COMMUNICATIONS
FORUM

"Should the Regional Bell Operating Companies Be Allowed to Manufacture?"

September 27, 1990

Seminar Notes

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

COMMUNICATIONS FORUM

# "Should the Regional Bell Operating Companies Be Allowed to Manufacture?"

September 27, 1990

Seminar Notes


David Marsh, M.I.T., Organizer

Pėter Temin, M.I.T. Department of Economics, Moderator

Rober W. Stearns, Codex/Motorola Corporation

Casimir S. Skrzypczak, NYNEX Corporation

Elizabeth H. Prodromou, M.I.T., Rapporteur

This session of the M.I.T. Communications Forum brought together two representatives from the telephone communications industry. One panelist represented the perspective of the Regional Bell Operating Companies (RBOCs) and the other represented the perspective of independent manufacturers of data and voice communications equipment.

Professor Peter Temin, Chairman of the M.I.T. Department of Economics, introduced the two speakers and presented the context for their debate. The debate grows out of the 1984 Consent Decree which provided for the breakup of the Bell System by imposing a variety of restrictions on the operations of the resulting seven RBOCs. Most significant among these restrictions were prohibitions against offering long distance service outside of their own operating regions, providing their telephone customers with information content, and manufacturing products. In a recent ruling by Judge Harold Greene, upheld in the U.S. Court of Appeals for the District of Columbia, the Consent Decree's ban on manufacturing was interpreted to include design and development, as well as the fabrication.

Against this backdrop, the two panelists will discuss whether the restriction on manufacturing is counterproductive to U.S. innovation and international competitivenes or an appropriate safeguard against unfair competition.

The first speaker was Robert W. Stearns, Vice President, Corporate Marketing, at the Codex/Motorola Corporation. The company manufactures a wide array of customer premise and network equipment, and supports over 3800 employees on a worldwide basis. Codex sells to MNC's and Fortune 500 companies, amongst other clients. It has been involved in telecommunications policy since 1971, and has seen the industry evolve from a stagnant monopoly to a dynamic industry.

According to Stearns, today's question can't be understood without keeping in mind the 1984 Consent Decree and the anti-trust laws which were its basis. These laws understood monopoly behavior as bad and free market competition as good, and the 1984 decree has borne out these views. The American consumer now relies on free market forces which have meant lower prices and unprecedented technological innovation in the industry. While the decree split manufacturing from local exchange services, the nature of the local exchange industry is still monopolistic. So, to allow the RBOCs to manufacture, would mean dismantling the foundation upon which the Bell System was broken up.

Stearns pointed out that Judge Greene's ruling resolved an important point of contention aroung this whole issue, by maintaining that manufacturing meant the actual fabrication of a product, as well as product design and development. The Bell System had used its monopoly to drive out competition at the design and development stages, through cross-subsidies between regulated and unregulated activities. The result of barring local exchange companies (RBOCs) from manufacturing, according to Stearns, has been to create a level playing field in the telecommunications equipment markets. This is consistent with the philosophy that competitive markets are the best way to provide products to customers.

Stearns went on to argue that the empirical evidence supports the logic of his argument. The telecommunications industry is highly competitive, with an abundance of new products and with strong growth from current industry participants and new market entrants. Prices in current dollars have declined significantly for almost every telecommunications product category from 1970 to 1990. Moreover, consumer choices are now made on quality and price rather than on the basis of what a monopolist feels like bringing to market. Products never before dreamed of by carriers are now available (e.g. the T1 and the statistical multiplex). An important reason for this is because carriers are not interested in creating products that would reduce their revenue from transmission services. Instead, it's been independent manufacturers that have introduced the innovative products.

Stearns said that the value a regulated monopoly can bring to the competitive equipment market is none. In fact, BOC participation in manufacturing could only hurt the market because they would drive out competitors by engaging in anti-competitive practices. In any case, he said that the RBOCs still can engage in manufacturing-related areas and that they are restricted from only those stages which are most susceptible to cross-subsidization. He went on to say that the RBOCs need to enter into relationships where both parties (supplier and customer) can prosper.

In response to the RBOCs argument that companies like Codex don't want more competition, Stearns argued that this is not so. He said that Codex is not afraid of competition and that it has always welcomed new entrants into the market. It just doesn't want a monopoly in the industry that can engage in anti-competitive practices. He also rejected the RBOCs' argument that accounting safeguards already prevent the RBOCs from cross-subsidizing their equipment operation with revenues from their local exchange service. He argued that the accounting standards weren't workable because they weren't developed with an eye toward this issue and, what's more, that they don't have attendant policing mechanisms.

Stearns said that the RBOCs' argument that price caps remove incentives for cross subsidization is fallatious. Because the price cap (which governs the maximum price an RBOC can charge for its services) is lowered if an RBOC makes an excessive profit, there will be an incentive to reduce the profits by engaging in cross-subsidies, for example, cost-shifting from its equipment side to its regulated service side. Moreover, the issue is not simply one of cost, but of preserving a climate which is favorable to innovation. He rejected the RBOCs' contention that they would continue to buy other companies' products if allowed to manufacture. He held that the RBOCs would be motivated to buy their own affilates' products, even if poorer in quality, because of the investment in their own manufacturing operations. As for the argument that a separate subsidiary structure would prevent anti-competitive practices, Stearns cited the fact that this never worked in the case of Western Electric. Finally, Stearns noted that the FCC could not monitor the anti-competitive practices that would emerge with a change in the rules, because the FCC does not have the manpower and funds to enforce the regulations. In fact, he said, that's precisely why the monopolies were broken up in the first place.

Stearns turned to the argument that the 1984 agreement has created the current trade deficit in telecommunications equipment. He said that the RBOCs are completely wrong about this point. The trade deficit is the result of a variety of other factors, including the lower cost of wages in East Asian countries, unfair trade barriers, and distorted exchange rates in the mid-1980's. He pointed out that the decline in the trade balance began prior to 1984, the point in time that the manufacturing restriction took effect. Moreover, Stearns noted that there has been a tremendous improvement in the trade deficit in the past two years, which a result of the weakening of the dollar, the liberalization of overseas markets, more agressive U.S. marketing practices overseas, and the changeover to the new harmonized system of tracking trade. The dramatic rise in the export of telecommunications products is the most important reason in the improved balance. He cited the fact that the telecommunications trade deficit is largely related to products at the low end of the industry (e.g. phones, answering machines) and that these products are largely imported by AT&T and the RBOCs. He also said that the U.S. maintains a surplus in data communications products and in the high end of the market.

According to Stearns, the RBOCs go beyond misusing the trade balance issue to try to rescind the manufacturing restriction. He argued that RBOC manufacturing would be a negative force for the trade balance, since it would have a negative impact on innovation in U.S. industry by creating the non-competitive conditions which ultimately would reduce the number of telecommunications companies involved in the industry.

Stearns commented on how difficult it's been for companies like Codex to meet the RBOCs head on-in this debate. He noted that the RBOCs have a strong lobbying presence in Washington, D.C., have enormous financial resources at their disposal, and they the resources and will to dominate the worldwide standardization process.

In closing, Stearns stated that the RBOCs must play a constructive role in the U.S. telecommunications industry in the 21st century. He remarked on the important role they have to play in the development of digital and optical broad-band communications equipment that will help the United States to remain a first-rate power. These developments will provide the RBOCs with significant profits. He cautioned, however, that there is no place for the RBOCs in markets which are already competitive.

The second panelist was Casimir S. Skrzypczak, Vice President, Science and Technology, at the NYNEX Corporation. He began by noting that he was pleased to be addressing a group of scientists and engineers who, he believed would be able to appreciate the detrimental effects of the manufacturing restriction on the caliber and quality of the telecommunications industry in the United States, as well as its detrimental impacts on the competitiveness of the United States in today's expanding global economic environment.

Skrzypczak remarked that he has difficulty in trying to justify the Manufacturing Consent Decree by trying to apply pre-divestiture Bell Systems arguments to a company like NYNEX. He maintained that his point is especially valid given that NYNEX and its subsidiaries have never manufactured, nor do they have any factories for manufacturing.

He also noted that the tendency to treat the seven RBOCs as a single group is a mistake. They are not monolithic and people who treat them as such are simply trying to create a smokescreen for their own self-serving arguments. He set out to approach the debate from the perpsective of a technologist, given his position as chief technologist at NYEX and given his previous experiences at Bellcore in network planning activities.

The main question at hand for Skrzypczak is "what impact is the manufacturing restriction having on the development of telecommunications equipment and services in the United States?" He maintained that the people who created the present structure have a lack of understanding about the process of product and service creation in the telecommunications industry. He outlined the process as a fragile one, with five major steps: (1) basic research: this phase keys in on the development of a basic understanding of technology, without a specific focus on how the knowledge might be used; (2) applied research: this stage concentrates on how to apply knowledge to a specific application or area of customer needs: (3): generic requirements: this phase focuses on specifying the particular characteristics of the product or service you're trying to create; (4) manufacturing design: this phase addresses the specific configuration of the product you're trying to produce; and (5) fabrication: this involves the final assembly.

The manufacturing restriction is based on the unrealistic assumption that you can draw a solid line between phases three and four. Skrzypczak argued that this is impossible. In fact, all of the stages require continuous interaction, and the most critical interrelationship is between pphases three and four. But Judge Greene's ruling misses this point.

Skrzypczak commented that the most critical ingredient for success in the telecommunications industry is constant contact with the customer. Product development is a constant learning process and a constant iterative process, in which the developer learns from the customer and vice versa. An artificial wall built between the knowledge of the service need gained through customer contact and the ability to passs this knowledge along through the manufacturing phase can only hurt the telecommunications industry. According to Skrzypczak, this is what the current structure does.

Moreover, Skrzypczak maintained that Judge Greene's rulign has created a set of dfinitions that are very confusing to technicians; these definitions make little sense and are next to impossible to discern in practical terms.

The RBOCs companies have no clear understanding of what we can and can't do anymore, because we a working within a fundamentally flawed system whose operational definitions often do not relate to the realities of rapidly evolving technologies. The RBOCs comprise 50% of the R&D in the U.S. telecommunications industry, but the current strucutre does not allow us (the industry and the consumers) to make the most efficient use of this investment.

Skrzypczak followed with an example to support his claim. NYNEX tried to develop a prototype for a possible wireless technology for use in trading networks. Because of the uncertainty of the dividing line between permitted generic requirements development and forbidden manufacturing design, we were unable to transfer the full extent of our prototype experience and knowledge to facilitate the creation of a manufacturable design, thus substantially delaying our ability to bring this product to market.

Skrzypczak then addressed the view reflected in the manufacturing restriction that, if permitted, the RBOCs would team up with foreign companies and therefore work to the detriment of the United States. Skrzypczak argued that this is not true; rather, NYNEX would prefer to team up with small U.S. sttart-up frims who need funding and/or customer knowledge about the nature of the market they want to serve. The best results would be those team-ups where there would be constant contact and interaction with the manufacturer and the RBOCs. Clearly, this can best be achieved by teaming with U.S. firms and not with foreign manufacturers.

He also looked at the argument that the RBOCs would team up with a large central office switch manufacturer (i.e. a foreign company) to eliminate the last U.S. central office switch manufacturer (AT&T). **Skrzypczak** maintained that this is also fallacious. He said that NYNEX policy has been to expand the number of central office switch manufactureres it utilized because this mankes them more competitive and therefore results in lower prices for NYNEX and its customers.

Turning to what sort of path NYNEX would pursue if the manufacturing restriction were lifted, **Skrzypczak** had the following comments to offer. If the manufacturing restriction were lifted, NYNEX wouldn't try to replicate the Western Electric Bell Systems relationship of the past, as many people contend. In fact, our motivation is to obtain the maximum benefits and returns from the $200 million we put into R&D each year. We ould try to do this by teaming up with companies to produce new capabilities and also to obtain an appropriate return on investment through such cooperative ventures in manufacturing. That's essentially the nature of what NYNEX would do, and I fail to see how that would threaten the viability, range, and breadth of competition and products in the U.S. telecommunications industry.

**Skrzypczak** maintained that some independent manufacturers try to mischaracterize how NYNEX would participate in the manufacturing arena. The focus of NYNEX's efforts in manufacturing would be to compliment existing manufacturers by coupling our knowledge and understanding of customer needs and our knowledge of technology gained through our investments in R&D to meet customer needs that go unmet today by manufacturers.

In concluding, **Skrzypczak** remarked that the empirical evidence does not allow one to conclude that the manufacturing restriction has in any way anhanced the telecommunications industry.

## Question & Answer

The first question asked about the possibility of other restrictions which might be handed down in the event that the manufacturing restrictions were lifted to allow the RBOCs to manufacture. **Skrzypczak** answered that there could be any range of possible restrictions which might be imposed in that sort of situation. He noted that, in his view, the best case scenario would be one in which there would be no additional restrictions, so that the RBOCs could use any technology in any way to help their customers. Based on existing legislation under consideration, **Skrzypczak** said that there may be restrictions on the amount of equipment the RBOCs could by from an in-house manufacturer. Another possibility would be the requirement of basing the sale price to internal affiliates on the sale price to external units. Yet another issue under discussion concerns a limitation (40% is the number currently being bandied around) on the non-U.S. portion or value added to U.S. pieces of manufactured equipment. A final possibility concerns percent ownership restrictions on a NYNEX manufacturing subsidiary.

The second question remarked on **Skrzypczak's** point that the current situation is, overall, non-beneficial to the U.S. telecommunications industry. The questioner noted that the manufacturing restriction has created a situation in which a group of people is designed generic requirements with no real feel for what's needed at the manufacturing level. The question is how to deal with this situation, and one possible option might be to invite both domestic and foreign manufacturers to share with us what they're working on.

**Stearns** responded that there is a simple answer as to why U.S. manufacturers haven't responded to the call to share their information with the RBOCs. He said that independent manufactureres just don't have any confidence that the RBOCs have any understanding of what the markets want. He disagreed with Skrzypczak's point that the customer doesn't know from the outset what he wants, stating that, indeed, the customer knows exactly what it wants. He also found it inconsistent that NYNEX starts by saying that they have no knowledge of manufacturing, but then provides a model of how the manufacturing process works.

The questioner countered by saying that what's really going on here is that the manufacturing companies want their own monopoly, which is why they continue to support the manufacturing restriction.

**Skrzypczak** intervened to say that this discussion, just as with the broader debate on the manufacturing restriction issue, is not a black and white one. He pointed out that, in fact, the issue is one of greys - there are no black and white answers. The point is that all parties (i.e. the two speakers) seem to agree that what's need is more direct contact with the customer. He submitted that, when it comes to major steps forward, most customers don't understand the range of future technological application possibilities. It's here that the manufacturers and the RBOCs could offer valuable pooled advice.

**Stearns** agreed that there is a definite need for continuous customer contact. But he also noted that the RBOCs use this point to conceal the fact that they want to get everything right on the first shot. They're not willing to go beyond the first iteration if they perceive the investment as too great. The manufacturers, he maintained, recognize that the first iteration won't necessarily be the best and they are committed to going beyond that to get consistency over time.

Another question turned to Skrzypczak's apparent view that what's past is past and that the same problems which developed prior to the divestiture and manufacturing restrictions won't recur.

**Skrzupczak** commented that this view comes from his point that people mistakenly take the RBOCs as a monolith, and that this is not correct. The seven RBOCs are independent and have different strategies. Interestingly, there is probably more competition over strategy and success amongst the seven than many people appreciate. Secondly, he noted that there would be a very different role for manufacturing in a company like NYNEX than there would have been in a company like AT&T in its pre-divestiture days. Finally, most of the NYNEX management came out of the service, rather than the development and manufacturing parts of AT&T, which provides an added focus and appreciation of end customer needs. He explained that NYNEX's manufacturing strategy is not exclusively manufacturing bottom-line driven.

The next question asked **Stearns** why he is opposed to letting the RBOCs compete on a level playing field which would come through open market competition in the manufacturing area, particularly since they could contribute a lot to new activities in the manufacturing realm.

**Stearns** answered that his concern lies with the RBOCs' abilities to cross subsidize and to offer preferential procurement treatment to captive manufacturers. He is not willing to compete with a monopoly that will cross subsidize. And while, theoretically, restrictions could be imposed to prevent that from happening, enforcement of these restrictions would be nearly impossible. Stearns said that he is not convinced by the apparently straightforward intentions of the RBOCs in this whole matter.

The next question turned to NYNEX's proposed relationship with small companies, in a situation where themanufacutring restriction would be lifted. The questioner noted that because NYNEX controls access to its local loops, they might then use this ability to manipulate how the vendor equipment integrates with the NYNEX network.

**Skrzypczak** remarked that because NYNEX makes its money from providing network services, it would only be in their interest to increase the number of people and equipment able to use the network. So, it would not be in NYNEX's interest to restrict vendors.

The next questioner observed that the real question may not be a concern over the manufacturing restriction per se, but over how the legislation has been written. He offered that, if the RBOCs don't want to become monopolistic manufacturers, then maybe it's possible to get around the problem by rewriting the legislation. The question might be one of information services, and of how to allow more cooperation between independent manufactureres and the big companies under the system as it now exists.

**Skrzypczak** indicated that there are numerous examples of where the manufacturers have not stepped up to the challenges of such cooperation. He pointed to the case of British Telephone and their attempts to get manufacturers interested in the breakthrough technology of passive optics.

In closing, both **Skrzypczak** and **Stearns** agreed that they appreciated the other's point of view and the positive spirit in which it had been offered. They also agreed that the final solution must be one that benefits the U.S. telecommunications industry as a whole, particularly since this is an issue affecting the national interest.