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FEDERAL TRADE COMMISSION

In the Matter of:	)	
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	)	Docket No.: P951201
HEARINGS ON GLOBAL AND	)	
INNOVATION-BASED COMPETITION	)	

Thursday,
November 30, 1995

Federal Trade Commission
Sixth and Pennsylvania Avenues
Room 432
Washington, D.C. 20580

The above-entitled matter came on for hearing, pursuant to notice, at 9:18 a.m.

SPEAKERS:

ROBERT PITOFSKY
Chairman, Federal Trade Commission

JANET D. STEIGER
Commissioner, Federal Trade Commission

CHRISTINE A. VARNEY
Commissioner, Federal Trade Commission

BECKY BURR
Attorney/Advisor to Commissioner Varney

SPEAKERS (Continued):

SUSAN S. DE SANTI
Director, Policy Planning

DEBRA VALENTINE
Deputy Director, Policy Planning

MARK WHITENER
Deputy Director, Bureau of Competition

JOHN HILKE
Economist, Bureau of Economics

MICHAEL ANTALICS
Assistant Director for Non-Merger
General Litigation I Division,
Bureau of Competition

WILLIARD K. TOM
Director for Policy and Evaluation,
Bureau of Competition

WILLIAM E. COHEN
Project Director for Innovation,
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THOMAS R. IOSSO
Economist, Bureau of Economics

TIMOTHY BRESNAHAN
Professor, Stanford University,
Sloan Foundation Computer Study

MICHAEL MORRIS
SUN Microsystems

MARSHALL PHELPS
IBM

RUSSELL WAYMAN
Storage Technology

EDWARD J. BLACK
Computer & Communications Industry Association

SPEAKERS (Continued):

EMERY SIMON
Alliance to Promote Software Innovation

STANLEY BESEN
Charles River Associates

L. NORTON CUTLER
US WEST

DUNCAN MacDONALD
Citicorp

JOSEPH OPPER
Assistant Attorney General, New York
Chair, NAAG Payment Systems

MARK ROSENBLUM
AT&T

P R O C E E D I N G S

COMMISSIONER STEIGER: Good morning, ladies and gentlemen. We are delighted to see, once again, a very distinguished group of panelists here this morning.

The Chairman has a flat tire, is in the process of being rescued, but has asked that we go ahead in deference to the very busy schedules of our distinguished guests.

It is a particular honor for me, on behalf of the Chairman and the Commission, to welcome our first speaker. William Baxter is the William Benjamin Scott and Luna Scott Professor of Law at Stanford.

He is also Of Counsel at Shearman & Sterling. He is one of the most highly renowned authorities on antitrust law and competition policy, and he does us great honor by being with us today.

Professor Baxter served as Assistant Attorney General of the Antitrust Division from 1981 to 1983. As Assistant Attorney General, he oversaw the development of the 1982 Merger Guidelines and was the father of the 5 percent test, which has been said to have moved our profession from something of an art to something approaching a science.

He was also a seminal contributor to the concept of current product, innovation, and future product markets.

Professor Baxter has served as a consultant to a rich variety of firms and organizations, including the ABA Committee on Judicial Administration and the Brookings Institution.

In 1969, he served as a member of President Johnson's Task Force on Antitrust Policy and was co-author of the subsequent report which we know as "The Neal Report."

He has published articles, truly, too numerous to mention on a wide variety of topics, including antitrust, retail banking, and the legal aspects of airport noise.

The one thing we know we will not get from Professor Baxter is noise. We will, indeed, get light.

And for that, Professor, our profound thanks for being with us.

MR. BAXTER: You're much too kind. Thank you.

Our topic this morning is: How should antitrust enforcers assess foreclosure, access, and efficiency issues related to networks and standards?

I guess the question in my mind is whether, the fact that they pertain to networks and standards really makes any difference.

The network issue gives rise to a particular cost structure which is troublesome from an antitrust standpoint. If it takes an extreme form, you get this structure where you have a lot of front-end, sunk fixed cost to amortize that must be recaptured with a return if the investment in that activity is to continue.

On the other hand, marginal costs, or the cost of incremental usage after the big investment in innovation is completed, historically often approaches zero; and so you have a problem of: Who is it that is to contribute to the amortization of these front-end costs?

And, of course, this leads to, sometimes, extreme forms of price competition; and, indeed, in theory, under competitive circumstances there is no way to recover those front-end costs. But, of course, to the extent we can successfully confer intellectual property protection, it will facilitate that recapture; and, indeed, it is precisely to facilitate that recapture that we have intellectual property.

That still leaves the very interesting question: Who pays? And I'll come back to that, because there is a standard to which one might at least make reference.

When people talk about foreclosure and access, it turns out, often enough, that what they're really talking about is mandatory licensing, compulsory admission, a requirement that the incumbent firm deal with a would-be competitor; and reference is made to such cases as the Associated Press case, Terminal Railway, and more recently the Aspen Skiing fiasco, a case which I'm sure the courts would prefer to forget.

The difficult issue, or the central issue, raised by that line of cases is basically the problem of confiscation, incentive dulling. You can't expect people to go on making investments unless there's a reasonable expectation that they will be repaid.

And, indeed, I think it is the small prospect of really hitting the jackpot that drives investment in these industries to a greater extent than the present discounted value of alternative futures might suggest.

In short, I think that people who make decisions in these highly experimental technology, cutting edge industries, tend to behave as risk preferrers. So that I would be very, very slow ever to require licensing, engaging in compulsory licensing. I think we simply have to get used to the idea that we're going to have a different kind competition, no less desirable form of competition, but a quite different kind of competition in these industries, than we are used to seeing in industries where marginal costs are significant and rising and the recapture of fixed cost occurs as an unnoted incident of competitive pricing. And that, of course, is the usual situation with the more typical set of cost curves.

And the kind of competition that I refer to, that I think we will see more and more of in these industries and have seen to a considerable extent already, is what I call leapfrog competition where you don't get competition in the present technology. You get competition for a future technology, and then there is a winner; and the winner is the dominant firm for a period of a couple of years or maybe 10 years; and then someone else comes up with a big technological improvement and displaces the former dominant firm.

The reason competition takes this form is because you get powerful lock-in phenomena in these industries where people build complementary libraries of applications, programs, whatever form of investment occurs on the part of a buyer. And it is sufficient in its magnitude to make it quite difficult to simply interface and compete for the same contemporaneous service that the dominant firm is selling.

You can have lots of people all making plugs that stick in 110 volt standard electrical boxes because the complexity of the interface or the simplicity of the interface is such that it doesn't really get in the way of the service that's to be delivered through it.

But in these new technologies, particularly in their early phases, it's quite difficult often to deliver the same service through an interface of the complexities that are sometimes involved.

And so it's my expectation that we will see, as we have seen, in the computer industry, not only do I have in mind not so much the PC, although, we have seen it there, as the work station Hewlett Packard emergence. And I think we'll undoubtedly see the same thing with respect to Microsoft. Microsoft's operating system really is not a great operating system. It just happens to be the incumbent one, accompanied by a huge amount of lock-in investment. But I have no doubt that we will see it displaced at some point down the road by a truly superior system. I don't think we are going to see prices forced down by competition in the usual sense. Indeed, it seems to me on non-systematic observation that the industries we're talking about are not industries that typically engage in competition through price but rather competition through service rivalries of one sort or another.

Two other points I'll make quickly. I see my time has slipped away already.

I have long thought it was a mistake to worry about the phenomena of price discrimination in the context of intellectual property.

Price discrimination should be regarded as a positive good, I would say more generally, but certainly in the concept of intellectual property where the whole purpose is to generate a revenue flow toward the person who is assertively engaging in pricing discrimination.

But more important than that, when marginal costs approach zero, there is no coherent definition of price discrimination. If you go back to Harold Hoteling's bridge and you have a Volkswagen and an 18-wheel tractor trailer lined up to cross the bridge, there is no rational basis on which to charge the bug one fare and the truck another. Short-run statics will tell you that the only correct fare is a zero marginal cost fare; but, of course, we all knew that before Mr. Hoteling's bridge was built.

Insofar as economists have anything to say on that subject of who contributes how much to the amortization of front-end costs, reference I suppose would be to the work of Mr. Ramsey, who incidentally was a political scientist working for Lloyd George on the single land tax problem rather than an economist -- primarily seen as an economic problem when he wrote his now famous paper in 1927.

But that prescription essentially is to price in inverse proportion to the individual demand elasticity of the users. And, of course, that means that the people who are most solidly locked in and have fewest alternatives must carry the principal burden of amortizing the front-end costs.

Politically, that's often the difficult position to maintain. But I think we have to get accustomed to its essentiality in these industries.

Well, I will desist there and perhaps exercise my rights as chairman to pick on everybody else when they give their talks.

Thank you.

COMMISSIONER STEIGER: We are not going to let you off that easily. You certainly are not limited by this very brief amount of time. If there is any other thought in your head that we can get out of you before we turn to the other panelists, we are going to get it, Professor. We only have one crack at you.

MR. BAXTER: Oh, I'll be here all day.

COMMISSIONER STEIGER: Don't let him out of your sight.

We will move, then, with the Professor's gracious okay, to the first of a very distinguished panel, indeed.

Timothy Bresnahan is Professor of Economics and, by courtesy, of Business, at Stanford University.

He also serves as Co-Director of the Stanford Computer Industry Project, Co-Director of the Technology and Economic Growth Program in CEPR.

His research interests lie in Industrial Organization Economics, where he has been concerned with econometric measurement of market power and testing of models of imperfect competition; and in the Economics of Technology, where he has been studying the economic process by which raw technology generates value in use.

And what a lovely segue you offer us, Professor, from the opening remarks that we have just heard.

Would you proceed for us.

MR. BRESNAHAN: Very good. Let me say at the beginning that I have stood for some time for the view that the analysis of market power, entry and related phenomena in the world calls for detailed studies of individual industries and of the process of competition and of entry in those industries.

I, therefore, applaud the Commission's decision to have a set of hearings like this which are specific to the body of competitive problems we find in information technology industries.

But the Sloan-Foundation-funded Stanford Computer Industry Project is an attempt on the part of the University and the Foundation to create a body of knowledge about the computer industry broadly understood, with its purpose primarily to advise people who work either buying or selling in that industry in the course of their normal business. So it's mostly a business policy research shop. There's also the hope that it would become a useful public policy research shop, which is why I'm here.

My part of the SCIP has been to talk to, study by database, interview through students, large buyers of information technology.

We believe that the buyers of networked computing are not only the place you have to stand to understand competition in networked computing, network computing is a product-differentiated industry.

The tastes of buyers for different kinds of networked computer solutions, say old host-based ones, versus new client-server ones are critical for understanding the competitive process in that industry and also the buyers are probably the bottleneck by which the very fecund information technology industry's invention of raw technology is slowed in turning the value in to use. Okay?

So I think about competition in this industry from a buyers' perspective, which is slightly peculiar. And I look back at the structure of sellers in information technology, particularly in networked computing, from the perspective of buyers' frustrations with the effectiveness of sellers in supporting buyers' intelligent use well. Okay?

And that leads me to a base slide which is -- one should be clear in this forum about intellectual property. This is largely taken from the work of Andy Grove, particularly the vertical and horizontal bars down at the bottom are Andy's.

There are two sorts of models of industry structure in computing that we have inherited from the past.

These two models influenced both buyers' and sellers' thinking about how computers industry structure ought to be in a first-order way.

There's sort of one that comes from the little world, little computers, small buyers, small companies, vertically disintegrated -- that's why it's got these bars, it's the vertically disintegrated one. And the other model of industry structure which comes to people's minds is the big, big, big one. It's got the large buyer enterprise computing proprietary architectures sold by large companies. And rather than having the many points of influence on the direction of technical change which the horizontally organized vertically disintegrated model is said to have, it has platform steering by a lead vendor.

Andy Grove calls these the "old" -- vertical one is old -- and "new" computer industry market structure models. I think that's an important misnomer.

These two ways of organizing supply have emerged in two very different segments of computing because they were responsive to different customer needs in those two segments. IBM was successful with a very integrated, centralized, controlling, and coordinating model in the face-off competition for more decentralized models some years ago, because that responded to the needs for reliability, predictability, standardization, and communication between buyers and sellers that customers turned out to value at that time.

A lot of IBM's success as a computer company in forming that vertical model and in attaching its intellectual property, its proprietary intellectual property to standards came because of IBM's understanding of the commercialization process in information technology not just from its understanding of raw technology.

Similarly, the customer needs and the wider availability of competencies and expertise, in the personal computer market, permitted a much more rapidly changing, much more vertically disintegrated openish architectures industry structure.

Now, I emphasize the responsiveness of these two models of supply to customers' needs because I think the old and new labels are wrong. I think that networked computing in the 90's and the early part of the new century is going to be characterized by elements of the centralization from the vertical model and elements of the decentralization from the horizontal model in a mixture which neither sellers nor we now understand, and that it is not possible, over the imaginable range of competition policies, to force either of these models on the network computer industry of the future. A French competition policy, the most rabid French Diehrgist pro-national champion policy could not create another IBM, nor could the most U.S. anti-success rabid competition policy create another one of these. You just can't do it.

Now, so there's sort of the background. What should we do? How should we think about what goes on in the process by which that new industry structure is created?

Okay. And here I want to -- I'm going to skip a lot of the long-run because I largely agree with what Bill Baxter said. And I think it's just -- let me just echo what he said on the long-run side in slightly different language. You know, we have concentration in the computer platforms, including the networked computer platforms over which applications run. We have persistence in concentration. We have concentration even when the platforms are open -- so concentration in platforms not in firms -- for long periods. I think that that mostly reflects social costs. It's mostly a fact that comes from the cost function of IT that makes it be true that standards stick around for a long time. They serve social roles. And as a result, in the long run, we have entry processes which are primarily indirect.

Historically the long-run and indirect entry processes have been ones where a non-commercial computing capability has grown up and then been turned into a commercial computing capability.

So by "non-commercial," I mean, for example, minicomputers for process control sold by engineer to engineer marketing to people who work in plants, or personal computers sold to hobbyists, neither of those sold with any important commercial use, a technical capability gets built up and later becomes an effective entrant in either the PC case, workstation much the same, or minicomputer case into competition with existing commercial platforms.

The modern example of the Internet has much the same nerdy flavor. In its early uses, the Internet was used by people who were not commercial buyers. You know, we have professors of physics wanting to share working papers, and that demand supports the creation of a competitive capability which we are now told is the next big thing. There are plenty of routes for the indirect entry that supports the process that Bill Baxter was talking about.

Now, there's also, in these markets which have strong elements of vertical disintegration and many points of influence on the direction of technical change, a competition process in the short run whereby firms race, time to market is extremely important; and because of the inherent malleability, I believe, of software, there are constant border wars around the definitions of the market boundaries in those horizontal segments of the Grove horizontal model.

And the Commission has been at times, in Microsoft, for example, tempted to construe those border wars as anti-competitive acts. Whereas I think the reality of the day-to-day life in the information technology industry is that most of those border wars are acts of competition.

Just because server software network operating systems and desktop operating systems appear to be technological complements doesn't mean that they're not in competition in an economic sense. There's constant redrawing of the boundaries -- I pick those two examples advisedly -- of the boundaries of the functionality delivered by those three different kinds of software and competition from improved functionality in the market segment, one over, is very important.

So in the short run, you know, you hear the constant reactions of people in the normal course of their business in IT selling saying that they have to invent things really fast, that other people invent really fast; and you hear things like, you know, we used to think that we had a deal with those people, those people who sell a complement to our product; but now, instead of having to deal with them, you know, their product doesn't just interoperate with ours, it interops with everybody else. So there's a constant attempt by competitors in one segment to turn the products in the next segment over into a commodity by making them universally interoperate.

Or, worse, you know, our functionality -- there used to be a functionality which was a key part of our value-added to customers, and now it's embedded in their product; and so it gets sold, and our business goes away. Now, these are acts of competing on their face. They're not necessarily anti-competitive acts.

So I would disagree with Bill on the point. I agree with him absolutely about competition in the long run, that leapfrogging competition is very important in the long run.

I think that it is a mistake of too narrow market definition in the short run to think that there are not also important avenues for competition from firms in adjacent market segments.

Okay. Now I want to sort of give a large, global example of that, which is pretty contemporary. These are also slides which I use to talk to people in the -- who are both buyers and sellers. Sellers tend to react to the next two slides by telling me that I talk to buyers too much. Buyers tend to react to the next two slides by telling me that I am an apologist for sellers. So I think they're probably right.

What I want to talk about is the currently available seller vendor initiatives for resolving the problem of whether we're going to have a vertical structure or a horizontal structure, how much of -- each of which we are going to have early in the new century.

For a long time, the most popular model was that all inventors of technology, all people in technology companies would become producers of commodities, where we would have the horizontal model for everything. And then that business process, re-engineering services would be bundled with the integration of information technology in the customer's shop. And the only possible locus of market power would be at EDS or at Anderson. This model was very influential for several years in the early 90's and now seems to be going out of favor.

A variant of that, which had strong elements of the old IBM model, was that there should be a technology company -- Oracle comes immediately to mind -- that would bundle the consulting services that advised users on how to buy and use a large amount of IT with their particular technology and create, along Teecean lines, accost specific asset in connection to the customer.

And that's now come the full route of an attempt to commodify other people's technology. The Oracle guys now tell us that you don't need a personal computer; you don't, in particular, need Microsoft to collaborate with them. You should have a thin client. You should have a special purpose terminal at the end of the wires out from their product that would cost, say, only $500.

So when I say that these are initiatives to go after the same rents, to attempt to determine the same industry structure that cuts across a lot of vertical lines, I mean that. I would not like to see my friends in Washington convict half a dozen different people of trying to monopolize the same business.

Now, there's a somewhat less vertically integrated model, again, a service and support model which is sort of the rump of former large system companies.

Anybody here from UNISYS or AT&T? I don't mean that to be insulting.

The people who used to support the proprietary architecture of those companies now service and support multi-vendor environments.

Okay. Now, there's some more of these. I'll stop going through them in any detail.

The point is, there are a large number of competitive initiatives with strong elements of leaving horizontal competition between different technologies in place but creating an entity which can strongly influence the de facto standard setting process. There's not just the one famous one of those. There's a lot of different ones.

I think of them in competition. And, you know, the same process which makes it true that very smart people earn big rents in this business, which is that in the periods when the de facto standard setting process is very easy to influence, it's also very hard to foresee. And the same thing causes me to caution you against too much of an interventionist stance towards the regulation of the de facto standard setting process, which has lots of competition in it as well as the anti-competitive acts.

CHAIRMAN PITOFSKY: Thank you.

Good morning, everyone.

Our next participant is Russell Wayman who joined Storage Technology Corporation as General Counsel and Secretary in January 1990 and was elected Corporate Vice President in March 1991.

From May 1984 through 1990, he served as General Counsel of VLSI Technology.

He has had 23 years of legal practice with 20 of those as Corporate Counsel.

Mr. Wayman, welcome to the FTC.

MR. WAYMAN: Thank you, Mr. Chairman and Commissioner. I appreciate the opportunity to be here this morning.

I'm not on an academic par with the previous speakers.

COMMISSIONER STEIGER: Nobody is.

MR. WAYMAN: I'm more of a --

CHAIRMAN PITOFSKY: You're not alone on that.

MR. WAYMAN: Right. I guess that's stating the obvious, but that just proves I'm a good lawyer with my instinct for the obvious, as they say.

I have been in business for a long time, and I think I'm going to try and give you some thoughts related to my vision of how, or my view of how the computer industry competes.

I don't have the ability or the intention this morning to provide you with a thoroughly thought-through, world view as to how the Federal Trade Commission ought to enforce antitrust laws, what they should and shouldn't do. I just thought it might be useful to give you a couple of perspectives that you could use in thinking about your jobs in the environment.

I'm reminded a little bit of the old Arsenio Hall show, he used to have a little bit that he did which made people say: Well, hmm. You know, isn't that interesting. And that's kind of my purpose here. I don't pretend to tie this all together into some suggestions for what you need to do next.

I'll tell you a little bit about Storage Technology to help set my background. We are a $2 billion company, and we manufacture huge memory subsystems that hold data for folks like the Social Security Administration and

CIA, and insurance companies, and banks. Our systems sell for, on the order of half a million dollars a piece. They're not desktop systems.

We do not ourselves manufacture a complete system. All of our products hook up to somebody else's computers. So although our products are very large, the large analogue of the disk drives and tape drives may be attached to your own personal computers. And that's what we do for a living, and to the extent that you want to discount what I say, you might keep that in mind as where we're coming from.

The first sort of interesting fact, at least from a perspective that I have that I wanted to take a minute here to talk about, was my view as to two important characteristics of computer companies or, indeed, any high-tech company. And I think these will be not very insightful in the sense that I don't think there will be much controversy, but when you look at how they play off against one another, I think it leads to perhaps some interesting thoughts.

High-tech companies are peculiar because one of their principal assets is intellectual property. They are really unique institutions when compared to old-line companies, an oil company or a steel mill, you look at the asset base of that company and what it's worth and what could happen to it and say: Well, it's a blast furnace, it's an assembly line.

If you look at a company, I think, a good example of that would be a Microsoft, and you say: Well, what's the asset there? They don't have any capital assets to speak of. I mean, they have some buildings; but that's not the value the company. The value of the company is the software programs. And the software programs are intellectual property.

And so, in a sense, the real value of that company is based entirely on intellectual property laws and the ability to protect that property.

If there were no laws, the guy that owns a steel mill has a tremendous barrier to entry because you've got to build another blast furnace to get in competition with him. If there were no laws at Microsoft, it wouldn't take very long to be in competition in one sense. But played off against that fact is another, and second, I think, important characteristic of high technology companies.

Yes, intellectual property is one important fact of those companies. Another important fact is the rapidity with which the marketplace changes. And, again, I don't think that's a particularly insightful remark. Anybody that's had the pleasure of going out and buying the latest and greatest PC only to find out next week that it's obsolete understands that things are moving very quickly in this arena; and that is, in fact, the nature of the beast.

Those two facts are -- when you look, then, at the value of a company and you're saying, well, how do computer companies compete and how much is this company going to be worth if you're going to invest in it, you can look at both of those: How much intellectual property do they have today? And that's one fact that's interesting. And another one is: How quickly are they moving?

And that's the second, and I would say, to a significant extent, the most important fact in looking at the value of the company, because this is a race where everybody is running, very, very fast; and it isn't particularly valuable to you as a potential investor to find a company that has this tremendous fixed position in this race. Because if everybody else is moving, as I say in my paper, at the speed of a race car, the fact that you've got a race car that's standing still that happens to be, at one point in time, the equivalent of theirs is not particularly helpful as a competitor.

The implications of this I think are just that when you look at how companies compete and you look at what ought to be encouraged and discouraged from a consumer welfare point of view and you say, well, do we want a paradigm in which people are particularly encouraged to build large asset bases and not have to run very fast because they have a tremendously high level of ability to protect them, or do we want to create an environment in which it's probably the best defense to run like hell and hope you can stay ahead of your competitors.

From a consumer welfare point of view, setting aside -- those of us that bought the computer that was obsolete a week later, but from an overall consumer welfare point of view, I think the bias ought to be towards encouraging people to keep moving. And I think that has some implications for what intellectual property regime we ought to look for.

The second observation about how computer companies compete and the nature of the -- just sort of the background that I have, and I think it's useful to insert into the debate, again, not because it sets out a whole way that you all ought to enforce the law, but just an important thing to keep in mind in your background and something that isn't often stated -- is the peculiar nature of software. When you look at how it has evolved, as a creature of intellectual property, you look at the fact, that I mentioned earlier, that Microsoft's principal asset -- and I don't mean to single them out. Storage Technology has millions and millions of lines of code in its products, which are one of our major assets, and every company represented at this table is in similar circumstances.

But if you look at that intellectual property, that software, and you look at what the landscape looks like now from a legal perspective and compare it with what the landscape looked like back when I first started advising clients about software, I remember having inventors coming in to me and saying, there's no -- we can't protect our software at all. It's totally unprotectable.

And, indeed, there was some validity to that view. I mean, the early cases indicated before CONTU that you couldn't copyright this stuff. And certainly until Diamond v. Diehr people thought you couldn't get a patent on it. And we used to write contracts that say you can't steal it; but, you know, I think that that was precious little protection.

Guys like me, men and women like me, trying to protect our clients' assets and their investment have pressed on these issues; and the Congress has legislated on these issues. And today we have a regime where if you have a piece of software you can clearly get a copyright on it. We all know that. And you can get a patent on a tremendous amount of it. In fact, that's a real concern that I think people have, that the patentability standards are -- the standards are not low, but the collective intelligence and background of the Patent and Trademark Office in examining software patents is not as robust as it is in other areas;

and, therefore, we sometimes think that the examination procedure is not as rigorous as it could be. So you get a lot of patents.

So we have a creature today, as I said in my paper, if you're looking at the automobile engine and you say, well, I want to protect some aspect of it, you'd generally try and advise a client to get a patent. If you're looking at a book or a play, you don't think about getting a patent. You say, well, you're protected by copyright. And if you look at a secret formula, you can say, well, we'll just keep that a trade secret.

It's almost unique in the intellectual property regime that if a client walks in with a piece of software you say: Well, we'll patent it, copyright it, and keep it is as a trade secret.

And that, again, is just sort of as Arsenio hall maybe does, sort of a little "Hmm" you ought to keep in mind as you look at this landscape and think about this industry.

The last thing I'd like to talk a little bit about is my perspective on the interfaces. Well, I guess, the best way to say it is that I think that we need to separate, in our conversations, issues about the value of an interface from issues about the value of the assets on either side of the interface.

So when we talk, for example, about a person that has gone to the time and expense of preparing and developing a network or an operating system and then we talk about the need for facilitating open, unfettered access to that network or that operating system, it is, I believe, a very, very serious mistake to say if we facilitate access to that operating system, for example, we are then preempting or capturing or denigrating the value of that operating system to the person that developed it.

We're not talking about the second person to this theoretical marketplace replicating that operating system and selling his version of it and gathering the rents on the use of that operating system.

What we're talking about is the ability of the second person to introduce his own value-added product on the other side of that interface and that own value-added product cannot violate the owner of the operating system's copyright or patent or trade secret right. Nobody's talking about that issue.

So I think it's a terrible mistake in this dialogue to say, well, Company A has tremendous costs in starting up this network or this system, which is certainly true; and, therefore, facilitating other people attaching to it is preempting the value of that system. I think that the person who developed the operating system is entitled to gather the economic rents on that system, but nobody's arguing about that.

The question is: Can he prevent other people from gathering rents on things which could attach to that system if the interface were available to that second person? I think that's a very different economic issue than saying you're preempting the value of the system itself.

Another point that I sometimes make about interfaces, I would like to make here as my last point today is the interesting comparison, as we talk about the availability of interfaces, the availability of information, as to how to attach one product to another or how to make products interoperate.

And we talk about folks that say, well, that information ought to be not available at the election of the owner of the operating system, in my example, or a computing device -- there are many opportunities to talk about interfaces in this industry -- that discerning that interface --- whether or not one can discern that interface is a right that the owner of the interface has to say, no, you can't figure out how to hook up your device. The example was used earlier of the plugs in the wall jack, plugs in the wall. It would be ridiculous if I was to argue that I have a way to plug a device into an electrical outlet but I won't let you see what it is; and you can't figure out what it is, which is the case in these sophisticated interfaces. That would be a preposterous argument.

Or as I say in my paper, the interface between a carburetor and an engine, the bolt pattern, if I said that's protected; you can't see that bolt pattern; I won't let you know what it is, that would be silly.

And I'm not much more impressed with the arguments that say that would prevent individuals from discerning those patterns when it comes to trying to build interoperable devices. I think it is an economically and a legally suspect position in my view and I think in the courts' view when they have had occasion to look at it.

Well, those, I don't think, are very many antitrust thoughts. Those are more how companies compete and some background for you all as you go about your job.

My feeling, to maybe summarize about the antitrust laws, is I'm glad they're here. I think that they're an important part of the debate as to how these computer companies compete, and I look forward to the continued interest of the Commission in these areas; and I applaud some of the recent decisions and some of the recent actions, in particular the situation with my good friend Bill Kelly over at Silicon Graphics. I applaud your efforts, and I think my remarks indicate that that's a pretty good deal.

So, thanks a lot for your time; and if you have any questions, I'd be happy to try and answer them.

CHAIRMAN PITOFSKY: Thank you very much.

Why don't we have one more presentation and then let's stop for a round of Q and A and some discussion, and then we'll take a short break.

Our next speaker is Marshall Phelps, Vice President of Intellectual Property and Licensing Services at IBM. In his current position, Mr. Phelps is responsible for IBM's worldwide Intellectual Property Law activities, Licensing, Standards and Telecommunications Policy.

In August 1987, he was named IBM Director for Governmental programs located in Washington, D.C.

Mr. Phelps, welcome to the FTC.

MR. PHELPS: Thank you. Good morning Commissioners, ladies and gentlemen.

We welcome the opportunity to talk a little bit about the information technology industry. I'll call it the "IT" industry today.

It's an industry that may seem like it's been around forever, but it is quite young; it is fast-paced; it is growing; it is changing; and it is driven by innovation, competition, and consumer demand. It's international in scope, and it's marvelously complex.

Over the next couple of minutes, I would like to talk about these industry characteristics and then argue that technology innovation, above all else, is the critical competitive element in our industry.

Now, in addition to our view of the vigorous competitive environment in this industry -- and you've heard a lot about that already -- you have asked us to talk about networking and standards.

We are coming to the view that networking, a largely unexplored territory of opportunity and challenges, is already exerting a profound influence in our industry, stimulating it to some really new heights.

But this question of interoperability, historically of some importance in this industry, as you already know, is crucial for networking to flourish. Thus, the industry has really got to strengthen its commitment to work in a responsible and timely fashion to resolve this question of compatibility between and among programs and devices.

Now, international industry standards provide a foundation for solving these interoperability issues, but the process for developing these standards, while it's been shortened in recent years, needs acceleration and even broader industry support.

As for how this impacts the FTC, we are going to encourage you to stay the course: to maintain a restraint and deliberateness that you've shown so far, which has been a proven success, rather than embark on new strategies and theories which may turn out in the end to be ill-suited to this most fast-paced and dynamic of industries.

Now, our industry has demonstrated a remarkable capability. Practically every decade it redefines itself and concurrently expands the availability of computers for new uses and new users.

Barely 30 years ago, our national consciousness awoke to the power of computers when man first walked on the moon. The 1960's and 70's were the industry's initial wave. "Mainframes" made the Apollo missions possible. Businesses centralized company-wide functions like payroll on mainframes. "On-line" transaction-based systems did arise in these years as users at remote terminals communicated with mainframes. But the options available to these terminal users in terms of data processing alternatives were severely limited by the host mainframe. Mainframes were huge; they were powerful; they were enclosed, in raised floors, glassed-in, air-conditioned quarters; and they were isolated from the users.

The next era was the microprocessors and the arrival of the personal computer in the early 1980's. The industry completely switched directions. Data processing became decentralized, distributed to individuals with PC's in their offices and homes. Personal productivity increased but generally for the individual user only, as opposed to the mainframe, however, this was technological democracy.

Now, we're in a new era already, called "network centric computing." That's at least our term for it. The old paradigms are coalescing and giving birth to a grander vision: Interconnectivity and collaboration across networks, indeed, across the world. This is epitomized by the Internet, that network of networks, where unlimited numbers of people have unlimited access to unlimited information. There are many networks, both public and private; and they link extended enterprises and individuals. They allow electronic communication, interaction, and commercial transactions.

Now what has driven these phases in our industry has been an inexorable tide of technological innovation. Time after time, science has overcome technological thresholds to provide faster, cheaper products with greater capabilities. And this is going to continue as far as we can see into the next century.

So today, PC's in the home are equivalent to 1985 mainframes. And the same computing power in the original guidance system that landed the Apollo mission's space capsule exists in a 1995 Cadillac.

IT companies have rushed to provide the benefits of new technology to their consumers, and they have been welcomed generally. Thus, today, unrelenting consumer demands for additional computing capability and techniques -- e.g., Internet access, CD-ROMs, multi-media, whatever -- are fueling an impetus for even further innovation by the industry.

Consequently, innovation and commercialization of new technologies are proceeding at break-neck pace. Not that long ago, computer products took 5, even 10 years to develop. Today, a year and a half is the norm. And in the PC industry, it's becoming 6 months.

Each phase of the industry has expanded competition and vastly increased the number of competitors. Moreover, the arrival of each phase has re-leveled the playing field. The competitive leaders in the previous phase had no particular advantage in the race for leadership in the next phase. In fact, they were arguably at a disadvantage because of their dependence on the status quo to sustain their industry position.

In the mid 60's, fewer than 10 companies had the resources to develop and manufacture main frames. You knew them. They were IBM and the "BUNCH." That was Boroughs, UniVac, NCR, CDC, and Honeywell.

Today, there are 71,000 competitors in our industry worldwide. I got those figures from IDC, and I attached them to the back of my testimony, if you want to look at those.

And we're only in the early stages of this thing called "network-centric computing," that is experiencing yet another explosion of competition and proliferation of competitors to meet the challenges.

You already know some of these new companies; although, six months ago you never heard of them. They're the latest darlings of Wall Street, companies like NetScape and Spyglass, which have seen their market capitalizations quadruple in just a few months.

As a company whose PE ratio is 9, I really envy Spyglass and NetScape whose PE ratios are somewhere around 6,000.

Moreover, this is an international phenomenon. Back in the 1970's at the height of IBM's antitrust troubles, we couldn't convince anyone that the information technology market was international. Today, to think otherwise is laughable.

For many U.S. computer companies, half of their business is overseas. The Internet is already accessible internationally, and the goal of Global Information Infrastructure is well accepted.

I also referred to the marvelous complexity of our industry. From the antitrust point of view, this feature alone makes regulation extraordinarily challenging. Not only are there numerous competitors, but they vary in size and objectives, from hardware component suppliers to mainframe-server manufacturers, from software application to operating systems programming houses. There are groupware programming developers like Lotus, and AT&T. There are telecommunication and network access providers, like Prodigy and America Online and what have you.

Products are distributed by manufacturers, component and subsystems integrators, value-added re-sellers, retailers, mail order catalogs, and, now, of course, electronically. There are established entities and a barrage of "start-up" firms. In addition, there are countless combinations, ventures, alliances, and contracts, both domestically and internationally, between firms in the industry and businesses in fields related to the industry.

A complexity also results from the number and variety of hardware and software products. Each information processing problem has a range of alternative solutions. For example, we are all very familiar with the attraction of fully functioned PC's with powerful operating systems and processing facilities, speed and memory, to load and run resident application programs.

Well, even so, industry seers are foretelling the emergence of a rival new technology -- you heard a little bit about it earlier -- for the same task. One such device would be a simple, low-cost "IPC" or Inter-Personal

Computer, aka, a network computer, an information appliance, or "web-top box," designed and optimized for connection to the Internet.

Now, an IPC user downloads and pays for only what's required. He subscribes to rather than purchases application programs and creates "live" applications, customized for whatever particular problem he or she is trying to solve. Now, the long-term horizon for the arrival of this latest fantasy is early 1996.

You've asked how companies in the industry compete; and it should be obvious from what I've said so far that, innovation in our view, is the preeminent factor. This is an industry where R&D generates incredible increases in performance no matter where you look, microprocessors, storage capacity, displays, memory. The price/performance ratio has improved 30 to 40 percent annually since the industry began. And it shows no let up.

Now, what do we do with these improvements? Well, we give them away. By that I mean the aggregate cost to consumers for solutions declines even if the speed and capacity increases.

I'll give you just one example. According to "Business Week's Annual Buying Guide to Computers", issued earlier this month, "The $2,000 or so that you're very likely to spend on a home PC this year can buy you a machine that has 50 percent more disk storage and nearly double the raw computing power of last year's models." More cost effective solutions mean more consumer problems that are addressable by consumers. And this results in a cycle of consumer demand driving the technological innovation that I mentioned earlier. These are not indicators of a dysfunctional or uncompetitive industry.

You have also asked me to discuss the impact of networking on the industry. Well, it's a broad term, and it encompasses all sizes and arrangements of a simple but really elegant idea, and that's connecting people and information and methods. So they can be little or big, local or international. They can contain a wide range of communications equipment, computers, software, and information resources, developed and used by a diverse collection of folks and companies around the globe.

But they are developing and multiplying exponentially. There are already some 34,000 networks comprising the Internet. A new network is added every 30 minutes. And even though by some estimates, upwards of 40 million people are using these networks, they will never achieve their full potential unless they are user-friendly, consumer-oriented, and easily connected. That is interoperable. Interoperability means that different systems, products, and services work together easily and transparently.

The mechanism to achieve interoperability is the development and implementation of open interfaces -- and you heard a little bit about interfaces -- at key "high leverage" points in a network.

In our view, an interface is open if its specifications are readily and non-discriminatorily available to all and if applicable intellectual property rights are available on reasonable and non-discriminatory terms. Open critical interfaces enable and catalyze the development of new systems, products, and services built and operated by competing providers and users.

This, in turn, results in more competition, increased consumer choice, lower prices, and enhanced accessibility. Already consumers and customers in the marketplace are insisting that vendors provide interoperable solutions; and they are responding.

What about standards? Well, standards are vital to our industry because they provide a way out of the confusing morass of incompatible products and services. They are the key to facilitating interoperability via open critical interfaces. Since the vision of networking is global, interoperability standards must apply internationally.

The process of defining and adopting voluntary standards involves consensus building, which is inherently democratic and inherently slow.

De jure standards organizations, such as ISO, IEC, JTC1, and ANSI are faced with many of the same problems that government regulators face: Remedies or solutions that take years to formulate are anachronistic by the time they are adopted in an industry with annual product cycles. For the past five years, the de jure organizations have been reducing the process time. But if there was a clarion call to our industry it's this: Timely solutions for the interoperability concerns that could limit the industry's future must receive top priority. The industry's standards development organizations must find a way to keep pace with technology.

There is evidence this is beginning to happen. There are some thoughtful ways to invigorate the process. Once such effort is under ANSI, the American National Standards Institute. It's got a zillion members, 40 government agencies and 200 technical groups, et cetera. They've got a panel IISP. And the whole idea of that is to pick the 75 or so interface points that are going to need standardization for networking development and optimize on those. We're hopeful that that will be successful and a model for the future.

Now, I mentioned earlier that the standards have to be international. Just as we cannot optimize around one manufacturer's view, neither can one country or region impose its view -- or the view of its national champion -- on the rest of the world. This calls for increased participation in the development of standards by industry, government users, and other interested parties worldwide.

If the de jure system isn't as nimble as it ought to be, what about the de facto standards? Well, they are a fact of life. They are generally adopted by industry consortia or informal groups, and they are appropriate and they are necessary in the proper circumstances.

One notable example you may have heard about recently is this Digital Video Disk format which was worked out between two groups developing DVD technology. The developers were at the point of commercializing two disparate approaches.

However, the two principal prospective customers of this technology, who happened to be the entertainment world, and the distributors and PC storage manufacturers, put intense pressure on the developers to agree to a single format so these DVD's could be swapped between PC's and DVD players attached to your television.

The adoption of a single format avoided a repetition of the "VHS v. Betamax" situation with its confusion and wasted resources. It also eliminated the increased development and manufacturing costs and, ultimately, will lower prices to the consumer.

Now, given this perspective, what's a responsible federal agency to do?

Well, obviously, we believe the FTC should continue to police the industry for per se restraints of trade, price fixing, market division, Sherman Act section 1-type violations, et cetera, offenses under FTC Act section 5, and other violations. Similarly, it should continue to investigate mergers, which may also be a vehicle to abuse.

Now, the FTC has long pursued what we would think is a relatively judicious approach to antitrust enforcement in our industry. And we think this continues to be appropriate for the future.

First, this industry is a case study in free enterprise, competition, innovation, and lower prices for the benefit of consumers -- precisely the values our antitrust laws were enacted to encourage.

Second, government agencies and courts are bound to exercise due deliberation before reaching conclusions. This takes time. Any industry characteristic could operate in the interim to alter those conclusions. Change is likely to nullify the potential for the antitrust consequences initially predicted.

In fact, historically this has been the case.

Thus, one could assert that the industry has a built-in remedial force. Occasionally, some companies might acquire inappropriate power. But the inexorable march of technology generally has made their grip transitory.

Moreover, other industries, such as steel or automotive, pharmaceutical, and banking, to name a few, have a greater incidence of political, regulatory, environmental, or other limitations. The computer industry is restrained only by human intelligence and imagination. It is precisely this paucity of artificial limitations that has spurred the incredible innovation and competition that is the hallmark of our industry. The important role for antitrust enforcement agencies is to ensure that the atmosphere, shown to be so conducive to competition, is preserved.

Thus, we believe that the FTC should not embark on a mission to regulate this industry. Industry participants -- many of them niche players -- hustle to understand the import of almost daily revisions to the industry's product mix, technologies, approaches, and viewpoints.

I doubt that more precise rules of competition -- beyond the general principles of antitrust law -- could even be conceived for such an environment. It is precisely the unrestrained interplay of ideas and efforts to commercialize them that has resulted in the miraculous achievement of this industry.

You may recall that just four years ago, the Clinton administration was advocating a considerable government expenditure for the NII, or National Information Infrastructure. They asserted that without federal founding, the fiber backbone essential for the realization of the NII would not be built. And they were even talking of budgeting $5 billion dollars to do this.

But what's happened in these last four years? Everyone from public utilities, to common carriers, to private corporations, to Joe's corner gas station is now laying fiber in this country so that today there are 20 million miles of fiber in the U.S. And this well-intentioned government project, the need and necessity for it, has just evaporated. The Internet has arrived, and the NII and the GII are fast becoming a reality.

Likewise, the FTC should not set out to manage the voluntary industry standards process, but should insist that it be operated openly and fairly. There is just no evidence that installing another layer of costly bureaucracy would do anything to speed the process. It will probably just make a slow process even slower.

As I mentioned earlier, the private sector is moving rapidly to address these concerns. When governments have tried to meddle in the standards process, the results have generally been disastrous.

For example -- I'll give you one example in Europe -- a European industry standards group called ETSI -- it was the European Telecommunications Standards Institute, desperately wanted to avoid the cost of paying royalties for patent rights on innovative technologies.

You can guess which country had the innovative technology.

With some support from segments within the EU Commission and under the guise of establishing European standards, ETSI attempted, albeit unsuccessfully, to force compulsory licensing of intellectual property rights, including, obviously U.S.-owned rights, as a condition for participating in the standards process and most probably as a condition precedent for bidding qualifications for public procurements.

This effort threatened to destroy ETSI. Ultimately, thoughtful leaders in the Commission and ETSI itself recognized that this effort was misguided, and the members overwhelmingly rejected the approach.

Not without, I might add, a lawsuit filed on behalf of U.S. manufacturers, many of whom are sitting around here.

The FTC should, however, in our view, assist the industry in building an international marketplace. For example, the FTC could advocate international synthesis of antitrust laws or at least a global set of principles for acceptable competitive conduct.

If antitrust rules and enforcement were relatively uniform worldwide, our antitrust enforcement activities would not unfairly hamper American firms competing in international markets.

No country can operate independently of international forces any more, and any antitrust analysis that denies that is simplistic.

So I hope you got somewhat of a picture of a vibrant industry that we're in but one that has a challenge of solving issues of compatibility and interoperability through appropriate actions by, hopefully, the standards bodies.

In the belief that competition will continue to flourish and challenges to competition will be surmounted, I've ended with a plea to the government antitrust agencies to continue their judicious approach vis-a-vis our industry. In our opinion, this is policy the FTC should readily endorse.

The United States is the clear leader in the worldwide IT industry. There is no other government in the world that has a competition policy -- not Europe, not Japan -- that has done so much for its computer industry as the U.S. has done for ours. And no other industry, in our view, as a response, has done so much for the world's consumers.

Thank you.

CHAIRMAN PITOFSKY: Thank you very much.

Let me open this up with a question to Bill Baxter. And, Bill, I apologize for not hearing your presentation. My hope is that global or high-tech competition will make the experience of coming out of your house and finding your car has a flat tire a thing of the past.

Bill, restore your thinking to those days when you were the chief antitrust enforcement official for the U.S. and imagine a situation in which a firm or a group of firms has a legally acquired dominant position and many other firms are at a significant disadvantage because they cannot interconnect or they don't know the code or they can't duplicate the dominant position because of secrets and so forth, and assume we take Mr. Phelps' advice about restraint and being judicious and not plunging in mindlessly, are there any circumstances you can imagine where antitrust could step into that fray and either by requiring disclosure or some kind of compulsory licensing or mandating open interfaces, are there any circumstances where antitrust can do more good than harm?

MR. BAXTER: I would treat that as a question about predation. And if the control of the network had been acquired by a method which was itself illegal, because predatory, within the meaning of section 2 jurisprudence, then I would intervene, but otherwise not.

CHAIRMAN PITOFSKY: And, of course, my assumption was, legally acquired. So your response is that you would not intervene?

MR. BAXTER: Right.

CHAIRMAN PITOFSKY: Any other comments on that particular question or other questions.

MS. DeSANTI: Can I just ask as a follow-up: Is that to say that it would make -- that the arguments we heard from, say, Mr. Wayman about the distinction between an API that's an interface versus the underlying code for the underlying product are not distinguishing features for you, that you wouldn't attempt to distinguish between whether the access was being sought by a producer of a complementary product versus a competing product?

MR. BAXTER: Well, of course, I don't agree with Mr. Wayman's comments there. I don't see any difference. If I have control of the Net legitimately and he has something that he would like to attach and he seems to me as an appropriate carrier of some of my fixed costs as anybody else, I mean, that's what makes up my demand curve under those circumstances, is people who want to attach.

So that takes me back where I was before. If someone has legitimate control over the Net for whatever reason, including the reason of having himself an attachment that is of such value that it carries the Net with it, that seems to me perfectly appropriate.

MS. DeSANTI: Let me ask you, maybe you can take it a step further, yesterday we had some panels on the interface of antitrust and intellectual property protection that led into a discussion of whether firms can take legally acquired dominance or market power in one market and leverage it into another market.

And there were some who argued that a distinction should be made in the situation where you need an interface availability to prevent the monopolist in the first market from leveraging its power into the second market.

Do you have any comments on that type of a situation?

MR. BAXTER: Well, first of all, it's very important to be precise what we mean by leveraging into the adjacent market. People use that expression when all they really mean is that some sort of advantage has been gained by which the firm in the first market makes additional sales in the second market. And that is not what I have in mind when I say "leveraging into a second market."

The only time I recognize the existence of a problem is when an independent base of market power is being established in the adjacent market that will be able to collect monopoly rents from people who have no demand in the first market. And that means there must be significant independent uses of the product that constitutes the second market.

But under those circumstances, I would be perfectly happy to recognize a violation where an independent base of market power was being established by manipulation of market power in the first market.

CHAIRMAN PITOFSKY: Other questions?

MS. VALENTINE: Actually, Tim Bresnahan, would you comment on those questions as well?

And we may as well stay with the last example that we had of a market power situation in one market, and let's say it's a refusal to license, which then leads to a market power situation in the second market, but it is a complementary product.

MR. BRESNAHAN: Yes. I think that in general, it is possible that owners of legal market power in one market attempt to lever it into a complementary market. I dislike Aspen Ski a great deal less than Bill does.

In IT in particular, I think that the test for whether it is an efficient leverage attempt or inefficient leverage attempt, market power gaining leverage attempt will often come out for efficiencies.

You know, why will the owner of the interface standard -- if, say, it is embedded in a product that is in one of the two complementary markets -- not wish to license it for open interoperability to most people in the adjacent market for interconnect?

Typically, owners of intellectual property in IT are very focused on scale economies and on the advantages of positive feedback by the investment of complementary technologies that are complementary to theirs.

And in most circumstances, if there is a benefit to their customers of having the connection to the other firm's product, then they will want to do it. Now, why might they not?

They might be attempting to create a more valuable monopoly by being in two markets, for example, for price discrimination reasons. It seems to me that that's an investigable question of fact. Or it might be -- and I think this is the one which makes me say that in these particular industries, we shouldn't be too interventionist on these matters -- it might be that the apparent technological complement this year is next year's competitor and that the motivation for the desire for the interconnect is a horizontal competitive one.

So I would say that it's often true that we are protecting competitors by forcing licensure of intellectual property rather than by protecting the competitive process in such circumstances.

CHAIRMAN PITOFSKY: Bill?

MR. BAXTER: Yeah. If I could add just one word. I agree with Tim that the normal incentives here are for licensing, and that certainly is an important reason why the case that you specify so seldomly actually arises.

But there's another reason. And that is that if these two things are strong, technical complements and each has market power in the individual separate markets, you run into a problem of double marginalization of successive -- of each company marking up to reflect its market power but starting from a marginal costs number that is already inflated by reason of the market power of the other company.

And you get prices that are even higher than the monopoly level and outputs that are even lower so that coordination is needed to bring price down and quantity up. It sounds backwards from all of our intuitions, but it's really quite a common situation.

CHAIRMAN PITOFSKY: Other questions?

Can I just ask Mr. Wayman, Mr. Phelps, or others, in your experience in the business world, have there been circumstances in which antitrust enforcement or the threat of antitrust enforcement, because the area is so uncertain, have deterred companies from engaging in behavior that you thought would have been efficient?

COMMISSIONER STEIGER: Let me add to it, because that was my question of Mr. Phelps, in particular, I believe he suggested that antitrust laws have impeded industry activities abroad; and I would be very interested to hear some expansion of that, if indeed that was your view.

MR. WAYMAN: Chairman, we never take any cognizance of the antitrust laws. We just proceed regardless.

CHAIRMAN PITOFSKY: Were there deals that actually were scratched or sidetracked, delayed?

MR. WAYMAN: Sure. And also deals that were significantly restructured. My first year of practice with the Federal Trade Commission -- I'm aware of the antitrust laws. We pay attention to them. They have an impact on how we do our business.

Then this guy --

MR. PHELPS: I was just amazed at the question. Because the answer to that is, of course, people are aware of that.

God knows we've turned it into an art form, I think, at IBM. It's, thankfully, becoming less of an issue; but it dominated the company for 20 years.

There are trade associations in Washington, you might hear from one shortly, that have existed because of the antitrust concerns related to the IBM Corporation.

We still live under a consent decree that is so old, it has fuzz on it. It was drafted before the industry even existed. It was 1956. And yet it affects business practices that we have today.

We have to have separate subsidiaries for leasing and financing as a result of a 1956 consent decree that, as I say, was put in effect before there was a computer industry. And yet it operates today.

So, yeah, there are lots of constraints like that that still exist. We would like to change some of those, obviously.

There are lots of deals that don't take place, I would just say, because of concerns over whether or not they are going to pass muster. I'm not sure that that's a bad thing, and I'm not suggesting that it is a bad thing. But there's probably more self-policing that goes on than you would imagine, sitting here, on that.

The international issue is there because -- I put it there because I think, especially in Europe, what happens under the Treaty of Rome, and what have you, is not as well defined as it is in the United States.

And the issue of dominance is a much looser -- I'm not here trying to testify as a European lawyer, but it's a looser concept. And the various commissions sometimes are at war with themselves on how they would interpret some of those things. And so you have DG-3 or DG-13 versus DG-4. And what happens to you overseas is somewhat speculative. Now you get to Japan and, my goodness, the Fair Trade Commission in Japan sometimes -- I don't know if they go to work. I don't know what they do. But I do know that when I was living in Japan, the only time they seemed to wake up was when Apple or IBM did something. But the keiretsu structure still exists and, my goodness, you'd have a hell of a time trying to inflict that kind of a structure in the United States upon anybody.

So I think the enforcement of it is very spotty overseas and clearly not very consistent, at least I would say that from a business perspective, and I would obviously defer to our academic friends on that.

CHAIRMAN PITOFSKY: Well, I can say that in six months' experience here that the questions of coordination, harmonization, procedural cooperation, if they're not moving as quickly as they should, it's not for failure of attention or energy.

MR. PHELPS: Right.

CHAIRMAN PITOFSKY: There are very difficult problems when you get into the international arena.

MR. PHELPS: Yes, there are. But I think the U.S. has been pretty forthcoming trying to get that kind of consistency, and we welcome it.

CHAIRMAN PITOFSKY: Good.

Well, on that note, why don't we take about a 10-minute break, and then we will resume.

(Whereupon, a brief recess was taken.)

CHAIRMAN PITOFSKY: Let's resume, if we can.

Our next participant is Michael Morris, Vice President, General Counsel, and Secretary of Sun Microsystems.

Before joining Sun in 1987, Mr. Morris was Secretary and General Counsel at U.S. Telecenters Corporation.

From 1983 to 1986, he was Secretary, General Counsel, and Director of Government Affairs at ROLM Corporation, and before that, a senior attorney at that company.

He is, among other things, Director of the Sun Microsystems Foundation and Director of the Aris Project.

Mr. Morris, we welcome you here.

MR. MORRIS: Thank you very much.

I am pleased to be here today. And I want to extend my thanks to Chairman Pitofsky and the other Commissioners for giving me this opportunity.

You have my written submission. And rather than reiterate the issues discussed there, what I'd like to do is talk briefly today about a couple of over-arching themes that provided the context for those written remarks.

While it is true that the principal American antitrust statutes and case law were developed in the Industrial Age and motivated by concerns over the concentration of economic power in the hands of firms engaged in the production and distribution of physical goods in capital-intensive industries, I believe that the antitrust law has as vital a role to play in the Information Age as it ever has.

Ninety years ago, the monopolization of refining capacity or smelting capacity or rail distribution were the main threats to a competitive market economy. In the Information Age, those threats are represented by monopolization of technical standards.

Usually, a discussion of this issue revolves around the domination of the personal computer operating system software by Microsoft and the domination of personal computer microprocessors by Intel, the combination popularly known in the industry as "Wintel." Of course, that domination is utterly obvious. But I want to take a somewhat longer historical view.

It has often been observed that the Microsoft/Intel domination of the personal computer market was the product of IBM's decision to license the two most critical technologies in the original IBM PC from those two companies.

What's important isn't that IBM chose Microsoft over some other outside supplier for its operating system or Intel over some other outside supplier for its microprocessor. What was critical was the fact that it was IBM that was making the decision. After all, Apple invented the first mass-produced personal computer, and it was built around a Motorola microprocessor. Today, Motorola has a tiny share of the personal computer microprocessor business.

Apple built its operating system in-house; but even if it had licensed that technology from the outside, such an outside supplier would have been no more successful in establishing its technology as the PC standard than Motorola was on the microprocessor side.

My point isn't merely that IBM unwittingly transferred its market domination to Microsoft and Intel in 1980. That fact has often been observed. My point, which is less often remarked upon, is that the original monopoly power developed by IBM in the early 50's runs in an unbroken line to Microsoft and Intel 40 years later. This is an amazingly static phenomenon for an industry that is normally characterized as the quintessence of dynamism.

I think it is absolutely essential to keep this history in mind because there are many in and outside of our industry who claim that the rapidity of technological change somehow renders antitrust law and policy stultifying at worst and irrelevant at best in the Information Age. And yet for all that change and supposed dynamism, the control by IBM of a handful of key technical standards in the 50's, 60's, and 70's created such market power that its decision to cede control of a handful of technical standards to Microsoft and Intel in 1980 conferred the power on those companies to dominate the industry in the 80's and 90's.

Many people like to comfort themselves with the thought that the so-called paradigm shift represented by the emergence of the PC in the early 80's, which represented a fundamental technological change from the computing model represented by mainframes and minicomputers, will undoubtedly be repeated and that, when it happens, the apparently unassailable domination by Microsoft and Intel will be subverted, just as Intel and Microsoft subverted IBM's most dominant position.

Don't be too sure.

In the first place, the concept that a technical paradigm shift can undermine a dominant player is now known. That wasn't the case in 1980 when IBM made its fatal decision to license key PC technologies from the outside. Indeed, not long before IBM entered the PC business, internal IBM studies reportedly suggested that the total available market for PC's would be unlikely to exceed 100,000 a year.

IBM didn't realize that it was about to get caught in the paradigm shift. Today, by contrast, the IBM example provides proof to anyone with eyes to see that such things can happen. Microsoft, Intel, and every other company in the industry has been on the lookout for the next paradigm shift for the past 10 years. And that shift may be at hand.

The explosion of the Internet, the rapid and massive deployment of industry resources to exploit the Internet, the development of technologies such as the NetScape Web Browser and Sun's Java technology may well be harboring the dawn of the new world of information technology in which Sun's 10-year old slogan, "The Network is the Computer" becomes an objective reality and not simply a marketing phrase.

Depending on how this pans out, the Internet could develop into a worldwide computing framework that renders desktop operating system software and packaged applications software obsolete.

So if a paradigm shift is now occurring that is about to usher in the brave new world of genuine networked-based computing, isn't that proof that the philosophy which underlies the antitrust laws is hopelessly out of date and irrelevant in the Information Age?

My answer is: "Not at all." There are a couple of reasons.

First, Microsoft is completely aware of the importance of the Internet and the threat it poses to Microsoft's current domination of the computer industry. Bill Gates published a long memorandum to his staff last spring, which has been widely quoted in the press, making it quite clear that the Internet phenomenon will not sneak up on Microsoft in the way the PC phenomenon sneaked up on IBM.

Second, one may be sure that today's dominant players will exert every effort they can to leverage their position in order to dominate the world of tomorrow. And there are enough technical hooks and handles available for them to do so.

Even though the basic technical standards and protocols that comprise the Internet are in the public domain, it is possible for Microsoft to so tightly integrate its own web browser with its applications and operating software -- and at the same time render similar products and technologies from other companies incompatible -- that it can assure its domination of the information technology business for generations to come. That is clearly their goal.

Microsoft sees the Internet as both a huge threat and a huge opportunity, a threat if they don't ultimately dominate the standards, an opportunity if they do ultimately control the standards. But control of the standards is the key, and they know it.

If antitrust enforcement does not take account of this key fact, then the antitrust laws will indeed have become dead letters at least insofar as the information technology industry is concerned.

I know there are some who honestly believe that the nation's antitrust laws are ill-suited to the workings of the information technology marketplace. Indeed, there are a few who believe, or say they do, that the market is virtually perfect and always self-correcting and that the antitrust laws are not only unnecessary today but were a mistake when they were enacted.

Even those who concede the logic and reason behind the current antitrust regime sometimes express doubt that the structure can reasonably be adapted to a market whose outstanding characteristic is the central importance of intellectual property.

I strongly disagree.

The reason that airlines frequently charge much more money for short flights on routes they monopolize than for long flights on routes where they do not is the same reason it took Microsoft 10 years after Windows was introduced to approach the functionality of the original

MacIntosh operating system. The phrase "If you love MacOS 87, you'll love Windows 95" isn't merely cynical; it's true.

In traditional industries, consumers tend to be victimized by monopolies through higher prices. In the computer industry, consumers tend to be victimized by lack of innovation. Apart from the natural tendency of a monopolist to take income to the bottom line rather than spend it on research and development, unless forced to do so by competition, technology monopolists also impede innovation in a whole industry by forcing others to innovate within the very narrow technological band permitted by monopoly-controlled standards. That is why the major PC companies spend very little on research and development.

One of the biggest reasons there has been such an explosion of commercial activity and innovation around the Internet in the past couple of years is because it is one area in which the standards and the standard-setting process are free of control by another company.

The brilliance of the Anglo-American legal system has always been its adaptability to changed economic and social circumstances. Reasoning by analogy has been the key to this adaptability. There is no obvious reason why, for example, Windows should be regarded as any less an "essential facility," in economic terms, than the only railroad terminal or a ski-lift in town.

Vigorous enforcement of the nation's antitrust laws is, I believe, indispensable to the full development of the information technology industry with all the manifold and unimaginable benefits that that industry can confer upon American consumers and our economy.

Capital requirements can be a barrier to entry into a marketplace. Technological lock-in can be an even higher barrier. The degree to which the Federal Trade Commission and the United States Department of Justice act upon this truth in their respective roles as antitrust enforcers will go a long way toward assuring that the unarguable blessings of competition serve to promote the economic welfare of what I think is now our nation's most important industry.

Thank you.

CHAIRMAN PITOFSKY: Thank you. I think once again we will save the questions for discussion until we complete the presentations.

Our next speaker is Emery Simon, Executive Director of the Alliance to Promote Software Innovation, a consortium of more than 70 software developers and publishers.

Until March 1993, Mr. Simon was Deputy Assistant U.S. Trade Rep for Intellectual Property at the Office of the Trade Representative. In that capacity, he was the principal U.S. negotiator on intellectual property in the North American Free Trade Agreement and was the coordinator in the intellectual property negotiations in the Uruguay Round.

Mr. Simon also negotiated more than 40 bilateral agreements on intellectual property and technological matters.

Mr. Simon.

MR. SIMON: Thank you, Chairman.

Thank you to all of you for giving us the opportunity to appear today.

The computer industry and the software industry is an industry that has a growing tradition of reinventing itself periodically.

As Mr. Phelps talked about and Wayman, too, it's an industry -- and Professor Baxter -- it's leapfrogging innovation that has driven the industry.

At the core of the industry is a basic asset, which is intellectual property. Intellectual property protection does two things, essentially, for the industry. One, it creates the incentive for people to devote themselves to developing new and better software technology.

The second thing it does is provide a modicum of protection against those who would steal it. And stealing it can take many forms. The most obvious form of stealing it is simply copying it and duplicating the software.

There are also incentives to get access to intellectual property whether you call it the intellectual property interface specification or whether you call it a subroutine or whether you call it any other portion of a program.

To get access to it by competitors on financial terms that are attractive. At some level, the discussion between disclosure and openness of interface specifications and access to interface specifications is really not about access. It's really about the cost at which you get access.

And those who would argue -- as Mr. Kohn argued yesterday, for example, for compulsory licensing of interface specification -- are really arguing for ways to reduce the price at which you get access.

The tradition today, the system that has evolved in the United States, is voluntary standard setting. Those standards are established. They can be standards which incorporate intellectual property rights, or they can be standards which have no intellectual property rights present at all.

In all of these standard setting organizations, the rule has been that if you do have an intellectual property right you agree to license on non-discriminatory commercial terms to all others who would use that. And when you deviate from that, you get into trouble.

The issue really is not whether a system should be open, because an open system could also consist of one that is licensed on non-discriminatory terms. The issue is at what cost it should be open?

I think that is a very important fact to keep in mind because this debate gets awful confused about interoperability, openness, compatibility, misuse of interface specifications. I mean all those things are nice, easy terms to get a handle on. But at their core, it's one way to get a handle on the concept as a whole. This is really not about promoting competition, this is about promoting the place in the marketplace of competitors.

The prices in the industry, as Mr. Phelps pointed out and others, have been dropping dramatically over the past decade. The same $2,000 computer I bought three years ago still costs $2,000; but inflation has eroded some of that price; and the value that I'm getting has increased dramatically. So it's an industry where price is declining, the number of competitors in the marketplace is increasing dramatically, employment is increasing, consumer welfare is increasing.

So however you want to measure competition, from whichever perspective you want to look at it, as a general matter, the industry is functioning pretty well. As a general matter, the industry is functioning pretty well with the existing intellectual property law and with the existing general regime of standard setting that is in place.

Departing from those could, frankly, produce disruptions in the marketplace. Some have argued, for example, that once you attain a certain degree of market success, your intellectual property should be diluted, that there should be an inverse relationship between success and between the scope of protection you receive.

That makes absolutely no sense. Because then we would have an intellectual property regime that would reward only losers. You get strong protection if you don't succeed in the marketplace. You get no protection if you do succeed in the marketplace.

That's the antithesis of what the constitutional concept is all about, which is promoting the science and the useful arts.

A second concept that is often advanced here is that somehow those intellectual property rights should become a public good. That once they become widely accepted in the marketplace, they should no longer be subject to ownership or control by the person who spent a lot of time developing it and creating its success in the marketplace. Again, that, too, stands the whole concept of how you promote innovation in this industry on its ear.

Now, a little bit about the standard setting process.

Standards are clearly necessary in the industry, because without standards, we have total chaos. And, in fact, the industry, driven principally by consumer demands, has been going towards compatibility, has been going towards interoperability, has been going towards integration of systems, because that's what consumers want.

That has occurred largely without government intervention. It is entirely unobvious to me how a regulator could figure out what a right standard is in a technology that changes every six months and could go about actually setting that standard and implementing it in a timely fashion.

The likelihood is that what you would get is you would get impediments set in the system rather than get the kind of push forward into the system.

I'll give you just one example. We have a regulated standard for television screen resolution, and it has essentially been in place since the late 1950's. And you get the same 550 lines of resolution on your television set no matter how many buttons you have.

The resolution on a PC monitor has exploded. It has increased over the last decade. It has become sharper, better, bigger, easier because there has been no standard.

Because what has been pushing it is the marketplace requiring better and better screen resolution because the products that are being displayed on it do more things; they look prettier, so we want to see it as a prettier thing.

That's just one example of many that I could cite where standards have been set. They have acted as an impediment to the technology being pushed forward as opposed to where standards have been really left to the marketplace to drive them have not.

I would like to say one other thing. As you mentioned in your introduction, I did spend a lot of time on international matters in my career. And I think Marshall brought up this point, and I think it's a very important one. The ETSI case that he mentioned was a case that I worked on when I was still at USTR.

One of the things that we need to be very careful about in this area is that we have an American industry that's extraordinary successful. It's extraordinarily successful at home, and it's extraordinarily successful in global markets. We have a series of domestic considerations, and we have presented many of these views to you here; and you have heard others of them over time.

And as a purely domestic matter, when you look at a domestic market, those considerations compete between consumers and producers and alternative producers. When you generalize this to the international marketplace, we as a country are principally a producing country and an exporting country.

All the major European countries, the Japanese, and many others would like to get into many of the business lines that these industries are now driving forward and pushing.

They are constantly on the lookout for ways to alter policy in ways that would not violate their international obligations or in ways that are justified because a precedent has been set already somewhere else maybe in the U.S. We are implementing those policies.

And it's, I believe, a true danger that we are sometimes our own worse enemies Sometimes we implement things here domestically which end up being rationalized by foreigners in ways that do damage to our own interest.

The ETSI example that Marshall raises is one example where, essentially, where -- we can talk about it now -- it was a Motorola patent that several European competitors -- Ericksen, Thompson, and others -- were really after. And what they didn't want was Motorola building the digital cellular telephone system in Europe. They wanted to build it. What did they do? They tried to manipulate the standards setting process so that Motorola would be compelled to license their patents to them free of charge.

That's not competition. That's theft. Very straightforward.

In different circumstances, Japanese industry has been very straightforward in talking about their goal is to avoid redundant investment in existing technologies and that the way to get there is to dilute the intellectual property for that existing technology. What they are trying to do is replicate, duplicate, actually displace successful U.S. products. That, too, is a standard setting process.

In the context of the telecommunications debate that's been occurring internationally -- and there was a big ministerial meeting in Brussels just about a year ago -- there was a lot of debate about what the agenda should be.

The issue which turned out to be the last issue resolved in that discussion and the one that was thorniest between the parties was the issue of interoperability. There was the issue of interoperability where the Japanese Government, in particular, was pushing the notion that interoperability should be mandated through regulation and that it should overwhelm any considerations of intellectual property rights that may exist in a standard so long as the standard is "necessary." Necessary in the sense of what? For the public good? For a local manufacturer to make the product? Those are totally different concepts.

There are many other examples like this that arise in the international context, and it's important that as we work through these issues in our domestic context -- and we should -- that we do it fully conscious of the fact that it has implications for the long-term competitiveness and the viability of these really thriving American industries in that international marketplace.

Thank you.

CHAIRMAN PITOFSKY: Thank you very much.

Our last speaker on this morning's panel is Edward Black, President of the Computer and Communications Industry Association.

Prior to being named President in 1995, Mr. Black served as Vice President and General Counsel of CCIA. He joined that association from a law firm where he was a partner representing a number of high-tech companies and associations.

He currently serves as President of the Washington International Trade Association, Chairman of the Pro-Trade Group, and is a member of the State Department's Advisory Committee on International Communications and Information Policy.

Mr. Black?

MR. BLACK: Good morning, Mr. Chairman, members of the Commission. I appreciate the opportunity to be here.

A word about CCIA. We think of ourselves somewhat different than many other industry groups whose membership reflect a more narrow niche in the marketplace.

CCIA is comprised of top executives from companies which represent a very broad cross-section of the industry, small, medium, and large companies representing many segments of the computer and communications industry.

As a result, our Association's views and scope of work tend to be broader, longer range, and more strategic in orientation.

We have a long history of supporting public policy which encourages vigorous competition in our industry. Therefore, CCIA also advocates a balanced approach to intellectual property rights in high technology markets, seeking to ensure a proper remuneration for creativity while preserving the ability of newer innovative companies to compete in the market.

We applaud the FTC for holding hearings on the appropriate role of antitrust enforcement and competition policy in our increasingly global, innovation-driven economy. Particularly in our industry, the pace of innovation, the increasing importance of network externalities in the development of product lines, and the important role of interfaces and interoperability, make it essential to reexamine how antitrust law and antitrust enforcement agencies should approach this industry in order to ensure that antitrust law performs its essential role of protecting competition and enhancing consumer welfare.

The economies of networks are such that control of interfaces and, thus, interoperability by means that include broad assertions of intellectual property rights are important determinants of the scope and intensity of competition in our industry.

The control of these interfaces can define the monopolists of the next decades. Indeed, this may be occurring already. On the other hand, reasonable open access to these interfaces by all competitors will help to ensure a vibrant competitive marketplace in the computer industry for years to come.

I would like to highlight certain key fundamentals of our industry and provide a little historical background that CCIA brings to these hearings.

About 25 years ago, CCIA was founded by a group of entrepreneurs who were struggling to compete against and do business with the industry giant of the day, IBM. Because almost all of the computer standards were IBM de facto standards. Any company seeking to compete in the market had to ensure that their products were compatible with the industry standards set by IBM. If their products were not compatible, no matter how good or innovative, they would not be accepted by the user community.

IBM's dominant position was recognized early by the Justice Department which clearly understood the potential anti-competitive practices. Thus, IBM came and remained under the close supervision of the Justice Department for several decades.

Now how does this historical experience relate to the present day? CCIA believes that the FTC and the Department of Justice must remain at least as vigilant today as you were in the past.

The economics of the industry have changed, but certain fundamentals remain the same. These include the network effects of large numbers of users adopting de facto industry standards. And the sunken costs associated with user training and expenditures on software which significantly influence future buying decisions.

These marketplace realities make anti-competitive practices more attractive to those who control the de facto standard. As you weigh all of the issues before you, it is important to keep these basic commercial realities in mind.

The central thesis I wish to offer today is that antitrust law and antitrust enforcement agencies can effectively promote competition in our industry by taking an active, informed role in defining the appropriate scope of intellectual property rights and in the vigorous enforcement of antitrust laws against parties that abuse intellectual property rights or assert excessive or over-broad intellectual property rights.

To achieve this end, two steps are in order:

Antitrust principles must inform decisions by Congress and the courts as to the appropriate scope of intellectual property rights. The FTC should take an active role in providing informed views on competition policy to those that define the proper sweep of intellectual property rights.

Antitrust authorities must rethink the appropriate role that antitrust laws should play in addressing key issues affecting competition in our industry, including the scope of intellectual property rights in computer interfaces, the cumulative impact of networks that derive their value from third-party investments, the problem of the control of interfaces by one or two companies.

What policies work and should be retained?

What policies need to be changed or fine-tuned to address innovation-based competition?

And what new ideas are needed to ensure that intellectual property is rewarded and protected but does not unnecessarily and inappropriately stifle competition in our industry?

I would like to reiterate the features of our industry that must be kept in mind in assessing competition in our industry.

We must recognize the important role of standards in our industry. Software developers, applications developers, peripheral manufacturers, network suppliers, and many other of the 71,000 that Marshall made reference to, all recognize the importance of industry-wide standards in enhancing the value of all aspects of computing. Interoperability is a central factor to the maturation and continued growth of the computer industry.

Second, one should recognize that the creation of standards occurs, for the most part, through product acceptance. Formalized standards-setting plays a limited role in our industry. Many standards are de facto standards. De facto standards often arise through the adoption of the standard by others -- network externalities.

As a result, the assertion of intellectual property rights in such de facto standards as an interface or network protocol poses troubling and complicated issues for antitrust authorities. Should firms be rewarded for actively encouraging the acceptance of their products as a de facto standard and thereafter asserting intellectual property rights on the interface to attempt to control competition against firms that have already committed their efforts to the standard?

Finally, as mentioned previously, I want to remind you of the sunken-costs issue in this industry. At all levels of our industry, from mainframe manufacturer to the workstation manufacturer to the PC manufacturers to the small independent software developers and to the end user, we are beset with the issue of sunk costs that make the industry and consumers less readily able to change products or architectures even if a significantly better product is introduced in the market.

Throughout the industry, firms make strong commitments to standards, to interfaces, to network configurations, and the like. Switching from the de facto standard can result in large sunk-cost losses, a situation that can present anti-competitive opportunities to firms that control the interface.

No one seriously disputes that intellectual property rights should play a role in an innovation-driven market. The rewards provided by the patent and copyright laws are an important incentive to create new products and to disseminate information needed to promote further innovation. However, the scope of protection must be calibrated to take account of the equally important policies and goals underlying the antitrust laws.

There is no inherent conflict. While it is true that the antitrust laws and intellectual property laws are correlative federal statutes that must be construed consistently, neither is subservient to the other.

I think it is now generally accepted that intellectual property laws and antitrust laws share the common purpose of promoting innovation and competition in the high-technology markets. Prudent enforcement policy dictates that the FTC should seek to harmonize these laws, a view I hope Commission shares.

However, in fulfilling their responsibilities, the enforcement agencies cannot be lax in this vitally important area. The agencies must be effective advocates of competition policy in connection with legislation and litigation in which the scope of intellectual property rights are defined.

Current antitrust thinking on intellectual property-antitrust issues generally involves two steps. In the first step, the agencies seek to determine if the conduct being construed is within the scope of the patent or copyright holder's exclusive right.

If the conduct amounts to no more than the unilateral exercise of a patent or copyright holder's exclusive right, then the conduct is normally thought to pass muster under the antitrust laws. Only if the conduct is beyond the rights conferred by the intellectual property laws does antitrust analysis proceed to the second step of assessing the reasonableness or lawfulness of the conduct under antitrust principles. This certainly seems to be the approach enunciated in the Guidelines from Justice and FTC, as well as many recent court decisions.

In and of itself, there is nothing wrong with this approach to antitrust enforcement. It is principled and seeks to harmonize the antitrust laws with the IP laws. However, the FTC should recognize that certain anti-competitive conduct will be unchangeable under this paradigm simply because the IP laws have been interpreted broadly to define the scope of the inventor or the author's exclusive rights.

The preferred cure for this problem, I submit, is not necessarily to change the paradigm that the enforcement agencies use to inform their prosecutorial discretion. Rather, what is needed is for the FTC and antitrust scholars and thinkers to become more actively involved in the process of defining the scope of intellectual property rights.

There is an important role for antitrust principles in defining that scope. The FTC should raise a strong voice in these decisions. Moreover, if the FTC -- or more generally the body of antitrust thinkers -- does not become more involved in the process, this straightforward opportunity may be lost.

Once anti-competitive practices become ensconced within the scope of intellectual property rights, the agencies will be left with the more difficult job of returning the horse to the barn.

Innovative antitrust enforcement approaches are possible, but the enforcement agencies' foremost mission ought to be to become effective voices for pro-competitive policies in the definition of intellectual property rights.

Let me suggest just a few examples of areas where the FTC and the body of antitrust law, generally, could be more active in assuring that concerns are heard in the definition of IP rights.

With regard to patents, one striking example comes to mind. The Patent and Trademark Office recently issued a detailed document describing the basis and principles that will apply in allowing patents covering computer program-related inventions. In general, the regulations will result in more patents being issued on computer programs. And in recent years, thousands are being issued each year.

Were the competitive concerns related to these rules adequately considered by the PTO?

What antitrust consideration was given to those rules?

Wholly apart from the outcome of the rule-making, I wonder if the competitive concerns related to the issuance of patents on software-related innovations were adequately addressed in that process.

If they were not, has not the opportunity largely been lost?

While admittedly the issues involved in the granting and the scope of patent rights are often difficult, arcane, and intricate, the intelligent and coherent consideration of antitrust policy clearly does have a role in this debate.

With regard to copyrights, the situation is perhaps more pressing. The courts today are grappling with the proper scope of protection that computer programs are entitled to under the copyright laws. It is a very hard process, one that Judge Boudin in Lotus v. Borland compared to trying to put a square peg in a round hole.

One important issue, at the core of what we are discussing today, is the copyright protection available to computer interfaces and to software that implements computer interfaces.

Can authors secure exclusive rights to the interoperability of their programs with other programs or control computer interfaces or networks through the assertion of copyrights? These issues are central to the competitive process in our industry. Many aspects of competition are going to be affected by the answer to these questions.

However, the battles are not being fought as questions of antitrust law. Rather, the issues today are phrased in terms of intellectual property disputes. The predictability of computer interfaces generally raises the question whether these interfaces are statutory subject matter under the copyright laws. But the issue has far broader and more important competitive implications for our market. The FTC should be heard on this issue.

Another important competitive issue relates to the ability of competitors to reverse engineer computer programs in order to ascertain the unprotectible elements of the program. Reverse engineering in order to understand the nature of computer interfaces or to develop interoperable programs is an essential aspect of competition in the computer industry.

The courts of appeals have recognized this in decisions like Sega v. Accolade, which held such reverse engineering a "fair use" of a copyrighted work.

Similarly, in the Atari case, the Court, in grappling with the predictability of software that implemented an interface, recognized that authors cannot be permitted to secure patent-like protection through the assertion of over-broad copyright protection.

Similar competition issues are present in the Lotus v. Borland case where the Supreme Court will be considering the scope of copyright protection over the programming language interface of spreadsheet programs.

Further still, in applying the widely accepted Computer Associates test to identify protectible elements of computer software, the courts must filter out unprotectible interfaces and other elements dictated by functional aspects of the program, such as its interface or aspects dictated by other network externalities.

Let me suggest several ways in which the antitrust enforcement authorities can become more effective in ensuring that anti-competitive issues are considered in defining the scope of IP rights.

With regard to pending legislation affecting the scope of intellectual property rights, the authorities ought to be heard on pending legislation.

In the Senate, currently, S. 1284 is a bill to implement the administration's legislative recommendations contained in the White Paper on Intellectual Property coming out of the NII.

One provision in the bill makes it unlawful to manufacture devices intended to bypass or deactivate systems which prevent copying. While nearly everyone opposes unlawful copyright infringement, the bill poses a serious competitive issue in that it could chill conduct that is lawful, such as reverse engineering to determine unprotectible subject matter in computer programs.

The competitive implications of this legislation ought to be considered by the antitrust authorities before legislative action occurs.

Likewise, the FTC should consider intervening in the appropriate cases where the question of the scope of an intellectual property right poses legitimate competitive issues, such as Atari and the Sega case. The courts would benefit from the Commission's views in such cases, and harmonization of IP and antitrust law would be furthered.

Finally, I suggest that it would be appropriate for the FTC to issue a white paper itself, or other such document, setting forth its views on the competitive issues that arise in various areas such as the application of the "fair use" doctrine to computer programs.

Another point I would like to make relates to the way in which the FTC needs to rethink its policies in order to ensure their relevance to the computer industry. I would like to applaud the steps the Commission has taken to date and encourage such creative thinking in the future.

These hearings are a very important statement that the FTC intends to remain an effective, vibrant force in competition policy in innovation-based industries like mine.

Likewise, the recent consent decree in the Dell case recognized the importance of standard-setting processes in promoting innovation and increasing competition by assuring access to industry-accepted interfaces.

This is true whether the standard is created in formal standard-setting bodies or if the standard is a de facto standard generated by network externalities, such as a large installed user base. Access to interfaces promotes competition and enhances consumer choice and, thus, consumer welfare.

We, again, applaud the FTC's efforts to protect competition in this regard.

The attention that the Commission has given to the R&D markets, to innovation markets, and the consideration of the novel ways of using its jurisdiction under section 5 all bespeak the correct view: That it is necessary to rethink and reinvent, if necessary, the approach the Commission takes to innovation-based competition, generally, and the computer industry in particular.

Let me suggest a few additional areas for your consideration:

Attention needs to be paid to the unduly anti-competitive restrictions in software licenses. For example, cases such as Sega v. Accolade, recognize that reverse engineering in a computer program to ascertain its unprotectible elements constitutes a fair use under the copyright laws.

However, dominant firms -- arguably, all authors -- should not be permitted, in the absence of open distribution practices, to impede the exercise of this right and stifle competition by imposing license terms that prohibit a fair use analysis for the purpose of developing non-infringing, interoperable products. There are obvious anti-competitive effects here that warrant your scrutiny.

Moreover, we need to bear in mind in this regard that the dominant purpose of the copyright laws is the dissemination of information. Rewarding the author is a secondary concern. Conduct that impedes the dissemination of unprotectible information is contrary to the purposes of both the antitrust laws and the copyright laws.

Likewise, the Commission needs to consider the question of the assertion of over-broad or unjustified threats to enforce intellectual property rights on competition in innovation-driven markets.

Invalid or over-broad threats of litigation can have a very chilling effect in this industry. Assertion of an invalid property right in an interface, for example, could chill scores of small software developers from writing applications for that interface and thereby entrench established players at the expense of competition.

What role does antitrust have to play in the dissemination of interoperability information relating to networks, interfaces, and the like?

Are there circumstances where a dominant firm can improperly impede competition by refusing to make interface information freely available?

Is section 5 an effective remedy in such cases?

Another area we would urge you to explore relates to the question of networks and other environments where substantial network externalities are present.

Where a large portion of the value of a network or interface is driven by network externalities, what limitations, if any, does that place on firms that control access to the network or define the interface through software that becomes a de facto standard in the industry?

For example, can firms affirmatively induce the creation of interoperable applications and, at the same time, seek intellectual property protection over the aspects of the application on which the industry must rely?

Is this type of conduct fundamentally any different from the conduct challenged in the Dell case in the context of more formalized standard setting bodies?

While I suspect that even on this panel the views are divergent, the issue is important and needs to be discussed.

Finally, you may wish to think about the role of the essential facilities doctrine in the innovation-driven industries.

Despite the fact that it is well established in Supreme Court jurisprudence, the application of essential facilities doctrine to unilateral conduct remains controversial.

However, given the structure of the computer industry, including the prevalence of de facto standards and the problem of sunk costs, the FTC needs to consider whether there may be a role for the essential facilities doctrine in this industry and to assess whether certain practices of copyrighted works constitute "essential facilities."

All of these questions, I submit, are important, regardless almost of the conclusions that individual panel members here might have on the question.

More generally, it is vitally important that we continue to rethink how antitrust doctrines apply to innovation-driven markets.

What works?

What doesn't?

What new competitive forces are at work?

And what responses are needed to these changes?

The computer industry does not need ad hoc antitrust rules or special principles to apply. What we do need is an antitrust policy that is prepared continually to review new conduct and to adapt itself to the competitive conditions in the market as it has in many other markets over the past 100 years.

One final note on global competitiveness. This is a subject where our industry is tremendously involved and concerned.

The primary purpose of the antitrust laws is to protect competition in the U.S. However, a prudent antitrust enforcement policy must take into account the need of U.S. firms to compete globally. We believe that the best way to ensure U.S. firms are able to compete globally is to have a strong, competitive market in our country. I believe that vigorous domestic competition is the best assurance that U.S. firms will have the competitive edge in the foreign markets.

We reject intellectual property protectionism.

Thank you.

CHAIRMAN PITOFSKY: Well, thank you. You certainly hit all the bases and the issues that led us to hold these hearings in the first place.

Let me make a comment and then ask you a question.

The comment is this: I think you're absolutely right that people who care about antitrust policy have to pay more attention to the scope of intellectual property rights. And I think that's in the works, and I think you'll find changes occurring in which that very kind of participation intervention will occur. And that's the long-term strategy and I think a useful one.

But in the short-term, while intellectual property rights are defined as they are, I thought I heard you say at the beginning of your comments that you thought either under section 5, or under the antitrust laws more generally, there is a role to ensure reasonable open access.

Is that your position, that the antitrust can play that role?

MR. BLACK: Yes.

CHAIRMAN PITOFSKY: We have, I think, today, as we did yesterday, a difference of view on this; and probably it reflects a difference of view in many circles in the country, whether by ensuring open access we diminish incentives to such a great extent that it's not useful.

And what are the practical problems of ensuring open access? Who sets the reasonable royalty? Who decides compulsory licenses and so forth?

It's not an easy set of questions.

Perhaps some of the people who spoke earlier this morning have comments on later discussion.

Bill Baxter.

MR. BAXTER: Yeah, I would like to make two points.

One is the fact that the investment that users make that is complementary to the Net is a real cost. I mean there are real social costs involved, and they can't be ignored.

If a single company owned the Net and all the applications, it would take into account, in deciding when to go to the next technology, the fact that it was obsoleting all of those applications; and nothing is changed by the fact that the applications are in two hands rather than in one.

So, first of all, the rate at which technology should turn over in these industries is slower by reason of those applications investments.

The second thing, getting back to the question you just raised -- about equal access or confiscation, however you like to think about it -- it is important, I think, to remember that in the real world one does not license patents or copyright. One essentially licenses technology for the most part. And that means there will be know-how provisions and show-how provisions; and we'll be sending technical people back and forth to one another's plants to teach their people on their premise how to do this and we'll send over the guy who explains that when it doesn't work right, you kick this machine down near the lower left-hand corner and that usually does the trick.

There are very complex arrangements. And, consequently, for the courts to issue remedial orders that will be effective involves very extensive, judicial regulation of the kind that we saw for these last 10 years, for example, in telecommunications under the MFJ.

And I would think one would want to take a deep breath and think very carefully before stepping into that situation.

CHAIRMAN PITOFSKY: Bill, you're not telling me that you have second thoughts about the AT&T case and the MFJ?

MR. BAXTER: The opportunity for re-litigation of the MFJ was greatly changed by Judge Green after I wrote my version.

CHAIRMAN PITOFSKY: Other comments or questions?

MR. PHELPS: I would like to make a quick comment.

CHAIRMAN PITOFSKY: Yes.

MR. PHELPS: It seems to me, if there is a problem, it really is a bottleneck and it really is a problem, I don't know what in the law isn't there to go fix it.

Now, I really worry about the point Emery Simon made, and you should all worry about it, too. We have a hell of an industry in this country. And the authorities and the competitors around the world watch hearings such as this and say, ah-ha, the American Government is worried about the very same things we're worried about for the very same reasons, only difference is it happens to be a U.S. industry. And there's a real opportunity for us here to take the exact same words and apply them in the context of Europe or Japan or whatever and really get our hands on some stuff we otherwise couldn't get our hands on.

It is not an idle possibility. ETSI is just one example. There is an effort right now under NPT's aegis in Japan to do exactly the same thing, which is compulsory licensing of what they would call -- pick whatever term you want -- of a bottleneck technology or standards process; you can wrap it up with any language you want.

And that's the problem here, it seems to me, with over-reaching, in generalities, on this kind of thing. It seems to me if there is a specific problem, it ought to go get fixed.

I don't know what in the law doesn't allow that to happen today. Now, maybe I'm missing something here.

And so that would be the only word of caution I would offer.

And the second point, obviously, being the technology is moving very rapidly; and you have to be sure when you've decided on who's going to get what confiscated, it's the right thing at that time; and it's going to be applicable into the future.

And I think that's a very difficult task.

CHAIRMAN PITOFSKY: Questions?

MR. SIMON: I guess I would like to make a short comment about what you were talking about, the increasing role of antitrust authorities and looking at intellectual property laws.

Ed raised a number of cases that have been litigated recently, the Sega case, the Atari case. You know, at some level, those are antitrust cases. They're really not copyright law cases. They happened to be litigated in a copyright context because it's cheaper, it's faster, it's more convenient, the --

MS. VALENTINE: Used to be.

MR. SIMON: Used to be. Whatever the reason, but those are really competition issues.

To solve a competition issue, you don't need to muck up the copyright law. You go after the competition problem the way you should, on a competition basis.

And I guess my personal trepidation about, you know, these blanket approaches, these condemnations of the basic -- I mean, Russ said it the best -- the basic assets of Storage Tech, of IBM, of Microsoft, of Sun, all of these companies, their intellectual property.

If to get at a perceived problem, which is a competition problem, the solution that you proceed with is diluting all of the intellectual property, you're not just hurting the company that has been abusive or the company that's the bottleneck. You're hurting the entire industry.

And that strikes me as an irrational approach to the problem. If you've got a player who's being abusive, you've got someone who's misbehaving, then you address that problem. You don't condemn the industry as a whole.

It strikes me that a lot of what Ed was talking about, which is, you know this whole re-examination of the scope of intellectual property from a purely antitrust perspective. I mean, the intellectual property law contained all those balancing notions in it already. And it has not evolved, you know, out of a blossom in 1995. It has evolved over 200 years, and those competition considerations have been active throughout its history.

So to somehow say that the law in the area of intellectual property has gone amuck and there are no competition considerations that play in it is simply counter-intuitive and counter-factual.

You've got to be very careful about this stuff.

MR. BLACK: If I could?

I think, again, we ought to take a look at some reality of what's going on. We view -- and I agree with everything Marshall said. We have a tremendous industry here. It has grown up in a certain environment. And part of that environment included significant intellectual property protection. But it was a balanced system.

What we are facing in the real world, as we have built up intellectual property, is a certain natural tendency within companies, you know, you do protect that. It's important to. We all want to.

But it is creating pressures on that balance. It is creating pressures of those who have large banks of intellectual property to go after an approach which, in fact, will create barriers to those who are coming along.

And it is tilting that balance in a way which is different from the environment, which, in fact, we thrived in as an industry, that is worrisome.

A specific real-world example is we're involved -- many of us here have played a role in legislation -- the major re-write of telecom laws.

Well, one of the little side bar battles that's going on relates to the issue of interoperability. There are very important companies in this country who are fighting tooth and nail to stop the word "interoperability" from being in there.

In spite of the fact that the presidential commission, after panel, after group have all basically agreed that interoperability is an essential element.

What's at stake here? And this is not an intellectual property dispute. What's there is the major initiative to have a dominance in the future evolution of our industry.

There is an attempt to tilt the balance and shift it. And, frankly, having strong vigorous antitrust oversight enforcement is worrisome to those who are doing that.

MS. VALENTINE: Both Mr. Phelps and Mr. Simon mentioned the role and potential effectiveness of voluntary standard setting. And I'm looking for comments from some of the other panelists.

I mean, interestingly in some of Emery Simon's very examples there were instances of arm twisting and manipulation, albeit on foreign side.

But does voluntary standard setting play much of a role? Will it play an increasing role?

Are de facto standards so prevalent that this is not really much of an issue?

As it becomes more international, is it more important that we all pay attention to that?

And does antitrust have a role? And should that be in terms of looking at the process itself or at the substantive outcome of the standard setting process?

MR. MORRIS: I'm a little bit dubious about the way standards tend to get set.

When they get set successfully -- as was the case with the Internet -- they get set at a point in time when nobody cares about them. When everybody starts to care about them, it becomes impossible to set them.

I mean Sun has been involved -- I think Sun is a member of virtually every industry standards body that exists.

And it seems to me that almost every time when we start to discuss a standard in which people actually have an economic stake, the politics get really ugly.

And I'm sure we even play them. I mean, I'm not suggesting we are innocent parties here.

On the other hand, when the emerging technologies are really emerging and nobody yet has an economic stake or can't figure out what their economic stake might ultimately be, it's a lot easier to come to agreement.

This is apart from the fact that the distinction between things like, you know, what's an interface versus what's an implementation, what is interoperability versus what is compatibility, are not perfectly obvious. We frequently use those terms in this industry as though the definitions were perfectly obvious and then you'd have to be either an idiot or acting in bad faith and deny it.

The fact is that, you know, the definition of terms is important. One of the reasons we have supported the recent movement of the courts of appeal in this country in connection with this question of what's copyrightable in terms of intellectual property, particularly computer code, is because we believe they've hit upon a methodology for figuring out the right answer, the filtration issue and so forth, where you separate the parts that are functional from the parts that are expressive. That issue now is before the Supreme Court in the Lotus v. Borland case.

We've supported the -- virtually every appellate court which has reviewed this question has said: No, there is a distinction. And here's the way you figure out what it is.

There are other people in the business that are on the other side of that case and would like to eliminate what we think are kind of standard garden variety distinctions of the copyright law, or at least make them not apply in the way we believe they ought to, to computer software. We think that's wrong. And we think what that ultimately will do is confer or enable other people to maintain monopoly power on really critical pieces of technology to the detriment of the industry as a whole.

We are not advocating, at Sun, changes in the law. We don't think the law needs to be changed. We think there are plenty of tools available to the antitrust enforcers and under the intellectual property laws to provide a balance plug. And that's been mentioned here.

On the one hand it gives incentives for inventors and developers and authors, and it keeps the industry moving forward; but at the same time, it doesn't permit one or two parties to get a strangle hold on a choke point and derive monopoly rents out of it.

COMMISSIONER STEIGER: May I just add a question at this point, because I think you can answer it as well.

Looking at intellectual property as a part of an antitrust analysis, would you distinguish between copyright, patent, and trademark in an analysis? Or do you consider it all of a piece?

MR. MORRIS: I distinguish it simply because there are different rules that apply to the different parts.

And so you have to -- I mean, as the lawyer, I have to distinguish it because the rules are different. You can't avoid those kinds of distinctions.

One of the problems that we believe the White Paper that was introduced by the PTO recently tends to confuse copyright and patent law and make the former the latter, which that's a mistake, because it tries to do that without imposing some of the limitations and tests that copyright law imposes on -- or patent law imposes on patent.

They are distinctive, there is no question. They form the entire piece -- or the entire body of intellectual property law. But they are enacted -- but the statutes are different. They were enacted for different purposes. So we think you have to distinguish. You can't avoid it.

MS. VALENTINE: Mr. Wayman, on the standard setting?

MR. WAYMAN: Yeah, on the standards you -- a couple of comments which hopefully will be responsive.

As I look at the debate on standards, I think that, to some extent, it's really off on a wrong track. When I look, I think you had the Commissioner -- an attorney that works for ANSI talk, and I read her remarks.

You know, I don't think we should be worried about examining the standard setting process in any great deal. It is subject to abuse. The situation that you have with Dell is such an abuse. But I don't think that that's a very leading-edge kind of an issue to be worried about in these hearings. It seems to me that the laws are reasonably well settled there and that the Dell case was a reasonably predictable outcome. And that's not what we ought to be focusing on in these hearings.

I think the real issue is the standards that don't get set. The question of, you know, yes, sometimes ANSI comes up with good standards and, to agree with Mr. Morris, sometimes they're too late and it's too political.

The thing we need to focus on is: What are the points at which standards need to be established? And what are we going to do to facilitate that process?

If it happens to be facilitated by a voluntary program, that's terrific. But I think the antitrust law needs to be worried about the standards that aren't being set and the interfaces that aren't being admitted as interfaces.

And let me just surface one very important problem when we talk about interfaces. And Mike used the term that one man's interface is another man's proprietary location of his devices.

You need to understand, in our company in particular, we have devices which have functional characteristics which are unique when compared to the person that owns the network or the operating system. And he says, well, you can attach this device here; well, that means this device has to work in that way.

Well, if you want to develop a device that works in a different way and provides different functionality, he says, hey, that's not an interface.

So that's my comment on that.

MS. VALENTINE: Bill?

MR. BAXTER: Yeah, two quick comments. One in response to, I guess Bob's question, or perhaps yours, about voluntary standards.

One problem with voluntary standards, particularly as to devices or products that are not really very high tech, is that I've seen several instances where it seemed fairly clear to me that what was going on was really a reduction in the complexity of the set of goods that was out in the marketplace for the purpose of facilitating price coordination in a concentrated industry.

A second question really in response to Janet's question about the different systems, copyright, patents, and trademarks. I think there's a lot of confusion about trademarks or incomplete thinking about trademarks.

I've seen again and again in literature the statement that, well, copyrights and patents are intended to induce investments and innovation; but trademarks are just consumer protection to keep consumers from being deceived.

But that has an opposite side of a coin. If you can make your trademark stick and enforce it effectively, you have an incentive to engage in quality control, quality improvements, and, indeed, innovation that you don't have if you can't identify your product effectively so that I see no difference between trademarks and patents and copyrights in that respect.

And, indeed, it seems to me they are closer together in their purposes and animation than is usually allowed for in the standard treatment.

COMMISSIONER STEIGER: Thank you for that. I think it is interesting, just on an anecdotal level, that if you are considering value of assets, even though the value may be amorphous, the trade name frequently is mentioned as substantial assets.

MR. BAXTER: Yeah, one of the more interesting fights actually in the telecommunication context was who got the name "Bell." It was obviously regarded as having enormous value by the parties.

CHAIRMAN PITOFSKY: Other questions?

MR. SIMON: I just want to make a very short comment about the point that Mr. Morris brought up, which is the definition of terms, which is really critical, because I think every company and industry licenses interfaces or what somebody else would call a critical interface.

And the question is: What's the critical interface? The one that I own, which of course is not critical because then I can license it. Or is it the one that he owns, which I want for free; so, therefore, it should be critical.

Everybody licenses technology, everybody licenses interface specifications, everybody shows others where to attach their product.

Because, frankly, all these companies and all the companies are driven to work together and one of the ways they do that is by licensing each other.

The key here, or the debate is: How do you pick the ones which you shouldn't be able to license? And that's not an intellectual property issue. That's a competition issue. And to phrase it as an intellectual property issue, frankly, confuses it beyond necessity. It doesn't work in that realm.

One very small point, too, about patents and trademarks and copyrights.

Yesterday, you talked quite a bit about compulsory licensing. Under international law, as I understand the compulsory licensing of copyrights is not permitted. You can, under limited circumstances, compulsory license the patents still under the international agreements under the World Trade Organization.

But compulsory licensing of copyrights is not permitted. That's from your perspective as you look at that -- or have looked at that as one of the ways that you remedy situations, that's not an option to you in the copyright area without violating international law.

CHAIRMAN PITOFSKY: Thank you.

MR. ANTALICS: I did have a question for Professor Baxter.

I was just wondering if you saw any limits on the types of agreements that a dominant operating system holder and also holding the interface -- any limits on the types of agreements that they could enter into with companies in the complementary market that might affect their dominance in the operating system market, exclusive agreements or things of that nature?

MR. BAXTER: Well, sure I can imagine, although I have never seen, a circumstance where you would have sufficient leverage to really execute foreclosure. I don't think foreclosure is a logical error. It may be an empiric, empty set.

But there certainly would be circumstances where there were substantial economies of scale at the adjacent level where there was a company at the adjacent level that had a very large -- you need very large market shares; you need significant entry barriers at both levels. And it's a form of predation. You have to buy more than proportionately at the adjoining level to preempt the opportunity for entry at the original level. It could happen.

MR. BRESNAHAN: I have actually prepared a graphic on exactly this topic.

I'm not sure about the 1991 date, but the two things shown here are Denny Yao, who I could call a dog because he was my high school roommate. When Denny was first Commissioner, he called me and said -- I think I agreed with him that there was a lot of monopoly power at Microsoft. I agreed with that instantly.

But I asked him sort of the dog and fire truck question, which is I think what Bill is after, which is: What are you going to do with it when you catch it exactly?

COMMISSIONER STEIGER: Thank you. There's got to be one like that in every crowd.

Yes, Susan.

MS. DeSANTI: We have been talking a lot about the proper role for antitrust enforcement.

I'm wondering whether any of you have thoughts on a possible role for the Federal Government as a large purchaser of computer products in terms of moving -- or influencing the development and implementation of standards that might facilitate entry and competition.

MR. PHELPS: Yeah, I actually mentioned that when I talked. If you -- the government is a huge purchaser. And one of the ways you can inflict -- any large purchaser can inflict their view of interoperability on the industry pretty easily is through that kind of a mechanism, it seems to me. And you can drive the industry towards interoperability faster than it might otherwise get there because it's in a common interest to do so.

And I would absolutely encourage the government to do that kind of thing, all governments. I mean, that's on the purchasing side. But there is absolutely no rule that says you can't also participate in the standards process itself as a large customer; and you should do that as well.

So I would encourage it.

MS. DeSANTI: Bill?

MR. BAXTER: I was just thinking, we now have two agencies enforcing the antitrust laws. I'm not sure I want a third, fourth, and fifth. If we are going to contemplate legislation of that kind, I would have these activities conducted only at the instruction of one of the existing agencies.

I'm reminded, not very many years ago, work at universities that was financed by the government could not be licensed -- or if it was licensed, the proceeds had to be turned over to the Federal Government.

Essentially, no licensing occurred during those years; and we had a terrible battle getting that law changed so that the universities could have licensing programs and give exclusive licenses, which, of course, turned out to be essential as a foundation for investment.

When we finally got that done, the success of universities, generally, in executing licensing programs changed quite fantastically.

So I don't know that having the government be the de facto owner of the Net would be a very good thing. If you are going do it, maybe what you should do is maybe sell off, as soon as you get your standard system established, get the government out of that picture. Because I expect it would have sort of the same effect it did back in the 70's when we were trying to get licensing started in the universities.

MR. BLACK: If I could make a brief comment, A, to agree with Marshall, and with regard to Professor Baxter's comments.

The difference between encouraging competition and having other agencies enforce antitrust, I think the Federal Government has a very great role to encourage competition. The USTR does. The Small Business Administration does it. Lots of agencies of government do that and are intended to and should.

And I think using the procurement process to encourage interoperability is an excellent suggestion.

COMMISSIONER STEIGER: Becky, you have a question.

MS. BURR: Yeah. I was very gratified that the panelists were willing to acknowledge the confusion that I certainly feel about the difference between an application and merely an interface.

So I'm wondering whether the panelists can give us any guidance? I mean, what are the characteristics of things, whether they be applications or interfaces that need to be open?

And I was also struck by Mr. Wayman's comment that you need not equate access to interface with diminishing the value of the system itself.

And my question on that is, rather than thinking about sort of the application versus interface distinction, ought we to be thinking about a process distinction?

And is access what we're talking about?

And if so, what sort of access is enough?

COMMISSIONER STEIGER: Who wants to respond to one, two, or three of that question? All of them are extremely important to us.

MR. BRESNAHAN: Let me buy us some time by going back to the last topic for a second, while we chew on those very difficult ones.

I think there is a large thing missing from the IT industry now which is a vendor neutral forum for buyers to influence the direction of technical change by their voice as well as by their buying behavior.

And the old vendor-specific ones, the share and guide committees that were aligned with IBM a generation ago were very useful in doing it.

And now vendors are trying to start up vendor-specific -- Microsoft and IBM still has them -- are trying to start vendor-specific committees to get feedback.

The government could play a very useful role as a buyer by instituting the formation of a vendor-neutral committee.

On the other hand, you know, it seems to me -- I've read the Department of Defense's definition of "open systems." It took me a little over two hours.

The DoD procurement is just not designed in its intent of producing competition in purchasing to produce actual competition in purchasing in an industry that changes as rapidly as IT. It seems having the governments per se do it is a bad horse to ride. Having the government facilitate it is a great idea.

COMMISSIONER STEIGER: Stanford is fortunate to have a speed reader on its distinguished faculty.

Who else wants to respond here to Becky's questions?

MR. WAYMAN: If that question had an easy answer, I'd give it to you, I guess, is one answer to tell you. I mean that is a tremendous problem, you know. But I do feel strongly that we are not talking about an appreciable part -- we should not, in order to be talking properly about interfaces, we should not be talking about an appreciable part of the intellectual property investment of the first mover being captured by the person who has access to the interface.

I mean, if that is, in fact, the case let me use the essential facility cases which, if you claim that a football stadium is an essential facility and you need to get use of it, you're claiming rights to a huge investment that somebody else made.

But if you claim that one guy installed a set of railroad tracks and they have a certain gauge or width and you want to build your own network of railroad tracks and you want to copy the same gauge, you know, the whole economic equation is completely different.

And I'd be interested in Professor Baxter's -- he commented to Chairman Pitofsky's question about: If the first mover has a monopoly in a certain area, is it appropriate for him to extend that monopoly -- as I understood it -- or to charge a rent on use of that facility in the next area?

Would it be your answer if the first guy built a set of railroad tracks that if he could protect the gauge of that track -- that he was entitled to extract a rent on that gauge equal to the value of the second set of railroad tracks?

MR. BAXTER: Yes. And, of course, that's one reason why a gauge would not be protectible unless it had some extraordinary unpredictable characteristics. It would be not protectible.

But I would see a substantial difference between the situation where I want to attach my gadget to your Net and you say, well, yeah, at a price. And I find the price unsatisfactory, at which point I become a true believer in open access.

Someone said that war is merely an extension of diplomacy. And open access is merely an extension of bargaining over the price of access.

Now, if I take the analogy to your second railroad and I don't want access to your system at all, all I want to do is use some of the features of your system and build an independent circumstance, that, of course, is a completely different case.

What's the nature of your intellectual property that would enable you to keep me from doing that?

MR. WAYMAN: Okay. Let me give you an example. How about the QWERTY keyboard?

That probably, under current copyright law would be protectible for the guy that invented it.

MR. BAXTER: The QWERTY keyboard?

MR. WAYMAN: Yes, sir

MR. BAXTER: I don't expect that -- oh, you mean so that current people would still be paying?

MR. WAYMAN: I develop the keyboard and I build a bunch of typewriters, and now another guy wants to build some typewriters and he wants to use the same keyboard. And I say, fine, give me the profits you're going to make on your typewriters.

MR. BAXTER: Well, for the life of the intellectual property that is involved, I guess I have no problem with that.

MR. WAYMAN: Okay. I really do.

MR. BLACK: I think what the Professor raises, though, again gets to the issue that's so important is to focus on the scope of protection. I mean, should it be allowed to cover the gauge in this metaphor? And I think we're saying that is not a critical element that should be protectible.

In the copyright world, we have a unique situation with an electronic copying process that creates a copy that subjects certain processes to intellectual property law in a way that a railroad gauge has never been subjected. And that isn't captured. Computer software is.

COMMISSIONER STEIGER: We have one more respondent to this line of questions, and then we will --

MR. PHELPS: I really think the examples are so simplistic as to not even be useful. And I don't think it's even possible to set rules here that you could even apply generally without a disaster.

It all depends from whose perspective you are looking at this. From the interface provider's perspective, unless it's ever in that person's economic interest to promote interoperability, they're always going to provide less than the interface receiver wants.

And so to try to define rules for that is really amazing. Because if I'm on the receiving end of this thing, I'm going to define my interface needs that big (gesturing). And the interface provider is going to provide that much (gesturing).

Now, I don't know where you're going to try to -- how you're going to administratively try to draw where that line really ought to be to an industry, if you open up a computer, it's probably got five million inventions setting in there somewhere along the line and all kinds of different attachments and interfaces and specifications and whatever. It brings you back to this, as a participant in the standards process as a big purchaser, the government could have a proactive role without setting up another agency to administer interfaces of the world.

By the way, I don't think there's a human being smart enough to participate in that organization if it were set up. And I also go back to the point that by the time you did define that interface, the world has probably moved on to another one.

COMMISSIONER STEIGER: Will, did you want to interject a question?

MR. TOM: Yeah, I have two related questions. One is a follow-up to Professor Baxter's answer on the railroad gauge.

That is: Do you see a distinction between a patent regime in which the railroad gauge, unless somehow tremendously inventive, novel, and non-obvious, would not be protected and a copyright regime in which conceivably it could be protected without showing that degree of novelty and non-obviousness?

And my second question really relates to something that Emery Simon said, which is that these are competition questions which ought to be handled in an antitrust regime and that we shouldn't meddle with respect to the scope of intellectual property protection.

And my question is: Can you be more specific as to how that kind of problem can be dealt with under antitrust doctrines as opposed to taking close looks at what really is protectible and what is not?

MR. BAXTER: Well, I'll try to answer the first half of that and not the second because I really didn't understand the second point.

But as for the first part, yes, I think we have gotten ourselves in a rather bad situation, because the copyright laws really are not appropriate in their fundamental characteristics to do the job we expect them to do in the intellectual property area.

I mean, essentially we want protection of functionality. And the copyright laws were not designed to provide protection of functionality. So they've sort of been forced and bent out of shape in order to do a job they were never intended to do.

And I think that sooner or later, before we really get good answers in this area, sensible answers, we're going to have to have a legislative amendment that brings into existence a form of intellectual property that is appropriate to the task that we are trying to impose on it.

Now, having said that, I don't understand the point that Emery made; so I'm going to let him deal with that.

MR. SIMON: I guess it's sort of the answer I was going to give to Becky's question as well, which is, if you focus on definitions of what's an interface or what is an API and whether or not that is protectible, ultimately I think that that's an uninteresting question because those things are protectible. We know that many aspects of those things are protectible. And whether Professor Baxter is right or wrong about the copyright law not doing the job that it's supposed to be doing, it's a law that we have today.

The issue is not whether that thing within the parameters of the copyright law meets its criteria. The question is whether the right holder is exercising that property right in a way that violates the antitrust laws. And I think that's the issue that you need to focus on. It's not whether the subject matter is protectible. You're not trying to invalidate protection from an antitrust perspective. You may ultimately view that as your solution; that is, you may -- yesterday there was a lot about compulsory licenses or confiscation.

As a solution, you may want to confiscate that property right. But the issue that you should be looking at is not whether a property right exists but whether it's being misused, whether it's being, you know, whether the guy is doing bad things with it.

So I think that's the concept that I was trying to get at, which is different than whether or not, as a matter of copyright law, it is a good thing or a bad thing or an indifferent thing for the copyright law to protect user interfaces or to protect -- whatever.

MR. TOM: I get a little nervous when I hear the word "misuse." Probably because I don't really understand the nuances of that doctrine.

But to take the specific example we were working with, that is the railroad gauge, it has been the general approach of antitrust law to take the property rights as given and to accept the fact that a person can legitimately gain a monopoly. And intellectual property rights are usually treated as legitimately acquired monopolies, in cases where they even amount to a monopoly.

And so it's not clear in my mind how we would treat a situation in which the law has awarded to the first railroad developer an intellectual property right over the gauge of the railroad track.

There doesn't seem to be anything in antitrust law that would clearly deal with the natural consequences that would flow from awarding that intellectual property right.

I mean, to call it a "misuse" is sort of to define the problem away, I would think.

MR. WAYMAN: What about the facilities --

MR. TOM: Well, I would be interested in hearing Professor Baxter's --

COMMISSIONER STEIGER: Excuse me. I don't think the reporter got the question.

MR. WAYMAN: He said there doesn't seem to be anything in antitrust law that would help us solve that issue, and I asked about the essential facilities doctrine.

And without mentioning the Aspen case, Professor Baxter is going to tell us what he thinks.

MR. BAXTER: Without mentioning the Aspen case?

MR. WAYMAN: I was just kidding.

MR. BAXTER: Well, if you go back through the essential facilities cases, you have a hard time finding one where there was an essential facility.

In Associated Press, there were several other press services. In the railroad case, contrary to popular fashion, it was not a gauge problem or the only bridge over the Mississippi River. It was switching facilities on the St. Louis side of the river. And the Supreme Court, essentially, handed that problem over to the Interstate Commerce Commission to solve as a regulatory matter. So it never got resolved in the courts at all.

You sort of joked about the Redskin's use of the stadium. I think the JFK Stadium is probably the best example of an indispensable facilities case that there is.

And there the problem was pretty clear that you did not have a profit maximizing entity who was doing the bargaining on the other side, so you were running into a political block rather than an economic problem.

So I just say that the essential facilities doctrine, so called, doesn't make any sense to me in the abstract; and until I see a case that actually involves the problem, I'm going to take the position there is no such thing.

MR. BRESNAHAN: This discussion, to me, has the flavor of trying to find a technical definition which will solve a rule of reason problem.

And the inherent complexity and malleability of software -- and most hardware and software -- means that any technical definition of what's an interface can be quickly evaded by designers of interfaces, designers of software products that have anti-competitive goals. Add modest costs to development to whatever the technical definition of a thing that should be open and that shouldn't be protectible, there just won't be any of those any more.

And I mean, it seems like there's going to be an impossible problem here of defining something where the respondent -- I think of the attempts, for example, to define an open airline reservation system. Think of that where the degrees of freedom to the designers of the system are vastly more complex than the degrees of freedom to American on how to order flights were, and you get some sort of idea of the regulatory problem that comes by trying to define the thing that should be open.

I mean, ultimately what happened in the airlines case was an outcomes test, which we don't have access to here either.

COMMISSIONER STEIGER: I saw a lot of heads nodding at the statement that we were trying to create a hard and fast rule for a rule of reason problem. I think we have got time for one more comment.

Who wants to chime in?

MR. WAYMAN: The other person may want -- I'll just say, sure, my head was nodding only because, you know, I agree it may be that you all thought you were looking for a per se solution. I never thought one was realistic, and I do not think that any of my ideas would lead one to some sort of per se kind of solution.

So I agree with you that rule of reason may be the appropriate analysis, but I don't agree with a point you did make, which is that no antitrust analysis is appropriate at all. I think it is.

COMMISSIONER STEIGER: Ed?

MR. BLACK: Well, just the question that you asked of Emery, I would follow up -- I mean that antitrust shouldn't get into the scope issue. We think that's fundamental change.

And pick another industry, pick some other dominant firm outside of that company that is attempting to change fundamental laws that would create -- make the monopoly impenetrable we think is what is, in fact, some of the efforts behind changing intellectual property law and scope.

And I think there would be a feeling that you would need to intervene. And that's what we believe the changes in the scope of intellectual property coverage is, that the fundamental motivation for it is, we think, largely competitive and anti-competitive. And that's why we urge you to be very active in the policy.

COMMISSIONER STEIGER: With that, our thanks to all of you on behalf of the Commission for a most stimulating and, for our purposes, a useful morning.

We will resume at 1:30. And we hope those of you who can stay will chime in.

(Pause in proceedings.)

All right. We have now decided to give you 15 more minutes to eat a hotdog. We are going to resume at 1:45.

(Whereupon, at 12:33 p.m., the hearing was recessed, to reconvene at 1:45 p.m., this same day.)

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A F T E R N O O N   S E S S I O N

1:45 p.m.

CHAIRMAN PITOFSKY: Good afternoon. We are ready to resume our hearings on these various innovation and high-tech industries.

And I'm glad to see that Professor Baxter is going to be able to stay with us this afternoon and perhaps comment on some of the presentations by others.

Our first presenter is Mark Rosenblum, Vice President of Law and Public Policy at AT&T, a position he has held since January of 1994. He's responsible for development, analysis, articulation, and litigation of AT&T's positions on domestic public policy matters, including local exchange and long-distance competition.

From September 1992 through December 1993, Mr. Rosenblum served as Government Affairs Vice President and Attorney in AT&T's Federal Government Affairs office.

Before that, he was General Attorney in the AT&T Law Division which he joined in July 1984.

Mr. Rosenblum, welcome to the Federal Trade Commission.

MR. ROSENBLUM: Thank you, Mr. Chairman, members of the staff. I'm honored to be here.

And I think the reason for my being here, as the Chairman just reminded me, is a promise to talk some about

AT&T's recent announcement to go through at least one more restructuring in 1995 and 1996 -- following on the somewhat more famous one we went through in 1982 through 1984 -- I guess mainly from an antitrust perspective. And I thought long and hard about what that would be. And I think the short answer -- which I will give you first -- is, from our perspective, there is virtually no antitrust significance to AT&T's latest announcement and AT&T's latest series of transactions that it set for itself.

And in that respect, it's very different from the transaction AT&T went through, moving the integrated Bell system in 1982, to the divested eight companies that now make up the regional companies and AT&T largely as a result of antitrust litigation.

I've submitted written comments which go into the subject in somewhat greater detail and, in particular, explains what I do think is the antitrust significance from the 10-year-ago restructuring. I'll talk a little bit now about the coming restructuring and why I think it is relatively devoid of antitrust significance.

Today, as many of you may know, AT&T prides itself, and has since 1984, on being a very broadly integrated telecommunications supplier, supplying traditional-wired domestic and international long-distance services, now, through our affiliation with McCaw, supplying a complete range of wireless services, manufacturing the telephone equipment that you might buy for your homes and your offices, and manufacturing the telecommunications gear that telephone carriers across the world buy to put in their networks and make the networks function, tying all of that together, of course, with the research and development arm, Bell Laboratories.

And that integration was seen to be a source of great advantage for AT&T in terms of the research, in terms of the economies of scope and scale, and just in terms of being able to offer to the marketplace what amounts to one-stop shopping for all the telecommunications needs.

I think our decision in 1995, to go ahead with this restructuring maybe reflects a judgment either that this advantage that we thought we had either wasn't attainable or, if it was, is no longer sustainable.

And so what we plan to do is split ourselves up yet again, this time into three stand-alone, completely separately owned and operated corporations.

The one that will retain the name "AT&T" is what is now our services business. And the new AT&T will combine the long-distance and the wireless services and any other telecommunications service business that we get into, domestically and internationally. It will also include the credit card and financial services Universal card.

Roughly speaking, there will be a second large corporation which currently has no name. We refer to it as S&T for "Systems and Technology." And that will be the conglomeration of all of AT&T's current equipment businesses on the telecommunication side. That would be the customer premise equipment, the network equipment, and virtually all of what is now AT&T Bell Laboratories as the research and development engine behind those manufacturing businesses.

We also acquired NCR several years ago to head up our computer business. And that is going to be spun off as a third stand-alone company reflecting whatever of the old AT&T stays in the computer business.

There are some minor other transactions that attend this, but I think for purposes of today's presentation, thinking of these three new stand-alone companies as the successors to what is now AT&T is probably the right way to view this.

Fundamentally, the transaction will be accomplished by spinning off shares in each of these new companies to the existing body of AT&T shareholders. But each of the companies will have completely independent boards of directors and management structures; and, of course, as shares are traded, increasingly they will have different bodies of shareholders and presumably relatively different analyses by the investment community.

I guess the term that comes to my mind to describe our rationale finally for doing this in 1995 is "dis-economy of scope." The economies of scope that we thought that we were going to derive from this integration within our various telecommunication businesses turns out, at least in 1995, now to be negative. And it actually costs us efficiency to try to have this very broadly integrated corporation operating under a common ownership. It is not clear whether it was ever possible to do it otherwise, but this reflects our judgments now that it's not.

I will tell you that within AT&T, almost annually, since the mid 1980's, the question has come up: Can we continue to sustain? Can we continue to benefit from the integration of the equipment and the services business?

And just as regularly the answer, after deliberation, has come back: Yes, we must. It must be right.

And, candidly, it was just this year that the answer came back: Nope, let's throw in the towel. And the reason for it is the increasing business conflict that we think is inherent between our equipment business, on the one hand, and our services business on the other.

It turns out that it costs a lot of money to run an equipment business. There are very few niche markets on the network equipment side that are easy to penetrate with little capital investment. A very large customer base is an essential component for success. And it follows from that and our experience, that AT&T, to be successful as a supplier of network equipment, absolutely must be able to compete for the business of at least the major local exchange telephone companies in this country and, indeed, many major foreign telecommunications carriers in the rest of the globe.

And we have been finding increasingly that no matter the price, quality, value, and innovation of our products, the major customers for those products see themselves as being actual or potential competitors of AT&T on the services side in the very near future. They have been increasingly reluctant to commit their network infrastructure purchases to a firm that they see as a network competitor of theirs.

Our equipment entity, for its part, has been extremely concerned about AT&T's services business not making market moves or taking even public policy positions that would irritate their prospective customers. And increasingly the amount of management time and attention that has been required to hold these conflicting parts of AT&T's business together has begun to outweigh even our wildest dreams of potential benefits.

And in a nutshell, I can tell you that is the rationale for having made the decision to separate the equipment and the services businesses.

I think the rest of the transaction was just sort of, if we're going to do this, we may as well do it right and create three new corporations with very different markets and very different potential market focus needs so that each new company can be relatively free to focus its management time and focus its business and investment decisions on the part of the business that it operates in without having to worry so much about either the conflicting strategies of other parts of the entity or even the conflicting capital needs or financial positions of other lines of business unrelated to their own.

And so that's why we have these three new corporate entities coming out of the old new AT&T.

Trying hard to find some antitrust significance to this, I confess, I really can find none, again, unlike in 1984 when the structural remedy of separating the Bell system into its competitive and non-competitive parts was the damages, if you will, sought by the United States antitrust case. And the perception, at least in the Bell system, at the time was that if we did not do something as dramatic as divestiture, we would continue to face certainly antitrust litigation and likely antitrust exposure.

There are no such aspects to the current restructuring by AT&T.

I don't think for a moment there is any basis to think that AT&T would be more or less vulnerable to antitrust exposure with or without this kind of a transaction. And I know that's not any part of our consideration in this regard.

Nor, frankly, do I think it suggests any generic model rule of economics or business judgment for industry generally. I think that it is not necessarily true that smaller is better than bigger. It is not necessarily true that economies of scope turn negative after a certain point. I think it merely reflects in AT&T's case -- and maybe the telecommunication industry -- it's a blurring of the lines between customers and competitors and a blurring of lines between products and services and just a strategic and managerial difficulty that connotes for trying to hold together a very broadly integrated company.

And so I'm sort of embarrassed to report, you know, that the news is none for purposes of the FTC's, I think, quite laudable objective here. I wish I could be more upbeat or more didactic for you. But to tell you the truth, we haven't even figured out for sure how we're going to do this although, we are pretty sure about why we have chosen to do it.

So at least until we have gotten through it and seen the result, it's certainly premature to assign any broad significance to this disintegration as a strategy.

But I'd be happy to answer questions about what we think we're doing. And if the day moves along as I suspect it will, I imagine I'll have a chance to address what I do think is quite different about the 1984 restructuring in that it does have tremendous antitrust significance still.

Thank you.

CHAIRMAN PITOFSKY: Thank you very much. And if antitrust is irrelevant, it's best that we know it going in.

What we could do is have clarifying questions if there are any and save a general policy discussion for a little later in the afternoon.

All right. Let's move on to one of these potential competitors who you had in mind.

Norton Cutler is Corporate Counsel in the advocacy section of U.S. West, a position he has held since 1993. Before that, Mr. Cutler served as General Attorney in the Litigation and Regulatory Section of NCR. And before that, he was Associate Chief Counsel, Senior Counsel, and Senior Attorney.

Among his many accomplishments, Mr. Cutler led a team in successful litigation to have a cable/telephone company cross-ownership ban declared unconstitutional, and he's credited with obtaining antitrust relief to allow

U.S. West to create the information superhighway.

Mr. Cutler.

MR. CUTLER: Thank you, Mr. Chairman.

I want to preface my remarks with a little more of my history and hope to speak somewhat as a representative of U.S. West and somewhat more as a private citizen who has observed these issues for a long time.

Indeed, most of this came to my attention first as a student of Professor Baxter at Stanford. And I then went and started with sort of a plaintiff's antitrust firm representing DayTran in their lawsuit against AT&T, which I think was resolved in the late 1970's; although, I'm getting old enough that that was long enough ago that I can't exactly recall.

I then worked for NCR for a long period of time. Indeed, when I look at the panelists you had this morning, I worked very closely with all of them on a number of the computer open network issues. And now I'm working for a telephone company dealing with open networks and telephones.

I'll try to make certain comments which I think try to draw on having worked in both industries, since that seems to be sort of the topic here: How do these issues overlap?

I would say in the early 1980's Professor Baxter made two very significant decisions when he was heading up the Antitrust Division, one of which I approved of then, one of which I thought was very silly. I've changed my mind about the second decision.

My observation is that he concluded that if you left the computer industry alone -- i.e., if you don't do anything about IBM -- whatever power they may have had in that time frame would eventually sort of work itself out in the free marketplace.

Apparently it has, and I congratulate Professor Baxter for a very smart decision which I didn't agree with at that point in time.

His second decision was that in the telephone business, some sort of structural solution was necessary in order to open up the network and create a lot more competition. And, obviously, he pursued the AT&T case very hard and brought about the divestiture on January 1, 1984.

A recent New Yorker article observed that the shareholders of IBM perhaps should have wished that Professor Baxter had pursued that lawsuit. But IBM is back fairly strong now, so maybe the shareholders are perfectly happy.

Generally, we in the local telephone companies have reached a few conclusions, I believe, about how networks should be structured and what the hints are for the computer industry. And perhaps beyond that, as I'm sure you all know, U.S. West is very interested in, let's call it the information highway, cable, telephony, the Full Service Network, whatever you want to call it, which we are developing in conjunction with Time Warner in many areas.

First of all, we strongly believe that open networks are good and that exchange of traffic and interconnection, well defined interfaces, whatever you want to call it, stimulate competition. And the telephone industry is a perfect example of how that can work.

We have concluded, as a child of the Bell system that -- and without being pejorative at all -- the old Bell system way of providing everything from soup to nuts in a closed structure, perhaps, is not as effective as the new method where there are at least, you know, 15 different companies that can provide some degree of the telephone service.

Obviously, creating seven RBOCs provided lots of new sources of innovation and solutions to old problems. The changes in the CPE business since the Carterphone decision, which I think was in the late 1960's, are just dramatic as to what you can buy in a telephone today compared to what was available then when the Bell systems said you couldn't hook anything onto the telephone network.

I think that's a very important lesson to be learned about open architecture and interconnection of computers or video network.

The next point is what I will call exchange of traffic and services.

Computer companies, I think for a long time, first probably -- and these are things that I experienced. In the IBM world, the peripheral companies came along in the late 1960's, and there were lots of arguments about what could be attached, when and where and whatever.

I think that's pretty well passed now. But I can imagine that Russell Wayman had something to say about that on the previous panel, being from Storage Tech. But those issues are sort of gone. The telephone business has always exchanged traffic and services.

A base point about a telephone is, it's only as good as how many people the user can reach. The telephone business, since the beginning of time, even with the integrated Bell system, exchanges traffic with all kinds of independent telephone companies.

Now, in the last 20 years, there's been an enormous growth, first in the long-distance business of various companies like Sprint and MCI, which obviously participated in sort of an open network traffic exchange system. That, obviously, created much more competition. Indeed, AT&T recently won its non-dominance argument with the FCC and is now virtually a deregulated carrier because of all that.

We are obviously beginning to see that in the local telephone business. And there are a number of issues yet to be decided there. And I probably -- I guess Mark was saying he was planning to comment on this later this afternoon. We at U.S. West call them AT&T's "Nine Points Of Light." He'll probably call them something else. But, obviously, the subject of interconnected and unbundled is a very interesting question which has to be decided in the next 5 to 10 years.

The cellular carriers are another example of a group of people with whom telephone networks have fully interconnected and passed traffic back and forth. Indeed, another point to be made there, and I'll get to it later, is the private standard making system was so essential there that until they worked out something called the IS-41 standard across the country, that severely retarded the growth of the cellular business.

But when that standard of interconnection was worked out so that I can bring my phone to Washington D.C. and start dialing everyone, frankly, in the world, even though my local carrier is back in Denver, Colorado, that interconnection was very important. And the growth of cellular telephones in the last five years, I think, since that was worked out, is just dramatic. And AT&T, obviously, observed that, too.

Another important issue is what I'll call resale and piecing out. One of our own people asked me what does "piece out" mean. And it was a familiar term when I was doing antitrust cases in the late 1970's.

Basically, in the telephone business, for a long time you had permitted competing carriers who would buy pieces from us and fill out their networks so they didn't have to build the whole thing. That's, obviously, very similar to a computer industry on a network question there. Do you have to provide an entire computer system the way that IBM and DEC and, to a degree, Apple do, or can you just provide a piece, like Storage Tech provides the world's best storage system, so they think?

So we believe that piecing out and resale of those pieces is a very important competitive tool. And AT&T, obviously, wants to do that. And the local network, using our services -- and I imagine in this that if the RBOCs get over the line of business restrictions in some fashion, either through legislation or waivers in the next year or two, then they'll be buying pieces from AT&T to put together whatever interexchange traffic they intend to carry.

So that's a very important part of competition.

I think once we get past those basic issues, then we get to the much more difficult question. Now, those really are: How far do you go in interconnection and what you pay for it?

I understand there was a long discussion of essential facilities this morning, and I'm not trying to stimulate it again. U.S. West's position is, number one, the things that should be resolved should be services and not pieces of equipment.

One of the current fights, without naming names, certain people would like us to basically come in and say: I want that element in your switch in that LATA; and I want to buy it.

And our position is: No. We would prefer to sell you a service. What do you want? Do you want to buy Caller ID for your customers from us? We'll sell you that. We don't want to sell you the actual switch.

The other issue in there is defining where you interconnect. I know that was a big issue in the computer industry. One of IBM's famous comments always is, well, so and so copied us so badly, they stole the SNIGLET's, which are BOCs, and the best places to interconnect in their computer programs. And there were always fights about whether or not you could actually interconnect wherever you wanted to in someone else's computer system or computer network.

And, did you have to take what they are offering?

It's going to be similar in the telephone business if an interconnecting carrier says I want to connect at the X spot, which will require a ton of technical work to make that happen, and dislocate everything else in our own network. What's the appropriate solution?

That's going to be a difficult question. The legislation tries to get close to it. With you how to define that is very important.

The final and important issue in interconnection is pricing. Unfortunately, we're a business that has been regulated for 100 years.

Like most businesses that have that much regulation, a lot of social engineering has been going on. Without saying whose idea it was, there's no question but that we sell a lot of services today that are significantly below costs. And the reason why they were below cost is not because we're charity. It's because the regulators made us do that.

Now, when one of our competitors comes in and wants to buy up the low-cost service, we have a lot of questions about why we have to subsidize a competitor. It's one thing to be forced to, for social purposes, supply $10 flat-rate farm service in rural Colorado or Montana. It's another thing if you sell it to one of your competitors.

Current legislation even forces us to offer a wholesale discount below the already below-cost rate. This is probably a transitional issue that's going to go away in a number of years, but it's a very important issue for us.

The next important question I think is: How do you resolve these disagreements?

We are not naive to think that we can sit down with AT&T or any other interconnecting carrier and always solve everything consensually. So the question becomes: Who's going to resolve the dispute?

I guess our recommendation is that we start with private discussion. I noticed that one of the other speakers here is going to talk about ONA. One of our observations about ONA is while we do agree that it was a good idea making the telephone network into smaller and more sort of granular pieces that people could buy, particularly the enhanced service providers, maybe we started backward.

U.S. West is already providing interconnection to a number of competing local telephone carriers, particularly in Iowa, Washington, and Oregon. The way we have dealt with them so far is basically ask them: What do you want? And then we talk about the best way of providing the services which they want and what are the right interfacing. And, obviously, we have to have price negotiation, and those are perhaps tougher than anything else. But we at least know what that carrier wants.

Whereas in ONA, our observation is that we created, I don't know, I'm sure it's 100 basic service elements; and very few of them have ever been bought by anybody. A lot of work went into that.

The enhanced service sort of outside business really is a disappointment, I think, to everyone in that it just didn't grow up the way people thought it would.

So our recommendation would be that we have private negotiations. Then when you can't resolve that, the next step from a technical point of view is probably the standards organization.

There are a number of standards organizations working on all kinds of telephone standards now. That's obviously an important interconnection and open systems problem about the telephone network. AT&T took care of it admirably until 1984 because they controlled almost everything. I guess they -- I assume they talked to GTE, but I wasn't involved that deeply then. But they could do it in an integrated fashion.

So you've got to have some kind of private organization consensus, like the T-1 standard committee, for instance, that works on what are the interfaces.

I'm sorry. Am I too far from the mic?

Thanks.

This comes, by the way, from one of the principal differences between NCR before and after AT&T took it over was we all sat in cubes prior to AT&T taking over. So you learned how to talk very softly in a cube for fear of disturbing your neighborhood. And I guess I don't -- I should think of you all as my children, and then I would raise my voice high enough and it would be taken care of.

So that's an important issue there, as to how to resolve technical differences.

Then the next question is what's the next step to solve that, and our recommendation would be if the consensus process cannot come to a conclusion -- and you should hang with it for a long time. And by the way, there is an argument going on in the industry now with MCI about when should arbitration be called on in a standard setting environment. We think that eventually that's probably the right step, but we really would like to try very hard for consensus.

And that is simply because usually if you -- it's kind of like -- and having been a resident of Dayton, I can observe this -- when you make the Bosnians go stay in a place like Dayton as opposed to Paris, perhaps, for a month, they'll come up with an agreement in the end. And that's the best way to set standards.

However, arbitration is probably a reasonable resolution of some of these standards issues after a very long consensus effort.

Then the question is, you ought to have to go some place after that. And we do recognize a role for regulatory agencies to resolve interconnection disputes, and that's very important. We have a number of them going on now, again, in Iowa, Washington, and Oregon. We do think that we should call upon the expertise of these agencies who have dealt with telephone systems for a very long time. We presume that similar types of agencies would be worked out for computer and broadcast networks; although, obviously the expertise might not yet be there.

And then I guess, as a last and final step, we assume that people are going to go to court because they do. One observation about the current legislation is that it does seem to be badly missing some kind of immunity in that what happens is you go through a long discussion with various people and go to a regulatory agency and everything else and after the regulatory agency makes a decision how you should interconnect, you get no immunity in there and there's basically an invitation to sue any telephone company you don't like for -- I think it's up to $500 million in penalties. And we kind of think that's double dipping. But, at any rate, there does need to be a dispute resolution.

A final comment is, whatever rules we set in place now to deal with an obvious issue of how do we transition from a monopoly to competition in interconnecting, you should recognize the transitional rules are, indeed, transitional. We expect there will be a day when U.S. West will have what we think are no more essential facilities and there will be enough competition that we don't need a lot of rules, and unbundling and the marketplace will solve these problems.

We would observe that AT&T was treated as a dominant carrier by the FCC a lot, lot longer than was probably appropriate and congratulate the FCC for the recent decision to treat them as non-dominant, basically let them be controlled by the marketplace. And we encourage that whatever mechanism is put into place to facilitate this telephone transition also have some kind of sunset at the end.

Thank you.

CHAIRMAN PITOFSKY: Say a little more about arbitration. That's a thought that's new to these discussions.

What do you -- you don't have binding arbitration in mind, do you?

MR. CUTLER: Well, with the preface that for seven years I did nothing but try computer arbitrations for NCR and I have a great deal of faith in the process and I'm horribly biased on that subject, certainly, as a private citizen, I don't see why not.

I do believe that you might have an appeal to the regulatory agency under similar principles that are used in other arbitrations.

Obviously you want to have some kind of an appeal if only to follow what I recall as being Professor Lon Fuller's views that laws have to have some minimum morality. People won't accept what's going on as useless. So people do want to appeal.

But at least our view is that many of these disputes need to be resolved and not just fish around places forever. And we're really fearful that some of the process being set up may last so long that we won't get some of the freedoms we are entitled to when we solve them. And the people who were trying to discuss what to do, you know, might be long gone before anybody makes a decision.

CHAIRMAN PITOFSKY: Okay. Well, we can follow up on that later.

Any other questions?

Our third speaker is Stan Besen, Vice President of Charles River Associates in Washington, D.C. Dr. Besen has served as a Brookings Economic Policy Fellow and as Co-Director of the Network Inquiry Special Staff at the FCC.

He has been co-editor of RAND Journal of Economics and on the editorial board of Information Economics and Policy.

Dr. Besen also is a member of the Office of Technology Assessment Advisory Panel, and he has taught at Rice University, Columbia University and was a colleague of mine when we were both at Georgetown University.

Mr. Stan Besen.

MR. BESEN: Thank you, Mr. Chairman.

The topic of today's session is: What can we learn from the telecommunications industry about possible ways to assess pro- and anti-competitive behavior in other networks industries?

I thought I should start with my conclusions since I don't know if I can actually get through my whole talk. And if I have time, I'll give you the conclusions twice. But I'll just sort of state this basically in the form of what might even be considered four aphorisms.

First, access to technical specifications may be as important for competition in network -- excuse me. Access to technical specifications is important for competition in network industries, but it's not everything.

Second, competition in network industries may be affected as much by the number of different networks as by the openness of any particular network.

Third, which interfaces are available may count as much as knowledge about their technical specifications.

And, finally, the price of access to key interfaces can be as important as the availability of technical information about them.

Now, the organizing sort of principle for my talk here today is based on the FCC's Computer III decision, in particular the portion of it referred to as open network architecture.

I'm not going to provide a complete evaluation of ONA, and I'll not even be particularly concerned about determining whether or not the problem to which the ONA policy was designed to deal was an important one or whether ONA was an appropriate response.

I have a more modest objective, that is to highlight the major issues with which the policy sought to deal in order to draw some lessons for the treatment of similar issues in other industries.

I think all of you are probably familiar in a general way with ONA. It was one of a series of efforts engaged in by the FCC over many years in which the Commission sought to permit competition and supply telecommunication services in the face of what it perceived to be monopoly control by the local exchange carriers, or LECs, of certain key inputs.

The policy concern was the LECs would discriminate in favor of their own downstream affiliates in provision of these inputs unless certain restrictions were placed on their behavior. Initially, the FCC permitted the LECs to offer competitive services through fully separated subsidiaries.

Later, under the MFJ, there were line of business restrictions placed on the LECs. The ONA policy basically resulted in a conclusion on the part of the FCC that the separate subsidiary requirement was inappropriate. The Commission began its own ONA proceedings.

The policy was a retreat from the previous policies and was based on a belief that these policies prevented or limited efficient entry in the supply of enhanced services by the LECs.

The FCC continued to accept the view that certain elements of the communication system would necessarily continue under the control of the LECs, but it tried to make it possible for others to compete in the provision of services that required connection to those elements while at the same time permitting the LECs to exploit whatever economies of scope existed between basic and enhanced services.

In the Commission's words: "...non-structural safeguards could protect competing enhanced services providers from anti-competitive activity by the BOCs while avoiding the inefficiencies associated with structural separation."

In this particular case, of course, the example was the concern about access by information service providers to the LECs. But the analogy of the network industries is clear. Just to mention a few, one could sort of use the same words, talk about links between peripheral equipment and mainframe computers, or computer hardware and operating systems, or application programs and hardware, or recording media and playback equipment. And the list is, of course, endless.

The professed concern is the same in all of these cases, that somehow the entity that controls the bottleneck or -- can I use the words -- "essential facility" can somehow leverage that control to dominate other potentially competitive markets.

Initially, the non-structural safeguards adopted by the Commission consisted of a requirement that the enhanced service providers could obtain the same services from the LECs that the LECs provided to their own enhanced service operations and to obtain these services at the same rates.

However, this policy, which was then called -- I guess still called -- Comparably Efficient Interconnection, did not require the LECs to offer services they did not use themselves. The open network architecture policy was designed to deal with that issue.

I want to talk about four aspects of the ONA policy, and they track the four conclusions that I gave earlier: disclosure of technical information, uniformity among networks, the definition of the interfaces, and pricing.

I would emphasize before I talk about ONA in these regards that not all of these elements will be present or present in the same degree in every network industry.

For example, disclosure of technical information is likely to be more important for physical networks than for metaphorical ones. And for some types of networks, access price is going to be much more important than technical information.

The interesting thing about the ONA policy is that I think all of these elements somehow play a role here. And so we can illustrate something about each of them by the experience in the telecommunications industry.

Technical information is the first topic I want to talk about. The focus here of the FCC's policy was a requirement that the LECs provide information to rival, enhanced services providers about changes in the specifications of certain key interfaces and to do so in a timely fashion.

The fear was that without such a requirement, the LECs might use frequent and unannounced changes in these specifications to disadvantage their rivals, a story we have heard, obviously, in other industries.

These rivals would be disadvantaged, of course, if the changes in specifications made it costly or impossible for them to combine their products and services with those provided by the local exchange carriers.

Now, again, quoting the Commission: "Network information disclosure rules are designed to ensure that independent [Enhanced Service Providers] receive timely access to technical information related to new or modified network services affecting the interconnection of enhanced services to the BOC networks."

The issues here, I think are clear. Just by way of commentary on them, there's obviously an issue about how much information is to be provided and how long before a change is implemented before the information must be made available to rivals.

Obviously, the rivals want information available as early as possible and in as plentiful detail as possible.

On the other hand, requiring very long lead time may substantially reduce the rate at which new technologies and services are introduced. And so there's obviously a trade-off.

Second, the policy has the effect of reducing the returns to innovation by the LECs, because the lead over their rivals is reduced by early disclosure. If we believe that most changes in specifications were intended solely to disadvantage rivals, then we wouldn't much care about this. However, if changes in specifications typically involved significant technical advances and if the LECs could be expected to be sources of innovation, presumably one would be willing to shorten the lead time in order to promote innovation.

This, of course, is a familiar sort of trade-off to students of antitrust policy where one is concerned about the trade-off between widespread access on the one hand and the promotion of innovation on the other. Quite familiar in standard sort of problems.

Geographic uniformity, the second topic I want to deal with.

The issue of information disclosure focuses on the relationship between a single LEC and its rivals.

However, competition may also be affected by whether different LECs adopt different specifications to key interfaces.

To draw an analogy in a different setting, even if IBM and Apple both have open systems so that rival hardware and application software providers could supply either network, these rivals must offer different products to the users of the two different networks if the networks employ different technologies.

Of course, they do.

The reason this is important to competition is there may be economies of scale in the provision of complementary products, some of which are lost if rival suppliers must offer services with different specifications in different geographic areas. The earlier point about the advantages of the same cellular phone being used throughout the U.S. is a good example. If their economies of scale can't be exploited because of lack of geographic uniformity, this obviously will disadvantage competitors.

And, again, for much the same reason that a LEC might want to disadvantage rivals by changing specifications of key interfaces, it may also want to offer interfaces with different specifications of other LECs, even if information about them must be made widely available.

Indeed, if the LECs see each other as important rivals, they may prefer the non-price competition that results from offering products with different specifications to the intensive price competition that might result if they offered products with the same specifications everywhere.

The point, again, is a simple one: Open systems may not be enough to promote effective competition if different firms offer different open systems. As a result, in assessing whether behavior is competitive, it is not enough to focus simply on the openness of any particular system.

This has been a point, by the way, of considerable controversy in the case of telecommunication. One set of commentators has noted that: "there was considerable variation in the services available and the terms of offerings among the seven regional BOCs' ONA plans. [Enhanced Service Providers] decried the lack of national uniformity, finding that just 27 of the 102 requested services would be available under ONA in all areas of the country."

The next topic concerns the question of sort of how early or how granular the network has to be. The topic I have here is called: What is an interface?

I have been somewhat vague to this point about the definition of an interface, treating it as well-defined; but, of course, that's not necessarily the case.

Indeed, perhaps the most controversial aspect of the FCC's ONA policy and the one that is often regarded as the least successful is the way in which it requires -- and, again, I'll quote the Commission -- it requires: "...BOCs to unbundle elements of the networks and allow [Enhanced Service Providers] to purchase specific services that are useful for their enhanced services."

Under the policy, the LECs are required to make available what the Commission calls Basic Service Elements, or BSEs. These are essentially building blocks of a telecommunication network. The significance of these elements is, of course, they define the interfaces at which rivals can connect their services to those of the LEC.

From the point of the would-be rival, it makes no difference whether it cannot connect to the network of an LEC because it does not know the technical specifications of the interfaces or because the interface is somehow inside the service element that is being offered by the LEC.

Put somewhat differently, the ability of rivals to compete depends both on the accessibility of interfaces and knowledge about their specifications.

Initially the FCC proposed what it referred to as fundamental unbundling, which would have required the LEC to offer any Basic Service Elements that were requested by independent Enhanced Service Providers. Under such a policy, the ESPs will be free to purchase as much or as little of the LEC network as they wish in order to provide their own services.

Over time, this requirement has become less stringent. And the Commission has moved to a policy which it describes as an "evolutionary" approach to unbundling the network, which has led to these controversies about whether or not the degree of unbundling that the LEC has offered is, in fact, appropriate.

Under the approach, the LECs have generally proposed to offer large building blocks or at least larger building blocks than their rivals would have liked, the implication being, of course, there are fewer interfaces at which rivals can connect.

And these rivals have complained about the fact that they must purchase larger blocks than they want, thus reducing the scope of the area in which they can compete.

Again, the lesson for standards policy generally and other industries is the number and identity of the service elements available for separate purchase is likely to be at least as important for competition as is the extent to which information about the technical specifications of interfaces is available.

Competition may fail not because competitors do not know how to connect to a network, but because they cannot connect where they want to.

The last point is pricing. It may seem a lot for an economist to give the pricing last, but I certainly wouldn't want to leave it out.

I have not yet discussed the issue of the price at which interconnection is offered or, equivalently, the price at which the service elements that rivals do not want to purchase themselves are available.

I'm an Enhanced Service Provider and I want to buy A and B, but I want to buy C from the telephone company. All I care about is the price of C.

An ESP can have all the necessary information about the specification of the interfaces. It may have access to many such interfaces, but entry may still be impossible or at least difficult if the cost of access to those interfaces that are most desired by ESPs is especially high.

The FCC has adopted a companion -- or has listed a companion proceeding -- instituted a companion proceeding called a Joint Cost Proceeding specifying procedures by which the LECs were required to separate their costs between regulated and unregulated service. Any regulated services used to provide unregulated services, such as basic services provided under CEI or the ONA rules, had to be transferred at tariff rates. The Commission has also hoped to limit cost shifting by applying price cap regulations of these services.

I won't go into much detail. Obviously everyone here knows the whole question of exactly how these Basic Service Elements are priced is a big, big problem, one unlikely to go away very soon.

Again, let me just get to the summary again. I just sort of reminded you that I told you what I was going to say; I've tried to say it; and I will tell you what I think I said.

First, access to technical specifications is an important issue. You've got to know how to connect at the interfaces. But it's certainly not the total solution.

Second, the number of different networks makes a difference. You can have a number of open networks, but that will produce a less competitive environment or at least to some dimensions than one in which there is some uniformity in the various networks.

Third, which interfaces are available may count as much as the knowledge about the technical specifications.

And, finally, of course, price is important.

Let me stop here.

CHAIRMAN PITOFSKY: Thank you. I must say when you put it that I way, access seems like a rather formidable challenge for a regulatory group.

Debra Valentine reminds me that the first three speakers have concentrated on telecommunications and then we will be moving on to emphasize financial markets. So maybe this is a good point to stop and have a little bit of a discussion.

And I can't resist inviting Professor Baxter, if he wants to, to comment on what we have heard so far.

MR. BAXTER: I really don't have anything. I agree -- no disagreement I can perceive among the speakers, and I basically agree with everything they have said.

MR. BESEN: It's a different Bill Baxter than I know.

CHAIRMAN PITOFSKY: Any other questions?

MR. ANTALICS: I just had a question for Professor Baxter. If you see providing the interface technology in this industry as pro-competitive, why do you see required -- what's the difference between this industry and other industries?

MR. BAXTER: This was a regulated industry. If it had been free to profit maximize, I think the arrangement would have been as good as any other. But because it was a regulated industry, it was driven to maximize in perverse ways. And it was only the sub-optimalization savings driven by regulations that made me think divestiture was an improvement.

MS. VALENTINE: I just had a somewhat related question, which is: Where do you see this all going? At what point will this industry, if ever, or when will a network industry that was regulated, operate on a market basis?

And when will pricing and access be done among the parties?

And if we start compulsory licensing in other instances, are we going to get into problems with getting back to a market-based system?

MR. CUTLER: Well, I would comment, as I did earlier, about AT&T. I think we have some decent rules that the FCC came up with initially on: When is a carrier dominant and when isn't a carrier dominant.

And I'm not an expert in that field, but I think that the Commission has dealt fairly well with AT&T. Again, our observation is they waited a little too long there but that if similar principles are applied -- and the current bills do have even a direction to keep reexamining where the local networks are and when you should stop doing so much regulation -- then I think the principles are there.

Exactly when? I think it depends on -- I think there is a test that AT&T phrased about contestibility in the recent proceeding about what happens to AT&T pricing if one of the other competitors does something -- and I would ask, maybe Mark could explain that one -- but some percentage difference or something like that.

But that's the basic principle.

MR. ROSENBLUM: Well, I think I'll address the question in a slightly different way.

I think the -- surprisingly, I also found nothing particular to disagree with about Mr. Cutler's presentation.

And I think the important question is: When will the transitional regime end? And that's sort of a question that I think needs to be answered almost on a case-by-case basis.

Fundamentally when the formerly monopoly business or formerly essential business now faces choice and consumers of that business have a choice of suppliers, you know, clearly the time for transition is passed and you can get rid of some of those rules.

In the telephone industry, in my view, we are not at that point yet because, fundamentally, folks don't have a choice of local exchange providers.

On the long distance side, oddly, we saw maybe the rules overstaying their welcome as Norton suggested; and in fact, some of what had been the transitional regulations to promote competition themselves became factors affecting the market and then requirements that AT&T make its long distance services available for this resale or piece out have now become features that large business buyers of telephone service demand of all their suppliers. And the market has effectively forced suppliers to make these features available in the services that they put on the market.

Large business users would like to be able to buy discounted volume services from AT&T or MCI or Sprint and have at least the option to re-sell part of that network to other users and then recoup some of their purchase price.

So the requirement that is initially imposed only on the Bell system and only on AT&T as a means helping their fledgling competitors now has become a marketing feature that all the major facilities-based long-distance carriers are required by the market to make available.

MR. BESEN: You asked a good question. I think it's so good that it's really basically impossible to answer.

The sort of the pace at which one lets go is, I think, what you're really asking about. I think most people would worry about turning loose the controllers of a bottleneck facility over night for obvious reasons.

On the other hand, the danger is, one, that your question at least implies that if you hold on too long, a lot of the benefits that you hope to get from letting go will, in fact -- would be lost.

What you're trying to do is somehow -- maybe I go should go back to one of the -- not to overstate some of the things I said in my talk.

What we want to be able to do is induce the entities that control these inputs to have an incentive to provide their services effectively to people who supply complements to what they're offering.

In general, we expect most firms like to have people who supply complements to them be able to do so because they can sell more of the thing that it's a complement to.

And the danger is -- or the concern is that somehow we have created a set of skewed incentives which, in fact, induce people, contrary to what most economics would teach us, to in fact want to disadvantage people who supply complements.

But figuring out when to let go, I think, is -- and exactly how to do it -- is not a straightforward matter. And there are dangers in either letting go too soon or too late. And I don't think there's a simple answer to that question.

MR. BAXTER: Well, of course one would like to give the answer that the time to let go is when the industry can now function competitively.

And that implies that somehow or other we have overcome the local loop problem, which is, in some ways, the heart of the problem.

But it's going to be a very, very long time, in my estimation, before anybody over builds the local loop.

One can imagine -- although, I don't believe it myself -- that there will really turn out to be a demand for

500 channels of television and then the circumstances, it may be that having more than one local loop in place was reasonably cost effective. But that doesn't really seem to be in the cards for a very long time to come.

One can imagine some sort of a radio signal or a laser light system where you have a little gadget on your roof and it is capable of sending a signal to a receiver of AT&T, MCI, and Sprint and if you get mad at one of them, all you have to do is press the button on the wall down below and you refocus your radar transmitter.

Well, that brings the marginal cost of switching suppliers down to a reasonable level but not the total cost. It would still be necessary that my radar gadget cost less than a thousand dollars, let's say, to install because that's about the cost of putting in a local loop.

So I don't see any time soon when the telephone business is going to be competitive; and, therefore, I don't see any time soon when there's a distinctive answer to the question: When should we let go?

CHAIRMAN PITOFSKY: Any comment on that?

I just might mention that we saw quite a presentation here a couple of weeks ago. I agree that rebuilding the local loop is unlikely. But the presentation had to do with the convergence of over-the-air TV, cable TV, computer technology, and the telephone.

And the prediction was -- with no firm date, of course. The prediction was that this convergence is really gaining steam right now and that we are likely to see telephones facing competition through interactive cable TV and vice versa.

Any of you care to comment on when you think that's in the works?

MR. CUTLER: Well, I would observe that U.S. West is currently building a full competitive local telephone service in Atlanta, Georgia. The switch will go into operation in the second or third quarter of 1996. And any citizen passed by our cable system there, which is pretty coextensive with the metropolitan area, will be able to be switched to the service from U.S. West.

Obviously, it has to interconnect with the Bell South system because most of the customers are going to be on Bell South. But I do think it's a little closer than Professor Baxter thinks, at least in Atlanta.

I would point out that, obviously, there are other places where things aren't going quite as quickly. But we expect the same thing to happen in our own area. And we are facing increasing competition every day of the week in our major cities.

And a third comment I think is really on resale. And that's why it is important. There are plans currently on file. And the current legislation, obviously, is going to talk about a lot of resale. And I think AT&T is currently offering resold competitive service in Rochester and intends to begin that in -- I think three cities chosen by Ameritech: Chicago, Grand Rapids, and whatever the third one is.

So it probably isn't here immediately, but it is sure coming quickly.

MR. BESEN: My impression is, in the UK, the cable systems have, in fact, gotten a significant number of telephone subscribers there.

Is that correct?

MR. CUTLER: The most interesting statistic I have observed from U.S. West operations called TeleWest, which is when -- if it's approved to merge with Southwestern Bell's operation, it's going to have a different name -- will be the largest cable system in the UK.

We have more telephone subscribers than we do cable TV subscribers. I have never heard an explanation for that, but it is true.

MR. ROSENBLUM: I guess we're also a little more optimistic that it can happen where we share Professor Baxter's concern that the critical fact will turn out to be the relative costs of putting in these new capabilities versus the competing costs of either putting in or simply reducing the existing copper wire that goes to most people's home today.

And I don't know to what extent, Norton, you feel free to comment on this, but I know you folks have started this project in Atlanta, the one you referred to.

Is this something that you believe is economically viable as a local exchange alternative in the short term?

MR. CUTLER: With the caveat that I'm a poor lawyer and not an engineer, yes, our belief is we can compete effectively in that marketplace. And I'll toot our own horn here, if we get the right to sell a package of services which needs to include exchange traffic which we have a current waiver pending, and one of the bills would allow us to do that anyway.

But, yes, we think we can do it.

MR. BAXTER: Well, of course, one interesting question, Norton, is: How much are you going to pay the existing Bell company for interconnection at the edges of your system?

The answer, of course is: Well, of course, that's a regulated number. But it also means that your competitive service -- I don't want to say is essentially meaningless in competitive terms, but it is totally dependent upon the ability of the incumbent, complete system to pull all the consumer surplus from under your demand curve, which, of course, is the role of the re-sellers historically.

CHAIRMAN PITOFSKY: Stan?

MR. BESEN: Yeah. Just one other observation. The point about the ability of the two separate networks to connect, the example is, in fact the moral or economic equivalent of the geographic uniformity point.

And part of the question -- one of the issues in determining how easy it will be for the rivals to grow at the expense of the RBOCs will, in part, depend on the very issue of the extent to which people on one network can interact with the folks on the other.

And for obvious reasons, one party may have greater interest in achieving compatibility -- if you want to use that term -- than the other.

MR. CUTLER: I really don't think that that's a new problem. It has previously been an end to end problem in, geez, for 100 years, the Bell system interconnected with -- despite what people think, the Bell system had probably, I think, maybe even less than half the telephones in the United States in 1984. But certainly there were a lot of phones that were not in the Bell system, and they were interconnected on an end to end basis.

MR. BESEN: My point is a different one. Do you have an incentive to interconnect with somebody in an adjacent service you're offering complements to?

It's a different story when you're operating substitutes.

MR. CUTLER: That was going to be my next point.

It's definitely a new issue when you are, indeed, connecting with a direct competitor. But I think as long as we follow those precedents -- and Professor Baxter raised an excellent question, which was pricing; and that is an extremely difficult problem. U.S. West, obviously, wrestles with both halves of that problem and is in a sort of unique situation as to how do you see it when you have most of the customers and how do you see it when you don't?

And we are working extremely hard on what the correct formula is here.

MR. BAXTER: As a point of information, in 1980, I think Bell had about 80 percent of the telephones; GTE had about 12 percent; and about 8 percent were little, tiny independents. And they were connected into the system by long-distance contracts which were simply a substitute for complete ownership.

CHAIRMAN PITOFSKY: Well, an extraordinary exchange. We have been told now, in several different contexts, that antitrust people, at their peril, will ignore these changes that are taking place. And I'm certainly convinced of that.

Why don't we take a 10-minute break, and then we will resume these discussions.

COMMISSIONER STEIGER: Well, again, we are fortunate to have a very able wrap-up crew for the last part of our afternoon session.

We will begin with Joe Opper. He is the Assistant Attorney General in the Antitrust Bureau of the New York State, Department of Law where he has been since 1985. He has been Deputy Bureau Chief since 1990.

In addition, he serves as the Chair of the Payment Systems Working Group of the National Association of Attorneys General Antitrust Task Force, a group that this Commission and the Justice Department are pleased to work very closely with.

The Payment Systems Working Group was formed following "Entree" litigation, that is, the State of New York, et al, v. VISA USA, Inc., to monitor competitive developments in the payment systems industry.

And we are most anxious to hear from the NAAG on this.

MR. OPPER: Thank you very much, Commissioner.

I'm very pleased to be here today to discuss the topic: How should antitrust enforcers assess foreclosure, access, and efficiency issues related to networks and standards?

I believe the short answer to that question is:

Very carefully.

I must also take care to preface my comments with a public servant's caveat that the opinions I express are my own and do not necessarily reflect the views of the Attorney General of the State of New York nor any other state attorney general.

Among the topics listed for today's discussion are several that state attorneys general have confronted as antitrust enforcers:

How do networks and the financial service industries affect competition?

Under what circumstances can two or more networks compete?

What can we learn from the financial service industry that may be relevant to competitive issues and other networks?

In 1989, these first two questions were directly addressed by 14 states, including New York, when they filed an antitrust action in the Southern District of New York against VISA and MasterCard. That complaint asserted claims under section 1 and 2 of the Sherman Act and section 7 of the Clayton Act and alleged that the two credit card associations had conspired to monopolize and control the development of the emerging point-of-sale debit card market through a joint venture known as "Entree."

A point-of-sale debit card is really nothing more than an ATM card that is accepted by retailers at the point-of-sale. Unlike a credit card, however, a debit card draws on the bank and accesses a cardholder's checking or demand-deposit account. And it does not require an extension of credit by the issuing bank.

Entree was to be the super deluxe model of point-of-sale debit cards because it was "on-line real-time." Each transaction would require the cardholder to use their PIN number and, therefore, would be instantaneously authorized and fully guaranteed. Any risk in the system would be virtually eliminated.

The critical inquiry from the states' perspective was whether the joint venturers were collaborating to offer a product or service that neither could offer separately. Entree was, in fact, a joint venture network of competing joint venture networks, MasterCard and VISA. The competitive relationship between the two bankcard networks was already somewhat compromised by the existence of duality, that is, virtually every bank that was a member of MasterCard was also a member of VISA.

As the states' investigations progressed, it became clear that the answer to our inquiry was, no. In fact, to the contrary, we learned that both VISA and MasterCard had planned to enter the point-of-sale debit card market independently, that each had previously rejected a combined effort involving the other, and that both were committed to offering competing debit card products outside of the United States where duality is prohibited.

In fact, during the formation of Entree, when it appeared that VISA and MasterCard might not be able to reach a final agreement, VISA had prepared secret contingency plans to launch its own debit card program to compete with the delayed but real and anticipated entrant from MasterCard.

Well, then, under circumstances where the two networks explicitly recognized and acknowledged that they could compete, why would they choose not to do so?

The states believed that the reasons were anti-competitive. The complaint alleged that a primary purpose of the combined Entree venture was to retard and control the development of the emerging point-of-sale debit card market so as to minimize any losses to credit card profits.

The concern was not merely that point-of-sale debit might replace certain credit card transactions but that the lower interchange fee and pricing structure of point-of-sale debit would cause merchants and other participants to question the high fee structure for credit card transactions.

The bankcard associations, of course, asserted a different rationale for justifying Entree. They claimed that unless there was a single, combined product, point-of-sale debit would never find a receptive market.

In 1990, the lawsuit was resolved by a settlement agreement that required VISA and MasterCard to terminate the Entree program.

MasterCard and VISA were also required to notify the states prior to entering into any similar venture or commencing separate point-of-sale debit card programs in which duality was not explicitly prohibited.

Following the Entree settlement agreement, both bankcard associations launched their own independent point-of-sale debit card programs.

In 1991, VISA formally acquired 100 percent ownership and control of Interlink, a regional point-of-sale network, and announced its plan to take Interlink national.

Then MasterCard launched the Maestro program, which was affiliated with several regional ATM and point-of-sale networks.

The states viewed the launch of these two highly competitive independent point-of-sale debit card programs as extremely pro-competitive and as an affirmation of the states' decision to challenge Entree.

The benefits of aggressive intersystem competition are evident from the different pricing and marketing strategies that the two bankcard associations have adopted.

Both associations have different interchange and switching fees. Interlink imposed annual card service fees and merchant location fees while Maestro did not.

Of particular significance, Interlink charged a "transaction service fee" of two cents on each transaction conducted by an Interlink cardholder and an Interlink merchant, even though the POS transaction was processed by a regional point-of-sale network instead of Interlink. Maestro imposed no such "bypass" fee. Soon after Maestro announced its pricing, Interlink eliminated its "transaction service fee."

And I also noticed just last week that the Interlink program reduced or eliminated a start-up fee that was assessed against ISO's or third-party processors in response to Maestro's -- the Maestro program, which had no such fees.

Both associations have also aggressively and independently promoted their programs; and both programs appear to be doing well. Card membership, merchant participation, and transaction volumes are growing at ever-increasing rates for both programs.

In April of last year, MasterCard notified the states, pursuant to the Entree settlement agreement, that

Maestro intended to amend its membership rules to permit issuing duality. In other words, MasterCard would allow banks that issued Maestro cards to also issue Interlink cards, Maestro's direct competitor.

After reviewing how intersystem competition between VISA and MasterCard products had flourished following the demise of Entree, the states were unable to assure MasterCard that the elimination of its prohibition against issuing duality would not lead to an enforcement action.

The states were particularly concerned that debit card services, unlike credit card service necessarily require access to the consumer's demand deposit accounts. Therefore, it is unlikely that any viable, non-bank competitor, such as an American Express or a Discover card, could enter the debit card market and provide additional intersystem competition to the bankcard associations.

While antitrust enforcers assess foreclosure and access issues and the circumstances under which two or more networks can compete, they must not overlook joint action reflected in network standards and operating rules that may inhibit competition in the name of efficiency or convenience. This task may be difficult when a network is just getting started, as it may be hard to discern or anticipate the likely effect of a particular rule or practice.

The interchange fee enshrined by the bankcard associations in their credit card systems and introduced into ATM and point-of-sale debit card networks may be such a competition inhibiting rule.

In virtually every credit card transaction, the card-issuing bank gets a commission. The bankcard associations' rules require the retailer's bank or the merchant bank to pay the card-issuing bank or cardholder's bank a percentage of each retail transaction.

This percentage fee, the interchange fee, is fixed by the member banks of each bankcard association. The ostensible justification for the interchange fee is to reimburse the card-issuing bank for actual costs incurred in extending credit to its cardholders, such as losses from bad credit risks or to cover the float or grace period for convenience users.

By making the other parties involved in the credit card transaction pay these discreet issuer/cardholder transaction costs, however, the pricing structure of the entire system is pre-determined and distorted.

The merchant bank discount fee, the fee the merchant bank is paid by the retailer, must exceed the interchange fee paid by the merchant bank; or the merchant bank will operate at a loss.

The retailer, in turn, must factor in the discount fee it pays the merchant bank in determining the retail price.

To the extent the interchange fee accurately reflects actual costs to the issuing bank, the retailer becomes, in essence, the issuing bank's collection agent, and non-credit card users are taxed part of the cost. To the extent the predetermined interchange fee is a revenue generator for the issuing banks, the issuing banks are engaged in horizontal price-fixing.

In 1984, a District Court in Florida rejected a price-fixing challenge to the interchange fee in an action brought by a third-party processor in the NaBanco case. In NaBanco, the District Court found, first, that the product market in which credit cards competed consisted of all payment services, that is, all general purpose and proprietary credit and travel and entertainment cards, merchant's open book accounts, travelers checks, ATM cards, check guarantee cards, checks, and cash.

In such a broad market definition, it is hard to think of any combination of card products or networks that would raise antitrust concerns. The District Court found further that the interchange fee was necessary for the existence of the credit card product and, therefore, pro-competitive.

The decision was affirmed by the Eleventh Circuit.

If the case were to be brought today, it is not at all certain that the result would be the same. In the first place, even VISA has conceded, as it did in the VISA/Dean Witter-Discover litigation, that general purpose credit cards constitute a distinct product market.

Secondly, challenges to the interchange fee structure in ATM networks suggest that the interchange fee is no longer considered sacrosanct. In the First Texas arbitration, presided over by Professor Thomas Kauper, a bank challenged the Plus ATM network's interchange fee and rule prohibiting surcharging.

Professor Kauper determined that the interchange fee was not essential to the existence of the ATM network, and that a "free market" approach in which each ATM owner independently determines the fee to charge the ATM user was preferable, but that the ATM owner's ability to surcharge and/or offer a rebate was an effective means to ameliorate any pricing restraints imposed by the interchange fee.

Similarly, in the Valley Bank case, the Ninth Circuit held that the Plus ATM network's interchange fee structure and its prohibition against surcharging were not so critical to the network's operation to invalidate, on commerce clause grounds, a statute prohibiting prohibitions against surcharging.

I also note recently that VISA has eliminated its rule prohibiting member banks from surcharging.

The need for an interchange fee in point-of-sale debit card networks is even less compelling.

The Entree program itself included only a very small interchange fee denominated the "funds guarantee fee." Significantly Interlink, as well as several established regional point-of-sale debit networks that existed before Entree, did not have an interchange fee.

The perverseness of the interchange fee becomes apparent when the bankcard association's off-line and on-line point-of-sale debit card products are compared.

VISA and MasterCard off-line debit products, which do not require a PIN, rely on a check-like clearance process and are technologically inferior to their on-line products. They cannot provide immediate authorization or full guarantees for each transaction.

Yet, the bankcard associations are pushing their off-line programs which carry higher interchange fees than the on-line programs, as the superior debit product because of the greater interchange fee revenue. Indeed, it is only recently that the bankcard associations adopted an interchange fee for their debit off-line products that was lower than the credit card fee.

For years, merchants and, ultimately, consumers were paying the banks the credit card rate on debit card purchases even though credit had never been extended.

The third question for today's discussion asks: What can we learn from the financial services industry that may be relevant to competitive issues and other network industries?"

I believe what we can and have learned is valuable. Though other network industries may look very different, critical competitive issues that may arise in each will likely be the same.

Who owns the network?

Is it a proprietary system or a joint venture?

Are there competing networks?

Is new entry possible or likely?

Who can become a member or obtain access to the network?

Who can't?

What is the competitive relationship between the users of the network?

How are the costs and fees for the use of the network determined and who pays them?

Who are the customers or buyers of the networks' service?

Can they constrain anti-competitive conduct by taking their business elsewhere?

And so on.

While the significance of the answers may vary depending on the nature of the industry, I firmly believe that the experience gained from examining networks in the financial services industry will at least enable antitrust enforcers to ask the right questions.

Thank you.

COMMISSIONER STEIGER: Thank you, Joe.

I am interested in and would note that 14 other states filed with New York, which I presume is the lead counsel in the case here.

As recently as six or seven years ago that would have been a very unusual phenomenon. The task force is now quite a common one. Antitrust enforcement and consumer protection in the states is one issue that I have watched grow with interest.

Our last formal presentation today is Mr. MacDonald who is going to hopefully enlighten us further and let all of our distinguished participants have at everybody.

Duncan MacDonald is General Counsel of Citibank's Bankcard program for Europe and North America and of its Global Travelers Checks program.

He was hired as a litigator in 1972 and has split his time since then working on both the commercial and retail side of Citicorp. He has considerable expertise in issues such as consumer protection, antitrust, data protection, and interactions of markets within regulatory frameworks.

He has published many articles on the legal profession, legal writing, banking law, and is the author of legislation on, among other things, consumer banking law.

Thank you very much. Would you give us your wisdom?

MR. MacDONALD: I'm over here, by the way.

COMMISSIONER STEIGER: Well, with one set of glasses I could tell you that. This one, I can't see that far.

MR. MacDONALD: That was my old resume. I want to take the antitrust part off in light of what I'm about to say.

But, like Joe, what I say will be my comments; and you'll see why as I get going.

I represent a bank. And I noticed that the FTC put down that I worked for Citicorp. And I assume that was to assert jurisdiction over me.

But I'm not paranoid.

What I'd like to do is start off with a maxim and then get into some, what I'll call, "learning points."

And the maxim is anchored somewhat in history.

And essentially it goes like this: Since the diminishment, so to speak, of the role of government in the economy since the 1980's, the goals of the antitrust laws, and in particular, the Sherman Act have been achieved fairly well.

If the goals, in fact, were the creation of more products, more competitors, better products, lower prices, et cetera, et cetera, I would argue that has happened. But it happened explosively and that resulted in abundance.

I would argue just on the lower prices thing that an argument can be made that because of competition and because that goal has been achieved, it has played a role in stabilizing a role -- not the role, but a role in stabilizing even inflation since the 1980's. And it also has played a tremendous role in invention and innovation.

With that said, to pick what we can learn and what we have learned, it would be 80,000 things, it could be 100,000 things. But by necessity, I have selected a few. I'll go through them somewhat rapid fire. They are different here and there. They tend to be somewhat general. I'll have a couple of anecdotes if time allows.

But let me start off with the thought that joint venture networks essentially, as I see it -- and by the way, my experience is with the joint ventures that apply to the banking industry, of which Citibank is a member of many, many around the world, and certainly in the United States certainly many also: MasterCard, VISA, and several ATM networks to name some.

But let me start off with the point that when all is said and done, they're very fragile. Joint venture networks are very fragile. They take a long time to succeed. They require continued investment and tremendous investor patience.

It's best if they limit their interference with their member's competitive practices. They should not compete with them. They have a higher chance of succeeding, which is to say to survive, if they're pulled together, in my opinion, because of necessity, as opposed to opportunity.

Necessity, I will describe proudly as saying, in effect, they come together because there may be restrictions against them in the marketplace, legal restrictions prohibitive costs, specialized industry challenges which they cannot deal with perhaps because of their legal status, et cetera, et cetera and most of all, overwhelming consumer demand.

It's best, based on our experience that the members of the joint venture be alike, banks, for example, as opposed to having in the joint venture banks and farmers.

Another point is that government will be suspicious of these kind of joint ventures. And we start off with the premise any time competitors get together, everybody gets a little bit nervous -- and government probably gets more nervous than anybody else -- but that government suspicions of these forms of industrial organization can create a mess if they are acted upon too soon.

The hold of a joint venture network, when all is said and done, to put it somewhat in the antitrust philosophy is not to fix prices, not to set markets, limit production, et cetera, et cetera. And, in fact, if that was the case, there would be far more of them than there are. And the fact of the matter is, there are very few. And there's got to be an explanation for that; and, perhaps, Professor Baxter will give us some other reasons later on why there are not.

In the case of the card industry, when I talk about how suspicions and actions on those suspicions can create a mess, if you read the literature about the industry, one of the things you come across constantly is that terrible thing called "duality." If you're a bank, you can belong to two of these joint ventures: MasterCard and VISA. But if you look behind the curtain, you discover one of the reasons why that came to pass is because government interfered. The entrepreneurs by themselves had created a system that, in effect, either you join one or you join the other.

Which, by the way, with the philosophy the way it is today on this and, in fact, is the way people say things should have gone; but there was an attitude back in the 70's that created a situation where government looked at the thing. A little bank came along in Arkansas and said, we don't want to be condemned just to being a member of one of the associations; we want to be more competitive; let us be in both. And after some litigation and skirmishing and so on, the government shrugged its shoulders and said, in so many words, why not?

I'm told, by the way, that one of the lawyers who worked on that case back in the early 70's in Arkansas was a guy by the name of Bill Clinton. No one has ever heard from him since. But, in any event, maybe he was one of the persons who pushed the first dominoes.

And one way to look at this interference thing, if I can stick with this on a philosophical basis and, government interference on something that's fragile and so on, I have given an example to other groups in the past, you think of the situation where you have a river that's flooding every 10 years in a valley and people build their homes around the river and the flood comes and knocks it over, and the people say: Government, build a dam up stream. You got to protect us on this thing here. That's the solution.

Government, being somewhat paternalistic, looks at it and says, well, why not, you know. The people want it.

When, in fact, the government could say: Move away from the stream. Pay for insurance. Take care of it yourself. Self-reliance. Read Walt Whitman -- I'm sorry. Not Walt Whitman. Emerson.

What happens? They build a dam, and 20 years later an ecology movement takes place and the environmentalists come along and say: You're killing the salmon. You're killing the birds. You're killing the trees. You're killing the bears, et cetera, et cetera. You got to dismantle the dam.

And then all of a sudden, the government is standing there scratching their heads saying: What do we do this time? And it's not all that easy.

The question, or the temptation is: Do we stick our hands in again and perhaps meddle again; and will we replace this problem with a true solution; or will we just replace it with another problem?

This is something that government has to deal with all the time. And it's one of the reasons why I suggest that there ought to be caution in dealing with this thing called "joint venture networks."

With respect to joint venture networks, we should recognize that because of the antitrust laws and perhaps even because of our common law, players will use the antitrust laws either to promote the joint venture and, in many cases, to erode it from the outside because maybe someone who came along later and would be viewed by someone as a free rider or to erode it in the inside because their affection for the joint venture no longer exists and they feel they have developed, perhaps, a better mouse trap and they don't want to play by the rules of the association.

Well, there's always a process that's going on, in any event, inside of a joint venture that calibrates its lifecycle. And there are always opportunists who look at this and also the membership folks who decide they want to graduate out of it but may be stuck within the joint venture because there's a contractual basis; and they look to the antitrust laws to help them out.

Also, another point is a learning -- a point on this thing here is that if there is an essential facilities doctrine, it's somewhat nebulous and in a confused state. It's something that members of joint ventures and like companies that are in them often raise their hands and say: Don't let someone come in because this is not an essential facility and when all is said and done, my suspicion is that the understanding of the economic dynamics of these things is just as bad as the status of the essential facilities doctrine. Not many people really know that much about it.

Success of a joint venture network presents many, many global opportunities. And I believe in one of the iterations of the stuff that was handed out, I saw that word "global" somewhere. So I think there's a learning message from that.

But by the same token, there's a risk that global joint ventures from outside the United States, in fact, can take advantages in this country with respect to the antitrust laws and perhaps use them both in favor and against American companies.

Success of a joint venture also does other things that I think are worth noting as learning experiences. They breed alternatives. They cause invention. They woo other players to do the same thing. And at the end of the day, the experience on the joint ventures that my employer belongs to is that they empower consumers who ultimately control all the chips here.

When all is said and done, survival of the joint venture of the type I'm describing is best if the joint venture creates a new separate brand that is strong and, in the process, creates a critical mass. Both of those things prevent the members from walking away and misbehaving, and that's not a terrible thing.

In terms of learning about perhaps what the government's role can be on this, I'll list a bunch of other points.

One, as I implied before, government should be patient about these animals and on a probability basis perhaps assume, not that the bad is that competitors get together but that the odds are in favor that the joint venture won't survive. So presume less.

Secondly, don't over-read or over-apply the antitrust standards because of the, what I'll call, the upstream dam problem. You may just replace one problem with another.

The government should allow membership restrictions to promote stability, safe investing, invention, no free riding. In effect, to allow the entrepreneurs or the owners to use their property as they see fit. That is as fundamental in our constitution as perhaps the opposite in our thinking is in the Sherman Act.

They should also allow experimentation within the joint venture over time, experimentation with rules, markets, pricing, membership changes, et cetera, et cetera.

From the literature and things I have seen and heard over the years, from time to time, you get the impression that some people would feel comfortable that the initial joint venture stays that way forever and no dynamic company would ever be held to that standard and neither should a joint venture.

Trust that if there is sufficient transparency which is understanding in the marketplace about what's going on that consumers, entrepreneurs, inventors, and so on will do your work for you. They will make the best decision. It will be the optimal efficient decision.

Government also should take a position with respect to joint ventures in supporting free market pricing. Profits are a must for the joint ventures. There are suspicions that revenue streams that members of the joint venture and the joint venture creates are bad because, as Joe brought up -- he raised the issue on interchange and that perhaps by eliminating the interchange that will make the amount go away.

But it doesn't work that way. At the end of the day, we are talking about revenue streams and profits. And more profits means more jobs, more investment, more taxes, et cetera, et cetera.

It's good.

Joint ventures of the type of MasterCard and VISA have played an equalitarian role in the economy that is devoutly to be wished. If I could give a little anecdote for a second. Going back 20 years ago, low-income consumers in this country, when they wanted to borrow money, had to go to the finance companies, which were single entities, to borrow three to $700 increments at 36 percent interest and security of, like, a refrigerator. And today that product has gone away. And it's the result of competition that has ushered in, by the creation of these wonderful joint ventures, which now provide a much better product, a much more efficient and global product at half the price and no security.

It's a phenomenon and something that should be applauded.

And last but not least on that point, one thing to look at about joint ventures that succeed and especially these in particular is that they are an American phenomenon and something that we ought to be proud of and something that we ought to nurture. But, once again, if they are fragile, we ought to be as much supporters as we are tinkerers.

In looking at the benefits of a joint venture network, there are a few other points that I would like to bring up.

If you look at the history of the development of the bankcard industry as a joint venture, you'll see that, one, they have had a tremendous effect on pricing, product distribution, product development, et cetera, et cetera. Look back on them and see what existed X number of years ago. I gave you one example. But the learning experience will tell you that they came frontally against the T&E

cards, the retail cards, the oil cards, the travel cards, travelers checks, and on and on and on. And they have shaped the face of the planet and have given consumers a better product. They spurred development of the alternate systems and improvement of existing systems.

They have had a tremendous effect on debit cards so that when Joe talks about debit cards and the way they're going, just remember debit cards are a development, or child, of the growth of the bankcard industry. It's a plus. And it's working well.

They have redefined "currency," not just domestically but globally. When I see Helmut Kohl or Jacques Chirac talking about creating a common currency for Europe, I sit back and I say to myself: We have already done it. An American joint venture network has gone global and has affected the attitude toward currency for perhaps 20 or 30 percent of all payment transactions in the world today. And if it's not that high, it's going to get that high. That's a tremendous result of government's debate over it and private industry creating it.

They have spurred technological development, computer software development. They have promoted mobility for consumers. They have given consumers freedom of choice. They have promoted commerce in a thousand little ways.

When you think of mobility and freedom of choice, another example is if you look at the -- just one example, the department store industry and the shake up that it's gone through in the last 10 or 15 years. I know with my parents, going back in time, they all had these private label cards and they were captives of department stores, in my case, downtown Brooklyn, and so on.

Along came the bankcard industries with the retailers standing up in the early days and saying: Keep them out; they're trouble, et cetera, et cetera. And instead of dealing with them, through innovation and perhaps creating joint ventures themselves, they just said: Stay away.

And little by little, these joint ventures developed a critical mass and a strong brand so that, in time, doors had to come down, doors had to open, and consumers had the ability to buy in a number of places. And that resulted in a shake up.

For those of you who are old enough to remember the Kerner Commission report on crime in the 60's, one of the things they pointed out was that people in the inner-city ghettos are captive of a credit system that cheats them. The private creation of these joint ventures, in fact, the market, in fact, eliminated that problem. You couldn't have a Kerner Commission report today and talk about the same issues.

In short, as my voice perhaps goes, these joint ventures affected competition by challenging old ways, eroding old systems, providing consumers with economic mobility, choice, and quality at a lower cost. And they are revolutionary. Their success bred emulation, entry, investment, and competition.

I will close with just a couple of comments on globalization because I think it enters into it in terms of learning and because it presents special problems for global companies who want to conduct business in a number of places and have to deal with different governments in those places.

One of the concerns that we have -- and the "we" is both sides -- is overlapping and inconsistent law enforcement that is going to force us together. And I think one of the good things about a session like today is it does bring us together to see how the other is really thinking. It results in redundant audits and taxation.

One of the things, by the way, I think is going to become one of the great issues in the next decade is in terms of how governments enforce their laws across borders. It raises sovereignty risks that I know from my own experience I'm bumping into right now, especially in connection with the audit issue.

It results in certain gamesmanship when you straddle different countries. And it's a gamesmanship that can work in a number of ways. Sometimes it's government using foreign companies to affect legal practices in another place. And sometimes it's business using local law to affect government policy in another place. And then there are variations on the theme on that. Those are the kinds of things we are learning about and, because of the global economy, have to come to grips with.

We also know that companies, in fact, can go global. They can do it by themselves. But at least some types of companies, especially banks, if they are to do it, probably in a number of instances are going to have to do it through network joint ventures and other types of joint ventures.

Governments can't go global when all is said and done. We're not there yet. Maybe a 1,000 years from now, but we're not there yet.

And yet in order to achieve their goals and also the rule of law, without which there would be no free enterprise system, they have to find ways, in effect, to become joint venturers themselves, with other governments and perhaps in cahoots with the business community. I don't know where that goes, but it's something that we have to care about.

Governments also will never be able to resist and probably shouldn't resist issues involving joint ventures with respect to whether or not to promote them in the national interest or whether interference in them will, in fact, harm the national interests. And we know of examples of that.

Which leads me to one conclusion, of which there could be thousands, and that is that perhaps when all is said and done, the old fashioned enforcement, which is now being harmed by budget considerations in the government agencies, is going to have to shift, at least with respect to global matters, to more of setting transparency standards and education standards and, in effect, some of the points that were brought out before, not just private standards but collaboration on standards between business communities and the global players.

I don't know how many minutes I took, but I'll leave it at that. Uncontroversial.

COMMISSIONER STEIGER: Nicely done.

I think we ought to ask our other participants of the afternoon whether they would like to make a comment on our two last speakers.

At least one direct question was posed for Professor Baxter.

I don't know if you would want to respond to it.

MR. BAXTER: What question was that? I don't remember now.

COMMISSIONER STEIGER: The essential facilities matter, I believe, was brought up one more time.

MR. MacDONALD: I think I said it was in a confused state. But I implied that we worship at its altar.

MR. BAXTER: Well, not all of us.

COMMISSIONER STEIGER: I think you gave us a resounding answer on your view that you have yet to see an essential facilities case where there is an essential facility. But did you want to expand on that as it applies to the financial networks?

Are they any different? Is there a possibility that a financial network, due to declining costs with scope and scale, are a natural kind of monopoly?

MR. BAXTER: No. But I think the local loops in telephone systems are natural monopolies. It's not that natural monopolies don't exist. But here was an example where VISA and MasterCard, for example, could have gone their own way, did go their own way, the net of the other was not an essential facility for either.

But I certainly agree with Duncan that the credit cards, in general, in their history, have been really quite remarkable.

I started representing VISA in the early 70's, I guess, only 20 years ago; and they have really changed the world in many senses, changed all of our behavior, changed the density of distribution of branch banks. I think it's a marvelous example of the power of competition and of innovation. And it's been a fascinating industry to watch and to work for.

Perhaps the most widely misunderstood thing is the interchange fee. And the critical factor to understanding interchange fees is to understand that each bank has an incentive to overcharge. Once it gets its hands on the merchant paper, there's no other source; it has an enormous incentive to overcharge. And the interchange fee is a ceiling. It is a horizontal price-fixing agreement in a sense; but it's a horizontal price fixing agreement about maximum prices, not about minimum prices.

And as such, it is good for consumers. Now, I realize that we maintain a per se rule in that context, too. But it's an idiotic per se rule, and one ought not to trot it out when one is not forced to do so.

But the interchange fee is something that's essential to the effective operation of these organizations. Is it essential? No, I don't mean to suggest ever that there's only one equilibrium or two equilibria, one where we are and the other at a zero level of activity.

There would be credit cards without interchange fees. But there would be fewer of them, and their costs would be higher.

COMMISSIONER STEIGER: Always provocative. I love that per se that we should keep under the desk.

What of our other panelists from earlier in the day have a comment to make on our last two speakers?

MR. CUTLER: I would just like to observe that I think one of the truisms stated by Duncan is that joint ventures probably should be looked at very differently from other things in the antitrust laws.

But certainly joint ventures which face competition should be looked at very differently in the banking industry, where most of the ATM networks face significant competition, and so do the credit cards. I think we're going to see some joint ventures in the telecommunications industry quite soon because all of the players are going to be allowed to invade each other's turf.

And the Commission should look very carefully at the amount of competition that each one of these ventures is facing when trying to figure out whether or not even the limited rules applied to joint ventures should apply when a joint venture is facing quite a bit of competition.

COMMISSIONER STEIGER: Other comments?

MS. VALENTINE: Well, actually, Stan Besen, you had a comment earlier -- bye-bye, Professor Baxter. We all thank you very much.

MR. BAXTER: I have got to make the plane.

MS. VALENTINE: I hope you make your plane, right.

You had an earlier comment about -- it was phrased in terms of geographic uniformity; but it was about network uniformity and how, in the context, where you have complementary products, it often may be good to have really one network or one entirely uniform system so that people could reach economies of sale in providing components to that network.

And I think what I'm hearing now is that often it's good when networks compete.

I think Duncan MacDonald's message was duality was something that the government imposed on us, and we would have been far better off as two competing networks.

MR. MacDONALD: I didn't say that. Sometimes we're grateful to the government.

And I didn't mean that either.

MS. VALENTINE: Okay.

Well, are there times when we want to be looking for situations where networks compete? Are there times when we want a single network to optimize our efficiencies and economies of scale?

MR. BESEN: In the first place, just to be clear, it's not a single network.

MS. VALENTINE: Right. That are all uniform.

MR. BESEN: Uniform, or at least where there's compatibility where you are talking about networks that -- you think of the network of IBM users and the network of Apple users, compatibility or the equivalent of the geographic uniformity, there is the ability to use software written for one network and have it run the other because of sufficient similarities.

I didn't want to suggest that it's always desirable to have a single network. But I also think I want to suggest that there may, in fact, at times be incentives on the part of the parties to, in fact, promote incompatibility when consumers would be better off by uniformity.

The best kind of examples are the obvious ones where we have a large existing network with a large installed base which might have a desire to disadvantage a new entrant whose ultimate success depends on access to that large installed base. If you can, in fact, assure some degree of incompatibility, one might handicap the rival.

Take one very specific example -- and I'm not necessarily sure I'm promoting a particular policy view here -- but this is the kind of issue in which those people, for example, who oppose intellectual property protection for certain kinds of software are essentially arguing that in fact the new entrants ought to have access to the installed base of the incumbent in order to promote competition.

This shows up in lots of different places. I don't want to suggest that one network is always the right answer. But I don't think one wants to assume there's some invisible hand theorem that says that leaving the parties alone will always lead to an optimal outcome.

MR. MacDONALD: Could I comment on that?

If I could paraphrase Voltaire somewhat --

MR. BESEN: In French?

MR. MacDONALD: No. I can only do that after a good bottle of French wine.

If the evolution, whether voluntary or government imposed, creates the one network, we will expect Bill Baxter to break it up again.

Then, in effect, to create an old fashioned AT&T, at least in our industry, is to invite and to ask government after the smell gets too strong, to say, let's break it up and let's get back to intersystem competition.

There are some psychologies that play in this that I've always been fascinated with. There are folks who will look at the industry and say there are only three, four, five networks when, in fact, my guess is that there are many, many more; and there are emerging networks that people really don't think are networks today that in five or ten years we're going to know they're there.

But it's easy to get sympathetic. And it goes back to the point I brought up before about the dam downstream and the duality of the little bank and so on. It's easy to get sympathetic and look and say, you know, someone's knocking on the door, let them in. These are membership rules that are restrictive or anti-competitive.

And that's government causing the thing to happen. But if the members, one of the members of -- I'm sorry, if one of the joint ventures were to go to the media and announce that they want to invite all the other joint venturers to merge with them, to become one big joint venture, I have no doubt that everyone's philosophy would go out the window because of the psychology of it in terms of looking at it in a different perspective. They would fundamentally say: This is crazy and the injunction from Joe would come, people would come, and so on; and you'd say this is a bad thing.

But, on the other hand, we psychologically tend, through our sympathies, to accept the idea that this is sort of gradualism knocking on the door and saying, you're denying my free right or rights, whatever they are, that that's a better way to get at it. And I submit that's not the better way to get at it.

If it ain't broke, don't fix it. If it really isn't causing harm and if the inventory of pluses are as tremendous as you get out of joint ventures that I know about, then the better thing to do is to watch it and to applaud it.

COMMISSIONER STEIGER: Yes, Joe.

MR. OPPER: Yeah. If I could just make three points.

I would like to say that I am certainly second to none in my admiration of the bank card association for the new and innovative product that it may have come out with in terms of how it has enhanced convenience and it has revolutionized the way the payment systems operate.

I don't think, however, that means that antitrust enforcers should never pay attention to exactly what's going on within that.

And I'm sorry Professor Baxter had to leave. It would have been a rare opportunity for me to ask him a question.

With respect to the interchange fee, I'm not denying that there is a necessity for -- and there is a transaction cost when the card-issuing bank purchased the paper from the merchant bank.

However, to the extent this covers anything more than the cost of the exchange or the communication and incorporates factors such the risk of the bad credit loss or, again, the convenience fees, those are transaction costs that should be negotiated between the cardholder who proposes the risk and the cardholder who gets the benefit of the 30-day grace period and the card-issuing bank, which extends the service.

There is no need to institutionalize that transaction cost in the entire system.

COMMISSIONER STEIGER: I know you probably have another point to make, but I would like to interject a question here.

As a matter of analysis, why shouldn't we see fees as an ancillary restraint -- fees and their allocations -- as a necessary ancillary restraint to allow the joint venture to bring forward a new product and, therefore, not be unduly concerned about it?

MR. OPPER: Well, if they are truly ancillary and necessary for the existence of the product, then I think it should be allowed.

I think the key question with the interchange fee and the bankcard networks is whether truly this is an ancillary fee or whether it's a revenue-ensurer or revenue-generator, you know, for the issuing banks. And rather than negotiated independently with the cardholders, it's certainly much more convenient for there to be a uniform fee that is institutionalized in the transaction.

COMMISSIONER STEIGER: Thank you very much.

Does that pose a response?

MR. MacDONALD: Yeah. Let me start off with the broad maxim, and that is to get back to what I would say one of the things that would ensure success of a network joint venture would be that there should be discipline, there should be policing, there should be uniformity.

And you could focus in too much on something like interchange. You know, but pricing is a golden word in the antitrust laws. But there are a gazillion other things, for the joint venture to work, the members have to develop uniform behavior. And, arguably, any one of those maybe would cause some shivering in the night.

But when you look at a thing like interchange, again, it's like the dam up the river. And this, by the way, is a fairly big issue that's emerging in Europe. And among the things that have been proposed as a government solution is, one, to require one-to-one negotiation of the so-called interchange fee within the system, which, on its face, is virtually impossible when you have tens of thousands of players and hundreds of thousands of merchants and gazillions of transactions and so on, maybe that could work; or maybe that would just kill it. But if it were to work, it would raise the price to everybody. And I don't see how government, coming in with that kind of solution, is going to do anybody a favor if the price gets higher.

The other solution is to eliminate the fee because it smells. It's price-fixing, you know, in the classic sense perhaps.

But if you eliminate the fee, it doesn't mean that the revenue stream by the entrepreneur is going to be eradicated. And it doesn't mean that the thing is going to go away.

If the net is that some retailers, perhaps through the system are paying part of the fee just as you may pay a la carte in a restaurant instead of a price-fixed kind of meal or pay for tinted glass when buy your car instead of a rounded up price, if you eliminate the fee, the cost is going to be passed on to consumers. And when they wake up in the morning and instead of paying X price, they're going to pay 250 basis points more, some people will scratch their head and say, did government do me a favor, because of a specialized principle that's tied to some words that were, you know, important in the rule of law and go back a century ago. But at the end of the day we know we have to be flexible.

Interchange is awkward. But at the end of the day, it's entrepreneurs getting together and creating something that does work. And in the moral scheme of things, I don't think a case could be made that it's harming people or the system in a way that justifies government interference.

COMMISSIONER STEIGER: Yes, Tom.

MR. IOSSO: Could I just follow up on the interchange fee? I have a question for Mr. Opper, and then Mr. MacDonald could respond.

An argument could be made that, with the interchange fee, a certain amount goes back to the consumer's bank; and then through the banks competing for customers, they're offering a float period, they're offering cash back, possibly, they're offering rental car coverage, so on and so forth that through all of these methods, they basically return to the consumers all the excess profits from the float -- from the interchange fee; so, therefore, using the interchange fee guarantees maintenance of the system plus allowing the competitive market to return any excess to consumers.

MR. OPPER: I certainly understand that analysis; and I think Duncan and I might be talking past each other to a certain extent.

I concede the necessity for a uniform and established fee to govern the exchange of paper or whatever it is between the merchant bank and the card-issuing bank.

But the concern for me raises when it includes something other than the pure transaction cost and incorporates some other concern of the card-issuing bank.

And with respect to what you raised, I think in the perfect competitive market, that makes a lot of sense. But as an antitrust enforcer and as a consumer, I'm not particularly comforted by the fact that economic theory says that if the banks take it away in the first instance they're going to give it to me back, you know, somehow sometime later.

MR. IOSSO: Do you have a response also?

MR. MacDONALD: Yeah. Let me take an easy way out and say I agree with what I think your question was and not answer it, perhaps.

I have a different thought, and it relates to something that Joe had said.

And we're not talking past each other, by the way. We've been in the same room before and done fine.

One of the points that Joe brought up before is this issue about legislation that's been passed to allow surcharges on ATM's. And there are a lot of good reasons for it. And as far as I'd be concerned, either way the argument is good.

But the way the system existed before was that the entrepreneurs, the owners, decided that they didn't want to have this extra surcharge. Some, quote, opportunists -- using the word the way I used it before -- inside the system and some political opportunists on the outside of the system -- and I don't use that term as a pejorative, by the way --

and saw things in a different way and decided to seek legislation -- I saw the eyebrows go up -- to seek legislation to allow the surcharge.

I would guess -- and I may be dead wrong on this -- but that, at least initially, the net of that is that the consumer is going to end up paying more so that the role of the government played is that more costs got hit on consumers. I think, over time, competition will take care of that, and there will be a self-correction in there.

But, perhaps, to get back to what I suspect your point was, is, in fact, that one way or the other, there are benefits that come from the interchange and that it's simply wrong -- that interchange ought to be viewed as a revenue stream. And I would argue that, as long as it's not an immoral revenue stream, it doesn't matter if it's illogical. As long as it's not an immoral revenue stream, then to affect it or to try to make it go away is not to save anybody any money, because entrepreneurs will find a way to change their pricing to achieve the same revenue objective.

And I suspect that Bill Baxter would agree with that. But he probably knew I was going to say it, so that's why he left.

COMMISSIONER STEIGER: Yes, Becky.

MS. BURR: I would like to see if we can bring this back a little bit to the topic that we started out with this morning which was the information technology networks.

And with both the financial institutions and the telecommunications networks, these industries grew in the highly regulated environment and a geographically based environment.

And what we're seeing now with the information superhighway is something that is clearly not regulated and clearly not geographically based.

And I'm wondering -- especially from Mr. Cutler -- whether the lessons for how you develop an adequate amount of interoperability in the absence of the sort of structures that grew up with the telephone industry, how we're going to figure out what adequate interoperability is within those networks and whether the market is going to achieve them by itself.

MR. CUTLER: I would start with, particularly, the lesson being from the telephone network. I will say there is a cross-over point somewhere where the market takes over for itself.

The first point I was trying to make earlier in my talk was, it would be better off to let two networks speak to one another about how to interchange first before setting a hard and fast rule about how to do it.

Because sometimes they will want to do it differently than the regulators decide and agree upon a more efficient solution, because they know more about their own technologies than the regulator ever will.

The other point I think is that particularly with networks -- and the same thing, frankly, applies even in yellow pages, which are a very sort of crude form of an information network -- is that there doesn't seem to have been much of a problem once we got over the copyright issue that everybody would exchange information and put each other's listing in the phone books, because if your phone book isn't complete, no one will use it.

It's the same way with sort of a network solution in that, soon enough, the incumbents will realize that they must interconnect with the new people because they're not going to have all the customers any more.

And I guess the question is that at some point you have to decide when the marketplace can take over that, because if they reach a solution, each one of them is sort of left like being -- and this is probably -- I'm glad the computer people aren't here -- they're both left like being DEC and Apple: They have a small, isolated part of the universe and can't get any bigger.

So I think that the answer is, yes, in the beginning the regulator might have to supervise in the end. But after a while the networks are big enough, they have enough power countervailing each other. I think maybe ATMs is a good example. There are very big ATM networks who have figured out how to interchange information with one another.

MR. IOSSO: I have a similar-type of follow-up or looking from a different direction. And I'll ask this to Dr. Besen.

You talked about how, in a more regulated-type of setting, there are a lot of pitfalls to try to get to the open interface and ways to work around it.

If we were to look at an unregulated type of center with some type of bottleneck, how do you see antitrust -- the effectiveness of antitrust opening it up?

How could it avoid these pitfalls?

Do these pitfalls call into question in some way the whole exercise?

MR. BESEN: Let me start by saying that the standards, interoperability or compatibility questions we are talking about here, I think are among the most fundamentally difficult public policy questions that are around.

I once had an occasion at a conference to remark that economists who study standards aren't even very good at predicting the past, by which I mean, when an outcome occurs, it's not always the case that we can actually tell with any great confidence why what happened actually happened. This is a lot of the -- you people have been reading about path dependence or sort of related concepts here.

This is an extraordinarily difficult industry or set of problems in which to make policies.

I guess I were -- I wish I were as confident as some of the people around the table here about the ability of the various institutions that exist that try to deal with these problems that, in fact, they will work.

The theorems the economists have generated in this area, have generally been of the sort that, in fact, there is certainly no confidence that, in fact, private non-cooperative activities, the sort that occur in ordinary marketplaces, are guaranteed -- or even likely -- to produce the right outcomes.

We get back to this business of the small network and the large network. If I'm a large installed base and I have a choice of letting you in and having the two of us compete like hell on price or keeping you out and having a slightly smaller network, I might well choose a slightly smaller network. And, in fact, sometimes that's the right answer.

There is a remarkable set of institutions that are around to deal with these problems. There are a variety of industries. We're talking here basically about the private markets non-cooperative, behaviorally and the way those processes worked and we talked about regulation.

There's a whole set of private voluntary standards bodies that try to deal with this. These are all extraordinarily imperfect mechanisms for dealing with the problems that we're talking about here.

I don't have really great confidence that any of them is going to produce anything approaching the optimum. But I guess I can't really -- I guess the short answer is, given the kind of difficulties I have identified before, is that we are going to muddle through. I mean, these are all very fact-specific. There are no sort of general principles that guide these. The answer might be different in banking networks than it is in telecom. So I don't think there's kind of the sort of general principles that this system will work everywhere and always.

But I think there will always be extraordinarily difficult problems to try to solve, because there are really not very simple answers.

I know that's not a satisfactory answer, but I think it's a truthful one.

MR. CUTLER: Can I make one more marketplace observation that I think sort of underscores my faith that, particularly with networks -- it doesn't work so well with computer systems and some other things because interoperability is probably not vital in that situation.

But it works in networks.

And that is that in the UK, BT went around the country when TeleWest got all these customers -- and I think TeleWest has 230,000 telephone customers and only 240,000 cable TV customers -- which I still think is a fascinating statistic -- BT went around and ripped out all the local loops of all of our customers as sort of a retaliatory measure for having left BT.

Now, obviously, what that means is, we've got them forever, basically. Because now in order to get back there, BT has to spend the $1,000 -- assuming that's the right number in the UK -- to get to them.

And obviously they stopped doing that because they realized what a bad competitive move it was. It's like when they switched, they're gone forever. And I really think that telephone companies are going to recognize that type of a situation. And because of the way a network is only as good as its size, it will continue to interoperate because whether or not they lose a customer, their other customers still want to reach them.

And AT&T didn't cut off -- doesn't basically say you can't reach a Sprint or an MCI customer if you don't sign up any more. AT&T figures out how to interconnect, and it gets there eventually.

MR. COHEN: Profession Besen, you make the point in your statement that if standard setting bodies can choose between competing technologies, competition for the market may partially substitute for competition within the market.

And I'm wondering if you would like to comment on, you know, what you see as limits on this ability to substitute for competition within the marketplace, based on possible imperfections in knowledge before a standard is adopted or limitations on ability to enter long-term contracts or any other similar limitation.

MR. BESEN: I think I probably said "may substitute partially."

MR. COHEN: Yes, you did.

MR. BESEN: So I wouldn't disagree with the sentiment of your remarks.

On the other hand, it is the case that it's common, maybe even ubiquitous, for many kinds of standards bodies to, in fact, sort of deal with the issue of the potential monopoly power of the owner of a standard, to deal with it in an ex ante sense by essentially saying, you know, if you want to be the standard, you've got to guarantee us a low price.

You're right, there is sort of a problem with contracts and possible ex post opportunism, but standards bodies, in fact, do this.

I guess, a particularly interesting aspect of the behavior of these bodies that people tend to think of as primarily dealing with technical standards is they worry about price a good deal. That shouldn't be surprising to economists, and I think it does serve as a useful function.

Is it a perfect mechanism? Of course not. But I think it's useful, and it's useful to remember that, in fact, this is one way in which private parties, dealing through, again, non-market, non-governmental institutions, in fact, try to deal with the kind of problems we have identified here, which is not being held up by the party that's got the bottleneck, try to anticipate who it's going to be and try as best you can to get them to guarantee a low price.

COMMISSIONER STEIGER: Are there any more questions for our very distinguished group or any more comments from them before we wrap up this afternoon?

Well, then, it is, indeed, a great pleasure for us to have had the opportunity to meet with all of you. And on behalf of the Commission, our thanks for your contribution to the record and this exploration of antitrust in the global world.

Thank you.

(Whereupon, at 4:12 p.m., the hearing was recessed.)

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C E R T I F I C A T E

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CASE TITLE: GLOBAL AND INNOVATION-BASED COMPETITION

HEARING DATE: November 30, 1995

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: November 30, 1995

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