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**AT THE CROSSROADS OF
LAW AND TECHNOLOGY:
KEYNOTE ADDRESS, OCTOBER 23, 1999**

*Ira Magaziner**

This afternoon, I would like to share with you some of my thoughts on the ways in which the Internet is transforming society, and some of the principles I helped shape and implement to respond to and promote these transformations as senior advisor to the President for policy development in this arena.

We enter the new millennium in the midst of a revolution, an information revolution. As you look back on the sweep of human history there have only been a few major transformational changes to human society. We have the privilege of living through one of them.

For thousands of years, human economy and social organization was based on nomadic tribes that hunted and gathered their food. Then, some technological advances gave rise to agrarian societies—such as the ability to use certain metals, to plant seeds, to husband animals, and to use the wheel. These inventions made agrarian-based societies possible, and these societies were fundamentally different from the nomadic tribes in their economic, social, and legal structures.

About a quarter of a millennium ago, the industrial revolution began, driven by such technological advances as the harnessing of electricity and the steam engine. It took place over the course of about 100 to 150 years as it spread through the developed countries in the world. Industrialization is still spreading into some of the developing countries. These advances wrought fundamental changes in economic, social, and legal paradigms. During each of these

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transformations, the relationships among societies changed dramatically. Leading societies that failed to master the new technologies were surpassed by those societies that did.

We are now going through a transformation which is every bit as significant as those others. This transformation has been advanced by two major developments. The first is the ability to process a massive amount of information very rapidly on the smallest of microprocessors. The second, which is less often discussed, is the ability to communicate by light—the substitution of photons for electrons. It is now possible to send the entire contents of the Library of Congress across the United States in under fourteen seconds on a single optical fiber as thin as a human hair. This combination of the ability to communicate by light with the ability to process massive amounts of information at very rapid speeds is creating another revolution which has come together in the Internet to form a common basis for communication and commerce. This revolution is less than a tenth of a century old and it will probably play itself out over a couple of decades.

This revolution has already transformed our economy. The Internet economy is real. Our government now estimates that the development of the Internet infrastructure—just the development of the Internet—has been responsible for an average of 35% of the real growth of the U.S. economy from 1995 to 1998.¹ Over 55% of total investment of venture capital in 1997 went to the information technology sector.² If you add electronic commerce to that, as well as the productivity effects of electronic commerce, I believe that almost two-thirds of the real growth of the U.S. economy is coming from the Internet economy.³ And it is the major reason why the U.S. economy is performing so much better than every other economy in the world. It is having an incredibly dramatic economic impact. And this has occurred as a result of the fact that the Internet increased

1. See U.S. DEP'T OF COMMERCE, THE EMERGING DIGITAL ECONOMY II tbl.2.3 (1999) ("IT Producing Industries: Contribution to Real Economic Growth"), available at <<http://www.ecommerce.gov/ede/report.html>>.

2. See U.S. DEP'T OF COMMERCE, THE EMERGING DIGITAL ECONOMY A2-5 app. 2 ("Building out the Internet") (1998), available at <<http://www.ecommerce.gov/emerging.html>>.

3. See *id.*

from having one million to 150 million users.⁴ Consider what will happen when this figure jumps from twenty million to a billion people. These trends are only going to accelerate. The amount of business-to-business electronic commerce was zero three years ago and will go up to about two trillion dollars by the year 2003.⁵ The Internet is reshaping the whole economy in dramatic fashion.

I want to illustrate just how quickly this information revolution is playing out. In 1994, President Clinton asked me to chair a joint National Security Council–National Economic Council initiative and identify the most important things the administration could do to continue the current economic expansion. We had a list of things to look at, and we held hearings around the country, and what we eventually came up with was not even on our original list. I will never forget the meeting where I presented our findings. Although the NSF had just opened the Internet up for commercialization a little over a year earlier,⁶ I nevertheless projected that the Internet and electronic commerce were going to drive the world economy for the next couple of decades. When I did that, something happened that would be repeated with every subsequent six-month forecast I issued: everyone around the table laughed and said, “You know, you are dreaming, that is utopian.” But every one of those forecasts turned out to be conservative by many orders of magnitude. The reality outstripped the projections, even though everybody thought the projections were considerably overblown.

The President understood the significance of these developments and created a group, which I chaired, to develop a strategy that would enable the Internet to expand for the economic benefit of the country and the world. We brought together about eighteen agencies of government to develop that strategy, which we then issued as “A Framework For Global Electronic Commerce”⁷ and promoted throughout the world. I am going to give you some of the highlights

4. *See id.*

5. *See id.*

6. *See* Robert Hobbes Zakon, *Hobbes' Internet Timeline* (visited Feb. 21, 2000) <<http://info.isoc.org/guest/zakon/Internet/History/HIT.html>> (the definitive Internet history).

7. William J. Clinton & Albert Gore, Jr., *A Framework for Global Electronic Commerce* (visited Feb. 21, 2000) <<http://www.iitf.nist.gov/eleccomm/ecommm.htm>>.

of our strategy and some of the significant issues that we are confronting today as the Internet revolution spreads throughout the world.

The administration had two central concerns in developing this strategy. The first was the lack of a predictable global legal environment for doing business electronically.⁸ For example, there is no uniform approach to digital signatures. Some countries recognize the legal effect of certain types of digital signature; some countries do not recognize any. The second concern was that some governments would strangle the Internet through over-regulation—taxation, censorship, etc.⁹ Indeed, there was evidence that this was already beginning to occur, even by our own government. Laws were beginning to be enacted censoring Internet content and there were many states looking at taxing Internet transactions.¹⁰ The European Union was considering a “bit tax” on every transmission over the Internet.¹¹ So, we had to develop a strategy that would address those issues.

The one thing we knew for certain, and it was the only thing we knew for certain as we developed this strategy, was that we did not know where all this was headed: The changes were just too rapid and there were too many complex interactions. We therefore wanted to be certain that we did not take aggressive actions that might have negative unintended consequences. Thus, we formulated a series of general principles to help guide us in our policy development.

I. PRINCIPLE 1: PRIVATE SECTOR LEADERSHIP

The first principle was that where government action with respect to the Internet is necessary, private sector leadership should be the primary mode for carrying out that action.¹² We are Democrats, we do not dislike government; we think government has a very important role to play in society. With respect to health care, I would espouse a very active government role to provide adequate health

8. *See id.*

9. *See id.*

10. *See* Vertex, *Internet Taxation: State Summaries* (last modified Jan. 18, 2000) <http://www.vertexinc.com/taxcybrary20/CyberTax_Channel/taxsum_73.html>.

11. *See* *The Internet Tax Freedom Act Home Page* (visited Feb. 26, 2000) <<http://www.house.gov/cox/nettax/>>.

12. *See* Clinton & Gore, *supra* note 7.

care to everyone in society. But the Internet moves too quickly. The processes of government are too slow, inflexible, and bureaucratic to effectively address Internet changes. And we were afraid that the development of the Internet would be strangled by excessive government regulation and intrusion.

Thus, we determined that private collective action was preferable to government action in a variety of areas. One such example of this was the technical coordination of the Internet routing system.

Many people actually felt that the International Telecommunications Union (ITU), because it is the body that coordinates worldwide telecommunications protocols, should be the organization coordinating the Internet routing system. The ITU is comprised of over 150 nations and includes the government regulators from those nations.¹³ So many in our government, and in other governments, were advocating that we turn the technical coordination of the Internet over to the ITU because it was maturing and becoming a significant worldwide economic force. We took the opposite approach, believing that vesting the ITU with control over Internet routing would only bog down the Internet. Considering how the regulatory authority in one country can impede the progress of the Internet, you can imagine our concern at turning over the technical coordination of the Internet to an organization comprised of the regulatory authorities of 150 countries. Our concerns were highlighted by the fact that the ITU initially rejected the use of packet switched networks for global communications systems, and continued to reject packet switched networks for the next eight years in the face of the development and growth of the Internet.¹⁴

So instead, we adopted a new model of government action to advance our new Internet policy. We followed the models of the Internet Engineering Task Force and the Internet Architecture Board, which coordinated the formation of Internet protocols in the early

13. See International Telecommunication Union, *International Telecommunication Union Homepage* (last modified Apr. 23, 1999) <<http://www.itu.int/>>.

14. See *Total Telecom Homepage* (visited Apr. 12, 2000) <<http://www.totaltele.com/>>.

years of the Internet.¹⁵ These organizations comprised stakeholder-based groups that operated in a fairly democratic manner and developed protocols among technical experts from around the world.

We delegated specific Internet coordination functions to a private, international, non-profit stakeholder-based group that governments would recognize under certain conditions of charter.¹⁶ This policy reflected our belief that the Internet should be a free, decentralized medium—but one still requiring coordination. Obviously, if the stakeholder-based group in some way became renegade or got captured by a particular special interest, governments may need to step in to force a reorganization. But private stakeholder-based groups, rather than intergovernmental entities, should be the first line of coordination.

We envisioned a number of stakeholder-based groups, each focusing on a set of core issues, working together. We started with the domain-name system, setting in motion the Internet Corporation for Assigned Names and Numbers (ICANN),¹⁷ which is now in the process of trying to coordinate the domain-name system. We hope and expect that there will be a development of private stakeholder-based groups dedicated to solving problems surrounding specific issues such as privacy protection and consumer protection. This model of delegating authority to private stakeholder-based groups will provide more flexible, faster moving, and ultimately more effective coordination of the Internet.

This model can also be used to address some of the difficulties surrounding Internet enforcement issues—issues that are very relevant to the jurisdiction questions you are exploring today in your moot court project. Consider, for example, the extremely important

15. See Internet Engineering Task Force, *Overview of the IETF* (visited Feb. 24, 2000) <<http://www.ietf.org/overview.html>>; Internet Architecture Board, *IAB Overview* (last modified Jan. 11, 1999) <<http://www.iab.org/iab/overview.html>>; Zakon, *supra* note 6.

16. For example, ICANN's charter takes the form of a Memorandum of Understanding with the U.S. Government. See *Memorandum of Understanding Between the U.S. Department of Commerce and Internet Corporation for Assigned Names and Numbers* (visited Feb. 2000) <<http://www.icann.org/general/icann-mou-25nov98.htm>>.

17. See *id.*

issue of on-line privacy protection. Privacy protection is a fundamental value. It is also something that is necessary to ensure that people feel comfortable using the Internet. Nevertheless, we have resisted proposing a comprehensive on-line privacy law for several reasons. The primary reason was that even if we passed the most comprehensive on-line privacy law, we did not know how it could be enforced. Consider the fact that there are 20,000 Web sites forming every week and no government agency can monitor them all.¹⁸ And even if you find one that you think may be violating the law that you passed, it may have its server in the Seychelles one week and Bermuda the next, so tracking it down—and acquiring jurisdiction over it once you locate it—would be difficult. We thought that to pass a largely unenforceable law is to lie to the people. It is to say, “Do not worry, we are protecting your privacy, we passed a law,” when in fact we cannot do so.

So what do you do? Do you just give up and say you cannot protect privacy? No. What we suggest is a different paradigm: to encourage private stakeholder-based groups to form and develop non-governmental self-regulatory approaches to the problem. For example, in this country we now have the Online Privacy Alliance,¹⁹ as well as the Better Business Bureau²⁰ and a group called TRUSTe²¹ that are self-regulating watchdog groups. These organizations base their philosophy on an accepted group of privacy principles crafted by the Organization for Economic Cooperation & Development.²² According to these principles, operators of on-line sites must provide

18. See Robert Hobbes Zakon, *Hobbes' Internet Timeline* (visited Feb. 21, 2000) <<http://info.isoc.org/guest/zakon/Internet/History/HIT.html#Growth>>.

19. See *Online Privacy Alliance* (visited Feb. 22, 2000) <<http://www.privacyalliance.org/>>.

20. See *The Better Business Bureau System* (visited Feb. 22, 2000) <<http://www.bbb.org/>>. For the Better Business Bureau's Childrens' Advertising Review Unit's Privacy Guidelines see *Better Business Bureau: Guidelines for Childrens' Advertising* (visited Feb. 22, 2000) <<http://www.caru.org/caruguid.asp>>.

21. See *TRUSTe: Building a Web You Can Believe In* (visited Feb. 22, 2000) <<http://www.truste.org/>>.

22. ORGANIZATION FOR ECONOMIC COOPERATION & DEVELOPMENT, COUNCIL RECOMMENDATION CONCERNING GUIDELINES GOVERNING THE PROTECTION OF PRIVACY AND TRANSBORDER FLOW OF PERSONAL DATA (1981).

notice of their information collection practices to their visitors, including how they intend to use the information they collect. Next, they must provide their visitors with the opportunity to opt out if they do not want their personal information used in the proposed manner. Finally, there must be monitoring and enforcement mechanisms in place under the auspices of private self-regulatory groups. These groups confer seals denoting that a site is following the privacy principles, they audit sites to ensure continuing compliance, and they provide a forum for redress to handle consumer grievances.

With this kind of self-regulatory system in place, government can protect consumers by warning them to be careful when visiting sites that do not have a privacy seal—and at the same time, avoid strangling the Internet with burdensome and ineffective regulation. With the cooperation of industry, the government can go to consumers and say, “Look, the Internet is a free place, you can go wherever you want, but be careful. If you go to a Web site that does not have one of these privacy symbols, your privacy may not be protected.” Of course, some consumers may not care, and that is their right; but other consumers will care and consequently will only visit sites that have privacy seals. This system creates a market incentive for companies to participate in the self-regulatory system by joining one of the privacy organizations and getting a seal; otherwise, they limit their market. But the government does not coerce them into participating. This approach recognizes that the Internet should remain a free environment; but at the same time, the government continues to have a role in empowering people by giving them the tools and information to protect themselves as they see fit.

This private, self-regulatory approach to Internet governance also avoids some difficult jurisdictional issues. Private sector watchdog groups are forming throughout the world: in the U.S. it is the Better Business Bureau and TRUSTe; in Japan and Europe, a number of business organizations are forming. These organizations will use common symbols or seals, and these seals will have similar meanings. Thus, whether you visit a Web site from Japan, Europe, or the United States, if you see such a seal, you will know that your privacy is protected even though different groups in different countries are in charge of monitoring and enforcement.

Governments will come to recognize this approach as the first line of defense in ensuring privacy protection. Of course, there must still be some kind of government backup—in the United States, it is the Federal Trade Commission—so that if an entity fraudulently displays a seal or knowingly and repeatedly violates the self-regulatory organization's rules, it can be referred for prosecution. But that is a more manageable task for the government, and it is not the first line of defense for privacy protection. Will this approach work perfectly? Of course not. But we think that it will work more effectively, and bog down the progress of the Internet less, than if each government passes its own set of privacy laws, enforced by its own privacy boards. Such an approach would create enormous confusion. Inevitably, each nation's privacy law would differ from the others'—and all of them would be difficult to enforce.

Thus, one very important principle underlying our Internet policy was to favor private collective action over governmental action. Let me again emphasize that we are not absolutely certain that this is the right approach. But it seemed to us most prudent to first let private sector leadership try to develop the rules of the road for the Internet through private collective action. If this does not work, the government can always step in and pass a law. On the other hand, if it is the government that first tries to set the rules of the road for the Internet by passing a law, it becomes much more difficult to take corrective action if the law proves to be flawed.

II. PRINCIPLE 2: A MARKET-DRIVEN INTERNET

A second principle underlying our Internet policy was to regard the Internet as a market driven arena rather than as a regulated arena. The initial reaction of most other governments was to regard the Internet as a regulated industry. Telecommunications and broadcast media are regulated industries—in the United States, by the Federal Communications Commission—and the Internet was regarded as an extension of communications policy, hence an arena to be regulated. We took the opposite position for two reasons.

First, governments initially regulated telecommunications because when the telecommunications infrastructure was built, the size of investment necessary relative to the size of the companies in the industry was huge. Therefore, governments licensed monopolies to

build the infrastructure, and they accordingly had to regulate those monopolies. With the Internet, the exact opposite situation prevails: The competition to develop the Internet will be the greatest in the history of free enterprise. Satellite companies, wireless companies, telecommunications companies, consumer electronics companies, computer companies, software companies, and electric utilities are all going to be in competition to build out the Internet. The best thing that we can do is to allow that competition to occur free from government regulation.

Second, governments initially regulated broadcast media because there was a similar problem with respect to competition due to the limited amount of spectrum available. The government became involved in the allocation of the broadcast spectrum and therefore it regulated it because it was conferring an economic value. With the Internet, there is almost unlimited bandwidth, so the problem of allocating spectrum does not arise in the same way.

For those reasons, we determined that the Internet should be a market-driven environment rather than a regulated environment. Therefore, the FCC is not regulating the packet-switched networks now. We cannot undo the old circuit switch regulation—but that is becoming a smaller and smaller part of the telecommunications universe. And the Internet will basically remain a market-driven environment. What makes that especially significant is that in the years ahead, the Internet, broadcast, and telephone will converge. We will have the Internet on television, broadcast on computer, and we will make telephone calls from both. What we are saying is that this converged environment should be a market-driven environment, not a regulated environment.

III. PRINCIPLE 3: NARROWLY TARGETED GOVERNMENT ACTION

A third principle underlying our Internet policy was that when government action is required—which will, of course, happen in certain circumstances—such action should be in the form of precise and narrowly targeted laws rather than broad omnibus bills. Consider once again the issue of Internet privacy protection. While we favored self-regulation, someone pointed out during congressional testimony that current bankruptcy law might frustrate consumer privacy protection. Suppose I provided personal information to a

company with the understanding that the business would only use such information internally and would not sell it to third parties. Then that company goes bankrupt and is taken over by a new entity. That entity is not necessarily bound by its predecessor's agreements with respect to the personal information collected from consumers. And so there was a broad consensus that some legislation ought to be enacted that would protect consumers from this scenario. Government action was required, but the action was taken in a precise and focused way rather than in an omnibus or globalized way that would be too bureaucratic.

IV. PRINCIPLE 4: RESPECT FOR THE NATURE OF THE INTERNET

A fourth principle underlying our Internet policy was the hardest one for some people to deal with: Whatever we do we must respect the nature of the Internet. By its very nature, the Internet is an arena where technology evolves very rapidly. Thus, all Internet policy must be technology-neutral—lest it become outmoded before it is even enacted. Similarly, because the Internet is an inherently decentralized medium, any attempt to impose centralized control over it—even if this was desirable, which I believe is not the case—would be impossible. And life is too short to spend too much time trying to do things that are impossible. For example, with respect to censorship, it is extremely attractive from a political perspective to be concerned about objectionable content that children might be exposed to on the Internet. Indeed, as a parent of young children, I have been concerned about this, too. But the knee-jerk reaction in Congress was to pass laws to try to censor the Internet.²³ Thankfully, such laws were struck down under the First Amendment²⁴—but we did succeed in changing administration policy on this issue, as well, so that the administration now opposes such restrictions on the Internet.

But once more, the Internet requires a new paradigm for government action. As the governments of Singapore and China have learned, even if we wanted to censor the Internet we would face an

23. *See, e.g.*, Communications Decency Act of 1996, 47 U.S.C. § 223 (1999). The CDA criminally prohibited the use of any “interactive computer service to display in a manner available to persons under 18 years of age” certain “patently offensive” materials. 47 U.S.C. § 223(d)(1)(B).

24. *See Reno v. ACLU*, 521 U.S. 844 (1997).

impossible task. Unless the government tries to confiscate every radio, every television, every telephone, and every computer in the country, and unless it shoots down all the satellites, it will be impossible to keep the Internet out or censor it.

Consider China. In 1996, Chinese officials intended to control Internet content by creating their own super intranet—but by 1998, they understood that they could not do that. They also understood that the Internet was going to be an engine of the economy and something that they should allow to develop.

Thus, the paradigm should not be one of government censorship. The paradigm should be to empower parents to protect their own households. When you sign up with an Internet Service Provider, there should be choices that you can make according to your own value system as a parent. Maybe there will be a Christian Coalition filtering package, or a children's television network filtering package, and you as a parent can choose what filter you want that might limit the content that comes into your own home. If you wish, you might want to let everything come through and use your own browser or search engine software to filter out what you do not want. If you love violence and you hate sex you can filter out the sex and keep the violence. It should be your choice. The key principle, though, is to provide people with the tools to do what they wish in their own homes, according to their own value systems. And one of the great things about the Internet is that it makes this approach possible because it is the ultimate customizable environment.

V. PRINCIPLE 5: A SEAMLESS GLOBAL MARKETPLACE

The final principle underlying our Internet policy involves the recognition that this is the first market to be born on a global scale. Traditionally, industries grow up within national borders, and then nations negotiate with each other so that their industries may work together on a global scale. This is not the case here: Internet industries are global from the moment of their birth. Therefore, from the very beginning we need to try to create a global, seamless marketplace which will allow for the free flow of commerce. For this reason, during my final year and a half in the administration, we negotiated a dozen different international trade agreements involving most

of the developed countries of the world, covering such areas as copy-right, taxation, tariffs, privacy, content, and the like.

VI. POLICY RESULTS

We have had a great deal of success with the agenda that we laid out in these principles. In fact, this was actually one of the only agendas that passed with very large bipartisan majorities over the past couple of years. We succeeded in reaching agreement with most of the developed nations of the world with respect to the privatization of the technical management of the Internet. We reached agreement on the self-regulatory approach towards privacy and content issues, along the lines described above. We have also succeeded in getting the World Trade Organization to agree that Internet commerce should be free of customs duties.²⁵ Similarly, on the domestic front, we passed the Internet Tax Freedom Act,²⁶ which declared a moratorium on discriminatory taxation against the Internet and against every jurisdiction doing its own form of taxation, and we are now trying to develop a uniform tax-neutral approach to electronic commerce. Finally, we reached agreement on a uniform commercial code approach, rather than a regulatory approach, towards the Internet so that contracts can now be made electronically.²⁷ This underscores that the role of government in the market-driven Internet environment is not to regulate, but to provide uniform commercial code so that a buyer and seller can come together and make terms as they wish—but then have, if they wish, global legal protection. This work is now moving along well. We have already passed a law in the United States recognizing, in a uniform way, electronic contracts formed over the Internet.²⁸ This approach to electronic commercial law will have a global reach due to mutual recognition agreements

25. See CNET News.Com, *WTO: No Net Taxes for a Year* (visited Feb. 22, 2000) <<http://www.news.com:80/News/Item/0,4,22354,00.html?owv>>.

26. Internet Tax Freedom Act, Pub. L. No. 105-277, 112 Stat. 2681-719 (1998).

27. See Uniform Computer Information Transactions Act (UCITA) (visited Feb. 22, 2000) <<http://www.2bguide.com/docs/pru72999.html>>; see also UNCITRAL Model Law on Electronic Commerce with Guide to Enactment (1996) (visited Feb. 22, 2000) <<http://www.uncitral.org/english/texts/electcom/ml-ec.htm>> (as adopted in 1998).

28. See Millennium Digital Commerce Act, S. 761, 106th Cong. § 5 (1999).

and the adoption of international model laws. So in a variety of ways, we have hopefully launched, on a global scale, a free-market oriented approach to the Internet.

The Internet will continue to produce significant social and political changes. It will be a tremendous force for democracy. Dictatorship relies on control of information. With the Internet, governments will not be able to control information. In fact, we found that it is going to do a great deal to open up our own political processes, as well. We did something with this effort that had never been done before in government: We took the first draft of a policy paper that we produced at the end of 1996 and we put it up on the Internet for comment. We treated it as a virtual document: We went through eighteen drafts, all on-line, all the comments were on-line and posted, and all our meetings were on-line and posted. Thanks to the Internet, we had an open process of forming this policy. Of course, we got some of the things you would expect—comments like, “The best thing you could do is die,” and so on. But most of the comments we received were quite good, and they came from people you would usually never hear from in Washington. As a result of these comments, we had probably one hundred very good modifications to the document over the course of these drafts. And the fact that we had such an open process meant that by the time we issued the strategy, there was a great deal of consensus around it and it worked very well. Since then, we have done that with all subsequent Internet Policy Group papers, and the government is starting to do it in other areas, as well. I believe that this will have a very positive effect.²⁹

VII. THE BUSINESS REVOLUTION

Let me close my remarks with some thoughts on how I see the Internet transforming the business and legal communities in the next few years. We will see fundamental changes in business models and the way business is done. For example, accountants today value companies largely based on their physical assets. In the Internet age, physical assets are going to be more of a negative than a positive. The three major assets a company has are the quality of its

29. Note that the same thing is going on with litigation. See Berkman Center for Internet & Society, *OpenLaw-Home* (visited Feb. 22, 2000) <<http://eon.law.harvard.edu/openlaw>>.

workforce, its intellectual property, and its brand. Brand is important, because in a world with virtually unlimited consumer choice and information, consumers will look for products they recognize and trust. These three assets are usually grouped together as goodwill and are considered the sort of ephemeral things that cannot be adequately valued under current accounting principles. In the future, they will be the most important assets a company has, so we need to reevaluate the way we account for them.

Next, companies are not going to want to be vertically integrated, which is very different than what we saw in the industrial age. Instead, companies are going to focus very narrowly on areas where they have a competitive advantage, and then they are going to form networks to get the rest of what they need from others who have their own competitive advantage in each narrow sliver of activity. And so a corporate entity is going to exist more as an informal network, or a network of agreements formed among groups of people. And because there are going to be so many agreements formed and a lot of flexibility in that process, the existing processes by which contracts are negotiated among companies are going to change dramatically. If you talk to entrepreneurs who are engaged in these kinds of activities, they are looking for ways now to standardize such agreements and facilitate their on-line formation. These kinds of companies are forming now. In fact, I had a teleconference last night with a large Australian law firm that is contemplating its future. I said that their biggest competitors are not the law firms they are used to competing against; their biggest competitors are companies that they have never heard of who are now forming ways to do their business on-line. In New York, for example, in the financial arena, there are a couple of new start-up companies that will be going public in the next couple of months that are putting financial process closings on-line—these on-line closings will be done at about one one-hundredth of the cost and about fifty times the speed of normal closings. And I believe that most Internet companies are going to use them instead of using traditional law firms. So, the legal profession will be going through a dramatic change as the nature of the corporation itself changes.

There will also be a new definition of investment. Prior to joining the administration, I was a business strategy consultant.

Until the early nineties, our business focused on CEOs of large companies who had to make investment decisions and wanted a second opinion from an outside consultant. They would go through complicated discounted cash flow rate of return analyses and would take months and months to make a decision because each investment was so important that they did not want to get it wrong. In the Internet age, there will be an entirely different philosophy. Speed will be crucial. When you have markets that are growing at fifty or one hundred percent a year, you cannot take a year to make a decision on whether to make the investment. Instead, the realization will emerge that there are multiple different technological possibilities, and multiple different market outcome possibilities corresponding to these technologies. No one knows for sure which ones are going to win and which ones are not. So investors will place bets on many of them. For the most successful investors, five out of ten of their investments will fail; for investors who do moderately well, about eight out of ten will fail—but the one or two businesses that succeed will more than pay for the others. So we will see an entirely different philosophy of investment and risk-taking.

Similarly, there will be a new definition of success and failure. The successful business executive in the past was one who never made mistakes—he was very cautious, very slow moving and so on. In the future, it will be the entrepreneurs who get rewarded even within companies, and that will occasion a major change in the nature of the employee/employer relationship. If human capital is one of your most important assets and you are in an entrepreneurial environment, a stake in the company becomes crucial as opposed to a base salary. This will fundamentally alter professional service firms as well as other firms.

Finally, the relative position of large companies versus small companies is going to change. Traditionally, a large company always had an advantage over a small one because it had more resources at its disposal. What the financial markets are saying today—and I personally think it is a rational thing to say—is that we know that nine out of ten companies we are funding are going to fail, but the one that succeeds will create far more value than the nine that fail, and therefore the overall value we are giving this new economy is right. The other thing they are saying—and this is something to

give pause to all large companies—is that we do not think that many large companies are going to be the winners in the new economy. There may be some, but we do not think they will be the winners as a whole, because they are not going to be flexible enough to be able to change their corporate cultures. So we are going to bet on the small new guys.

It was a real watershed when Worldcom bought MCI, the six billion dollar company buying the thirty billion dollar company. Because Worldcom had a bigger market capitalization, it could do it. We will see a lot more of these transactions, because the financial markets favor the small agile company much more than the big dinosaurs who are not able to move quickly or change their cultures, and who have CEOs who are too used to acting in the old ways. And so this will be another fundamental change transforming the business world.

We are living through a revolutionary period today. The law is going to have to adapt to these revolutionary changes. Let me finish on this note. One of the first things I did when the President said, “This is going to be important, go ahead and do it,” was to read some histories of the industrial revolution. It was very interesting because there were a number of countries who understood that change was coming and they embraced the change by fundamentally transforming their legal, commercial, and economic systems. There were other countries, including some who were leaders in the pre-industrial world, which could not change because the old ways of doing things were just too strong. And there was virtually a 100% correlation between those nations that changed and succeeded, and those who could not change and fell backward. As a result, new world leaders—economic leaders and political leaders—emerged. We are in a similar revolutionary period. I believe that the challenge our legal system faces is this: Are we going to try to force the great creativity of this new Internet economy into old legal models, or are we going to realize that we have to adapt those models and transform them to enable this revolution to continue to flourish?

Of course, we have to worry about the negative side effects of the revolution. There will be new types of crime, potential violations of privacy, a whole range of things to worry about, and we need a legal system that can help us negotiate our way through these perils.

But such a legal system is going to have to operate much faster than it does now. It is going to have to change a lot of the ways it does things to be more relevant to the world changing around it. If we fail to do that, we will fall behind. This is the real challenge for our legal system in this new world. On the other hand, it is a very exciting time to be alive. We have a privilege that few generations have—to live through a major revolutionary period that can be a force for great positive change in human history. So we have an exciting challenge before us and hopefully we will be brave enough and forward-thinking enough to exercise that challenge in a way that will benefit our children and grandchildren.