on price and quality to increase their economic profits. More specifically, free goods often create problems for market definition; furthermore, they make predatory pricing schemes obsolete.

In addition, bundling products at low or zero prices, tying them or using similar leveraging practices may constitute abusive behavior that firms use either to maintain market dominance, or to create entry barriers for potential new players. Such leveraging practices are quite common in case of industry platforms, where the structure of the markets also allows platform leaders to use the complementarities to increase switching costs and to lock-in users.

The multiplication of two-sided markets, and thus the presence of many platforms, has proved problematic also from other perspectives. On the one hand, it may be difficult, by using the traditional competition tools, to analyze properly the relation between prices and costs and to solve pricing problems. On the other hand, both single homing and multi-homing may create competition concerns. In the first case, the multiplicity of platforms may lower the quality of services. In the second case, there is a structural tendency towards monopoly that could be prevented by using exclusivity contracts. In fact, in this context, exclusivity could favor differentiation and preserve the multiplicity of platforms; the issue here is to define how much exclusivity can be allowed, and the problem is strictly linked with the dynamic of the winner-takes-all approach in a number of online markets.

Another case of firms' behavior that could create competition involves the bargaining power of aggregators: as the Internet has shifted the balance of power in favor of the resellers, they tend to apply to vendors clauses such as the resale price maintenance or the most favored nation usually in violation of antitrust rules.

The last example, which is not intended to be comprehensive, derives from the enormous potential for sharing introduced by the Internet, and which appears to conflict with the set of rules that firms running some activities need to respect, but that are difficult to apply to user-to-user dynamics. Depending on the specific case, these rules concern insurances, licenses, authorizations, workers' rights and so on.

agency, the Superior Audiovisual Council, recommended extending the culture tax to entertainment sites such as YouTube and Facebook.

The conclusion that can be drawn from all this is that the Internet is having the same disruptive impact on rules that it had on traditional businesses. Therefore, decision-makers and regulators may be forced to perform the same exercise that firms had to go through in order to survive and adapt to the Internet revolution.

In the cases of businesses that simply migrated online, governments and watchdogs can still regulate market dynamics by applying old tools as they stand to the online dimension. Thus, a general migration of rules to an online dimension could meet this objective.

On the contrary, in cases where firms adapt or evolve their business models, resorting to traditional regulatory schemes is not feasible, because the particular features of the modified Internet businesses either their prerequisites vanish, or create situations that fall within grey legal areas. In this case, decision-makers and enforcers could adapt the old rules used to regulate the offline ancestors' conducts in order to discipline the new online firms' behavior, and to accelerate their interventions in order to adjust it to the different speed introduced by the Internet. While performing this exercise, regulators should act in a way that guarantees a level playing field for offline and online players; both exist and, at least partially, both compete.

Finally, the adaptation process may turn out to be completely insufficient for the newly created online businesses. In this case, products and services that did not exist prior to the Internet revolution have to be dealt with, but regulators do not yet have suitable tools to regulate them. This being the premise, it may be necessary to create completely new schemes instead of ineffectively stretching the old ones to situations that differ dramatically from those for which the rules were originally formulated. Contrary to what has been seen in cases of transfer and adaptation, while eventually establishing this new set of rules decision-makers do not need to go in parallel with the offline world, because in the cases at stake there is no equivalent offline business. Moreover, in this case instead of trying to maintain an industrial level playing field between online and offline players, regulation may be better off guaranteeing respect for the basic rights and duties of actors in the newly created markets.

Thus, both in the adaptation scenario and in scenario of creation of new regulatory schemes, the main question remains how, and how much, to regulate. The following part of this section tries to identify a few possible options for regulators to react to and keep up with market and business evolutions²². In order to do so, a number of preliminary issues should be dealt with beforehand.

²² Many scholars have dedicated their attention to this topic, suggesting a number of possible solutions. For example, see: Parcu P.L. and Silvestri V. (2013), *Electronic Communications Regulation in Europe: An overview of Past and Future Problems*. EUI Working Papers Series; Mehmet U. (2013), *Governance, Regulation and Innovation, Theory and Evidence*

First, there is Internet architecture whose specificities generate the necessary indications to ensure the effectiveness of rules. Since its inception, the Internet has been split between three main technological layers (Benkler, 2000): the carrier layer, which is the physical level (hardware and infrastructure) that conveys the signals; the logical layer, that is the software and protocols that enables the hardware to function; and the content layer, which carries the substance (data, voice, videos).

At present, each layer is regulated separately; nevertheless, some law regimes apply across layers²³. For example, the European electronic communications framework covers the first and, at least partially, the second layer; on the other hand, copyright, privacy or e-commerce rules usually cover the second and third.

One of the consequences of this is that the regulatory environment influences firms' activities to a different degree depending on the latter's core business. If a rank has to be set, it could be affirmed that the more regulated actors appear to be network providers, followed by content providers and device and applications providers, while the less regulated actors seem to be service providers. In a scenario where different market segments converge in a single marketplace, and thus various types of market players compete directly among each other, it may help to harmonize the regulatory regimes applicable to each player's category, in order to ensure a level playing field for all actors. The question remains as to whether the best direction to follow should be towards widespread de-regulation, or the opposite.

Another consequence of the peculiar Internet architecture is the lack of a coherent Internet policy. The bulk of laws currently enacted are the result of various Internet policies²⁴, not a unique policy. By way of example, in Europe the Digital Agenda has drawn up a lengthy wish-list, but is quite vague on key aspects such as the future of network services or copyright, and while looking at both carrier and content layers, it does not seem to set any coordination parameters for a consistent regulatory framework involving both. Therefore, it is suggested that, in order to avoid enacting conflicting regulatory tools, it might be better to make a coordinated effort with regard to the different policies behind each of those tools.

from Firms and Nations, Edward Elgar; Claffy, KC. and Clark, D. (2014), Platform Models for Sustainable Internet Regulation. *Journal of Information Policy* 4: 463-488.

²³ On the convergence between content and carrier layers see Jakobsen, S.S. (2014). EU Internet Law in the era of Convergence: The Internet Interplay with EU Telecoms and Media Law. In Savin, A., Trzaskowski, J. *Research Handbook on EU Internet Law*. Elgar, forthcoming.

²⁴ Some have argued that the fact that everything is in one way or another connected to the Internet implies that almost every area of policy can be somehow considered Internet policy. See Cave, J. (2013). Policy and regulatory requirements for a future internet. In Brown, I. *Research Handbook on Governance of the Internet*. Edward Elgar. Cheltenham.

In addition, a frequently repeated slogan is that the Internet changes rapidly. This assertion implies that regulators expose themselves to the risk of constantly delayed action. In turn, what happens is that, within industries where technological and regulatory changes are asynchronous, there is a major risk of regulatory uncertainty. This being the case, it is not rare that market players are capable of setting business models that exploit such uncertainty, while the incumbent usually remains locked into past business models²⁵; the current communications and media marketplace being a good example. The challenge is then to assess, among a pyramid of possible regulatory interventions, which level might be best tailored to cope with the described dynamics. Indeed, between the two extremes of laissez-faire and industry-wide intervention, lie a number of other options that are worth exploring.

The first one is partial-industry regulation, which implies that authorities regulate only one part of the industry and leave the rest unregulated (Ayres, Braithwaite, 1992). Especially in a dynamic scenario such as the markets at stake, partial regulation may prove more resilient to the virus of abuse of dominance, while at the same time trying to foster and harness the welfare-enhancing effects of competition. Partial regulation is based on the assumption that only a limited number of firms can have an impact on the competitive dynamics of the entire industry; therefore, it might fit well in the communications and media sector.

In general, partial-industry regulation can take various forms and be aimed at three main categories of firms: dominant, fringe and oligopoly. The target changes according to the objective to be achieved. Partial industry intervention may be a good compromise for both sides of the current deregulation debate. For those fighting for industry-wide regulation, it could still be a market-compatible solution; for those trying to go beyond the laissez-faire approach, it still offers a public response to market failures. However, this strategy of regulation may also imply downsides in terms of fairness and equal treatment: in order to prevent this, decision-makers and regulators should pay the utmost attention to ensuring that dissimilar treatment are applied only and strictly in cases of dissimilar impact on the industry that the target firms have.²⁶

Another option could be to slacken, where possible, the regulatory ties imposed on businesses and to engage in constant negotiations with them. In other words, once a few basic limits are imposed on firms' behavior, regulators could rely on persuasion, rather than on more or less severe sanctions, to direct market dynamics. This option has the advantage of reducing the regulatory burden on market players, as well as eliminating the information gap for rules. In addition, it could ensure

²⁵ Some scholars have investigated the role of regulatory uncertainty in stimulating or obstructing business models innovation. See, for example: Meijer, I.S.M., Hekkert, M.P., Koppenjan, J.F.M.(2007) How perceived uncertainties influence transitions: the case of micro-CHP in the Netherlands. *Technol. Forecast. Soc. Chang.* 74 (4) 519-537.

²⁶ The equal protection principle only mandates that similarly situated entities be treated equally (Tribe, 1998).

enough space for self-regulation, and safeguard innovation. In fact, commercial agreements and business strategies are well placed to cope with the rapidly changing conditions brought about by technological development, whereas regulation is not. However, close attention should be paid in order to guarantee that, even in these cases, a workable level of competition is ensured on the marketplace.

Moreover, while adopting this approach, it is important to identify which rules should remain in place and which could be abolished. To do so, the gist of law and regulations currently in place, their core values and principles should be identified, and those that are considered essential should be selected. One solution may be to keep in place only those regulatory instruments that protect citizens' basic rights and freedoms, and to adapt these instruments to the changing circumstances where needed. The rest could be left to industry self-regulation, provided that regulators still intervene ex-post when competition in the market is in danger.

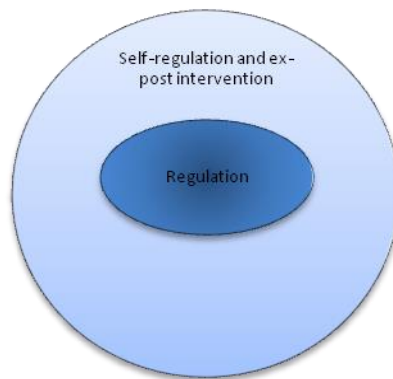
Whatever option is adopted, in the transitional period courts might be called to play an important role. In a scenario where, because of technological changes and market developments, existing legal categories lose their forces, the boundaries between legal concepts fade, existing legal concepts get eroded and there are no shared assumptions (Karnow, 1997), courts might perform the essential exercise of testing old rules and legal concepts in order to see whether they could still be adapted to the new business practices and forms of life arisen as a consequence of the Internet revolution.

Embracing as premise the widely recognized assumption that law is mainly a conservative institution that tries to ensure stability through change, or that, borrowing a metaphor, it tends to pour new wine into old bottles instead of finding new bottles for the new wine (Friedman, 2005), the interpretative role that courts are called to perform could help to test legislative solutions before enacting them, that is to verify if the old bottles still fit the scope with the new wine.

A look at the communications and media markets confirms the above. In fact, in the last decade, the number of private litigations on issues strictly linked with technological advances has considerably grown. As a way of example, it is possible to mention the numerous cases concerning private property in the web-based environment, privacy, or patents' infringements.

However, this specific courts' role should be limited to a transitional phase; therefore it is not suggested that litigation should be considered as an alternative to regulation ²⁷.

²⁷ For an overview of the pros and cons of regulation versus litigations, see: Posner, R.A. (2010). Regulation (Agencies) versus Litigation (Courts): An Analytical Framework, retrieved from: <http://www.nber.org/chapters/c11956.pdf> (last accessed: 28 October 2014).



5. Conclusions

The Internet revolution has had a unprecedented impact on our society and our economy and has had a strong gravitational pull for traditional businesses. When observing the markets, three main types of reactions by firms to cope with the attraction of the Internet can be identified. Some have transferred their business online as it stands; others have adapted or evolved their business models to the new market features brought about by the Internet; and a number of firms have taken advantage of the Internet potential to create completely new businesses that would have not been viable in the offline context. An examination of concrete examples reveals that there are a number of Internet features that have made certain businesses sustainable or that have created the conditions for the appearance of new business stars.

The scope of Internet-driven changes is so extensive that it becomes very challenging or even impossible to apply the rules that normally discipline traditional offline business to their online equivalents. Regulators need to question whether it would not be more efficient to create new rules to regulate online businesses instead of trying to stretch the existing ones. In practice they need to undergo the same process that offline firms are called to perform by adapting their business models in order to survive. In this new scenario, regulators should identify which regulatory strategy might be best placed to direct market dynamics. A few suggestions have been made that mediate between the two extreme approaches of wide-industry regulation or pure *laissez-faire*. In particular, it has been argued that, at this stage of market developments, rules should basically be used to protect some fundamental rights and freedoms, whilst the ordinary evolution of markets should be left to free dynamics among firms, provided that a workable degree of competition is ensured. The general feeling is that the changing process brought about by the Internet is far from complete, and new

scenarios will soon emerge, this situation probably requires a phase of cooling off for all types of pervasive regulation before a new robust equilibrium is achieved.

Reference List

- AGCOM. (2014). Relazione Annuale 2014. Retrieved from: <http://www.agcom.it/relazioni-annuali>
- Association of America Publishers. (2013). AAP Industry Statistics and Reports. Retrieved from: <http://www.publishers.org/resources/>
- Ayers, I., Braithwaite, J. (1992). Partial-Industry Intervention. In: Responsive Regulation: Transcending the deregulation debate. Oxford University Press.
- Benkler, Y. (2000). From Consumers to Users: Shifting the Deeper Structures of Regulation. 52 Federal Communications Law Journal 561
- CISCO. (2014). VNI Mobile, 2014. Retrieved from: <http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>
- Claffy, KC. and Clark, D. (2014), Platform Models for Sustainable Internet Regulation. Journal of Information Policy 4: 463-488.
- European Commission. (2014). Scoreboard 2014 - Trends in European broadband markets 2014. Retrieved from: <http://ec.europa.eu/digital-agenda/en/news/scoreboard-2014-trends-european-broadband-markets-2014>
- Friedman, L. M. (2005). A History of American Law, 3rd Ed. New York: Simon & Schuster.
- GSMA. (2014). Mobile Economy Europe 2013. Retrieved from: <http://gsmamobileeconomyeurope.com/>
- Karnow, C. E. A. (1997). Future Codes: Essays in Advanced Computer Technology and Law. Boston: Artech House.
- IFPI. (2014). Digital Music Report 2014. Retrieved from: <http://www.ifpi.org/resources-and-reports.php#/digital-music-report.php>
- ITU. (2014). The World in 2014: ICT Facts and Figures. Retrieved from: <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2014-e.pdf>
- Mehmet U. Edited By. (2013), Governance, Regulation and Innovation, Theory and Evidence from Firms and Nations, Edward Elgar.

Mulligan M., Jopling K. (edited by). (2013). Building the New Business Case for Bundled Music Services – A Media Consulting report commissioned by Universal Music. Retrieved from: <http://musicindustryblog.files.wordpress.com/2013/10/building-the-new-business-case-for-bundled-music-services.pdf>

Ofcom. (2014). International communications market report 2013. Retrieved from: <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr13/international>

Parcu P.L. and Silvestri V. (2013), Electronic Communications Regulation in Europe: An overview of Past and Future Problems. RSCAS 2013/92. EUI Working Papers Series.

Rochet J.C. & Tirole J. (2003). Platform Competition in Two-Sided Markets. Retrieved from: <http://idei.fr/doc/wp/2002/platform.pdf>

Tribe, L. (1988). American Constitutional Law. Mineola: Foundation Press.