Current international issues in communications regulation: refining regulatory techniques, impact of wireless' popularity on regulation, and the growing significance of cable television[1]

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Draft, September 11, 2003

For Policy Research Conference on
Communication, Information and Internet Policy
September 19-21, 2003, Arlington, Virginia

[1] *The authors thank Doug Webbink and Patricia Cooper for their comments on this paper. This paper only represents the personal views of the authors and does not reflect the position of the FCC, nor of the countries that are discussed.*

At the Federal Communications Commission (FCC), we frequently correspond with communications policy makers and regulators in other countries. During 2002 alone, the International Bureau staff met informally with over 500 visitors from more than 100 countries, in addition to the several dozen formal government-to-government talks which take place regularly. The majority of meetings are with regulators and policy makers from developing countries who seek insight in how to better manage policy issues at home. From these discussions, we have gleaned several clusters of issues where further research would directly benefit policy makers and regulators. While this paper does not reflect the official view of the FCC or the other countries discussed, it is offered as an informal set of notes from the field on pressing questions that regulators are discussing today. They fall into three main areas. First, related to regulation in general, is refining techniques for decision-making, rules enforcement, and understanding consumer issues. Second and third are specific issues which require application of such techniques. One is the impact of impact of wireless' popularity on regulation. The other is the growth of cable television's significance in the communications industry.

A decade ago there were very few telecommunications regulatory authorities in either developed or developing countries. In fact, in 1990 there were only 13.[2] Since that time, the number has roughly doubled every four to five years. Today there are no less than 119 regulatory authorities.[3] While there is a lot of literature on the importance of an

[2] World Telecommunication Development Report 2002. International Telecommunication Union, 51, as cited in "Domestic Enforcement of Telecom Laws, Best Practice Guidelines," ITU-D Question 18/1, Rapporteur's Draft No. 2, July 2003, 3.
[3] Domestic Enforcement of Telecom Laws, Best Practice Guidelines" ITU-D Question 18/1, Rapporteur's Draft No. 2, July 2003, 3.

independent regulator,[4] there has been relatively little work on what techniques regulators can use to achieve their objectives. Further, there is a bias in the literature that favors the study of large markets in high income countries. This is natural, as the information from these kinds of markets and countries is more voluminous and easily available.

In a recent meeting of countries from eastern and southern Africa, for example, regulators highlighted the lack of basic data on the telecommunications industry for the entire region. They also emphasized the need for reliable information to support of their efforts to liberalize their telecom markets.[5] Regulators in countries with a highly developed regulatory structure often complain about information asymmetry, where regulators have less information than they need or only imperfect information about the firms they are regulating. Regulators in developing countries have to tackle an even more fundamental problem. In many cases they not only have imperfect information about the firms being regulated, but also have no reliable data on the industry and the economy as a whole.

By examining the effects of rules that were adopted earlier in other countries with similar demographic and economic profiles, regulators can assess the potential effects that proposed regulation might have in their own country. Moreover, regulations that

[4] See, for example, Giandomenico Majone, Regulating Europe. Routledge: London, 1996; Brian Levy and Pablo Spiller, "The Institutional Foundations of Regulatory Commitment: a Comparative Analysis of Telecommunications Regulation," Journal of Law, Economics, and Organization. 1994, 201-246; J. Luis Guasch and Pablo Spiller, Managing the Regulatory Process: Design, Concepts, Issues, and the Latin America and Caribbean Story, World Bank: Washington, D.C., 1999; Peter Cowhey, "The Political Economy of Telecommunications Reform in Developing Countries," in Implementing Reforms in the Telecommunications Sector: Lessons from Experience. Bjorn Wellenius and Peter Stern, eds. World Bank: Washington, D.C., 1994 ; Martin Cave and Jon Stern, "Regulatory Institutions and Regulatory Policy for Economies in Transition," in Regulating Utilities: Understanding the Issues. M.E. Beesley, ed. Institute of Economic Affairs: London, 1998.

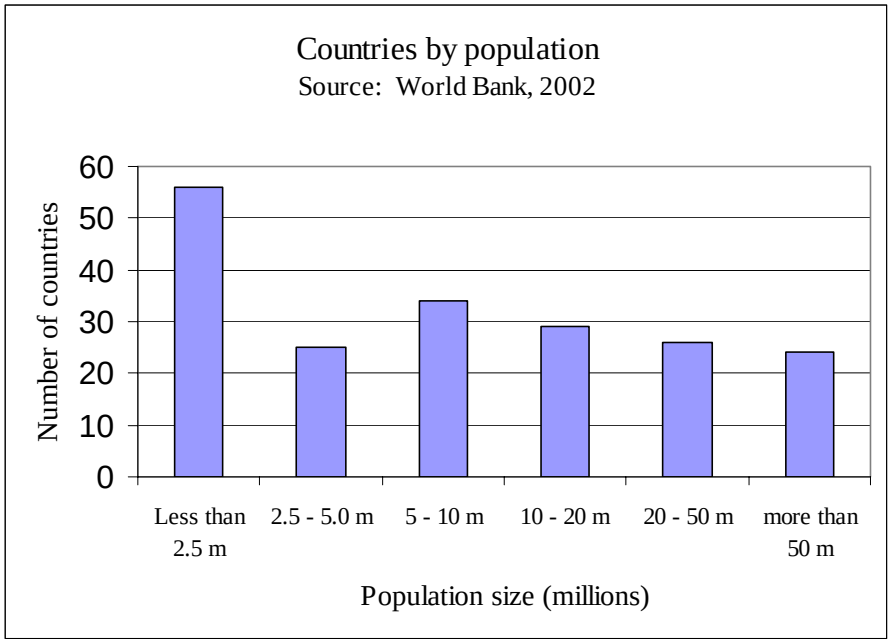
[5] Common Market for Southern and Eastern Africa Meeting, Cairo, Egypt. July 2003.

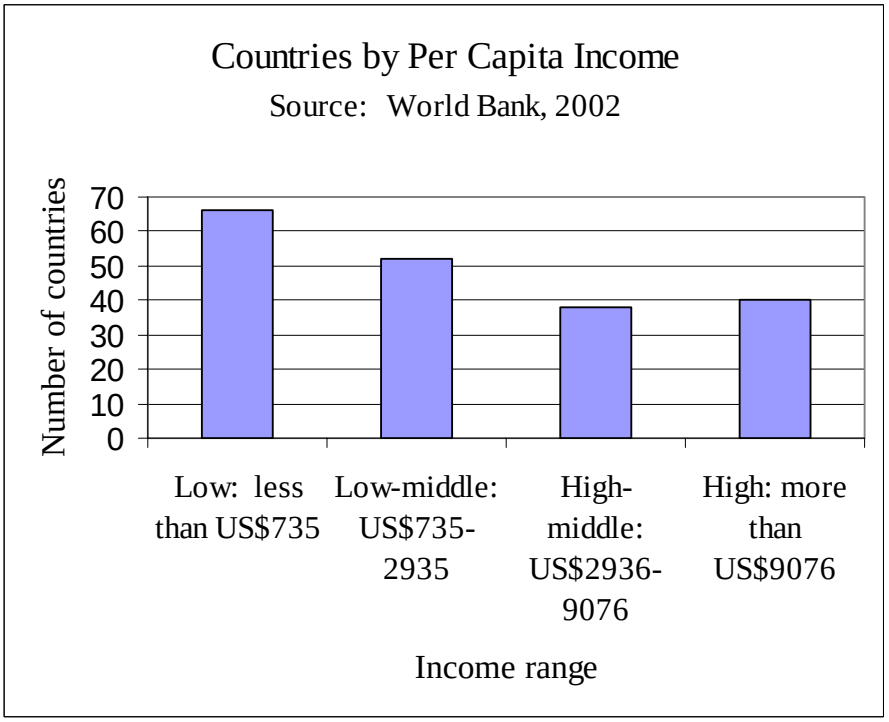
have international implications, such as the accounting rate for international calls, could be set more effectively if calling patterns, and economic and demographic variables including immigration, were clearly understood by regulators in all affected countries. However, this requires cross-sectional data from other similarly situated countries that contain firm level, industry, and broad socio-economic data to establish benchmarks.

In a step toward filling this data gap, the FCC is developing a database that contains telecommunications industry data as well as a host of socio-economic data from the US and many other countries. We believe that this database will be useful to regulators in the US and in other countries to analyze proposed telecommunications regulations and policies. This database is being compiled now and will be updated periodically with data from various public and academic sources.[6]

Another factor not often reflected in the literature on communications regulation is that most markets in the world have less than 20 million population and are at low or middle income level of economic development, as shown by the two graphs below.

[6] For more information on this database, contact Kiran Duwadi, Economist, Regional and Industry Analysis Branch, International Bureau, Federal Communications Commission. Kiran.Duwadi@fcc.gov





Very often, once regulatory objectives have been defined, it is necessary that they be implemented efficiently with a lean staff. In a recent survey of 18 markets, we found that half had fewer than 250 staff, including substantial numbers of support staff, to regulate

both telecommunications and broadcast.[7] Ideally, policy and regulatory recommendations by researchers would not require dozens of professional staff to conduct analysis and make decisions.

1. Regulatory Techniques: Enforcement, Decision-making Procedures, and Consumer Information Issues

This section discusses three aspects of regulatory techniques: the decision making procedures that help shape rules, the problems faced in good enforcement of the rules, and challenges in understanding consumer concerns in a competitive market.

Decision-making procedures. What kinds of steps can government organizations can take to enable open and transparent decision making? As one frustrated Costa Rican official commented recently, just organizing public meetings does not seem to result in an interested, participating, public.[8] About five years ago, when Japan's Ministry of Posts and Telecommunications, now the Ministry of Public Management, Home Affairs, Posts and Telecommunications (MPHPT) first began issuing proposals for comment, very few parties commented. Now, there is an active community of operators and others who participate. Is this simply a question of regulatory persistence over time? Or are there other factors at work? A preliminary foray into this area is Xue and Wu's paper on decision-making procedures and ethics rules.[9] However, simply describing the

[7] For more information, contact Irene Wu, corresponding author. Study results will be released in third quarter 2003.
[8] Meeting with Autoridad Reguladora de los Servicios Publicos, Direccion de Telecomunicaciones. Washington, D.C. August 8, 2003.
[9] See www.fcc.gov/globaloutreach for Irene Wu and Cathleen Xue, "Decision-making Procedures and Ethics Rules: the Practical Enablers of Integrity and Impartiality in Telecommunications Regulation." 2002.

procedures of various regimes is not enough, more work needs to be done to examine what works effectively in engaging a previously unengaged public in regulatory decisions.

Enforcement. While there is substantial literature on how rules should be established to regulate firms in a competitive communications market, there is comparatively little literature on how to enforce such rules. A good starting point is a chapter in Baldwin and Caves' *Understanding Regulation* which describes how enforcement of regulation in general can be considered.[10] More specific work from the communications world with examples of particular cases would be enlightening.

From our dialogue with other regulators, it appears to us that failure to consider enforcement during the drafting of rules can lead to the creation of meaningless rules that market players simply ignore. In recent years callback services and Internet telephony are among the most remarkable international examples. While many regimes insist, for variety of political and economic reasons, on tightly regulating these services, the failure to consider the enforceability of such regulation has doomed such approaches to failure. In the cases of callback and Internet telephony, many other interests are at stake other than enforceability of rules. Nevertheless, from the standpoint of operating an efficient regulatory agency, the expenditure of staff time and energy to create and implement a policy that cannot be enforced seems misguided, especially given the number of pressing problems inevitably facing a regulator of a competitive market.

Interconnection is another area rife with enforcement problems. For example, in a discussion with the Shaanxi Province Telecommunications Administration in China, officials expressed concern about interconnection disputes they faced. Not only were

[10] "Enforcing Regulation" in Robert Baldwin and Martin Cave. Understanding Regulation: Theory, Strategy, and Practice. Oxford: New York, 1999. 96-117.

there terms and pricing problems, but also, basic questions of how many minutes operators were exchanging were in dispute.[11] Recently, Sri Lankan telecom operators complained that while interconnection was promised, it was not delivered by the incumbent. The regulator's ability to issue monetary fines was capped by law at a low level, and, indeed, appears to never have been exercised to enforce interconnection obligations.[12] Similarly in India, operators complain that while FLAG and Bharti submarine cable systems should be able to interconnect with domestic operators' networks, incumbent VSNL is able to prevent it.[13]

To address this gap, the FCC and several other countries are involved in preparing best practice guidelines for enforcing domestic telecommunications laws in the International Telecommunication Union (ITU) Development Sector and in Asia Pacific Economic Cooperation (APEC). In March 2003, APEC held a workshop on "Enforcing Pro-Competitive Polices." Singapore proposed to establish a drafting group to develop guidelines and best practices to assist APEC economies in developing and improving regulatory enforcement. Australia, Canada, Philippines, Thailand, and the U.S. are the other members of the drafting committee. The guide proposes to include practical examples of enforcement procedures tools and other key success factors that lead to effective enforcement, explain the relationship between compliance and enforcement,

[11] Meeting with Shaanxi Province Telecommunications Administration, Peoples Republic of China. Xian, China. January 2002.
[12] Meeting with Sri Lankan industry representatives. Colombo, Sri Lanka. August 2003.
[13] Meeting with Indian company representatives. Chennai, India, and Washington, D.C. August 2003.

introduce the environment today and the need for effective enforcement.[14] Drafting has begun and the goal is a final paper by March 2004.

At the ITU 2002 World Telecommunications Development Conference in Istanbul, Turkey, a study question on "Domestic Enforcement of Telecommunications Laws and Policies, Best Practice Guidelines" was adopted. The US serves as Rapporteur for the project, with Vice Rapporteurs from Brazil, Sri Lanka, and France. Additionally, 17 countries identify themselves as Active Collaborators. The objective of this exercise is to develop guidelines for national regulatory authorities (NRA) to effectively enforce their domestic telecommunications laws, with special emphasis on challenges faced by developing countries. However, since there are relatively new NRAs from both developed and developing countries, the conclusion will be a menu of guidelines for application in diverse circumstances.

Of the seven items covered in the ITU study question,[15] one item in particular has little literature available on it -- specific methodologies for determining appropriate sanctions for common violations a NRA encounters when regulating the telecommunications sector. Thus far, the ITU group has recommended that when issuing a sanction, an NRA consider the severity of the harm, the cost of enforcement, the probability of detection, and the risk sensitivity of the offender. However, there is still no specific methodology available for quantifying each of these elements in the

[14] For the U.S., the main representative for this project is Anita Dey, Regional Specialist for Asia, International Bureau, Federal Communications Commission. Anita.Dey@fcc.gov. The Chair of the group is Colin Tan Thong Tee, Manager/International. Infocomm Development Authority of Singapore, tan_thong_tee@ida.gov.sg.

[15] Seven sub-elements are covered: (i) Source of Enforcement Power; (ii) Process; (iii) Sanctions and Penalties; (iv) Organization and Resources; (v) Independent Decision Making; (vi) Barriers/Challenges; and (vii) Gender. Guidelines for common violations of specific areas (e.g., interconnection, radio interference) will also be addressed.

telecommunications context. In the case of radio interference, for example, what is an appropriate formula or methodology for quantifying the harm caused and what elements should be taken into account when setting a fine? In other words, specifically in the telecom context, how does an NRA set a fault standard equal to the harm, and a fine at a level that achieves compliance with that standard? Are there economic models, for example, that could be developed for this purpose? The Rapporteur would welcome contributions in this vein.[16] Also, there are larger questions, such as, are there perverse results from the lack of enforcement? Are contracts made less valuable, is investment dampened? Does the failure to enforce some rules mean that other rules are also more likely to be routinely violated as well?

Consumer issues. The possible role of the regulator in responding to consumer concerns is another area where there is little prior academic work. The overwhelming preponderance of literature on communications regulation focuses on the regulation of firms. Very few studies have been undertaken to examine consumer response to competition and to understand in greater detail the challenges consumers face in making the transition from a monopoly to competitive environment. Recently, when the United Kingdom's telecommunications regulator Oftel undertook a decision on mobile termination, it had data on consumer sensitivity to prices for calls to mobiles. Oftel had information that large enterprise users, small enterprise users, and individual users were more, less, and even less sensitive, respectively, to price changes for calls to mobiles.[17]

[16] The Rapporteur is Roxanne McElvane, Senior Counsel, International Development, International Bureau, Federal Communications Commission, Roxanne.McElvane@fcc.gov.
[17] See Office of Telecommunications (Oftel), "Consumers Use of Fixed and Mobile Telephony," quarterly survey of consumers at www.oftel.gov.uk/publications/research/index.htm

Oftel had this data because it regularly conducts consumer surveys on key topics. Do other regimes similarly make efforts to gather data on consumer behavior?

The relationship between gender and access to and use of communications services is one of the outstanding consumer issue areas where more research could be undertaken. There is a substantial development and economics literature documenting the negative of effect of gender inequality on a country's educational level, income, and economic growth, but little comparable investigation in the communications field.[18] This is in contrast with the substantial literature on rural communications issues, even though women often constitute as large or often a larger percentage of a country's population than rural consumers. In the field of development economics, the failure to consider gender issues in implementing policy has been proven to have negative consequences for economic growth. Do women and men have different access to or responses to communications technology and change? If so, as the development literature would suggest, what would be the implications for regulatory decisions and the design of programs?

Finally, many regulatory agencies or their governments have established special mechanisms or created specific organizations to represent consumers' interests relative those of firms. Australia has a Telecommunications Industry Ombudsman. Many media regulators, such as Hong Kong's Broadcast Authority and the Swedish Broadcast

[18] For example, see the World Bank's Policy Research Report Working Paper Series at www.worldbank.org/gender/prr/wp.htm. Examples include Stephan Klasen, "Does Gender Inequality Reduce Growth and Development? Evidence from Cross-Country Regressions," November 1999; David Dollar and Roberta Gatti, "Gender Inequality, Income, and Growth: Are Good Times Good for Women?," 1999; and Agens Quisumbing and John A. Maluccio, "Intrahousehold Allocation and Gender Relations: New Empirical Evidence," October 1999. See also World Bank's Gender and the Digital Divide Seminar Series at www.worldbank.org/gender/digitaldivide/index.htm

Commission, serve primarily as channels to handle audience complaints. India has a separate consumer courts system that covers communications issues. To date there have not been cross-country comparisons of what kinds of mechanisms are most effective at assessing or improving consumers' ability to make satisfactory choices. Of course, ideally, in a competitive market, consumer satisfaction should not be a major problem because inefficient or bad service providers are eliminated. But, if there are information asymmetries, what techniques may usefully employ to help consumers overcome them?

2. The Changing Relationship between Wireline and Wireless Telephony

In many countries, wireless subscribership now or soon will exceed wireline subscribership, fundamentally challenging market definitions that have been the basis for policy making. This is especially striking in developing countries where wireless may be primarily a complement, rather than substitute for wireline telephony.[19]

Countries Where
Cellular Subscriptions Exceed Wireline Subscriptions on a Per Capita Basis
Source: ITU World Telecommunications Indicators
Income categories based on World Bank classification

	Low income countries (2001)	Low-middle income countries (2001)	High-middle income countries (2001)
1996	0 out of 63	0 out of 53	0 out of 37
2001	26 out of 63	14 out of 53	17 out of 37

This significant change in the role of wireless in telecommunications development poses new questions for regulators, or at least old questions in new ways.

[19] For evidence from Africa where this is a common phenomena, see Jacqueline Hamilton, "Are Main Lines and Mobile Phones Substitutes or Complements? Evidence from Africa," in Telecommunications Policy. 27(2003):109-133.

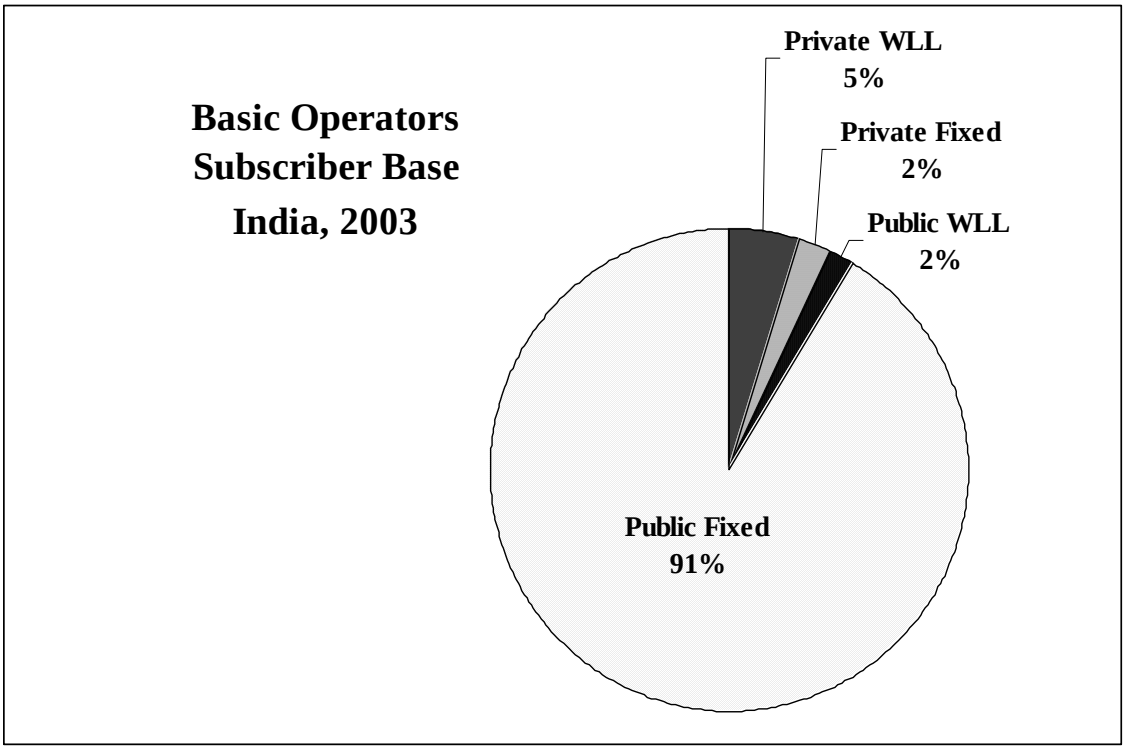
Tension between goals of universal access and affordability. In many markets, a calling-party-pays regime that allows the wireless operator to generate most of its revenue from charging high rates to terminate calls on their mobile network, has enabled the rapid popularization of wireless telephony service. In countries with extensive wireline networks, achieving a reasonable price for consumers to call mobile phones may be the major policy priority, often resulting in regulation of mobile termination rates. Especially in Europe in recent years, this is the trend. However, in countries with limited wireline development, the overwhelming public policy priority may be universal service. For example, in the case of El Salvador, the population of 6.5 million is served by nine fixed and four mobile operators. Some rural areas of El Salvador are exclusively served by wireless operators. Handsets are nearly free, wireless operators generate revenue from termination rates charged to those who call to those handsets.[20] If universal service is the primary policy objective, then regulatory regimes may appropriately have a higher tolerance for high termination rates. At what point in a country's telecommunications development should the regulator's priority be universal access or reasonable pricing?

Emergence of limited mobility service via wireless local loop. The lines separating wireless and wireline service are blurring as wireless local loop creates the opportunity for fixed line operators to offer a near-cellular type of phone service. In China and India, such technologies have grown dramatically in the last few years. In both instances, the foundation for the service is a fixed line network. In China, a version of Japan's personal handyphone system (PHS) seems to be the main technology used to provide wireless local loop. In India, an early generation version of CDMA technology

[20] Presentation by Superintendencia General de Electricidad y Telecomunicaciones (SIGET) de El Salvador. Washington, D.C. August 8, 2003.

seems to be the main technology on offer. They both offer mobile service within a limited geographic range, such as a single city, or part of a large metropolitan area.

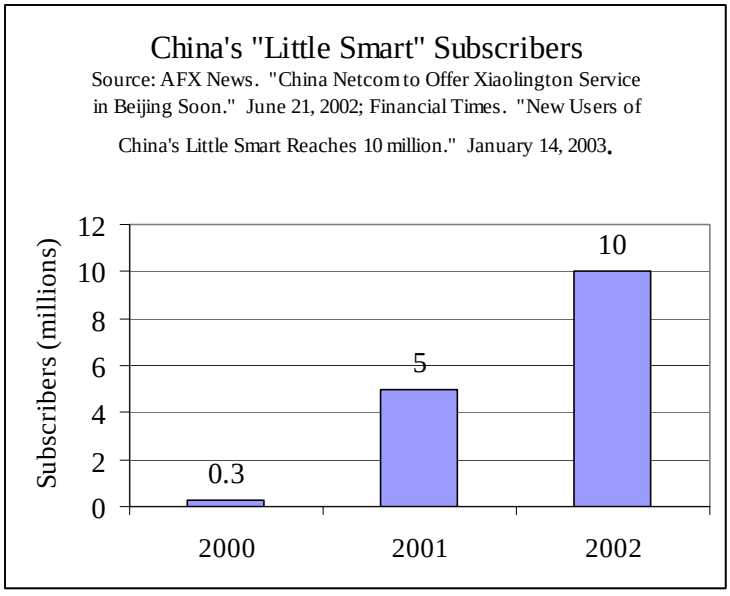
In India, this limited mobility service allows basic operators, those with licenses to operate fixed networks, to get new phone lines to customers much more quickly and cheaply than laying copper cable. While still in its earliest stages, where WLL is deployed it is likely to be popular, since it is a more affordable service than traditional mobile. As the pie graph shows, for publicly owned basic operators BSNL and MTNL, WLL is used by only a small fraction of their subscribers. For the private basic operators, nearly two-thirds of their subscribers are limited mobility service users.



Source: Telecom Regulatory Authority of India. "The Indian Telecommunication Industry Performance Indicators 2002-03." July 2003. Yahoo! India Finance, "Private Basic Telecom Firms have 3 Million Users." July 10, 2003.

While a cheap wireless service is a boon to Indians who cannot afford cellular service, the manner in which the service was introduced has created a sense of regulatory uncertainty for investors in telecom. In addition, the well-organized incumbent cellular operators have fought fiercely against the prospect of new competition from fixed operators with WLL.

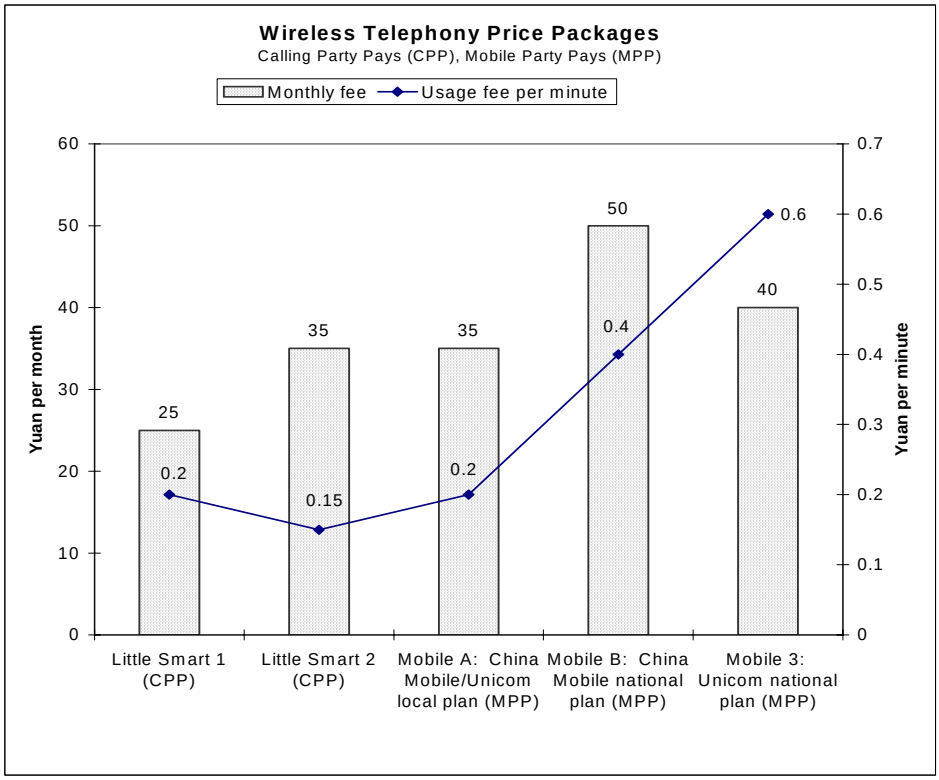
In China, in response to declining revenues from IP telephony and competition from mobile operators, China Telecom and China Netcom are providing "Little Smart" *(Xiao Ling Tong)* limited mobility wireless service. While critics complain that the quality of the service is poorer than cell phones and the network is prone to congestion, the service in China also meets a major need in the market - a type of mobile service at a lower, more affordable price.



The Little Smart began in 1997, as a service approved by the government only for rural areas. However, China Telecom was able to resist the Ministry's decisions limiting of the service and by the second quarter of 2003, the service was available nationwide, concentrated primarily in urban areas. As has been the case in India, the regulator's

indecision over six years about how to regulate this service favored the interests of fixed operators over the mobile operators.

The following graph compares two common Little Smart packages with three common mobile packages. China's mobile operators historically used a mobile-party-pays regime, but the advent of Little Smart services with a calling-party-pays regime has increased pressure on mobile operators to also shift to calling-party-pays.



The growth of wireless local loop service in China and India is compelling because these markets have sufficient scale to foster technological innovations that meet the particular needs of developing economies. We are aware that other wireless local loop technologies,

such as the corDECT system, have systems deployed in Argentina, Brazil, Madagascar, Kenya, Nigeria, Angola, Tunisia, Yemen, Fiji and Iran.[21]

Both the growing popularity of cell phone and limited mobility phone services raise some larger questions regarding regulation. For example, historically, regulations have been asymmetric, with more intense regulation of wireline operators as dominant, compared to wireless. Is such an approach now obsolete, and should wireless operators be regulated as dominant? What are the implications for universal service obligations, historically the burden of the wireline operator? What conceptions of universal service can replace the current ones, which rely on wireline network development? If such a change occurs, however, how will Internet service develop, if much of a nation's network is connected by wireless, but not wireline?

3. Growing Significance of Cable Television

The advent of technology which enables cable networks to offer telecommunications, Internet, and as audiovisual services, is re-orienting telecom and broadcast regulation in many countries. However, unlike telecom networks, national cable networks have much more diverse histories. Whereas most telecom networks originated as state-owned monopolies, different countries have taken a variety of paths in cable development.

For example, there are some markets with state-owned cable networks. France's cable network is owned by the incumbent telecommunications operator, not an unusual pattern. In Korea, the state-owned telecom company and the state-owned electricity

[21] Meeting with Dr. Ashok Jhunjhunwala, Indian Institute of Technology, Madras. Chennai, India. August 2003.

company for a few years were the only owners of cable television infrastructure in a regulatory effort to limit the influence of *chaebols,* Korea's large conglomerates, in television programming.[22] In contrast, in Brazil, a variety of civil society forces banded together to ensure that the telecom company was not given the right to run the cable television network.[23] Further, other kinds of regimes, such as China's, consider cable networks a foundation of its state propaganda apparatus. In order to ensure key programs, such as the Central China Television (CCTV) evening news, reach as many people as possible, the government offices for television subsidize both cable network investment and household subscriptions. Somewhat like Brazil, but for different ideological reasons, these cable network operators are also resisting entry by the telecom operator into their industry.[24]

Other markets have networks which consist of small community or neighborhood operators. Sometimes these are sponsored by local governments, such as in the Netherlands or the United States. In other cases, they are entrepreneurial ventures operating in response to audience demand for entertainment and news beyond the government monopoly broadcaster. This is the case in Taiwan and India, for example. Both these markets have undergone tremendous consolidation in the past years, and their respective governments have overhauled the applicable regulatory framework. In Taiwan, the most notable challenge has been the inconsistent program offerings available to subscribers due to regular disputes between cable system operators and program

[22] Hyuhn-Suhck Bae and Thomas Baldwin. "Policy Issues for Cable Startup in Smaller Countries: the Case in South Korea." Telecommunications Policy. 22(4/5):371-381.
[23] Patricia Aufderheide. "In Search of the Civic Sector: Cable Television Policy Making in Brazil, 1989-1996." Communications Law and Policy. 2(1997): 563-593.
[24] Sino-International Cable TV Executive Management Conference, Beijing China. March 2003.

providers.[25] India is in the midst of a controversial transition to require subscribers to use set-top boxes. While a instituting a set-top box system may improve opportunities for cable investment and technological upgrade, the political path to achieve such a transition is unclear.

While there are numerous articles on cable development in individual markets, little cross-country work in this area is available. The major exception is recent Organization of Economic Cooperation and Development (OECD) studies of broadband Internet service, which include substantial discussion of cable industries.[26] Cable markets with such diverse origins will have different the structural, political, and cultural dynamics at play. What are the forces of change within a cable market? What is the impact of alternative video services, such as satellite television? Why do some cable markets attract investment necessary to enable delivery of new services such as telephony and Internet, while others do not?

In some markets, cable television subscribership is more widespread than telephone subscribership. India and China are both examples here. Why this is the case? In other markets, cable network development is sparse. The OECD has already identified that if an incumbent telecommunications operator also owns major cable operations, broadband Internet service development is likely to take place more slowly compared to countries that have separate cable and telecom ownership. Does this also apply more generally to the development of cable networks, or are there other important factors?

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[25] Hsiao-Cheng Yu. "Anti-competition Issues between Taiwan's Cable TV System Operators and Channel Providers – New Rules of Engagement?" Telecommunications Policy. 25(2001):485-497.

[26] Organization of Economic Cooperation and Development (OECD). "The Development of Broadband Access in OECD Countries." DSTI/ICCP/TISP(2001)2. October 29, 2001. and

4. Summary

In short, the growth of competition and the convergence of technologies affect regulation today in very practical ways in countries at every level of economic development and market size. The ubiquity or scarcity of cable television networks will have implications for future network competition. The distinction between wireline and wireless operations is growing more blurred, with implications for licensing, universal access, and competition policy. Finally, the accelerated emergence of these and other regulatory challenges creates a demand for more empirically based study of effective regulatory techniques in areas such as decision-making procedures, enforcement, and consumer information.

"Broadband and Telephony Services over Cable Television Networks." DSTI/ICCP/TISP(2003)1. Draft May 9, 2003.

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