United States Patent and Trademark Office

Public Hearing on Use of the Patent System to Protect Software-Related Inventions

Transcript of Proceedings

Thursday, February 10, 1994
9:00 a.m. to 5:00 p.m.

Friday, February 11, 1994
9:00 a.m. to 12:30 p.m.

Before

Bruce A. Lehman
Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks

Location:
The Marriott Crystal Forum
1999 Jefferson Davis Highway
Arlington, Virginia

Table of Participants

Before: Bruce A. Lehman
Assistant Secretary of Commerce and
Commissioner of Patents and Trademarks
United States Patent and Trademark Office

The Panel: Lawrence Goffney
Assistant Commissioner for Patents-Designate
United States Patent and Trademark Office

Micheal K. Kirk
Assistant Commissioner for External Affairs
United States Patent and Trademark Office

Jeffrey P. Kushan
Attorney-Advisor
United States Patent and Trademark Office

Michael Fleming
Supervisory Patent Examiner
United States Patent and Trademark Office

Transcription Services by:

AMERICAN REPORTERS
NATIONWIDE (800) 929-0130
WASHINGTON METRO (703) 644-7636
FAX (703) 866-7049

Witnesses

February 10, 1994

PAUL ROBINSON
Tansin A. Darcos & Company

KEITH STEPHENS
Taligent, Inc.

MARK TRAPHAGEN
Software Publishers Association

ROB LIPPINCOTT
Interactive Multimedia Association

E. ROBERT YOCHES
JEFFREY A. BERKOWITZ
Finnegan, Henderson, Farabow, Garrett & Dunner

STEPHEN L. NOE
Caterpillar, Inc.
Intellectual Property Owners, Inc.

JOHN J. HORN
Allen-Bradley

RICHARD NYDEGGER
Workman, Nydegger & Jensen

ALLAN RATNER
Philadelphia Patent Law Association
Ratner & Prestia

DIANNE CALLAN
Lotus Development Corporation
Business Software Alliance

R. DUFF THOMPSON
WordPerfect Corporation

RON REILING
Digital Equipment Corporation

RICHARD JORDAN
Thinking Machines Corporation

A. JASON MIRABITO
Boston Patent Law Association

JONATHAN BAND
Morrison & Foerster

LEONARD CHARLES SUCHYTA
Bellcore, Bell Communications Research

VERN BLANCHARD
American Multisystems

EDDIE CURRY
IMAGESOFT, INC.

February 11, 1994

D.C. TOEDT
Arnold, White and Durkee

JOSEPH HOFSTADER
League for Programming Freedom

TIMOTHY SCANLON
JOHN J. HORN
Allen-Bradley

R. LEWIS GABLE
Welsh & Katz

JOHN E. DeWALD
The Prudential Insurance Company of America

DAVID L. CLARK
Aquilino & Welsh, P.C.

ALLEN M. LO
Finnegan, Henderson, Farabow, Garrett & Dunner

SAMUAL ODDI
Northern Illinois University
College of Law

BERNARD GALLER
University of Michigan
Software Patent Institute

GREGORY AHARONIAN
Source Translation and Optimization

PROCEEDINGS

MORNING SESSION

(9:11 a.m.)

COMMISSIONER LEHMAN: Good morning. My name is Bruce Lehman and I am the Assistant Secretary of Commerce, and Commissioner of Patents and Trademarks.

Welcome to our second round of hearings on the use of the patent system to protect software-related inventions. Two weeks ago we held two days of hearings in San Jose, California, the capital of the Silicon Valley. Those hearings focused on the patent system and how it was being used in the field of software.

This round of hearings will focus on the standards of patentability and the examination process, as well as the treatment of the visual aspects of software under our design and utility patent systems.

The common goal for all of our hearings is to find out how the patent system is working for this field of technology and to get your suggestions for making it work better.

President Clinton has made the development of and competitiveness of high tech industries in the United States a cornerstone of his economic program. Promoting these industries will lead to high tech, high wage jobs for Americans and will ensure continued American competitiveness in the industries of the future.

Our Secretary of Commerce, Ron Brown, has assembled an excellent team to work on initiatives toward that end and I am pleased to be a part of that Commerce Department technology team. The software industry is already meeting the President's goals for creating competitive high tech domestic industry. So we've got a good thing going already.

Statistics show that since 1987 employment in the software industry has risen at an annual rate of over 6.5 percent and now employs well over 400,000 people. In 1992 revenue from the sales of programming services, pre-packaged software and computer integrated design was over $50 billion. U.S. software firms dominate the world's software markets, holding over 75 percent of the market for pre-packaged software.

It is interesting that up until the middle of this century the wealth and economic strength of the United States came primarily from the exploitation of our natural resources and we had a lot of them in those days. In the 21st Century, our economic strength will come from tapping our most treasured resource, the wealth of the human mind, and we will be concentrating on conserving our natural resources.

To do this, however, we must encourage innovation and provide our innovators with the legal protections they need to successfully exploit their innovations. This is especially true in the intensively competitive and fast-paced computer and software industry.

Indeed, innovation is the life blood of this industry. It is what separates successful firms from unsuccessful ones.

Innovation, however, is a fragile commodity. Without effective legal protection our software industry would not enjoy the dominance it now does in the global market, nor would consumers enjoy the high quality and extremely usable software products that are available on the market today.

Our intellectual property systems were established over 200 years ago to promote and protect innovation in all fields of technology. If these systems are functioning properly, they will provide an appropriate level of protection and encourage innovation.

From what we have heard recently, this may not be the case for our patent system in the field of software-related inventions. This is why we are seeking public input -- to identify the problems that exist and to hear suggestions on how to address them.

Two weeks ago we held the first round of hearings, as I mentioned earlier, in San Jose, California. No clear consensus emerged from those hearings, but many suggestions were made regarding how the patent system could be improved for the software industry.

Some people testified that the patent system was not working at all, that it neither encouraged nor assisted software development. Others suggested that companies only sought patents for defensive purposes. If true, this runs counter to one of the primary reasons for the patent system, which is to encourage innovation.

On the other hand, several people testified that the patent system was essential for successful software development efforts. We heard large and small companies tell us that without patents they would not be able to attract or effectively protect investments in developing new software-related technology. I think we also were hearing that the industry might be on the verge of a shift to more patent dependency and more usefulness in the patent system.

However, even people who generally supported the patent system commented on the need to improve the quality of issued patents. Some people expressed skepticism over the ability of the PTO to accurately gauge software innovation. Others commented that the Patent and Trademark Office does not have access to enough prior art or that adequate collections of prior art simply do not exist.

We are committed to addressing these concerns and to taking whatever measures are necessary to ensure the proper function of the patent system. I would like to say, just yesterday, I know, the Chairman of our House Subcommittee, Chairman William Hughes, discussed these hearings and he indicated his willingness to work in partnership with us, to the extent that legislation is required to assure the proper functioning of that system.

My goal is to ensure that patents will be instruments that you can take to the bank literally. From what we heard in San Jose this may not be the case for patents in the field of software-related inventions.

We intend to address these concerns through three levels of action. First, we will improve our examining operation

to ensure high quality examination. Second, we will pursue appropriate legislative reform to ensure the efficient functioning of the patent system. And finally, we intend to work with the Judiciary to improve the interpretation of patent rights in the context of enforcement.

Many useful suggestions were made in San Jose two weeks ago and I expect to hear many more in the next two days -- today and tomorrow. For example, many people stressed the need for reform of the reexamination process. We recognize the need for making reexamination a more attractive option for those having reasons to question the validity of any particular patent and are presently studying a number of suggestions and proposals in that area.

Many people pointed out in San Jose that the obviousness standard, as interpreted by our examiners and by the court, seems to be inconsistent with the realities of the industry.

We recognize that an effectively functioning patent system requires a standard of nonobviousness that is rigorous and reflective of industry norms. However, we also recognize that the courts are the primary source of guidance on the basic question of obviousness.

As such, we intend to work with the courts to ensure that the obviousness standard is applied rigorously, not only in the context of examination, but also when patents are enforced. I mentioned that was part of our three-part program.

Several suggestions were made regarding the improvement of our operations. I would like to note that we are already responding to some of these suggestions. For example, many people have called for the PTO to improve its ability to find and retrieve prior art.

One step we've taken towards this goal is the creation of our electronic information center in Group 2300. This facility will provide an easily accessible structure through which we can improve our collections of and access to the prior art.

However, extensive work with industry and other groups is beginning to pay off in the form of specific commitments to providing information, like in-house textbooks, old software user manuals and access to information on early programming techniques.

We also heard that we need to attract and retain more qualified examiners by providing more competitive salaries and improving the stature of the examiner position. Toward this end, we have just changed our standards so that we will hire for the first time computer scientists as examiners.

We are also in the process of expanding our examiner enrichment program to provide our examiners with greater exposure to other aspects of the Patent and Trademark Office and technical programs in other government agencies. That is just the beginning. We have a real quality of life improvement program underway here for our patent examiners that hopefully will translate into better quality of examination.

Another specific area targeted by people testifying in San Jose was the need to improve the administrative processing of patent applications. People stressed the importance not only of insuring the timely consideration of patent applications but the timely processing at every stage of the patent application process. This falls squarely within our new focus on customer service.

One example of a program that we are studying now is the pre-examination interview. We are conducting a trial program to evaluate whether this step can help reduce the delays and assist pro se inventors.

Before we hear from our first witness, I would like to introduce you to some of the members of our own panel, people who are here from the Patent and Trademark Office.

First, I would like to introduce on my left Michael Kirk. Mike is our Assistant Commissioner for External Affairs. Presently he's in charge of our Office of Legislation in International Affairs. But President Clinton has nominated him to become Deputy Commissioner.

Under our new reorganization that we are implementing in the Patent and Trademark Office, he will be in charge of -- basically the policy czar for the Patent and Trademark Office and will have reporting to him not only the Office of Legislature and International Affairs, which he now runs in the Office of Public Affairs, but also the Solicitor's Office, the Board of Appeals and our quality review operations so that we can bring all of these together into a single unified policy entity that will help work on policy aspects of these problems and provide better service to all the people who look to us in the Patent and Trademark Office for leadership.

On my immediate right is Lawrence Goffney, our Assistant Commissioner for Patents-Designate, who the President has nominated to run our patent operation, by far the largest, over half of the whole Patent and Trademark Office, with over 5,000 employees. And, of course, Group 2300 and this particular subject matter falls directly under Larry Goffney's jurisdiction.

The other fellow sitting here at the table with us is Jeff Kushan, an attorney in our Office of Legislation, International Affairs, who many of you may have talked with. He's the point man for day-to-day contact on this particular issue. And anybody who has any questions or follow-up on this can get ahold of him, and his number is 703-305-9300.

I also would like to introduce somebody who is not sitting at the table, but who is absolutely a lynch pin to this whole effort, and that is Jerry Goldberg --- Jerry wants to stand up -- who is our Group Director for Group 2300.

Finally, even though he is not sitting there right now, I would like to note that Mike Fleming was in Group 2300. There he is right there. Mike is going to be, anybody that has any scheduling issues or questions or whatever, whether a hearing is going on -- if you might, stand up again, Mike, so they can make certain they know where you are. Are you going to sit there or over there? He's going to sit

right over here in the corner. You should just approach Mike and he'll see that you get taken care of.

People who will be testifying over the next two days should have received a schedule indicating the approximate time they have been assigned to give their remarks. A final list is available at the entrance to the room. I expect most of you have already picked it up.

I would encourage all the people scheduled to testify to be here at least 20 minutes before your assigned time slot. The reason for that is because we've already had a couple of people because of this weather who can't come. So obviously if we have a person who can't come, that's going to move us up a little bit. That's been our experience so far with these hearings, these and other similar hearings. So please be here at least 20 minutes before your assigned time slot.

Each person will have eleven minutes to speak. The computer monitor right there in front of the podium will display a green screen for nine minutes. Then it will turn yellow. And when the screen turns red we would very much like you to have concluded your comments by that time. I encourage everybody to do that because it's really only fair to all the other witnesses. And generally speaking, these hearings have been pretty good at that. I hate to have to gavel people to a halt. So if you'd really cooperate with that, I'd really appreciate it. I think eleven minutes is a pretty good amount of time.

I want to emphasize that, you know, these eleven minutes aren't your only chance to -- they may be your only chance in the spotlight with an audience, but they are not your only chance to communicate with us. You know, this isn't the court where this is your oral argument and that's it. We certainly welcome further written comments. Certainly at the Patent and Trademark Office we like to be accessible even on a day-to-day oral basis. I've just introduced a bunch of people to you -- Jerry Goldberg and Jeff Kushan.

I would also like to introduce Charlie Vanhorn who is sitting over there. Charlie is our Chief Patent Policy guru in the Patent Corps. I know many of you already know these people. I'm sure that over the next weeks and months they look forward to having a dialogue, continued dialogue, on these issues.

If you check the Federal Register Notice of December 20, 1993, you will find all the information about how to send us more comments if you want. That notice is not only available printed in the Federal Register, but it's also been widely circulated through the Internet and it can be retrieved from our FTP site, which is COMMENTS.USPTO.GOV.

Transcripts for these hearings will be available after February 21 and paper copies will be available from our office for $30.00 and transcripts will also be available for free through our FTP site on the Internet.

Once again, we welcome everybody to our hearings today. I'm really gratified at the turnout that we've been having. We had a very large audience in San Jose. We get a normal 60 people who testified and I'd say that we had at any given time at least 100 people in the room, and probably at the maximum we had 300 or 400 and a lot of them stuck with us. So there's obviously interest in the industry in this. We're gratified about that.

We also understand that that imposes on us an obligation to really make these hearings meaningful and to follow up in the ways that we've already started, that I've outlined to you in my own opening remarks.

So with that I'd like to call our first witness to come up and share his thoughts with us, and that's Paul Robinson, who is the Manager of Data Processing and Chief Programmer of Tansin A. Darcos.

PRESENTATION BY PAUL ROBINSON

TANSIN A. DARCOS & COMPANY

MR. ROBINSON: Good morning, Assistant Secretary Lehman, Mr. Kushan, the staff here, members of the audience, people reading this report in the future and anyone else I've forgotten. My name is Paul Robinson. I am Chief Programmer for Tansin A. Darcos & Company, a software development firm which specializes in text processing applications.

I also do work on commercial philosophy and metaphysics of computer systems. My special interest and my personal hobby is collecting compiler and other program sources. My reasons for this are that these all solve problems.

By reading the manner and method other people solved other problems it gives me insight into how to solve mine. This is a common practice in the computer world in order to, as the expression goes, not reinvent the wheel. I assume this is common in other industries. In fact, this is most likely the reason that we have the patent system.

Someone is granted the exclusive right over commercial use of their invention for a limited term in exchange for telling the world about it. For most computers, every application, such as word processing or spreadsheets, has at least two and possibly three or more different applications fighting for market share.

The fights in this industry are usually referred to by the expression dinosaur mating dances, as huge companies fight for market share by releasing new programs to introduce new features that the companies believe the customers want.

Version 3 of Turbo Pascal was an excellent language compiler and less than 40K. Version 4 would fit on one 360K diskette. Today, Turbo Pascal Windows Version 1.5 takes 14,000K of disk space.

The program that is most probably the premier application for graphics design is Corel Draw, which has so much material it is being released on not one, but two 500 megabyte CD ROM diskettes. But there are probably still niches for smaller companies to move into.

With the rapid changes in the marketplace it is necessary to be ready to have new programs and new releases of old programs out to encourage people to move to the next

release. In some cases, companies make more money from upgrades and need to do so to stay alive. These kind of cycles mean new releases have to out very quickly, in a matter of weeks to months.

With this kind of rapid development cycle, delays in a release of a program could be fatal and the time available to create the work is sometimes barely enough. Until recently, the only legal issue that anyone had to worry about was copyright infringement. This could be avoided by creating new work from scratch.

Now we have another issue altogether. A programmer can independently create something without ever knowing about any other developments, and yet be sabotaged by the discovery that the method they have used is patented. This is a standard problem that all industries have had to face and it is part and parcel of living in an industrial society.

But there is another problem. A computer program is the written instructions by a human being to tell a computer how to perform a particular task. As such, there are only two parameters -- the input supply to the program and the expected output. Everything else is literally a figment of someone's imagination.

This bears clarification. A computer program is the means of manipulating the internal data passed through a computer system. There is no requirement that the manipulations have any correspondence to the real world. In this, the real world, doing anything requires the expensive movement of people and goods from one point to another, the possible refinement of materials into other materials and the expenditure of energy and resources.

Doing anything in a computer is merely the essentially cost-free movement of electron paths from one direction to another. It brings forth the approbation of the concepts of the math, man and manual camped into reality, a world in which anything is possible.

We can see this in the current discussions going on about violent computer games where someone goes about maiming, shredding and killing their opponents in graphic detail. Then when the game is over, nothing in the real world has changed except the clock.

One of my favorites happens to be the game Doom, where the weapon of choice is a 12-gauge shotgun, but a chain saw does a nice job on people near you. We have seen it in motion pictures, such as Total Recall, where if one is acting within a part of a computer program you cannot be certain what is real and what is fantasy.

The movie Brainstorm had simulations of sexual contact, apparently indistinguishable from reality.

There are things that can be done within a computer program that cannot be done in the real world or would have undesirable consequences. As such, we should ask whether the patent rules which are designed to apply to real world conditions where doing something requires the expenditure of energy and resources should apply where the known rules of the universe do not apply. Because the entire design starts from scratch, the designer doesn't just get to play God, he is God.

Despite the ease under which someone can do something, we still live under real world constraints. Once a design choice is made, it is very expensive in time and effort to change it. Worst, because most programs have interactions that cover every part, a change to one part can cause unexpected and even undesirable side effects in unknown and unexpected places.

Computer programs may be the stuff that dreams are made of, as Shakespeare has used. But once placed in a concrete form, as written in software instructions, it's just as expensive to repair or change as if it were carved out of real materials. It may be necessary to change the rules on patents to comply with conditions that exist for computer programs. I can think of a couple of suggestions.

There has been talk of instituting first-to-file in order to "harmonize" with the systems in other countries. I think that this is not a good choice. Most countries have fewer patents and provide protection which is much narrower than our system does. This would also mean that if someone does invent a new and useful technique for use in a computer application would be unable to collect any royalties from someone else who is using the same invention who thought of it after they did, but started using it before they filed.

The two really large problems that exist in our system are probably two-part -- the secrecy under which patent applications are filed and the problems if a program uses parts of several patents which might not be discovered until later.

As I mentioned earlier, computer programs are created out of the figment of someone's imagination, then mass copied the way an original painting can be reproduced by lithograph. A single large application might have a dozen people working on it or thousands of people working on it, and upwards of 50 different features, and might have upwards of 200 or more different parts. Any one of those might be infringing on zero, one or more patents, depending on what the claims are.

I doubt seriously that all but the largest corporations have the resources to do 200 patent searches on a single software application, which would be prohibitive for a small company because it is likely that a large program could infringe dozens of patents due to the continued development of ever larger applications that do multiple simultaneous functions.

But more than that, you can't do patent searches on works which are under application form until after the patent has been issued. And more importantly, with more than 1200 patents issued every week, checking them all for possible interconnection would make it impossible to do any serious work, although that might provide somebody with an idea for a magazine.

Seventy years ago fears that the major piano manufacturer would tie up the entire song market and create other companies from creating player piano roles caused Congress to institute compulsory licensing. This may be an idea whose time has come again.

Therefore, it might be considered to make two possible changes to the patent law with respect to computer programs. Perhaps to implement a standard compulsory license, perhaps 10 percent of the manufacturer's suggested list price, and to eliminate secrecy provisions in the filing of patent applications.

Either of these could certainly help the situation. Eliminating secrecy and publishing applications once filed would let people know about pending applications. They could endeavor to avoid infringements in advance. It might also allow them to file inferences early if it turns out that they invented the concept earlier while it is still cheap to do so; and would allow people to be aware of what is being developed, which would comply with Article I, Section VIII of the Constitution where patent protection was designed to "encourage the improvement of the useful arts."

The other option of setting a standard royalty, via compulsory license, would eliminate the worries of someone infringing upon an existing patent or multiple patents or one that is filed after their work is created. It would also grant to inventors an income stream from those who use their inventions which started before they filed their application, but after they reduced the invention to practice.

It would also limit liability and exposure to sustainable limits. As it stands, if someone develops a program that infringes upon 40 patents and they each want a 3 percent royalty, it isn't hard to see that 120 percent of the program's income is not going to be possible.

Thank you. Any questions?

COMMISSIONER LEHMAN: Thank you very much, Mr. Robinson. You obviously put a lot of thought into that statement and had some very interesting ideas. Thank you very much.

I'd like to next call on Keith Stephens, corporate counsel to Taligent, Inc.

PRESENTATION BY KEITH STEPHENS

TALIGENT, INC.

MR. STEPHENS: Mr. Commissioner, my name is Keith Stephens. I'm corporate counsel of Taligent and I will be testifying today on behalf of Taligent, Inc. I'm a computer scientist and engineer by training and have earned my living as a systems engineer, as an inventor and subsequently as a marketing rep before I saw the light, went back to law school, took the patent agent's exam and became an attorney. Currently I'm employed by Taligent to protect their intellectual property.

Taligent is a joint venture, similar to many other small innovative companies in the Silicon Valley. It's increasingly important for small ventures o be able to protect their intellectual property.

Today I would like to talk about transforming the legal chaos associated with software-related inventions into a system with much better legal certainty by continuing to refine the examination process, and issuing quality patents

allowing software investors to obtain a better return on their investment, and encouraging investment in American software technology.

Can I have my second slide? I have three major points. First, it's important for the Patent Office to hire the best people. Second, to provide them with the best tools. And third, to tune the examination process.

The Patent Office needs to hire computer science majors and I applaud your efforts in that area. However, they need to get computer science majors with industry experience. This will give them a historical perspective on the prior art.

In addition, they need to continue the efforts that Jerry Goldberg and Group 2300 have made in bringing industry experts into the Patent Office to teach classes on particular technologies that they come into contact with. We sent Mike Pitel, who was a university professor at Chicago. He came and taught a class on object oriented programming, not just a class to introduce them to the technology, but also to teach the history of object oriented programming and give them a perspective so that they would be in a better position to examine our patents.

We also worked closely with Groups 2300, 2500 and 2600 to bring a set of examiners out to the Silicon Valley to introduce them firsthand to technology experts. However, as Tom Kronium pointed out in the Silicon Valley, this is a two-edged sword. As Gary Shaw quipped, this provided him with new and innovative ways to reject our claims.

Now in addition I'd like to encourage examiner/attorney communication. It's so important for examiners to up front understand exactly what the invention is that I would like to encourage them to be more open in contacting attorneys so that they can find out from their first source exactly what the invention is.

Corporate America doesn't work in a vacuum. Corporate America -- it's always the case that we consult experts within and without before we make any kind of a decision. Similarly, as an attorney, when I receive an invention disclosure I don't just snap to a decision on that disclosure. I'll consult the experts within our company as well as ask general questions to maintain confidentiality of what the state of the art is outside.

And finally, I'll also, if I know someone in the Patent Office that's an expert in the area, contact them and ask them what they know about it. Similarly, I would encourage the Patent Office to create a human database of experts, both inside and outside of the Patent Office, and communicate with them through phone, Internet, querying a wider audience to determine exactly what the prior art is.

This could be done through a contractual basis or just generally by contacts and asking open-ended questions. But I would also encourage them to continue the confidential status of patents until they issue.

Secondly, I think it's important to give the best tools to the examiners. It's very encouraging to see examiners starting to get access to Internet. Electronic mail is a tool that everyone in the industry uses as a common practice.

I would even venture to say that had Internet been available that the multimedia technology, state of the art, would have made it in the Patent Office in a much more timely manner.

Secondly, commercial databases such as those in the Group 2300, Orbit, Dialogue and Lexus should be used as a regular basis amongst examiners. But in addition the Patent Office should pursue getting industry databases from such companies as AT&T and IBM, so that they can effectively search the technical disclosure bulletins of these companies. The result will be quality patents and a confidence in the appropriate claim scopes issuing in the patents.

Third, I'd like to talk about tuning the examination process. It's very important to standardize the examination process and encourage examiners to take advantage of contacting attorneys using the databases to find out what the state of the art is in the area and inquiring of experts, both within and without at the Patent Office to make their determination as to novelty and obviousness.

Then in addition it would be very good to have a common format of acceptable standards to file patent applications so that we could electronically file patents. This standard could be such as WordPerfect or a word standard document that we could transmit electronically to the PTO and eliminate a lot of the paper shuffle associated with patent applications and speed up the processing of these applications.

Then, too, I would encourage the improvement of practical application of the law in the Patent Office. Hiring people with industry experience is naturally going to elevate the current obviousness standard and the novelty standard once people have a knowledge of what the prior art really teaches.

And then I would encourage the Patent Office to modify their examination process, to remove the bias currently associated with the reexamination process, to encourage us to utilize the reexamination process as opposed to using a more costly approach of going to the CAFC or other Federal District Court type of an approach.

These changes, which are slight modifications to the current examination process, will result in much better patents being issued.

So in summary, I would encourage communication with attorneys in the Patent Office, better communication with the outside world. I would encourage the utilization of a human database through a setup so that the PTO could have access to better prior art. And then I would encourage the best possible tools being provided to the Patent Office so that they'd be in a better position to know what the prior art is and to also assess what is truly new technology versus just reinventing the wheel.

And finally, tuning the process associated with examination of processing patent applications. This will eliminate the current chaos associated with software-related inventions, improve the legal certainty associated with issued patents, and make the PTO much prouder of their work product.

Let's remember who created the patent system and let his words control. Thomas Jefferson said, "Where a new invention promises to be useful, it should be tried and afforded the best possible protection to allow progress in the technology and to allow the fruit of the labor to be realized by the inventor of the technology."

This will encourage investment in software, will result in more software-related high pay, high tech jobs and finally, will increase American competitiveness in a global economy.

Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Stephens. I didn't hear in your list of proposed reforms, which actually Mr. Robinson suggested, and that was the idea of some kind of disclosure prior to publication of the patent, of the information in the patent application. Pre-publication as a technique to make certain that we let the world know what's going on and make sure we get the prior art. What would be your view about that?

MR. STEPHENS: My view on that is I don't think that pre-publication is necessary to reach your common goal that I think everyone here will agree with, is to issue the best quality patents with claims of the scope that the inventor is entitled to.

That can better be achieved by providing the appropriate tools to examiners and providing them access to the experts in the area, even possibly putting together a contractual relationship between the Patent Office and various human experts that are available in industry, so that the confidentiality of the application will not be compromised.

But the information will be available to examiners to make sure that the issuance of the patent has the appropriate claims or the appropriate scope of claims.

COMMISSIONER LEHMAN: Thank you very much. Does anyone else have any questions?

(No audible response.)

COMMISSIONER LEHMAN: Next I'd like to call Mark Traphagen, counsel to the Software Publishers Association.

PRESENTATION BY MARK TRAPHAGEN

SOFTWARE PUBLISHERS ASSOCIATION

MR. TRAPHAGEN: Good morning, Mr. Commissioner, members of the panel, and those of you in the audience. Thank you for the opportunity to appear today to speak about patent protection for software-related inventions. My name is Mark Traphagen and I am counsel for the Software Publishers Association.

Patents for software-related inventions have been highlighted by the media in recent months. For example, last year the U.S. Patent and Trademark Office granted a patent to Compton's New Media of Carlsbad, California for a system of retrieving information for multimedia works.

Now Compton's New Media is a member company and SPA has no position on the merits of this patent which is

now being reexamined. But it is worth noting that Compton's New Media is not alone in seeking patent protection for software, as several other companies have been reported in the trade press to own patents for software with important applications in multimedia. And since 1987 more than 10,000 patents have been issued on nearly 35,000 applications filed in classes 364 and 395.

In 1992 alone almost 2,000 patents were issued on 8,000 applications filed. And lest one think the patent applications for software patents are a phenomenon unique to the United States, the Japanese Patent Office issued as many as 12,000 such patents in 1990.

Since it was founded in 1984, SPA's been a leader in advancing the interests of its members, primarily through copyright law. And copyright law has been popular, more popular than patents, among software developers and publishers because its protection is relatively inexpensive and free of formalities.

Copyright law alone, however, cannot protect all of the aspects of intellectual property and software technology because it is limited to creative expression in code, screen displays and other graphic output. In particular, Section 102(b) of the Copyright Act provides that "in no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle or discovery regardless of the form in which is described, explained, illustrated or embodied in such work."

Now it's precisely these functional aspects of software technology that are sought to be protected by patent law. While like copyright law, patent law does not protect ideas in themselves, it does protect the machines, methods, processes, and apparatus that implement these novel ideas. This protection is extended, however, only to innovations that satisfy the statutory requirements of novelty and nonobviousness.

SPA has over 1100 members and represents not only large, well-known software publishers and developers, but hundreds of smaller companies and organizations as well. SPA members include not only those organizations that have sought patent protection already, but also those who will do so in the future and those whose products are potentially affected by patents held by others.

SPA called on the elected Board members of its consumer, education and multimedia sections to join a software patent working group and assist SPA's government affairs committee in formulating our position on patent protection for software-related inventions.

The success of the patent system in encouraging technological and commercial progress in other fields suggests that it would be prudent to try improving the patent examination process before changing the statutory underpinnings of the law. Whether patent owner or patent user, many agree that the patent examination process can be procedurally improved.

SPA applauds the efforts the U.S. PTO has made to make these improvements, including those announced by you today, Mr. Commissioner, and those that Jerry Goldberg, the Director of Group 2300 and I have discussed earlier by telephone.

SPA supports these efforts to improve the patent examination process and commits itself to the following three-step process to help the U.S. PTO continue to solve these problems.

First of all, SPA will continue to support the efforts of the Software Patent Institute, a nonprofit organization developing a software technology prior art database. You will be hearing later on in the day from a Mr. Galler, who I've worked with before on this issue and who is Chair of the Software Patent Institute.

Second, SPA will call on its broad membership to contribute nonproprietary information about software products to the Software Patent Institute.

And third, SPA will provide educational and training opportunities in the field of software technology to U.S. PTO examiners.

Many difficulties or many objections to the current system of patent protection for software-related inventions stem from difficulties in uncovering prior art. Typical complaints focus on the unavailability of pertinent prior art and an expanded prior art collection would help the U.S. PTO make more informed judgments about whether a particular invention meets the statutory tests of novelty and nonobviousness.

These difficulties are not unique to software technology, but developing a comprehensive prior art database has proven more difficult for software than other disciplines, such as biotechnology.

In the early days of the software industry, patent protection was not as widely used as it has been for other technologies. The primary focus instead was on copyright protection for creative expression and trade secret protection for other aspects of the technology.

As a result, much pertinent prior art may not reside in prior patents but in publications and limited circulation documents such as technical manuals. The difficulty has been compounded by related problems, in particular inconsistent terminology in the technology.

The first step in SPA's program will be to continue to support the effort to build a non-patent prior art database in the field of software technology. The SPA is an Executive Committee member of the Software Patent Institute, which has been recognized for its efforts to provide the best available prior art in the software technology field for use by the PTO and the public.

Up until now the PTO has lacked such a source to fill this need. The Institute is compiling a database of software technologies from descriptions of software techniques and processes contributed by the software industry, government, and academia.

The Institute's work is now producing results that promise to improve the ability of patent examiners to conduct research into non-patent prior art. On January 15th the

Institute made its prior art database available on-line and has demonstrated it to the U.S. PTO and the American Intellectual Property Law Association.

As the second step in its program SPA will call on its membership to contribute nonproprietary information about software prior art to the Institute. SPA is in an excellent position to assist this effort because it is the principal trade association of the personal computer software industry.

SPA has over 1100 members in North America and Europe, ranging from large well-known companies to hundreds of smaller companies, all of which develop and market consumer, business and education software. Their cumulative knowledge is unsurpassed and should reinforce the already significant resources incorporated into the Institute's database.

The third step in SPA's program will help address concerns about the level of skill of patent examiners handling applications for software-related inventions. SPA would like to assist the U.S. PTO in educational and training programs designed to keep software patent examiners conversant in this rapidly developing technology.

To begin this effort, SPA will extend scholarships for U.S. PTO patent examiners to attend the SPA Spring Symposium and other conferences. These conferences feature many seminars devoted to emerging technologies. The upcoming seminar in particular includes seminars on risk unix systems, wireless and interactive networks, and I think typically the role of patents in software development.

The SPA program would compliment the academic training now being offered by the Software Patent Institute and other groups. Mr. Goldberg, the Director of Group 2300, has been very receptive to this initiative and in return has invited SPA's software patent working group on a tour of the PTO. I am pleased to say that we will be glad to accept.

In closing, the most important concern about patents for software-related inventions for SPA members whether they be patent owners or patent users is the integrity of patent examination. SPA is hopeful, as others have been, that the current problems of patent protection for software-related inventions can be addressed by improving U.S. PTO's access to non-patent prior art and information about ongoing developments in software technology.

We look forward to a continuing relationship and a free flow of information between the U.S. PTO and our members. Once again, Mr. Commissioner and members of the panel, thank you for giving SPA the opportunity to testify on this important issue. I will be happy to answer any questions you may have.

COMMISSIONER LEHMAN: Thank you very much, Mr. Traphagen. Does anybody have any questions on the panel?

(No audible response.)

COMMISSIONER LEHMAN: If not, thank you very much for your sharing with us.

Next I would like to ask Rob Lippincott, Executive Vice President of the Interactive Multimedia Association to come forward.

PRESENTATION BY ROB LIPPINCOTT

INTERACTIVE MULTIMEDIA ASSOCIATION

MR. LIPPINCOTT: Good morning, Mr. Commissioner, members of the panel, ladies and gentlemen. My name is Rob Lippincott. I'm Vice President for Content at Ziff/Davis Interactive, which is an on-line information services provider and multimedia publisher. I also serve as Executive Vice President of the Interactive Multimedia Association.

The Association's General Counsel, Brian Kahen, who also directs our intellectual property project is here with me today to answer any questions you may have.

As a traditional magazine and newsletter publisher, Ziff/Davis has built a business on the value added by the work of editors and writers doing research, selecting, highlighting, linking information, by aggregating rights, by creating original material, and by expressing the opinions which they believe will influence the market, change the flow of business or touch human souls.

As multimedia information publishers we have come to view interactivity as perhaps the fundamental principle of the new media. It is how editors and developers use computers to speak to people. It's how people use computers to get the information they need, and it's how people speak to other people through computers.

It's how communities grow and how markets are formed, perhaps most importantly. Interactivity, per se, cannot be considered a patentable process. It's how we communicate. It's this perspective that I find shared by the majority of my fellow IMA members and from which I offer the following testimony on their behalf.

The IMA, the Interactive Multimedia Association, is a U.S. based trade association with more than 280 member companies and organizations, representing all of the areas of the multimedia industry. Its mission is to promote the development of interactive multimedia applications and to reduce existing barriers to the widespread use of multimedia technology.

Multimedia draws on traditional content industries -- movies, television and music, as well as traditional publishing -- which have been and which promise to be powerful export industries for the United States. These are creative industries which function very effectively and comfortably to date, largely dependent on the copyright law for intellectual property protection.

And as my colleague Tom Lopez testified in San Jose, a number of the creative people in our emerging industry feel rather threatened by abstract process patents which they believe give patentees leverage over content developers and publishers.

Our concern is not software patents in general, but patents which constrain and control human expression and the flow

of information. Under the European patent convention, patents are not granted for "schemes, rules and methods for performing mental acts, playing games or doing business, programs for computers or presentations of information."

While we have similar judicially created exceptions in our law, in certain instances they have been eroded if not eliminated. The result is that we have a patent system that has in certain instances stretched the system beyond its resources and capabilities some might argue, to in fact regulate those abstract functions.

From the perspective of a number of our members, our multimedia developers and producers, the patent system is a one-size-fits-all system for creating property rights that is indifferent to its impact on the industries it seeks to regulate, directly or indirectly. Software is treated in much the same way as chemical compounds, but it has persistent problems in the examination process.

Broad patents, especially patents that preempt functions that cannot be designed around, should not be granted without an extraordinary level of quality control, preferably in the form of peer review, much as has been spoken of earlier today.

Whatever the practical limitations on the knowledge and expertise of examiners, they ought to be able to identify such broad claims and route the applications accordingly. Broad patents are inherently regulatory in nature. It is imperative that the claims be precise and that the examination be thorough. Such patents must be widely acknowledged and respected within the field and the industries that they affect.

Pre-grant publication for both broad and narrow patents is an absolute necessity in the software area because the patent database is so limited. In Europe and Japan and virtually everywhere else in the world patent applications are published before the patent is granted. Many of the patents that trouble the multimedia industry because of their breadth would never stand up to pre-grant publication.

In 1966 the President's Commission on the Patent System recommended against granting patents for computer programs for practical reasons. "The Patent Office now cannot examine applications for programs because of the lack of a classification scheme and the requisite search files. Even if these are available, reliable searches would not be feasible or economic because of the tremendous volume of prior art being generated."

Twenty-eight years later, and a significant twenty-eight years in our industry, the situation remains largely the same because the search files have never been completely developed and the volume of prior art has naturally grown exponentially.

However, the U.S. PTO began to grant patents on software processes liberally without addressing the practical problems. Pre-grant publication is an alternative, which could in due course elicit sufficient prior art to make such a database feasible.

Furthermore, we have the beginnings of an information infrastructure that can make pre-grant publication inexpensive and effective. The patent system should be an integral part of this infrastructure.

The problems with subject matter and those of examination tend to go hand-in-hand. While we applaud the fact that last month the PTO finally began hiring examiners with degrees in computer science, this didn't happen until 12 years after the PTO liberalized its policy on software.

With the PTO granting patents on multimedia designs, business methods and educational methods by rights it should admit MBAs and Masters in instruction design as patent examiners. Given past experience, we would not expect this to happen any time soon. But the notion suggested in question two that an examiner trained in electrical engineering can deduce the level of ordinary skill in these arts from reading a few journals and patents is clearly insupportable.

The relevant art or arts should be identified by the applicant. The examiner should be identified with a cited art and their final signature should, in fact, affirm that they are skilled in those arts.

There are a number of other considerations we don't have time to note here, but will do so in writing. We will do so with the understanding that other industries may feel differently about the operation of the patent system. Other industries may feel the opportunity to maintain trade secret protection outweighs the need for a better examination process. We respect their views because we feel that the system should be tailored to promote innovation, not simply to validate preconceived rights through the threat of exorbitantly expensive lawsuits.

As the Commissioner has suggested in San Jose, there is a dearth of economic analysis of the patent system, but there are costs that are real, and for multimedia designers, frightening.

Stanford Professor John Barton estimates the average cost of patent litigation at $500,000 per claim per side. The cost of insurance against an inadvertent patent infringement is a minimum of $50,000 per multimedia product with a $50,000 deductible. That's a marketplace measure of the tax that the patent system places on our industry.

This figure is likely to be five or ten times the cost of conventional errors and omissions insurance which covers most other liabilities. This figure functions as one benchmark that multimedia developers will look to to gauge the Patent and Trademark Office and the administration and their efforts to protect the expression in the multimedia age.

We look forward to working with the Patent and Trademark Office to perfect the process that we must support as an industry. Thank you, Mr. Commissioner and members of the panel, for this opportunity to express the concerns of multimedia developers and publishers.

COMMISSIONER LEHMAN: Thank you very much, Mr. Lippincott. We appreciate your comments. They were so thorough that I don't have any questions. You answered all of them.

MR. LIPPINCOTT: All right.

COMMISSIONER LEHMAN: Next, I'd like to ask Mr. Robert Yoches from Finnegan, Henderson, Farabow, Garrett & Dunner to come forward.

PRESENTATION BY E. ROBERT YOCHES

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER

MR. YOCHES: Thank you, Mr. Commissioner. My name is Bob Yoches and I am with Finnegan, Henderson, Farabow, Garrett & Dunner; and I am presenting my own views today, not the views of the firm, and not the views of the clients of the firm.

What I would like to address specifically are Questions three through six of topic B. However, the testimony I give may apply to other topics as well.

Questions three through six really address the issue of whether the examination standard for patents on software-related inventions should differ from patents on other technologies. I don't believe it should. The primary reason is, I don't think it's possible and I don't think it's warranted.

I don't think it's possible because as many other witnesses in San Jose testified, it is difficult, if not impossible, but certainly impractical to distinguish between software-related inventions and inventions based on other technologies. Certainly the history of software has arisen many times as an evolution from hardware to firmware and finally to software.

Moreover, we found, and many witnesses have testified, that software is ubiquitous. It is in many different technologies and it is in many different aspects of the life. It is no longer a separate and identifiable part of the technology that can be treated differently.

More to the point though, if some distinction were made, I fear that what would result is some sort of game playing. In the Patent Office we saw this in the 1970s where clever patent agents and patent attorneys tried to get around the reluctance of the Office to grant software-related patents by changing the specification and claims to make it look not like a computer, even though that's what the invention was.

Another problem that I see arising from having different standards for examining patent applications for certain inventions is in the area of litigation. Because I think if you have a higher standard for examining applications for software-related technology that what you'll do is cheapen the patents on the other technology, because there isn't a patent lawyer around who when attacking a patent on a non-software-related technology won't point out to the jury or judge that this patent didn't receive the special treatment that the Patent Office gives to computer patents.

Attorneys representing patentees that have a patent based on the software-related technology will argue just the opposite, that this patent received that special attention that the Patent Office has reserved for computer related inventions.

The other practical problem I see in having different standards for examination is one in the Patent Office, and that is a training problem. I don't need to tell you how difficult it is to train the examiners with regard to issues of 102 and 103 and obviousness and novelty.

If they have to learn not one, but two different standards, and if they also have to use their judgment of when to apply the one standard as opposed to the other standard, I think that the training costs and the quality of examination will drop.

There is, however, I think a larger problem in even asking the question of having different standards and that's a philosophical problem, because the questions are based on the underlying assumption that there's something wrong with software-related patents that issue from the Patent Office now. I don't know that that's been shown.

Certainly there's no question but software is a different technology than other technologies, but you could make the same argument about any technology. I don't think that there's been a demonstration, other than by some anecdotal indications that the software patents are any better or worse than patents related to any other technology.

In fact, to the contrary, I have found that especially in Group 2300 with Director Goldberg, that there's been an increased effort and an intense effort to improve the examination process. In fact, as you may know, the AIPLA and the Patent Office held a joint program last fall, a program we hope to continue, where there was an open dialogue between the Office and between the practitioners to try to improve communications and improve the examination process.

More to the point, however, changing the standard for examining patents will not really address the problems which have been raised. Those are the lack of prior art and the inability to retain examiners.

And now to the specific questions. Question three asks whether the Patent Office should impose a special duty, a higher duty, on applicants having a software-related invention to disclose information. I'm not quite sure what's being indicated there because the current duty is quite high. I assume that the additional duty would require some sort of a search.

However, most of the places that patent attorneys search are the same places that the patent examiners would search. So I don't know that you'd get a better examination process. What you would get, however, is a lot more charges of fraud on the Patent Office because information that should have been discovered wasn't discovered and given to the Patent Office. And as the Federal Circuit has already noted, charges of inequitable conduct and fraud are a plague on the patent system.

Question four asks whether the standards of novelty and obviousness accurately reflect the inventive activity in that area. I think they have to. The standards which the Patent Office is supposed to apply are independent of a particular

technology and they involve what the state of the art is and they involve what the level of ordinary skill in that art is.

And the way those standards are supposed to reflect the particular technology, it's just supposed to be applied to that technology. So the state of the art and the computer technology will track whatever those changes are and the level of skill will also track those changes.

Question five asks whether we should implement, I suspect, a per se rule, that if the underlying process is known that merely implementing on a computer is not patentable. Again, I don't think so. I think that the present legal standard which asks the Patent Office and asks the courts to look at the claim as a whole is the proper one because I can imagine situations where either because of difficulties and practicalities or because of common knowledge in the art, it was not thought possible or a good idea to implement a certain process on a computer.

Although I can't give you a specific example from real life, one that came to mind on my way over here is the idea of a product I had just seen, which is supposed to improve the grammar and the style of writing. Now certainly English teachers have been doing this for years. It's a known process of how to improve grammar and style.

But implementing it on a computer, I suspect, is pretty difficult. Although there is a product out there and maybe it's prior art now, I don't think that we should have a per se rule saying that type of product does not merit patent protection.

Finally, Question six addresses the general question of whether the PTO should change its examination procedures for novelty and obviousness in this area, and there are three subparts. The first asks whether the Patent Office should require applicants to conduct a search and distinguish their inventions from the prior art in the search.

Now the Patent Office already has a procedure for doing this if you want to get expedited examination. What I think will happen is two things. One is, if this rule existed right now I would pay the extra fee, which is not too much, and get the expedited examination.

I don't know whether the Patent Office examination though of software-related patents would improve, because again the searches that are conducted generally are from the same database as the examiners use.

Question B asks whether the Office should impose a special requirement on applicants to show that their inventions are distinct over the prior art independent of their computer implementation. I have addressed that before. The invention is the invention as a whole and, indeed, part of the invention may rely on how it was implemented by a computer.

Question C asks whether the PTO should be allowed to establish that a software-related invention is not novel or obvious using a lower standard, in other words, not a prime facie case. I'm a little confused here because I don't know what could be a lower standard.

The prime facie case merely asks the examiner to do two things. One is to find art that shows each one of the claim elements; and, two, show that there's some motivation for combining those elements. I suspect the lower standard could either be removing the criteria for motivation or allowing the examiner to reject applications based on his or her gut feel.

In my experience, both occur right now. Whether they should or they shouldn't is another issue. But I don't think it's appropriate that, again, you should be applying different standards here. I don't believe that the result will be any better patents. It will just be a longer and more drawn out examination process.

My conclusion is this. I believe that if you adopt more stringent or even different examination standards for a certain class of inventions, whether it be software-related or others, that you'll be opening up a Pandora's Box that will create many more problems than it's intended to solve. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Yoches.

Next I'd like to ask Stephen Noe, counsel to Caterpillar, Inc., representing Intellectual Property Owners, Inc. to come forward and share.

PRESENTATION BY STEPHEN L. NOE

CATERPILLAR, INC.

MR. NOE: Thank you. I am Stephen Noe, but I am sort of Stephen Noe as well, Intellectual Property Council for Caterpillar, that well-known earth moving and computer company in Peoria, Illinois.

Today I'm representing the Intellectual Property Owners, a nonprofit association whose members include companies, universities, individuals who own and are interested in intellectual properties.

My testimony has been approved by the Board of Directors for IPO for presentation as an IPO position as well. Caterpillar is a member organization of the IPO and is truly an interested party in its own right, as both a producer and major user of computer software.

Today's hearing -- I have to thank Mr. Yoches for shortening my necessary presentation. But I want to amplify some of the things he said. Today's hearing presupposes the continued availability of patent projection for the computer software implemented inventions, a position strongly endorsed by the IPO and focuses on the examination of those applications.

However, implicit in this series of hearings is the suggestion that software is somehow different from other technologies and must be treated in some special way. I disagree. Considering some of the remarks made at the recent hearings in San Jose and even some this morning, just agreeing on what is and what is not software-related technology may be an exercise for Humpty Dumpty from Alice in Wonderland where a word means just what I choose it to mean. Nothing more nor less.

For purposes of my testimony I'll use software or software-related technology in the broad sense, to include discreet software products like word processors or speaker timing computers, highly complex custom software that controls manufacturing systems and imbedded software that controls engines, anti-lock braking systems, perhaps your microwave oven.

One can readily come up with other examples, some of which may look and feel more or less what we think of as software traditionally, but all of which lie along a continuum of software-related technology. Whether an automobile engine is controlled by a camshaft or a microprocessor it makes little difference to the driver of that automobile who only cares that the engine run well and reliably.

Patent policy should not be the factor that forces a manufacturer to choose which tool to use to control that engine. The IPO supports treating software-related technology like any other technology within the scope of the patent system. Continued patent protection of software-related technology is important to the United States' industrial competitiveness.

The PTO should process applications for patents on software no differently than applications in any other technology, either in examination procedure or in the way the statutory tests are applied. In particular, the IPO rejects the proposal that software-related patent application should be subject to special tests or standards governing novelty, nonobviousness or disclosure.

The first noticed question related to the adequacy of prior art. Patents and more significantly printed publications do provide a sufficient and representative collection of prior art to assess novelty and obviousness. Examiners access to and understanding of the printed publications is the issue, not the existence of the publications.

Several avenues are available to and should be used by the PTO to improve its access to and its ability to apply software-related prior art.

These include supplementing its own collections with non-patent references, reclassifying and computerizing those collections as necessary, encouraging the development of readily accessible prior art collections outside the Office, collections such as that we have heard discussed this morning being put together by the Software Patent Institute in Ann Arbor, Michigan, training its existing examiners in the technical programming skills necessary to understand and properly apply the prior art references that they do find, and hiring as fully qualified examiners computer scientists or others who are trained in software technology.

A number of these activities are currently being implemented and the IPO applauds and encourages these efforts. Jerry Goldberg has been especially active in this area and I've spoken with Jerry many times about this.

The hearing notice also asks if a special duty of disclosure should apply to applicants for software-related inventions. Such a burden would be neither fair nor workable. Even knowing when the duty applies would be difficult and subject to interpretation. There simply is no bright line separating software-related inventions from other inventions.

Instead, there is a continuum of software-relatedness, which encompasses products of all descriptions. Developers who implement their inventions using software should not be penalized for doing so by the patent system.

The notice then moves to focus on the PTO examination procedures, the area that Bob Yoches specifically addressed. Once again, there simply should be no special standards or tests applied to or duties imposed upon applicants in software-related applications.

The difficulties in examining these applications result from examiners unfamiliar with the technology attempting to examine applications using incomplete prior art collections. These difficulties can and should be corrected by supplementing the art collections and improving the expertise.

A mandatory duty to search for, disclose and discuss prior art in software-related applications would be a powerful incentive to characterize inventions as other than software-related in an attempt to avoid the burdens and disadvantages of that duty. Examiners will try to impose the requirement; applicants will try to avoid it; and the quality of examination and classification will suffer.

One item of software-related technology the PTO should follow closely and make early use of is the national information infrastructure of the high speed data highway. I noticed in Commissioner Lehman's comments that this has begun. The Internet is being used by the PTO already.

A major problem underlying the difficulty in examining software-related patent applications is information related. The PTO does not have sufficient access to the best prior art information and the public has no convenient access to the PTO search files. The proposed data highway could close this information gap, providing a common resource to searchers, both within and outside of the PTO.

As Mr. Lippincott pointed out earlier this morning, this technology could even offer a cost effective way to implement early publication of pending applications, allowing interested parties to review the applications and provide relative art. This approach would take advantage of the knowledge of those most informed in the field of software technology and most concerned about the issuance of software-related patents.

What difficulties the applicants face in complying with existing disclosure requirements? The best mode requirement in U.S. law used to be a non-issue. The best mode issue seldom arose in patent contests. However, recent judicial opinions have caused quite a stir in this area and patent practitioners have responded as they believe necessary to protect their clients. Some in an abundance of caution feel the need to submit program source or object code listings.

The PTO cannot unilaterally resolve this matter. Resolution must await legislative or judicial clarification. However, the Office could begin accepting code listings on standard machine readable media containing printable files.

The PTO should not, however, require patent applicants to confirm to any standardized disclosure format for such applications. No one format can be the best for all the wide range of software-related technology. What would simplify examination in the Office might well complicate others' understanding of the resulting patent or complicate litigation relating to that patent.

The issues commented on here today are important ones for all of American industry, because software permeates every facet of technology today. Industry needs the assurance of patent protection for innovative developments, software-related or otherwise, to maintain and improve technological leadership. Software-related technology is not inherently different from any other new technology that the patent system has faced and adapted to in the past and will be called upon to deal with in the future.

The problem that exists today lies not with the technology, but with the initial PTO reluctance to meet it head on. The PTO resisted until the courts insisted. Had the patent system and the technology grown side-by-side as is the usual case, there would be no hearings today.

Now the PTO is a bit behind the curve, but progress is being made. This is the time to accelerate, support and encourage the adaptation to this technology, not to make a special case of it.

Who can say what the next generation of innovation will bring. What will be the software issue of the future? With appropriate training, tools, and hiring practices the PTO can examine software-related applications just as capably as anything else and the patent law can remain technology neutral as it must. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Noe. What is IPO's position with regard to the issue of pre-publication?

MR. NOE: I feel it supports the concept of pre-publication provided that it's done with sufficient safeguards to the applicant. For example, the applicant should have the opportunity to withdraw the application prior to publication if that is to come to be.

COMMISSIONER LEHMAN: Thank you very much.

I'd just like to observe that there already are differences in examination procedures among different examining groups and different technologies, certainly in Group 1800 which does biotechnology and we do a lot of searches of DNA sequences. We have an examination technique and procedure really that is quite different. So we can distinguish between the technologies without necessarily changing legal standards among the technologies.

Next, I'd like to call John Horn, Patent Counsel for Allen-Bradley Corporation. Are you representing Allen-Bradley or yourself, Mr. Horn?

PRESENTATION BY JOHN HORN

ALLEN-BRADLEY

MR. HORN: I'm representing Allen-Bradley this morning, sir. Good morning, my name is John Horn. I'm Patent

Counsel for Allen-Bradley Company, which is a manufacturer of industrial automation equipment, such as programmable logic controllers and including an increasing number of software products.

Allen-Bradley has observed a strong trend in the industrial control business towards replacing functions accomplished by hardware with software. Industrial control hardware and industrial control software can and frequently do have very similar functionalities.

Consequently, patent claims can closely correspond between hardware and software based inventions. In view of the above, we believe new software based functions should be patentable in the same way as new hardware based inventions are patentable.

However, we also believe that it is important that patent examiners should look to hardware based prior art and that previously existing hardware based functionality should always be viewed as highly relevant to the allowability of software based claims. Novelty should it not be predicated on the coding of functions previously implemented in hardware.

Although new functions which may be enabled by software's special capabilities should be patentable when they rise to the level of being novel and non-obvious improvements on previous hardware based techniques.

It appears to us that inventions and patent claims focusing on the software art form itself, such as programming techniques, may at least temporarily require some new procedures for identifying prior art. Allen-Bradley supports the idea of establishing new mechanisms for identifying prior art pertinent to software inventions in order to assist in getting the best prior art into the hands of the examining corps.

However, Allen-Bradley also believes that software inventions should be treated in like fashion to inventions in other technological fields and higher standards for patentability of software inventions should not be adopted. Software would appear to us to be a new and distinct type of technological art form. As such, it may have some growing pains at the Patent Office and elsewhere.

Nevertheless, software inventions need protection to promote creativity and protect the investments of innovative developers. Consequently, we would like to encourage the Patent Office as well to recognize software as independently capable of having patentable elements, such as specialized data structures, when such elements are novel and non-obvious.

Separately, Allen-Bradley does not believe computer program code listings are an effective way to describe software inventions. In general, such listings we have found to be arcane and too difficult to decipher to enable most software inventions to be understood and used.

Thank you. Allen-Bradley looks forward to working with the Patent Office in trying to improve the patenting process.

COMMISSIONER LEHMAN: Thank you very much, Mr. Horn.

Next, I'd like to call forward Mr. Richard Nydegger for the Digital Equipment Corporation. He's going to be replacing Ron Ryland who was scheduled to represent Digital this morning. You need to correct your representational status here, Mr. Nydegger.

MR. NYDEGGER: Yes, I will. Thank you.

PRESENTATION BY RICHARD NYDEGGER

WORKMAN, NYDEGGER & JENSEN

MR. NYDEGGER: Good morning, Mr. Commissioner, members of the panel, and fellow participants. My name is Rick Nydegger. I am a patent attorney and I practice with the law firm of Workman, Nydegger & Jensen in Salt Lake City, which specializes in intellectual property law. I'm also an Adjunct Professor of Law at the University of Utah, College of Law and I am a past-Chair of the Electronic and Computer Law Committee of the American Intellectual Property Law Association. I currently serve on the Board of that Association.

The views which I express today, however, are my own views and I appreciate this opportunity to participate in this proceeding and to add my comments to the record of these hearings.

First, I wish to make a few introductory comments, which I will then follow with specific comments in response to the subject of this hearing, namely standards and practices used in examination of patent applications for software-related inventions.

Much has been written and said by way of criticism about overly broad patents having been granted by the PTO for software-related inventions. However, it should be remembered that these types of problems are not unique to software-related inventions alone, but have existed and will exist in connection with any type of new and rapidly emerging technology.

Indeed, in the celebrated Telegraph case that was decided by the Supreme Court in 1854, the eighth claim in Samuel Morris' patent on the telegraph was ultimately invalidated as being overly broad, although granted initially by the Patent Office.

However, equally important though often overlooked is the fact that the first seven claims in Mr. Morris' patent were upheld, thus providing broad protection for a new technology which spawned a whole new industry.

In a similar fashion, in 1888 Alexander Graham Bell's patent for the telephone was also challenged as being overly broad. Claim five of Bell's patent was contained in a mere five lines which simply read, "The method of and apparatus for transmitting vocal or other sounds telegraphically as herein described by causing electrical emulations, similar and formal vibrations of the air accompanying the vocal or other sounds."

Yet in upholding that claim the Supreme Court said, "It may be that electricity cannot be used at all for the transmission of speech except in the way Bell has discovered it. And that, therefore, practically his patent gives him this exclusive use for that purpose. But that does not make his claim one for the use of electricity distinct from the particular process with which it is connected in his patent. It will, if true, show more clearly the great importance of his discovery, but it will not invalidate his patent."

Those skilled in the art of prosecuting patent applications for software-related inventions will readily appreciate the similarities between the claims and the issues raised in the telegraph and telephone cases and the issues raised by the claims in many software-related inventions.

I cite these historical examples merely to point out that criticism and charges of overly broad patents that are issued by the Patent Office are not something new, particularly when dealing with fundamentally new and rapidly changing technologies.

Yet the fact remains that in both these cases, as in many others, protection under the patent system was broadly afforded to these emerging technologies on which entire industries were ultimately founded.

That's not to say that the U.S. patent system as it presently exists is without problems that need to be carefully examined. Indeed, I strongly support the increased efforts being made by the Patent Office, including these hearings, to become more customer oriented and to create a stronger sense of partnership with American inventors at all levels.

However, when examining the problems that may exist under the patent system there is a need for temperance and we should be slow to illuminate or narrowly circumscribe protection for any new or emerging technology simply because the newness of that technology makes it difficult to search, difficult to disclose or difficult to apply statutory standards of eligibility or patentability.

With these remarks in mind, I turn to some particular comments on examination standards and practices that will, it is hoped, suggest possible ways to strengthen the patent system and the way in which the patent system can serve to both reward and foster innovation as well as to continue to strengthen our country's economy and the ability to compete in an increasingly competitive global marketplace.

Specifically, I wish to direct my remaining comments to four areas. One, improving access to relevant prior art; two, improving the experience, training and retention of qualified examiners; three, reducing the present emphasis on pendency time and adopting early publication procedures; and four, expanding third party participation in reexamination and opposition proceedings.

On point number one, improving access to relevant prior art, for pure software systems such as application programs, computer operating systems, network operating systems, database management systems to name just a few, access to prior art other than patents or printed publications is needed because many such pure software techniques have not been documented or published in traditional ways. Much is already being done to rectify those problems.

Efforts such as the APS classified search and retrieval system, private efforts such as those that Dr. Bernard Galler with respect to the Software Patent Institute and others are commendable and are helping to develop an adequate prior art database.

The PTO has and should continue to request voluntary submission of product descriptions, user manuals, administrator guides and programming guides and soft copy from software developers for addition to the PTO's library.

The current reclassification efforts with respect to software-related inventions have been successful. And Director Jerry Goldberg and his team in Group 2300 of the PTO have been doing an excellent job of reclassifying software-related technology within the Patent Office.

In addition to the extent that such a source has not already been considered, a classification system which takes into account classifications proposed by the IEEE and the ACM might be considered. These classification systems represent industry efforts to classify software-related technology.

Continued effort in all of these areas is needed. Another way to provide patent examiners with access to the most complete up-to-date prior art is to solicit the assistance of those most interested in seeing to it that patents with overbroad claims do not issue, by providing for publication prior to grant and by providing an opportunity for interested parties to submit relevant prior art before issuance. This is discussed further in point three below.

On point number two, improving the experience, training and retention of qualified examiners, patent examiners who are not well qualified or trained or who lack adequate resources will not be able to adequately assess an invention's patentability.

Thus, patent examiners need to have proper background in the software-related arts and every effort needs to be made to retain well-qualified and experienced examiners. One way to ensure that patent examiners have proper training in the field of software-related technology is to recognize computer science as a science for the purpose of serving as a patent examiner. I was pleased to hear that things are moving in that direction currently.

Another important step toward improving the examining corps' performance level in the field of software-related technology is to improve the retention rate of examiners. On-the-job training builds examiner confidence and examiners should be encouraged to stay on the job.

I believe the PTO should consider conducting a comprehensive study to find ways of increasing the retention rate of well-qualified, trained and experienced examiners and to provide adequate resources in terms of physical support facilities and personnel to permit efficient and thorough examination to be carried out.

On point number three, reducing the present emphasis on pendency time and adopting early publication procedures, the PTO should decrease the present emphasis on pendency time concurrent with adopting early publication procedures. The current emphasis by the PTO on pendency time is, I believe, misplaced since a patent is an important means for disclosing details concerning new technology.

The important question is not pendency time, but rather time to publication. This concept is recognized in the patent laws of most major industrial countries which provide for publication of an application 18 months after the priority date.

Delays in publication can mean that the technology disclosed in a patent is not available to the public in a timely fashion, which may delay further development of the technology and may also lead to problems with so-called submarine patents.

The present emphasis on reducing pendency time by the PTO has a number of undesirable consequences on the examination process. For example, if a patent issues within the approximately 18 month pendency time as now suggested by the PTO, prior art from foreign patent tribunals is most likely not available for consideration by the U.S. examiner.

Having this prior art is particularly important in the software-related arts and would further help to protect against issuance of overly broad patents. It would make for a more complete examination and higher degree of confidence in the validity of an issued patent for such inventions.

It is thus suggested that consideration be given by the PTO to publishing applications 18 months from the priority date. This publication should be contingent upon providing a search report prior to publication to permit the applicant to amend or withdraw the application prior to publication.

Following publication the applicant should be entitled to recover damages for use of the invention after publication but prior to issuance in the event of infringement. Examination could then take place in a more contemplated environment.

It should be noted that early publication can also operate as an early notification to others working in the field of the potential issuance of the patent, allowing them to factor that into their business decisions and thus minimizing the problems with submarine patents as noted above.

On point number four, expanding third party participation in reexamination proceedings, the PTO should consider changing the current procedures governing reexamination. The problem of patents that are issued with overbroad claims could be reduced by changing the current procedures governing reexamination.

Third parties are reluctant to institute reexamination because of the essentially ex parte nature of such proceedings. The PTO should expand the ability of third party petitioners to participate in reexamination after the petition for reexamination is granted. If such a reform were made, the use of reexamination would increase and the reliance on the courts would decrease.

In conclusion, Mr. Commissioner, I believe that the above-proposed changes would serve to greatly strengthen the U.S. patent system in ways that would appropriately further the progress in science and useful arts as contemplated under the Constitution and in ways that would continue to help U.S. industry to effectively compete by protecting the investment of U.S. companies in important new technologies of the type typified by the software and electronics industries. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Nydegger, for those thoughts and for coming all the way from Utah to be with us.

I'd like to mention a couple of housekeeping items at this point. I'd like to remind the speakers that if they have prepared remarks it would really be helpful to us. If you haven't already given them to us, if you would give them either to Jeff Kushan right here or Mike Fleming who is circulating around here someplace, who I introduced before.

Also, for any members of the press or media who are here interested in this, I'd like to note that Ruth Ford is our Director of Media Relations. I don't think she's here in the room right now, but will be very happy to help you with anything you need. And you can reach her at the Commissioner's office at 703-305-8600.

Next, I'd like to ask Allan Ratner, the President of the Philadelphia Patent Law Association from Ratner & Prestia to come forward.

PRESENTATION BY ALLAN RATNER

PHILADELPHIA PATENT LAW ASSOCIATION

Mr. RATNER. I'm Allan Ratner of Valley Forge, Pennsylvania. I'm representing Ratner & Prestia. We're a firm of 13 attorneys, 7 of whom specialize and mainly work in software, computers and sophisticated electronics.

I'm also representing the Philadelphia Patent Law Association. That's a 400 member association with members in New Jersey, Pennsylvania and Delaware. I'm familiar with the views of our membership and I state for the record that at this time these remarks are being considered by the Association and will be soon acted upon by the Board.

I personally have been prosecuting and licensing software-related inventions for more than 25 years and have seen the continuous growth of the law and the practice and changes in the law and the PTO practice as time goes on. I've seen this positive evolution continuing to better protect the public interest and better protect the burgeoning technology, the software technology.

My remarks -- in considering protection for software it's important to view the industries impacted by any potential changes in the patent law. First, what products fall under the umbrella of software-related inventions. The request for comment refers to the software industry and programming services, prepackaged software and computer integrated design.

However, there is no single software industry. Certainly there is a large expanding prepackaged software industry and the U.S. patent system should reflect policies that encourage and protect innovation within this industry. But equally important are those many industries that produce machinery and electronic systems in which imbedded microprocessors and microcontrollers use control functions.

In 1992 a single U.S. manufacturer sold nearly 250 microcontroller chips, each of which is used to provide control functions in a hardware system.

The list of products controlled using these imbedded chips is virtually endless. The following is a brief list, intended only to show diversity. Every one of these systems is controlled to some extent by software executed in the imbedded microprocessor or microcontroller. Every one of them is a software-related invention.

We have telephone CT scanners; MRI systems for imaging the human body; televisions and TV converter boxes; electronic test signal generators; automobile subsystems, including ignition systems, anti-lock brakes, traction control, airbags; chemical process control equipment; agricultural equipment; microwave ovens; facsimile machines; sewing machines; dishwashers; signal processing equipment; camcorders; automatic bank teller machines.

We have clients in many of these fields -- small clients, emerging companies, mid-sized companies and large companies -- all of which use patents to protect their technology.

The trend toward increased use of software in imbedded chips is expected to continue as the cost of chips decreases. The decision to use chips is a design choice and is determined by such factors as cost, design delays, comparing software against the same functions in hardware, such as ASICS. They also consider whether the functions of the product will change frequently, in which case software reduces life cycle development costs.

Thus, it is impossible to define a single software industry. Admittedly, at one end of the spectrum there are application software developers who have low capital costs and who are able to bring their products to market rapidly.

Nonetheless, at the other end, U.S. auto manufacturers, for example, rely on software to improve the comfort and safety of their cars. Few industries have higher capital costs than the auto industry and delays in bringing new products to market are common.

For example, testing of airbags in an actual car is neither fast nor expensive and, of course, software controls the operation of the airbag. There are countless other industries that rely on software-related inventions which do not have low capital costs or short development cycles and any attempt to define a software industry is bound to fail.

Furthermore, the industries that use imbedded microprocessors and controllers are in need of the protections offered by the patent system that are not available through other forms of IP protection.

Defining separate standards for patenting hardware and software is likely to result in inadequate protection for software-related inventions that do not fit neatly into the precise pigeon holes of hardware systems and software systems.

Although it is more common to see hardware circuitry replaced by software implementations, this is not a one-way street. As computer aided design techniques improve, a growing number of hardware designs are created by implementing functions in software from which designs for dedicated hardware are automatically generated.

Given the ability to implement many algorithms in either hardware or software elements that are functionally equivalent, there is no compelling reason for penalizing an inventor that selects one implementation over another. On the contrary, the inventor who identifies that a software implementation is better, i.e. less expensive or faster to bring to the marketplace, has given something more valuable to society than the inventor that discloses a functional equivalent -- but more expensive -- hardware embodiment.

The fact that the inventor has disclosed a software embodiment of the invention that is easier to implement increases the value to the public and the inventor should be rewarded.

35 U.S.C. 112 requires that the inventor disclose the best mode. Ever increasingly, the best mode for many machines and systems include software elements. A software solution to a control function may be the preferred mode. 112 requires disclosure of that software embodiment. Without protection for the inventive concepts that are in software, there would be little incentive for inventors to disclosure software-related inventions in the United States industries.

Thus, the fundamental constitutional mandate for promoting progress in the useful arts would not be met. In this way the contributions of software engineers, control engineers and systems analysts have been rewarded and encouraged.

Coming out to Part B, they seem to reflect a response to a number of criticisms, many of which reflect the public's misunderstanding with respect to standards applied in the examination of software-related inventions.

Both the PTO and the Patent Bar should emphasize that hardware and software-related inventions have been and continue to be subject to the same standards with respect to novelty and unobviousness during examination. It has never passed muster to take a known system or a known process and without more implement that system or process in software. A conventional hardware system by itself ported over into software is still a conventional system.

There is no public policy reason to define a higher standard of patentability for a software-related invention than for any other invention. Now some patents covering software-related inventions have been questioned because the Code is written following well-known programming skills. This is

not and should not be the standard for patentability used by examiners.

The relevant field of the invention is usually never computer programming itself, even for inventions in software application programs. The field may be systems engineering; operating systems; networks; database architecture; electronic design; automatic control system design; electromechanical system design; chemical process engineering or others.

The inventor very often is the system architect, the person who conceives of the system and its concepts. The programmer acts as a technician under the inventor's direction -- a technician.

A valid concern has been raised that examiners do not have access to a comprehensive base of prior art. One approach to solving this problem is to improve the access to materials within the PTO's library, which presently is quite extensive, as well as improving access to on-line prior art databases that increase the examiner's productivity.

These techniques are being implemented and more funds should be put into them. Perhaps the single most effective method of providing a more comprehensive base of prior art to the examiner is to enlist the assistance of other parties who have a stake in the outcome if a patent is issued. These parties include both third parties and the applicants themselves.

With respect to third parties, the current patent law presents obstacles for third parties who would otherwise be inclined to submit prior art. With adequate safeguards -- that's important, with adequate safeguards -- early publication of all patent applications may be one way to enable third parties to submit prior art during the pendency of applications. This particular way has problems but that is being considered.

Increased third party participation in post issuance reexamination proceedings may also encourage the submission of prior art by third parties. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Ratner, for those really thoughtful comments.

Next, I'd like to ask Dianne Callan, Deputy General Counsel of the Lotus Development Corporation to come forward. She will talking with us on behalf of the Business Software Alliance.

PRESENTATION BY DIANNE CALLAN

LOTUS DEVELOPMENT CORPORATION

MS. CALLAN: Good morning, Mr. Secretary. My name is Diane Callan and I am Deputy General Counsel of Lotus Development Corporation. I am speaking to you this morning on behalf of the Business Software Alliance.

On behalf of the BSA I would like to thank you for convening this hearing to consider these important issues and we appreciate the opportunity to speak to you.

The BSA was organized in 1988 to promote the continued growth of the software industry through its public policy, education and enforcement programs in the United States

and in more than 50 countries throughout North America, Europe, Asia and Latin America.

BSA members are actively involved in nearly all aspects of microcomputer software development, including production of operating systems, application software and networking software.

The current BSA members who are participating in this statement include ALDUS Corporation, Apple Computer, Inc., Autodesk, Inc., Intergraph Corporation, Lotus Development Corporation, Microsoft Corporation, Novell, Inc. and WordPerfect Corporation.

In the last five years every government, academic and industry study of technologies that are key to America's futures have identified the vital role to be played by the software industry. Software is characterized by both rapid technological innovation and widespread use in downstream markets.

Software innovation improves the competitiveness of other industries which utilize software products to make them more innovative and more competitive. The benefits of continuous software innovation permeate much of the American economy.

In March of last year the BSA released a study prepared by Economists, Inc. entitled "The U.S. Software Industry/Economic Contribution in the U.S. and World Markets." Based on government and industry information, the study reviewed the economic contribution made to the American economy by U.S. core software industry. By core software we mean prepackaged software, custom computer programming services and computer integrated design.

The Economists' study found that the core industry is the fastest growing industry in the United States, is now larger than all but five manufacturing industries, is contributing to the economy of virtually every state in the nation, and is achieving tremendous success in the international marketplace.

Notwithstanding this impressive record, the software industry's role in the growth of the nation's economy will be even more critical in the future as new and more advanced technologies continue to evolve.

The BSA has several views which we would like to share at this hearing. First of all, we believe that strong intellectual property protection is essential to the continued health and growth of the software industry. Software is difficult and expensive to create, yet easy to steal or duplicate.

Moreover, the real value of the software and the principal assets of a software company are not its tangible factories or raw material inventories. Apart from its employees, buildings and computer equipment, the assets of a software company are intellectual property, the technology embodied in the computer programs that are their products.

Second, the BSA does not believe that a new form of protection for software-related inventions is necessary or desirable. There is, however, an urgent need to improve the operation of the United States patent system as it pertains to software-related inventions.

Patents continue to be issued, which do not appear to meet the statutory mandates of novelty and nonobviousness. And these patents impose a substantial cost on the software industry and on society as a whole. Those aspects of the patent system that permit long gestation periods for patents also cause economic cost to society without providing commensurate benefits.

Let me emphasize that members of the BSA have widely divergent views as to the values of patents being granted for software-related inventions. However, all the members recognize that the current patent system does not adequately deal with such patents.

Therefore, these comments which are the minimum common points agreed upon by the participating BSA members primarily suggest procedural changes to the operation of the patent system to improve its effectiveness regarding the protection of software-related inventions.

The BSA respectfully suggests several changes to improve the effectiveness of the system. First, the patent system should run for a fixed time from the filing date. An important problem with the patent system is the issuance of patents after inordinately long application periods, brought about by continuation and continuation in part applications and occasionally interference proceedings.

Whatever the cause, the result is that the sudden appearance of a patent years after the technology to which it relates has been developed and commercialized is an important problem for the industry.

At that point design around possibilities may no longer be feasible and the patent consequently can assume an enormously enhanced power to disrupt long established expectations for a full 17 years from the issue date.

The BSA supports the Commissioner's intention to establish a fixed term from the original filing date, as that would give the patent owner a strong incentive to have her patent issued promptly and would in any case reduce the likelihood of the stealth patent that suddenly appears having lain hidden in the PTO for 15 or more years.

Furthermore, the spur to an applicant to timely present all claims and applications stemming from a single disclosure would promote additional efficiencies in the examination process. The BSA is gratified to learn that the PTO will support legislation embodying this concept.

Our second suggestion is that the examination process should be improved as to the content of the prior art database, the accessibility of this database to the examiners and the training and treatment of the examiners. Most of the prior art regularly available to the PTO examiners comprises collections of patents and publications.

However, especially in the field of software-related patents, much of the relevant art exists not as patents or publications but rather as companies internal technical manuals, reference works, bulletins and other similar documents.

Thus, often the most relevant prior art is not readily available to the examiners of software-related patents. Groups such as the Software Patent Institute have undertaken to compile databases with these types of software-related patent prior art.

It is important, especially in this area, that the PTO expand the universe of the prior art on which it relies and to improve access to that universe. The BSA hereby offers to provide ongoing assistance in establishing and providing content for suitable databases as well as examiner training and software tools for searches in these databases.

Our third suggestion is that applicants should be encouraged to conduct a patentability search before filing and to present the results of that search to the PTO before the application is examined.

Because of the quantity of prior art relating to software-related inventions, as well as the diversity of the nature and location of such prior art, we think that the applicant should be encouraged to conduct a reasonable prior art search and to present those results.

Our fourth suggestion is that an opposition procedure should be established with provisions that ensure expedited results. A third party may often be aware of prior art not readily accessible to the PTO and may also be the entity with the greatest interest in preventing the issuance of a patent covering what is in the prior art.

The BSA believes that providing an opportunity for submissions during prosecution, as is done in the EPO after publication of the application and the EPO search report, would facilitate a more complete view by the examiner of the relevant prior art.

In addition, once claims are allowed an opposition period of sufficient duration to permit reasoned investigations pertaining to those claims would provide the public with a timely and efficient opportunity to submit relevant information pertaining to the claims as they are expected to issue.

Our position, however, is premised on some assumptions. First of all, the fact that a period for filing an opposition has expired without any oppositions having been made would not in any way affect the presumption of the validity of the patent.

Second, that any opposition activity or proceeding would take place in an expedited manner, so that the opposition process cannot be used, as in some countries, including Japan, to unduly delay the issuance of the patent.

And finally, any opposition proceedings would include appropriate procedural safeguards to limit the potential abuses of the process.

The last suggestion that we would like to present today is that the examination procedures should be strengthened and expanded substantively to include non-prior art validity issues.

The current examination process, as was discussed earlier, is generally not viewed as a viable option by opponents to a patent due to the largely ex parte nature of the process. The BSA urges that reexamination be modified to provide more of an inter-parte proceeding, allowing opponents to a patent to feel more comfortable in relying on the procedure to efficiently resolve their concerns in what may be the most efficient forum.

Further, the scope of the reexamination proceedings should be expanded to additionally cover all prior art categories as well as non-prior art, validity and enforceability issues. For example, inequitable conduct regarding an applicant's nondisclosure of material prior art during the prosecution of an application.

The BSA acknowledges and supports the Patent Office's intent to forward to Congress legislation making reexamination a more attractive vehicle for challenging a patent's validity. We appreciate the opportunity of speaking to you.

COMMISSIONER LEHMAN: Thank you very much, Ms. Callan, for sharing that with us. It was a sufficiently complete statement that I really think I understand it and don't really have any questions where you stand.

Before I call our next witness, I just want to say that since we're running a little bit ahead, we may be able to get through to shorten our afternoon session if we can call some of the people who are scheduled to appear this afternoon. I have a list of some people -- Richard Jordan, Jonathan Band, Vern Blanchard, and Jeffrey Berkowitz.

If any of you are here, what I'm going to do is, after the next witness I'm going to at least call one or two of you. And if you're able to, then we can, you know, get your testimony included in the morning session.

With that I'd like to call next R. Duff Thompson, who's the Executive Vice President and General Counsel of the WordPerfect Corporation.

PRESENTATION BY R. DUFF THOMPSON

WORDPERFECT CORPORATION

MR. THOMPSON: Thank you, Mr. Secretary. My name is Duff Thompson. I am speaking to you today on behalf of WordPerfect Corporation, for which I serve as the Executive Vice President and General Counsel. WordPerfect appreciates the opportunity to participate in this hearing regarding the patent process. We certainly applaud the efforts of the Commissioner and others to bring these issues to light.

WordPerfect Corporation is a Utah company employing approximately 5,000 people worldwide. It is the leading supplier of word processing software in the world and other key business applications. WordPerfect is a member of the Business Software Alliance, as has been mentioned, and we support the positions that Ms. Callan has just expressed.

On behalf of WordPerfect, however, I want to emphasize certain points she has made and to add a couple of others. First, WordPerfect Corporation believes with the Business Software Alliance that strong intellectual property protection is essential to the U.S. software industry to

continue to grow and provide jobs and export revenues for this country.

Because of the ease of copying, software piracy is endemic, not only in this country but around the world. Software companies need vigorous intellectual property protection to secure the fruits of their labors.

Second, like the Business Software Alliance, WordPerfect Corporation does not believe that a suigeneris form of protection for software-related inventions is a viable solution to the problems that exist with the current legal regimes, including patents.

Recent experiences of two types highlight the reasons for these concerns. First, the 1976 amendments to the Copyright Act, an existing statute I might add, took well over a decade to become enacted. Given the number and diversity of views on technical, financial and legal matters relating to software protection and software patents, it seems likely that a new statute could easily be a decade in the making.

During that time we would still have to get along with the system we now have. And as we know, a decade in the software industry is virtually an eternity. Moreover, even if a suigeneris act were enacted, it would necessarily introduce enormous uncertainties into the subject until years of case law development had clarified the many inevitable issues.

We have lots of uncertain areas now within the existing legal framework, but those uncertainties would seem very small indeed compared to the issues that a clean slate approach to this subject would introduce.

WordPerfect in sum believes that the existing statute, regulations and case law are capable of providing an adequate framework for assessing the patentability of software-related inventions.

WordPerfect also believes, however, that two major deficiencies in the application process which have led to enormous expenditures of nonproductive effort and money by software companies need to be addressed.

Time and again software companies have had to respond to patents that should not have been issued because they are, in fact, obvious over very close but non-cited prior art, and to patents that issued a decade or more after the initial application was filed during which time entire related industries have developed, unaware of what I have called buried land mines.

These consequences must be avoided if the health, growth and worldwide competitiveness of the United States software industry is to continue.

First on the issue of the obviousness of some of the patents. Too many software-related patents have issued despite the existence of very close prior art, art which was not found during the examination process. Mr. Secretary, you, yourself, have highlighted what has become the most glaring example of this type of patent in the Compton New Media patent issued in August of '93.

You ordered a reexamination of this patent because it cased a "great deal of angst in the industry." The PTO to its credit departed from normal procedure when it decided to consider additional prior art from the public during the reexamination of the Compton patent.

This action clearly demonstrates the PTO's recognition of the underlying problem, that much of the prior art in the area of software-related inventions is not embodied in patents while existing searching techniques focus on patents.

Clearly, the archive of prior art in relevant areas needs to be significantly improved. And the PTO's ability to access that prior art must be greatly enhanced.

In speaking for the BSA, Diane Callan mentioned the possibility of industry assistance to the PTO in setting up databases for prior art with respect to software-related inventions, in providing necessary software tools to ensure meaningful access to those databases and in assisting with training of examiners in these areas.

I'm here today to tell you the WordPerfect Corporation is also ready to participate in that enterprise. We are ready to do our part in helping the PTO improve the examination process. I encourage all similarly situated software vendors to participate in a like manner.

In addition, WordPerfect believes that giving third parties the right to file oppositions to allowed applications would further benefit the PTO and the public. Oppositions would in essence deputize the concerned public. They would enable people with the best knowledge of the subject matter to submit prior art which was not located by the examiner.

In this way the PTO would be assisted, often by experts in the field, in identifying the most relevant prior art. At the same time the interested public has the opportunity to prevent the issuance of an undeserved patent that would otherwise become a scarecrow in the art.

Again, consistent with the BSA statement, WordPerfect's support for the availability of an opposition proceeding is based on the expectation that first the failure of a party to file an opposition would not in any way affect the presumption of validity of an issued patent, either as to that party or generally; and second, any opposition that is filed would be completed in a relatively short period, so as not to unduly delay the issuance of the patent.

Second, on the land mines issue a very small proportion of patents carry a substantially and unfairly disproportionate weight upon being granted. These are often patents that are issued 10, 20 or even more years after the initial application was filed. Often such patents rest buried in prosecution or the public, not knowing about them, develops whole industries related to their subject matter.

Such patents often don't really issue so much as blow up in the unsuspecting public's collective faces. Enormous royalties are often demanded by their owners who have been watching the industry develop, and in many cases drafted claims to read on the products and processes of those industries, taking advantage of accidental disclosures

in their applications that can be stretched and tortured to support claims they never considered making until others made the inventions.

The patents then go into expensive and protracted litigation. Two examples make this point. The first is, in 1990 Gilbert Hyatt's patent for a computer on a chip issued. The original application had been filed in 1970 when most of today's computer companies were not yet even contemplated. Yet industry analysts have estimated that Hyatt's patent portfolio may be well worth over $100 million during its 17-year life.

A second example, Jerome Lemelson owns a number of these long hidden patents. For example, his Patent Number 753 covering a bar code scanner issued on July 7, 1992 from a continuation application filed in 1989. However, the original application was filed in December of 1954 and was followed by 11 continuation, division and continuation in part applications.

In 1992 alone Lemelson's attorney, who according to the American Lawyer Magazine earned more that year than all the combined partners of Krabath, Swain & Moore and Winston & Strong combined -- I assume to the chagrin of the partners at Krabath, Swain & Moore and Winston & Strong -- negotiated over $400 million in settlements regarding Lemelson's patents.

A racketeering and anti-trust suit filed against Lemelson cites Lemelson's attorney as having written that "Some of Lemelson's pending patent applications were being refined to encompass explicitly the processes that manufacturers were already using in their factories."

Even Judge J. Plager, Circuit Judge of the U.S. Court of Appeals for the Federal Circuit acknowledged this problem in a recent interview by the Journal of Proprietary Rights. As you may know, Judge Plager did not have a patent law background prior to taking the bench on the Federal Circuit. Even so, during the interview on May 12, 1993 Judge Plager supported the idea of switching to a fixed patent term from the date of filing, noting that even in the short time that he had been on the court, which is approximately two plus years, he had picked up "some of the things that go on, the delays that are built into or allowed by the system, all of the things that you can do to game the system."

Thus, WordPerfect wholeheartedly welcomes the PTO's inquiry into legislation which would change the life of a patent to one that expires after a fixed period of time from the original filing date of an application or its earliest parent.

Similarly, WordPerfect urges the PTO to support the publication of all pending applications a fixed time after their filing dates. In these ways, most of the buried land mines would be disarmed or at least have their explosive power lessened, enabling the public to travel a safer landscape of software development.

Finally, WordPerfect requests that the PTO consider one additional item not mentioned in the BSA presentation. That is the vast extension of patent claims by unreasonable application of the doctrine of equivalence to cover software-related inventions which are vastly different in spirit and content from the invention disclosed in the patent.

WordPerfect recognizes that the doctrine of equivalence has a place in patent law and that there are times when the choice between implementing an invention in hardware or software is determined by a variety of factors which do not alter the basic nature of the apparatus or process in question.

However, in other cases the basic nature of the invention as described in a "hardware" patent is qualitatively different from a software implementation. In those cases I suggest the doctrine of equivalence has been applied beyond any reasonable scope.

Thank you for the opportunity to present these remarks.

COMMISSIONER LEHMAN: Thank you very much, Mr. Thompson. I'd like to ask you a question or two if you don't mind.

First, a fairly short one, and I think you've obviously given us the answer, but just to put it on the record, when we were in San Jose, one of the witnesses presented a chart and it showed all of the patent applications that had been filed by various computer software companies. As might be expected, it showed that we had, you know, the largest number in companies like IBM, General Electric, Digital Equipment and so on.

The point was made that some of the most rapidly growing and innovative companies in the business in the last ten years have filed very few applications. You got down to Microsoft and -- I don't know -- there were maybe 13, I think, or 15 applications and the Lotus Development Corporation had about 7; WordPerfect had none. And this was used to indicate that -- basically as a result, I think the message was that certainly the microcomputer industry could do just fine without any patent protection at all.

And yet I don't hear you saying that. Is it your view that the industry has matured to the point that, you know, patents should be a part of the options available to you now, even though you have not -- obviously, any applications that you may have pending are confidential -- but you haven't had any issued?

MR. THOMPSON: We actually have had three issued. I am not sure where that information came from.

COMMISSIONER LEHMAN: I guess the information we got then was incorrect.

MR. THOMPSON: Yes. We actually have had a number issued and we have a number in process.

This is a difficult question, Mr. Secretary, because we're asking really at the base root whether or not we believe patents are a helpful aspect of this industry. I think that it's been the position of the owners and most of the employees of WordPerfect Corporation for a number of years that patents are not good news for the software industry.

However, I believe the time for making that argument passed many years ago and we are now at a point where we simply have to say, if they are part of the landscape how can we best ensure that they become a workable part of our business plan.

I have to say that WordPerfect Corporation has been surprised. There is a certain lag effect in the patent process, isn't there? There's not a real hurry up and let's start getting our patent portfolio in shape. There's a certain lag effect here and it takes a period of years for companies to develop process and methodology to see that patents are made a part of the everyday development process.

And certainly that's the case of WordPerfect Corporation. Three years ago WordPerfect Corporation essentially had one patent application in process. Today we have many. We are considering hiring in-house patent counsel. We consider it an unfortunate circumstance, but a necessary circumstance.

COMMISSIONER LEHMAN: I gather then that the reason that you're filing patent applications is by in large from a defensive point of view?

MR. THOMPSON: Absolutely right.

COMMISSIONER LEHMAN: Some of the other witnesses in San Jose indicated the same thing.

The next question I wanted to ask concerns, you referred to the Commissioner's order of reexamination in the Compton's Multimedia case. Again in San Jose we heard a number of situations listed, a number of patents which had been issued, which some of the witnesses there, at least one or two, thought were similarly questionable.

Obviously, one of the things that we could conceivably do is to make better use of that, of our own powers to order reexamination and perhaps make a review of some of the patents that are -- where there is some question about whether or not we have gotten all the prior art. What would you view about that be? Would you encourage or discourage us from using that Commissioner ordered reexamination?

MR. THOMPSON: I think that's a healthy thing for the industry and certainly the most efficient thing that can be done at this point in time. As you may know, WordPerfect and other companies are being threatened, a number of claims of infringement on patents that we believe simply should not have been issued and the prior art searches that we have done, I think, would be very useful for the PTO.

COMMISSIONER LEHMAN: But I gather that in those cases you haven't chosen to use the reexamination procedure yourself.

MR. THOMPSON: Not yet, no.

COMMISSIONER LEHMAN: And I asked also about that in San Jose and I'm -- just in the interest of time; I don't want to spend an hour on cross examination here, so I'll lead the witness a little bit -- the answer that we got as to why companies who feel that they have prior art that clearly might invalidate some of these patents, they don't

want to bring that to our attention by requesting reexamination themselves is because they think that the present procedure basically is not their best shot for utilizing that prior art and they don't want to disclose it in that kind of a forum. They'd rather save it for the infringement law suit itself.

Do you find that figures into your strategy about whether or not to use reexamine?

MR. THOMPSON: I think that's right. I believe if we had a better sense of the reexamination process and certainly had the sense that it was an expedited process, one which could bootstrap us ahead of where we would be through the private negotiations in the litigation that would be something we'd be very attracted to.

COMMISSIONER LEHMAN: Well, unless any of my colleagues have any questions, thank you very much.

MR. THOMPSON: Thank you.

COMMISSIONER LEHMAN: As I indicated, we are running a little bit ahead of time and it would be very helpful to us in getting through our afternoon more quickly if we could fit in at least one or two of the afternoon people. So I've indicated that Richard Jordan -- is Richard Jordan here?

MR. JORDAN: Yes, I am, sir.

COMMISSIONER LEHMAN: Great. Would you mind coming forward? Presumably you'll be as prepared now as this afternoon.

Richard Jordan, Patent Counsel to Thinking Machines Corporation. I hope you'll notice this new level of customer service that we have here.

MR. JORDAN: Thank you very much. It's very much appreciated.

COMMISSIONER LEHMAN: We're on the Internet. We've got all our hearings printed up. We've got refreshments in the lobby. We haven't yet gotten them for free, but we're working on that.

PRESENTATION BY RICHARD JORDAN

THINKING MACHINES CORPORATION

MR. JORDAN: Mr. Commissioner, ladies and gentlemen, my name is Richard Jordan. I'm Patent Counsel with Thinking Machines Corporation. By way of background, Thinking Machines Corporation was founded in 1983 to develop, manufacture and sell massively parallel super computer systems. Thinking Machines products are an outgrowth of research undertaken principally by its chief scientist, Danny Hillis while he was a graduate student at MIT.

Since Thinking Machines announced its first product, the Connection Machine, Model CM-1 super computer in 1986 the company has had excellent revenue growth and revenue from massively parallel super computers is believed to be the largest of any company.

However, it should be noted that its revenue is much less than that of a number of other companies in the computer industry, both domestic and foreign, including companies in

the traditional super computer field as well as those principally known for selling computers and more conventional architectures, many of which I should say are developing products that are competitive with Thinking Machines.

Over the past several years the computing power of massively parallel computing technology has been emphasized by a number of awards relating to Thinking Machines' technology. Since 1990 the IEEE, the Institute of Electrical and Electronics Engineers, has given its Gordon Novell Award for computing speed to several teams, including Thinking Machines employees for programs processed on a connection machine super computer and for compiler technology.

The importance of massively parallel computing technology has also been recognized by articles in journals such as the Scientific American and newspapers such as the New York Times and the Wall Street Journal.

A connection machine computer achieves its computing power through a combination of hardware and software, unlike a conventional computer which uses one or only a few powerful data processors on masses of data, the hardware of a connection machine computer includes tens, hundreds, or even thousands of microprocessors which operate in parallel on relatively small amounts of data that are distributed to them.

The individual microprocessors are interconnected by a data routing network which allow them to share data as necessary and the software effectively coordinates the operations of the individual microprocessors and the routing network to achieve tremendous computing power.

While the hardware is important to the computing power achieved by a massively parallel computing system, at least as important as the advancement in software techniques. Many advancements have come in the development of parallel algorithms and computing techniques; the pattern of assignment of data to processors to minimize processing time; techniques for rapidly routing data through the routing network; compiler techniques; the development of high level languages and compilers to make massively parallel computers easy to use.

Thinking Machines currently has a staff in excess of 500, of whom approximately one-third are involved in hardware and software engineering development. Of these engineers only about 30 percent are involved in what might traditionally be referred to as hardware development, while fully 70 percent are involved in software development.

In addition, a number of other employees actively develop software in Thinking Machine's large customer service group developing software techniques specifically for or with customers. It is manifestly evident that Thinking Machines software development effort represents a very significant portion of its investment in massively parallel computing technology and Thinking Machines believes that patent protection provides an important tool to help protect this investment.

Thinking Machines further has an ongoing program to encourage its developers to publish papers and articles describing new parallel processing techniques. This provides information on new uses for massively parallel computing technology and techniques and may also help to enhance the professional standing of its employee authors within their professions.

Published papers represent divulgation of technology for which Thinking Machines has provided often considerable investment. And Thinking Machines believes that patent protection can be an important tool to protect this investment as well, particularly in view of the substantial degree of competition that's developing in the marketplace.

Thinking Machines, unlike some larger companies, does not require its employee's papers to be cleared, that is scrutinized to determine whether they describe technology which the company may wish to protect, before the papers can be sent out for publication, but it does actively file for patent protection on technology to be described in the papers.

Thinking Machines recognizes that computer software is also protected by copyright, but it believes that copyright will not provide the degree of protection required to protect its investment. First, the scope of copyright protection is far from clear and has been made less clear in recent years in view of the Second Circuit's opinion in the Computer Associates case. It's generally said that copyright protects the expression of a work and not its idea.

While these words are easy to say, it's very difficult to apply them in practice. Furthermore, the application of 17 U.S.C. Section 102(b), which exempts from copyright protection ideas, processes, methods and so forth regardless of the form in which they're described, further renders uncertain the degree of protection provided by copyright.

Much of the value in the program related techniques developed by Thinking Machines is not in the detailed computer program code, which is clearly protected by copyright, but in the algorithms, programming techniques for which copyright protection is far less clear. Similar ambiguities are not present in patent protection.

Furthermore, patent protection is important in view of the publishing by Thinking Machine's employees, which disclosed the algorithms and techniques to the world and particularly to the competition and in view of the fact that copyright protection may not protect against reverse engineering.

Accordingly, Thinking Machines believes that patent protection for computer program related inventions is an important tool to protect its investment. That being said, Thinking Machines believes it important that the patent system maximize the likelihood that the patents issued are valid, that the claims are directed to new, useful, and nonobvious technology in accordance with the statutory mandate.

It does no one any service if patents are issued that do not meet the statutory standard. While no one can reasonably

expect that any institution run by human beings can be 100 percent perfect, we believe that enhancements can be made to improve the system.

And I might mention that while we're here discussing patent issues relating to computer software-related inventions, these same problems can arise in connection with computer hardware and indeed in any technology. The problems may be exacerbated somewhat in the software area since the PTO for a number of years was reluctant to consider computer program related inventions to be statutory subject matter -- a reluctance that to some extent still continues -- which delayed its development of a prior art database in this area.

However, there is no industry in which all of the technology is patented or otherwise published. Several changes to U.S. procedure may be appropriate to provide for early publication of the applications. This would have two advantages. First, it would ensure more timely publication of the technology, making it available to those working in the industry. A publication delay of one to one-and-a-half years after submission to a paper is not atypical for engineering and scientific journals, but for patents, particularly in this subject matter, a much longer delay is more typical.

With developments in computer technology moving as rapidly as they are, the patent disclosure after such a lengthy delay may be somewhat less valuable as a source of technical information.

Second, early publication can also operate as early notification to others working in the field of the potential issuance of a patent, allowing them to favor that into their business decisions.

The potentially lengthy delays to patent issuance under current practice in the United States means that others working in the field would not be notified that a patent application is pending that may cover something they are developing until the patent actually issues, which can be a number of years after its original filing date and perhaps after much time and money has been invested in the potentially infringing enterprise.

Third, early publication followed by an examination in a more contemplative environment than would be possible in the current push for a reduction in the pendency period would provide a better patent upon issuance. For example, if a patent issued on the original application with the approximately 18 month pendency period as currently suggested by the PTO, the prior art from foreign patent offices would most likely not be available for consideration by the U.S. examiner.

Having this prior art is particularly important in the computer area. It makes for a more complete examination and a higher degree of confidence in the validity of the patent. Typically such prior art is not available until around 18 to 24 months after the priority date and an 18 month pendency time would mean that the art would not be available until just around the time the U.S. patent would be issuing.

If the art were deemed material and the application still pending, the applicant would likely have to file a continuation application to get it considered, which could delay issuance to the patent and publication of the technology for an even greater amount of time and require additional expenditure by the applicant of another filing fee.

On the other hand, if the U.S. patent had already issued the only ways to have the art considered would be by reexamine or reissue, both of which can be costly. In addition, it puts too much stress on the Patent Examining Corps which can have problems with retention of examiners.

These problems can be alleviated by a few relatively simple changes to the prosecution procedures and the PTO. First, they can publish the application 18 months from the priority date, preferably with a search report so that the applicant can have it and ideas to the likelihood of being able to get a patent.

In addition, the public should be brought into the process at some point, perhaps by way of an opposition proceeding just before or after issuance. It would alleviate the secrecy problem, things going into the Patent Office. But you have to make sure that oppositions are conducted and restricted here as to procedures and time frames, otherwise they can run on interminably.

Another way that the system can be improved is by holding ongoing dialogue such as these hearings to get input from the Bar and others who have interest in the patent system.

Wearing another hat, I am also Chairman of the Electronic and Computer Law Committee of the AIPLA and our committee leadership has for a number of years been meeting with the group directors and others in the electrical examining groups to discuss issues of mutual concern. We expect to hold another meeting in April, of which we hope to discuss among other things, some of the issues raised by the notice for these hearings.

An outgrowth of earlier meetings was a program held last October in conjunction with the AIPLA's annual meeting that was extremely well attended by examiners from the Examining Corps and by members of the AIPLA.

At the program a number of problems and practice issues of concern to the Examining Corps and to the Bar were discussed in detail. Each side, so to speak, learned quite a bit of the problems and perspectives of the others and the program received quite good reviews and we hope to have more of them. Thank you very much.

COMMISSIONER LEHMAN: Thank you very much. Those were very helpful comments and I appreciate your be willing to give them in advance of your prepared time.

MR. JORDAN: Thank you very much.

COMMISSIONER LEHMAN: I'm going to try to call one more person in the morning session. Is Jonathan Band here?

(No audible response.)

COMMISSIONER LEHMAN: How about Vern Blanchard?

(No audible response.)

COMMISSIONER LEHMAN: Jeffrey Berkowitz? Mr. Berkowitz, great. Mr. Berkowitz is an attorney with Finnegan, Henderson, Farabow, Garrett & Dunner.

Yesterday we had a meeting with the unions at the PTO and we big -- we were sitting on the Partnership Council and we had a big discussion about who should get represented and how many representatives they should have on this.

It's interesting that we have a disproportionate representation from Finnegan, Henderson, Farabow, Garrett & Dunner. I think this is about the fifth witness that we've had in the course of these four days of hearings. It will be interesting to see this other face of the firm.

PRESENTATION BY JEFFREY A. BERKOWITZ

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER

MR. BERKOWITZ: Good morning, Mr. Commissioner, and other distinguished members to this panel. I'm Jeffrey Berkowitz, Associate with the intellectual property firm of Finnegan, Henderson. And like my colleague, Mr. Yoches, my comments today are my own and not those of the firm.

I'd like to talk a little bit today about Question Number 10 in Topic B for today's hearing. In Question Number 10 the PTO asked for comments on how they should handle the submission of computer program code listings, specifically the PTO seeks comments on the following four items:

One, should the PTO require a submission of program code listings;

Two, should the PTO require a submission of code listings in machine readable format only;

Three, should program code listings be included in patent documents or should they be made available only through a publicly accessible database; and

Four, what hardships would patent applicants face if these requirements were imposed?

In my opinion, the PTO should not require a submission of program code listings. The following discussion concerning my opinions on the first item of Question 10 necessarily provides my opinion on the remaining items.

Currently, applicants may file program code listings with the PTO, and I emphasize the word "may," because these listings, particularly when in machine readable format can take hundreds of pages, maybe even thousands of pages. It is clear that the PTO must deal with substantial financial, printing and logistical problems when an applicant chooses to submit a program listing.

In an effort to deal with these problems, the PTO promulgated 37 C.F.R. Section 1.96 under which program listings must be included in the application itself, either in the specification or as part of the drawings if the listing is under 11 pages in length.

If, however, the listing is 11 or more pages in length then the listing may be submitted in the form of a microfiche appendix, which will not be part of the printed patent, but will become available to the public once the patent is issued. Some applicants choose to submit program code listings regardless of the number of pages to ensure that their applications comply with the statutory requirements of Section 112, first paragraph.

However, if a programmer of ordinary skill in the art could write a program without undue experimentation from the disclosure of the program list application, that is an application for a software-related invention absent a program listing, and if such a listing is not required to satisfy other statutory requirements, for example, the best mode requirement of Section 112, second paragraph, then the applicant would not need to file a program code listing for the invention.

Based on this reasoning, many applicants typically choose not to file program code listings. A requirement for program listings would prevent applicants from filing applications until product development is complete, which would further delay the process of filing applications, examining applications, and issuing patents for software-related inventions.

In many of the software-related patent applications that I've written and prosecuted, inventors have not yet completely developed their software-related inventions to be patented prior to the filing of the application.

Thus, there is no final program listing to be submitted with the application. This should not prevent the applicant from filing an application on his or her invention. In this regard, it is important to note that in other technologies applicants can and do file patent applications without having completed product development.

Applicants also choose not to file program code listings because filing the listings would make the entire program available to the public, which in some cases may divulge important trade secrets or other information that the applicant may not need to specifically divulge in order to secure patent protection.

Even if applicants choose to submit machine readable listings, such listings may be reverse engineered. As long as a programmer of ordinary skill in the art can write a program without undue experimentation from the disclosure of a programless application and if such a listing is not required to satisfy other statutory requirements, then the applicant should not have to file a program code listing for the invention and divulge important trade secrets.

Furthermore, a requirement for the submission of program code listings, regardless of the form of the listings will only further increase the PTO's burden in connection with both the examination of software-related inventions as well as the practical aspects related to storing program code listings and making those listings available to the public.

Examiners do not have the time to study program listings, regardless of the form in which they are submitted to the PTO, nor does the PTO have resources to waste in storing the program code listings and making them available to the public.

Some of the hardships associated with mandatory requirement for submission of program listings are apparent from the above discussion. There are also a number of problems associated with the current microfiche requirements that are worth mentioning. First is the availability and cost associated with the microfiche appendix requirements outlined above.

When an applicant chooses to submit a program listing of 11 or more pages, he or she must locate a company that provides the microfiche services, a task that is not so easy, and spend additional money to have the listing put on microfiche, a cost that may be high depending upon the length of the program listing.

Instead, if the PTO believes that it is necessary to require appendices for program listings, I suggest that the PTO consider more practical approaches, such as submission of program listings on a CD-ROM or other mass storage device and in a format that may be used by examiners to inspect efficiently and effectively the program listings.

I believe these and other approaches are less expensive and more accessible to inventors of software-related inventions than the archaic microfiche appendices instituted in the current rules.

Finally, I'm also concerned that requiring submission of program code listings would lead to litigants unnecessarily raising issues concerning a program listing should the PTO adopt a submission requirement. This, however, is beyond the scope of these hearings. Thank you for your time this morning to present my views.

COMMISSIONER LEHMAN: Thank you very much, Mr. Berkowitz.

I understand that Ron Reiling is now here. Perhaps you could finish up the morning for us, Mr. Reiling. Ron Reiling is corporate counsel to the Digital Equipment Corporation.

PRESENTATION BY RON REILING

DIGITAL EQUIPMENT CORPORATION

MR. REILING: Good morning, Mr. Commissioner and members of the panel. Greetings from a snow-filled and bitterly cold Boston. I'm representing Digital Equipment Corporation. We are, as you may know, one of the larger suppliers of network computers and software in the world and we invest heavily in research and development to come up with new products and we rely heavily on the patent system to protect that investment.

We are vitally interested in software-related inventions because we spend hundreds of millions of dollars a year in this area. Creativity and innovation drive technology and industrial progress. Thus, the importance of adequately rewarding the world's best minds by safeguarding their software-related inventions through patents I believe will increase dramatically in the years ahead as technological advances in this field accelerate.

In today's global highly competitive marketplace, some believe that we are witnessing a fundamental shift in business history. They are, we say, progressing from managerial capitalism to intellectual capitalism. They believe that the importance of intellectual capital will ultimately cause a dramatic shift in the wealth of the world from material resources to those who control ideas and information, that is intellectual property.

A fundamental feature of the patent system is that it establishes a basis for this intellectual effort to be regarded as an asset and to be traded in the marketplace. Thus, an effective patent system which promotes creativity by providing a beneficial and stimulating environment for inventors is essential for the information age.

This environment will produce a constant stream of new products and competitive processes forging the growth of a vigorous American economy.

Turning now to the specific issues, Digital believes, one, that software-related inventions should be treated the same as any other invention; that no legislative changes are necessary in order to properly protect software-related inventions; that increased training, as well as expanded content and better classification of the prior art available to the examiners would improve the examination process.

We feel it's important that patents can be obtained on all software-related inventions, those at the operating system level, at the application system level, those pertaining to storage or the transmission of information, such as memory data structures, packet switch networks, magnetic and optical media.

We also believe that the standards for patentability applied by the PTO for software-related inventions should be the same as those applied to any other technology. It would be a mistake to single out any technology and treat it in a discriminatory manner.

The issues related to software-related inventions have been evolving for almost 20 years. It appears that we are finally approaching a point in this evolutionary process where predictability may be possible. It would be misguided in our view to attempt to redirect software-related patenting at this time by altering the established standards of review.

However, the PTO appears to have recently changed its standard of review in certain of the software-related inventions by ignoring novel software-related steps or means in the claims, thereby finding the claims anticipated by prior art that does not disclose the ignored claimed features.

This is basically a reversal of the PTO's longstanding claim as a whole analysis in novelty determinations. What's happening in our view in these cases is that the PTO has imported 101 type considerations back into the 102 and 103 considerations.

The PTO has also asked whether the implementing of a known process, technique or method on a computer should be patentable if but for the use of the software the overall process, technique or method is known. I believe the correct answer is yes and that's provided, of course, the software recitations in the claim present a new and nonobvious invention. It should not be the PTO policy or

procedure to exclude software limitations from novelty determinations.

On another point the PTO should not impose any special duty on the patent applicants for software-related inventions under Rule 56. Such applicants should not be required to conduct a patentability search. After all, Rule 56 already encourages all applicants in all technologies to examine carefully the closest prior art information.

With respect to the way a software-related invention is described no special requirements should be proscribed or required. Typically block diagrams are a useful to communicate the software steps and functionality of relationships of components included in software inventions.

Blocks within the diagrams should be deemed adequate illustrations to support elements of both method and apparatus claims. Program code listings should not be encouraged. They should be accepted provided the specification standing alone provides a clear and understandable description of the invention.

With respect to administrative matters, we believe it is vital that the PTO invest in quality. The PTO has recently shown improvements in timeliness and quality of examinations, but further improvements are essential. Congress should approve the hiring and training of more examiners and ongoing qualification assurance programs, including continuing education requirements should be adopted.

The examiner should improve on the quality of Office actions by including better explanations of rejections. Providing only conclusory statements of prior art rejections does very little in advancing the determination of patentability.

Needless to say comprehensive patentability searches are essential and we see some improvement in the PTO in the last few years. However, too often patent offices in other nations encounter references, including U.S. references, which should have been located but were not during the search by the PTO. This has to change.

Another possibility is the creation of an electronic database where one could include software-related documentation and make this database accessible to the public, so that people could add to the database over the Internet, for example.

The patenting process we all agree should include public involvement and we think the mechanisms to accomplish this are already in place, but perhaps are not adequately utilized. For example, we could encourage the public to cite prior art in accordance with Section 301 or the reexamination process might be redefined to provide an incentive for early challenges to issued patents.

One concept might be to substantially reduce the fees in the first three months over a patent's life to encourage people to use reexamination.

In conclusion, software-related patents are of great significance to American industry. We have a vast and vital interest in software-related patents, in valid software-related patents, and the industry is more than willing to work with the PTO in accomplishing this objective. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Reiling. I appreciate your suggestions, the idea of sort of a development of an open-ended electronic database that you could get public input in is a very interesting idea.

That concludes our morning set of hearings. We're going to reconvene promptly at 2:00 this afternoon. I hope since we have heard several of this afternoon's witnesses, I hope that anybody that is in the room this morning that is going to be here this afternoon will realize that, you know, they may be called maybe even more than 20 minutes -- I hope more than 20 minutes -- before their assigned time schedule so that we can conclude our business this afternoon early.

Thank you very much.

(Whereupon, at 12:06 p.m., the above-entitled hearing was adjourned, to reconvene at 2:00 p.m., this same date.)

AFTERNOON SESSION

(2:14 p.m.)

COMMISSIONER LEHMAN: We're about to begin our afternoon session of our third day of hearings on patent and software-related inventions. Before we call our first witness, I'd like to note the fact for those who are here that we have a distinguished visitor with us and that is Roland Deer, who is a Director in the European Patent Office.

Mr. Deer, welcome to the United States. We're glad you have an interest in our proceeding.

(Applause.)

COMMISSIONER LEHMAN: We made quite a bit of progress this morning and apparently our first witness that we had scheduled for this afternoon, Michael DeAngeli has not arrived and, therefore, we are going to go on to Jason Mirabito, Board Member of the Boston Patent Law Association. So if you would join us, please, Mr. Mirabito, maybe we could hear from you.

PRESENTATION BY A. JASON MIRABITO

BOSTON PATENT LAW ASSOCIATION

MR. MIRABITO: Is that where you want me?

COMMISSIONER LEHMAN: That's right.

MR. MIRABITO: I'm sorry I wasn't here this morning. My trip here took 24 hours to get from Boston here.

COMMISSIONER LEHMAN: Did it really? I guess we had some other people from Boston this morning who had a lot of problems.

MR. MIRABITO: I missed a hearing before the Board of Appeals this morning at 9:00, so I made it for this.

COMMISSIONER LEHMAN: We're sorry about that. Just relax now. Tell us what you think.

MR. MIRABITO: Thank you. Good afternoon, Commissioner, gentlemen. My name is Jason Mirabito and I am a partner at the Boston patent law firm of Wolf, Green, Field & Sax. I'm here to testify on behalf of the Boston Patent Law Association, which is an Association of some 400 members, of which I am the past-President.

In the short time available to me today I wanted to concentrate solely on the issues of Topic B. While I was trying to prepare my remarks earlier yesterday, figure out what I wanted to say, I questioned, why is this area different from other areas and why does this area seem to be so fraught with problems that other areas of technology have not been.

An example of that is the biotechnology area. I guess I came to the conclusion that in the biotechnology area, where there has been a lot of patent activity in the last ten years, the general thrust is to publish. If you don't publish, you perish. And perhaps in this area this is an area in which if you do publish you do perish. That is due, I think to some extent to the trade secret licensing status and much computer software.

– 28 –

I think what's -- I don't mean this literally, of course, because certainly computer software programs aren't published, but the underlying processes of them are not generally published.

Our organization recognizes that sometimes shortcomings in both the examination process and the process of uncovering prior art is partly due to this trade secret status of many software developments. We do not believe, however, that the difficulty in searching for prior art should militate and argue in eliminating protection for computer software and that software only be deprived of the protection which is guaranteed to them and to other technology holders.

We should remember that some, I guess it's 20 years ago now, in the '70s through until 19-, really early '80s, the issue of computer software patentability was again before the Patent Office and the Patent Office at that time took an attitude which I would suggest is negative towards the patenting of computer software. It finally took a Supreme Court decision to change that around.

As I see Topic B there are two main themes there. The first theme being what can be done to better examination and what can be done to better the discovery of prior art. And the second is the disclosure of software inventions.

As to the first series of questions, we suggest that the Patent Office needs to be appropriated more funds and the Patent Office, like every other agency always likes to hear that. But I think those monies are needed to better index software technology and to train examiners.

COMMISSIONER LEHMAN: Can I interrupt you?

MR. MIRABITO: Sure.

COMMISSIONER LEHMAN: You know, we don't receive appropriated funds. We're by law fully fee funded. Does that mean you think we should increase the fees to support this?

MR. MIRABITO: Definitely not. I've always found it interesting that this is one of the few agencies that's required to be somewhat self-sufficient while every other agency -- although I understand now the FDA, they're talking about the FDA charging for the analysis they do. But I've always found that very curious that we're expected to, we the public are expected to, fund an agency. The defense agency certainly does not have that problem.

I think if the Patent Office gets the required funds and gets the better training for the examiners, particularly hiring more computer software trained examiners, people with majors in computer science, I think the Patent Office can do what the biotech group did earlier and will rise to the occasion.

With respect to the issue of so-called hidden prior art, this is a very real problem. There are allegations that the so-called prior art has been sitting in software programs and on people's computers for years and years. I think to the extent it's true -- and I think there is some truth in it -- that it is very difficult to search some computer technology, that the Patent Office should, as the Commissioner did

recently in the Compton's patent case, order reexamination.

We, as an organization, are in favor of an expanded reexamination procedure within the Patent Office that would include all the traditional reasons for unpatentability. This would require a slight change to the reexaminations, statute and procedure, but not very much at all.

Secondly, I think another thing which may ameliorate the problem that may exist with so-called bad patents being issued is when the United States, if it does go to a publication system, I think a publication system would eliminate some of those problems because then people would be advised of potential patent rights and then have a right to make opposition to those rights.

I would suggestion this, however, in a day in which most foreign countries have publication within 18 months of the earliest filing date, in many instances, both in software and other areas, one may not even get a first Office action by that point. This is an area in which the owner of the technology will make a decision whether to stick with trade secret protection or to opt the patent mode.

I think an 18-month period is too short sometimes. What we would suggest as a change to that would be that a period of time after the first Office action has been issued, say three to six to nine months there would be publication that would then allow the applicant to see what the prior art looks like and make a determination at that point whether or not to continue on with it.

I would like now to turn briefly to some of the issues that are related in the second theme, that of disclosure to the Patent Office. I've been practicing in this area since at least the early 1980s when one could practice in this area or unless you flip back to the 1960s. I'm not that old.

One, question three posits whether the Patent Office should impose special disclosure standards on software-related inventions. We firmly believe that such a disclosure requirement would be inappropriate as there is no reason for treating software-related inventions differently than other patentable technology. So long as the disclosures meet the requirements of Section 112 and other requirements, we don't believe there should be any other changes.

Question six questions whether the applicants for software-related inventions ought to do a prior art search. Such prior art search, of course, is not required in other areas. We believe it would be inappropriate to require a prior art search. Obviously, myself and other of my colleagues will from time to time do a prior art search for a particular invention but not always. We always have, of course, our great duty of disclosure rules which would take care of any prior art of which the attorney or the inventor is aware is not disclosed.

Questions 7, 8 and 9 I kind of jumbled together and relate to the most effective way to describe software and patent applications. This is something that myself and some of my colleagues in the early 1980s started having to deal with. The issue became, well, do we include codes, do we not

include codes; do we use flow charts, are flow charts sufficient.

I've seen a tendency and a change over time. In the very beginning, the early '80s, we always included code because you never know just disclosing flow charts may not be sufficient and you don't want to get caught with a nonenabling patent.

Then we shifted over in the later times to flow charts are sufficient. I see now people flipping back again. I guess the point I'd like to make is that there is no best way. Certain inventions are best described by the code. Certain inventions are best described by flow charts or pseudo code, and certain inventions, such as combinations of hardware and software, are very unclear how they should be described.

The bottom line again is Section 112. Is the description sufficient to meet the requirements of the statute? A related issue to the requirements of requiring that a list patent software -- I'm sorry -- computer software listings be included as a requirement I think would be inappropriate. It is akin to me to requiring that applicants for mechanically related inventions disclose to the Patent Office the detailed blueprint drawings that make up the machine under issue there.

I think that would be improper in that case; it would be proper in this case. In addition, required computer software listings and software-related inventions would prevent those who wish to file an application and get a constructive date of reduction to practice prior to writing the code. I think that would be another problem with that.

There are many other issues and comments we would like to make had we had an unlimited amount of time which, of course, doesn't exist. But we expect our organization, and we are now planning to give many more detailed submissions in the written March details.

We thank you for the opportunity to have spoken to you and wish you very good luck in what I think will be very interesting endeavors. Thank you.

COMMISSIONER LEHMAN: Thank you very much, Mr. Mirabito and thanks to the Boston Patent Law Association. As I recall you testified or the Association testified in the last hearings that we had here on -- I think it was the harmonization hearings. They also came before us.

MR. MIRABITO: That's correct.

COMMISSIONER LEHMAN: Thank you for putting in your work as an Association and for, you know, going through all the trouble to get here with the weather.

Next, I'd like to ask Jonathan Band if he's here to come forward. Mr. Band is an attorney with Morrison & Foerster.

PRESENTATION BY JONATHAN BAND

MORRISON & FOERSTER

MR. BAND: I am Jonathan Band, a partner in the intellectual property group of the Washington, D.C. office of Morrison & Foerster. The views I express here today are my own.

I attended the PTO hearings two weeks ago in San Jose and I would like to share with you three observations based not on the testimony which you heard, but in my conversations with many of the Silicon Valley spectators. This is, if you will, a report from the Peanut Gallery.

First, using Ron Lorings' perceptive classification a small but not insignificantly minority of the audience fell into the software patents are bad category. While the majority fell into the bad software patents are bad category.

By further discussions with the software patents are bad adherence revealed that they were confused and frustrated by the case law and patentability or software-related inventions and that they had no confidence in the ability of the PTO to search the prior art.

This suggests that if the PTO successfully addresses the concerns of the bad software patents are bad people, many of the software patents are bad people will be satisfied as well.

Second, and following from the first point, I detected a strong mandate for serious procedural reforms that would improve the quality of software patents and eliminate submarine patents. The PTO has already announced that it will introduce legislation establishing a 20-year term from filing and reforming the reexamination process. These proposals met with near universal support in San Jose.

There was also strong support for pre-grant publication of applications and reform of the continuation and division practice. The PTO should give these and the many other amendments suggested close consideration. As the PTO reviews these proposals, it should place the interests of the inventing community ahead of those of the Patent Bar, the primary beneficiaries of the current obfuscation and litigation.

Reform of the system to make it simpler and more predictable while eliminating the game playing and the lawsuits would be a lasting legacy of the Clinton Administration in the technological history of our nation.

And speaking of game playing in the Patent Bar, the current hopelessly confusing state of the case law on the patentability of software-related inventions means that the success of the software patent application turns more on the cleverness of the patent lawyer than on the quality of the invention. This, of course, is backwards.

The PTO should establish a commission consisting of programmers, law professors, practitioners and jurists to establish some order in this area.

My third observation on the San Jose hearings is that there's an underlying concern in the inventing community that in the past decade the pendulum may have swung too far from too little intellectual property protection to too much protection.

As Judge Kazinski of the Ninth Circuit has observed, overprotecting intellectual property is as harmful as underprotecting it. Judge Kazinski further notes that

creativity is impossible without a rich public domain. For this reason the intellectual properties are full of what Judge Kazinski calls careful balances between what's set aside for the owner and what's left in the public domain for the rest of us.

Because patents and copyrights are monopolies created by the intellectual property laws, regulation of those monopolies is the responsibility primarily of the intellectual property laws and only secondarily of the anti-trust laws.

Given the PTO Commissioner's emerging role as the administration's intellectual property policy advisor, the PTO must be vigilant about maintaining the balance between protection and competition. Thank you for your attention.

COMMISSIONER LEHMAN: Thank you very much for those comments. I really don't have any questions. They simply strike a responsive chord on my own thinking. I thought that was a good description and analysis of our San Jose hearings.

Next, I'd like to call Michael Chakansky. I hope he's here. We're running a little outside of the 20 minutes.

If not, is Paul Heckel here? I did not see him. Well, we're going to have a quick hearing this afternoon.

Leonard Suchyta, from Bellcore, Bell Communications Research, General Attorney there.

PRESENTATION BY LEONARD CHARLES SUCHYTA

BELLCORE, BELL COMMUNICATIONS RESEARCH

MR. SUCHYTA: Good afternoon. My name is Leonard Charles Suchyta. I'm a patent attorney and I'm also the Assistant Vice President and general attorney for the intellectual property managers for Bell Communications Research, Inc., more commonly known as Bellcore.

The views that I will be presenting today are the views of Bellcore. On behalf of Bellcore and myself, we express our sincerest appreciation for the Patent Office permitting us to present our views on this important matter.

A short history of Bellcore. Bellcore is owned by and is a research engineering organization of the seven regional telephone companies which was established in 1984 as a result of the divestiture of what was known as the Bell System.

Bellcore's research activities are in support of the exchange and exchange access telecommunications services offered by these companies and a large part of these activities are the development and the maintenance of software systems utilized in the provision and the administration of the exchange and exchange access telecommunication services.

Revenues for Bellcore are roughly $1 million and they have slightly less than 7,000 employees, most of whom are employed in New Jersey. Software development and maintenance is a significant portion of these activities, in that of the 7,000 employees roughly 3,000 Bellcore employees have this type of function.

More from a perspective point of view, there are roughly 4,500 technical employees at Bellcore with approximately 2,100 actually performing software-related services. The software that Bellcore develops costs in excess of tens of millions of dollars to develop and these are protected both by patents and copyrights as well as by trade secrets.

As a result, Bellcore views patent protections for software as critical to the protection of the investment of Bellcore and its owner companies and the rate payer ultimately. Bellcore, while not offering any detailed testimony on Topic A, would like to set forth for the record that it strongly favors patent protection for software-related inventions. When Bellcore provides its written comments it will certainly provide detailed comments with respect to Topic A.

With respect to Topic B, Bellcore would like to address the specific questions that were raised in the notice of the hearing. First of all, do the patents and the printed publications provide examiners with a sufficient and representative collection of the prior art to assess novelty and obviousness. We believe that patents and the printed publications provide sufficient prior art.

We base this conclusion on the fact that major companies who are actively seeking patent protection utilize patents for the protection and also publish. This includes Bellcore. We believe that publication as well as patent protection is especially true for the computer and the telecommunications industries.

However, we are well aware that prior art collections can always be improved. As a result, Bellcore has agreed that it would voluntarily submit nonproprietary software publications to the Patent Office's library to assist them in their collection for prior art.

The next question that we would like to comment on is, can an accurate measurement of the ordinary level of skill in the art in the field of computer programming be derived from printed publications and issued patents. The answer is yes.

The ordinary level of skill for a software-related invention is the same as that as for any other invention. It makes no difference whether they be software or hardware. There is an assumption that software patents are those inventions conceived by programmers or they're somewhere down at the programming level. This is generally not the case and certainly this is not the case in the case of Bellcore.

The software-related inventions for Bellcore, which we seek to protect by patents, come from software systems designers whose tasks are to conceive and to define the various functions and their interrelationships which can then be combined to comprise the software system. The inventive aspects are generally found with these tasks, not with the detailed coding implementations that are left to other non-highly-technical people.

The third question is: Should the PTO influence a special duty on patent applications for software-related inventions? We believe that the requirements of Rule 56 are sufficient and we do not believe that software-related inventions should be treated any differently from those afforded any other patent application for other technology.

We would, however, be receptive to helping the examiner to identify the areas of search or to comment on those references where the examiner has some difficulty finding their relevance.

The next question is: Do the standards governing novelty and obviousness as applied by the PTO and the federal courts accurately reflect the inventive activity in the field of software design and development? Our answer is yes.

Novelty and obviousness are statutory standards that are equally applicable to software-related inventions as well as to other inventions. The fact that you mentioned hardware or software should not change that statutory standard.

The next question we'd like to address is: Should the PTO require applicants for software-related inventions to conduct a search and include copies of documents? We believe the answer is no.

The applicant for a software-related invention should not be required to undertake any additional obligations other than those set forth in Rule 56 and we believe that Rule 56 adequately sets forth the standard.

The last item we'd like to comment on is the format that software applications should take. Should the filing of source codes be required? Our answer to that is, when we file software-related applications, meeting the requirements of 35 U.S.C. 112 is sometimes very troubling. Also sometimes uncertain and we do not believe that the filing of the source code serves any particular beneficial purpose, the same for the object code.

The patentable methodologies and the techniques of software-related inventions are really best described by some detailed specification that's accompanied by drawings which include flow charts and block diagrams. To require the filing of source code or object code would do little to meet the requirements of Section 112 since the source code and the object code may not even be readily understandable by those skilled in the art or by the patent attorneys who are actually preparing and filing the patent applications.

In fact, the source code and the object code may even serve to obfuscate the patentable subject matter. The obfuscation would especially be true where the amount of the source code or the object code filed is so large as to make it superfluous and/or nonintelligible.

Also the source code or the object code may not be sufficiently annotated to provide any source of information or it just simply may not be directed to the patentable aspects of the invention.

It is our position that the filing of the source code should not be required and, in fact, should not even be permitted because we believe that it will do nothing to facilitate searching and that it is really contrary to some of the other protections that -- I'm sorry.

Also we believe that the filing of the source code may not be appropriate in certain circumstances since it really may disclose the trade secret aspects of subject matter which is not the subject of the patent application. This certainly is not consistent with requirements nor the objectives of the other forms of statutory protection.

Once again, on behalf of Bellcore we thank you for permitting us to be heard on this important matter. And if you have any further questions we would be more than happy to answer them. Thank you very much.

COMMISSIONER LEHMAN: Thank you very much, Mr. Suchyta. We appreciate the time you have put into this and Bellcore has.

I'd like to go back now and see if Michael Chakansky has arrived. Apparently not. And I don't think Mr. Heckel has arrived either. I think we apparently are having some transportation problems up and down the east coast here.

Did Mr. DeAngeli arrive?

(No audible response.)

COMMISSIONER LEHMAN: Then we'll go on to D.C. Toedt. Oh, I'm sorry, Vern Blanchard. I'm sorry, I missed Mr. Blanchard. Sorry.

PRESENTATION BY VERN BLANCHARD

AMERICAN MULTISYSTEMS

MR. BLANCHARD: Good afternoon. According to Mr. Band I probably fall within the software patents, or bad bunch and even on a good day I think bad software patents are bad. So maybe we can take it from there.

I'm CEO and janitor of what's left of American Multisystems. I'm hopefully representative of the smaller companies which generally don't have the opportunity to come speak before you.

COMMISSIONER LEHMAN: That's one reason we went to the Silicon Valley and we had a lot more of the people who felt that software patents were bad out there. So we do know a little bit. They don't tend to have Washington lawyers as much.

MR. BLANCHARD: Well, I think that's maybe why they sent me.

COMMISSIONER LEHMAN: Where are you from?

MR. BLANCHARD: I'm from San Diego.

COMMISSIONER LEHMAN: I see, so you came all the way.

MR. BLANCHARD: Yes, I did.

COMMISSIONER LEHMAN: Thanks.

MR. BLANCHARD: The patent system was enacted to promote the useful sciences. You've heard arguments stating that without the patent process the software industry won't produce and it will ultimately fail. My belief is that until the door for software patents was opened judicially we had a flourishing software industry.

I believe that unless we close that door and get back to where we used to be, the United States will be relegated to a third world status as far as software is concerned. Programmers are not a stupid bunch. When we're faced

with endless and expensive litigation and uncertainty, we're just going to migrate to other fields.

And you, by keeping things as they are, will cause the best and the brightest in the software industry to go to other activities and professions. Our innovations will be stillborn. The public loses when that happens. I'll get up on a little high horse here. It probably sounds a little melodramatic, but right now we have the power --

Specifically, you have the power in changing some of the rules that will make or break an entire industry. I believe that software patents must be eliminated. The patents granted over the last decade or so are now being used to attack developers for selling programs that they have independently developed.

We're reaching a point where new companies are going to be barred from the software arena because most programs will require licenses from dozens of patents. I've seen quite a few of them that in my opinion are absurd and were very obvious even at the time they were granted.

By requiring the licenses it's going to make projects unfeasible and I was one of those particular companies. You're going to be inundated with platitudes from both sides of this issue -- hopefully I'll inundate you with a few things that will change your mind -- you'll be told of lofty principles and moral and ethical high grounds.

But the bottom line is, the actions of the PTO affect people. You've heard that software patents are necessary to protect the small company. American Multisystems is one person. That's me. I'm probably typical of many start-up companies. And we'll get into what my story is.

I'm a pretty good programmer. In fact, outside of this room I'll probably tell you I'm a great programmer and lay out a couple other descriptions of how well I can program. In 1991 I was approached by a client who invited me to partake in the American dream. If I could program a bingo program I could taste the good life, which I did. I thought there would be no problem at all. Bingo is a real simple program. It's a child's game, in fact.

Most computer programming classes, this is first year stuff, you design a bingo game or a checkers game or something along those lines, very, very simple. Besides, I had already, as it turned out, just by coincidence, played an electronic bingo game back in the early '80s on some OSI computers, for those of you that remember OSI.

Certainly patent law had nothing to do with my analysis of whether or not I could do the project. I abandoned all my other projects for two years. And what you can read into that is I did it without pay. I saw the opportunity and I went for it.

Ultimately I developed a superior product. My customers liked it. The competition out there respected it. Life was good. And then I was introduced to the patent system. One of my competitors sued me for patent infringement. And irrespective of the fact that I always believed that software was an expression of an idea and covered under the First Amendment -- and we won't get into legal details because I'm sure there are probably many of my colleagues

out here who will take issue with that -- besides that the fact that playing bingo on a computer is not novel, it's not unique. There's nothing inherently brilliant about it.

The program that I created is nothing more than mathematical algorithms. And the fact is, I did nothing ethically or morally wrong and effectively I was put out of business.

The realities of the patent system as it relates to computer software is this --

COMMISSIONER LEHMAN: You need to tell us a little more how that happened. There are only two ways, it seems to me that you would be put out of business. One is that you decided to shut your doors in the face of the patent claims from your competitor or two, that the competitor actually enforced their patent in some way that caused you to go out of business.

MR. BLANCHARD: In fact, that's what happened. That's what I'm getting to. They filed suit for patent infringement. The patent in question covered a hand-held calculator type device and it was broadly written enough to where since I was a competitor they thought they could include my program, which happened to be run on plain vanilla, IBM-clone, off-the-shelf Comp-USA kind of hardware.

The filed for an injunction which, of course -- the problem with the system as it is now is judges are not particularly literate in technical issues. When they see a patent they presume that it's valid, as they should. They're in a position if the PTO says that this is a valid patent, well, of course, it's a valid patent. They're not necessarily schooled in knowing the nuances of whether a particular claim reads on an invention or not.

So initially the small company or the people that are defendants in these actions are behind the eight ball. We must, even though the burden of proof is supposed to be on the Plaintiff showing that their patent is valid, the realities are that judges, when they see a patent, believe that the patent is valid.

Now what the bottom line is, is when small companies are involved in patent litigation you have just about by filing of the suit put most companies out of business. My particular situation was unique. As it turns out, I had some legal schooling. Everything that could possibly have gone right, went right in my case and yet I'm out of business and I'm in debt over $100,000.

The mere filing of a patent infringement suit will kill most small companies.

COMMISSIONER LEHMAN: Does that mean you won the suit?

MR. BLANCHARD: Well, yes, I'm victorious. There was actually -- I'll take that back. We're still in litigation. The state of our suit was that they filed for a preliminary injunction which was granted. We, of course, countered with points that we made stating why she should overturn it, which she ultimately did.

And, again, everything -- in my particular case things went well. I was able to do most of the legal work, saving

probably hundreds of thousands of dollars. My adversary spent more than $450,000. Now this was just at the very first stage and I was into it thankfully only for $100,000.

We had prior art searches done by the League for Programming Freedom. We found perfect prior art. Everything went right. I had experts in the industry sign on and file -- and I'll make this brief -- on my behalf. We had a judge who after giving a decision that said yes, this infringes and you're restrained actually took the time to learn about patent law and actually realized that she had made a mistake and reversed her decision.

That rarely a happens. I mean, how often have you heard a judge say, I've made a mistake, here's the new ruling. I mean, we even expected her to say, if you don't like it, appeal it. Everything went right in my particular case and yet American Multisystems is not a viable company today.

I copied nothing as far as the code. Very simple. Again, it's a very simple code, playing bingo.

COMMISSIONER LEHMAN: Well, is that because the preliminary injunction was lifted so that you could continue to do business? Why did you go out of business then?

MR. BLANCHARD: The cost. We have $100,000 in legal fees, not including all the time and effort that we were down, patent companies -- or the aggressor in my particular case, of course, went out into my particular industry and waved around the preliminary injunction. Effectively, we no longer can partake in that market.

The realities are, is that happens all the time. By filing suit against the small company -- in fact, I'm sure that there are many patent attorneys here will tell you what a retainer will cost and what just even answering a complaint will cost small companies.

COMMISSIONER LEHMAN: Was your case, your defense, based upon the fact, the response that you did not infringe or was it based on the validity of the plaintiff's patent?

MR. BLANCHARD: Yes, we took it from all those aspects.

COMMISSIONER LEHMAN: And apparently there hasn't been a final judgment, so the judge has not ruled on the patentability claim?

MR. BLANCHARD: No.

COMMISSIONER LEHMAN: On the viability of the patent.

MR. BLANCHARD: At this point we're still --

COMMISSIONER LEHMAN: And is it your view that the patent was -- the basis of the infringement lawsuit was not valid?

MR. BLANCHARD: My opinion is yes, that it was not valid. It was written so broadly that it covered everything from a wristwatch, calculator, computer, laptop.

COMMISSIONER LEHMAN: So it fell back into the second category that Mr. Band described as bad software patents in your view?

MR. BLANCHARD: Yes.

COMMISSIONER LEHMAN: Did you ever think of using the reexamination procedure which would have presumably been a lot less costly way for you to resolve this?

MR. BLANCHARD: Yes. We did consider that. The problem with that is, by reexamining they may very well have had a good patent as to a particular device. But we still did not believe that it would read on our invention. By going and reexamining it and coming back with you, the PTO, saying that it's valid we then have no chance in court.

I'm supposed to stop speaking. But if you have any other questions.

COMMISSIONER LEHMAN: Well, I've kept you going. So if you want to -- if you have a couple more minutes, why don't you continue because I interrupted you unlike some of the other witnesses. But I wanted to flesh out what the main objections and the main points were in your experience.

MR. BLANCHARD: Sure. The problem that's unique, I believe, to software and I've heard some of the other speakers state that software should not be differentiated from other fields. I was able to complete a very complex project because of the programming tools I had available, not because of any technique or patent or anything else that anybody had taught by virtue of the patents.

The innovation in software is because of the tools that we have available to us. We can nearly instantaneously change things, see how they will work. The tools provide the innovation, not the prior coding.

The overall effect if we continue to have software patents, in my opinion hinder, the industry, is that the PTO will obstruct that which you were charged to promote, which was the useful sciences. Computer programmers, we share a program all the time. I invite you to log onto many of the informational services. We help each other. We submit code back and forth. And that's how computer programmers assemble pieces of code, bits of ideas, bits of techniques into finished products.

Where computer software is different from many of the other fields are because of the tools that we have. Our compilers today do things that were unheard of even five years ago, and not because someone had patented any particular technique. It's just the evolution of the software process.

So I would implore you to change the rules as to software patents to eliminate them or at least make it so that we fall into the bad software patents or eliminate the bad software patents.

COMMISSIONER LEHMAN: Thank you very much. Now you could help us a little bit if you would -- since we don't have the time to get into all the details of your case. But I assume since you were in litigation you have memoranda or motions and so on and so forth --

MR. BLANCHARD: Yes.

COMMISSIONER LEHMAN: -- filed in court, maybe even a decision of the judge. It would be really useful to have a

record to look at as an example, you know, to find out what was really going on there, get to the bottom of your concerns. Obviously to the extent that, in fact, you had a truly valid patent there and you may have, in fact, been infringing that patent. That creates one circumstance.

If in fact your allegations had some merit to them or your defense did, that the initial patent was overly broad, that suggests that it was a bad software patent, bad software patents are bad and maybe that we should have been doing something about that.

But we can't really get to the heart of that until we look at some of the more details of your case. We hear this, certainly this statement, made. We've heard it in the Silicon Valley. We've heard it from you, that there is a real chilling effect going on here. I would like to get to the bottom of that. Is that indeed the case?

And to get some very specific examples of it if people are, in fact, having that problem, so that we can determine whether or not there is a serious problem of widespread scope and then to maybe address if there is how to deal with it or are these just idiosyncratic rare circumstances that every -- and that happens in life.

I mean every once in a while in business sometimes, you know, you get some bad luck. I'm trying to determine whether this is bad luck occasionally or whether there's some systematic pattern of problems here. You can help us with that by supplying what you have.

MR. BLANCHARD: I've got probably five feet of filings. Would you like them all?

COMMISSIONER LEHMAN: Yes, you can send them to Jeff Kushan here and he can stay up until 3 o'clock in the morning for a week, which he will do.

MR. BLANCHARD: Thank you.

COMMISSIONER LEHMAN: And you got his Internet number. Actually, it's in the witness list, I think, or one of the handouts that's out on the table.

Next, is Mr. Heckel here yet?

(No audible response.)

COMMISSIONER LEHMAN: Apparently not. Did Mr. Chakansky come?

(No audible response.)

COMMISSIONER LEHMAN: Mr. DeAngeli?

(No audible response.)

COMMISSIONER LEHMAN: Apparently not. Then I guess we're down to D.C. Toedt of Arnold, White and Durkee from Texas. I think people are having a hard time getting into National Airport now and he wasn't on our list until 4:30, but I don't think we're going to be here until 4:30.

Joseph Hofstader is here, I think.

Well, I don't know quite what to do. I think he was the last witness. So actually we're at the end of witnesses here. Yes, sir?

MR. CURRY: Given that you have some time, would you allow some informal discussion? Just for a couple of minutes.

COMMISSIONER LEHMAN: Well, I would permit you to come forward if you wanted to make a statement for a few minutes since we have time. Let me say this, we have a lot of stuff to do here. We're really busy and really crunched time wise. So it's not like we have all afternoon to -- we have a lot of good things to do with our time if we do adjourn the hearing early. But since we do have a few minutes and since these people didn't come, I'd be happy to let you come forward and make a statement if you'd like. If you'll identify yourself, please.

PRESENTATION BY EDDIE CURRY

IMAGE SOFT, INC.

MR. CURRY: My name is Eddie Curry. I'm from a company called ImageSoft, Inc. based in New York. We're a software publishing company. We are right now are involved in a patent infringement suit which has been suggested that a patent that we're offering is infringing on someone else's patent. I just want to make a couple of brief remarks if I may. I appreciate your allowing me to speak.

I've been in the software publishing business since 1975. I was at a small company in Albuquerque called Mentz. It built the first microcomputer. That's where Microsoft originated. I've spent a lot of time watching the industry develop.

This is my first experience with patent issues. And what I've experienced, briefly, is that in looking at the particular patent in question the patent is incredibly broad, making it very difficult for us to respond in a way that we would like to.

There is virtually no reflection of any consideration of prior art in the patent itself, other than some oblique references to some existing patents, which are pretty far afield from the material that's covered in the patent itself. But there is a considerable body of prior art which we've been able to document.

The dilemma is the following. It's pretty obvious from listening to the comments that have bee made here, it's pretty obvious in what I've read and what I've learned, that the reexamination process is a fundamentally flawed process from the perspective of someone like ourselves.

We have spent to date about $120,000 just arguing over the venue in which this case is going to be heard and we still don't have a venue decision. We filed an action in Federal Court in New York.

We would like to use the reexamination process because we are confident that if we, in fact, could have a fair and equitable hearing of the facts that it would be very difficult for this patent to stand.

I have spoken in the last 30 days to about six law firms in New York City, all of whom specialize in intellectual property, to a man, every firm, or to a firm every firm has

suggested strongly that we do not avail ourselves of the reexamination process because they have little faith and belief in it, because they believe it accrues largely to the benefit of the patent holder, that it will afford an opportunity for the patent holder to extend or otherwise modify the coverage of the patent in ways that may not have been anticipated at the time the patent was filed, but certainly wouldn't accrue to our benefit or may not.

And more importantly, if we invoke that process, we are then operating in a substantial handicap if that process produces a result that is not in our favor in terms of litigation as we would go forward.

Now I represent at the moment about 15 different authors of software products. Our business is to take small companies such as the one you heard about here. We specialize in development tools. It's a fairly high technology end of the business.

I think the problem here is that we ought to be able to appeal to the Patent Office, we ought to be able to appeal to the reexamination process, we ought to have confidence that we would have a fair and equitable hearing and if the facts bear out that we have, in fact, infringed then we'll suffer the consequences.

My suggestion is that at a minimum the Patent Office ought to recognize the fact that it probably has issued some patents that were overly broad, that probably in retrospect ought to be reexamined, ought to be critically reexamined. They ought to broaden the opportunities for people such as ourselves to participate in that process so that we don't have to be at arm's length in terms of making submissions and then waiting in the wings to find out what the conclusions are going to be; and that that process ought to work and be fair and equitable.

My guess is that if we poll the people in this room we'd find out that they would agree this is not a process to be used. I would further suspect that if we poll the people sitting up here they, if they're candid, would have to admit, although they probably may choose not to, that it's not a fair and equitable process.

Now I think that at a minimum there ought to be a watershed that says we're going to take into consideration that there are people that right now are suffering from this flawed process and do something to address that where possible.

The other problem we have is, it's not likely that you will do anything in the near term that will help us. So we probably are going to be left to proceed without the reexamination process even though we believe very strongly that we could present a very substantial case that an error has been made.

So you can't plot a curve with only one data point, but we are one data point. We're spending a lot of money for reasons that we don't fully understand. We're convinced we shouldn't be spending this kind of money and we don't have recourse through the Patent Office that we can feel comfortable with. That's really my comment.

COMMISSIONER LEHMAN: Well, thank you. I appreciate those comments. I think those were extremely helpful and useful about perspective. They certainly lend a sense of urgency to our work here to try to get a more responsive system in place as quickly as possible.

Let me just call the witnesses again here. See if anybody's come in the door. I don't think they have. Michael M. DeAngeli. Michael Chakansky. Paul Heckel. D.C. Toedt -- is it Toedt? -- and Joseph Hofstader.

I think what I'm going to do in view of the fact that we're way ahead of the schedule and we did say for people to be here at least 20 minutes in advance, and we have a real backed up schedule. I have a very backed up schedule and lots of prices and problems to deal with.

What I'm going to do is suggest that we recess the hearing until 4:15 and that at that time I ask Mr. Kushan to reconvene the hearing and to chair it and to take testimony from -- if we have any of these people who manage to straggle in and at least give them, especially since I suspect some of them are trying to get here by plane, and it would be very unfair to have them go through the hell of trying to fly in this weather and then land at National Airport, get all the way here and then not have the hearing.

So I think we at least want to give them that opportunity to put their views on the record here in this forum. If they don't show up by 4:15 then we'll obviously take their testimony in written form, either through the mail or if they want to send it to us on electronic mail through the Internet they can do that.

So with that I'm going to adjourn the hearing until 4:15 and Mr. Kushan will reconvene it for any of the stragglers that there may be.

(Recess.)

MR. KUSHAN: We've reached a consensus. The two speakers that we've identified as being here are going to testify tomorrow morning in our a.m. session.

So unless the other three people, which I should probably read off one last time are here, we will cancel the hearing for the remainder of the day and reconvene in the morning. The three people that weren't identified before Michael DeAngeli, Michael Chakansky, and Paul Heckel. I don't see Paul. Michael DeAngeli is in California.

So we're 0 for 3. That means that we're going to cancel for the rest of the day today and we'll reconvene tomorrow morning at 9:00 a.m., probably until about 12:15. Thank you.

(Whereupon, at 3:20 p.m., the hearing in the above-entitled matter was adjourned, to reconvene on Friday, February 11, 1994 at 9:00 a.m.)

PROCEEDINGS

MORNING SESSION

COMMISSIONER LEHMAN: Let me just make a couple of opening comments. First let me introduce everyone here, in case you don't know, I'm Bruce Lehman. My title is the Assistant Secretary of Commerce and Commissioner of Patents and Trademarks. And this is Larry Goffney, who is our Assistant Commissioner for Patents designate.

And then we also have Mike Fleming who is one of our SPE supervisory patent examiners. If you have any follow-up or any questions today to this, you can talk to Mike about it, administrative type questions, or any other questions he can help you with.

But the staff person for these hearings if Jeff Kushan. His telephone number is 703-305-9300, he's way out at the far reaches of Northern Virginia, and he's not here today.

I think among the papers somewhere there is this Internet address on there, too. You can certainly find it there.

For those who weren't here, we will have a transcript of this hearing. The transcripts will be available after February 21st this year, and paper copies will be available for $30 and they will be available on the Internet at our FTEP site for free. That site is comments, period, USPTO, period, GOB.

Also, the transcript from our December 20 Federal Register notice will be available about the same FTEP site.

What I would like to do is that we have two witnesses from yesterday who didn't make it. They had problems with airplanes. It started yesterday and so we found ourselves finishing very early yesterday. So we'll start with them. And the first is D.C. Toedt, from Arnold, White and Durkee who comes all the way from Texas.

Shall we just have them -- do you mind sitting in here? And you can turn towards us and use that microphone and talk into it.

PRESENTATION BY MR. D.C. TOEDT

ARNOLD, WHITE AND DURKEE

MR. TOEDT: First off, thank you very much for accommodating the viscidities of travel. I found out a little while ago that the real reason for my trip, which was a federal circuit oral argument this morning, was canceled. So I'm glad this was able to go forward. I appreciate your working it in.

COMMISSIONER LEHMAN: I should say, this is the advantage of a fully user fee funded agency.

(Laughter.)

COMMISSIONER LEHMAN: You've got to be there when your customers are there. The court is not a full user fee.

MR. TOEDT: As Mr. Commissioner indicated my name is D.C. Toedt. As requested in the Federal Register notice of this hearing, let me summarize briefly for the record my affiliation.

I'm a shareholder and chair of the Patent Prosecution Practice Committee at Arnold, White and Durkee, practicing in the firm's Houston office. Much of my firm's practice and my own work relates to the computer industry and to computer software. My remarks today, however, represent my own views and not necessarily those of my firm nor of any of its clients or its other attorneys. My remarks are directed strictly to procedural questions and not to the substantive issues that have come up in these hearings.

For the convenience of the panel, the written version of my remarks includes something of an executive summary beginning on page 2.

Mr. Secretary, you mentioned just now, and in San Jose two weeks ago, your focus on the customers of the PTO, and we're all aware of the Clinton Administration's commitment to reinventing government. It sounds as though you're familiar with the concept of reengineering.

The PTO has made considerable progress lately in improving the quality of examinations, but the challenge faced by the Office is broader than that. The Office should be concerned with doing the right things in today's high technology world, and not just doing things right as that might have been defined years or decades or even centuries ago.

One of the first steps, of course, is figuring out who the customers are and what is it they want. In the broadest terms, the PTO's customers are the people who participate in patent enforcement, by which I mean, not just litigants -- judges, juries, attorneys -- but companies doing license negotiations, design work, deciding whether they can compete with a patent owner, or whether they stay out because they respect the patent rights.

I'd like to address three points today concerning what the PTO can do for those customers. Some of my suggestions frankly even to me seem a little bit off the beaten track. Some might work. Some might need fine-tuning. Some might be wildly impractical upon further thought or maybe in actual practice.

First, the Office should experiment within the existing statutory framework through notice and comment rulemaking, with borrowing some approaches from the Securities and Exchange Commission. In some notable respects the PTO's work is very similar to that of the SEC. A company or an individual does similar things when it applies for a patent and when it issues securities. In each case, it's going to the public and asking, broadly speaking, to give it an asset for use in its business. In effect, it's saying to the public, let's make a deal.

The price the public levies is information in the offering document, whether that's a patent application or a securities prospectus. Both the PTO and the SEC are charged with ensuring that when a company goes to the public seeking such an asset, the public gets what it pays for.

The U.S. securities markets are considered to be the best in the world, so maybe there's some lessons to be had there. And it's interesting because the PTO and the SEC

take considerably different approaches to their work and to their respective uses of administrative resources.

The SEC does not use a one size fits all philosophy. If your proposed securities offering is a limited one, a low end offering with limited potential impact on the public, you can use short form disclosures, streamlined SEC approval proceedings.

If you're willing to settle for a low end asset, restrictions on the dollar amount of the offering, the amount of solicitation you could do and so forth, you can use a qualification proceeding under Regulation A as recently amended specifically for small business owners, instead of a full blown public offering registration, or you could even be exempt from registration entirely.

Every venture capitalist and every small business pretty much knows it can make a lot more sense for a company to go for such a low end securities offering first, and hold off on a full blown public offering until it clearly makes sense.

The other difference is that the SEC tries a different way of getting the most bang for its buck. It prescribes fairly detailed requirements in advance for a disclosure content and format of an organization, and in some instances certification by outside professional CPAs, for example.

The SEC is very selective about how it uses its investigation and examination resources. It doesn't do merit review of securities offerings at all unless a problem comes up and they have to deal with enforcement proceedings. They save their resources for when they can do the most good for the public.

The SEC's examination of offering documents is usually confined to determining that the documents comply with the extensive formal requirements. If you're in this kind of business, you need to disclose this, this, and this, in such and such order.

Staff can get pretty picky about whether you've complied. But even so, securities offerings are approved with what we patent lawyers would regard as blinding speed.

The Commissioner might have authority under the existing statute to create analogous low end patents for people who want them, like small businesses, for example, that can be obtained quickly and inexpensively without a full blown examination proceeding.

By regulation the Commissioner might require applicants to file applications that conform to specified content and format standards, depending on the argument they're in. And an applicant that wanted to could file a written election to waive certain statutory rights associated with a patent, and reduce the impact of the patent on the public.

The Commissioner could then cause a limited examination to happen. The statute says only that the Commissioner shall cause an examination to be made -- and then issue the patent quickly.

The applicant's written election might include, for example, voluntary acceptance of limitations on statutory rights and remedies, maybe an obligation to prove patentability in any

infringement litigation, maybe just a few claims, maybe an independent prior art search.

If the application and the written election documents appear to be in order, issue the patent. Treat the written election as a continuation application. Suspend action on the continuation for some period of time. And if it turns out to be worth it to the patent owner in the long run, the patent owner can ask for a full blown examination to go to a conventional, what would now be a 20-year patent, subject to broadening of reissue limitations and intervening right considerations.

I think many small businesses and large companies would love to have such an option available. One of my colleagues that deals mostly in biotech areas said that she thought many of her clients would be delighted to be able to get some protection up front, and wait until it becomes more clearly advantageous to go through a full blown proceeding.

The Office should try that out on an experimental basis. My written remarks go into a fair amount of more detail about that possibility.

Now, a friend of mine who is in-house at a large company's patent department commented that this sounds uncomfortably like the Japanese system, where an applicant can wait years to request examination and businesses might have to wait that long to know whether a patent got ever issued.

I see a critical difference. In Japan, as I understand it, the applicant's incentive to request examination at the end of the -- I think it's a seven-year period -- is to go from zero protection to full protection. Here the differential is much smaller. The low end patent owner has some protection already. So there's much less upside and much less incentive to try and go for a full blown examination at the end of whatever the waiting period is.

My second suggestion is that we get rid of file ping-pong in examination proceedings. As an attorney, I never know when an Office action is going to hit my in box. It could be years after filing. The examiner never knows when I'm going to respond, if at all. He never knows when I'm going to pick up the phone and call and ask for an interview, he or she.

I sometimes wonder whether, as a result, some attorneys and examiners unconsciously focus more on getting the file off of their desk and onto someone else's desk, than on getting a client's project finished.

Moreover, sometimes it can seem like it's difficult to get meaningful attention from an SPE. The SPEs are busy. They are very busy. They might have a dozen or more assistants to supervise. And every now and then you get the feeling that you're like in a situation where you're buying a car.

You talk to the salesman, and the salesman says, yeah, I think we can do that. But the salesman has to go off to talk to the sales manager in the back room. Sometimes you make the deal, and sometimes the salesman comes back and says, sorry, we can't do that.

It's not like that in appeals to the board. It's not like that in interferences. And more particularly, it's not like that in trial work. If the judge wants it to, the scheduling order means what it says. If you're on the Eastern District in the rocket docket, in Judge Sam Kent's court in Galveston, you will get your pretrial work done, you will go to trial on schedule. You get in, you get it done. Everybody gets very focused because that's their one shot.

Let's try doing some patent examinations that way. Let an assistant examiner function like a junior prosecutor in a DA's office. He can try cases under the tutelage of a more experienced attorney, but he's trying the cases. Let a primary examiner be the "judge." Have discovery cutoffs for exchanging prior art. Do whatever claim amendments are desired, whatever evidence of patentability against patentability is desired. Propose filings and conclusions just like examiners do now, just like attorneys do now. And let the primary make the decision, a first and final action.

If the action is adverse, take it up on appeal. Tape record the hearing maybe. It could be just a low key interview. It doesn't' need to be a complete adversarial proceeding. Transcribe it to get a written decision. It could be a lot like a board of appeal, a lot like an interference.

It would make life easier for attorneys, I think. Many examiners would probably enjoy doing administrative trials instead of having work shoved into their in-box. I think the quality of the examination would go up, and the throughput volume might even go up.

Now, my in-house friend said he thought a lot of old-time patent lawyers would be very nervous about this, that a lot of them like the leisurely practice, where you've got three to six months to handle an Office action that comes in.

That is a valid concern, but it is certainly not the driving one.

Mr. Secretary, many practitioners are delighted that the Office is working so hard on the examination process. You have a wonderful opportunity to help improve the role of the PTO in promoting the progress of science and the useful arts.

Thank you very much for the chance to participate.

COMMISSIONER LEHMAN: Thank you very much. I might want to just ask you a question, if you would bear with me for just a second.

First, I would like to say for the record that your testimony was extremely polished and very well delivered. And I know what the reason for that was. You were a student of my colleague Larry Goffney when he taught you at the University of Texas.

So it's a good illustration of, you know, if this is what we get from the student, just think what we will get from the master.

The procedure you were talking about offers sort of a range of options. In a sense, some of the other countries already have this. In Europe some countries have sort of

petty patent systems. The Germans have it. And that's one of the kinds of things that you're talking about, right?

MR. TOEDT: Correct.

COMMISSIONER LEHMAN: The advantage of that specifically for what we're talking about today would be that at least this would enable us to focus the examination resources on the really critical issues and the really critical technology.

It would also have the advantage, then, I assume for the -- if you want to use the term petty patents, whatever you want to use -- it would have the advantage of getting that information out there, at least, in the public domain so that people would know that it was there, would be aware that it was lurking out there.

Presumably they would then be able to prepare, should that -- if they disagreed with the patent claims and the patent applicant decided to go for the full-blown patent, they would be well-positioned then to come in to make certain that the Patent Office had the relevant prior art and so on.

Does that sort of describe the advantages of the system that you just outlined?

MR. TOEDT: Those are among them, yes, sir.

COMMISSIONER LEHMAN: Those are among the advantages. That was the answer to that.

Professor?

COMMISSIONER GOFFNEY: Great presentation. Thank you very much.

(Discussion off the record.)

COMMISSIONER LEHMAN: Next I'd like to call Joseph Hofstader. Joseph Hofstader is basically sitting in for his father, Christian Hofstader.

MR. HOFSTADER: My brother.

COMMISSIONER LEHMAN: Oh, your brother. I didn't think there was anybody your father's age in the League for Programming Freedom. So I was really surprised at that when I was told it was your father. But it's your brother. And he is here to represent the League for Programming Freedom.

PRESENTATION BY JOSEPH HOFSTADER

LEAGUE FOR PROGRAMMING FREEDOM

MR. HOFSTADER: Thank you for giving me the opportunity to testify before you today. The League for Programming Freedom is an organization of software developers opposed to software patents and copyrights on user interfaces.

I would like to use this opportunity to clarify some of the issues that were raised in an earlier round of hearings in San Jose. To evaluate the numerous conflicting arguments that have been made, we must organize them within a systematic framework. Since the patent system is an economic system, economics is the best framework.

What questions need to be answered? What issues should be confronted prior to determining whether software patents should be granted?

The goal of the patent system is to provide science in the useful arts. Whether software should be patentable is therefore a question of whether patents promote innovation and progress in the software industry in the computer sciences. The economic interpretation of this question is whether granting patents on software benefits the economy by making the software industry more efficient.

The League for Programming Freedom asks: Does the transfer of economic resources, which software patents represent, constitute a transfer whereby the resources are going to be employed more productively?

As an example of how the patent system is dependent on economic factors that will vary from one industry to another, I will mention just one factor, the overall size of an industry.

Let's imagine there are 5,000 people employed by the candlemaking industry in the U.S. and that it has been determined based on sound economic principles that the optimal life for a patent in the candlemaking industry is 20 years. Suppose the demand for candles is twice what it actually is. The candle making industry would be almost twice its earlier size, employing close to 10,000 people.

Under a set of economic assumptions reasonable for the candlemaking or software industry, economics would then dictate a cut in the length of patents for the candlemaking industry. Cutting the length of patents by one-half would yield roughly the same incentive to invent, and thus the same rate of progress that existed earlier.

Alternatively, we might consider cutting the length of patents by one quarter. In doing so, we're sending a signal to the candlemaking industry regarding the increase net economic value of improvements in the candlemaking process.

This signal, however, has to be effectively traded off against the increased lack of competition. When the size of an industry increases, the optimal lifetime for patents needs to be shortened. Without knowing various factors relating to the inventive process in the candlemaking industry, the new length for patents is a matter of debate.

It isn't fair to directly compare the software industry to the candlemaking industry. The software is much larger, and it is also much broader. From the example of the candlemaking industry, it should be possible to understand how the traditional 17-year patent grant may in some industries conceivably hurt progress by stifling competition more than it helps progress by encouraging innovation.

The software industry employs some 6 million people. A significant fraction of them develop software. More people are probably engaged in the software development than in all other branches of engineering combined. As a result, in the software industry reinvention has become commonplace, and software patents seriously harm the competition.

In eliminating software patents, is it going to be possible to legislatively define software? This issue was raised frequently at the San Jose hearings. It is surprising that such an argument can be to justify risking the future efficiency of a $50 billion a year industry.

Since this argument is apparently one of the key arguments in favor of the continued granting of software patents, the League decided to subject it to intense scrutiny.

It is true that many things in this world form part of a continuum. Nonetheless, we are able to legislatively differentiate between them. The post office is able to distinguish between a letter and a letter packet. The FDA is able to distinguish between a cheese spread and a cheese-flavored spread. There is no way to draw a perfect line between drunk and sober, but the law does draw a line, and it works.

On a larger scale, the IRS classifies capital goods into many different categories, to determine depreciation rates, while the Customs Service is able to classify things to apply duties. Considerable financial incentives exist to try to circumvent these classification systems, yet they work. There is little problem with them being circumvented, or with their complexities imposing great financial burdens. The legal system effectively handles disputes over occasional borderline cases.

A legislative definition of software need not embody absolute truth. It need only work effectively and efficiently. Searching for absolute truth makes no more sense than determining the exact definition the IRS should use for wood pulping machinery.

The definition the League proposes is, "Software is composed of an ideal infallible mathematical component whose outputs are ineffective by the components they feed into."

I'm confident that the PTO and the courts would be able to readily distinguish between software and hardware using this definition. The PTO is already skilled at administering a classification system that deals with far more subtle distinctions.

To show that it is possible to legislatively define software patents, the League performed an ambitious experiment. The League examined 2,000 patents issued during a one-week period. We tediously analyzed the details of every software-related patent granted in that week. We found little difficulty existed in identifying software-related patents.

The League then took each software-related patent and analyzed its claim according to a number of different criteria. These criteria were chosen on the basis that their presence could be used as a part of a test to identify software patents that should not be granted. The results of this research clearly showed us that it would be relatively simple to legislatively define and identify software patents.

This is not surprising, given that legislation already exists, that it is able to successfully identify far more nebulous

concepts than the difference between software and hardware.

At the San Jose hearings, Tom Cronin of Taligent forcefully suggested start up companies require software to attract venture capital. He described Taligent as a recent start up that has succeeded in attracting a large amount of venture capital, and for whom software patents were considered as vital.

He failed to mention Taligent was an IBM-Apple joint venture staffed by transferring surplus personnel from these two companies. Taligent is quite unique when compared to most other startups.

The numerous two-kids-in-a-garage stories demonstrate that successful software ventures require very little capital. It isn't necessary to attract large amounts of capital to produce software, or at least it was not necessary. Defending against patent threats may increase this expense.

All the software companies spawned by the micro-computer revolution gathered sufficient starting capital without any software patents. Microsoft, Oralent, Novelle, Adobe, Systematic, Oracle, and WordPerfect are just a few examples.

The final prepared remark I have deals with why copyright is the most suitable form of intellectual property protection for the software industry. Patents are used in other industries to prevent companies from using, but not paying for, the results of their rivals' research and development. Permitting this would be a serious disincentive against R&D investment.

Unlike every other industry subject to patents, the software industry is unique in that its products are also subject to copyrights. Copyrights ensure that to be commercially successful a company choosing to follow another must spend as much to develop program as the original firm. Indeed, the history of spreadsheets, word processors, and virtually every other software product suggests that it is actually more expensive to follow than to lead.

A product that seeks to displace the market leader can only do so by incorporating new features, thereby making it more expensive to develop the original product.

Copyright is effective because it protects precisely the product that has been developed. It prevents other companies from benefiting by copying your products, while at the same time permitting them to reap the full benefits of anything they develop.

Copyright is efficient because it enables firms to compete on the basis of rival implementations. This competition is vital for the efficient allocation of economic resources. The traditional literal aspects of copyright doctrine is also efficient because it has negligible administrative overhead and presents no uncertainties. A small start up has the knowledge that they control what they create.

Given that copyright law effectively and efficiently achieves the economic aims of the patent system, there is simply no need for software patents.

This concludes the League for Programming Freedom's response to issues raised at the San Jose hearings. I would be happy to take any questions you might have.

COMMISSIONER LEHMAN: First, are you a computer programmer yourself, or are you just delivering Christian's --

MR. HOFSTADER: I'm not a programmer. I've worked for a high-tech firm in their legal department, though.

COMMISSIONER LEHMAN: So you are a lawyer?

MR. HOFSTADER: I'm not a lawyer, no. I'm not a programmer, though, either.

COMMISSIONER LEHMAN: You mentioned that the League had done an analysis of 2,000 computer program patents. Do you have that analysis available that you could share with us?

MR. HOFSTADER: I don't have it with me right now.

COMMISSIONER LEHMAN: Does Christian have it?

MR. HOFSTADER: Yes. What's happening and how I'm here right now is that they were stuck in Boston during the snowstorm. So the speech got faxed to me. The other materials are being sent Federal Express.

COMMISSIONER LEHMAN: I'd be interested in following up on that. We have to proceed on the basis of facts and take a look at these analyses. We might have some of our people -- Mike Fleming and others -- might take a look at it. And we might even want to have some further dialogue with you, or with the League, about that because it gets really into the question of our prior art database and what's going on here.

So I think, rather than just sort of have a statement about the results of this analysis, we'd really like to take a look at it to see if we would come to the same conclusion. If we would, obviously it would have some impact on what we would do.

MR. HOFSTADER: Okay.

COMMISSIONER LEHMAN: So you can pass that back. Thank you very much.

Now we're ready for Mr. Scanlon, Tim Scanlon. Would you identify where you're from?

PRESENTATION BY MR. TIMOTHY SCANLON

ALLEN-BRADLEY COMPANY

MR. SCANLON: Yes. Good morning. I'm with the Allen-Bradley Company. And the views that I'm expressing will be those of the Allen-Bradley Company.

COMMISSIONER LEHMAN: There was an Allen-Bradley witness who was --

MR. SCANLON: That was John J. Horn yesterday, who is our legal patent counsel at our headquarters office in Milwaukee.

COMMISSIONER LEHMAN: Yes. He was here, wasn't he?

MR. SCANLON: Yes. He still is. He's right there.

COMMISSIONER LEHMAN: Oh, yes.

MR. SCANLON: He may be here for longer than he wants to be here.

COMMISSIONER LEHMAN: He's the guy that gave us the donuts. We have to pay, you know, I didn't realize they were coming from Allen-Bradley.

(Laughter.)

COMMISSIONER LEHMAN: If they're coming from you, it's okay. This is a widely-attended event. We can take a donut. But we can't take a donut from Allen-Bradley.

MR. SCANLON: You'd better save some for your stay in the airport tonight.

COMMISSIONER LEHMAN: I'm from Wisconsin and I'm familiar with that company pretty much. I doubt if they support the Clinton administration too much, but anyway.

(Laughter.)

COMMISSIONER LEHMAN: I'm just joking. Go ahead, please.

COMMISSIONER LEHMAN: Thank you.

MR. SCANLON: Good morning, Commissioner Lehman and other distinguished members of the panel, participants, and attendees.

Thank you for providing this forum to share our views relating to these important issues, and most importantly, thank you for your time.

My name is Timothy Scanlon. I'm representing the Allen-Bradley Company. Allen-Bradley is a world leader in industrial automation and control. We provide a diverse range of hardware and software products and services to enable our customers worldwide to compete in their respective markets.

As Allen-Bradley patent counsel John Horn presented yesterday, there is a fast and furious trend in our industry, like other industries, towards replacing hardware functionality with software. My position with Allen-Bradley is not that of legal counsel, but rather I'm a human interface specialist within a corporate-wide software marketing organization. It's a little bit different slant perspective from the past couple of days, hopefully.

My formal education is in industrial design in human factors. And I've been practicing these disciplines for the past 10-plus years. At Allen-Bradley I work with talented software developers, communication designers, and useability specialists to create new and innovative software user interface solutions.

These software graphical user interface designs enable a broad spectrum of users in the industrial control sector to interact with complex and sophisticated technologies to do what they really want to do, effectively perform work to satisfy their job requirements.

In general, people don't really want to use computers, they just want to get their work done.

So why are the visual aspects of software significant to the Allen-Bradley company and so important to protect? I'd like to address three key areas of significance to help foster an understanding of our position, and encourage appreciation for the impact that this has on our businesses and the businesses that use our software.

But before I address these three areas, I'd like to establish a definition for the visual aspects of our software.

The visual aspects of our software that we'd like to protect are what we call user interface components. These consist of icons, bit maps, and controls, developed specifically for our verticals markets in industry.

These are different from platform standard components, such as common dialogue boxes, et cetera, that are widely used across vertical industries. And we're not advocating protection of commonly and generally -- widely used standards as far as the windows controls and things of that nature.

Now back to the three key areas. The first one is the level of effort involved in establishing a usable graphical user interface. And I'd like to emphasize "usable." What the usability of Allen-Bradley software means to our customers will be area number two. And number three, how the software graphical user interface is an extensive of Allen-Bradley's expertise and knowledge of the industrial control and automation industry.

There are several constraints considered during the design of our graphical user interfaces. Key considerations include the accommodation of a broad spectrum of end users. Allen-Bradley, through extensive research and studies, has identified six types of users for our software products. Each and every software product that we design is designed to accommodate these user profiles.

The six categories of users and their educational backgrounds, just to give you an idea of the challenge, is, at the low end, a maintenance technician who has a high school diploma and maybe a two-year technical school certificate in electronics.

Next would be an operator who has a high school diploma and maybe a two-year technical degree certificate from a technical school.

Third on the way up the scale would be an installer, somebody who installs our equipment, whose educational background is high school, a two-year technical certificate, and possibly an apprenticeship.

Next would be an implementer, somebody who has a two-year certificate, an engineering degree in computer science, perhaps.

The last two on the high end of the scale would be a designer, a system designer, who typically has a two-year certificate, an engineering degree in computer science. And at the top level, a planner who actually plans a facility or a plant who typically would have a Bachelor of Science in Electrical Engineering, and possibly has completed a graduate level education program.

The reason that I walked through these and gave these brief profiles was to illustrate the challenges that we face when designing graphical user interfaces. We have to accommodate a broad range of users in every product that we design, and we consider these.

In addition, all of our GUIs are designed to facilitate translation into seven languages, namely, English, French, German, Russian, Japanese, Spanish, and Italian. Special considerations are made to ensure that user interface components can accommodate expansion due to text screen growth, for instance, following translation.

We also developed symbology to incorporate into our tool buyers and in other areas of our software. And it's carefully designed for global recognition. So we developed several different symbols, and we actually test these. So there's quite a lot of money spent in developing these components.

As you can see, designing the GUI for --

COMMISSIONER LEHMAN: What's your status on the international market in your exports as a percentage of your sales?

MR. SCANLON: Percentage of sales? Boy, I'll tell you, that would be tough for me to quantify, since we've been traditionally a hardware-oriented company and we're now growing into software.

Rather than answering it that way, I'd like to tell you what products we have translated and --

COMMISSIONER LEHMAN: But I assume that a lot of your hardware is exported?

MR. SCANLON: Absolutely.

COMMISSIONER LEHMAN: Allen-Bradley is a big export company.

MR. SCANLON: Yes, we're very heavily --

COMMISSIONER LEHMAN: My impression was, it was like 50 percent or something like that, not that much.

MR. SCANLON: Is that about what it is, John?

MR. HORN: I don't know exactly know the figures, but if I were to take a rough guess, they are probably 20 or 30.

COMMISSIONER LEHMAN: Twenty or thirty? Yes.

MR. SCANLON: We're very heavily entrenched in the European markets and now starting to expand into the Asian markets at a fast rate.

COMMISSIONER LEHMAN: In the area of controls, that's your area, isn't it?

MR. SCANLON: Yes.

COMMISSIONER LEHMAN: My understanding is that there was some proprietary French technology which basically was a software technology, which has sort of a central position in this industry. Is that true?

MR. SCANLON: That would be the graphs set?

MR. HORN: Vision Recognition.

COMMISSIONER LEHMAN: Vision Recognition? Do you use that?

MR. HORN: Oh, yes.

COMMISSIONER LEHMAN: And is that covered under copyright or patents, or trade secrets, and do you license it?

MR. SCANLON: John?

MR. HORN: It is covered under -- there are hardware components and there are software components. So you've got really what yesterday was referred to by one of the witnesses as an embedded microprocessor system.

It runs software, which has been designed in France, and we do have patents on some of the aspects of that software. It happens in that particular case that there isn't that much patent coverage available because a lot of the ideas behind that software, which I think personally would have been patentable, actually were surfaced in academic circles 10 or 15 years ago.

COMMISSIONER LEHMAN: I asked about the French technology here, which you are licensing even though it has limited intellectual property rights protection in this country, I gather. I mean, it doesn't have patent protection. I assume you license it because you have to get access to the proprietary know how that comes along with it. What causes you not just to take it instead of license it?

MR. HORN: Well, when you say we license it, I must add that the software is actually developed by a French subsidiary of the company. We bought it.

COMMISSIONER LEHMAN: Okay. Well, then I guess that's the answer. So this is a company that's now owned by Allen-Bradley?

MR. HORN: Right. And we have a design center in France that continues to improve this software.

COMMISSIONER LEHMAN: I see. So then I guess the question is, are other people licensing it, or are they just taking it?

MR. HORN: My impression is -- and I must say that I'm not an expert on the vision industry -- is that most of it is homegrown stuff developed by the individual vision companies to work with their special hardware. And again, most of these are embedded systems. Most of them have specialized hardware, and then the custom software that goes with that specialized hardware.

COMMISSIONER LEHMAN: One of the reasons that Allen-Bradley is interested in a pretty strong patent protection here is because it would -- now, I'm not saying this -- I think a yes answer is perfectly acceptable -- because it would obviously help them to exploit this technology which they have.

MR. HORN: It would help us to exploit the technology in cases where we have major innovations in which we've made significant major investments. And we feel that those do occur on occasion.

COMMISSIONER LEHMAN: I'm sorry to interrupt you.

MR. SCANLON: That's quite all right. I'm glad that John's able to --

COMMISSIONER LEHMAN: The great thing about an informal atmosphere and having all day is that we can have this colloquy which is helpful to us to flesh out the issues.

MR. SCANLON: John is based in the legal department in Milwaukee, so he has a broader view into that. So I'm glad he was able to answer your questions.

So as you can see, designing the graphical user interface for software is something that requires a significant investment. And I've only mentioned a few of the scenarios that we have to design for, and some of the constraints that we deal with.

The second key point is what the usability of Allen-Bradley software means to our customers. We have a concept of measuring software usability at various points during the software development process. And many people have probably seen more and more about software usability as it enters the mainstream media and gets broader and broader coverage.

We handle this through the conduct of usability studies in controlled environments, typically usability labs, with carefully selected test subjects that have certain user profiles and experience.

We measure speed: how long it takes for a person to perform a particular task. Accuracy: what's the percentage of error during that performance. Training: how much training is involved to bring the individual up to a certain level of proficiency. Then more of a qualitative rating, which is a level of acceptance for our software.

Usability to our customers is very important, because it means reduced system integration time. That is, taking the hardware of the control system and programming it to communicate in effect the manufacturing process. System integration cost is very high in the control industry, sometimes even as much as the actual hardware cost.

With the new and more usable graphical interfaces that we are developing, we can significantly reduce the integration cost and enable our customers to go online faster. This is an important competitive advantage for Allen-Bradley.

A case in point is a product that we sell that gives programmers the capability to program motion controllers graphically, versus the traditional text-based method. The product is GML, which stands for graphical motion language. Our customers can perform the same tasks with GML, that is programming motion controllers, in 20 percent of the time it used to take them with a reduced percentage of error.

Key point number three is how the software graphical user interface is an extension of Allen-Bradley's expertise and knowledge of the industrial automation and control industry. GML is a good example of this. At Allen-Bradley we've developed and continue to develop graphical user interfaces like GML for areas other than motion control. These areas include vision and bar code systems, logical programming tools, statistical process data gathering and analysis tools, operator interfaces for control in the plant floor, or supervisory control at remote locations. The list goes on.

We're able to create graphical user interface like GML for all of these products because we understand these businesses. We understand how our customers perform work. Consequently we can create GUIs like graphical motion language, that create this domain expertise -- that reflect this domain expertise and translate the productivity tools for end users and customers.

The problem for us is that it is very easy to take something like our graphical user interface concepts that reflect this domain expertise, translate it into a graphical form, and are painstakingly refined to become globally usable and duplicated or create knockoffs.

Given the graphical user interfaces are an important feature of our present and future product offerings, we believe that they are worthy of proper legal protection. It seems to us the existing copyright protection is not fully adequate in view of the utilitarian aspects that are closely linked to our unique industry-specific user interface components.

For our purposes, copyright law concentrates too heavily on the details of expression. We believe that design patents are somewhat appropriate for protecting these graphically oriented technologies, despite their focus on the ornamental aspects.

We would like to encourage the Patent Office to allow design patent protection of graphical user interface components that include icons, bit maps, and controls. So we're kind of going beyond just the icons because there's a lot more there.

We would also encourage the Patent Office to seek any necessary legislative authority to make design patents and/or utility patents effective for the protection of these new and valuable uses for graphical interface components.

It looks like I'm running out of time. I had another idea about the parallel aspects of --

COMMISSIONER LEHMAN: Why don't you tell it to us?

MR. SCANLON: Sitting in the meetings for the past couple of days, as a marketing person who generates market requirements and hands those over to developers, it's very difficult to communicate the features functionality or the behavior of graphical user interfaces.

I see a parallel problem in the traditional medium that is used to submit patent applications. So possibly some lessons could be learned. Typically what we do is we generate market requirements documents there, go to engineering. They respond with a function requirements spec. We are now actually building in prototypes and using some alternative approaches to communicating the behavior, not just the visual aspects of our software.

So there's more behavioral elements associated with that. And those are very important in creating these competitive user interfaces. So there may be something there that could be investigated and used for the future for the U.S. Patent and Trademark Office.

Allen-Bradley would like to support these endeavors through continued participation in future gatherings such as this. Once again, thank you for your time.

COMMISSIONER LEHMAN: Thank you very much. In the process, we're big users of software technology, of course, ourselves. We're spending a very large sum of money automating the patent system, and it's a big management problem for me. Right now we're in very much a transitional phase, not just because the administration has changed, but because our leadership of that whole operation, the two top people, have retired.

Actually, we have two jobs open. Our director of information systems position for the whole Patent and Trademark Office is open. If anybody has some good candidates, send them our way. We'll pay the top money we can pay in the Federal Government, give them all the benefits we can. And it's interesting work.

But one of the things that we're doing is that we're just now starting our electronic applications system, which involves the creation of graphical interfaces that I personally am quite excited about. We have a pilot program going right now. I think it's going to help us produce much, much better and more usable patent applications because when you actually have to fill out an electronic form, the interface won't let you proceed until it gets all the information. From step one you can't go to step two.

And I think it will help -- and it educates the user all the way along the line. So we're actually in that business ourselves, and it's a very exciting thing. I think you've chosen a very good profession for yourself.

MR. SCANLON: Thank you. It's a lot of fun.

COMMISSIONER LEHMAN: Thanks.

Now I think we're done with yesterday's witnesses. We can start this morning. Again, earlier, about an hour ago -- or more than an hour ago -- I went through and called off people, and I know some of the people here. I'm going to do that again so I can see who's here.

Michael Kurtz of the Oracle Corporation. Has he come?

Daniel Kluth of Schwegman, Lundberg & Woessner.

R. Lewis Gable of Welsh & Katz is here.

Robert Greene Sterne, Sterne, Kessler, Goldstein and Fox.

John E. DeWald, Prudential was here, is still here.

David Clark of Aquilino & Welsh, who is here now, okay.

Allen M. Lo of Finnegan, Henderson, is now here.

Samual Oddi is here.

And David Webber, LNK Corporation.

Bernard Galler. I mentioned that if he's not here, he's not going to be here because of the snow.

Gregory Aharonian was here.

I don't see Bill Fryer here.

We have one, two, three, four, five, six people then. I'm going to start with R. Lewis Gable of Welsh & Katz.

Oh, David Cornwell. I don't have him on my -- is David Cornwell here?

(No audible response.)

COMMISSIONER LEHMAN: Is there anybody who was scheduled to testify that I haven't named who is here?

(No audible response.)

COMMISSIONER LEHMAN: I guess not, thanks.

PRESENTATION BY MR. R. LEWIS GABLE

WELSH & KATZ

MR. GABLE: Mr. Secretary, Professor Goffney, and Mr. Fleming, I'm very pleased to have dug out of my garage this morning and to be here. My name is Lewis Gable. I'm an attorney with the law firm of Welsh & Katz. We're an intellectual property law firm. And our offices are in Chicago, and also one here in Arlington, Virginia.

I have practiced patent law for 30-plus year, specializing in the preparation and prosecution of complex electronic and computer and software-related patent applications.

I started my career in the Patent Office where for approximately two years I examined patents while I was going to law school. I have practiced through the '70s when the entire issue of whether computer patents, computer-related patents, was patentable subject matter under 35 U.S.C. Section 101.

I have talked, and I have written extensively about the 101 issue, some of it with Mr. Fleming on many occasions, which I have enjoyed very much.

I have chaired the Electronic and Computer Law Committee of the American Intellectual Property Law Association.

My comments this morning are strictly for myself, and should not be attributed to Welsh & Katz, or any association, or of course the clients of Welsh & Katz.

I will focus on questions 2 and 6 of topic B. Fundamentally both ask how can the PTO improve the quality of its examination?

Question 2 asks, how can an examiner measure the ordinary skill of art? And question 6, how can the PTO improve its examination of novelty and obviousness?

It's apparent that these questions go right to the very heart of the obvious determinations required by the Supreme Court in their Graham decision.

My point this morning, my focus this morning, is that the experience level of the average patent examiner is low. And that the lack of experience affects the quality of patent examination.

This is true of all arts, but it is particularly true of software-related inventions. And that difficulty quickly rises in that area because of the complexity of the technology and the difficulty really to learn it.

The positive aspect of this problem is that there is perhaps some rather effective solutions. I do not want my comments this morning to be interpreted that the people employed by the Patent Office are unqualified. My point is that it's very difficult to become an efficient, effective, competent patent examiner within the tenure that many patent examiners serve in the Office.

The average years of experience has dropped significantly since I joined the profession perhaps about 30 years ago. When I joined the Patent Office, my division -- at that time there were no groups or art units -- was comprised mostly of experienced primary examiners. Many of them had 10, 20, even 30 years of experience.

As a novice non-primary examiner, all of my work had to be supervised. And my primary examiner was John Burns. He had two examiners besides myself to train. He spent a lot of time with me, and if I made a mistake in an office action that I was about ready to issue, he told me about it. If I had missed a reference, he had the uncanny ability to go right over to the shoe, and pick that reference out, and say, this is where such and such a feature is shown.

He gained that experience because he had been in that art unit, or that group, that limited number of sub-classes for a very long time. He supervised it. He had supervised the examiners that had examined in that area. And he knew, literally in detail, all the references at issue. And that's a great help in examining.

Then the ratio of inexperienced, non-primary examiners to primary examiners was very low. However, today that ratio literally has been turned upside down. Any time I now receive a patent office action, one of the first things I do is to turn to the last page, and to see whether the examiner that signed was a primary or non-primary examiner. And that gives me a good idea of how good this action is going to be.

I rarely have a primary examiner examine my applications. When I go in to have an interview with the examiners in the Office, one of the things I do is I walk up and down past the Office of the examiner, and I count the number of examiners or non-primary examiners, and the number of primary examiners. Often that ratio may be 9 or 10 to 1.

That ratio tells me something about the supervision that the non-primary examiners who will receive from the SPE in that particular art unit.

One patent that I had examined I think illustrates the difference between experienced and inexperienced examiners. I had prepared and filed a very complex application involving the application of artificial intelligence to setting up a printing press.

The application had 100 pages. There were at least 25 pages of flow diagram. The initial Patent Office action came back with but a single rejection, and that was that the specification was inadequate. There was no prior art rejection, no references cited. And so it was time for me to have an interview with the examiner.

And I found out that the examiner that I had gotten had six months of experience, and that the application had come into this art unit, this group, and all the more experienced examiners really didn't want to take the time to examine it. So it ended up literally with the least experienced examiner in the group.

I went to the supervisor, the group director. And he appointed a more experienced, a senior examiner, to help her. And the Office action that I got back was a very fine Office action. The references that were cited were even better than some of them of which I was aware of.

COMMISSIONER LEHMAN: You're obviously very familiar with our Office. You've worked in it. You've really worked very closely with it. And one of the things that concerns me about, that I'm picking up on that is a real problem -- and it's not just in the Group 2300, but I think because of the pressures on Group 2300 it probably has a bigger effect on it -- and that is our performance evaluation system in the Patent Office basically is based on numbers. It's pushing the papers out. You know, how many first actions do you issue? How many patents are issued? And so on and so forth.

I can see why in that situation that you've just described the more senior people see this, and there's sort of a pecking order. They want to get the papers out. They want to get that higher performance rating. And they get a bonus if they get a higher performance rating.

So naturally, the low person on the totem pole is going to get stuck with the cases obviously that are going to be harder to move out. So in a sense, I think our system -- my impression is that we may well have a system that pushes these harder cases down the totem pole to the person that doesn't have the seniority because those are the cases that take longer.

Do you have a sense that that may be the case? Do you think that that evaluation system that we have, that performance system, needs to be looked at?

MR. GABLE: I think you understand the system quite well. My impression is that experienced examiners maybe at the 12, 13, 14 level may have as many what we call bogey, or to make per week, maybe four, five, maybe six actions per week. And if you get, say, a very complex, lengthy patent application, there is no way that you can approach that and get five or six of them out in a week.

So at least where you have complexity and length of cases, typically like you have in 2300 or 2600, there has to be something done to permit people to achieve -- examiners to achieve, meet their goals, and yet be realistic in terms of the time that a particular patent application may be examined.

It gives me great pause -- and I'm going off of my talk a little bit here -- that when you get to the higher levels in terms of examiners, that they may have only eight hours to examine a very complex examination, much like the one I put in. And in that eight hours, you have to read 100 pages, maybe review 40 claims. Then you go to your shoes where you keep your prior art, search that, come back,

evaluate that, make the critical comparisons that you do in patentability between what is taught and what is not taught. And then, does that rise to the level of unobviousness?

And then you write up a report that conveys all of these determinations. You do this in eight hours, and it becomes an Herculean if not an almost impossible task.

COMMISSIONER LEHMAN: I don't think we can underestimate the importance of this problem. This is our fourth day of testimony where people are saying that we're issuing patents when we haven't caught all the prior art. And I think you're pinpointing one of the reasons that that takes place.

Even though it wasn't part of your prepared statement, I think this little colloquy and dialogue in terms of identifying some major issues is very important.

MR. GABLE: It's hard to set limits on doing a good job. It depends -- it's so particular to a given application and also to a given technology.

COMMISSIONER GOFFNEY: I'd like to ask one question about the quality level that you find in the more experienced examiners. Is that manifested in 103 rejections? Has that been your experience?

MR. GABLE: Yes. My particular complaint is that with the younger examiners the art that is cited, the patents that are cited, many have very little relevance to the invention that you're claimed. I come away and I think many of my colleagues come away, with the idea, was the invention understood? How could someone cite this reference back?

I'm not talking about the situation where we disagree, where we're hassling and bargaining with each other with regard to the questions, is this sufficiently different, so that it will be obvious and you can allow this claim? The question is, is this reference, or are these sets of references really pertinent or even in the same ball park?

And it's not surprising, particularly with young examiners, you come into a particular area of the technology, and you try to learn it. I would say the first six months, maybe a year, is a real struggle, particularly in the very complex technologies. And you could have a EE degree or you could have a computer science degree, and you will not know the details of the technology, of the software, of the hardware, that may be involved in what you're searching.

So it's just a struggle until you know that. You learn this. It's surprising. If you've been there two, three, four, five, ten years, you know, you've read, you've examined yourself all these references so that the problem of searching is much easier.

If I know maybe -- literally you get to know a couple of thousand patents. And so, when you see this in an application in front of you, you have probably a very good idea of where the basic references are, you know where the various features are. And so you can short-cut a good part of the process by just going and picking up maybe five, ten references. And the examination moves on.

Otherwise, if good references are not cited, you're spinning your wheels. You have to respond and point out that this has very little relevance to the invention.

Typically what I've had to do is say, well, look at these references over here. These are really much more pertinent, and try to move the prosecution on so that we can get to the issues of 103 and 102 and maybe 112, first and second paragraphs, and really deal with what is the substance of what an examination should be about.

The difficulty with the younger examiner is that we don't really get to the issues. And as I said, I'm not criticizing the examiner. I mean, these people are well trained, they have good degrees. They just have not been there long enough to absorb and know the technology thoroughly.

COMMISSIONER GOFFNEY: Now, just one further question. I can see how that might be the case with the experience with the technology. But I'm curious about the legal rationale that you might get from the examiners.

MR. GABLE: Of course, most of it is in terms of what the art -- I mean, the fundamental question of obviousness depends upon a critical evaluation of the references. And of course, then you define the difference.

If you don't have good art to begin with in your rejection, regardless of whether you say it's obvious or not -- in other words, your legal conclusion -- it has no basis. And you may write that down very nicely on the Office action, but it makes no sense to the person reading it trying to respond to it.

One of the other things you mentioned was some of the legal determinations that you make. Particularly in the 2300 area, one of the most difficult ones is a 101 determination. There are perhaps maybe 40 to 50 relevant decisions. I think it's easy to say, and I think Mike would confirm this, that there are no bright lines. It is an extremely complex decision.

I find particularly with the younger examiners that, when they give a 101 rejection, they really have not done it within the confines or in accordance with the guidelines the Patent Office sets out.

That is not because of any lack of training on the part of the Office, because I know Mike is involved in extensive programs on 101 issues within and without the Office. But it's a problem of just, having dealt with these very complex issues over a sufficiently long time to absorb and to know very intimately maybe 10 or 15 cases, and to apply, and to know how to apply them to the claims and the facts. It's tough.

When the ratio of non-primary to primary examiners is high, it's difficult to adequately supervise all the novice examiners. Actions may come out, and I think they have, where the SPE has to supervise 10 or more non-primary examiners. There is literally no way that the SPE in a particular art unit can take a look at the work product, the Office actions, that come across his or her desk, and to really have a good feel for whether it represents a quality examination.

The Ps and Qs may be well stated, but the underlying very complex decisions, which depend upon a grasp of what is disclosed in the application and a grasp of what is disclosed in the technology, may or may not be apparent until maybe you've spent a couple of hours. And simply the SPEs now do not have a couple of hours for office action for each of their nine or ten non-primaries.

My personal observations -- and a lot of what I've said so far are personal -- are pretty much confirmed by some of the personnel figures that have been provided by PTO, focusing on the computer group 2300. Right now there are approximately 160 examiners. Of that total, 130 examiners, or over 80 percent, are non-primary examiners; 89 examiners of that total, or over 55 percent, have less than two years experience.

Appreciate that, if you don't have a primary authority, you cannot issue yourself an office action or issue a patent. So your Office action has to be supervised by an SPE. So what you're looking at is the ratio of SPEs to the number of non-primaries. And the arithmetic is fairly simple. There are approximately on average in 2,300 10 non-primary examiners for each SPE. In some art units, there are as many as 14 non-primary examiners for one SPE.

The significance of this, as I've implied, is somewhat discouraging and disturbing. I believe it's impossible for a single SPE to review the work output of 10 and perhaps 14 non-primary examiners. These numbers also indicate that there has been a massive examiner drain, particularly at the two or three level. I think when you say there's 55 percent with less than two years experience, you can see that seems to be a place when a lot of people are leaving.

After two or three years, the Patent Office pays these non-primaries approximately $32,000 to $35,000. And it's a fact of life that firms and corporations can exceed that pay significantly.

The problem is not so much with the primary or more experienced examiners, because it seems that to some degree the pay does catch up in later years, but the problem is that most examiners don't wait around much past two or three years to get to the higher salaries.

Thus the cycle continues. An examiner comes to the PTO, is trained for two or three years, and then he or she leaves.

Mr. Secretary, I heard your comments at the AIPLA and the IPLA and I was very impressed with your efforts to reach out to the examiner to make the work conditions and the work support there better. I certainly would encourage you to continue that. But I think you also have to look at the pay schedules, particularly for young examiners.

I appreciated this time to come and talk with you this morning.

COMMISSIONER LEHMAN: Thank you very much, Mr. Gable. I really thought that was very -- a little different perspective than some of the other witnesses whose statements were very valuable. But I think you hit on some very practical issues that we were aware were there, but I think you put them in really sharp relief, and helped me a lot, and I'm sure Commissioner Goffney to put them in sharp relief. And we'll go back and redouble our efforts to work on it.

MR. GABLE: Thank you.

COMMISSIONER LEHMAN: Thank you.

Next, Mr. John DeWald from the Prudential Insurance Company of America.

I should add that if people have written statements, that we would appreciate it if you'll make sure that Mike Fleming gets them, it will help us a lot to make sure that we have the best kind of transcript that we can have of these proceedings.

PRESENTATION BY MR. JOHN E. DeWALD

THE PRUDENTIAL INSURANCE COMPANY OF AMERICA

MR. DeWALD: Good morning. My name is John DeWald. I'm an Assistant General Counsel at The Prudential Insurance Company of America, and I'm responsible for its intellectual property matters.

My remarks this morning will focus on the impact of software-related inventions on The Prudential as a large insurance and financial services company. I believe our experience in this regard is representative of the industry as a whole.

In San Jose, my colleague and client Charlie Morgan confronted the panel of a software patent infringement charge against his Prudential business unit under a patent that essentially claims a method of doing business. A computer system is used in that product to estimate tax contribution limits, forecast premiums, and the like for health benefits using a 501(c)(9) trust.

That charge is a specific example of a general issue I'd like to discuss today. For several years there have been practitioners advising in trade journals, such as the National Underwriter and Insurance Trade Weekly, and elsewhere, that you could virtually lock in for 17 years the exclusive rights to market a new product or service by patenting the computer system created to support it.

Those who know the insurance industry and have no special self-interest would probably agree that most such efforts should fail for inability to prove novelty or nonobviousness, or as for claiming a mere method of doing business, which is non-statutory subject matter.

But the patent confronted by Charlie Morgan illustrates graphically that many an insurance or financial product, even one based squarely on the Internal Revenue code, can be patented if the applicant simply embeds it within a computer system.

This is relatively easy to do because in fact everybody already uses computers to crunch the large numbers involved with any insurance product or financial instrument.

In theory, defending against such a claim should be a straightforward matter. But in reality, the risks and costs of responding are so extensive that economics alone often dictates that many such claims be settled rather than defended, even where the accused infringer is advised by counsel that the patent is invalid.

The presumption of validity in favor of the patent-holder, the so-called patentee advantage, creates economic risks far out of proportion to the intrinsic merit of the patent. This is because insurance by its very nature involves contractual obligations and risks for large numbers of policyholders and beneficiaries, and these numbers can easily run into the millions.

Further, to the average business person who must decide whether or not to deal with an insurance company, the patent itself appears to give an impartial government stamp of approval to the patentee's allegations. Even the informed business person with competent legal advice does not want to become involved in any insurer's complex, possibly costly, patent disputes, let alone be drawn into a lawsuit.

This has a chilling effect on the market. If customers decide not to purchase a product, the market freezes, and the business can die. And all of this can happen before the insurer has even a reasonable opportunity to obtain an adjudication on the patent.

Even if an alleged infringer wants to contest the merits of the patent claim, the long delays involved, the burden to identify, locate, and produce a compelling array of prior art, plus the cost of counsel, let alone the huge potential cost of litigation, becomes a daunting and expensive alternative, even beyond the expenses typically associated with patent litigation.

This raises the nuisance value of such claims, so patentees and their advisers expect huge sums in settlement. Because of all this, the patentee gets much more than the right to sue. Given the right circumstances, the patent holder gets in effect a lottery ticket.

And with this result comes the social cost of diverting the insurer's resources away from actually doing business, the possible withdrawal of products from the market, hurting individuals as well as companies. And it could also mean an increase in the cost of products to consumers to cover added legal costs.

For mutuals like Prudential Insurance, it could also mean a diversion of revenues which otherwise could have gone to the policyholders as dividends. And again, all this cost comes without any corresponding value added to the economy or technological benefit.

Accordingly, I'm responding to the first six questions on Topic B as follows:

First, patents and printed publications do not provide examiners with sufficient representative collection of prior art to assess the novelty or obviousness of software-related inventions, particularly in the insurance and financial area. For example, many program products constitute

prior art by virtue of being on sale, or the subject of public use.

It's been traditional not to publish these methods embodied in the packages. So the public is unaware of the nature of -- and unable to search -- this type of prior art. The collection of prior art must be drastically improved. I endorse in principle the establishment of the machine-readable database now being organized by the Software Patent Institute. That project should be enthusiastically supported.

But also, much of the internal programming which companies did in this area has been treated as, and considered a trade secret, and not patented at all.

Finally, to the extent appropriate, that database should also include policy filings from state insurance departments or other regulatory agencies.

Two, for the same reasons, an accurate measurement of the ordinary skill in computer programming, particularly in insurance and financial services, cannot be derived from printed publications and issued patents alone. New products or variations on old existing ones are constantly being developed by the industry in response to market demands, changing economic conditions, or changes in the law.

Internal computer programs at these companies are modified accordingly on a continuous basis.

In view of this situation, the PTO should impose a special duty on patent applicants for software-related inventions, particularly in the insurance and financial services field, to disclose information relevant to the invention.

Applicants should not be rewarded, and everyone else penalized, for the proverbial empty head and clean heart.

As a practical matter, the manner of implementing standards of novelty and obviousness is returning results that do not accurately reflect software inventive activities. We appreciate and applaud the efforts that the Commissioner has made in this matter. But so far to date what's happened is that applying a competent standard to an incompetent database has yielded a deficient result.

Perhaps most importantly, implementing on a computer a process technique, system, or method of doing business which is well known but for the use of the software should not be considered novel and nonobvious unless implementing the well known process on a computer results in a novel and nonobvious process. Generally this will not be the case.

To do otherwise merely invites speculators to gain the system --

COMMISSIONER LEHMAN: Can I interrupt you and ask for Mike who is here, what kind of guidance can you give on that at the moment to our examiners, if any?

MR. FLEMING: Presently we are applying the same standard as in any computer arts. Unfortunately, we are having to find the particular features that are being claimed to apply an obvious standard. And if that happens to be a

business practice, we have to find that business practice in order to apply a 103. And that's been very difficult.

COMMISSIONER LEHMAN: Especially since business practices aren't to be found in our patent shoes very much.

MR. FLEMING: Right. Nor do we have -- sometimes understand what the business practices are since we're trained as technology-types and not business -- in the insurance. And we have a large variety of fields that these come into.

COMMISSIONER LEHMAN: It reminds me -- as a lawyer, one of the most frustrating things that can ever happen to you sometime is when you know exactly what the law is and then you a very inexperienced adversary who may have not -- and then they come up with all kinds of totally off-the-wall ideas that everyone who really is an expert knows are off-the-wall.

Then when you actually try to explain this to a court, or whatever, a judge who may be similarly inexperience, well, judge this is something everybody knows -- he may actually -- it sometimes is very difficult to actually define and explain and elaborate on what may to those who do it every day seem to be obvious.

And I have a feeling that in the software area, now that we've opened up this Pandora's box a little bit and where people realize, hey, you can patent a lot of stuff, we're getting people coming in with things that are really quite bizarre patent applications, and the system just isn't used to or able to deal with this.

I see you're shaking your head yes that you agree with it, and I gather that's a problem that Prudential is having.

MR. DeWALD: Exactly, Commissioner. Yes.

To treat the matter otherwise merely invites speculators to gain in the system by sandwiching software into products and services that are already well known. In effect, large blocks of insurance products unjustifiably become sitting targets.

There should be enough flexibility in the patent system to reward the truly innovative software inventor without allowing a host of free riders to cash in on the system without making a contribution to it.

For 6.A, until the database deficiency has been rectified, the PTO should require patent applicants to conduct diligent search of prior art before filing and to distinguish claimed software inventions from the resulting references. In many instances, the applicant may be able to identify technology that PTO would be unable to uncover.

I realize this may impose on software applicants a burden not imposed on others. But nevertheless, given the importance of this technology and the curable problems inherent in its present treatment, this temporary burden is justified and in the public interest.

6.B, the PTO should require software patent applicants to prove their inventions overall are distinct over the prior art. If the only difference between the claimed invention and the prior art is implementation on a computer, then the claimed invention is not patentable unless the computer implementation is nonobvious over the preexisting implementation.

Anything less allows software soldiers of fortune to bootstrap the patent system without adding value to the product, the economy, or improving our technical body of knowledge.

6.C, as in the case of requirement applicants search, the PTO should be permitted at least temporarily to distinguish software-related inventions by setting a standard less than prima facia to establish that such an invention is not novel, or is obvious.

With the tremendous leverage afforded to the patentee in the huge private and social costs in challenging the presumption of validity, substance, not form, should prevail, especially where there is not yet developed an adequate database.

The closed nature of the examination process should be revisited. After initial approval there ought to be publication for opposition. And that opposition should allow for a meaningful internal adversarial process. Challengers should have a right to rebut the patentee's response.

A form which allows for the reasonable determination of contested facts without the need to resort to multi-million dollar litigation will enhance the integrity of both the system and issued patents, discourage frivolous applications, and hopefully eliminate some of the roadblocks along the information superhighway we hear so much about these days.

Thank you very much for you attention and for the opportunity to make these remarks today.

COMMISSIONER LEHMAN: Thank you very much, Mr. DeWald.

Our next witness is David Clark. You can come up right now -- or hold off. I want to take about a three-minute stretch break, and then we'll be right back. But don't go away too far. We'll be right back.

(Recess.)

COMMISSIONER LEHMAN: Shall we proceed? David Clark, Aquilino and Welsh. By the way, we have three more witnesses after Mr. Clark. I would think we would probably be able to finish up by about 20 minutes after the hour, certainly by 12:30, even if we ask a lot of questions.

PRESENTATION BY DAVID L. CLARK

AQUILINO & WELSH, P.C.

MR. CLARK: Mr. Commissioner, members of the panel, my name is David Clark. I was an examiner in Group 2300 for 10 years from 1983 to 1993. When I left the Patent Office, I was a supervisor in the group.

I'm currently an intellectual property attorney with the law firm of Aquilino & Welsh. I figure I have about one year per minute to cover here. I've been thinking about this process for quite a while, so I'll try to jam it all together.

When I became a supervisor -- I guess I'm living proof of Lou's statistics -- I had 11 people in my art unit. I did not have any primary examiners, and seven of the people that I was in charge of had less than a year of experience.

The technology that we worked with in the art unit was database technology, which is very often Ph.D. level work, and the legal issues that we did confront in the database technology were often the first impression as far as legal issues go.

I relay this story because it's typical of the group at this point, as was told to you by Lou earlier. And I believe it directs attention to the key problem in the group, which is retention. I think that many of the issues being discussed by these hearings can be addressed at least partly by solving the problem of retention.

For many people with computer backgrounds, the Patent Office is not considered a career path, but rather just a stepping stone. The high turnover places great stress on the senior personnel. And the costs of constantly training new people is extremely high.

Over the years, the resources of the group have literally been drained as a result of this. This has created a vicious cycle of eroded resources and high turnover, which I think are very closely related.

I've heard a lot of talk about hiring during these hearings. I don't think hiring alone will solve the problems of retention, because the group currently hires many capable people. But the years of training necessary for developing the skills of -- nuances -- understand nuances of the law, the technology, and how the law applies to the technology, cannot be hired.

The key resource of Group 2300 is people. People who have developed the skills of effectively analyzing and expressing the technical and legal issues of these very complex technologies. It's my contention that all resources should be directed towards improving these skills and maintaining these skills within the Office once they've been attained.

I think the problem of retention can be addressed by focusing on two things, providing tools which will lead to an effective examination and satisfaction among the examining corps, as well as proper recognition for the people in the groups that improve the Office and perform a good job.

And perhaps more importantly, I think Group 2300 has to realize that they must compete with the career alternatives available to the examining staff. That is, the group must consider itself a competitor for these people's services.

First I'd like to discuss tools. The two fundamental tools of examining are time and efficient access of information. The time to examine an application in Group 2300 has remained constant over at least the last decade that I'm aware of. Even though the technology has accelerated at a much faster pace than what was going on 10 years ago. I think this has led to an increased dissatisfaction among the examining staff with respect to what is attainable within that time period.

I would recommend, as you alluded to earlier, a very strong analysis of the time constraints imposed on the examining staff, as well as the incentives created by the present system. And this should include a review, at least where possible, of similar activities on the outside.

The second tool is efficient access of information. And this can either be in the form of physical tools used by an individual, or the exchange of information among people. In either case, the ideal is to be able to immediately access -- and I would put forth without searching for it -- relevant art.

And then the process of examination should be just merely review of that art, rather than -- the current process of searching, I would say, characterizes out of control. You're often lucky if you can find ballpark art in many instances for cases.

And I think that if the information is already organized before they go to access it, this will lead to a much greater sense of satisfaction with the job.

COMMISSIONER LEHMAN: How would we do that? What do we need to do to organize it better? Is it still the classification system?

MR. CLARK: Yes. That's actually my next couple of topics here.

The Office should immediately implement in Group 2300 a dynamic, ongoing classification of the information that's coming in and being developed. The first step is to create a structure which supports this effort and then to provide the time necessary to update and maintain the system.

In this rapidly developing technology, the classification really needs to be a lock-step with the developments as they are coming out, instead of the typical process of every couple of years undergoing a reclassification.

This will reduce the frustration presently experienced among the examining staff, which I think will -- it's my belief it will lead to more retention. And I think that the further that the Office is away from these ideals, the more problems it will have with retention.

The Office should also implement existing technologies which encourage and facilitate the flow of information both between examiners and between examiners and outside information-gatherers. Each art area should be encouraged and supported in forming a network entity for exchanging information on an ongoing basis. Information services within the PTO should serve the examiners' goals in developing these tools.

As a way to further facilitate the flow of information among examiners, I would recommend developing discussion groups for technology areas. And these should be supported by the system, the incentives in place, and management.

I can attest to the value of these because I was involved in two discussion groups in the database and graphics processing area when I was in the Office. These are extremely valuable for developing resources, exchanging

ideas with respect to the technology being examined in particular cases, and also discussing the legal issues that surround these cases.

I think that these discussions often lead to a much greater consistency in the examination process. And it can be tied to retention because it reduces the isolation of the examiner and it puts a team concept into the process.

COMMISSIONER LEHMAN: Now, that sort of thing, though, requires -- again, given how we evaluate people.

MR. CLARK: Right.

COMMISSIONER LEHMAN: They don't get any credit for discussion groups. So that really goes again to the criteria that we use for judging performance. Right now you can get the wrong paper out the door and you get as much credit for it as if you get the right paper out the door.

MR. CLARK: That's right. In fact, the discussion groups which we had were all supported -- well, we were not given time by management to do these. It was a grassroots type effort.

There should also be a technology liaison between each discussion group and industry and the bar for bringing in people and receiving information relevant to that area.

I'd like to make a final comment on tool development. I think that the attitude which should pervade this process should be one of empowering the examiners to define the tools that they need for their job. And this should be supported by management so that they can define what their future is like in the Office.

I have to admit that this concept was given to me by somebody in industry because I don't think I had the mind set for it coming out of the patent office.

The second area is recognition, both in monetary form and in nonmonetary form. An example of -- I know somebody who recently left the Office who had been in the Office approximately three or four years. Their take-home pay doubled when they left the Office. And they expect increases in salary of $15,000 to $20,000 over the next year.

I think that the gap needs to be closed to some extent, and maybe it's not possible to close it all the way. But with whatever is left, as far as a gap between the outside and the PTO, the Office is going to have to very aggressively compete in the other areas.

Then with nonmonetary recognition, I think the system needs to be realigned to effectively recognize the groups of people that work together to attain the goals of the Office.

COMMISSIONER LEHMAN: Is it your view that the -- Mr. Gable mentioned that we have a pay problem, particularly at that GS -- at that sort of early middle level -- or do you think we have a problem at every level? Do you think that if you spend 20 years at the Patent Office and you get to be a GS-15 and you get a bonus, that even that isn't enough?

MR. CLARK: I think somebody who has made that decision, at least at this point, has signed on to whatever salary -- I think, as far as retention goes, early on they look

at the salary that they have, the salary they could get for very similar type of work.

COMMISSIONER LEHMAN: So you really agree with him that the real problem is more in that, say, in the two to five year, two to ten year category?

MR. CLARK: Yes. I could see the upper GS levels being relevant in terms of long-term growth within the Office, that somebody with career alternatives who is being lured away from the Office could look down the line and say, well, GS-15 -- you know, that economic analysis that the GS-15 makes this, and where will I be in the same timeframe that it would take me to attain a GS-15 level?

COMMISSIONER LEHMAN: Of course, it's my impression that in terms of a non-lawyer examiner, that the options for the really large six-figure-plus incomes are somewhat limited. I mean, at that point we're fairly competitive. But if you have the law degree, as you do -- you went to law school and became a lawyer -- then we really become very noncompetitive, almost at every stage. And it's extremely hard to close that gap.

But with the at least non-lawyer examiner, my sense of it is that within the overall context of the government's pay scale that at least theoretically we could close the gap.

MR. CLARK: Right. Yes, I think the compensation for attorneys within the Office, that's a very sensitive subject. But I think that that possibly could be -- it happened indirectly with me. I was given certain cases because of my legal skills, which in my case I stayed in the Office longer as a result of that.

I think that that's what I was talking about earlier, where maybe there are alternatives to salary, even after closing the gap.

COMMISSIONER LEHMAN: You found the work itself to be more interesting and stimulating when you've got some legal challenges that made it worth staying there.

MR. CLARK: Right.

COMMISSIONER LEHMAN: One of the concerns I have that I'm picking up, not at these hearings of course, but in my discussions with Patent Office employees, is that there is a real cultural bias in certain areas in the patent corps against lawyers. It's kind of like when you go to law school, you join another group. Did you experience that at all?

MR. CLARK: I think that depends. I don't think there's an overall bias, but I know -- and I did not personally experience that. I think that's a tribute to my supervisors.

COMMISSIONER GOFFNEY: I'm curious as to when you went to law school. Could you give us a little background as to when you went to law school and finished?

MR. CLARK: '86 to '90.

COMMISSIONER GOFFNEY: I mean, during your tenure. Did you come here and go to law school while you were an examiner, and when did that happen? After the first year? Second year?

MR. CLARK: Well, I was in the Office. I joined in '83, and for the first year and a half I just focused on examining and reading books, actually, that I had gathered over my undergraduate years. And then I went and attained my master's degree for the next two years, from '84 to '86. Then from '86 to '90 I attended law school.

During that time, I went through the partial and full sig programs.

COMMISSIONER GOFFNEY: So it was about three years after you attained your law degree that you went out to industry, or went out to practice?

MR. CLARK: Right.

COMMISSIONER GOFFNEY: Thank you.

COMMISSIONER LEHMAN: What was your undergraduate degree in?

MR. CLARK: Computer engineering, which was a very good degree for what the technology is in Group 2300.

I guess just to summarize it, I think it's -- in order for this problem to be resolved, I think the group is going to have to be competitive, and really look into maximizing its advantages, especially in the upgrading of the examination, tools for the examiner, to provide a better environment.

And I think this will break this current cycle of the eroded resources and poor retention, and hopefully start a new cycle of much better resources, higher retention, which will be to a more experienced staff. And I think a better treatment of the legal and technical issues that are creating problems in the public domain.

COMMISSIONER LEHMAN: Well, I really appreciate your -- again, like Mr. Gable's testimony, I think you really focused on some very important practical issues. We might even want to have you back informally for some discussions about it. Maybe we can get a little discussion group going of people like you who have left the Office, and if we can get to the bottom of why they do.

MR. CLARK: I'd love to participate.

COMMISSIONER LEHMAN: Great. Thank you very much.

MR. CLARK: Thank you.

COMMISSIONER LEHMAN: Professor Galler has arrived, I assume. Great. I think we're not quite ready yet, though. We're running way behind because we thought we had all the time in the world.

Our next witness is Allen M. Lo, a student associate at Finnegan, Henderson, Farabow, Garrett & Dunner.

PRESENTATION BY MR. ALLEN M. LO

FINNEGAN, HENDERSON, FARABOW GARRETT & DUNNER

MR. LO: Good morning, Mr. Commissioner. My name is Allen Lo. I'm also another example of a casualty from Group 2300. I worked as an examiner in Group 2300 for about two and a half years, examining patent applications involving computer control systems, computer-aided product manufacturing, and error correction and detection systems.

Last March I left the PTO to work for the law firm of Finnegan, Henderson, Farabow, Garrett & Dunner, where I currently prosecute and write patent applications, much of which involves software-related inventions. I currently attend the Georgetown University Law Center as a third-year evening student.

Today I'm speaking on my own behalf. The views that I express today are my own and not the views of the firm or its clients.

Mr. Commissioner, I'd like to address two different matters this morning. First I'd like to speak about the group's policy regarding the patentability of claims drawn to software stored on a disk. Second, I'd like to supplement the comments that Dave Clark made about what the PTO can do to improve the quality of examination based on my own experience.

Beginning with the first issue, it's been the policy of Group 2300 that claims drawn to software stored on a disk are per se unpatentable. During the examination of an application involving a software related invention, examiners in Group 2300 place claims into one of two groups: implemented and nonimplemented computer software.

Implemented computer software generally refers to computer software that's claimed as being executed on a computer, which Group 2300 treats as being patentable, subject, of course, to the novelty and nonobviousness requirements. For example, a claim reciting a general purpose computer running a novel and nonobvious computer program is treated as being a new machine, and thus would be allowed by Group 2300.

In contrast, nonimplemented computer software refers to computer software that is not executed on a computer. In other words, simply a static program.

Claims reciting nonimplemented computer software may be directed either to the computer program itself, such as a computer program comprising followed by either source code or means plus function language, or to software that's stored on a disk, such as a computer-readable medium, storing a computer program comprising, followed by source code or means plus function language.

Group 2300 views these claims, the nonimplemented computer software, as per se unpatentable.

I'd like to focus my comments on one particular type of nonimplemented computer software, and that is claims reciting a disk that store a computer program claimed in terms of means for performing a function, say a function -- means for performing function A, means for performing function B, et cetera.

Examiners in Group 2300 are trained to reject this type of claim under 35 U.S.C. Sections 101, 102, 103, 112 first paragraph, and 112 second paragraph. These rejections can be simplified, and I would generally classify them into three different categories.

First, these kind of claims are rejected under 35 U.S.C. Section 101 as being directed to printed matter. The second category, the claim is rejected under 35 U.S.C. Sections 101, 102, and 103 over a prior art disk by effectively reading out any specific recitations in the claims directed to the computer program, and then concluding that either the claims are anticipated by a prior art disk, or that storing any type of data on a disk would have been obvious.

The third category of rejections are under 35 U.S.C. Section 112 first and second paragraphs, because the disk itself is unable to perform the recited functions, but requires a computer to actually perform the functions, and therefore is either indefinite, or the specification doesn't disclose how a disk can perform the functions.

I believe that these type of rejections are either unsupportable under the case law, or can be easily drafted to avoid these kind of rejections.

First, with regard to the printed matter rejections, these type of claims do not attempt to claim the mere arrangement of words, which is really what the printed matter rejection is all about, such as the program code itself. But rather, these type of claims specifically are directed to the functionality that is provided by the computer program. And thus the claim really doesn't contain printed matter.

However, even if the computer program could be analogized to printed matter, the case law does provide an exception to the printed matter rule, which is that if there is a functional relationship between the printed matter and the medium that the printed matter is stored on, then those claims are not considered printed matter -- printed matter rejections are not applicable to those types of claims.

In the case of a computer program stored on a disk, the computer program really transforms the disk into new disk kind of the same way that a computer program transforms a general purpose computer into a new machine.

With respect to the rejections over a prior art disk, it's simply improper for the PTO to ignore any limitations in the claim, particularly in this case where the computer program is claimed in means plus function language.

And finally, with respect to rejections based on the disk being unable to provide the claimed functions, the claim can be drafted to be more specifically and particularly claimed if actual function performed by the disk. For example, the claim could be drafted differently, and rather than being claimed as a disk storing a computer program comprising means for performing a function, means for performing a function, it could be claimed as a disk storing a computer program comprising a means for instructing a processor to perform the function, means for instructing a processor to perform another function.

So in this way it actually is claiming what it actually does, which is really to instruct a processor. And I think that can avoid those types of rejections.

It should be noted that the claiming of software on a disk is not simply a trivial exercise in claim drafting. Patentees have an interest in obtaining claims drawn to software stored on a disk.

By disallowing these types of claims, patentees must obtain patents with claims drawn to software that is run on a computer. When patentee seeks to enforce this type of patent, manufacturers and sellers of infringing software would not be liable for direct infringement, but rather it would be the users of the software that would be liable for direct infringement by virtue of the fact that they're running the software, because that's what the claims really recite.

Manufacturers and sellers of infringing software would not be liable for direct infringement, but instead they would only be liable to the patentee under some cumbersome theory of contributory infringement, or inducement infringement, requiring the patentee to prove additional elements, including knowledge and intent.

Whether or not the PTO changes its policy toward nonimplemented computer software, I think it's important that the PTO at least publish in the official gazette clear guidelines and rules defining the types of software claims which they PTO considers to be acceptable.

I believe that a lot of these guidelines are not published. And so a lot of this information I have is only as having been an examiner in the group.

Turning to the matter of improving the quality of examination, I'd like to make the following observations and suggestions.

First, as others have suggested, examiners in Group 2300 need to receive more legal and technical training. Many of the examiners who attend law school eventually end up leaving the PTO to accept more lucrative positions in private practice, resulting in fewer and fewer examiners with legal training in the PTO.

I would recommend at least more in-house legal courses that teach basic legal skills, such as legal research and writing, be offered to those examiners who don't attend law school.

Further, examiners should be invited and encouraged to attend meetings and lectures that relate to software patenting, for example, such as today's hearings. Yesterday I attended, and I didn't see any patent examiners. I don't believe that they were actually notified of the hearings. And I think attendance at these kinds of things would be helpful to examiners, at least so that they can understand the big picture and appreciate the issues that they are actually facing during examination.

Further, more technical courses need to be offered to increase the level of technical understanding within the group. It is awfully difficult for an examiner to appreciate the advantages of an invention when they don't really understand what it is.

And as Dave Clark pointed out earlier, the training of examiners is undermined if the PTO is unable to retain its examiners. My experience has been that examiners leave

the PTO for various reasons. Certainly many examiners are lured from the PTO by the higher salaries that are offered by patent law firms. This problem could be alleviated somewhat by raising salaries in groups with high turnover rates, such as Group 2300.

However, I believe that some examiners, myself included, leave the PTO because they feel the examining function is no longer stimulating or challenging. Finding solutions for retaining these types of people may be difficult, but I believe that, for example, the Examiner Enrichment Program which you mentioned yesterday is a definite step in the right direction.

Finally, there is natural tension between the count system and having a high quality of examination, as you mentioned. I think the count system is something that is necessary. I think you had mentioned reevaluating the number of hours, perhaps, that the examiners should spend on a particular case. I think that would be helpful.

Some of the suggestions that Dave made earlier about having group meetings and that kind of thing, and how that doesn't really count towards an examiner's performance, can -- those types of meetings can be counted by the fact that PTO oftentimes does offer write-off time. So time that people spend in these types of meetings, they're not really held accountable to produce additional cases.

I'd like to thank you for allowing me this opportunity to testify, and I can answer any questions you may have.

COMMISSIONER LEHMAN: Thank you very much. I don't think I have a need at this point, but I think that was very helpful. And it's very helpful, the perspective of people like you who have been in the corps, who are young attorneys or attorneys-to-be, because you're exactly the kind of people we need to know what's going on with. Thank you very much.

Our next witness is Professor Samual Oddi of the Northern Illinois University College of Law.

PRESENTATION BY SAMUAL ODDI

NORTHERN ILLINOIS UNIVERSITY COLLEGE OF LAW

MR. ODDI: My name is Samual Oddi. I'm Professor of Law at the Northern Illinois University College of Law in DeKalb, Illinois.

My comments are premised on research I have done into the area of the economic impact that intellectual property has in various spheres. I started this research because of my interest in the international patent system and its impact on the economic development of Third World countries. That study is published in the Duke Law Journal.

Then, due to my economic research into that, I came upon a number of economic theories which I thought had more specific applicability, if you would, to the United States and developed countries.

I then published an article in the American University Law Review entitled "Invention Protection in the 21st Century Beyond Obviousness" where I proposed a revolutionary patent which provided an enhanced degree of protection for those very rare revolutionary inventions which I will define in a moment.

Most pertinent to these hearings is an article that was published very recently, late last year, in the Nebraska Law Review entitled "On Uneasier Case for Copyright Than for Patent Protection for Computer Programs."

COMMISSIONER LEHMAN: An Uneasier Case?

MR. ODDI: On Uneasier -- rather ungrammatical, but that's the title which is based upon a previous use of the "uneasier" in the copyright context.

I have heard this morning a couple of comments which I think are very typical of what's happening in this field today. There is a League for Programming Freedom and perhaps a league for insurance company freedom. We love intellectual property, as long as our ox isn't gored. And there are costs. Indeed, there are costs. They may be spurious lawsuits. They may be lack of access.

Intellectual property is always the context of access versus incentive. I want to talk about the positive aspect of it this morning, about the incentives.

The question I'd like to address is whether the present regime of intellectual property provides adequate incentives for the creation of software-related inventions in general, and for what I call revolutionary software-related inventions in particular.

Now, incentives are fundamental to our intellectual property system. The instrumentalist intent of Article I, Section 8, Clause 8 of the Constitution is clear: To promote the progress of science and useful arts. This was not a novel concept even 200 years ago when our Constitution was framed. It can be traced back to at least the Venetian patent statute of 1474, which states -- and the language is rather interesting and I'll quote it for you.

"Now, if provision were made for works and devices discovered by men of great genius apt to invent and discover ingenious devices so that others who may see them could not build them and take the inventor's honor away, more men would then by their genius would discover and would build devices of great utility and benefit to our commonwealth."

Again, this idea of the incentive being provided. The underlying assumption of providing the patent incentive of exclusivity for the creation of inventions is that in the absence of such an incentive and inadequate number of inventions would be provided. This would be to the detriment of society.

Now, there are costs associated with that. We are willing to suffer the indignity of the patent, the copyright monopoly, in order to achieve these inventions. However, as all of us know, many inventions would still be created, even if there were no patent system.

After all the aphorism, necessity is the mother of invention, still rings true. The market will induce many inventions with such factors as lead time, learning curve advantage, market recognition, among others, often being sufficient incentives.

Thus we can distinguish patent-induced inventions, that is, those which are actually induced by the availability of a patent, from market-induced inventions, which do not rely upon this patent system for their creation. The market drives them.

Economists tell us that if patents were limited to those of the market-induced variety, the result would be a net benefit to society. The problem is that the patent system protects all inventions. It boils down to a question of whether society should pay for something that it would otherwise get for nothing. So we built in costs because we inherently protect all types of inventions.

Now, the Supreme Court recognized this in Graham versus John Deere in the context of discussing the standard for invention. And I quote: "The inherent problem was to develop some means of weeding out those inventions which would not be disclosed or devised but for the inducement of the patent."

The requirement, however, that an invention not be obvious to one skilled in the art is at best a fickle tool for weeding. There are of course many inventions that would satisfy, and do satisfy, the nonobvious requirement, which are induced by the market rather than the patent system. These tend to be inventions which are of a high benefit/cost ratio variety.

That is, those which are in the product line of the enterprise, and which fit into existing product lines which you need to develop for competitive purpose, or else you're going to be out of business whether or not you're going to patent it.

Now, in my view, the important category inventions that rely upon the patent system for their creation are revolutionary inventions. These inventions, as defined by Professor F.H. Chair, who is an economist at Harvard, are those that revolutionize production or consumption. These are the industry-creating and job-creating inventions.

Examples will include telephones, geography, black and white television, transistor, and there are many, many others. The revolutionary inventions tend to require the patent system for inducement because of their uncertain benefit/cost ratio. They do not lend themselves to a bottom-line type of analysis because of the uncertainty involved in even creating a viable invention.

There's a final class of patent-inducing inventions. These are the detailed inventions that companies will typically use in a defensive manner to carve out some small area, and they tend not to be very important because there is competition. So they are not extremely costly.

Now, if revolutionary inventions are the important category, how does the present patent system deal with them? In my view, it deals with them poorly. And indeed, discriminates against them with respect to requirements of patent law. One, the statutory subject matter requirement, and two, the utility requirement.

Because revolutionary inventions tend to be at the cutting edge of knowledge and very close to discoveries of scientific principles or laws of nature, they may tend to run afoul of Section 101 definition of statutory subject matter.

In addition, as such inventions tend to be at an early stage of development where full utility has not been fully determined, they may have difficulty in complying with the utility requirement as rather rigidly defined in Brennar versus Manson.

Now, statutory subject matter has plagued software inventions, as all of you know. Benson and Flute are still lurking out there somewhere, although narrowly interpreted by the Court of Appeals for the Federal Circuit, and also the Patent and Trademark Office.

The utility requirement may also present some problems for these cutting edge software inventions. On the other hand, market-induced inventions have little trouble satisfying statutory subject matter in utility requirements. The only filtering aspect is the nonobvious standard. And as you also know, secondary consideration, such as commercial success, may even open up the filter with respect to many market-induced, because the market loves these. They were needed in the first place.

Now, let me change gears a bit and talk just a moment about copyrights. It is clear that literary and artistic works tend to require the inducement of copyright -- novels, poetry, musical compositions. To a lesser extent, factual work, such as compilations that require the expenditure of sweat of the brow, may need some inducement.

But, the category of works requiring the least incentive would seem to be utilitarian works that provide a function outside of expression.

I would suggest three dimensional lamp bases, for example. And of particular relevance here, computer programs. It seemed quite clear that there was a tremendous market incentive to create, for example, application programs. This symbiotic relationship between hardware and software drives development in both directions.

Now, if I can be permitted to generalization, present copyright law provides excessive incentives for the creation of software in general. There is a low substantive standard, originality, for protection. The scope of protection might be quite broad, and is inherently ambiguous. Little information is conveyed when programs are published in object form. And the cost of acquisition is negligible.

Now, notable examples of excess protection in the copyright sphere would include Welan, the Lotus case, lingering linguistic charm of look and feel. The Second Circuit case of Computer Associate versus Altay at least attempts to provide a filtering form of analysis to eliminate some functional features of utilitarian programs.

However, there are inherent difficulties in attempting to use a literary form of copyright infringement analysis in the context of a utilitarian work. Nonetheless, does the copyright system, even as presently interpreted, provide an adequate system of protection for what may be called revolutionary software?

It seems clear to me that reasonable business people would not rely on copyright alone for the protection of revolutionary developments. The important aspects of such developments would reside in the ideas contained therein, which would be subject to strong attack under even the most generous and ambiguous literary forms of analysis.

What then about trade secrets? Trade secrets, particularly in combination with copyright, provide a relatively strong regime of protection for programs. However, with respect to revolutionary software, once the idea has been conveyed publicly, there is no misappropriation, and competitors would be free to use these basic ideas, which indeed make the software revolutionary.

Finally, a word about suigenerous protection. There's been a lot said about that, a lot published about providing a suigenerous protection for computer software. This may or may not be a good idea. Such a system may solve certain problems, but will create others.

In any event, with respect to revolutionary software, it does not provide an adequate solution. None of the proposals I have seen have the temerity to suggest the protection of ideas.

Now, my general conclusion is that the current regime of intellectual property -- let me state my general conclusion once more. My general conclusion that the current regime of intellectual property inadequately protects revolutionary software invention.

What then would I recommend? As a minimalist position, I would urge the Patent and Trademark Office to stay the course. The law with respect to the patentability of software-related inventions seems to be advancing in a desirable manner under the benign leadership of the Court of Appeals for the Federal Circuit in its application by the PTO.

It would be nice to have Benson and Flute overruled legislatively. To the extent that statutory subject matter would include, as indicated in the Shakovardy decision, "anything under the sun made by man."

It would also seem desirable to have Deere clarified as to the definition of a process so that it was made clear that there is no transformational requirement.

Also, it may be helpful, if this comes into issue, to look at the definition of utility again. The Manson standard, in my view, is far too narrow. It impacts adversely on revolutionary types of invention.

In closing, I'd like to say a few words about the economic importance of revolutionary inventions, and in particular revolutionary software inventions. The United States is the current recognized leader in software development. Nonetheless, in my view, it will not retain that leadership if development is concentrated in the creation of new game programs or further adaptations of application programs.

The future lies in those revolutionary inventions that will change how we do business, consume, communicate, whatever. This may be with reference to the information superhighway, interactive media, data compression, and more importantly, for uses that haven't even been thought about at this time.

Along this line, it should be noted that Americans are probably the most creative individuals in the world. Look at the number of Nobel prizes awarded to Americans. Look at the number of revolutionary inventions created here, even though they may be commercialized elsewhere.

In addition, Americans are noted for their entrepreneurship. Small businesses create the vast majority of the jobs in this country today. The downsizing of major corporations is unfortunate, but it is a reality.

It is also known that entrepreneurs are willing to risk capital in the development of inventions that do not have a bottom line driven benefits/cost ratio. It is this risk-taking of the entrepreneur, when coupled with the creativity of the individual, that is likely to produce revolutionary inventions.

This is particularly pertinent to the software industry, which still tends to be a cottage industry and requires relatively little capital investment -- only access to a computer, a creative mind, and an entrepreneurial experience. We should build upon our leadership in the software area and exploit the creativity and entrepreneurship of those already working in this field and those who will enter this field.

Thus, I would urge that the policies be adopted so that an adequate system of protection for revolutionary inventions, particularly in the software field, can be maintained and implemented.

Thank you.

COMMISSIONER LEHMAN: Thank you very much, Professor Oddi. I was all set to ask you a question that I think you sort of answered at the very end. But when you talked about the incentive of the patent system and really focused on the incentive of the patent system as a means of inducing invention.

We, not only in this forum -- and in this forum we heard it, but definitely in San Jose and here and other places -- the patent system also is a mechanism for inducing investment as well. I gather that -- as I said, I think at the end you sort of clarified that, but you can tell me whether I'm right or not in terms of my interpretation of your analysis -- and that is that you indicated that actually investment in run-of-the-mill -- that the present system actually encourages investment in the run-of-the-mill technology as opposed to the really innovative breakthrough technology. So that actually an analysis which really focuses on innovation, and a system which focuses on innovation, are still the preferred system.

MR. ODDI: Yes. Let me clarify. When I talk about inducing, I'm talking at all stages, not at the creation stage, which is what I primarily focused on today. In my article I go in and talk about at the innovation stage -- commercialization stage -- economists like to call it innovation when it goes into production. It's actually commercialized.

Yes, those would be induced, too, because certainly the basic idea has to be implemented. And we need incentives all the way throughout the development.

COMMISSIONER LEHMAN: We also heard in San Jose quite a bit of criticism of the way we implement Section 101, and that we're really spending too much time on very artificial determinations. And I think to some degree that was an underlay of some of Mr. Lo's comments, too, working day to day on this, in fact to the point where he was in a sense almost offering suggestions as to how we might further refine these, to some degree, semantic distinctions simply so they'll create fewer problems.

And I gather that that's something that you think really does need review.

MR. ODDI: I certainly do. So I think Section 101 should not be a filter for inventions. And it was mentioned here earlier, the methods of doing business -- well, in my view, that is an arbitrary categorization based upon 19th century formalistic jurisprudence, which today we know that the United States is a great service industry. And I think there's a great deal of creativity in the service industry.

And certainly if somebody comes up with a revolutionary invention in the field of how you do business in the insurance, or whatever business, I think our society benefits at the margin from having that invention, rather than having people invest in that so that we will have it, because it will be a more efficient way of doing business. We will have value added, and I think that's important to our economic development.

COMMISSIONER LEHMAN: Well, actually in San Jose I think one of the things that came out, quite apart from whether or not inventions get -- applications are rejected inappropriately on these grounds, which would be your thrust -- that the mere fact that we spend so much time worrying about it takes away from the -- focuses our attention on the wrong issue, which is really nonobviousness --

MR. ODDI: Yes, I know that.

COMMISSIONER LEHMAN: -- as opposed to, you know, trying to fit this square peg in the round hole.

MR. ODDI: My only comment on that, that I think the nonobvious standard ought to be a rigorous high standard because it is the only mechanism that we have for filtering out these costly inventions, which the market would otherwise create.

COMMISSIONER LEHMAN: Well, I think that really goes to the core of what you're talking about too. I got the impression there's a fair amount of satisfaction with the direction of the Court of Appeals for the Federal Circuit on that. That would not necessarily be my view of --

MR. ODDI: With a caveat about secondary considerations and other -- because that tends to show you that the market really was a factor in the creation of it. I'd like to see a more objective evaluation of the nonobvious issue based upon the prior art, rather than what happens post hoc.

COMMISSIONER LEHMAN: I really want to thank you for coming all the way out here. I hope you're not snowed in forever.

MR. ODDI: I hope not.

COMMISSIONER LEHMAN: You're used to it, though, in Illinois.

MR. ODDI: Right. Thank you very much.

COMMISSIONER LEHMAN: Next, actually, because we've dilly-dallied around, we've supplied time for Bernard Galler of the University of Michigan Software Patent Institute to get here. So if Professor Galler would come forward?

MR. GALLER: Yes. One plane canceled, one late. The taxi drivers couldn't find the place. But I got here.

COMMISSIONER LEHMAN: Great. The Federal Government is closed today.

MR. GALLER: I heard that it was closed, but I had confidence that you would continue with these hearings.

(Laughter.)

PRESENTATION BY BERNARD GALLER

UNIVERSITY OF MICHIGAN SOFTWARE PATENT INSTITUTE

MR. GALLER: I'll introduce myself. I'm Bernie Galler, Professor of Computer Science at the University of Michigan, and former president of the ACM. But I'm here today as the founder and chairman of the Software Patent Institute in Ann Arbor, Michigan. And I'm speaking here as Software Patent Institute representative.

The history of inventions in the software area is not recorded well. There are a few formal journals, such as the Annals of the History of Computing, and some textbooks. But the prior art that is needed by the PTO is not available in many of the forms that more mature fields support.

For example, in the fields of chemistry or physics, in addition to a large number of patents available to the PTO, most researchers' results are published in a relatively few journals.

This is not the case in the software community. Not only are the results and inventions not published in formal journals most of the time, they usually described if at all, primarily in informal conference reports or newsletters. Add to that the almost complete lack of issued patents before 1981 in this field, and it is clear why PTO examiners have a difficult time finding prior art, even when previous work that is relevant is well-known in the field.

There are some repositories of program code, but it's very difficult to extract, or abstract, the innovative and nonobvious algorithms and ideas that are detailed there.

What is needed is not the detailed code, but some level of description of what is in that code. Unless the author carefully documents the developing algorithm, the control flow and the data structures, it's very difficult to discover these concepts to understand the underlying process.

It is well known, however, that programmers are usually too interested in moving on to the next task to take the time to document the last one.

It isn't difficult to understand why software results are so often not published in formal journals. Most of the work in this emerging field has been done outside academia, since software is almost always immediately applicable to the solution of problems that already exist in industry.

Of course, there is theoretical work in computer science and compute engineering. But the explosion of computing in our society has led to a corresponding explosion in software techniques in advance of the theory. And in the rush to exploit these techniques, relatively little effort has been devoted to disseminating these results and techniques widely.

In fact, even when this kind of information is not regarded as a trade secret, many companies are not particularly anxious to have it made widely available.

During the years before 1980, there was much confusion as to the kind of protection that might be available, if any, for software inventions. And there was little incentive for programmers to try to publish their work. Much of the communication that did go on occurred at thematic conferences and workshops. The reports of such conferences constitute a very valuable source of prior art, but they are not readily available to the PTO.

Thus, the PTO has found it difficult to identify the relevant sources for prior art, or to collect that prior art into a usable database for the purpose of evaluating patent applications.

What are the relevant sources for prior art in the software area? I already mentioned our conference and workshop proceedings from both general and specialized conferences. These are usually sponsored by professional societies such as the ACM and the IEEE, and special interest groups, the sigs, or societies. And the sigs publish newsletters also, often containing nuggets describing new ideas and techniques which eventually prove to be important prior art.

Universities such as Michigan and UCLA have for many years offered short courses lasting one or two weeks in which leading edge research results are presented, disclosing new ideas, concepts, and techniques. The notes which are distributed to attendees contain valuable descriptions of such work and in time prove to be important prior art publicly disclosed.

Manuals for commercial systems and applications often contain important descriptions of the techniques these systems and applications embody, and are a valuable source of prior art. Such sources would not be readily available to PTO examiners unless the PTO would have the funding to build an extensive library with appropriate indexing for that purpose.

A number of software vendors publish internal reports and/or research journals, which are made available to their customers, and are thus publicly disclosed. These reports and journals and other materials used for the education and training of customers often describe innovative ideas and techniques which could be used as prior art if they were available to the PTO examiners.

Government sponsored research is often documented in reports generated by the principal investigators and published by the sponsoring government agencies. While these are public documents, it's not easy to know where to look for them. They often contain the earliest reports of significant research and applications in the software area.

Another source of material can be found in books published on various subjects in computer science and computer engineering. These include textbooks for the more advanced courses, and research publications from academic institutions.

It is not always easy to find the kinds of prior art that examiners need in such books. But if they were on-line instead of only in printed form, it would be much easier to discover which books contain material relevant to a particular claimed invention.

Finally, corporate defense of disclosure publications can be important sources of relevant prior art. A company that wants to make sure that a competitor does not obtain a patent covering a process or technique that is essential to its own business might publish a description of that process or technique to have it publicly disclosed without taking the additional step of applying for a patent. And there are well-known examples of this.

On the other hand, that company may not be particularly anxious to advertise its discovery or use of that process or technique, so the publication would not be very widely disseminated. There are also well-known examples of that.

If indeed a patent is later issued for that process or technique, the company can point to the disclosed art during litigation, but that is a very late stage in the cycle.

Companies that rely on defense of disclosure should be encouraged to deposit their published disclosures in a database available to the PTO so the controversial patent most likely will not be granted at all.

Well, the Software Patent Institute is a nonprofit institution dedicated to providing information to the public, to assisting the PTO and others by providing technical support in the form of educational and training programs, and to providing access to information and retrieval sources.

The primary goal of the Software Patent Institute is to provide the best available information as to prior art in the software field for utilization by the public and the PTO.

We applaud the efforts by Dr. Dobb's journal of Miller Friedman publications to make its articles available on CD ROM. And the efforts of Ziff/Davis Publications to put a number of recent computer-related publications on CD ROM, as well as the efforts by the IEEE and the ACM to make available abstractive computer science articles.

We also applaud the efforts of those who are working to identify, collect, and distribute copies of the patents they consider software-related, especially since many of the

patents that have been identified come from a large number of PTO classes. These efforts are valuable contributions to the overall effort to document the history of software technology, and to make the results available in online form.

The Software Patent Institute, for its part, is tracking these efforts carefully so that our collection supplements rather than duplicates these other efforts. To track the history of an exploding industry with rapidly developing technology is a massive undertaking that will require significant efforts by a number of organizations. We are committed to being one of them.

The Software Patent Institute also provides an educational resource from which the PTO and the public can obtain an enhanced understanding of the nature of software, of software engineering, and of the history of the discipline and its relationship to the patent process.

Several lectures have already been given to the examiners of the PTO on aspects of software history and techniques. And several more are scheduled during the next few weeks and the coming months. We will have a professor from Carnegie Mellon there next week, and a professor from Michigan there the week after that, lecturing to the examiners. And we hope to continue that.

We plan to offer our first one-day session on related topics to patent professionals and the general public sometime this spring.

Although there is a current debate on the overall desirability of having software patents, the Software Patent Institute has deliberately taken no position on that question. We recognize that the patent system is in place, and working, but that there is currently a problem regarding software-related patents. We are dedicated to helping alleviate that problem independent of longer-range considerations that must eventually be resolved.

The Software Patent Institute has asked people throughout the software industry, government, and academia, to contribute descriptions of software techniques and processes to the Software Patent Institute database. These descriptions form the content of the SPI database, and have now been made available for computer-aided searching by the PTO, and by members of the Software Patent Institute. Access by the general public will follow shortly.

The SPI database already contains many examples of each of the kinds of relevant prior art outlined above, and it is growing rapidly.

Our recommendation to this panel is to issue a strong recognition and endorsement of this kind of activity by the Software Patent Institute and by others, and to encourage the PTO to take advantage of the services of the Software Patent Institute as much as possible.

We strongly believe that the PTO can and will do a better job than it has if it has the right tools and the right information.

I thank you for being able to talk to you, and I certainly would answer questions.

COMMISSIONER LEHMAN: Thank you very much, Professor Galler.

One of the issues that came up earlier today was the whole question of the classification system that we have right now, that it very rapidly gets out of date. And this makes it very difficult for examiners even to take advantage of the information that's already in our patent files.

Obviously you're struggling with that, working with that, as you try to organize this new database. Maybe you could expand on that, about, do we have a problem? What's the nature of the problem? And maybe you have some suggestions about it.

MR. GALLER: Well, for the time being we're providing full text search with whatever words the patent examiners know about.

What's really needed down the line, though, is a thesaurus kind of help, which says, if you're looking with this term, you really ought to be looking for those, also, and here are some additional suggestions. Here are some related articles or entries that you may not have thought about, but they might be close to what you want.

There are an awful lot of database techniques that are well-known here which we certainly will start to use once we have a process that is working and bringing in the revenue that we need to keep going.

But is this kind of -- well, two things. One is, the database service can provide such help. Here are some suggestions for what you want to do.

The other thing is, as we give these lectures and other people give lectures, and the examiners become more technology-knowledgeable, they themselves will expand their knowledge of how to search. What are the relevant terms? What are the relevant things they ought to be knowing about?

The classification that the PTO has doesn't help. You know, from the computer science point of view, it's not a very good classification. But it exists. And we can hope to help map it into more coherent, technology-based classifications. And we certainly plan to do that.

COMMISSIONER LEHMAN: Thank you very much. We look forward to cooperating with you and working with you.

MR. GALLER: Thank you.

COMMISSIONER GOFFNEY: Bernie, Jerry Goldberg, who is the director of Group 2300, certainly endorses your activity, as do we. He wasn't here, wasn't able to get here today, but he has told me a lot about your work, and it's certainly appreciated.

MR. GALLER: Well, he's been very helpful to us in helping us understand the problems of the Patent Office, absolutely.

COMMISSIONER GOFFNEY: Thank you.

COMMISSIONER LEHMAN: Thank you very much.

We're getting there. Finally, unless Professor Fryer has arrived -- he hasn't. I know him personally, and I don't see him.

Then finally, we're at Gregory Aharonian, who has waited very patiently for two days now. He was also in San Jose.

PRESENTATION BY GREGORY AHARONIAN

SOURCE TRANSLATION AND OPTIMIZATION

MR. AHARONIAN: Before I address the topic -- I'll mainly be speaking about software prior art -- there were three kind of little tidbits that came out of other discussions I thought I'd share with everyone.

About a year ago, a group either with the German Patent Office or the European Patent Office did a study of the maintenance fee renewal process for German patents. In Germany I guess they're done every year as opposed to being done every three or four years, as in the U.S. So that from an economic analysis point of view, yearly data is very easy to analyze.

They found that for the computer software industry -- no, for the computer industry as a whole, that the average length of the patent was about six or seven years before they effectively stopped renewing the patent. So these talks about lowering the patent life, I mean you could go down as far as about seven years. And if you actually look at renewal rates, it would have absolutely no impact.

It's a little known study, but it's one that probably should be circulated more widely.

The second thing that was also talked about is, there are a growing number of investment funds in New York City that are pooling money to find people with patents so they can go chase lawsuits and stuff. So that all these problems we're talking about are going to get a lot worse because there's going to be a lot more floating around to play these games. Especially in the field of software, there's a definite window of time before it gets really messy with the monies being thrown into this stuff.

And the third is a patent I just came across out of Microsoft that -- I had seen something in there that I had never seen before. In the preamble to the specification, they said that part of the patent specification contained copyrighted material. And there was a warning in there of some sort.

It was the first time I've actually seen anything copyrighted inside of a patent. And I'm wondering if this is going to be a whole new family of hybrid copyright patent things that are going to confuse everyone to death.

COMMISSIONER GOFFNEY: Did that happen to be code that was in there?

MR. AHARONIAN: I didn't look. I was just examining something over at the Public Search Room, and the first page had this paragraph that I Xeroxed because it was just something I'd never seen before.

PARTICIPANT: For clarification, it's a notice that says that, for purposes -- that you can copy this patent application or patent, once it issues, for any purpose you want related to the patent application. But you can't -- all other copyright rights are reserved. And it's a common practice by practitioners.

MR. AHARONIAN: I'd never seen it before, and I thought it was kind of interesting. A couple of us were chuckling.

I'm here to talk about software prior art, and I happen to know a little bit about the subject.

Software prior art comes up in six areas of activities. In the information disclosure document, when the applicant files a document, during the patent examination when the examiner is dealing with issues of novelty and obviousness, during reexaminations when somebody is going to challenge it, infringement lawsuits, and the circuit court decisions.

Each of these need to have access to what's been done in the field before. Actually, in terms of economic activities, which dwarfs all software prior art activities, there's just some general software technology trends for reuse, well, they have actually the same question: What is out there that exists that can be used?

For many years now, at least eight years now, I've been maintaining a very large -- the largest software prior art reuse database in the country. I have information over 15,000 computer programs coming out in government, corporate, and university facilities, 5,000 patents, and over 100,000 abstracts to articles in the field.

This is in a sense an active collection. Each of the items are items that I've actively sought out to include in my database and examined either in depth or just briefly to look at them.

I'm located in the Boston area, and in this modern era I'm located on the Internet.

One of the things I do is that every year or two years I publish a directory of -- what I call the Government Source Code Directory -- since a lot of the public domain software, a lot of the university software, even a lot of the corporate software is actually funded under government contract, except for obviously corporate commercial software.

The current directory has the titles to about 10,000 programs. It's actually a pretty good guide to both what is state-of-the-art, what is historical, how to classify software. It's just such a large body of information that there is a lot you can do with it.

I run a business of helping companies get at the software, helping them reuse it in their business practices, helping them examine the technology inside of it, things of that nature. It's a very rich source material. This country spends about $50 billion a year developing this stuff. And there are a lot of good programmers working here, so that there's a tremendous wealth of technology available.

I also, in recent years, as software patenting has become active, and I tend to share a lot in the information I have, I've started up something called Internet Patent News Service, where each week I mail out over the Internet the titles and numbers to the most recent patents and the most

recent gazette that happens to hit the Boston Public Library where I do a lot of my research.

I have about 1,000 subscribers around the world, many of which are actually rebroadcast sites, gopher sites where they collect the information and make it available -- 880 of the subscribers get the news service, where I, for example, announce the PTO hearings and other such things. Nine hundred or so are electronic, most of which are software. There is a tremendous demand on the Internet for software patenting information. These people would kill for almost anything.

I have all types of people, government agencies, people in 35 states, 28 countries, corporations, universities, and one of the Texas patent depositories got tired of getting their data so late down there they just figured they'd get it through me.

This is a map that was collected by one of the Internet node maintainers of traffic flow over the Internet. And it's kind of a pretty picture which I like showing to people. But it also kind of shows both the sites where a lot of software activity is going on in the U.S., where I track a lot of the software. That does come out, where a lot of the software prior art is being made, and where actually a lot of my Patent News Service subscribers are.

It's all pretty much the same thing. And not surprisingly, there are heavy concentrations in New York, Boston, and Washington on the East Coast, obviously. And then up on the West Coast, it's the Bay Area, Silicon Valley, and down in LA, San Diego. There's a decent movement in Texas and somewhere in the Midwest. But for the most part, it's regionalized into the five big tech cities of the country that are up there.

Where do you find software prior art? Well, the sources I find out when I'm traveling around the country are in these seven categories: technical reports, both government, corporate, and academic; journal articles; conference proceedings; theses and books -- and universities theses are probably one of the most richest sources of software prior art, in a timely sense; commercial products; Internet files; bulletin board systems, which are in many cases not part of the Internet formally but tend to store growing mounts of information; and in software patents.

Each of those sources of information have a legacy of history behind the organizations involved with them. And you have to learn about them to learn how to search through them.

What types of software prior art do I search for? Well, obviously, source code is the most obvious one to look for, since that is the best description of a program.

Then there are object libraries and executables. There are flow charts and state charts. There are pseudo-code which you see in a lot of journal articles. There are patent claims. Obvious things, obvious description of those software.

Then there are some things that kind of border on the software field, the SPICE and VHDL circuit description languages, and with the growing convergence of hardware and software, they too become prior art of a sort that have to be searched for, even though to most people concerned searching for software prior art, they would not look in such sources.

Then spreadsheets and numerical data also can be considered software as a form.

Now, when I think of software prior art -- and what follows is a series of slides that I'm going to give you a tour of where I hang out most of my life. When I think of software prior arts, I think of dusty, grungy old basements. That's where most of this type of literature can be found. You have to look for it. But this is where you're going to find it a lot of times -- dark basements, with endless stacks of materials that you have to search through one by one.

Most of this stuff is not on computer databases at all. The only way you're going to really find any of this stuff is to pull out these volumes one by one and flip through them. It's a very tedious, lengthy process. It's the only way it really can be done.

This happens to be a collection of books dealing purely with software. So in some cases, the information is fairly compact. These I think are programming language books in a variety of languages. I think those green books up top are all the ADA books.

In some cases, the information is tightly concentrated, and it does make the search easier.

In other cases, for example, the bookcases you see in the background, are for the subject matters of physics and engineering. Normally you wouldn't consider searching through such stacks for software, especially since they're really not in software. But there is a growing amount of software prior art in such subjects. Physicists do a lot of cutting edge software development that does qualify as prior art. And when you deal with stacks like that, the books are very scattered in there and it takes a long time to go through them all.

Another source is journals. This is a series of journals. And most of the journals up there come from one of the leading societies, the ACM. I think the third and fourth rows up there are mostly the ACM journals.

But there are a variety of other journals in related fields to software that all have to be searched through, all coming out every month, all potentially sources of prior art. And each journal has a family of editors and reviewers behind it, associations behind it. There are certain styles of software in there. Knowing that is very important to tracking software prior art.

The journals you just saw up there were one current month's work for all the journal from like A to Z. There are tremendous numbers of them. These are all the back journals. In this case, for those familiar with searching for such stuff, the IEEE has the previous journals around. They just use lots of different colors for their journal covers, and you can usually identify which section of the library deals with them. But in each case you have to flip through each one of these volumes to find stuff.

Then there are collections of technical reports. And these tend to be even more unorganized and scattered about. But even there, there is structure to how they are kept. If you'll see, in the middle you'll see some white journals with a colorful band across them. Those happen to belong to the Electric Power Research Institute, and they actually do some software development which they've had patents on. So you have to search through all of them.

Next to them are some orange journals which are characteristic of the Japanese Atomic Energy Research Institute. And again, they have software. In that case, it's even more difficult to search for that stuff because their reports tend to be all in Japanese except for an English abstract in source code and usually FORTRAN or something. And you know, I can read FORTRAN, but I'm still trying to learn to read Japanese.

But again, it's there and it's something that has to be dealt with.

These are again even older technical reports. These are so old that they've lost most of their colors. The orange ones are the NASA reports, and NASA tends to have bright orange and dull blue covers. The middle ones are from a European defense group, AGARD, that has a lot of software prior art.

Endless number of these in these libraries all over the country, that require one to go through them.

In some cases, the volumes of reports are so great that no library could contain them all, and you reduce them down with microfiche. This happens to be one subsection of a collection of microfiche for NASA technical reports.

Again, you have to go through each one of these one by one, stick them into the microfiche reader, and examine them to see if they have prior art, flow charts, whatever. It's not a fun process, and I've got a fair number of cuts on my fingers over the years from going through these things.

Again, here are more cabinets of microfiche. And in the background you see microform, which is a different type of film, with its set of printers. And it's just endless volumes of these things.

One of the richest sources of software prior art are university theses, because they tend to let their students do things that are as wacky as wacky can be, mainly because students are there to learn how to do wacky things as opposed to doing anything really meaningful. So a lot of the ideas -- I mean, something like Compton's patents I initially laughed at it because I've seen theses in the '80s that did all types of things with CD ROMs, because back then they were first coming out. And some student said, hey, there's a new CD ROM, let me try doing something educational with it.

Unfortunately most thesis information is not on any database, and it's very hard to find short of actually going to each university and flipping through these reports one by one. It can be a pain.

And finally, there is in the academic community, even in the corporate research community, the preprint system where people tend to distribute copies of their reports before they're published, or in many cases they don't even get published, they just pass them out anyway.

These things are very unorganized, and you tend to find them in stacks on carts. I think this is actually an IBM library in the Boston area I happened to be floating through. Searching that stuff is a pain.

Now, increasingly computers are making an impact on the library world. This is the main reference section for one such library. But in terms of prior art, most of the really interesting stuff predates most databases so that, while such computer systems will help in the future, they really won't help in the past.

Of course, I complain about a lot of the places I hang out. But this happens to be out the window of one of the MIT libraries, and during the summer it's a very pretty view. So it is somewhat relaxing sometimes in doing my prior art searches.

Now, in San Jose -- and once again I'd like to reiterate it out here -- recent developments in the hardware design world are really blurring the distinctions between hardware and software. And I'll disagree with some of the others who say that there are such distinctions. While this will have an impact on patenting issues and procedures, it has a great impact on software prior art because it opens up tremendous sections of hardware research over the past 20 years as potential software prior art.

There exists programs that allow me to scan in circuits what anyone would consider to be a pure piece of hardware, and turn them into a software algorithm. That means that in building a software prior art database you have to include all of the hardware prior art that exists out there because nowadays it can be turned into software.

And based on some counts I've made, there's at least twice as much hardware prior art as there is software prior art, so it basically triples the size of such an effort.

This is just a little article on a company in Germany that combined case tools, which is basically software engineering, with their hardware design tools, so that within one environment for the most part the engineer doesn't even care what the end result will be, hardware or software. He's just worrying about processes and algorithms and devices and things like that. At the end he pushes a button to get out a chip or a computer program. So that this issue of prior art is becoming more complicated even as we're holding these hearings.

Building prior art databases is not for amateurs. I mean, over the past ten years at least eight government efforts have tried to do similar things, and they all have failed for a variety of reasons. It's a very complicated process. There are at least 10 different knowledge classification schemes I've had to learn over the years, Library of Congress, IEEE has one, ACM has one, I have two, the Patent Office has one, there's the Dewey decimal system.

When you're going through all these sources of information out there, each one classifies its stuff differently. And to do these searches effectively and cost-

efficiently, you have to know each one. It's a tremendous amount of information.

There have been suggestions that the Internet could be a substitute. I'm very skeptical. I think that doing prior art searches and requests over the Internet has actually caused more problems than it will solve.

In recent months a variety of different people have actually asked me how much it would cost to build a truly useful software prior art database. My guess is, based on what I've been doing over the past eight years, is that you need a minimum of $10 million, plus $2 million a year as maintenance.

Now, that might seem a lot, but remember, this is to track a $50 billion a year development process. And out of that, $10 million is fairly minor. But given the vast amount of literature that already exists out there, you're going to need a very rapid development effort to catch up with all of that, plus future development efforts to do so into the future.

With the databases I already have in my knowledge, I could reject about a quarter of all existing software patents. So I would think there is indeed a problem. And most people have recognized that.

As a kind of incentive to the Patent Office, if they're considering actually building such databases, the software prior art database would have even greater benefits to the U.S. software development community. And you could score a fair number of brownie points by helping them out at the same time.

The last slide illustrates some of the problems we're now facing with software patents. This is from the January 4th, 1994 Official Gazette. And it's a patent from IBM for choosing items off of a menu.

Now, the Official Gazette includes the first claim and a diagram of the best mode embodiment. And it is inconceivable to me that in 1994 the best mode embodiment of a menu selection system is what appears in the Gazette and what appears in the patent. I haven't examined this patent in detail, but I suspect what we see there reflects what's in the rest of it.

Those type of menu selection systems date back to the '60s. And the fact that something was issued with such diagrams makes me kind of nervous that the problem is even worse than we think it is.

But like I said, you flip open recent Gazettes, and you'll see patents in there that are truly questionable.

That's it.

COMMISSIONER LEHMAN: Thank you very much, Mr. Aharonian.

Well, I think we did pretty well today for a snowy day. We actually got all but a handful of people that were supposed to testify, and we got a couple more from yesterday. And I want to thank everybody for coming through the snow.

As I indicated, this hearing transcript will be made available after February 21st. But we're happy to accept more supplemental information, either written information that

can be sent directly to us, or information that can be sent to Jeff Kushan on the Internet.

We're always open to information at any time, even two, three years from now if you -- you know, reelect President Clinton, we'll be available for information even then, and then maybe President Gore, and then maybe President Hillary Clinton. By then we'll have the prior art database completely resolved, that problem.

So anyway, thank you very much, and have a good day.

(Whereupon, the hearing in the above-entitled matter was adjourned.)

Due to the inclement weather, a number of speakers were unable to attend or provide oral remarks. Prepared remarks from these individuals has been included in the transcripts in response to their request.

PREPARED REMARKS FROM ROBERT GREENE STERNE

Thank you, Mr. Commissioner.

My name is Robert Greene Sterne and I am testifying on behalf of myself. I want to focus on five specific issues which I believe need to be explored further in order to round out the record in these hearings. These five areas deal with the preparation and prosecution of computer related patent applications.

While my views are my own, they are based on the experience of the ten members of my firm who prepare and prosecute patent applications in the computer area. The experience base that is being drawn upon encompasses literally hundreds of original US cases. I mention this because you need to know the perspective from where my views come.

First, I want to address whether program listings or flowcharts or pseudocode or other specific types of disclosure should be required in the patent application for the software aspects of the invention? It is tempting both for practiioners and the Office to have very specific disclosure requirements concerning software. But my view is that it would be a mistake to establish specific disclosure requirements. Our experience is that there is no agreement among experienced patent attorneys or among software inventors concerning what is the optimal disclosure strategy. Moreover, as the technology races forward, the disclosure strategies change based on our experience. The patent system is very robust since it, unlike a sui generis system, can adapt to rapidly developing technology in emerging areas. I understand that to reduce printing costs and database costs the Patent Office would like to limit certain types of listings, and that many people believe that more higher level forms of representation of the invention are more effective in explaining the critical functionality and architecture and operation of the software invention. I agree with these sentiments, but believe that the system is better served by maintaining the flexibility of allowing the applicant to decide the best way of discloses the invention in the patent application.

To amplify on this point, let me say a few things about the technology that will support my view. First, I agree with the

opinion that machine code, such as object code, does not aid in enabling one skilled in the art to make and use the invention. But I believe that source code combined with adequate accompanying description is often sufficient to satisfy the disclosure requirements under Section 112. This is particularly true with computer programs written in higher level computer programming languages, such as Pascal and ADA. As the computer programming arts progresses, computer programs will be just as easy to read by humans as english text. In fact, it is the objective of such computer programming languages to be human readable. Thus, it would be wrong for the Office to adopt rules which would prohibit the submission of source code.

Second, as an attorney in private practice, I am very sensitive and aware of deadlines and budgets, and I applaud the Patent Office's efforts in the area of enlightened management, management by objective, and total quality control. These are all good and encourage Examiners to utilize their time in the examination process in the most optimal way. However, I am quite concerned that the very complexity of these state of the art software inventions by necessity require more time for examination that is being allocated by the Office. Examiners in these areas of technologies should be careful supervised, and their performance measured, like all other examiners. However, the Office must make sure that it is allowing them the time that they need to do a quality examination job that the patent system and the public requires.

Third, I applaud the efforts being made to hire examiners with significant educational and work experience in software technology. This expertise is absolutely essential for the Examination process, and the patent system is very well served by the Office raising the technical competence of the Examining corp in the software area as soon as possible. Similarly, applicants for the patent agents exam who have significant computer science backgrounds should qualify to sit for the exam. Computer science in this day and age should be considered to be a sufficient technical expertise to qualify to take the patent agents exam. But I agree with the sentiment expressed by some that there is a broad range of technical training in computer hardware and software from degrees from different educational institutions. Consequently, both in terms of hiring examiners and qualifying applicants for the agents exam the Office must carefully examine the educational qualifications of the individuals involved so that qualified people are let into the system and people without sufficient training are excluded. By necessity, this will require line drawing, but like many areas of patent law the ability to distinguish the shades of gray is the strength of the system. In other words, neither the approach of excluding all computer science people nor the policy of letting all computer science people in should be taken.

Fourth, our experience in prosecuting applications on state of the art software related inventions is that the Examination process in the real emerging areas of technology is effectively being delayed pending these hearings and the political uncertainty over patents on this technology. Mr. Commissioner, you should be aware that we are encountering situations in prosecution where applications, in our opinion, are not being allowed because the Examining Corp is afraid of the political ramifications associated with possible adverse publicity to the Office if applications in these technical areas are issued. This delay and uncertainty hurts the patent system and American innovation. These political forces should be removed from the examining process and the focus should be on examination and not on a fear that the anti-software patent forces will raise a great hue and cry over the issuance of a particular patent in an emerging area of technology. Now, I don't want to be misunderstood on this point. In no way am I arguing that a patent should be issued on an invention that is too broad based on the prior art or is non-statutory based on a liberal interpretation of Section 101. But I am deadset against any type of delay that is being caused by fear of issuance of patent applications on patentable inventions merely because they involve state of the art software technology.

My fifth and final point concerns your database. As other speakers have stated, one of the great benefits to the public of patent protection for software related inventions is that such inventions, which in the past have been maintained as trade secrets, will be disclosed to the public so that others will not have to reinvent the wheel. This will be of great benefit to the software industry. As an aside, the software industry in this regard is 180 degrees from what happens in another emerging area of technology, biotech, where the tradition is to publish or perish and inventors oftentimes lose their patent rights here or abroad though premature publication of their inventions in the technical literature. The biotechnology area clearly shows the benefit of rapid disclosure of technology in that competing researchers are allowed to rapidly build on the work of others and not recreate the same inventions.

Turning to the database problem involving the examination of software related inventions, my view is that this database problem is not different that the problems encounter by the Office in other areas of emerging technology, such as biotech. It is critical that the Patent Office take all reasonable steps to create the most robust database possible in these emerging areas of technology, and to provide efficient and economical access to this database to members of the public both in Washington and in remote locations. The electronics superhighway being pushed by this administration could form the backbone for this remote access. The patent office should squarely embrace initiatives for building the most comprehensive database possible and for opening it up for ready access by members of the public. I know that this in practice is a tall order and one that could be very expensive. However, the benefits of providing a comprehensive database appear to outweigh the cost.

Thank you for this opportunity.

PREPARED REMARKS FROM MR. DANIEL J. KLUTH
TESTIMONY OF DANIEL J. KLUTH
AT THE PUBLIC HEARINGS BY THE
U.S. DEPARTMENT OF COMMERCE
PATENT & TRADEMARK OFFICE ON

PATENT PROTECTION FOR SOFTWARE-RELATED INVENTIONS

February 11, 1994 Marriot Crystal Forum, Arlington, VA.

Good morning ladies and gentlemen. My name is Daniel J. Kluth and I am a patent attorney with Schwegman, Lundberg & Woessner, P.A. of Minneapolis, Minnesota. I am the chair of the Software Protection Committee of the Minnesota Intellectual Property Law Association and I am the Chair of the Government Relations Committee of the Minnesota Software Association. Although I am the chair of these two Committees, I must point out that my remarks today do not have the complete endorsement of these organizations. I have polled many of the members of these two organizations and, specifically, the Software Protection Committee, and I will try to convey the impressions I received.

The USPTO has been kind enough to allow me some extra time today to address both Topic B (Standards and Practices used in Examination of Patent Applications for Software Related Inventions) and Topic C (Significance of and Protection for Visual Aspects of Software Related Inventions). Thus, I will speak on both topics.

First, Topic B. In reviewing the testimony given in the San Jose hearing last month, many concerns were voiced about the quality of the examination process and the issuance of seemingly overbroad and invalid software patents. I won't belabor that point. I would like to point out, however, that I believe establishing new rules in the CFR or new or special procedures in the MPEP for software inventions would be wrong. Software patent applicants should stand on the same footing as any other technology groups or classes. I do not believe there is any basis in the current statutes which would allow special burdens to be placed on software applicants. The first insurmountable barrier would be how to decide if a patent application is a "software" patent.

Because there already has been so much comment in this area, I thought I would focus on questions 7-12 of Topic B. This set of questions deals with the problem of effectively and meaningfully disclosing software-related inventions.

A patent application must teach one skilled in the art how to make and use the invention (enablement) and the best mode in which an invention may be practiced. Failure to disclose the invention and teach the best mode robs the public of its part of the bargain in the patent system.

In many instances, the application is filed with a source code appendix in accordance with 37 CFR Section 1.96, either in paper form or on microfiche. This is one of the few rules promulgated by the USPTO which provides special consideration to a technology class: namely software.

As an aside, I would like to point out that a lot of the testimony presented in January and yesterday was directed to areas outside of the control of the USPTO. Many comments, if acted upon, would require changes to statutes and in one or two extreme cases, an amendment to the Constitution. But improving the quality of examination of

software patents is very much in the sphere of authority of the Patent Office and in some cases, can be done without rule changes. Simple refinements in procedure and using existing statutes and rules will suffice. This is particularly true in the area of disclosures. The source code appendix has proven in many instances to be a burden on the USPTO and does not appear to provide the applicant with a better patent application. I suggest that we eliminate Rule 96 and place the burden on the applicant to do a better job in explaining the software operation in the body of the specification.

Many patent applicants provide the source code in a patent application as a "backstop" to their application to satisfy both the best mode and the enablement requirements. I will first discuss enablement. Applicants hope that they can overcome an enablement rejection from the USPTO on their software patent application by relying on the source code to overcome the rejection. This reliance actually works against the public interest in permitting lax disclosures or poorly written disclosures in the body of the specification. By eliminating Rule 96, the applicants would be forced to do a better job of describing their invention.

In many cases, Rule 96 encourages this poor practice. In many cases, the source code appendix does not teach the public anything unless an expert is hired to decode, decompile or flow chart the appendix. Unfortunately, Rule 96 has become a de facto standard. By itself, eliminating Rule 96 would return the earlier practice of submitting source code listings in the body of the specification. This practice was a terrible burden on the public and the USPTO in creating many jumbo patent applications. But this practice should never have been allowed to flourish since it violates the requirements under 35 USC Section 112 which requires that the applicant describe the invention in clear and concise terms. Patent applications filed with the source code embodiment in the specification should be rejected as not being concise and the rules allowing substitute specifications be invoked to clean up the application. This procedure would be still useful in the case of rush-filed applications, especially if the U.S. adopts a first-to-file system. Applicants who file source code listings [only if necessary] in the body of the specification would be required to follow up with a concise substitute specification.

Source code listings are also submitted to satisfy the best mode requirement. But best mode is an objective standard which can rarely be tested in the USPTO examination process. This determination is made during litigation and is assisted by the discovery practice to determine the inventor's state of mind and to determine if the best mode was suppressed or concealed. In all other technology areas for patents, the best mode for practicing the invention is a comparison of the specification to information obtained during discovery. Software patents should be treated the same as other technology areas and the specification should stand alone without reliance on a source code appendix. Allowing for and even encouraging the submission of source code listings also hurts the public by discouraging

some applicants from filing software patent applications for fear of losing trade secret protection for the non-patentable aspects of the software disclosed in the source code appendix. In short, source code listings are similar to the submission of a model of the invention which is no longer required or even allowed. Eliminating Rule 96 is consistent with my position that no special burdens or rules be carved out for software-related technology or patent applications.

Once the source code is gone, how best to describe software? Question 9 asks the question in effect "Should the PTO require a standardized disclosure format for software patent applications?"

Patent applicants already are granted a broad range of disclosure options in all other technology classes. Requiring a standard submission format would place a heavy burden on the application since different software is best described in different ways. In many cases, high level pseudo-code is more descriptive than flow charts. State diagrams are often better for sequential operation descriptions. All these forms should still be allowed.

It is true that many players in the software industry have complained about the readability of the patent applications. But the existing drawing requirements in the CFR require that the claimed invention be shown in a drawing (with some limited exceptions). This rule should be used by examiners to improve the disclosures and allow the submission of drawings taken from the description in the specification..

Another existing rule which is used very little in my experience is the discretionary authority of Examiners to require that the Abstract and the Summary of the Invention sections of the patent application be amended to reflect the allowed claims. The use of this tool by the Patent Office may work to improve the readability of many software patents thereby diffusing much unfounded criticism of overbroad software patents in the software industry. And now I would like to address my remarks to Topic C: The Significance of and Protection for Visual Aspects of Software- Related Inventions.

I will not go into a lengthy history of the development of this issue, but I have followed the topic with great interest ever since the first icon design patents issued to Xerox Corporation in June of 1988. In August of 1988, Steven Lundberg and I published an article in the Computer Lawyer entitled "Design Patents: A New Form of Intellectual Property Protection for Computer Software", which was later republished in the JPOS. This article and the ensuing interest in the matter resulted in a single letter being written to the Commissioner of Patents and Trademarks opposing this form of protection. I learned through an FOIA request that other letters were also received, but they were all supportive. This led to a chain of events in which the pending Xerox design patent applications were rejected under 35 USC Section 171 and that those rejections led to the Patent Office Board of Patent Appeals and Interferences decision In re Strijland and other decisions.

The strict holding in the Strijland decision was that the Xerox design patent applications as originally filed did not show an article of manufacture and, hence, were deficient. The later amendments to the application to describe the icons for use on a computer screen were rejected as new matter by the Board.

The Strijland decision went beyond the holding to suggest that if Xerox had shown a three-dimensional article of manufacture on which the icon was displayed, this would be proper subject matter under 35 USC Section 171 and the article of manufacture was then a programmed computer screen display.

To date, the Patent Office has not issued any comments on the Strijland decision or the other related cases. The Patent Office is instead suspending all prosecution of these cases even if they comply with the Strijland requirements.

My position is that the Strijland decision was correct in stating that the application as originally filed did not disclose an article of manufacture if you adopt their position that the word ICON is not limited to the computer field. If an application for an icon or a screen display properly describes the article of manufacture in the title or description as being software for a programmed computer screen display, I believe this is enough to pass muster under 35 USC Section 171.

This leads me to my second point which is that the Board misconstrued what is the article of manufacture. I contend that the article of manufacture is the software, not the programmed screen display. This is consistent with the test for infringement for a design patent which as stated in the Supreme Court case of Gorham v. White reads:

"If in the eye of the ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other".

So, like in the trademark infringement test, inducement of an ordinary purchaser is key.

The point is that an ordinary purchaser of software would not be induced to purchase one computer thinking it to be another. The purchaser would confuse the software. This clarity of definition of the article of manufacture harmonizes the infringement test with the other issue in the Strijland decision: namely - the dicta which required future cases to show a three-dimensional computer screen adorned by the icon. This is not necessary since the article of manufacture, the software, defies a three-dimensional drawing.

The drawing requirements of 37 CFR are not rigid in their requirement of a three-dimensional object and the statute, 35 USC Section 171, does not require it. The Patent Office has not required it in type font design patents, game board design patents and watch faces, to name a few. To require three-dimensional drawings for icon or screen display design patent application is setting an extra burden for these cases which is unjustified.

In summary, I believe that the holding in the Strijland decision can be satisfied by describing the icon designs as for display on a screen display of a programmed computer. I do not believe the dicta of the Strijland decision need be followed since three- dimensional drawings are not required, and I believe that the article of manufacture is the software.

Finally, I have detected very little concern in the software industry for the issuance of design patents for screen displays. 35 USC Section 171 should not be used as a gatekeeper in this regard since the requirements of novelty and non-obviousness under 35 USC Sections 102 and 103 will ferret out designs that are not worthy of protection. Thank you,

Daniel J. Kluth

UNITED STATES PATENT AND TRADEMARK OFFICE
Public Hearing on Patent Protection for Software-Related Inventions
Arlington, Virginia -- February 10 & 11, 1994

Index to Participant Testimony