

Investment Drivers for Global Telecommunications

Investment and Structural Trends in Multinational Services

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The purpose of this chapter is to outline directions in development of the market for multinational telecommunications services. This market is characterized by tensions between trends toward globalism and localism: on the one hand,

- territoriality is fairly firmly entrenched in the services sector, though not as much (or in the same way) as in the equipment sector;
- the equipment sector provides only a limited model for the services sector; and
- the site of near-term competition will be domestic services to customers, with international services playing a lesser role, especially as the profit margins on these services come under pressure.

On the other hand, it appears that:

- a set of global service providers is emerging, offering value-added networks (VANs) and industry solutions to multinational clients;
- declining home markets are forcing former exclusively domestic carriers to look abroad for new revenue streams; and
- standardized service platforms, uniform network digitalization, and availability of low-cost international bandwidth will increase the penetration rate of global services.

The resolution of the competitive tensions between global services and domestic (virtual if not real) monopolies will define the extent to which there can be said to be a truly international market for telecommunications services and equipment.

1. Introduction

Financier George Soros has noted regarding financial markets that appearances (or market leadership, direction, activity) are the key to creating realities. Telecommunications markets are only somewhat less susceptible to illusionary moves, where, in our view, globalism is the

central illusion currently offered. Indeed, the professed aspirations of the first-tier players' revolve around this theme of globalism. Behind globalism is a perceived fundamental challenge to the established players in the telecommunications industry, who see that national markets alone can no longer provide the cash flow, growth, and support for R&D to satisfy the profit expectations of various stakeholders -- namely, the state and more recently private investors. Companies must therefore look abroad to new markets, leveraging investments in product and service development.

Today there are ten such globalizing entities:

AT&T, British Telecom (BT), Cable & Wireless, France Telecom, GEIS, Infonet, IBM Information Network, MCI, Sprint, and (although this judgment may be premature) Unisource.¹ Beneath the globalist rhetoric, however, few service providers have established significant revenue streams that are divorced from their historic network domains.

But perhaps this approach pays too much attention to the reality rather than the "shadow." Soros might argue that actions are not so important because effective constructions of illusions clearly have very real effects among competitors, regulators, and partners. The story of the transformation of engineering-oriented bureaucracies into customer-driven corporations may not yet be a best-seller in Europe, but the reaction to this fiction has led to real investment and business development initiatives. The remaining gap between the illusions and reality, led along by industry rhetoric (and pushed to varying degrees by the user community) will be our focus in this essay.² In addition, we will discuss the significance of home markets and the nationality of a customer or supplier (though this in time may be forgotten).³ Inevitably, this discussion must consider the remaining business opportunities that all major players in the information technologies industry are counting on to save their declining businesses.

The market visibility of the major international value-added network (IVANs) providers far outweighs their financial returns. IVAN activities and performance are still relatively modest in comparison with in-country TOs. However, the regional presence of these players -- a critical source of investment capital, technical competence, operational and marketing expertise, and joint venture partnering options -- is felt in every market segment, in turn promoting intraregional TO cooperation in opposition to the perceived threat.

2. What Does Globalism Entail?

Before speculating about world markets, one must pay homage to the strength of the domestic markets that form both the basis for the present industry structure and the bedrock of any nascent globalism in telecommunications. For most national carriers, international services represent and certainly provide higher margins than do domestic services. These numbers are large enough for international services to be considered a "core" competence, but globalism implies much more. Broadly speaking, it involves a worldwide presence, financial strength, and a culture that addresses diverse concerns.

To begin with, globalism implies relatively ubiquitous worldwide presence. When one thinks of global brands, one can envision perhaps a dozen or more that can be said to penetrate each market -- Coca Cola, IBM, Mercedes, McDonald's, and so on. AT&T is as close as the telecommunications industry comes to a globally recognized company, but its actual presence in most markets is relatively small. Presence that is extended via particular products is also

not sufficient. As particular software for messaging or transactional services becomes outdated, companies without presence or globally branded products are likely to lose business. Another implication of globalism is financial. Few carriers have a spread of revenues that is dependent on more than one country. Even Cable & Wireless is still heavily dependent upon Hong Kong Telecom for about 60 percent of its revenues.

Presence and finance obviously work hand in hand, but they depend on another force: company culture. Few (if any) of the top telecommunications firms have adopted an approach divorced from relatively parochial territorial concerns. This leads to a set of cultural issues, beginning with a natural discomfort in dealing with foreign markets, which are less easy to understand and control. This discomfort is compounded by the fact that many of the advantages conferred on products and services are bound up in the national context, especially in areas such as marketing and sales. Also, the traditional structure (segregation of voice and data, of communications and MIS or information technology departments) of end-user organizations makes the sale of integrated service packages more difficult. It means that two empires must be dismantled to offer any sort of outsourced or managed network solution.

2.1. Toward a Global Future?

What might lead a relatively conservative industry (certainly in terms of its investment strategies and approach to risk) to change its direction and develop a new stream of business serving customers with high-quality, ubiquitously available, and probably branded global telecommunications services? Before turning to some of the barriers to such services, we will look at the supply and demand drivers.

From the supply side, the following issues are relevant:

- *controlling the customer.* What seems to emerge more strongly in discussing demand for new services among users is a desire to use technology to define and control the relationship with the customers, be they other organizations or individuals. This was surely the logic behind the Bell Atlantic/TCI merger;
- *establishing brand identity.* Global branding of telecommunications services provides customers with an opportunity for low-cost business expansion, extending a virtual presence into a market (much as the serviced office business does today, providing business centers, receptionists, and skilled personnel on the basis of immediate availability). This sort of bundling or packaging of global services -- selling an identity along with the service -- is needed to overcome user doubts over service quality and consistency of cross-border support; and
- *forcing organizational adaptation.* The drive to expand into new markets provides competitive exposure to leading-edge business practice and makes demands on research and marketing activities for new, compatible products to support expansion. While it forces companies to learn, it can also cause structural problems for managers too wedded to the core of the organization. Often fewer outposts receiving more attention are better than a handful of unrelated but profitable standalone enterprises.⁴

From the demand side, some drivers for globalism are also evident:

- *improving productivity.* Where global service providers have the strongest case is in the productivity improvements that managed networks can bring. Internal benchmarking can set a standard for network performance as valid in Asia or Latin America as it is in developed domestic markets;
- *multinationals are not stupid.* As service-level agreements become more common multinationals are likely to demand that such agreements be extended to markets where reliability is a more serious problem -- Eastern Europe, Latin America, and so on -- in effect forcing carriers to shoulder the risk of dealing with the local PTT; and
- *customer requirements.* One demand driver will come from multinational corporate customers. The U.N.'s Center on Transnational Corporations (TNC) estimates there are about 35,000 enterprises that can be described as transnational, that is, with 10 percent of revenues derived from outside the home country. (This perhaps overstates the market because many of these enterprises will be small, and many others will represent holdings in one country and, for historical or tax reasons, headquarters in another.) Other estimates (by AT&T, BT, and others) of the market for global services has found about 2,500 to 3,000 firms with the size and scope of operations, and communications budgets, to justify global services.

3. Reasons for Skepticism

There are, in practical terms, few constraints upon investment in new industry structures, and many believe the market for international-global services is waiting for an innovative firm or grouping of firms to come along and define it. On the one hand, global service provision can be seen as the thin end of a wedge being driven into national monopolies, the harbinger of a competitive, boundaryless market. On the other hand, there remain reasons for skepticism about these developments. Globalism can be seen as mostly hype, a largely irrelevant slice of the business. It is all well and good for academics or those who generate corporate visions of future communications environments to promote the concept of globalism. But the practical realities of implementing those visions are considerable. The arguments against globalism are as follows:

- *regionalization of revenue streams, barriers to market entry-presence, and directions of future competition;*
- *market for industry solutions; and*
- *management difficulties.*

Each of these will be described in detail in the following sections.

3.1. Regionalization of Revenue Streams

The telecommunications equipment industry provides the best argument against territoriality (i.e., that companies do not respect national borders when seeking new markets) and may

represent a model for the potential future globalization of the services sector. Most of the largest vendors describe themselves as "global" in terms of both product availability and sales.

The important questions about globalism start with the percentage of revenues coming from "home markets." One notices a similarity between Ericsson, Northern Telecom (NT), and Alcatel: each gains about one-quarter of its revenues at home. For Siemens, AT&T, Motorola, and NEC, the revenue picture is somewhat more determined by domestic business. (Table 1 shows the role that "home" and regional markets play in total revenues generated by the leading equipment manufacturers.) National markets are, with only a few exceptions, too small to sustain a supplier of more than \$1 billion in revenues, but one sees that the necessary international activity is mostly confined to the regional scale.

As table 2 shows, one can also group these providers into those that are primarily telecommunications equipment vendors and those with other significant business or partnerships. In the first category are Ericsson, NT, and to a lesser extent Alcatel (whose communications business provides more than two-thirds of its overall revenues). In the second, are AT&T (primarily a carrier), Siemens (active in a number of other businesses unrelated to its communications group), and NEC (involved in a host of other high-technology manufacturing, with telecommunications equipment totaling about one quarter of all manufacturing).

There have been attempts to compare the relative advantage of home markets according to price per line of digital switching won by the national champion supplier, but such efforts inevitably involve apples-and-oranges comparisons (of features, functionality, support services, etc.) as well as estimates of confidential data. Suffice it to say that there is currently a radical deflation of per-line costs for digital switching in bids to developing markets, which are rippling through more mature and newly competitive markets in OECD countries. This is an interesting reversal of the situation in the services provision sector, where the cost of international and value-added services has fallen fastest in a few select, competition-minded OECD countries, with the effects only just now reaching other developed countries.

Again, globalism often comes at a steep price. Leading vendors share common management problems in their efforts to address foreign markets. Technological ubiquity also often comes at a steep price. Many vendors cannot afford to customize switching software to interoperate with local protocols. Most typically perform core R&D and product development at home.

The leading vendors are also limited in terms of market presence, though some are clearly more effective at central management of local resources. Some examples of these limits have become painfully clear. Both Siemens and Alcatel have lost considerable sums trying to penetrate the North American market. NT has taken a \$500 million write-off to rationalize its acquisition of STC, and AT&T announced in September 1993 that it would cut its headquarters staff in Hilversum, Netherlands, from 540 to only 35 people.

Financial strength is another sharp limit on most of the key players. Ericsson has recently weathered a difficult patch, and NT, Siemens, and IBM are in similar straits now. In 1993, Siemens announced that public communications orders would be down 10 to 20 percent from 1992. By many accounts, Alcatel faces a similarly sharp decline in turnover, and AT&T's fortunes remain unclear due to the company's vertical integration.

Table 1
Global Telecom Equipment Sales: Leading Vendors

1992 Rank	1992 Sales B\$US	Telecom as % of Sales	Home Market as % of Sales	Home Country
Alcatel	16.2	78%	22%	France
AT&T	13.1	20%	74%	USA
Siemens	11.9	24%	48%	Germany
NT	8.3	99%	27%	Canada
NEC	7.5	27%	77%*	Japan
Motorola	7.4	56%	77%*	USA
Ericsson	6.9	86%	13%	Sweden

Source:

Annual Reports, Authors

*percentage for home market includes all products, not just telecoms

Exchange rates for companies (FY1992):DM:0.6408, SEK:0.1717, Yen: 0.0075, ECU: 1.2945

AT&T data includes internal (estimated) and Federal Systems Group (estimated)

Table 2
International Service Provider Revenues

	Intl Revenues (\$Million)	Total Service Revenues	% of revenues from Intl	Notes
AT&T	6162	39580	16	excludes equipment sales
Deutsche Telekom	5123	34578	15	
France Telecom	3907	23164	17	
BT	3282	23547	14	
C&W	2666	5607	48	HK and Mercury reliance
KDD	1930	1930	100	International only
PTT Telecom	1538	5964	26	
Telmex	1408	6636	21	Inflated by acctg rates balance
MCI	1370	10562	13	
Telefonica	1319	11279	12	
Telstra (Australia)	1273	8899	14	
Swiss PTT	1246	6012	21	
Stentor	1076	11396	9	US and Mexico only
Telia	954	6014	16	Swedish Telecom
Teleglobe	900	1045	86	Outside NA only
Saudi Telecom	854	2504	34	
DGT (Taiwan)	761	3895	20	
Belgacom	753	3217	23	
Singapore Tel	750	1406	53	
OPT (Austria)	740	3084	24	
Sprint	735	9230	8	
Iritel	714	NA	NA	was ASST, EC traffic only
Italcable	640	640	100	Non-EC intl
Korea Telecom	638	6380	10	
Bezeq	583	1704	34	
<i>Total/Avg.</i>	41322	228273	18	

Source:

Comm Week Int'l; Authors

3.1.1. The Services Sector

In terms of revenues, the industry as a whole gets only a small percentage from operations based overseas from home markets. The lion's share -- over 95 percent -- of international service revenues comes from domestic voice and data services originating at home.

The origin of most international service revenue -- typically between 12 and 20 percent of total revenues -- is still captive-domestic customers (see table 2). Given the margins on international services -- the published figure for BT is 81 percent profit on capital employed, and likely much higher for other carriers -- they are a critical market segment. For the operator with an overall average of 10 to 12 percent profitability, 15 to 20 percent revenues from international services, and a profit margin of 80 percent in international services, the international market would provide most of the group profits.

Revenues from value-added network services play only a small part in overall cash flow. They generally provide between 2 and 4 percent of revenues for carriers worldwide (see table 4).

3.1.2. Entry Barriers Are Still High

Establishing a presence in new markets is an inherently costly and risky proposition for carriers. Rarely is there business demand in advance of such a presence, and the pressures on small-country offices -- which are usually short on resources and lacking critical, long-term contacts to navigate political waters -- are enormous. They are often given short time scales to develop significant business based on products developed for another market and another set of customers.

New service providers or specialized networking vendors will face many other barriers: the same markets are coveted by larger firms with deeper pockets and greater political leverage. New entrants must combat loyalty to existing suppliers, reverse inherently conservative procurement regimes, overcome the marked reluctance of users "to be a workbench for their suppliers," and work to counter the industrywide incentive to set floors on product life cycles. Nor will they escape the basic management issues facing the entire industry: adequate personnel expertise,⁵ lack of new product and service concepts, and long investment cycles for new ventures in wireless, international, or cable.

In addition to the problems of market presence and credibility, finance and culture -- the types of services that users expanding internationally might request -- invite problems. There are few offerings in OECD countries that do not rely on cooperation with the domestic courier, which is also the source of problems that the offering is geared to solve. Carrier infrastructure is also a common impediment: quality issues and provisioning also delay domestic and international circuits and limit expansion in many high-growth regions. Maintaining levels of service quality (especially under the pressure of the strict service-level agreements most large end users now negotiate) in such an environment is virtually impossible. Nodes on public data networks are not sufficient guarantees for end-users, who can often secure the same generic capacity directly at lower costs (and with the same risk of network outages).

3.1.3. Directions

In the most competitive markets worldwide, the focus of both dominant carriers and new entrants alike has been on domestic voice competition. Because data communications is a

Table 3
Western Europe Equipment Markets

Country	Pop	Mainlines per 100 pop	Equip Spend. 1992-7	Switching 1992-7	% Spend on Switching
Austria	7.9	43.5	5077	844	17
Belgium	10.0	44.7	4354	756	17
Denmark	5.2	58	2420	420	17
Finland	5.0	55.3	3210	705	22
France	57.7	53	33837	5188	15
Germany	80.6	43.9	59793	15770	26
Greece	10.3	43.6	911	177	19
Ireland	3.5	37	NA	NA	NA
Italy	55.0	42.3	25840	6189	24
Netherlands	15.2	49	10533	1558	15
Norway	4.3	49.9	2923	562	19
Portugal	9.8	27.4	2827	1072	38
Spain	39.4	34.7	23540	2578	11
Sweden	8.6	68.7	11691	2686	23
Switzerland	6?	75.7	6010	1834	31
Turkey	100?	17.9	5845	4965	85
UK	57.9	45.4	38336	2406	6
Avg/Totals	370.4	46.47	39524.50	7951.67	

Source:

European equipment market = \$40bn/year avg. 1992-1997

European switching market = \$8bn/year avg. 1992-1997

CITI, NBI, Northern Telecom Europe

Table 4
Global Telecom Service Providers Revenues by Region (US\$billion)

	North America	Europe	Asia Pacific	Latin America	Total
TO Revenues	160.54	138.11	79.62	21.3	396.61
VANs	3.24	3.88	3.58	0.4	10.82
Total	163.78	141.99	83.2	21.7	407.43
VANs Revenue as % of Total	1.98	2.73	4.30	1.84	2.66

comparatively low-profit market business, competition has naturally focused on voice provision opportunities. And nowhere is the cartel-like structure of the industry more evident than in international voice services. The United States is the only country with international voice competition beyond a duopoly, and even there the focus of price competition has been on domestic service. It may be a global world, but most carriers remain focused on home markets, either in response to or anticipation of competition. The bitter resistance of Europe's national monopolies to even the regionalization of competitive, cross-border, long distance services serves as a measure of the unwillingness of many to "think globally" (and even then only in small doses, when backed by committed capital or in risk-sharing partnerships).

Among the two leading contenders for the top spot as providers of global services, AT&T and BT have shown a marked reluctance to stray beyond familiar turf. AT&T's purchases of McCaw Cellular and, earlier, NCR were not clearly aimed at fulfilling the company's stated goal to raise earnings from foreign markets to 50 percent by decade's end. BT, for its part, sought a strong U.S. partner while ignoring numerous opportunities in markets less mature or advanced. Indeed, by investing directly in the main competitor to its chief rival, BT chose to directly confront competition on well-known ground rather than advance into uncharted waters, while its purchase of Tymnet provided the company with a leading position in the IVANs market. Attention and cash seem mostly focused on the North American-European market.

3.2. The Market for Industry Solutions

Much of the logic of global service provision is built around developing standard packages of services that can be provided to a range of competing customers in a particular industry sector, such as insurance or petrochemicals. These solutions need to be effectively custom tailored to specific business to command high value-added prices above standard costs for bandwidth capacity.

Since the bundling of services with bandwidth is the only economic way to profit from capacity (i.e., with bandwidth costs in free fall and new capacity being deployed, its abundance will outrun demand), the global services market is largely limited to those that own bandwidth worldwide (e.g., Cable & Wireless) or have maintained strong correspondent relations (e.g., GEIS).

There is another problem in that many of the target customers for such services may not want to use the same services package that is available to their competitors. Many of the Global 1000 still see communications as a critical competitive differentiator (one of the many reasons why the outsourcing market will evolve much more slowly than people think).

3.2.1. Other Drivers of Global Services

While globalism suggests a spread of revenues on the providers' side, it must be mirrored by a similar spread in customers' operations. For example, cost reduction should not be overstated. Pressures on overhead and head count are a central focus of every large organization, yet the leading firms in a given market are often more concerned with deriving competitive advantage from telecommunications than slashing costs and have neither the budgets nor the flexibility to pursue new applications. Moreover, in many cases, adopting global services is more costly than maintaining existing private networks. These organizations are also keenly aware of new service concepts developed by rivals and are conservative in

adopting solutions outside standard industry practice. Therefore, global services face a specific paradoxical barrier: they must be generic enough to satisfy cross-border customer requirements and still meet the customized needs for a specific (temporal) edge that large organizations are more than willing to pay for.⁶ Therefore, cost plays only a small part in the equation of users' choice.

3.3. Management Difficulties

While the management of such carriers as SITA and SWIFT have long professed expansionist desires, their partnership structures impedes development of a global services vision. Infonet is likely to face similar problems as its partners develop alternative streams of business. A telling comment on such potential problems was Cable & Wireless's remark in the wake of the BT-MCI alliance that it sought to partner with nontelecommunications companies. This reflected different strengths and customer bases rather than a joining with other carriers. But Cable & Wireless's answer -- looking for a "multimedia" firm -- was equally unsatisfactory, as was the AT&T projection of a percentage target for revenue growth coming from beyond home markets. These efforts do little to clarify the nature of global business (or indeed whether such a business relies upon the erosion of domestic business to make foreign investments look more attractive). The justifiable caution with which the regional Bell operating companies have approached developed markets in Europe is strong evidence against rapid expansionism.

4. Conclusion

The argument of this essay permits three conclusions:

- investment will stay focused domestically and then regionally (witness Bell South's barely noticed \$1 billion investment in 42 percent of the Mexican cellular provider or Transpac's European buying spree of 1992-93);
- due to numerous entry barriers, market structure will confine global services provision to a top "tier" of half a dozen entities;
- equity stakes and cross holdings will have to increase to ensure that service-level agreements with large global accounts are met (especially as the penalties for failing to meet the agreements grow more harsh).

References

- Kramer, R., and NíShúilleabháin, A., "Monopolistic Competition in European Telecommunications: Market Structure and Emerging Global Operators," CITI Working Paper, 1993.
- Trompenaars, Alfons, *The Seven Cultures of Capitalism*, London: Blackwell, 1992.

Endnotes

1. For an extended discussion of these first-tier players, see Kramer and NiShuilleabhain (1993).
2. To give a sense of the gap, see AT&T chief executive officer Robert Allen's recent recantation of his remark that 50 percent of the company's revenues would come from overseas operations by the year 2000. Allen claimed it was an offhand remark, not a statement of strategic intent.
3. Forgetting about national identity is not the same as embracing globalization. Without the issue of national identity, service or equipment provision would be reduced to culturally determined patterns of work and historically specific market structures. Companies that attempt to discard their national identities and cultures, in the hopes of finding a single "global" style of management, do so at their peril and risk losing their main source of competitive advantage -- the unity and collective communal sense of their knowledge workers, see Trompenaars (1992).
4. BT is one company that has found this out. One of the reasons for BT's divestiture of many smaller ventures was the disproportionate amount of senior management time they consumed.
5. A senior Cisco executive has said only half-jokingly that there will be a worldwide nerd shortage in years to come.
6. This view emerged in the course of the authors' interviews with senior information technology executives at major German banks and financial institutions in September 1993.