



International Chamber of Commerce

*The world business organization*

# Policy statement

## Digital convergence: an economic opportunity

*Prepared by the Commission on E-Business, IT and Telecoms*

### Executive summary

This ICC policy statement explains the opportunities offered by digital convergence and the policy issues and challenges created by it for business and governments. The statement concludes with concrete recommendations and a proposed policy framework for consideration by policymakers.

### What is digital convergence?

Convergence refers to the evolution of previously distinguishable digitalized information formats, services, applications, networks, and business models in ways that reduce or blend the distinctions. Convergence is driven by the rapid development of digital technology.

Convergence can be a stimulus within the information society ecosystem for creativity, improved productivity, continuous technological innovation, economic growth, societal benefit and greater inclusion. Convergence facilitates the use and deployment of information communication technologies (ICTs) across all stakeholders - business, government and individuals. It enables content creation, the availability of information anywhere by a multitude of devices and from a multitude of sources as well as communication, collaboration, coordination and interoperability among people, services and applications through enterprise systems and digital networks.

Convergence over the last ten years has referred mainly to the promise of new functionality in ICTs that was afforded by the ability to bridge networks and computing and communication devices. Today, continued evolution of ICTs, with the Internet as a key enabler, has built upon that foundation of network convergence and is reducing the importance of distance, connecting people and speeding information flows and processes – constituting a crucial development in the evolution of interdependent global enterprises and increasing the potential for greater inclusion and enhanced societal interaction.

### Benefits

The convergence phenomenon presents a huge opportunity for all stakeholders to improve economic efficiency and productivity, leading to innovation, new business opportunities, increased choice and lower prices that benefit all users. It can also provide the developing world an unprecedented opportunity to participate in the digital economy. Digitalized information flows have already increased market access and competitiveness by creating greater efficiency and global scope of sales and service.

Convergence offers further benefits to society. For example, convergence enables regional development, increases entrepreneurial activity and enhances educational opportunities (including those in remote areas), and access to healthcare and training.

It has facilitated significant online social interaction and creative collaboration, also improving the integration of people with special needs and non-traditional working groups into society.

### **Issues for business**

As markets develop, their structures are affected by changing technology, creating opportunities for new business models, increasing competition, and challenging and altering existing businesses and traditional business models. Changes to the affected industries' economics will also challenge the existing regulatory and legislative norms and cause a wide range of stakeholders to re-consider their relationships with the affected sectors.

The development of the information society is dependent upon the availability of sufficient infrastructure capacity, innovative products and services for business and individual users. In such an environment, interoperability, affordable pricing and choice constitute the primary market characteristics.

### **Policy considerations**

Governments should evaluate policy frameworks to ensure that obstacles to the deployment of converged business models, and ICTs generally, are removed. ICC urges governments to work in partnership with business to enable convergence and ensure that regulation neither creates unnecessary burdens nor unintended consequences that could impair the potential for economic growth and societal benefit that deployment of these technologies and/or new business models can provide.

Markets and business models are changing rapidly and inappropriate intervention could hamper these beneficial changes. The unconstrained market has already led to huge developments while interventions have sometimes produced chilling effects in important markets.

### **Core principles for policymakers**

- a) Government regulation should be limited to promoting competition, innovation and investment, allocating scarce resources and, where necessary, achieving public interest objectives. Any regulation should only be implemented after proper consultation with all stakeholders to ensure its proportionality.
- b) Competition law should be used as much as possible as the predominant means of preventing abuses of market power.
- c) Given the borderless nature of the Internet, there is a particular need to avoid divergent approaches between countries or regions, which may result in barriers for convergence, the off-shoring of investments to more favourable regulatory climates or, at worst, the balkanization of the Internet.

Adequate and effective intellectual property protection and enforcement are essential components to a policy framework that will continue to advance the creativity convergence is helping to fuel.

ICC welcomes continued international dialogue in existing multistakeholder and multilateral forums to further competition, stimulating the market for converged services.

## **In detail:**

### **1. What is digital convergence**

Convergence can be a stimulus within the information society ecosystem for creativity, improved productivity, continuous technological innovation, economic growth, societal benefit and greater inclusion. Convergence facilitates the use and deployment of information communication technologies (ICTs) across all stakeholders - business, government and individuals. It enables content creation, the availability of information anywhere by a multitude of devices and from a multitude of sources as well as communication, collaboration, coordination and interoperability among people, services and applications through enterprise systems and digital networks.

As markets develop, their structures are affected by changing technologies creating opportunities for new business models, increasing competition, and challenging and altering existing businesses and traditional business models. Changes to the industries' economics will also challenge the existing regulatory and legislative norms and cause a wide range of stakeholders to re-consider their relationships with the affected sectors.

Today, the digitalization of information and the increased connectivity across and between networks that allowed the growth of the Internet has led to an evolution in thinking. While convergence was once looked at only in terms of connectivity across networks, today it is a multifaceted concept related to connectivity, media, delivery channels, access devices, services and business models. Today's Internet Protocol (IP) networks are a platform for computing, distributed services and new business models, also referred to as "service-oriented architecture".

### **History and background**

One of the essential building blocks of convergence was the digitalization of information. Once information was digitalized it could move more freely, but networks at the time were not as interconnected and bandwidth was in certain areas, a significant constraint.

Throughout the 1990s, with networks that offered separate voice and data services and Internet connectivity primarily by dial-up connection, the telecommunications and cable industries globally embarked on an era of investment and technical development driven by competition – seminal in its speed and breadth. Those networks that were originally developed as platforms for voice soon facilitated the integration of business and consumer communications of myriad types of content, greater complexity and significantly faster distribution speeds. Today, on the cusp of new network developments, voice, data, video and inter-active communications and services-based applications are carried over multiple platforms, facilitating integrated digital networks, increased mobility, greater dependability and speed, fostering the realization of 'broadband' only envisioned a decade ago.

Digitalization and packetization are the primary factors driving convergence. Other factors accelerating the convergence process are reductions in the cost of computing capacity and storage, increased availability and take-up of broadband and high speed connectivity and networks, and advances in software development tools. All of these factors have facilitated today's social interaction and online creative collaboration.

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The convergence phenomenon presents a huge opportunity to improve economic efficiency, leading to innovation, new business opportunities, increased choice and lower prices that benefit all users. It can also provide the developing world an unprecedented opportunity to participate in the digital economy. Digitalized information flows have already increased market access and competitiveness by creating greater efficiency and global scope of sales and service.

Convergence offers further benefits to society. For example, convergence enables regional development, increases entrepreneurial activity and enhances educational opportunities (including those in remote areas), access to healthcare and training. It has facilitated significant online social interaction and creative collaboration, also improving the integration of people with special needs and non-traditional working groups into society.

### **Convergence of networks**

On the network side, convergence is occurring at a number of levels with communications infrastructure providers consolidating operations to reduce costs and achieve greater efficiency to better serve customers' needs and improve customer satisfaction.

For the telecommunications community, moving from the older technologies, such as Public Switched Telecommunications Network (PSTN) and its digital successors, including Integrated Services Digital Network (ISDN), to newer IP based networks has the potential to create opportunities for even more new applications, including, but not limited to voice and video and at ever faster speeds.

Investment in communications networks (fixed, wireless, satellite and cable) in recent years has improved the physical infrastructure and the availability of new services to customers, both residential and business. Companies that once provided only one service are now doing their best to package suites of voice, video, and broadband Internet for a market that makes little distinction among the technology platforms used to deliver them. Future investments in networks will be required to make communications technology and services even more broadly available throughout the world, and to meet customer demands for more robust communications capabilities.

### **Convergence of services**

The distinction between service and product offerings, traditionally provided through discrete networks and channels of trade by information technology, consumer products, media and telecommunications industries, has become less and less pronounced.

Current examples include mobile players entering the market for the distribution of music, traditional telecommunications companies and Internet Service Providers (ISPs) offering subscription video and multi-channel services and other audiovisual products, cable operators integrating horizontally into the provision of voice and Internet access, newspapers and other

traditionally 'print-based' media offering audiovisual content via their online presence, Internet portals and other online service providers offering voice and video applications as well as user generated content, and network operators enlarging their service portfolio by offering additional video applications.

Previously discrete value chains are rapidly evolving into a mesh of access, content and distribution service providers. The content and applications providers have actively embraced digital distribution models in addition to the traditional shrink-wrapped delivery mechanism, building online games with enhanced interactivity, investing in new production models and revising their traditional licensing models to build and support the emerging value chains (selling software or upgrades online for example). Adequate and effective intellectual property protection and enforcement are essential components to a policy framework that will continue to advance the creativity convergence is helping to fuel.

Communications and the consumption of content and applications using a single device are already becoming more prevalent, but other models based on the increasing specialization of devices are also possible. Development of capacity on mobile networks and the unprecedented success of mobile technology show the growing interest of end-users for the development of added value services on mobile networks.<sup>1</sup> The expansion of mobile technologies will enable a significant number of people to access converged services, including the Internet, wherever they may be.

### **The international nature of convergence**

The convergence phenomenon is global and will, therefore, have effects on policy and regulation at the international level. Diverging approaches between countries or regions is a serious barrier to convergence. This is particularly the case where divergent national rules prevent cross-border services or make them uneconomical. This stifles innovation.

## **2. The implications of convergence and converged ICTs for the future**

Technologies and delivery systems are in some cases catalysts, and in other cases facilitators of new business models, citizen services and possible opportunities for growth, and societal benefits. However, the role of ICT systems is to support rather than define internal processes of government or business. Technology is a means that needs to be used to address the problems of the enterprise or organization; strategic solutions that solve the problems should be the end result. New technologies provide improved ways of contemplating tasks and create new potential for functions and workflows that enable greater efficiency, economy and effectiveness. As businesses and governments define their priorities, they should take steps to assure that the possible beneficial impacts of the technologies that can support these end goals are promoted and utilize the technological means available to effect the change they desire.

Failure to optimize processes for ICTs and a failure to learn lessons from operational trends will prevent economies from capitalizing on the full benefit of ICT enablement. Removing paper from a process may account for a 10 to 20 percent increase in efficiency and cost savings, but the real flexibility and benefit comes from a review and optimization of the practices, processes and procedures, and appropriate change management, not just the automation of existing systems.

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<sup>1</sup> By the end of 2007 there were over 3 billion mobile subscribers globally and the 4 billion landmark will be reached in 2009 (Source: 4 December 2007 Nokia Capital Markets Day 2007 press release, and US Securities and Exchange Commission Form 20F-2007, Nokia Corporation).

The utility and functionality of ICT systems has evolved from systems that organize and tabulate to systems that help plan, coordinate, communicate, manage, educate, forecast and remediate. In the early stages of the information age, ICTs were responsible for creating more data. Today, ICTs are creating significantly greater benefits by providing actionable data. Actionable data is more valuable because it provides additional context and trending, enabling higher levels of decision-making and better analysis of risks, costs and benefits earlier in the business process. While the potential utility of information has increased, that potential can only be realized if an organization has optimized its processes to capture the information's value.

### **3. Policy challenges**

The development of the information society is dependent upon the availability of sufficient infrastructure capacity and innovative products and services for business and individual users. In such an environment, interoperability, affordable prices and choice constitute the primary market characteristics.

The recent years have shown an impressive growth of digital market platforms, e.g. e-commerce, content markets for online music, video-on-demand or online gaming applications. Challenges remain in the policy space as to how to migrate from a single-application based regime (telecommunications, TV, radio, commerce) to a multi-application regime where many different kinds of services are offered by multiple parties over converged infrastructures. This also applies to the transition from an analogue environment to a digital one.

#### ***As a result, the following questions arise:***

- What impacts do the new changes have for existing regulatory models?
- How can increased trade liberalization be best promoted in a converged environment?
- Do different cultural preferences and standards as well as different national laws make it more difficult to find a common approach in new services?

#### **Interoperability as a function of convergence**

Policymakers should recognize the value of and need for interoperability in the converged network along with security, mobility, scalability, traceability, privacy, resilience, reliability, and several other characteristics in a balanced manner in order to create the right environment to promote growth and development.

Where there is demonstrable demand for interoperability, then the market has a clear commercial incentive to deliver that. Failure to meet consumer demand will only see consumers switch to alternative value chains.

Interoperability will be an evolutionary process as customer demand for interoperability is examined and decided upon in the larger realm of functional requirements.

#### **Issues for business**

Businesses around the world face several issues as they tackle the convergence of technologies and services, while continuing to innovate:

- Understanding the business environment needs in a converged context and the impact of convergence on business operations and risk management

- Translating those needs into functional requirements and ensuring that the enterprise's needs are met by the converged technologies (and maximizing return on investment in converged technologies, or migration to converged technologies)
- Managing the impact of global application of myriad local and national laws and regulations

#### **4. The global market, ICTs and the policy and regulatory framework**

ICTs function in an environment expressly dependent on factors of law, culture, infrastructure, skills and resources. Consequently, the predictability and flexibility of these factors plays an increasingly important role in determining the success and value ICTs generate.

Today's companies are global in scope. Digitalization of information, modularization of workflows and broadband connectivity have enabled companies to situate resources to maximize efficiency, provide cost-effective service and logically site and utilize assets and resources without limitation from geographical or temporal proximity. Examples of the efficiency and benefits brought by ICTs in the global market include:

- Global support and service for customers 24 hours a day every day wherever they are located
- The ability to locate resources where and when they are needed, reducing service outage times for support services and assuring the person with the greatest knowledge of the problem and solution is the one dealing with it
- The ability to hand off a problem at the end of the day in one location to a team that is starting their day so work progresses on a continuous basis
- Information may be processed remotely in a number of global locations
- Information may be centralized to facilitate access from global locations and allow companies to build effective single points to ensure compliance with internal and external policies e.g. on fraud management
- Increased global integration of supply and value chains, collaborative design and development across jurisdictions
- Improvements to companies' abilities to locate operations where they can best take advantage of efficiencies, skills and resources
- Increasing access of citizens to the workforce, removing geographical boundaries and overcoming personal barriers

See for example, the "ICC Telecoms Liberalization toolkit, 2<sup>nd</sup> edition", for concrete suggestions in this space (<http://www.iccwbo.org/policy/ebitt/id5050/index.html>).

The Internet coupled with digitalization of information has facilitated global markets and created the ability for greater interaction among governments, businesses, and citizens. Digitalized information flows have increased market access and competitiveness by creating greater efficiency and global scope of sales and service. The global distribution of business processes has, by definition, led to substantial efficiencies and potentially improved service, but also increased the complexity of some business transactions that are subject to multiple, sometimes contradictory, legal frameworks. This complexity is greatest where there is the least transparency or predictability in the legal and regulatory framework.

Understanding the impact of convergence on the myriad of legal and jurisdictional challenges and customer benefits is important. ICC has produced recommendations for policymakers on specific areas, including: the telecoms guide, and privacy and security toolkits. (To access these documents, please see: <http://www.iccwbo.org/policy/ebitt>)

## **5. ICT-enabled growth: Business use case studies**

An economy where information is readily available is one that is better positioned to be competitive. There are physical, technical, and legal issues of access to technology, investment, skilled labour and infrastructure. Economies have to assess how prepared they are across all of these factors and subsequently develop plans to take actions appropriate to where they are in terms of technical infrastructure, skills development, resources and regulatory framework development. These development plans must of course be appropriate to the country's legal and cultural context, but should also take into account ways of regional cooperation to facilitate regional trade and information flows.

Today, economies compete for business in order to foster economic growth and help drive societal benefit. These benefits result directly from increased local employment, skills development and investment as well as tax revenues and other collateral spending in the economy. Over time, programs of local development can also result in the growth of local support industries, and with the proper backing, higher-level industries. For these possibilities to become a reality, however, an economy must provide an environment capable of promoting and capitalizing on beneficial change and growth.

Increasingly, business transactions are among multiple parties and across multiple jurisdictions. Transactions may thus be a confluence of information exchanges within a company's various subsidiaries and across any number of suppliers and other businesses. These information chains can include upstream suppliers, downstream distributors, payment processors, banks, fulfilment service providers, including shippers and carriers, and customer service providers. These chains can represent parts of a company or various associations of companies that are related by contract and previous relationships or joined together for the specific transaction.

With these more global enterprises and complex supply chains, greater attention is also being paid to trust in the system as well as the transaction. Companies are working to develop security practices and accountability frameworks that are in keeping with these new realities of global distribution, and enhance connectivity and interoperability. This becomes even more critical as users not only are using more "always on" broadband connections but as participative technologies enable users to become content creators and publishers through more accessible and interactive technologies.

## **6. Proposed framework**

### **a) Competition law – the guiding principle**

Application of general competition laws and policies should be the guiding principle driving convergence where there are no legacy market effects requiring sector specific legislation (see ICC Telecoms toolkit). In connection with this, ICC would like to emphasize the value of work that has been done by intergovernmental organizations such as the World Trade Organization (WTO) and the Organisation for Economic Co-operation and Development (OECD) on competition issues.

Convergence will sometimes lead to service providers trying to offer integrated services. This choice does not necessarily imply a vertical integration, but does not exclude it either. The relevant sectors will become more interdependent. Alliances and mergers can produce complementary services and achieve economies of scale, which will benefit users. These developments will result in new integrated services and chains of supply and demand. An important example is the convergence of telecom and data services markets. In consumer markets, an example of a new supply chain is content production, content packaging, delivery, control of delivery, conditional access and consumer hardware.

While the efficiency of market competition should be the presumption, in such a dynamic context, it is also possible behaviour that is anti-competitive or that unduly hampers innovation may occur through market dominance. Thus, there is a need to ensure the effective application of competition law and, where appropriate as set out in the following paragraph, regulation – to prevent any abuse of market position in all sectors concerned at all stages.

### **b) Efficient regulation**

General competition policy alone may not always be sufficiently effective, efficient or enforceable. In some circumstances, government regulation may be needed to supplement the application of general competition policy. However, this needs to be applied only as a last resort, after extensive consultation with all stakeholders and market impact assessments to ensure innovation will not suffer.

Government regulation should be proportionate, limited to promoting competition, allocating scarce resources and achieving public interest objectives, where legitimate. Regulation in these areas should be technology neutral, transparent, non-discriminatory and the least burdensome possible. (For more information, policymakers are encouraged to visit:

<http://www.iccwbo.org/policy/ebitt>)

### **c) A tailored and focused approach**

Governments need to evaluate where regulation is needed; not all situations require regulatory intervention. Where it is determined that regulation is required, it should be narrowly tailored to meet well-defined and compelling public policy objectives. Governments must also take care to assure that regulation does not create unnecessary burdens or create unintended consequences for innovative new business models or investment in and deployment of new technologies.

For all countries to achieve the benefits of advanced information and communications technologies there must be firm foundations in place to encourage investment and competition. Part of that critical foundation includes reliance on rule of law, as well as stable, transparent legal and regulatory systems. However, while we refer to the role of government and the policy and regulatory framework as essential, this should not be read to undermine in anyway the role of the market and competition. Policy and regulatory frameworks, by definition, struggle to keep pace with the speed of innovation resulting from new technologies and business models. In many cases, where no specific policy/regulatory framework exists, none may be required. In some cases, government's role of ensuring effective competition, consumer protection against fraud and criminal behaviour, and other basic functions may be sufficient. In other cases, especially where harm is evidenced, government may need to play a curative role. In still other cases, the market and government work in a co-operative relationship to facilitate and enhance the ability of ICTs to drive growth and provide societal benefits by removing barriers, lessening burdens and narrowly tailoring light touch policy/regulatory environments.

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### **ICC Commission on E-Business, IT and Telecoms (EBITT)**

Business leaders and experts drawn from the ICC membership establish the key business positions, policies and practices on e-business, information technologies and telecommunications through the EBITT Commission. With members who are users and providers of information technology and electronic services from both developed and developing countries, ICC provides the ideal platform to develop global voluntary rules and best practices for these areas. Dedicated to the expansion of cross-border trade, ICC champions liberalization of telecoms and development of infrastructures that support global online trade. ICC has also led and coordinated the input of business around the world to the World Summit on the Information Society (WSIS: Geneva 2003 and Tunis 2005), and continues this effort in the activities established in the Tunis Agenda through its initiative, Business Action to Support the Information Society (BASIS <http://www.iccwbo.org/basis>)

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### **About ICC**

ICC is the world business organization, a representative body that speaks with authority on behalf of enterprises from all sectors in every part of the world. ICC promotes an open international trade and investment system and the market economy, and helps business corporations meet the challenges and opportunities of globalization. Business leaders and experts drawn from ICC's global membership establish the business stance on broad issues of trade and investment policy as well as on vital technical subjects. ICC was founded in 1919 and today it groups thousands of member companies and associations in 130 countries.