

**PROSPERING FROM THE INTERNATIONAL TELECOMMUNICATIONS
REVOLUTION: A PARTY BY “INVITATION ONLY”**

by

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A. Introduction

It seems that not a week can pass without the announcement of yet another telecommunications mega-merger or cross-border joint venture. For example, in the United States, MCI Worldcom, the number 2 long distance provider, recently announced its planned acquisition of Sprint, the third largest long distance provider, in a proposed transaction amounting to approximately \$125 billion U.S. dollars, the largest acquisition or merger ever. AT&T, the number 1 long distance provider in the United States, and largest telecommunications company in the States, has acquired cable giant, Tele-Communications, Inc., and is now in the process of acquiring MediaOne. These acquisitions are part of AT&T's efforts to build a comprehensive network capable of providing (1) local and long distance telecommunications, (2) high-bandwidth Internet connectivity, and (3) interactive television. This AT&T model for building a telecommunications network could be known as the three box model. We live in houses and offices with three boxes; a computer, a TV and a telephone. The AT&T model would make these three boxes into one box, providing the three traditional media services and more -- all of them produced by or provided through AT&T.

In addition, we in the States have seen the seven giant local telecommunications providers (known colloquially as the “baby bells”) reduced in number to four with SBC Communications’ acquisition of both Pacific Bell and Ameritech, and Bell Atlantic’s acquisition of New England’s Nynex. And recently, the smallest baby bell, U.S. West (with a market value of *only* \$30 billion), has agreed to be acquired by Qwest Communications, an upstart telecom company with a high-flying stock price.

Internationally, the story is the same. Whether it be Olivetti’s takeover of Telecom Italia, the acquisition of U.S. wireless provider Airtouch by Vodafone, Deutsche Telekom’s acquisition of Britain’s One-2-One, or Mannesmann’s planned takeover of Britain’s Orange, it appears that the rapid consolidation in the telecom industry will only increase in size and pace over the next decade.

As commentators on the telecommunications and communications industries, we should try to put this consolidation into a coherent perspective. We must ask ourselves, is there a business rationality and a social rationality to this telecom M&A hinge? What is the goal toward

which these telecoms are moving? Is this the proper goal from both the national and international perspectives? And, who are the ultimate beneficiaries of this deal-making?

These pivotal questions are broad. But the economic worth of each of the individual transactions we are discussing is based on concrete assumptions and conclusions about the form of society in the near term and the methods by which groups and individuals in society will share their information, ideas and just plain data with each other.

A fair question already would be, what do I mean by the form society takes in the "near term"? Well that answer is relatively simple. It is the distance in time from the date of the transaction to that future point that the market will credit as the apogee of the combination's profit curve. At a shorter point, the economics of the transaction are not maximized; at a longer point, the economics are fanciful.

And since the market tends to judge economic worth on the basis of a transaction's hard, existing components -- rather than on those components enhanced by a myriad of synergistic possibilities -- the "near term" typically translates into the "very near term." Given this "very-near-termitis," I want to pose the question tonight how these industry combinations will -- or won't -- impact those nations of the world where the internet, advanced telecommunications technology, and e-commerce are barely present.

The perspective that I will share with you today may be seen as somewhat critical of both the private and the public players in the telecom industry. The enthusiasm that I have for the forthcoming changes in the industry is tempered by the concern that those countries and individuals least capable of guiding the transformation of the industry will, in many ways, be forgotten or ignored; and consequently, that those countries and their peoples will suffer the effects of not participating in the revolution in international telecommunications and the many other industries that are geometrically enhanced by that revolution.

Initially, I will assess the consolidation of the industry in the U.S. and Europe and discuss why such consolidation will lead inevitably to an industry dominated by "mega-firms" that control both the channels of communication and much of the content transmitted over them. Then, I will discuss why a future industry structured as such is highly susceptible to excluding the peoples of developing nations -- and indeed the underprivileged and underserved of all nations -- from the innumerable benefits (social, health, economic, political, experiential) that devolve from significant advances in telecommunications technology. Finally, we will talk about ways in which the governments of developed and developing nations can reduce the harmful and exclusionary effects of an industry left to its own devices.

B. Prior Industry Consolidations

But before we consider what the future holds, we must pay proper obeisance to George Santayana and consider the path that has led us to our present situation.

The 1990s has been the decade of legislative reform in the telecom industry. In the United States, we passed sweeping reform with the Telecommunications Act of 1996, which is generally

seen as the blueprint for convergence in the telecommunications and communications industries in the States. In Europe, the European Commission, has liberalized the markets for telecommunications equipment and services, thereby paving the way for the current consolidation unfolding before us in Britain and on the Continent. And at the global level, the World Trade Organization produced in 1997 the historic Agreement on Basic Telecommunications, in which dozens of nations committed to the privatization and liberalization of all or many of the sectors in their respective telecom markets over the next several years.

As we approach the end of the 1990s, and have the opportunity to review the preliminary results of these legislative reforms, we shall inquire whether a model of consolidation has presented itself. And, if it has, what that model bodes for the future.

A survey of the consolidation around us yields a variety of sub-models within the overarching theme of "horizontal" and "vertical" integration of the different sectors of the telecommunications and communications industries. For example, the MCI Worldcom-Sprint combination presents a long-distance and wireless powerhouse with ownership of a major Internet "backbone". The new AT&T represents a tremendous bet on the delivery of telephone and Internet services via cable networks. Bell Atlantic's pending merger with GTE represents the first baby bell to make a legitimate foray into long distance. At the same time, Bell Atlantic is combining (through joint-venture) its wireless networks with those of Vodafone, which presents a future Bell Atlantic-Vodafone combination as perhaps the dominant provider of telecommunications services in the U.S. and Europe, with vast and profitable operations in local, long distance and wireless services. And Deutsche Telekom's purchase of Britain's One-2-One, as well as its failed takeover of Telecom Italia, reveals a German desire to be *the* dominant European telecom provider.

When evaluating these sub-models, we may be drawn initially to the logic of one or another for different, and perhaps compelling, reasons. However, upon close review, I believe it is the new AT&T model that presents the most dynamic form of integration in the telecommunications and communications industries. Through its acquisition and proposed acquisition of Tele-Communications, Inc. and MediaOne, respectively, the new AT&T has placed a \$120 billion dollar bet on its ability to create a state-of-the-art network capable of sending and receiving high bandwidth communications to homes and businesses throughout the U.S. and, eventually, throughout the world. At the same time, the new AT&T presents an intriguing (or, depending on your perspective, a disturbing) picture of how the telecommunications and communications industries will merge into an industry where megafirms control both the channels of communication and much of the content transmitted over them.

C. Evaluating the AT&T Model of Vertical Integration

The catalyst for the new AT&T was the erosion of its market share in the long distance sector, and its corresponding need to break into the local market for telecommunications services without acquiring one or more baby bells -- acquisitions that would almost certainly be prohibited by federal or state regulators in the U.S. Faced with the prospect of constructing its own local network (which would involve laying millions of miles of high bandwidth lines at a

tremendous cost with questionable returns), AT&T looked to the only other communications line currently running into the homes of its future customers, which happens to be the cable line.

Of course, in the absence of the rather arbitrary division between local and long distance service in the States (which itself was the product of the breakup of AT&T by the U.S. government in the 1980s), AT&T would not have looked to cable as a panacea, since the project of upgrading cable lines to handle “two-way” interactive traffic as opposed to its current “one-way” broadcast configuration is no minor task. Nevertheless, faced with the brute contingencies of the situation, AT&T acted rather boldly in its quest to own a portion of the all-important “last-mile” into consumers’ homes.

Now, depending on how we view the cable industry, AT&T’s recent acquisitions may fall within the category of “horizontal” integration, where companies within the same industry combine; or “vertical” integration, where companies from different industries combine. If we see cable companies as telecommunications companies, then we will conclude that the new AT&T is a product of horizontal integration. Such a characterization would view the acquisition of a cable company by a traditional telecom company as akin to the acquisition of a wireless company -- as the acquisition of a somewhat different type of channel to carry the same content. However, if we see cable companies as communications companies or, more specifically, media companies, then we will conclude that the new AT&T is a product of what we call “vertical” integration.

It is my position (and, I believe, not a contentious one) that the new AT&T is a product of vertical integration for the simple reason that “typical” telecom companies such as the old AT&T, the new MCI Worldcom-Sprint or Britain’s Vodafone are networks of channels that are essentially “content-free”, while the leading cable companies are significant creators of content. For example, in the United States, Time Warner operates one of the largest cable networks, owns CNN and other major broadcast networks, operates a major movie studio and produces albums on its own record label. In Britain, the counterpart to Time Warner may be News Corp., together with its subsidiary BSkyB, which seem determined to provide this country both with cable and everything you see on it. In fact, a British counterpart to the new AT&T might be a combination involving British Telecom and News Corp., together with BSkyB. Although such a combination is not possible in the current regulatory environment because, as I understand it, British Telecom is restricted in its ability to deliver content, the pertinent question is whether such regulations will need to be relaxed if British companies are to be able to compete abroad effectively.

Although the cable companies forming the new AT&T are not content providers with the same influence as Time Warner or News Corp., both of them have significant programming assets, in fact, so significant that U.S. regulators may require that certain of those assets be divested before the new AT&T is fully formed.

However, regardless of the outcome of the battle over divestiture, AT&T will certainly control significant programming assets. Accordingly, the new AT&T will present an entity unlike the telecom giants currently in existence by virtue of its control of the largest telecom-

munications network on the planet and its possession of an incentive to promote on that network its own proprietary content over the programming of other content providers.

D. Is the AT&T Approach the Model of the Future?

Has AT&T accurately predicted where the telecommunications and communications industries are going? Or, will the new AT&T have the power to drive those industries in a certain direction? My answer to both questions is a qualified "yes". First, AT&T is betting on the convergence of the telecommunications and communications industries, which I believe is a foregone conclusion. Second, past experience leads us to believe that AT&T's role in leading the era of convergence will, to a large extent, drive those industries being converged.

A review of the literature shows that we need not spend a lot of time unpacking the first answer. Enough ink has already been spilled in discussing the "convergence" of the telecommunications and communications industries. Indeed, in its 1997 Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors, the European Commission did not question whether convergence of those industries would occur; rather, it posited as fact such forthcoming convergence and endeavored to formulate the principles of the proper regulatory scheme to govern it. We all expect convergence to occur. The only question is the form it will take.

Today, we have a primitive form of convergence on our personal computers. On my PC, I can read the early versions of *The Washington Post* and *The Financial Times*, research public bills before Parliament, download President Clinton's latest speeches and stream videoclips from CNN's website (all with a click of my mouse). Of course, the audio and video on the Internet are generally of the lowest quality, and therein lies the problem. Consumers, educators, businesses and the like are clamoring for convergence that yields the immediacy and the variety of the Internet with the quality audio and video of cable (and/or satellite) TV.

AT&T's goal is to be the first telecom company to produce such a network. Although a sophisticated version of such a network remains at least several years away, the fact that AT&T is close to achieving the infrastructure to support it is motivating other telecom companies to create rival networks in order to compete. Which leads to the second question.

Can a single company drive the telecommunications and communications industries? I don't think that a telecom company, including the new AT&T, can drive those industries in the way Microsoft currently drives the software industry or Intel drives the microchip industry. However, because there is only a relatively small group of global telecom players (perhaps 20 or 30), successful moves by a major firm will undoubtedly attract imitators. For example, it seems as though every telecommunications company in the U.S. wants to be my Internet Service Provider. And every telecommunications company wants to provide me with "bundled" services, including phone service, Internet connectivity, wireless service, paging, voice mail, and so on. If AT&T can bundle cable services and/or interactive TV with its phone and Internet service successfully, every other company will want to do the same thing for a simple reason -- to obtain their share of profits.

Therefore, if AT&T is successful in bundling all of its services on a convergent platform, the rest of the industry will undoubtedly follow. As other mega-firms form to compete with AT&T, the result will be competition to deliver these bundled services. How will these companies compete? To some extent on price, but businesses would rather not compete on price because generally the fruit of success is a lower profit margin. Rather, if you are a telecommunications company with some programming assets, how might you market yourself? The answer is with proprietary content. Which is why telecommunications mega-firms will cultivate and nourish their programming subsidiaries.

This is not to say that all, or even most, proprietary content will be hoarded by its owner. I imagine that there would be a healthy amount of cross licensing among the providers, if for no other reason than self-preservation. (After all, a cable company does not want to be caught without the ability to show this year's hottest TV show.). However, in an environment where the largest network owners control a significant portion of original programming, smaller network owners with little or no proprietary content may find themselves shut out of the competition to deliver services. Which leads me to the second part of my discussion: The effect of this forthcoming consolidation and convergence on the developing nations and their peoples.

E. The Relationship between Mega-Firms and Developing Nations.

I. Three Major Problems for Developing Nations

We've heard all of the numbers before:

- More than half the people in the world have never made a telephone call.
- The 200 richest people in the world have greater wealth than the 2 billion poorest.
- 5 million children go blind every year because of an easily remedied vitamin A deficiency.
- 40,000 children die every day of malnutrition.
- The world is being divided into the "information rich" and the "information poor," the "haves" and the "have nots;" the "digital divide" is becoming a cultural and intellectual chasm.

Why do we care? First, and most importantly, we care because we are human and one of the signal characteristics of our humanity is compassion.

Second, we care because the glaring inequities that exist throughout the world in health, education and other basic human necessities will now exist in the emerging knowledge society as well.

Third, because of the rapid pace of that change made possible by new telecommunications technology, the differences will be accelerated, with consequences felt by rich and poor alike; global destabilization caused by conflict, disease, poverty, regional immigration and diminished trade and investment opportunities. For example, wouldn't it be better to isolate and con-

quer the next exceedingly virulent strain of super virus in a remote area of the globe by means of a telemedicine project, than to battle the Twenty-First Century's version of the plague in more concentrated population centers?

Although the issues, or at least the problems, may be clear, several significant roadblocks stand in the way of beneficial symbiotic relations between the telecom mega-firms and developing nations. First, and most obviously, the peoples of developing nations likely will not be able to afford the services that will be available in, and indeed were designed for, wealthier nations. Second, developing nations' desires to protect their own cultures from the onslaught of American and European content may discourage and inhibit much needed foreign investment. And third (and actually the result of these first two concerns), mega-firms may avoid building a presence in developing nations based on the perception that (a) individuals in those countries will not have an interest in what they are selling, and (b) even if the interest exists, those individuals cannot afford to buy the products and services presented to them by the firms and their advertisers.

1. *The Lack of Affordability of Sophisticated Networks*

This issue of affordability, as it relates to the telecommunications industry, has plagued developing nations since the invention of the telephone. But now the problem is more urgent. It took 100 years to put telephones in the hands of a billion people, but it will take only 5 years to reach the next billion! Several billion more will be left out. Indeed, the inability of national governments to finance the necessary infrastructure improvements to their respective telecom systems is almost certainly the primary factor in the drive to privatize and liberalize state-owned networks. Developing nations comprise 75 percent of the world's population, but account for only 12 percent of the world's phone lines. Eighty percent of the world's inhabitants do not have a telephone in their homes. And while the 24 member nations of the OECD average about one phone line for every two people, the remaining nations average less than one phone line for every 25 people, with the poorest nations averaging less than one phone line for every 1,000 people.

The reasons for such disparities are very simple -- telecom infrastructure is expensive and the developing nations do not have the resources to fund the necessary development through public outlays. Indeed, it is estimated that by the year 2004, the worldwide investment in telecom infrastructure development will exceed \$200 billion dollars *annually*. The companies investing those funds will not do so unless they believe that such costs can be passed on to the end user -- which, of course, explains why sparsely populated areas of the developing world lack even the most basic access to telecommunications. The costs of providing access to those areas simply cannot be recouped.

Unfortunately, the convergence of telecommunications and communications and the creation of the mega-firm may only exacerbate the problem of affordability. While convergence synergies will reduce certain costs, the expense of creating high-bandwidth networks capable of handling the increased digital traffic will undoubtedly be passed on to consumers. For example, high-speed cable-modem service is available in major cities in the U.S. at a cost of \$50-100 dol-

lars a month, or about three to six times the cost of an Internet connection of average speed, which costs about \$15-20 dollars a month. Most people in the U.S. will not pay the added cost. So, when one considers that the per capita *monthly* income of many of the areas lacking virtually any form of telecommunications is *\$100 dollars or less*, one may wonder whether any solution to the problem of affordability is viable.

2. The Need for Investment Versus the Desire to Determine Content

The second major problem facing developing nations with regard to their future telecommunications systems involves the issues of culture, censorship and national identity. As mega-firms incorporate content into their systems of channels, a perennial question will be how much license any government will or should have to restrict that content in favor of programming more locally oriented, more educational, and perhaps more acceptable politically -- from the government's perspective. If a government restricts the ability of a mega-firm to deliver certain content over its channels, such a restriction may reduce the revenue potential of a telecom system, thereby discouraging a mega-firm from investing in the system. In such a situation, the residents of a nation would suffer from a *general* lack of content, not just *objectionable* content.

Of course, this second problem is not new. Nor is it a problem limited to developing nations. The debate between the U.S. and Europe over the "local content requirement" included in the Commission's Television without Frontiers Directive, which generally requires European broadcasters to devote minimum levels of airtime to "European works", provides a good example of the problem.

However, the convergence of telecommunications and communications, and the creation of the mega-firm, add new complexity to the situation. For example, on a convergent platform, the wire (or satellite receiver) that receives a movie or an album may also receive a professor's syllabus or a doctor's diagnosis. Furthermore, once a broadband Internet becomes reality, it will be virtually impossible to determine how many of the millions of websites distributing content are of a certain genre or culture. Accordingly, each government of a developing nation that finds itself negotiating with one or more mega-firms will find itself in the difficult position of balancing its country's need for investment with the government's (and possibly its people's) desire to maintain important aspects of its own unique culture.

3. The Problem of Perception: "Do They Want Us? Do We Want Them?"

The third issue might be termed the "problem of perception", and it is actually two problems in one. "Do they want us?" "Do we want them?"

Now, when I speak of perception, I refer to the perception of the mega-firm through the eyes of its managers/directors. As such directors consider a significant investment in a developing country, they will ask the most basic question: "Do the people of this country want our system and our services?"

Of course, as we know from the backlog for basic service in many of the developing nations, the people of the country in question would undoubtedly welcome basic phone service. However, the mega-firm, preferably, will not be in the business of providing only *basic* service.

Rather, it will be in the business of providing *bundled* service. It will be building broadband networks. It will not be laying copper wire incapable of high-speed digital transmission because the payoff of investing in such old technology will simply be too low. Hence, the firm will ask, "Why would a person without a television want our cable service? Why would a person without a computer want our Internet access?" Unless the government can provide answers to those questions, the nation's limited potential market will not be able to justify the investment.

The other side of this perception coin takes us back to the problem of affordability, but with an added element. The foreign firm, if convinced that its bundled services are desired by the people of a given country, will then ask, "Do we want these people as customers? Can they afford our services and the equipment necessary to use them? Do our cable advertisers want the attention of these people?"

So, the questions are, "Do they want us?" "Do we want them?" Assuming the population wants the services, or some of them, the question remains, "Can they pay our bills?" And, will advertisers pay for time in front of these people? After all, these firms will recoup some portion of their investment by selling advertising. And they will calculate the value of the average potential subscriber in a given country just as cable operators calculate the value of the average subscriber in countries they currently service. For example, as you are probably aware, viewers between the ages of 18-50 are more valuable to cable operators than other viewers because the members of that group account for the greatest percentage of money spent; and broadcasters who attract that coveted group can generally sell their airtime at a higher rate. Likewise, wealthier consumers are generally more valuable to cable operators due to their higher consumption. Thus, as mega-firms derive a greater proportion of their revenue from advertising, the value of their subscribers to advertisers will play a greater role in the firms' investment decision-making process. Accordingly, the poorest nations, which are in dire need of investment, will be even less attractive areas for investment due to their lack of wealth, thereby creating a vicious cycle.

II. Potential Solutions to the Problems

So, where do we go from here? Well, I believe that you cannot solve each of these problems independently because the problems are not independent of one another and, therefore, neither are the solutions.

In order to ensure that the peoples of developing nations are not forgotten as the revolution in telecommunications unfolds before us, both the private and public participants in developed and developing countries must act in concert to attack on all fronts the major problems through an international plan and policy of promoting sophisticated telecommunications in developing countries.

Such a project will never be easy for a host of reasons, many of which at base relate to competing theories about the proper division of resources. Thus, few people would argue that the project of bringing sophisticated telecommunications to the developing world is not worthwhile. Rather, they would argue that other needs are more pressing.

For example, in the United States -- and I suspect in Britain -- my more nationalistic colleagues would say, "we must *first* take care of the poor in our own country." Thus, they will argue for subsidization on the *national level*, but not on the *international level*.

Then we have the modified Luddite, who says, "Forget about technology, the people of developing nations need food, shelter and medicine first; cable TV and Internet access can come later." Put another way, "Let's fix bodies before we shape minds."

Finally, the neo-Darwinians among us take the position that, "Those individuals who want sophisticated telecommunications can get it, the government should not be in the business of providing it." This, notwithstanding that fact that even our neo-Darwinians live in fully developed nations which continue to employ the principle of government-guided cross-subsidization to achieve universal service. Of course, that is not to suggest that every village in the developing world should be wired with broadband cables. It is best never to cast good economics to the winds. Instead, the public and private participants considering an investment in a developing nation need to determine, with specificity, what type of cross-subsidization is both viable and most beneficial for the peoples involved. For example, in my prior writing on this subject, I have argued for the principle of "universal access", whereby systems would be constructed to provide emergency and occasional service to underserved areas for educational, medical and cultural purposes. As Brian Knowlton wrote recently:

"When there are too few teachers, and schools are too far apart, 'virtual universities' using video, television and Internet can fill a huge gap; when markets are far away and advertising prohibitively expensive, the Internet opens doors for small - and medium-sized enterprises; where medical specialties are rare, telemedicine projects have saved lives; where the press faces repression, the Internet has provided new freedoms."

Similarly, the nationalistic argument is partially discredited by ample demonstrations of the interdependence of nations, both economically and culturally; and, accordingly, how growth achieved in a foreign nation is reflected domestically. For example, it is not difficult to show the benefits (for both sides) that would be reaped from a program of electronic exchanges between students of a developed country and students of a less developed country over a broadband network.

Of course, the modified Luddite objection is perhaps the most easily dismissed. If the revolution in information technology has taught us anything, it is that advances in information technology are virtually worthless unless applied to another field. Improvements in information technology are called "applications" for the simple reason that there is no improvement if the technology does not enable something else. Information technology becomes mature when it assumes the role of catalyst.

The impact upon societies of technological developments during the past ten years has, of necessity, changed the way one must look at telecommunications development. Telecommunications development has moved to a different plane, more important to a nation's and a peoples' economic growth, than the construction of roads, offices and airports. Rather than merely contribute to a modest increase in a peoples' current wages, investments in telecommunications

technology truly can better position a nation for the ages. Properly channeled and funded, the development of a telecommunications infrastructure can improve not only a country's commercial viability, but also its health and educational levels. Hence, telecommunications is not just an issue for the Communications Minister in a developing country; it is just as important an issue for the Health Minister, the Education Minister, the Finance Minister, and others as well.

I am reminded of a new website on the Internet, Selfcare.com. One of the tag lines for its advertisements is, "The world is full of healing if you know where to find it."

Indeed, telecommunications technology is positioned to alter the entire dynamic between the developing and more developed worlds. No more need for developing nations be *given* assistance, whether it be in the form of grain, vaccines or books. Rather, a new and primary role of developing nations must be to take control of their futures -- to as great an extent as possible -- by means of access to the information and knowledge that we take for granted. Ignorance is healed by learning. As Jacques Maritain said, "The height of human knowledge is not conceptual, but experiential; not an idea, but an experience." Accordingly, until the developing nations have nodes on the international broadband network, they will never have the adequate "experiential" tools for self-improvement.

So, now, and finally, how can developing nations help themselves? Well, the answers are straightforward, if not easily achieved. The leaders of developing nations need to acknowledge that they need assistance, and that such assistance will come at a price. The price is transparency, decentralization of power, and openness -- everything that a totalitarian or ineffective government disdains.

This price must be paid because no one, and certainly not a publicly-traded company, will make a major investment in a given country if it doubts that the agreement memorializing that investment will be enforced in accordance with the rule of law. The absence of the rule of law corresponds to an absence of foreign investment. Thus, a government wishing to entice foreign investment must form and maintain a regulating authority governed by transparent rules, and the government must let it be known that the regulatory agency is in place and waiting to discuss investment with the private sector.

In addition, the government of a developing nation must work toward a realistic plan to coordinate the use of private and public funds to implement an agenda of universal access, as well as determine a general policy toward non-monetary restraints. Without such a plan, the country will be unable to attract significant international partners or determine the proper concessions to require of private entities.

For example, a government must develop a realistic plan for maintaining a significant portion of local programming without placing undue restrictions on a foreign firm's ability to deliver content and, of course, without acting in a way approaching censorship. Since broadcasters are accustomed to adjusting the delivery of content in order to accommodate local tastes, reasonable restrictions on their ability to deliver certain information should not significantly discourage investment. However, restrictions that seem too costly, or that manifest the government's desire to micro-manage programming, would undoubtedly result in reduced investment

and, accordingly, in diminished benefits to the people who could profit most from the new infrastructure. So again, what can the governments of developing countries do to help?

- Rely on a foundation of private investment. Governments alone cannot support the scale of investment needed.
- Eliminate legal and regulatory barriers to investment and competition.
- Facilitate open access and interconnection among all competitive service providers.
- Create a stable, transparent and flexible regulatory environment.
- Promote universal service.

For their part, foreign firms must contribute to this effort by adopting a long-term view and, accordingly, foregoing short-term profits at the expense of the developing nations and their own long-term prosperity. Now, in the private sector, where success is currently measured by the growth of profits on an annual and quarterly basis, such a request of the foreign firms is no small matter. That, frankly, is where convincing strategic planning and real leadership come into the picture. Markets recognize and credit credible long-term goals if they have a proper economic foundation and are effectively communicated. In addition, OECD countries should consider providing economic incentives or rewards, such as favorable tax treatment, to those international telecommunications providers that have established relationships with, and have invested in those developing nations that have implemented the reforms we have discussed. This would go a long way toward actuating the recent words of the Secretary-General of the OECD, "A development agenda is central to our work. It is not charity."

F. Conclusion

As William Gibson has been quoted as saying, "The future has arrived; it's just not evenly distributed." Indeed, the future is becoming less evenly distributed every day. Yet, with each passing day the Mosaic tenet that "knowledge is power" takes on greater meaning in our deeply cleaved digital world. There will never be a more propitious time to take concerted, thoughtful measures to promote more even distribution of technological literacy and its very practical benefits.