

THE CHANGING ROLE OF GOVERNMENT  
IN AN ERA OF TELECOM DEREGULATION

**TELECOMMUNICATIONS  
REGULATORY ISSUES FOR  
ELECTRONIC COMMERCE**

Chairman's Report  
of the Eighth Regulatory Colloquium

Geneva, 14-16 December 1998



INTERNATIONAL TELECOMMUNICATION UNION



## Table of Contents

	<i>Page</i>
Preface by the Secretary-General of the ITU Mr. Yoshio Utsumi .....	5
Report of the Colloquium Chairman Mr. David M. Leive .....	11
Executive Summary of Briefing Report Mr. David N. Townsend .....	43



**PREFACE**  
**BY THE SECRETARY-GENERAL**

It gives me great pleasure, as Secretary-General, to produce this preface to the Report by the Chairman of the Eighth ITU Regulatory Colloquium, which took place in Geneva from 14 to 16 December 1998 and dealt with the increasingly central issue of telecommunication regulation and electronic commerce.

Since its first meeting in December 1993, the ITU Regulatory Colloquium has helped to establish the Union as an international focal point for Member States engaged in the process of reforming and revitalizing their telecommunication policies and regulatory regimes. It has accomplished this path-breaking task through innovative reports, analyses and recommendations on issues common to national regulators around the world.

The colloquium's informal structure and approach have helped to maximize its usefulness. The key ingredients have been its independence, impartiality, expertise and informality. It is a small, informal group of top-level, individual experts, participating in their private capacities, with background studies privately financed and with the results of the meetings widely distributed by ITU in several languages.

On a personal note, I am very proud of the fact that Japan has played a crucial role in the funding and continuation of the colloquium. Funding for the First Colloquium in 1993 was provided by the New ITU Association of Japan, which also provided funding for the Eighth Colloquium. I myself participated in the meetings of the Second and Fourth Colloquiums, but my schedule regrettably made it impossible for me to attend the other meetings.

I should also like to acknowledge the essential funding provided for various colloquiums by the World Bank and its Infodev programme, and by the Friedrich Ebert Foundation of Germany. Without such continuing support, the colloquiums in their present form would not have been possible.

The concept of the Colloquium originated in 1991 with David M. Leive, the then Chairman of ITU's Telecom 91 Regulatory Symposium, who has since ably led and chaired all eight meetings, with the full support of my predecessor, Dr. Pekka Tarjanne. The eight Colloquiums have dealt with issues at the cutting edge of telecom regulatory policy and ITU's own growing responsibilities – telecom regulatory reform, universal service, interconnection, big LEOs, accounting rate reform, WTO's new regulatory regime and, most recently, electronic commerce.

The Eighth Colloquium focused on the role that telecommunication policy-makers and regulators could most usefully play in the development of electronic commerce, as well as on the most appropriate and constructive role that ITU and other international organizations might for their part play in facilitating and promoting that development. While electronic commerce in all its myriad forms has naturally received considerable attention, less attention has been devoted to the relationship between telecommunication regulation and policy and electronic commerce. In particular, relatively little attention has been paid to providing guidance to telecom officials in developing countries confronted with the many new issues associated with e-commerce. The analyses and conclusions of the colloquium are designed to help fill this gap, and I would therefore urge you to give them careful consideration.

The results of the Eighth Colloquium are reflected in the following Chairman's Report, prepared by Mr. David M. Leive. The report describes the consensus views of the participants on the main issues discussed, but does not necessarily represent the views of individual participants.

This publication also includes an executive summary of the Briefing Report prepared by an independent consultant, David N. Townsend. The Briefing Report was presented to the colloquium in draft form to serve as a basis for the discussions. The full Briefing Report is being translated and will be distributed to all ITU administrations in the coming months. Both the executive summary and the Briefing Report reflect Mr Townsend's own research and views, and are not products of the colloquium discussions themselves.

Both the Chairman's Report and the Briefing Report can be accessed on the ITU website.

*For the Chairman's Report*

[http://www.itu.int/itudoc/osg/colloq/chai\\_rep/index.html](http://www.itu.int/itudoc/osg/colloq/chai_rep/index.html)

and are also available free of charge on the colloquium's website at:

<http://www.regulate.org>

*For Briefing Report*

<http://www.itu.int/publications/bookstore.html>

Lastly, as I embark on my tenure at the helm of ITU, I should like to emphasize how much I am looking forward to receiving ideas, suggestions and advice from all quarters on how, working together, we can best adapt ITU to meeting the challenges of the new millennium.

Yoshio UTSUMI  
Secretary-General

Geneva, April 1999



## Table of Contents

	<i>Page</i>
Chairman's Report.....	11
Summary and conclusions.....	11
Section I – Introduction .....	17
Section II .....	19
A.    "Classical" Regulatory Issues .....	19
1.    Infrastructure .....	19
2.    Access to the infrastructure.....	20
3.    Local loop access and competition .....	20
4.    Unbundling .....	21
5.    Interconnection .....	22
B.    Issues of special concern to developing countries.....	23
1.    Promotion of universal access.....	23
2.    The need for rapid development .....	24
C.    New regulatory challenges.....	25
Section III – Role of telecom regulators in relation to "non-telecom" issues .....	27
Section IV – Role of the ITU.....	31
Section V – Conclusions.....	33
Attachment 1 – List of participants.....	35
Attachment 2 – Discussion outline.....	41



# **CHAIRMAN'S REPORT**

**David M. Leive**

## **TELECOMMUNICATIONS REGULATORY ISSUES FOR ELECTRONIC COMMERCE**

### **SUMMARY AND CONCLUSIONS**

Several themes emerged from the first two days of intensive and frank discussion at the Colloquium. Perhaps the strongest area of consensus, from the outset, was that electronic commerce carries the potential to bring great benefits and opportunities to individuals, businesses, and societies worldwide, and should therefore be encouraged in its fledgling development as much as possible. The opportunities are particularly critical for developing countries, and for small and medium enterprises in all countries, as e-commerce helps reduce barriers and costs for many forms of global and domestic commerce.

The primary purpose of the Eighth Colloquium was to examine the role that the telecommunications regulator could most usefully play in the development of electronic commerce, rather than to consider more generally electronic commerce issues. The precise links between telecommunications regulation and electronic commerce to date have not been explored in depth. Our perspective then, was that of a telecommunications regulator, particularly in a developing country: "What do I need to know about electronic commerce, and what are the range of actions I should take, or, equally important, not take?" For these reasons, the Colloquium participants were drawn from two separate but converging worlds: telecommunications policy makers and regulators on one side, and entrepreneurs and government officials dealing with electronic commerce on the other.

Given e-commerce's potential benefits, the Colloquium was strongly in favor of helping to foster expansion, experimentation, and growth in various forms of electronic commerce. To this end, the Colloquium addressed a range of questions concerning the role that telecommunications regulators can and should play, how particular decisions or actions (or indeed inaction) on their part might affect the incentives and constraints for entrepreneurs, carriers, businesses, and end users, at both the national and the international level. Telecommunications is clearly of primary importance to the functioning of electronic commerce activities, and the impact of telecom regulation can be significant in advancing or impeding its growth.

Although there was not always full agreement on all topics, a general set of key conclusions can be identified from the discussions. These conclusions represent the consensus of the participants at the Colloquium, but the participants equally recognized that it is important in this extraordinarily complex and fast changing field to avoid a prescriptive approach and, in order to be of maximum educational value, to fully describe the range of views expressed. It is equally crucial to fully consider all significant facets of introducing electronic commerce to developing countries:

1) *Electronic Commerce Is Driven By Market Forces And Technological Change, Not Regulation*

Electronic commerce and the Internet have evolved in a highly dynamic, market-driven environment, which shows how dramatically the market can stimulate innovation when the right incentives are there and regulatory barriers are minimized. The explosive growth of the Internet and electronic commerce and the rapid creation in many countries of income, wealth and, to some degree, employment associated with that growth can be attributed in good part to the absence of regulation and to the effectiveness of self

regulation: voluntary arrangements that have emerged for self governance by many participating organizations.

2) *The Telecommunications Regulator's Role Is Mainly To Assure Open Access To Telecommunications*

Telecom regulators, together with national legislators and policy makers, can help the development of e-commerce by fulfilling their prime responsibility to promote fair competition through assuring adequate capacity, connectivity, and open access. (In the EU countries, the EU's supra-national institutions will also play a role in this.) That core area of responsibility also concerns the operational issues that are critical to achieving fair competition, as well as the need to continually monitor and correct anti-competitive behavior in telecommunications. The agenda of issues affecting e-commerce that fall within this core area of responsibility of the telecom regulator may be relatively narrow compared with the full spectrum of e-commerce debates, but they are still critical to achieving fair competition. For example, one "classical" role of the regulator is to identify telecom "bottlenecks", that may lead to anti-competitive outcomes unless corrective action is taken. This role is highly relevant to e-commerce.

Regulators should focus on operational issues (like interconnection) that are vital to achieving fair competition in the e-commerce marketplace, and continuing monitoring and correction of anti-competitive behavior. In markets where one or more telecom operators have substantial market power, it will be especially beneficial to promote a rapid transition to competition and to ensure that competition is fair between the incumbent (for example, in its Internet Service Provider (ISP) and/or Internet backbone businesses) and new entrants (such as independent ISPs).

Experience in this field has already shown that major issues can arise, for example, as a result of mergers and acquisitions that increase market concentration. The extent to which such issues are dealt with by telecom regulators or by general competition agencies will vary from one country or region of the world to another, depending on particular legal frameworks and institutional arrangements. Whoever does the job of monitoring competitive conditions and enforcing competition policies and competition law, however, this job undoubtedly needs to be done.

3) *New Developments, Including Internet Telephony, Pose New Challenges To The Telecommunications Regulator*

In addition to the familiar agenda of issues in telecom regulation, the development of electronic commerce in the broadest sense creates certain new issues which telecom regulators will need to address, for example the regulatory treatment of Internet telephony, and the interconnection rights and obligations of various Internet players (including but not limited to ISPs) in relation to the public telephone network. Internet telephony diverts traffic, and hence revenues, from the established telephone companies. The question arises as to whether there should be a regulatory response to such diversion, either in terms of treating Internet telephony providers as equivalent to voice carriers, thus imposing access charges, promoting greater competition, or doing nothing.

4) *Telecommunications Regulators Should Exercise Restraint*

Looking beyond their “classical” role, telecom regulators can best contribute to the beneficial development of electronic commerce by exercising regulatory restraint, intervening only if there is a compelling reason to do so. When they do intervene, their guiding principle, as in the medical profession, should be, “ABOVE ALL, DO NO HARM”. Regulators who might now consider jumping into this new area to impose rules and restrictions around its evolution should be

cautioned. To the maximum extent possible, self governance should continue to guide the further expansion of Internet technologies and commercial applications of telecommunications.

5) *Many Important Issues Raised By Electronic Commerce Fall Outside The Telecommunications Regulator's Provenance*

Many issues of policy, regulation and law relating to e-commerce – e.g., data protection and security, intellectual property rights, taxation, privacy, commercial law, dispute resolution and contract issues - fall well outside the traditional scope of the telecom regulator's duties. The telecom regulator's agenda should focus on the *transport* of signals. Questions concerning *applications* and the *content* of those signals should not come under their control. Nevertheless, because such distinctions can never be defined perfectly, or permanently, in such a dynamic field, and because telecom regulators represent a valuable source of experience and advice, especially in developing countries, they should endeavor to be well-informed about the development of e-commerce and the full range of related policy issues, and to participate in the development of policy on those issues. In developing countries where competent regulatory infrastructures may be limited to telecoms, they may be called upon to assume a larger role.

6) *The ITU Has A Role To Play In E-Commerce, Largely Within Its Current Agenda*

The ITU has a valuable, though limited, role to play in the development of electronic commerce: providing information and advice to its members, especially in developing countries; developing technical standards in certain areas (especially where the Internet – largely self-governing in their fields – meets the Public Switched Telephone Network); providing assistance to Members in addressing policy issues; and contributing logistical expertise and support for members, as requested, to assist them in the development of e-commerce activities.

Many issues of policy, regulation and law relating to electronic commerce – e.g., data protection and security, intellectual property rights, taxation, privacy, commercial law, dispute resolution and contract issues – are already being considered by international organizations, including the ITU, and responsibility for forming policy on specific issues has been assigned by their respective national memberships to various international organizations. Although the mandate of the ITU is focused on promoting telecommunications worldwide through supervising such technical matters as frequency allocation, and certain aspects of standardization, and by offering operational advice and recommendations, the widening scope of telecommunications in the “information society” means that the mission of the ITU has also become wider and includes the stimulation of activities related to electronic commerce.

Telecommunications policy makers should identify the issues which the ITU should focus upon in electronic commerce, paying careful attention to achieving an efficient allocation of responsibilities between international organizations (ITU and WIPO, for example). The ITU should work closely with the World Bank in stimulating legal and regulatory reform in telecoms (and the World Bank has a larger role in stimulating general legal and judicial reform in other areas important to allow e-commerce to flourish, e.g., competition law and commercial law). The main engine of development in electronic commerce will undoubtedly continue to be private business initiative. Activities by public sector bodies (or mixed public/private bodies, such as the ITU is increasingly becoming) should be designed not to hamper or distort markets and entrepreneurial initiative. Nevertheless, the need for certain carefully selected activities by public and public/private bodies in the public interest is clear.

## **Section I – Introduction**

The Colloquium mainly comprised two distinct and separate groups of participants – the telecom regulators and policy makers on one side, and electronic commerce experts on the other. This Report reflects an effort to bring together their varying perspectives and interests. Nevertheless, the primary intended audience for this Report is telecommunications regulators and policy makers, particularly in developing countries. It is designed to assist them as they are confronted by these new myriad developments, by suggesting to them in broad terms how they should respond to the development of electronic commerce from the perspective of their own telecom regulatory responsibilities.

Three main introductory points emerged from the discussion:

*First*, Electronic commerce is an elusive term, to which no single, simple definition applies. For consideration of regulatory issues, it is sufficient to identify the principal types of business activities that fall into the overall category of e-commerce. A representative list is given in the Briefing Report.

*Second*, there are many regulatory issues relating to e-commerce, but only a small subset of them can be viewed as part of the core agenda for telecom regulators and policy makers. Other issues – notably commercial law, intellectual property rights and taxation – need to be understood by telecom regulators, but for the most part, they will normally be outside the strict field of responsibility of the telecom regulatory agencies.

The telecom regulator and policy maker does not act in isolation. Many of the relevant issues may be wholly or mainly handled by other parts of the machinery of government, or by industry self-regulation, rather than by the telecom regulator. Electronic commerce activities can be regarded as applications that utilize the

telecom network. As in the case of other kinds of applications (like telephone conversations or video conferences), the telecom regulators should usually be able to concentrate on issues concerned with telecom infrastructure and the transport of signals, without concerning themselves with the content of users' communications and the policy issues that arise from such content.

*Third*, in carrying out their "classical" or traditional functions telecom, regulators have a key role to play in creating favorable conditions for the development of electronic commerce and for wide, equitable participation in the resulting opportunities. They can do this by fostering market competition; encouraging greater supply of services and infrastructure capacity; supporting cost-based pricing of regulated services; ensuring fair interconnection arrangements; requiring the unbundling of services and networks where effective competition requires this; and promoting universal access. Telecom regulators need to examine how the effective discharge of these responsibilities can foster the growth of electronic commerce in a way that protects and promotes the public interest. Of equal importance, they need to examine how these new developments, including the new uses of telecom networks, may require them to re-examine their traditional approaches to telecommunications, which has historically had its roots in concepts and perspectives arising mainly from voice communications, rather than from the emerging world of high speed digital broadband communications. Even the concepts and categories in which telecom regulators and policy makers generally think (operators versus users; facilities-based operators versus resellers; basic versus value-added, and so on) may prove to be less and less valid or relevant in the new environment.

## **Section II**

### **A. “Classical” Regulatory Issues**

The Briefing Report and much of the discussion of the Colloquium emphasized how the opportunities and trends surrounding electronic commerce, far from invalidating many of the tasks or rules of telecom regulators, make fulfillment of many basic telecom regulatory objectives all the more necessary and urgent than ever. Expansion of the availability and diversity of infrastructure, economically rational pricing free of anti-competitive distortions, and open market access for new entrants will accelerate the potential for end users to benefit from the economic fruits of e-commerce. The following sections summarize some of the main issues and views in these areas presented at the Colloquium.

#### *1. Infrastructure*

An adequate telecommunications infrastructure is indispensable to the growth of e-commerce. The increasing demands for bandwidth, transmission quality and security of telecommunications may call for regulatory policies that remove obstacles to the development of a broadband digital backbone infrastructure, both in various countries and also on the international level. Policy makers and regulators may employ various means to achieve this.

The development of new backbone technologies and services will best be ensured by a competitive market. Excessive market power in the hands of one player in the market, or anachronistic cross-subsidies to other businesses, resulting in pricing policies that retain above-cost prices for these backbone services, will only result in higher costs for Internet Service Providers and other electronic commerce suppliers, and hence for end users.

Development of ubiquitous, high performance wireless transmission infrastructure will be indispensable in facilitating wide availability of access to broadband networks and services.

## 2. *Access to the infrastructure*

This central issue takes on various forms. For e-commerce to be most beneficial, both providers and purchasers of goods and services need access to the requisite facilities and technologies. For developing countries, this compels reconsideration of traditional universal service policies (see below). For more developed economies, access issues also go to the heart of competition policy in telecommunications. In a world with increasingly blurred boundaries between types of networks or services, between operators and value-added or content providers, between sellers and buyers, it is difficult to define precisely who requires access to what or to whom.

Rather than focusing on specific architectures or services, it should become the priority of regulators to identify *bottlenecks*, wherever they appear in the continuum of functions that combine to support modern telecommunications and information infrastructure. They may appear in surprising places, quite different from those where telecom policy and regulation are traditionally focused. Where significant strategically important bottlenecks exist, the regulator's role should be to help open them up, or at least to ensure that their control does not translate into unfair or uneconomic leverage in other competitive market segments.

## 3. *Local loop access and competition*

Though new bottleneck issues can be expected to emerge, the most major immediate bottleneck issue today facing electronic commerce, even in most developed countries, is undoubtedly still the local loop. Fixed wireline voice-grade loops are still by far the most common means for the vast majority of end users to connect with the global network, including the Internet, and few users have a choice among multiple local access suppliers. In many countries, active regulatory initiatives are underway to bring competitive options into this element of the infrastructure, with mixed success to date. As technologies and markets continue to evolve and

converge, however, the range of choices is widening, to include cable TV systems, digital TV, wireless networks, satellite services, as well as competing fixed local exchange networks. The regulator's task should be to encourage these developments by means of open entry and an economically fair framework of policy and regulation limited to the essential minimum needed to prevent anti-competitive abuses and protect the public interest.

Regulation affects not only the options for access, but also its affordability, through policies about tariffs and interconnection. Until market forces diminish the bottleneck character of loop access services, regulators will be responsible for overseeing local service pricing by dominant carriers. The changing nature of demand and network utilization brought about by the explosive growth of new technologies and applications, including e-commerce, may require re-examination of traditional access pricing regulation. The principle of basing prices on costs should prevail, especially for services involving more advanced and potentially expensive technologies. Regulators should be especially vigilant where monopolies still control these types of access services.

#### 4. *Unbundling*

One of the most potentially effective regulatory mechanisms for dismantling bottlenecks is to require network and service unbundling by dominant (or all) operators. In the context of services that support electronic commerce, this policy might go beyond the technical network elements, to require that competitors be allowed access to signaling, network intelligence, routing databases, and other strategically vital information that might be controlled by an access provider. The line between competitively fair unbundling and improper regulatory intervention in the market can be difficult to find however, and more so as the industry becomes more complex. Regulatory vigilance must be tempered with restraint.

## 5. *Interconnection*

Effective interconnection at fair, cost-based prices is essential to a competitive market and is also indispensable to the growth of e-commerce. The traditional questions arise: who pays for such interconnection and how are the various network costs allocated?

Interconnection regulation is the centerpiece of competition policy, and has been the subject of a previous Colloquium. With the growth of electronic commerce, interconnection policy takes on new dimensions. In addition to traditional telephone carriers, new players such as ISPs require a form of interconnection with the basic network, and regulatory oversight (though not necessarily detailed regulatory control) of the prices, terms, and technical standards of this interconnection are essential to the effective development of new services and applications. As regulators move increasingly toward permitting, even encouraging, entry into all market segments, their monitoring of interconnection issues and enforcement of interconnection policies will be important in determining how rapid and sustainable competition will be, and thus how much they may or may not have to be concerned with some of the other traditional regulatory tools that apply to monopoly or dominant carrier activities (price, quality, service, etc.), but that will be self-regulated by a competitive marketplace.

Interconnection policies imply a host of detailed questions in an e-commerce context. Methodologies affecting how common costs are recovered through the prices of different network services, for example, might need to be modified to account for the impact of intensive data usage in a voice-oriented exchange network. Where interconnection charges include some "contribution" or subsidy element, there are questions about extending those obligations to new service providers such as ISPs. When telephone operators are also providers of value-added services, other questions arise surrounding competitive balance, co-location of facilities, unbundling and "re-bundling", access to proprietary network intelligence

and customer data, and many other difficult issues. These are the types of practical concerns that telecom regulators will ultimately have to give high priority to if they are to facilitate an effective regime of competitive growth in telecommunications and e-commerce.

## **B. Issues of special concern to developing countries**

### *1. Promotion of universal access*

One of the most important aspects of the impact of electronic commerce is its potential to transform the basic economics of telecommunications access, particularly for developing countries, lower income populations, and rural areas, which have been the traditional focus of “universal service” policies. In this context, the term “universal service” itself may be more appropriately replaced with “universal access”. Policies may focus on access for communities, not just on access for individual homes; and on access to advanced communications and information technologies, as opposed to traditional voice telephony.

Internet access and electronic commerce can provide economic benefits to communities by connecting them with national and global markets, reducing transaction costs and increasing efficiencies throughout the local economy. These same technologies can support other important applications, such as distance learning and tele-medicine, further enhancing their appeal and value. The range of the applications utilizing the underlying network, and those applications optimized for voice, increase the likelihood that the end user community will see the value of these networks. At the same time, providers of e-commerce applications have incentives to support the process of expanding the telecom infrastructure to unserved areas, since this will expand their own market opportunities and hence the value of their businesses to shareholders. Seeking means to tap this market incentive for achieving wider access should be a major focus of policy development and research.

The widening range of technological options, and the decreasing costs for telecommunications access activities, makes this perspective increasingly important and relevant. These two trends are creating opportunities for the private sector, through market oriented regulatory policies, to fulfill the goals of universal access without the need for anachronistic cross-subsidies or centralized monopolies. Already, real world examples of multipurpose community-based telecenters are proving commercially viable in a number of countries, and providing encouraging examples for regulators, entrepreneurs, and users alike of the potential for this new paradigm of communications driven development.

## 2. *The need for rapid development*

E-commerce is expanding so rapidly that policy makers in developing countries need to move very fast to enable their companies and entrepreneurs to avoid being faced with a *fait accompli* in which their competitors are too far ahead of them. There are large opportunities for developing countries, but the “time-to-market” has a major impact on competitive outcomes in a worldwide, “frictionless” marketplace where global leadership positions in e-commerce can be carved out in hundreds of market niches, ranging from book selling to eco-tourism. While markets will remain contestable and open to competitive entry, some informed observers expect to see “winner takes all” situations where one or a few participants may dominate particular e-commerce segments for extended periods; others disagree. There is general agreement, however, that time is of the essence, and policy in developing countries should enable enterprises in these countries to rapidly establish an effective presence in the global electronic marketplace. It may paradoxically be easier to rapidly establish appropriate regulatory policies and initiatives to encourage e-commerce in developing countries than in some industrialized countries, because of the absence of entrenched interests and of elaborate, but obsolete telecom regulatory regimes.

### **C. New regulatory challenges**

The technological and market developments driving electronic commerce are also introducing certain new challenges to the array of traditional telecom regulatory issues. The issue of Internet-based telephony (voice over Internet), for example, represents one of the most clear cross-over points between the telecom world as traditionally defined, and the new world of electronic commerce. Most Internet voice services are not provided on an end-to-end basis over the existing Internet, but involve some combination of IP transmission (via the Internet or via other networks) and use of the conventional circuit-switched Public Switched Telephone Networks. Nevertheless, Internet telephony diverts traffic, and hence revenues, from the established telephone companies or other operators.

There is strong sentiment in some quarters to apply a regulatory “response” of some kind to Internet telephony, even where the prevailing view is to avoid regulation of other new types of applications. While some might wistfully prefer that Internet telephony go away altogether, the practical options include (i) treating Internet telephony providers as equivalent to traditional voice carriers (e.g., by imposing access charges), (ii) promoting greater industry competition and price rationalization, so that all participants compete on an efficient and equitable basis, or (iii) doing nothing.

There is, however, an important question of timing. At present, Internet telephony is minimal, and its impact upon incumbent telecom operator revenues negligible. At the same time, those incumbents maintain substantial market power in most countries over the bottleneck access facilities that link end users to the full range of electronic commerce options. Policy makers need to assess in each country the extent of the bottleneck. Regulators may well find that they need to monitor what the market place is doing, and the market behavior of incumbents which control access in this way, during the period when incumbents begin to feel major competitive impacts from independent providers of Internet telephony.

As the process of opening telecommunications markets to wider competition proceeds, along with the convergence of sectors, the lines between telecom services *per se* and other forms of commercial activities provided by telecom operators will continue to blur. As this occurs, the function of regulating the “pure” telecom activities may be more and more difficult to separate from regulation addressing commerce in general. One important example is the billing and collection function that telecom operators might provide to third-party (or affiliated) e-commerce suppliers. It is important for consumers to be protected from inappropriate treatment (for example, a threat to cut off telephone service for non-payment of bills), and that competitors not be disadvantaged by the unique position of incumbent telecom operators to control this function or the informational advantage they enjoy because they operate the network used to access e-commerce services (and bill for use of these networks).

To some extent, the entry of telecom operators into the direct provision of e-commerce services can be isolated, through structural separation requirements, accounting rules, and so forth. This may be a valuable safeguard against anti-competitive abuses of monopoly power arising from bottlenecks in the local access networks. Such separation will often be in the interest of telephone companies in any event, if only to minimize the degree to which their new activities may become subject to regulatory authority.

The next section addresses the role of telecom regulators in the wider array of electronic commerce regulatory issues.

### **Section III – Role of telecom regulators in relation to “non-telecom” issues**

There has been a plethora of international conferences and initiatives on electronic commerce around the world. These have identified numerous policy issues which merit attention on a national or international scale. Many of these issues appear to be well beyond the scope of the responsibilities usually assigned to regulatory authorities in the telecommunications sector. The Briefing Report itemized six categories of such issues:

- Commercial law and standards
- Data protection, security, fraud, and abuse
- Intellectual property rights
- Taxation
- Privacy
- Content issues

The predominant questions for telecom regulators associated with these types of issues in general are:

- 1) In what ways, if any, are they relevant to the functions and responsibilities of telecommunications regulation; and
- 2) What actions, if any, should the regulator take to address them?

The discussion in the Colloquium generally favored a minimalist philosophy for regulation. When applied to the issues discussed in this section, this suggests that the telecom regulator should avoid imposing itself in deliberations and decisions where other sectors, and other policy agencies, should be taking the lead. This means that the telecom regulator should limit its actions to becoming informed about the issues, and perhaps participating in national fora on e-commerce that may cover the full spectrum of policy

questions. But it is not within the province of a telecom regulator, for example, to be taking initiatives or setting rules regarding data security or the establishment of authentication authorities (although issues relating to the security and reliability of the networks themselves does fall within the normal province of the telecom regulator).

However, a number of activities and developments occurring within the telecommunications realm are linked to many of these electronic commerce issues. For example, when new service providers such as GMPCS operators apply to be licensed in a given country, they may often be required to accept a number of obligations with regard to data security, fraud, content, and so forth. These types of requirements may arise from decisions by policy makers in various areas of government, and not only (or even mainly) in telecom regulation. But the licensing function, and regulatory oversight of the operator's activities, is the responsibility of the telecom regulator. The regulator may thus be placed in a position of implementing and enforcing certain "non-telecom" policies, simply because it may be licensing facilities or operations including a "bottleneck" role, and making rules concerning control of data inherent in telecommunications network services.

Among the several areas where this potential encroachment of "non-telecom" issues may be most imminent for telecom regulators is the protection of personal data and privacy rights. Telecom operators have, by the nature of their business, unique access to databases of information about all of their subscribers, including not only directories of names and addresses (valuable in themselves), but usage statistics, spending patterns, and possibly, in the realm of Internet services, a whole range of highly specific demographic and economic data. The potential commercial value of such information, either to third parties or to the operators themselves in an e-commerce environment, creates disturbing incentives for abuses in the distribution and use of these databases. From another perspec-

tive, the same information may be valuable to government authorities, such as law enforcement agencies, not to mention tax officials.

What then is the appropriate role of the telecommunications regulator in the context of these changing conditions and relationships, spurred by the opportunities of electronic commerce? In part, the answer may depend upon the regulatory philosophy already adopted in the established (“classic”) realm of telecommunications regulation. Does the regulator see itself as an advocate, proactively promoting the development of electronic commerce? Is its role to enable market activities without necessarily encouraging them?

In many developing countries the entire range of electronic commerce policy issues may represent uncharted territory to an even greater degree than is the case in industrialized countries. Telecommunications infrastructure and access, and the role of new entities such as ISPs, may perhaps be the most critical focus for policy-making. In these circumstances, the telecom regulator – given its influence over infrastructure issues and also its expertise in the field – may play a significant role in the design of comprehensive national e-commerce policies. Here again, however, the discussion at the Colloquium favored market-based, minimally regulated solutions.

There is a difference, however, between helping making government policy in these areas, and regulatory implementation or enforcement of such policies. The telecom regulator can be an informed advocate and even a leader in the process of policy making, but the functions of telecom regulation as strictly defined should not be expanded to include control over policy in non-telecom areas. For example, national policy may dictate that personal data should be protected by telecom operators. The telecom regulator may take on a certain degree of responsibility to

implement that policy, for example through license conditions or other rules. But it should not be up to the regulator to define the policy unilaterally in the first instance.

It is apparent that the overlap of roles and issues will not be easily resolved, and circumstances will vary considerably in different countries. In some developing countries for example, it may not be practical for the telecom regulator to assume more than a peripheral role with regard to e-commerce activities, particularly if it has only recently been established and does not have substantial resources or experience. In other developing countries, however, the telecom regulatory agency may prove to be the only place in the public sector where at least some of the capabilities needed to tackle these issues are available.

The roles and functions of telecom providers, as well as regulators, are evolving in ways that no one can safely predict. Given this uncertainty, it may be most useful to define a set of general principles to guide regulators' approach to the question of whether, and to what extent, they should concern themselves with these issues. These include:

- 1) Concentrate principally upon fulfilling the "classical" responsibilities of the telecom regulator, as they apply in an environment of market opening and expansion (as discussed in the previous section).
- 2) Become informed, and share information, about the range of e-commerce issues beyond the traditional realm of telecom regulators that are being discussed worldwide.
- 3) Participate in and contribute to national policy deliberations on e-commerce, in particular offering expertise and advice with respect to telecommunications infrastructure and technology issues.
- 4) Maintain a focus on telecom-specific issues. Where new national policy mandates may be established, approach them with a strong predisposition toward non-intervention and minimalist regulation.

## **Section IV – Role of the ITU**

In considering the appropriate role of the ITU, it is important to distinguish among the various players and entities involved. These include Member States, private sector members, as well as the Sectors themselves, the various permanent Secretariats, and so on. For this reason, the complex, decentralized structure of the ITU often makes it difficult to refer to an “ITU role” or “ITU position”.

When considering the proper ITU role and whether it should lead, follow, help, facilitate or get out of the way in particular instances, it is also important to distinguish between different ITU activities. Regarding the issues of transport of signals – the traditional telecom function – the ITU plays a leading role, for example, through certain kinds of standardization (even though other kinds are handled through self-governance by operating businesses). Regarding specific e-commerce *applications*, the ITU does not have a key role. Furthermore, electronic commerce is market-driven and is developing at an extraordinarily rapid pace, while the ITU, although increasingly opening its doors to the private sector, is nevertheless in large part an intergovernmental organization, and this tends to delay decision-making.

The emphasis of the Colloquium on minimalist regulation and allowing market-based development of e-commerce technologies and services suggests that the ITU should not be looking to issue new sets of standards or regulations, or to create new treaty obligations in this emerging area. The ITU is already coordinating its deliberative and research efforts on certain important issues, such as network security, and data transmission, with other international bodies and private organizations. Moreover, while self governance by users and commercial players in the field of technical standardization will (and should) continue in the Internet community and in other areas relevant to e-commerce, such as payment systems, the ITU standardization role in certain fields can (and should) continue to make a vital contribution. Access to e-commerce via high speed modems, digital local networks, and third-generation (3G) modem

networks standardized by the ITU is a clear and vitally important example. These various types of work will continue to contribute to the development of e-commerce, but there is not a need to set forth any particular ITU position on electronic commerce regulation *per se*. Because of the speed of technological and commercial developments, the necessarily more slow-moving, standard-setting process, and the potentially negative effect of premature, or wrong, standards in a rapidly evolving field, great caution should be exercised in considering the development within the ITU of standards for aspects of e-commerce other than the operational networks or facilities to transport signals and provide access.

Nevertheless, several institutional roles can be identified for the ITU to help foster the growth of global electronic commerce, such as:

- i) following in detail what is happening in electronic commerce;
- ii) gathering and disseminating relevant technical, market, and regulatory information and advice to its developing country membership regarding electronic commerce;
- iii) contributing technical expertise and support to the implementation of e-commerce initiatives in member states, while sharing the experience and knowledge of such endeavors with its membership as a whole;
- iv) selectively focusing, but also accelerating and intensifying its standardization work in areas complementary to the technical self-governance activities of the Internet and the operational and commercial communities; and
- v) putting forward recommendations to help assure the security of telecommunications, in collaboration with service providers and customers.

The ITU's Sector structure and membership, in which private sector companies play a direct and autonomous role in the ITU's activities, can greatly facilitate carrying out the five potential ITU roles just identified.

## Section V – Conclusions

1. The Colloquium’s focus was limited to the role that telecom regulators and policy makers should play in fostering the growth of the Internet. More specifically, our analysis and conclusions are designed to provide the telecom regulator, particularly in developing countries, with a framework within which each can decide on its appropriate role in response to the ever-increasing Internet-related activities.

2. The telecom regulator should keep informed and appraised about all aspects of e-commerce, and should help where it can, but should mainly “stick to its knitting” – the classical functions of promoting competition, access, and interconnection. Why?

- Because no one else will do it, and
- Because doing so will help the rapid growth of e-commerce.

Put another way, the telecom regulator should focus on the *transport* of signals, not on the *content* of those signals or applications.

3. Taking the following actions, for example, would substantially promote the development of e-commerce:

- Expanding the supply of the backbone infrastructure, and increasing the ability to interconnect to it
- Encouraging different kinds of access, including access to broadband networks
- Encouraging competition in the local loop
- Unbundling the network services provided by operators of telecommunications infrastructure, specifically the incumbent operator
- Removing restrictions on wireless operators.

All these objectives constitute the basic mandate of the modern telecom regulator and policy maker (and many are in fact reflected in the WTO Reference Paper) – and would be important or desirable even if electronic commerce did not exist. But their effective implementation can have a tremendous impact on promoting the development of electronic commerce.

4. In addition to opportunities there are risks, which need to be avoided or minimized:

- The risk of the incumbent telco or PTT dominating the Internet Service Provider (ISP) and/or Internet backbone network businesses through anti-competitive behavior, to the disadvantage of competitive ISPs and the development of competition, and thus of the public interest.
- The risk – always present – of inappropriate micromanagement by the telecom regulator.

5. International agencies, such as the ITU and WTO, should adopt a minimalist approach – deferring both to the national regulator but more importantly, deferring to the market place. But within this overall constraint, there are many useful things such agencies can do.

**Attachment 1**  
(to Charmain's Report)

**EIGHTH REGULATORY COLLOQUIUM**  
**14-16 December 1998**

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## **Attachment 2**

### **EIGHTH ITU REGULATORY COLLOQUIUM**

#### DISCUSSION OUTLINE

The Colloquium will not duplicate the numerous and ever-growing number of meetings and discussion on electronic commerce and the Internet.

Rather, our intended audience is a principal constituency of the ITU – the telecommunications policy makers and regulators particularly in developing countries but also in developed countries. Our working assumption is that the marketplace and not the regulator should be the final arbiter of the merits of electronic commerce, and that the explosive growth of this activity and of the Internet can be attributed in good measure to the *absence* of regulation.

For this audience, practical concerns often focus on:

- What do the developments in e-commerce mean for telecommunications regulation?
- What, if any, regulatory actions should be undertaken?
- On what matters should regulatory initiatives be avoided?

To this end, the meeting will be organized to address the following questions (references are to the various sections of David N. Townsend's draft Briefing Report):

- 1) What is electronic commerce? Which aspects are of particular relevance to regulators? (Section II of Townsend Report).
- 2) How are governments and international organizations responding? (Section II)

- 3) What are the specific issues facing the telecommunications policy makers or regulators? (Section III)
    - Do regulators need to do anything different or additional in order for the country to take advantage of the opportunity from e-commerce? And to deal with some of the problems it raises? Recognizing that telecommunication infrastructure is critical to the development of e-commerce, what additional steps should regulators take to enhance that infrastructure?
    - In what ways, if any, should regulators in developing countries act differently than in developed countries?
    - How is the concept, policy objectives, and means to achieve universal service or access likely to change, in the context of the Internet and electronic commerce?
    - From the viewpoint of the telecommunications regulator, what is the most appropriate balance between public and private initiative that will facilitate market development of electronic commerce?
  - 4) On what issues should the telecommunications regulator not get involved, and why? (Section IV)
    - To what extent, if any, should telecommunications regulators in developing countries take the lead, or otherwise participate, in the deliberations over general e-commerce policies? How can interworking among various relevant agencies be facilitated?
  - 5) What, if any, role can the ITU play in facilitating the development of electronic commerce?
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**TELECOMMUNICATIONS  
REGULATORY ISSUES FOR  
ELECTRONIC COMMERCE**

Briefing Report

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Prepared for

**ITU EIGHTH REGULATORY COLLOQUIUM**

**Geneva, 14-16 December 1998**



## Table of Contents

	<i>Page</i>
Executive Summary.....	47
Market Trends and Perspectives.....	47
Telecommunication Market Regulation Issues.....	49
1. Infrastructure .....	49
2. Universal Service .....	49
3. Market structure, competition, licensing .....	50
4. Economic and pricing regulation .....	51
International electronic commerce policy issues and initiatives.	52



## EXECUTIVE SUMMARY

**Market Trends and Perspectives.** Electronic Commerce is a new term for old activities being done in new ways. As long as communications networks have been around, they have always been used to their fullest capability by entrepreneurs to create business opportunities. As advanced telecommunications and computer technologies have taken hold in recent years, they have moved to the center of the international economic infrastructure. Most prominently, the meteoric rise of the Internet and the World Wide Web has accelerated the transformation of global commerce, allowing for instantaneous, inexpensive contact among sellers, buyers, investors, advertisers, and financiers anywhere in the world. The rapid integration of Internet and other telecommunications-based functions into nearly every sphere of business is what has given rise to the recent international focus on the new world of electronic commerce.

Among the principal activities that can be identified as contributing to global electronic commerce are:

- Subscription and usage-based telephony, online, and Internet access services
- Subscription or transaction-based information services and software sales
- Consumer retail sales
- Business-to-business wholesale and retail services and sales
- Advertising and marketing services
- Financial services and transactions
- Government services and information
- Ancillary functions contributing to business/commercial activities

The vast majority of this activity to date has been taking place in countries with advanced economies and infrastructure, such as OECD members. For developing countries, electronic commerce presents important new opportunities to achieve a more level playing field vis-à-vis larger, more developed economies, as it diminishes in-place advantages of cost, communication, and information, and creates huge new markets for indigenous products and services. While many developing countries are beginning to take advantage of the potential of e-commerce, there remain critical challenges to be overcome before the vision of a truly integrated and equitable world economy can be realized. Chief among these for most developing countries, and the principal subject of this report, is a widespread lack of access to the basic telecommunications facilities and services that underlie all electronic commerce.

Telecommunications regulation, therefore, is of central importance to the prospects for further expansion of electronic commerce opportunities, especially in the developing world. In the past decade, important changes have been taking place in the areas of telecommunications policy and market structure in many parts of the world, with the aim to establish more market-oriented, efficient, and accessible networks and services. The elimination of monopolies and introduction of global competition has given to regulatory authorities, often newly created, a primary responsibility for facilitating these market transformations. With the emergence of electronic commerce as an important new force for growth, these objectives have become all the more urgent. The tools of regulation, in support of market forces, include the following:

- Market structure regulation, licensing
- Resource allocation
- Tariff regulation
- Interconnection regulation
- Dispute resolution
- Strategic planning and coordination

**Telecommunications Market Regulation Issues.** There are four principal areas in which telecommunications regulation is directly linked with the development of electronic commerce. Creative and coordinated regulatory practices, including the all-important ability to know when *not* to regulate, can play a leading role in facilitating new opportunities for large and small businesses, consumers, and public institutions to benefit from the new global economy.

1. *Infrastructure:* Telecommunications infrastructure that supports electronic commerce consists of three main elements: backbone networks, access services, and end user equipment and services. All of these require investment, expansion, and innovation to permit the most robust applications of electronic commerce. In general, it is not the regulator's role to directly manage the development of infrastructure, but regulatory policies toward market participation will influence the incentives for operators to install and upgrade needed network facilities.

The range of specific regulatory methods and options relating to infrastructure investment includes:

- 1) Regulatory forbearance (Let the market decide)
- 2) Incentive regulation (Risk and reward)
- 3) Service and technology mandates (Central control)
- 4) Regulation at the margin (Capturing externalities)

2. *Universal Service:* For developing countries, the goal of providing universal telephone service, or universal access to communications and information technologies, has been a paramount component of telecommunications policy. With the advent of electronic commerce, a new dynamic may be emerging, that can change some of the most basic traditional views of universal service opportunities and constraints:

- *Electronic Commerce has the potential to change dramatically the economics of telecommunications access. As merchants seek to reach wider markets, and consumers achieve more tangible benefits from communications, the economics of both demand and supply are changing.*

- *Basic voice telephone service may be becoming an anachronism as the most “essential” service.* Access to data transmission, electronic mail, the Internet, and other new services and applications, particularly those that support economic development, may supercede mere voice telephony in universal service policies.
- *Technical and market options for achieving “basic” connectivity, and for convergence and integration of services, are expanding.* Innovative technologies driven by market incentives are continually expanding the options for bringing advanced communications access to rural, low income, and specialized user groups.
- *Local community and private entrepreneurial initiatives can be as important as national policies and multinational investment.* There are more opportunities than ever for local businesses, governments, and organizations to take a lead role in bringing communications services to their communities.

Given these changing perceptions, telecommunications regulators should consider revisiting traditional universal service policies and objectives. A new range of options may be available, and through cooperation with the private sector, other public institutions, and the international community, a range of experience and best practices can emerge that could accelerate the delivery of economically beneficial communications services throughout the world. The most important among these options is the concept of promoting community-based “telecentres,” which can provide access to a broad range of technologies and services, under a private, locally operated market model.

3. *Market structure, competition, licensing:* Perhaps the most important actions that regulators can take to effect real market change in telecommunications are to open service markets to competitive entry by new carriers, providing expanded and new technologies and services at all levels. The process of market opening

involves a variety of steps relating to licensing terms and conditions, as well as definitions of responsibilities and restrictions of entry. In many cases, only minimal efforts may be required, after the lifting of former barriers to new entry.

Regulators potentially face competition and licensing options that will affect prospects for electronic commerce development in at least these areas:

- Telecommunications transmission services, including the markets for data transmission services, and for basic telecommunications access. Data transmission is particularly amenable to ready competitive entry, and should require little if any regulatory intervention. The process of opening basic services can be more complex, and involves numerous options for segmenting the markets, and linking investment opportunities and obligations.
- Internet access and value added services typically should not involve any particular licensing regime, although this has been the practice in many countries. As add-ons to the public network these computer-based services can flourish competitively without undue restrictions. Regulators should, however, be wary of the prospect that entry of dominant telephone operators themselves into Internet and value added markets could lead to anticompetitive consolidation.
- Information and gateway services similarly should not require any licensing regime, but there is again some potential for abuse if dominant telephone operators become actively involved in these markets. Opening basic telephony to effective competition would be the best means to forestall this type of ancillary market dominance.

4. *Economic and pricing regulation:* In transforming and developing markets, telecommunications regulators retain responsibility for economic and pricing regulation to the extent competitive forces are not fully effective. The key principle of tariff regulation should

be to encourage cost-based, market-oriented pricing for services, with minimal cross-subsidies or other distortions. This especially applies to interconnection pricing in an emerging competitive market. In the context of electronic commerce, the growth of Internet and data services will strongly depend upon efficient pricing for underlying telecommunications access and interconnection services.

In the specific case of basic local telephone service tariffs, concerns have been raised that the radically different usage patterns often engendered by Internet services will undermine the cost and pricing relationships for the basic network. High volume users, who also tend to have high incomes, should not be subsidized by other local telephone subscribers. The options for addressing this potential problem again rest with cost-based rebalancing of tariffs, but should avoid imposing new and inhibiting charges on Internet Service Providers.

**International electronic commerce policy issues and initiatives.**

Beyond telecommunications-specific regulatory issues, there is a wide range of policy and regulation questions surrounding implementation of electronic commerce, which have been the subject of numerous international conferences and negotiations. In the developed world, where basic telecommunications infrastructure access is not the overriding concern that it is in developing countries, these legal, technical, and social issues have moved to the forefront of e-commerce deliberations.

Telecommunications regulators need to be aware of, and participate in policy reviews on all levels, for a number of reasons. Particularly in the developing world, these issues will be addressed in tandem with telecommunications regulation questions, and it will be especially important to create coordinated, harmonized approaches. The expertise of effective telecom regulators, together with their leading position in supporting market-oriented infrastructure expansion, can be a vital asset to the policy making process.

The most prominent policy issues of which regulators should be aware include:

- Commercial laws and standards, that will apply to electronic signatures, contracts, and business relationships;
- Data security, fraud, and abuse in access to and use of electronic information;
- Intellectual property rights in a digital environment, where information and software can be easily pirated, and where Internet domain names are becoming a vital resource;
- Taxation questions and problems relating to electronic commerce transactions;
- Privacy rights for individuals whose online activities can be readily monitored and recorded; and
- Content related concerns of many governments and citizens, for whom certain types of information transmissions may be objectionable, illegal, or dangerous.