Law, Policy, and the Convergence of Telecommunications and Computing Technologies

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ADAPTING TO RAPID CHANGES IN CONSUMER BEHAVIOR

March 7, 2001

DEAN JEFFREY S. LEHMAN: Okay. Our first panel is on the topic Adapting to Rapid Changes in Consumer Behavior. Let me take just a few moments to introduce the panelists. The panel leader is Donn Davis. Donn is a graduate of Miami University and the University of Michigan Law School. He was a media lawyer with Sidley & Austin in Chicago for a few years before joining the Tribune Company in Chicago. At the age of twenty-nine he was serving as Chief Counsel of the Chicago Cubs and thereafter he led the Tribune's move out onto the internet as President of Tribune Ventures. In 1998 he left the Tribune to join AOL first as Senior Vice-President of Business Development and now is President of the AOL Interactive Properties Group which includes such businesses as Moviefone, WinAmp, ICQ, MapQuest, and AOL Instant Messenger, which I should say probably consumes about two hours of my teenage son's evening every night.

DONN DAVIS: Is that all? We're not doing our job.

(Laughter)

DEAN JEFFREY S. LEHMAN: The commentators are Doug Lichtman, John Riedl and Mary Snapp. Doug Lichtman is an Assistant Professor of Law at the University of Chicago, School of Law, where his research focuses on the question of how modern technology will challenge, redefine and re-enforce traditional legal principles. John Riedl is an Associate Professor in the Computer Science and Engineering Department at the University of Minnesota and also the Chief Scientist for Net Perceptions, an Internet marketing software company that grew out of a research project on collaborative filtering that he started in 1992. Mary Snapp has spent the last dozen years in the Law and Corporate Affairs Department of Microsoft where she is currently Deputy General Counsel leading the group of fifty-five lawyers and sixty paralegals which provide broad-based legal support to Microsoft's worldwide product development groups, its worldwide OEM sales organization and its worldwide marketing groups. I will keep the time on this panel. I ask that the members of the audience write up questions and we should have people with little blue cards who will be . . . I see one person standing back here, over here. As questions come to you ask for a little blue card or if you want to hold one during the talk and then write that's great and then bring them up to me and then I will pose the questions to the panelists after they're done speaking. So without further ado let me turn things over to Donn Davis.

DONN DAVIS (AOL): Thank you, Dean. Hearing Joel Klein just now and his discussion of Microsoft actually reminded me of a Microsoft story from a different perspective, from an AOL perspective. AOL has 8,000 call center operators who answer the phone if you have questions

about using your AOL software. Many of the calls aren't even about the AOL software, and such is this one. The caller says, "I have a problem," and walks the rep through the problem. The rep says, "I don't think your operating system is on, can you go ahead and open Windows?" And the caller says, "I'll be right back, I'm not near it right now." True story. My theme to start this panel is we must put at the center of the technology revolution the consumer. There are a lot of issues that are best resolved by keeping consumers front and center in our thinking. Real consumers are not on the bleeding edge, but rather are on the very simple "I'm not near the window." I'm going to try to set up over the next 15 minutes how we allow the technology revolution to flourish for consumers and then have each of the panel members comment on it and then get to your questions.

With new technologies, consumers keep changing the world. The television, telephone, and Internet are the big three transformational technologies. The last one, the Internet revolution, started about ten years ago. Do not be fooled by the dot-coms becoming dot-bombs last year. A lot of fizz and a lot of euphoria went out of the Internet marketplace. It was good fizz that went out of it, because the laws of business are not suspended just by the Internet. You have to have consumers and you have to turn a profit. Internet companies that have both are entering the next phase stronger than ever. We are really just at the beginning of the Internet golden age, the beginning of what will be the Internet Century. The last ten years was a warm-up. The first inning of a nine-inning game. The next ten years are the middle innings--or the second Internet revolution. The technologies that enable interactivity will continue to shape consumers in a very, very powerful way. Both Moore's Law and Metcalf's Law dictate that the Internet is happening faster than television and telephone did. It took three times longer for 50 percent of the people to get the telephone and the television than to get online. Moore's Law and Metcalf's Law. It's happening faster. It's also happening in a much more disruptive way to existing business models and existing behavior. Today more AOL members will send an email than the post office will deliver letters today. Today more people on the Internet will send an instant message than they will make phone calls today. So this is not something that is for our kids' generation, this is in fact driven by my generation. I'm 38 years old. When I sat in this classroom 14 years ago, none of my classmates would have had a computer.

The first Internet revolution made online a convenience for many. I'd like to illustrate this using some statistics you haven't seen. These are ones that make the point for me. The first test is a survivor test. People are asked, desert island, one choice--television, phone, or connected to the Internet. Not even close the vast majority pick the Internet. The second test is what I call a Martha Stewart test (this applies to my parents). My dad's 70 years old, he knew for Christmas I was going to get him a computer. He had never been online or used a computer. I knew he was anxious. I told him months ahead. Finally it comes out why. My mom calls. "We don't have a place to put it." "Put it in the study?" "That won't work." "The family room?" "That won't work?" This is a reality for many. The third test is a friends test. By any measure, the Internet is about interactivity, it is about socialization. Three out of four people have used it to communicate regularly with friends and family. And the last one I call a ultimate convenient test. What's e-commerce about? It's about your pajamas. Stores are open a finite period of time, but online is better than that, it's about your pajamas.

So that's just a warm-up for what the second Internet revolution is going to be about. The second Internet revolution is about making interactivity a necessity for many. We think online will be

more central than the telephone and the television. Today there's four key boxes in the home. One entertains you (the television), one sets your mood (the radio), one is for communication (the phone), and what the PC's really about is life management (email, my pictures, my calendar, my finances). These four key boxes are all coming together. When people talk about convergence, one way to think about it from a consumer's standpoint, is the four boxes that most consumers use for their life coming together and alive around interactivity.

The last ten years were about the PC, about narrowband dialup. When I came to AOL, dark ages, four years ago, our service was optimized for 28.8 modem speeds. That was the ideal, where 80 percent of the mass market got online. The next ten years adds critical concepts. Connected devices, home networks, wireless, broadband. What do those words mean? It means interactivity is part of your life wherever you go, whatever you do. It's part of whatever device you use. It should become invisible. Consumers do not buy technology. That's the biggest mistake that I think many Silicon Valley companies have made. None of us want technology, we want services. We want technology to be an enabler, not an end in itself. So the next revolution is really about the connected consumer.

One example of the connected consumer can be seen using your stock portfolio information. Right now it's on your PC. There are stocks you want to follow. You don't want to build a whole new stock portfolio on your mobile phone, you don't want a whole new stock portfolio on your Palm, you don't want a whole new stock portfolio on your cable box. You want your stock portfolio updated and displayed to you anytime, anywhere, any device, any type of network.

So let's talk a little bit about who's going to make all this happen. Joel talked a little bit about the government role. I think we can build on his thinking saying the government is important but not decisive. Another participant is technologists, without them there is no idea. But most brilliant technologies never catch on. Consumers don't buy technology. Another participant is marketers who too often try to sell technology and change consumer behavior through marketing campaigns. Law too needs to be involved, but not front and center. All four--government, technologists, marketers, legal--play a role, but not a decisive one.

When you study the first Internet revolution, it's the consumer that was driving it. The consumer decided on the eventual winners of that revolution. All the constituencies have a major role to play. This is the chain--idea, consumers try, consumers like, industry prospers, issues crop up, all the constituents in the right balance work on those issues. When we artificially or intrusively alter this chain competition's stifled and solutions are not flexible, moderated, and even-handed.

From digital music to interactive television to fair access on cable. From access to privacy to security. These all started with a consumer saying, "I've got a problem." So the question is--How do we create the right framework? How do we create a framework so everybody needed to make the online medium really central to consumers participates appropriately? It's not about a product, it's not about a technology, it's not about a company. It's about a medium. So how do we have the needed flexibility? I suggest we need a prism, not a crystal ball.

What not to do. A crystal ball approach to solving privacy, to solving digital downloads of music, to solving fair access of high-speed cable. Step one of a crystal ball approach would be to guess about the future even though with Moore's Law and Metcalf's Law it's changing every 24 months in ways we'll never see. Step two, would be to make a bunch of rules, not guidelines, but

rules based on guesses. Step three would be, let us live with that decision even though the speed of which things change poses a new question. Here would be a prism approach. Let consumers shape the market, let industry respond, and let other constituents shape the debate. This prism framework would be flexible and employ three principles--Freedom, Faith, Fairness. Freedom. Allow industry to experiment and innovate. What we knew two years ago we don't know today. Faith. Nobody wants a Wild West, it ain't good for anybody. People have to have confidence that basic rights, basic security, and basic access aren't threatened. Critical bedrocks. Fairness. What we need is technology-neutral solutions, a reasonable playing field. It's hard to understand the technologies and their impact. That is why a crystal ball approach doesn't work.

I'm going to get the panel rolling with a quick-case study. There was a lot in the news over the last year regarding digital music. I happen to know somewhat well, Justin Frankel, the creator of the most popular music player WinAmp as he was an employee in my group at AOL. So I have the distinction of being his boss as he invented in the exploding digital music market. I learned from Justin, all of 19 years old, that at the center of these revolutions consumers are speaking. In this instance they want a new way to consume music. They don't want to just buy a CD and put it in the single-purpose device. They want the ability to take music portably, they want the ability to share it, they want the ability to remix it. It's a whole new generation of music lovers. So why were some "stealing" music? Because that was the only way some consumers could do it. If there was a legal and paid way to consume music a new way they wouldn't "steal" it. It's just the framework around digital music had not caught up with consumers. Most people in the world don't wake up every day and want to be a criminal, so I think all we've learned this last year is that a new generation of music lovers want to consume music in a new way.

What I'd like to kick off for the panel to talk about is not a debate whether the second Internet revolution is happening and whether its impact is going to be bigger than the first Internet revolution. That's not the issue. What I would like to kick off to discuss is what is the framework so we make sure it's done right. I suggest doing it right comes down to democracy 101 and business 101. By democracy 101 I mean it's about the people--we must put the consumer at the center of it all. By business 101 I mean it is about all the constituents playing a measured role that uses a flexible prism approach. It starts with listening to the consumers and what they're doing and what's not working for them and what they'd like to do that they can't do.

So I guess I'd ask Mary to come up and--even though you are employed at Microsoft, and me at AOL, I'm sure you have a reasonably consistent view with us!

MARY E. SNAPP: Thank you very much. Could we have, since the screen is blue, lights in the front as well? It's interesting--Donn says that it's all about the pajamas, and my theory is that it's all about the chair in the internet revolution. There's first the concept of no chair, and that's with your PIM (Personal Information Manager) or your PDA and your phone, where you're walking and talking at the same time. There's your desk chair that you're using your PC from, there's your easy chair that you're watching interactive TV from, and then there's your bad chair when you're sitting on an airplane and you're using your eBook or your laptop. So my theory is it's all encompassed in a chair, so between the two of us, I think we have it completely wrapped.

In terms of thinking about the topic and legal policy, I wanted to really think about it in terms of a couple of ways. First of all, what is the change in consumer behavior that we're talking about, how does that affect the law and policy issues, and then who's doing the adapting? We are assuming that it might be industry, but it's not necessarily. It could be the government, it could be the courts, it could be the industry as well, and sometimes a combination of all three. And as we look at those areas, I'd like to focus on two particular areas in the law as bases or examples, and that's copyright and privacy. You can find, I think, similar parallels in defamation and also obscenity and decency, but we will focus on these two. At least, I'm going to focus on these two for today.

Copyright law, as most of you know, really had its genesis a hundred years ago in music and literature, and so we're really today adapting what is a long line of cases, based on old technology and old economy to what is a new set of businesses. Less than twenty years ago we had the first case that really looked at computer software and determined that computer software was, in fact, copyrightable. That was decided at the appellate court level in the *Apple v. Franklin* case reversing the district court which had determined that software was part of the machine, and therefore, not copyrightable. So we've come a long way, even in twenty years in this regard.

I look at 1995 as the paradigm shift with respect to the internet-and copyright law, which had gotten a little bit ho-hum in the software industry. With a string of five or six cases, a copyright has come to the fore again in terms of the notion of adapting old case law to new technology. And in this sort of paradigm shift, what we saw was a raft of cases that were brought with the old legislation, trying to adapt the new technology to it. Many of these cases settled because they didn't really want to be the poster child for the first case in really dealing with new technology in the copyright area. But we then saw legislation passed in a number of these areas, and now what we are seeing is litigation related to clarification of new legislation that has passed. So what we see is a bit of virtuous cycle between technology, consumer demand, legislation, litigation for clarification, and that cycle continues to evolve law and policy, keeping in mind, always at the beginning, the consumer demand. And when I think about copyright in terms of consumer demand, I'm going to talk about three basic areas.

The first is the notion of online service providers. When we think about the internet, many consumers want to go to a particular portal site, and they want information collected there. Online service providers filled that role, but there was a lot of concern in the early days, 1995, 96, 97, about what the liability of online service providers was for direct copyright infringement of third party content--not content that they owned, but third party content, whether it was either stationary posted on their site, placed on their site in a chatroom, whether it was on their site as a result of something called cachéing or mirroring, which helped to improve the performance of that web site, or whether it was on that web site because there was a link to a site that contained infringing material.

This really led to a lot of anxiety among online service providers, and we have a few pieces of litigation in that area, most notably the *Religious Technology Center v. Netcom* case, which really dealt with the question of contributory infringement of an online service provider, who, with respect to third party content, knew or should have known that the content was infringing. We've certainly started to think about vicarious infringement cases as well. However, with the

DMCA, the Digital Millennium Copyright Act of 1998, we have provided some safe harbors for online service providers, and that has dealt with a lot of the anxiety which existed for the three or four years preceding the passage of that act.

The second area to think about is one that Donn's already identified, and that is music on the internet. Clearly, consumers want to listen to music in a new way, and certainly there has been litigation testing the bounds of the copyright law with respect to the new technology. In the *RIAA v. Diamond Multimedia Systems*, we had the question of whether the Audio Home Recording Act applied from a PC to a downloading from the PC to an MP3 device. The act was written thinking about televisions. And so the question is interpretation of that act with respect to the Rio device. Another case was *UMG Recordings v. MP3.com*. This is the locker room case where essentially MP3.com posted about 80,000 different songs on the internet site, users had purchased a CD and they had to verify their purchase, but nonetheless, they listened to that song from the internet. Again, questions of fair use here were asked and really answered, not to the benefit of MP3 with respect to the use of essentially this locker room service. And there has recently been legislation introduced that would make legal certain kinds of those locker room services for people who had already purchased the CD.

The third case is *A&M Records v. Napster*, and I assume we're going to be talking a fair bit about that, particularly at the end of the panel--or the end of the three days--but certainly we have the peer-to-peer networking sets of issues here, and you have a scenario here where Napster is actually not doing any of the copying, it's not doing any of the mirroring, there's no song that's actually resident, or content resident, on any of the Napster servers, but nonetheless, we have the questions of contributory infringement there. So music is the second area where consumers and law and policy have intersected.

The third area is one that I would call "information or technology access tools." And in these cases copyright law was attempted to be applied, but it actually didn't quite work and so what we find here are courts reaching out to equitable principles to guide their decision in areas where you look really hard to try to find the copyright infringement. There are several examples here. The first is the framing case--*Washington Post Co. v. Total News* if some of you are familiar with that. But where copyright may or may not have applied, that case was settled. I think, by far, the better claim there was unfair competition or tortious interference with contract. Linking is another example. Is "linking" copyright infringement, depending on what the frame looks like when you go to the site? Probably not, but are there potential claims related to unfair infringement related to, for example, advertising content? Maybe; that could be the case depending on what happens.

Hot news is another equitable principle utilized as a result of the *NBA v. Motorola* case, and in this case again the question was what rights did the NBA have to exclusive broadcast of the basketball games and information associated with those games. No copyright infringement here because what the associated group known as "STATS" did was basically convey facts. However, the court allowed as how there might be a "hot news" claim related to unfair competition.

And finally, UCITA, which is the effort to change the Uniform Commercial Code to allow enforceability for shrinkwrap licenses and also clickwrap licenses under certain constraints. We think this is really important as an industry, not so much because of the need for copyright

protection, but because many of these licenses go beyond copyright protection and impose contract restrictions that are necessary to make those licenses enforceable and actually to allow the business model to be practiced and to allow the broad distribution of low cost technology.

And then finally, legislation. We talked about, briefly, the Digital Millennium Copyright Act, and as a result of that act we already have had several pieces of clarifying litigation. The first is the "DVD hacker" case, which tried to rely on the interoperability exception to the DMCA. The second was the *Real Networks v. Streambox* case, which really focused on the anti-circumvention provisions of that piece of legislation. And the third is Napster which also attempted to rely on the DMCA with respect to the safe harbor for OSP liability. So-and you'll see it again-litigation following legislation and ongoing advancement of the technology, sparking more questions in the areas of law and policy.

I'll spend just about five minutes on the topic of privacy, and it also is one where we've seen the virtuous cycle at work. In terms of privacy, I think it's very obvious that studies show that about 87% of internet users say that they are "concerned" to "very concerned" about privacy. Actually, only about 25% of those users, those influential users have purchased things online, and I think it's because they now know from Donn Davis that they will be caught in their pajamas! The second piece is what web sites have done and what the industry has done. Virtually all web sites collect personally identifiable information, or "PII." Of the 100 most popular sites, about 45% of those abide by what's called the Fair Information Practices, whereas only about 15% of the other sites do. So I think what you're finding here is that the very busiest, most popular, sites are taking the lead in terms of industry self-regulation. Now why is privacy so significant? Two things, I think. First of all, the internet allows a consolidation of traditional access to information in a way that's never been done before. Before you had to go to many places to aggregate information. For example, you went to DSHS; you had to go to the Vehicle Information Service; you had to go to the courts to collect public information about people. With the Internet you can collect that information almost instantly looking to one place. Secondly is the notion of consumer preferences being tracked online. And there are many ways in which this happens. One is when the user supplies information; secondly are "click-throughs" through advertising, third is cookies; fourth is the browser history that's tabulated; and finally there's the unique serial numbers associated with your PC through which information can be tracked. Now all of this is potentially good because it permits personalization. Essentially, you can decide through the use of this information what data you want to get. But on the other hand, data then is being collected about you as well. So there is a trend in industry to abide by the Fair Information Practices which are: notice of what information is being collected and how it will be used, your choice as to whether to permit that information to be collected or not, your ability to access the information to determine if it is correct, and finally your right to insure that that information is kept very secure.

The FTC has been very interested in this area over the last couple of years. They've issued four studies in the last two years with respect to online practices. They have recommended legislation in the case of kids' online privacy issues with the result being the Online Privacy Children's Protection Act and they've also recommended legislation in the area of online profiling. So I think in this area with the FTC's strong recommendation we are quite likely to see some legislation despite industry self-regulation efforts. There are literally hundreds of bills in the state legislatures today. There are dozens of bills at the federal level all relating to different degrees of constraints or severity with respect to the enforcement of the Fair Information Principles.

Now there is industry self-regulation happening, and I would be remiss if I didn't say a word about this. Certainly we have the seal programs which companies voluntarily join and the primary one of those is TRUSTe. We have trade associations like the Online Privacy Alliance, which by contract insures compliance with Fair Information Practices. Some sites have determined they will not advertise on sites that do not post privacy policies. We have self-regulatory tools that consumers can use like P3P, which allows you to set your preferences with respect to policy and allows, then, you to compare a site's policy with your preferences. We have cookie management or cookie blocker kinds of things, and we have anonymizers where you go through an intermediate party to surf the Internet so that you are not known. And the names of these companies are great: they're Zero Knowledge, PrivaSeek, e-Nonymous. All of these are ways in which industry has sought to self-regulate.

So when I look at these areas I think first about copyright. And in terms of policy, you have the tension between old copyright law and new technology. You have the First Amendment sets of issues, that is, the "information wants to be free" set of issues. You have the tension with competition law and then you have the tension with equitable principles in terms of what should and shouldn't happen with respect to content online. With respect to privacy, we're talking about consumers' need and desire for privacy at the same time as we're talking about access to information being important, at the same time as we are talking about the need for consumers to control their own destiny. And, quite frankly, the third piece of that is that even if you believe that "information wants to be free," there needs to be a business model, a viable business model on the Internet. To date that has been advertising and guess what makes advertising rates more lucrative: the ability to provide more personal information or demographic information that you collect when consumers are online. So the intersection of each of those points among those two areas I think will be quite significant for now and probably for the next 10 years.

JOHN RIEDL: Good afternoon everyone, I'm John Riedl. I'm an associate professor at the University of Minnesota and chief scientist at Net Perceptions.

In November of 1992 I was at the computer supported cooperative work conference and I saw a talk given by Professor Shumpei Kumon who's a technologist who studies the overarching flows of the affects of technology on our society. And he gave a talk in which he described something that he referred to as the wisdom economy. His idea was that we were soon going to see a change from the age of information in which we live today to the age of wisdom. Now what did he mean by this? Well the idea is today most of us would already say we have enough information. Does that fit your model of the world? Do you get enough in your email today? Do you find enough in your law books today for what you need to read? But what we need is to get just that piece of information that's most interesting to each of us, that's most valuable to us that lets us do our jobs better, that lets us study more effectively. Now at that conference with me was Paul Resnick and we got talking about this problem and started speculating about how we could solve the problem of the age of wisdom. And we felt there were some fundamental technologies that were missing. These are technologies that would help connect people to the information they need more efficiently than any technologies that had been seen before. But the problem with all the technological approaches that were being taken to date is that they were fundamentally trying to make the computers more smart about what humans find interesting or deep or valuable. And

that's something, that as a computer scientist I can tell you, we're several decades away from. Now I believe in a philosophical sense that getting computers to be just as smart as us isn't all that hard. It will happen eventually. In fact we heard Donn mention Moores' Law before. How many of you know Moore's Law? So about half of the people in here? I'll tell you Moore's Law and Metcalf's Law, which Donn also mentioned, are more important than any other law you will learn here in law school. What it says fundamentally is computers keep getting faster and they keep getting faster so much faster than anything else that can happen, exponentially quickly, that the speed of computers is going to dwarf our imaginations over small periods, just a decade or two decades. So I buy computers are going to be just as smart as us. HAL is going to happen. The problem is it won't be for quite a while. So what are we going to do in between now and then?

Well in between now and then we need to do something that lets us all gang up on this information overload problem. And what Paul Resnick, who's now on the faculty in the school of information here at Michigan, and I came up with is a model that says what we're all going to do is take the time to share with each other our opinions about all of this information. And then we'll have a computer do something that a computer does really, really well. Which is lots of ugly statistics and number crunching to figure out based on what you think is interesting what I might find interesting. We call that collaborative filtering and that's the heart of something called recommender systems. What we're going to look at today in my part of the panel is three things that have been happening over the last 10 years. Those things are first the use of recommender systems to make the life of consumers better. The second is the use of recommender systems to make businesses more money. And the third is the conflict between those two goals and how that fundamental conflict leads to two problems that somebody had better resolve.

So first, recommenders help people. Here's a picture of the website that I use in my research group. We call it MovieLens and it's a website that helps people find movies that you might like to see. I encourage you to go check it out if you're interested in movies. This is an example of the MovieLens website helping a group of, I think it's five people in this case, find some movie that all of them would like to go see. And it shows collections of movies on the far left and then stars telling which people would like which movies.

Here's another version of this site. Last Christmas I spent my Christmas vacation hacking up a version of the site that runs on my phone. So now, is this a great app or what, you walk into Blockbuster all of the movies that you wanted to see or ever heard about are checked out you whip out your phone, click a button or two, tell it what kind of movie you're in the mood for and then it gives you back a set of movies that you might like to see based on your personal preferences and its experiences with you at that site. This is changing the way we consumers deal with information. No longer is information just ganging up on us, now we're ganging up on it.

Here's another example of MovieLens. This is an example of what we call an explanation interface. The problem you find with these recommenders is that when they give you a list of things some of the times you look at them and you say, "Why do you think I would like My Life in Rose? Why would I like that movie? Why would I ever go see it?" And the explanation interface lets us tell you what it is that convinced us that that's something you would like. We can say, for instance, well you've tended to agree with these 100 people over the past 20 movies that you saw. Every single one of them liked this movie; you probably ought to go see it. It's

something that you're likely to like. Or we can say look we've been predicting for you for a year now; we're right 98 percent of the time, shut up and go see the movie. We call that the law professor style of recommendation.

Now let's take a look at how recommenders are helping businesses, which in many ways is at odds with how it's helping people. This is an example of GUS, which is one of the largest call center operations on the Internet. And people call in to GUS in Great Britain trying to buy stuff. They have a wide collection of all sorts of eclectic kinds of things that they're trying to sell people. And they did a study where they used their traditional cross-sell methods which say if you buy the housecoat you might like the pink bunny slippers, for instance, because a marketing person thinks that's what people ought to buy. And then they also compared that to using a recommender system based on collaborative filtering to try to understand which group of people you had been similar to in your past purchases and make a recommendation to you based on that similarity. Now what they found out is that they were able to take the average cross-sell value up by 60 percent, read millions of dollars per year, and the cross-sell success rate went up by 50 percent. More people accepted the suggestions if they were made using this technology than if they were made using traditional marketing methods.

Now what does that mean to businesses? Well to give you an example, a very large company that does a whole bunch of catalog sales, they won't let me tell you their name, but they just did a big study with one of their accountants, Price Waterhouse Coopers, in which they analyzed the costs and the benefits to them of putting this technology in on their sites. And they came up that it would benefit them, net, $20 million per year to put this technology in. So that's why businesses care.

Here's another set of three examples. I'll just pick one of them. Let's say the middle one because it's the most surprising. This was a medium-sized, European, outbound call center operation. So this is a place where they call you right about when you're sitting down to dinner to try and sell you something. And in this case they were trying to see a whole bunch of electronic equipment that was overstocked--it hadn't gotten sold when it was supposed to so they wanted to push it out to people who might like it. So they used a recommender system to go figure out who they should bother during dinnertime and then to call those people and ask them if they wanted to buy it. And they found that they got a dramatic increase in the rate of acceptances using this technology. 6.7% of the people they called bought the $350 average purchase price item, which is incredible if you've ever looked at statistics from one of these centers. That's at least double maybe triple what a call center would be happy to achieve. So this is why businesses care a whole lot about this kind of technology.

Now there are two problems I'd like to point out about this picture. And I'll catalog them both under where's the wisdom? When I started out telling you how Paul Resnick and I were going to go solve the problem of the wisdom age and when we look at what businesses are doing with our technology we find that they're not using wisdom in two ways. One deep and one shallow. The deep one I'm going to return to in the next segment of the talk, the shallow one I'll cover now.

The shallow one is almost all of these applications are applications of recommenders to commerce, not to information, which was a great shock to us when we founded Net Perceptions six years ago we thought that everybody was going to want to use our technologies for helping

people find information. That's what we had been studying in the research lab, that's what we thought was most important. And the reason for this, I think Mary touched on earlier in her talk, which is nobody's figured out how to make any money from information. Right, if you go up to a newspaper that's online on the web and you say, "Look I've got a technology that's going to help your users zero in on the information that they really want and find exactly the parts of your site they're most excited by and your customers are going to love this," you know what the site will usually say? "So great they're going to click on fewer pages because they find what they want. I'm supported by advertising. How does that help me? I'm not in business," they'll say, "primarily to help my customers. I'm in business to help my advertisers." Isn't this an interesting problem?

Let's look at the deeper questions now. We're going to do that by talking about the future of recommenders, asking the question about how this conflict between businesses and consumers is going to be resolved. First of all, privacy. Privacy versus personalization is often seen, I think correctly, as a conundrum. If you have perfect privacy you don't get any recommendations. I can't tell you what kind of product you're going to like best if I literally know nothing about you. If all I know is what color tie you wear, I know you're not a computer scientist but I don't know anything else about you. And, on the other hand, if I know deep information about all the things that you've done on my sites since the beginning of time and I've been tracking all that click stream information that Mary talked about then I know a lot and I can probably make good recommendations. But you have legitimate concerns. Am I going to treat that information wisely? Mary talked, and I think in a very positive form, about industry self-regulation. I'll give another spin on it. Has anyone looked at Amazon's privacy policy lately, just to pick an example? Go read it. What's it say? It says "Okay we'll share your information with anyone we're really friendly with. And, if you've been following the news lately, if we go bankrupt we'll share it with anybody we want to to make some more money." Now how does that make you as a consumer feel? I mean that's a privacy policy. It's officially stated, they tell you what they're going to do with your information almost whatever they want to do with your information. That's something we have to be concerned about.

Microsoft Wallet is something that Microsoft has proposed off and on as a way of solving this privacy problem. They say, "We'll solve the privacy problem. Give all your private information to us and we'll keep it secret." Enough said. So is this a question of the business versus consumer fundamentally, well yes and it is in other ways as well. For instance here's a website called Deja.com, until recently one of my favorite websites for getting information about things I might want to buy. Here's some PC speakers because I wanted to buy a surround sound system for my new personal computer. And as I went to Deja.com I got a set of ratings on all the speakers and these ratings are written by other consumers just like me. This is great collaborative filtering in action. Recommender system helping me find what I want. So what happened? Does anyone know the ending of this story? Ever heard of Half.com? A subsidiary of eBay. New owners of Deja. Maybe not mostly concerned with my happiness in life because they're a business that makes money by selling things to customers. This is the trend. Do businesses want the recommender to mostly help us? Is that their job? Is that how they see the world? Or do the businesses want the recommender mostly in order to sell more products, which they're being pretty successful at as I showed on the earlier page? Another business was talking to me about the possibility of using an offshoot of recommendation technology that we've been studying that let's you figure out what circular adds to put in those little inserts in newspapers to figure out

how to make more money. They figure that per year they can save and make a net of about $30 million by using the technology. Now that's enough money to change a business' behavior.

What do I see as happening? Well I think we have to have two sledge hammers that are going to make life better for us. And the first of those sledgehammers is what I call profile in a pocket. I can put all of the opinions I need about you on a smart card device in about 40 kilobytes of information. You can carry it with you wherever you want. You don't need Microsoft Wallet or Amazon.com keeping all your private information in order to get good recommendations. You can get good recommendations when you keep your information in your pocket. Of course, after you get those recommendations you're still probably going to go buy something so we also need to anonymize payment and shipping. It turns out that's not that hard. It's reasonable technologically. We computer scientists know how to solve this problem. Someone go make a business to do it please. Where I can buy something from a company and they can ship it to me without ever knowing who me is or where I live. Isn't that cool? Ask me about it later and I'll tell you more about it.

Or we can do personalization in a pocket. Here's my old technology PDA palm five, PDA device. This PDA has about 4 megabytes of memory. In two megabytes of memory I can write a total soup to nuts personalization service, a recommender system that recommends to you which products you want to buy and that runs on a device you carry with you in your pocket. Now you don't need the business to give you recommendations. You don't need Deja. Nobody can buy your PDA from you and start subverting it and making it do things that you don't want it to do. That's a very exciting technology. So I can do this in two megabytes. New PDAs now a days have 64 megabytes of memory. Very reasonable that we'll have that type of technology to carry with us.

So the bottom line. When Paul Resnick and I set out to try to realize Shunpike Koumone's vision of a wisdom economy we realized there was an opportunity for technology to take over and to make our lives better. What's happened to date is that this technology is being subverted by the businesses that are implementing. We all have to participate in making a case to businesses that by serving us better, by creating value for us they're doing the thing that will help them and the thing that they have to do. Otherwise we're going to go get personalization in a pocket and not need them anymore. Thank you very much.

(Applause)

DOUGLAS LICHTMAN: I'll keep my comments relatively brief just so we can get open to questions. But when I was first invited to talk on this panel I read the topic, and the topic was Adapting to Rapid Changes in Customer Behavior. As a law professor who teaches technology-related courses, I was itching to be invited to a slightly different panel. Something along the lines of Adapting to Incredibly Slow Changes in Consumer Behavior--because on that one I've got a lot to say it turns out. Law reacts well to slow. Rapid is sort of put in there to get us law people a little nervous. Law doesn't move quickly and you know that just from the things that we're talking about here. That everyone so far has just referenced Napster without explaining it. We know that we all already know that. That should be surprising to us. That we all have had enough

time to understand a big legal case; but again it's gone on so slowly that we have. Same thing with Microsoft. We're just referencing things and theories about Microsoft assuming that everyone will already know them. Tells us something about law. That law moves really slowly. That we think that this stuff has already gotten so into culture, so into popular press, that everyone knows these concepts and knows what's at stake. Law moves slow and it's something that we're always reminded of as we're thinking of legal issues related to the topics of this panel.

That said, I'm not sure that slow is a bad thing. I think Donn was sort of getting at this in the beginning of his remarks. One thing slow does is it keeps the government out in the beginning. He talked of prisms and crystal balls. What I think what he was trying to say is government shouldn't move too quick. Let the government be a little slow, let more information come out and as government gets more information we'll do a better job dealing with law. Again think of Napster. We really understand that issue so much better today than we did a year ago. And so the slowness has helped us and helped the courts have time to figure out how you address these issues. So slow can be good in that way, in a way sympathetic to what Donn said.

Slow might be good in another way, as well, and Napster is probably a great example of this. In that slow might make it that we don't need to get involved as a legal matter. Might instead be that strategy and other sort of business moves can come in and solve problems. This actually is going on right now and Napster is still being fought out in the courts and musicians are still making music. They can't wait for the courts to solve this. And so a popular group called Barenaked Ladies released a CD about a month and a half ago. Again and they knew that the Napster case would still be going on but they wanted to get their music out while people still enjoy them. And so what they did was say we're not going to wait and use the law, we're not going to see what happens in the case. What we're going to do is we're going to think about this strategically, we're going to play smart.

How did they play smart? Well what they did was they went onto Napster themselves and they put up files that represented their own music. They pretended that they were college students and put hundreds and hundreds of files into the Napster database as if it was their latest music. So the CD came out and they flooded the net with their own music. Of course when you went on Napster and downloaded this music thinking you were getting it safe from a University of Michigan student and instead accidentally getting it from the artist it wasn't the right stuff. You download it, you hit play, you got five seconds of a song and then the Barenaked Ladies would cut off and say, "Excuse me, if you're a fan you should be buying our music and not stealing it on the web." Incredibly effective though, right?

If you think about what the war was, the war here is the battle between the price of legal music and the price of illegal music. And Barenaked Ladies recognized that all they need to do is make illegal music a little more expensive. Make it a little more time-consuming, a little more difficult. And they could totally do that by flooding the market with, in essence, decoy files. Right now Napster is cluttered with Barenaked Ladies music most of which are these duds. At the same time they got cute PR. They didn't do it nastily and cleanly the way I just summarized it. They were really funny. These were great little downloads actually worth going to Napster just to get these. They make jokes about how the technology has evolved, about how they're being so tricky and so on. They did it with a nice PR spin.

And again the big point here is that they didn't need to wait for law. They already used technology to sort of mitigate the problem, they realized Napster is a community of folks who don't know each other, it's an anonymous person giving music to another anonymous person. So they said, "Hey, we can do that. We watched "The Mole" on ABC, we recognize this idea that you can sort of sneak around and pretend you're a nice person and in fact not be" and so they did that: they polluted the database and solved their problem. So law being slow may be not such a big deal.

That said, what I do worry about, as a law guy, is to worry about what happens when law does get involved? Again if slowness just gives us room to get more information to be predicting things that we understand better, and slowness gives room for strategy to come in and solve problems so maybe law doesn't have to, at the end of the day though law is getting involved later on. I mean it's kind of difficult in a lot of these settings to know how to get involved and let me give you two examples just to show why it is we're not sure what to do.

One: if you go back into the 1960s where the big antitrust case we talked about wasn't Microsoft it was the case against the Bell Telephone System. And in that case we can read those documents knowing what's to come you see how difficult these issues were even pre-Internet. For example one of the early skirmishes in the breakup of the Bell system was a question over whether Bell had to allow other parties to make telephone equipment. It was sort of conceded in this time period that Bell was going to own all the wires and the question was if you own the wires did you also get to make and sell all the telephones? Or could you have someone else come in and make phones. So for example if I wanted to open up a company and make a Snoopy telephone, the question was was I allowed to do that? Or could Bell say I own the wires so I also get to decide who makes the phones? The Department of Justice came in and thought they were weighing in on the side of innovation. They said we like having a lot of folks involved, we think we want different companies that want to make Snoopy phones, someone will make a cool conference phone and so on, so they said, "Bell if you try to stop this market we're going to come after you." And Bell said, "No, you're completely missing the point. The reason we want to control both markets is that that's best for innovation." Bell said, "You know, Department of Justice, if you get what you wish for, we have one set of companies making telephones and then us doing the wires it will be very hard to upgrade the phone system. If we want to upgrade the phone system we're going to have to get all these other companies to agree to change their equipment too. We'll change the wires and we'll have to call the guy that makes the Snoopy phone and he'll have to change his phone. Call the guy that makes the conference phone, he'll have to change his phone and so on." And Bell said, "That's really going to be difficult. So once you take what was one telephone system and let a large number of firms get involved you're slowing down innovation."

They made this argument in court. They lost but it's at least a plausible argument. It gives us pause. We don't quite know what the answer is. Maybe telling Bell to play nice was the right thing, maybe not. Law had to make that decision, the Department of Justice made that decision, it's not clear it was the right decision. There's something to Bell's point about keeping the system under uniform control to allow change. If you don't believe in the phone system think of FM radios. If the FCC tomorrow, the government entity that controls the regulation of that area, said they want to move the FM spectrum from the numbers you're used to to a different part of the spectrum we'd all revolt. We'd say we'd have to throw out our FM radio and have to buy a new

one. We wouldn't want to do that. We'd resist change. Why? Because we own some of the equipment and the radio broadcasters own different equipment. Same thing. So when you separate out ownership of a system you might slow down change. Again just note how difficult it is for law to analyze these.

At the same time we're worried about law dealing with new technologies too and sort of the new technology John talked about is amazingly interesting technology and we have to think about dealing with that. Just to throw one idea out and some ideas John said. I think First Amendment issues are going to come up in this recommender system collaborative filtering world. John paints it, as he totally should, as a boon for the consumer. Right, we're going to give you this new way to move information around and that way you're going to get to choose what you want to listen to. Choose movies, choose books and so on. And we might react to it and say, "That's great for free speech." That's going to make sure we listen to a lot of different things, we get things we enjoy and so on. But I worry and I don't know what the answer to this is, but in general law worries about the role of money in speech markets. We all want to make sure it's not only the wealthy who gets to speak but actually a lot of folks get to speak. And so for example cable systems are regulated in part to make sure that people other than just those who have ownership rights get to speak on cable. Cable owners have to allow other folks to put information on and so on and the idea is we want to make sure that even if you don't have money you can come online and let your information go out on the cable system. Well I wonder how important money's going to be in a world of collaborative filtering? Where you've got these databases of recommendations and I'm a very wealthy speaker. My bet is I can seed the database. I can go out and immediately get a hundred people to look at my item just by paying them to do so. And once I've done that my bet is the database is going to start recommending my product because the database is going to be familiar with it. A lot of people will know about it and so the statistics that John gets to run in his system will tend to pop my information out. So if I have a book and I have a lot of money I can overwhelm his system quickly with my money and then he's going to start recommending me. So again you have this weird tie that we have to figure out how to deal with as a legal matter. We always have to worry about money and the First Amendment here in a new technology we're going to have to figure out the technology to understand how money and technology work.

Overall where am I going with all this? I think I'm going to say that these markets look the same as every other market to me. I don't see anything radically different here. We always have a setting where law is a little slower than the pace of change. That might be good. Again, give the government time to catch up, gives strategy the time to solve problems so the law doesn't have to. Always when law does get involved, it is not easy. It would be a dull business I was in if it was easy to figure out the right answers. We wouldn't need smart folks like Joel Klein running the show. These are complicated questions as the Bell example points out. There is not an intuitive answer to go with.

I sort of disagree with Donn to summarize at the end by saying the customer is always right, people always win. I don't think that is right in any market, let alone this one. Usually when we talk about the customer is always right you say it with a wink and a nod. Or when the waiter comes up to your table at the end of the meal, agreeing with whatever you ask him to do, saying the customer is always right. You don't feel good about yourself. It's just his way of saying you're wrong, but as a business matter I'm going to do what it is that you told me to do.

And I think as a policy matter, that's the half we keep in mind. We recognize that the customer is not always right. We don't take people as we find them. We sometimes intervene. We try to give them more information. We sometimes overrule them. Same thing with people always win, we know that the people don't always win. We think maybe Microsoft is doing stuff that the people don't like. Making us use products we're aren't completely happy with and so on. We sense in all sorts of markets that market power and other factors cause the people to lose.

The final slide is actually great--I'm sitting here being a discussant reacting to what's said. The final slide was good--the last two things that Donn said I think are off. The customer isn't always right. People don't always win. And that's great for what I do, it leaves a little room for law to come in. We can help solve some of those issues. Come and help, make sure that the customer is getting things that they ought to get. Sometimes trumping them, sometimes trumping the companies who don't really want to serve exactly what the customer wants. And I think that we can also help to make sure that the people have some of the power against some of these large corporations that they might not.

DEAN JEFFREY S. LEHMAN: We have just about 15 minutes left. I'd like to ask the panelists to come back up. I've got a bunch of questions here. I've clumped the questions into three clumps.

When technology becomes so integrated in our lives that we are not aware that we have become dependent on it, is that not the point at which it becomes dangerous? Explain those dangers and whether this is an area where law should intervene to think about technological dependence.

It seems that the consumers are more controlled than ever because the technology has become more sophisticated even as it has pretended to become more friendly and easy. Don't you think that the crystal ball or the prism approach would ultimately lead somewhat surreptitiously to a corporation driven world, rather, while perhaps giving consumers the impression that they are in charge.

And finally, in a consumer driven economy how does innovation go beyond what the consumer can perceive and, therefore, demand? Will we somehow be limited to what today's consumers know how to demand?

So a set of questions about the relationship between the producer and the consumer. The first one really is the pusher and the drug-dependent person. I'll open it to any of you and in any order.

DONN DAVIS: The second question reminds me of a certain argument that some people have made about AOL. They've talked about this walled garden which they state doesn't really have consumer choice because AOL is not the open Internet. When you look at the user statistics we have 35 million AOL members and they spend more than half of their time in this walled garden despite the Internet being pervasive and always a click away on every screen of that walled garden. So, that indicates that consumers don't always want a wide-open set of choices. Happy

meal number 4 is probably the most successful selling hamburger in the world, right? Why is that? Consumers don't want five million things on the menu. They want to try happy meal number 4 provided there are other choices on the menu if they want them. That way consumers have the best of both worlds and I don't think you get into a dangerous steering of consumers. Instead you have a selection for consumers and yet choice for more.

JOHN RIEDL: I'll take a swing at it from the perspective of are we consumers being controlled. And I would say that with recommender systems that's a very real danger. The marketers understand us better than they ever have before and they're able to make predictions about what our behaviors are going to be. On the other hand, as someone who understands what the technology is underneath, I feel a lot less control when I think of it as I have a whole bunch of friends who are trying to help me find the next book to buy. Now, there's a really intriguing question underneath that. What if someone is subverting that recommender system so that it's not really a whole bunch of friends telling me what book to buy but as Douglas was suggesting what if it's a whole bunch of sneaky people trying to trick me into buying this book that I don't really want? That's a question I haven't seen any strong research on how to handle. There was a paper at this year's electronic commerce conference (ACMEC) conference in which they addressed technologies that you can use to search for patterns of opinion behavior that seem bogus. And you can look for those patterns of behavior and try to say this really isn't a opinion of the marketplace saying this is a good book for you. This is somebody trying to get in the system to try and get you to buy this book. Now the question that I'd raise and kind of the underlying theme to my whole talk is how are we going to make sure that businesses use the technology in that right way and the healthy way rather than businesses going out there and trying to get in the systems themselves. You know an example of that is Amazon sends out emails trying to talk people into buying books. And they've just recently announced that they now will expect the publishers of the books to pay for having their book recommended in the email. Now of course they promise that that doesn't influence editorial decision, which we all believe. But that's an issue.

MARY E. SNAPP: I would just like to take a crack at part of this question, too. I'll focus on the drug dealer and the pusher. I'm not so sure that technology advancements and the notion of people becoming "dependent," was the word used, on technology is any different today than it's been for the last 100 years. You can think about, for example, buying a car. I mean we're pretty dependent in our society today on a car. Does that make a difference between some people's ability to work in certain areas whether they have a car or not? Certainly. Can you make parallels with that sort of mobile transportation and the digital divide? I think so. And so I think what you really come down to is that you shouldn't necessarily impede technology advancements but certainly there's a role for legislation and the court system and consumer demand to try to guide the advances in such a way that it ends up protecting consumers where they need to be protected. It's very interesting, you come down to this question of the personalization versus privacy sets of issues and I agree with John. That's a very complex topic area. I'd like to take a cut at personalization in a different way

With the ability to personalize your preferences I think we risk a society in which an individual chooses and can choose not to be exposed to a wide range of ideas and thoughts that they are otherwise exposed to in other aspects of their lives today. And I've heard this example used where someone says, "You know they open up a newspaper, they're interested in a certain article

but as they flip through they get interested in something else and they read two or three articles in the newspaper." If you instead have your personalization preferences set up on your computer and on your Internet choices you may not see those kinds of things. Is that good for society as a whole? It may not be. How do you manage something like that? And I think that's sort of the flip side to one of the privacy kinds of issues.

DEAN JEFFREY S. LEHMAN: I've heard that last phenomenon described as narrowcasting, the opposite of broadcasting, as the sort of limiting the range of ideas and people you can become exposed to.

JOHN RIEDL: Yeah to pick up on Mary's idea. We've been asked a bunch of times, "Well what if you do perfect collaborative filtering? Doesn't that mean that all the Ted Kaczynskis get together into the unabomber forum and get to talk to each other about being better unabombers and they're not harassed by all of us complaining about it. And you know that's a risk. And that's something that there's a real issue with. I saw a talk by Bob Putnam who's the guy who wrote Bowling Alone. If you haven't read that I strongly recommend it. A great book about why the social network really matters. And one of the challenges he gave to the computer science research community he was talking to is we have to be exploring the ways in which our technology is going to influence society and asking questions like this. A famous psychologist who studies human user interfaces, Sarah Keisler at Carnegie Mellon University, was in a tutorial I gave on recommender systems earlier this year and she said that one of the things we ought to look at is this line of psychological research that says that if you put two people in a room together and they don't know anything about each other, they'll just ignore each other. But if you put them in a room together and you can tell them something they have in common you can really help to encourage them to create a network with each other. So as an example we could put any two of you in this room who use MovieLens, we could put you in a room and say, "Hey guys, this is a movie that you two would both really love. This is something you have in common. You ought to consider talking about this movie together." And that's a way technology can actually bring people closer together than they might have been otherwise. It's kind of interesting to think about that whole spectrum of the negatives and the positives.

DEAN JEFFREY S. LEHMAN: I want to call things to an end by asking everyone to please thank our wonderful panelists for a terrific panel. We resume tomorrow morning with a detailed focus on the topic of privacy where the panel leader will be Jennifer Granholm, the Attorney General of Michigan. Thank you again for being with us.