



**Michael Dell Remarks
E-Business: Strategies in Net Time
Address at the University of Texas**

Austin, Texas, April 27, 2000

Speaker: Ladies and gentleman, the president and CEO of the Greater Austin Chamber of Commerce, Mark Hasselwood.

Mark Hasselwood: On behalf of the Greater Austin Chamber of Commerce and the University of Texas, I am delighted to welcome you to this very exciting intersection of the Texas business community and the University of Texas at Austin. I'm sure that you are as interested as I am to hear Michael Dell's thoughts about operating in Net Time, so I'll move right on and introduce the next representative from the University of Texas, a member of the Greater Austin Chamber of Commerce Board of Directors, Dr. Juan Sanchez. Dr. Sanchez holds the Temple Foundation endowed professorship in the mechanical engineering department and chairs the graduate studies committee of the materials science and engineering program. He is the author and co-author of more than 140 technical publications on material science and engineering. In addition to serving on the Chamber board, he is a member of the Board of Directors of the Austin Software Council. So please join me in welcoming my friend, colleague, and boss, Dr. Juan Sanchez.

Dr. Juan Sanchez: Good afternoon. Ladies and gentleman, on behalf of the University of Texas at Austin, I'm proud to welcome Michael S. Dell, chairman and chief executive officer of Dell, which as you all know is the world's largest direct computer system company and the premier supplier of technology for the Internet infrastructure. Dell is a true pioneer of e-business of the Internet, and has been named Entrepreneur of the Year and Top CEO in American Business by leading industry journals. As the largest online commercial seller of computer systems, Dell is truly redefining the role of the web in delivering faster, better, and convenient service to customers. So, it's a true honor for me and for the University of Texas to have Michael Dell as the keynote speaker today. But before Mr. Dell speaks, Dell Computer Corporation has prepared a two-minute video presentation to find out about the new world of Net Time.

Speakers: Ladies and gentleman, Michael Dell.

Michael Dell: Thank you. Good afternoon. I am delighted to be here at UT's first e-business symposium. I will address how the Internet is fundamentally changing business as we know it, the impacts on the economy, the changes this is having on the economy, and the opportunities that exist for all businesses as a result of this. I've also been asked to describe what Internet Time or Net Time is



really about, and I'm going to give you some examples of it in today's economy. Essentially, it is an acceleration of the pace of business, and it's pretty unforgiving if you miss it or if you're late.

Actually, if you go back about three years ago the disruptive force of the Internet was only just beginning to show itself and this is represented in the difference in market capitalizations between companies that founded their business and were primarily driven around the Internet and companies that had a historical position or a legacy position. The new Internet business model is much more efficient and doesn't necessarily rely on vertical integration. Instead, it relies on information, so instead of things like inventory, you have information. Instead of physical assets you have intellectual assets. And instead of closed business systems, you have collaboration. And companies are able to connect themselves with their suppliers and their customers much more quickly using information. In fact, I think Dell is a great example of this. And we will refer to a virtual integration as opposed to vertical integration. We bring customers and suppliers inside the business.

For those of you who are familiar with Austin, you know that in the last 16 years, actually next week is our 16th birthday, we've grown to roughly what is projected to be this year about a 33 billion dollar business. I believe there is no way that could have been possible had we not been linking ourselves with our suppliers and our customers using information. And as I'll share at the end, I think there's actually a measurement you can use to determine whether companies are actually engaged in doing this. It really relates to how efficient they are with their capital; so, in this shift there is certainly a lot at stake that challenges the traditional business systems to recreate themselves and to think up new ways of doing business. The companies that don't adapt are essentially road kill on the Information Superhighway.

The GDP on an overall basis is certainly moving online. The worldwide Internet commerce growth is roughly 100 percent and is estimated to be 2.5 trillion by 2003. If you look at it on a percentage basis today it's just about 2 percent of the economy, pretty small. By 2003 it's up to about 16 percent, which is a 75 percent growth in the U.S. And outside the U.S., it's growing 220 percent, expecting to be 7.6 of the international GDP. Just by way of reference, the GDP of Dell is about 50 percent online, so we're a little bit ahead of the overall economy, but I think more and more businesses will be moving in this direction.

Statistics & Implications of the Internet Economy

The Internet economy grew 174 percent from 1995 to 1998, as opposed to roughly 3.8 percent for the overall economy. We're also starting to see the overall economy grow at a much faster rate, and I think it has to do with the unlocking of inefficiencies and friction that otherwise existed in the economy. If you think about the way any economic system works, essentially it's a collection of interactions and transactions. And the more expensive it is for that commerce to occur, the less productive an economy is. When you start transacting information in markets and in an online sense, you bring those costs of interactions way, way down, and have a more fluid marketplace, which ultimately is very healthy for the



economy and for our customers. Fortunately, it also happens to be healthy for the companies that can provide the tools that actually drive this online activity because it's a huge engine of growth. And I don't believe there will be any difference between the dot com companies and the old companies because every company will have to take advantage of these kinds of tools. It's a bit like electricity when it was first introduced in that everybody asked "Oh, what are we going to do about electricity?" And, of course, after awhile everybody just assumed that electricity was part of the way we conduct business, and I think the same will happen with the Internet.

The Internet infrastructure that's being built by all the companies, the service providers, the organizations that are involved in this tremendous commercial growth is quite huge. It's growing at roughly 32 percent per year and will be about 370 billion by 2003. There's roughly 7 million square feet of data center space that's been constructed by service providers or network aggregators that are essentially building the power plants of the Internet. And filling those up is going to require a huge number of servers and storage products. Dell has seen tremendous growth in this space. In the last four years we've had over 130 percent growth in our enterprise server and storage business and are now number two in the U.S. and worldwide in the server business. And last year alone we gained about ten points of market share, so it's a very rapidly growing space for us and for the overall market. Companies will continue to move in this direction because it's going to drive efficiency and new forms of capability, new product derivatives that couldn't have been offered before, and new services that unlock value for customers. The risk of not doing it is sort of a new "E", it's elimination; so if you don't get involved in this you have a new E to think about.

The Internet is the most overriding architectural influence for companies as they design their networks and computing devices because applications are increasingly residing on servers and storage. It's not just the PC that accesses these applications. It's now telephones, hand-held devices, palm pilots, voice recognition systems, and all sorts of technologies that ping on those servers. And that's a very important change for our company to recognize because we've got to shift our emphasis into not only this core of the Internet where we're investing a lot and building all ranges of products that can essentially provide the whole solution stack, but also the services and recognizing the importance of the service provider, which is a new form of entity.

I think there are a lot of companies that might have previously decided to build their own e-mail systems or house their own web sites but, increasingly companies are saying, you know, if somebody else can do that for me, I'm just going to plug into this infrastructure and let them worry about it. This is particularly true in the small and medium business space where you have web hosting and the APS model. But I think over time, over the next five to 10 years, you'll see larger companies looking at some of these applications and data storage capabilities and saying, "Gee, you know, we really don't want to operate our own power plant and we'd much rather have someone else do that." Of course we're not going to force that we're, instead, going to give our customers a choice and whether they are the



smallest or the largest we will provide them with a broad range of capabilities and services to meet their needs.

And we're investing heavily in this. We think it's the most important change that's impacting our business and it's clearly where a lot of the growth is in our marketplace. So, for example, instead of trying to take out the legacy mainframes, we're building rack optimized one U and two U web computing server engines that can essentially be the new growth engines that are put in either the front end of existing legacy systems or powering, you know, the totally new infrastructures that are being built today by service providers and by new dot com companies. So, if you think about some of the lessons that we've learned in our progress on the Internet, I think it really comes down to a couple of key rules and ideas we can describe as

The Rules for the Internet:

- The first is that velocity is a very important concept. The compression of time and distance really is the ultimate source of competitive advantage. But the velocity and the compression of time can unlock a tremendous amount of value and also responsiveness in delivering great products and services. Efficiency, I think, is at least as important as product and service in an era where there are so many tools that can yield tremendous efficiency, and certainly our company has proven that you can gain share with a structurally better business model. And you can gain lots of it.

The web experience must be better than any physical world experience. I don't think that all the physical world and physical world retailers will go away. I just think they're now challenged to a much higher level and they have a higher standard with which to compete. And, you know, just like the bookstores say, "Hey, the customer can go online so let's make a coffee bar here; let's make it a social environment; let's put things in here that make it so compelling that we're going to attract those customers that aren't going to be enticed to go online." Businesses have to consider the implications and be prepared for the changes and perhaps take out some of their own infrastructure from the old world to prepare for this new world

Velocity

Velocity is the shrinking of time and distance really in both directions. Backwards into the supply chain and forwards into the customer. As this happens businesses become more efficient and better able to meet customers' needs. In our case, we use customer information to fundamentally build a better product and service. Broadband and wireless broadband will only accelerate the rate at which change begins to impact businesses. Remember that as customers get broadband, they want richer content, and if your content is designed for narrow band, you're out of luck because your customers will experience slow content and they may go somewhere else. Because as the cable system and DSL systems ramp up and as next generation cellular technology comes into play for mobile Internet access, customers are going to want a richer experience.



And we've always pushed for a greater velocity. The Internet has really been the backbone of speeding and improving the asset turnover and the response and delivery time that we ultimately bring to our customers. A good example of this is what we've done with our suppliers with respect to quality. Often times, quality and speed are at odds, but at Dell we don't like things like that. We like to break down such barriers and create new ideas. In the physical world you might use meetings as a time to review metrics but that feedback is actually pretty slow, almost like the feedback from the computer retail channel back to the manufacturing factories where the computers are built. You know, it just takes a long time for the feedback to get there. Well, in our case we link our suppliers with our business operations, so they see in real time what their yield of materials on our factory floors is and also our delivery to the customer. We don't have to wait for the quarterly meeting to know that their materials are above or below a designated goal. If we've set a 300 defect per million goal and they are at 500 defects per million, you can be sure that we're going to want to understand how they will fix it and what we can do to solve as well as compare to other suppliers in real time to make sure all our suppliers are working towards improving our customers' ultimate experience. There's a real focus on collaboration, inventory management, seeing the work in process from our suppliers, and having them see the constant changes in the schedule and the demand trend to identify product shortages before they occur. This allows the supplier and Dell the ability to see this together, while accumulating huge savings in efficiency of the supply chain we have.

Efficiency

Efficiency is paramount in a business like ours and we've been using the net to harness new levels of efficiency and cost savings. Today about 75 percent of our technical support is done on the web. In fact, if you visited Dell.com in the prehistoric days during 1994, you will remember that the original start of Dell.com was not to sell but to support our customers, and it is our customers that have really embraced support@Dell.com. We've essentially taken all the information we have and put it online to provide smart diagnostic tools. The savings again are huge. A call center call into our support operations can typically cost about three to ten dollars per call, and of course, online those costs go to close to zero and it's the same information we would have internally to prepare for the calls anyway. Seventy percent of the calls are resolved without having to dispatch a service provider and that's very very important because if we can solve it online or on the phone the cost of doing that is much much less than having to send someone out. And not only do we have an information advantage that our dealer based competitors don't have, but we have a speed and cost advantage, and this manifests itself in less down time, lower costs, happier customers, and of course a better feedback route.

Internet Enabled Service Tools

In extending the service tools to be Internet enabled, we've got something called the open managed resolution assistant, which is a diagnostic tool that resides on a Dell server or work station. Let's say you have a Dell PowerEdge 6350, and somebody all of a sudden trips on the power cord or one of the power supplies goes out, that would be pretty rare, but let's say that there is a problem in that machine.



Okay, that machine has an ability to automatically notify any number of people inside your company, inside our company, and begin the process of solving that problem, even before it becomes a catastrophic event. And of course, one of the really interesting things about support is that about 60 percent of the cost of support is in effectively the name, rank, and serial number. You know, you call on the phone, what kind of computer do you have? What kind of operating system do you have? When did this problem first start happening, and how much memory do you have? This can take 60 percent of the call time, but with these tools that is essentially reduced to almost nothing because the data comes over perfectly and with 35 million computers out there we recognize that the problems are pretty much the same over and over again. They're not unique problems. So the ability to take the DNA of that problem and see it, understand it, and then solve it automatically without a human is tremendous. So you have a problem, you ping support@Dell.com, the problem is solved, and you're sort of back to work. Self-healing systems can really add a lot of value.

Web Experience is Superior

The final rule for Internet revolutionaries is that the web experience must be better than the physical experience. We found that loyalty for people shopping online is more related to the customer experience than traditional drivers such as price, etc. In fact, we think the top two drivers are quality of the service and on-time delivery. Certainly the predictability of delivery is a big factor, so there is a real vulnerability to business models if this customer experience element is not a fundamental part of the strategy, and it's something that we've really embraced. We, of course, sell online to all sorts of customers from the very largest to the individual consumer. But these large customers and medium sized customers, even small businesses, have unique needs. They have special pricing. They have account teams that are dedicated to them. They only want to buy certain products and they don't want their 300 thousand employees seeing all the products that we sell. They just want them to see the ones that are approved by the standards committee. They have nondisclosure information. They have special reporting and unique requirements. So as we were building our online presence, we created Premier Pages and now have over 40 thousand of them that lets a customer inside our business. An example is Ford Motor. Their page automates the procurement process in a paperless manner that's increasingly frictionless as we integrate the commerce systems of our customers with our own, like SAP and Arriba and many others.

We build unique configurations that customers require and can track their specific account information. It gives a worldwide view of the assets that have been deployed for that company through many many different windows. And it provides the support tools and in some cases more unique support tools that are tailored for individual customers. It deepens customer relationships. It drives convenience and obviously loyalty with our customers and, you know, we're tying our manufacturing operations into this whole process so that an increasing percentage of our orders are essentially frictionless and when a customer decides they want 100 of these or 500 of these, the order goes right to our factory.



Programs like Premier Pages that reside at Dell.com have built our online business into a very large business all by itself. In fact, our online sales today are at the run rate of a Fortune 100 company. It's about 50 percent of our revenues and at the end of the last quarter was about 40 million dollars a day on a seven-day week, including weekends and holidays. We're taking this further through things like commerce integration, and we're having customers tell us they're seeing big cost reductions in their own businesses in implementing these kinds of changes. Ultimately it drives an unparalleled level of customer experience and customer satisfaction.

In Summary

If you're online and direct, if you're not vertically integrated, you've got a business that is tremendously efficient in using information. It doesn't require a lot of physical capital. It requires intellectual capital, and it's able to generate huge returns with the limited physical assets that it has, and I think you're seeing the markets sort through, if you will, the companies that have proven profit engines, which ones have proven profitable growth engines. We're not talking selling at below our cost to operate and figure out how we make it into a business later. I think return on invested capital is probably the best measurement of this. Over the last several years, we've driven this metric up through the disciplined focus that we've had and through an increasing emphasis in the online component of our business in the area of 300 percent return on invested capital, which certainly is well above our cost of capital and indicated that Dell has significant opportunity to continue to gain market share. We've been growing at several times faster than the market.

The Internet is really about obtaining competitive advantage. The Internet is going to be your business. And hopefully you're ready and preparing for that. It's reshaping long held and long established business models and changing the global economy for the better not only for end users but also marketplaces. It's going to also create a lot of turmoil, and businesses need to be prepared for that. The ultimate goal, I believe, is end to end-direct business relationships with the Internet being the mechanism to transmit this data and to take friction out of the economy. There's still a ton of friction left in the economy and the Internet and the products and services that power the Internet are going to take that out and unlock a lot of value in the process.

So, with that, thank you for your attention. I'd be happy to answer any questions.

- 1) You talked about the impact of the storage devices on the Internet. With the advent of fluorescent light technology to take CD-sized devices and get 160 gig -- what impact do you think that will have on the Internet?

If you look at any technology whether it's semiconductors or photonics or storage mechanisms, you see either massive improvements or stepped-function improvements in the capacity of the systems. You know, networking was bumping along at ten megabits and all of a sudden we had 100 megabits and then gigabits and 10 gigabits and, you know, huge increments of performance capability brought to



bare. You have Moore's Law on semiconductors. There's lots of new exciting technologies in storage that are essentially making it very very low cost to store immense amounts of data. If you think about it for a second you say, "Well gee, why does anybody need to have all that storage?" And it's a bit like I remember when we were at Comdex in 1986, and we were introducing the world's first 12 MHz 286 computer. We had two long lines in our booth. One line where all the dBase and Autocad users said, "I gotta get one of these; this is great." And then we had the other long line of the press saying, "What is anybody going to do with that much computing power?" These kinds of step function performance improvements are going to continue.

If you could have hundreds of gigabits or terabits in your personal computer, and you had a broadband connection, well why wouldn't you store every single home movie that you have digitally and then access it on demand? Why wouldn't you store every video episode of your favorite show or shows and pull them out on demand? You might say, "Well gee, I don't really need that, and I don't have it today." But if you can get it all for \$29.95... What happens is, software is like a gas, it fills the available space, and people will find applications that are very, very creative and use up this capacity just as they have in processing, just as they have in bandwidth, and I think storage is the same. To some extent, storage technologies have been a substitute for bandwidth. So if you didn't have bandwidth, you had storage because you couldn't have access to the data online, so you had to have it offline, and that's also changing. There's an interesting company called Storage Networks, which Dell has an investment in, and they have taken space at all the EXODUS data centers around the world. They are linking with the Metromedia fiber networks that are in all the major cities so that essentially you don't have to have and run your own storage farm. It's back to the power plant concept, and for a lot of companies, I think that's going to be a very attractive idea, and as you get more and more bandwidth.

- 2) Mr. Dell, I understand about 85 percent who won't go online don't because they're afraid of so many privacy issues. Will you speak to us about the state-of-the-art encryption and platforms that can proxy my identity so I can prevent one of those double-click versus the Department of Justice things going on now?

Sure. Well privacy is a very important topic, and certainly there are lots of users, actually, the majority of users, have some level of privacy concern with the Internet. I think the first thing you have to do is make sure that companies are explaining what they're doing because if you don't have transparency, if you don't know what's happening, then why go out there if you don't really know what will happen to your information. There are some organizations like Trustee and BBB Online that Dell's been a big part of and have been explicit in saying, "Look, this is a big issue and companies that want to do something about this have to do the following things." For example, if you're going to use somebody's information, you have to tell them what you're going to do with it and how you're going to deal with it. In our case, we don't actually use customers' information and share with anyone or sell it to anyone. It's never been part of our business. There are some businesses that are fundamentally driven by the use of customer data. But they're not all online businesses. In fact some of the world's biggest media companies are



fundamentally grounded-some of the world's financial companies are fundamentally grounded-in what people would generally call "you're abusing my privacy." You don't like it as consumers, but whether it's online or offline, it's the same thing. And I think the first thing we have to do is have companies kind of come clean and explain what they are doing, what they are not doing. I mean let consumers choose and decide, which I think would be very productive. We're really interested in making sure that as responsible citizens in our industry we do the right thing by explaining to our users what we do with information and as we explain -- also encourage a visit to our site -- the vast majority of customers are extremely comfortable with that.

- 3) Mr. Dell, how have you solved the problem to align different e-business models among suppliers, manufacturers, and clients?

We are very much a customer pull-driven system. We can try to decide, but if the customer doesn't like it, then it doesn't really matter. So our job is to, we believe, listen to what our customers are telling us and reflect that in all of our relationships with our suppliers. We tell our suppliers, "Look, here's the way you've got to do business if you want to be a big supplier to Dell. You've got to meet these quality standards; you've got to deliver on time to these doors; you've got to do it globally; you've got to do it with these parameters; and if you don't want to do it, that's fine, but this is what our customers are telling us, and this is what we need to succeed." I think the customer has a huge say in this, and we're certainly seeing a lot of pull from customers who are saying, "I don't like purchase orders. I don't like paper. I don't want to do all of this stuff. I want to go with an electronic commerce system that's going to eliminate all this. And I want to have electronic payment systems, and I want to drive all of this cost down. I want to have standards, and sometimes I want to do it with SAP, sometimes it's Arriba, sometimes it's Oracle. It could be any number." We don't define for the customer, "Here's, how you have to do it." We link with all of them. And of course, we'd love for them to go online because that's the most efficient way, but quite frankly, we'll take your order any way we can get it: message in a bottle, smoke signals, fax machines, it doesn't matter.

- 4) I think you already answered my question, but can you describe a little bit the importance of digital marketplaces-the whole B to B marketplace? What effect that will have on companies like Dell that have such a great brand, meaning why let Commerce 1 take a cut of a sale if someone can come right to Dell, and then how industry thinks about integration like with procurement systems. How important is that going to be for you guys?

I think the whole e-market idea is a very big idea, but right now it's still in the excitement stage. It's pretty clear that you can take a lot of cost out of the supply chains. Companies like I2 have proven that, and we've been implementing those kind of technologies and seeing great results from doing it. I think one of the values is that if you go back to this idea of de-verticalization and the automobile companies for example saying, "Okay, we want to buy a particular component." Now, do we want that component to be a unique component for every model for every car for every car manufacturer? If you think about



the number of different models the car companies have, the cost of engineering a unique component for every single part of the car, for every single car company all around the world would be massive. I think where the friction gets removed is when a designer at Ford says, "Hey, you know if I use this part over here that is also used in this other car and this other car-and it might even be used by my competitor-but that's not where I'm going to get my differentiation. I'm going to get my differentiation in something else." That's where I think a lot of value could be extracted.

Think about in our industry: power supplies. If we have 150 different models of desktop computers (fortunately, we don't have that many, but let's say you have a huge variety of desktop computers), and then you multiply that by the number of competitors in the industry and the variance and volume by competitor, by country, by plant, do you design a unique power supply for every single one of those? The cost of doing that would be huge. The forecast accuracy and all sorts of problems would be massive, so I think e-markets can drive a lot of that cost down, but there's a lot of questions that are yet to be answered here in terms of where it actually finds its biggest application. I'm not as concerned that companies like Arriba and Commerce 1 will have a sort of lock-in because I think ultimately there's too much pressure from the buyers and the sellers to avoid that, and markets find ways to be more efficient.

- 5) Mr. Dell, we've seen a large movement with the old traditional PC as the main tool to surf the Internet. Now we're seeing a larger movement with PDAs, cell phones, and this large movement with broadband transferring over to these wireless devices. What's Dell's base movement going to be in that arena of web surfing and broadband and new technologies on that front?

Well everybody knows that the PC died 125 million units ago, and it was very unfortunate, but, actually, it's still quite alive and well as I think a lot of you realize. The interesting thing about this is that a lot of people have this idea about substitution. You get your Nokia phone, and you no longer need a PC. You get your Palm Pilot, you no longer need a PC. You get your Set Top box, you no longer need a PC. Actually I think these devices are far more complimentary. To give you an example, the most popular device out there that's sort of in this realm is the Palm Pilot. Have you ever found or heard of anyone who had a Palm Pilot that didn't have a PC? Anybody? Raise your hand if you've ever heard of anyone having a Palm Pilot who didn't have a PC? You fundamentally don't use a Palm Pilot without a PC. If I send you an e-mail, and you're looking at it on your Nokia phone and it has a Web address, you're response is likely "I'm missing out here. I can't see this thing."

Now, here's another question: Have you ever known anyone that got a high-speed Internet connection and then said, "You know, my PC is too fast"? No, that's not the way it works. Find people who got Roadrunner or DSL and ask them what happened. The first year, over half of them buy new PCs, and a significant portion of them buy multiple PCs per home, and the reason is that now they can suck down all this content, and it's a more compelling experience, and so I think actually the more little devices there are, the more big devices there are, and I think they will all work together. Nokia uses this



convenient statistic that there will be more people accessing the Internet from the phone than the PC. That may be true, but there are more people that walk than go in cars. But they go at different rates of speed, and they go different places. The PC I think has a great role to play here. Now it may be that some are predicting the death of the PC because they can't succeed at the PC model. They sort of lost that round, and they're trying to say, "Well gee, if the PC goes away, then we can get all the business." Well, I don't think it's going to play out that way. Other questions?

- 6) Two alternate visions of the future of software development are the Cathedral and the Bizarre, or more specifically Windows and Linux.

OpenSource, sure.

- 7) OpenSource. Now the development of those models is going to play out over the next few years or few decades. How do you see that happening and how does that relate to, for example, Microsoft's current problems with the antitrust situation?

Well, I think OpenSource is a real deal. I think it's a very big deal. I think it has a lot of validity to it, and we are supporting OpenSource throughout our business in very meaningful ways and providing our products with Linux. We've made a number of investments for Dell Ventures in Linux-related companies and companies doing Linux distributions and Linux support, that kind of thing. I don't think Windows is going to go away. I think they're both going to succeed, and I think the rapid rise of Linux-NetCraft believes (they don't believe, they have measured) that 33 percent of the Web sites out there on the Internet are running Linux. Pretty remarkable statistic. I think that the rapid rise of Linux is basically the customer speaking. And it also shows that these things can take off pretty quickly. Yeah, it's just on a server today or mostly on a server, but I think Linux on the desktop has a fair shot over the next couple of years. Does that mean Windows is going to go away? I don't think so. I think there will be healthy competition, and I think there's room for different business models there, and I think that that will cause all of us as consumers and users of the product to benefit.

- 8) As I understand the story, about 16 years ago, you had an idea in your UT dorm room that you could sell PCs direct to students, and that you could save a lot of money. If you were back in that UT dorm room today, what kind of a company do you think you'd start? [Laughter.]

Well, it wouldn't be a PC company. [Laughter.] And the reason is that, I firmly believe that if you're going to do something, you should do something better than somebody else is doing it, or else don't even try because trying to sort of copy or emulate a company who's succeeding is a very hard strategy to play. I would look for new opportunities to create value. I've been spending my time thinking about how can we grow and expand the business of Dell, in areas like storage and servers, an already huge and growing businesses for us. The kinds of trends I have talked about offer massive sort of disruption and potential for people who want to start businesses, and I think that it also lends itself toward people



in dorm rooms, quite frankly, because if you're sitting in an existing business, you're thinking about building and protecting that business. You're not thinking about these kinds of wild and radical ideas, which not all of them are successful ones. Over the last 10 years, out of all of the companies that went public, only 10 percent of them reached sales of more than \$400 million. When I was at the Goldman-Sacs conference earlier this year, I congratulated all the companies that had recently gone public because it appeared that the market was assuming that all of them were going to grow at 50 percent per year for the next 10 years. Now over the last 10 years, only three companies have been able to do that. I'm very familiar with at least one of them. But it's a really hard thing to do. I would look for big opportunities to create new value. I wouldn't look to sort of copy something that's already been done.

- 9) I was talking about your company today with somebody in one of my finance classes, and we were talking about Europe, and he said that his girlfriend was working over in Europe, and that a couple of weeks ago she saw the first Dell computer in Italy that she'd ever seen, and then yesterday she said she was seeing a lot more. What do you think about Europe in terms of PC growth? I understand that their Internet hasn't grown as much over there as ours has.

Well Europe has not grown as fast as the U.S. industry. Last year we grew about twice the rate of the European markets, you know, roughly a six billion dollar business for us. It's a very sizeable business, ... in Italy, but growing. Let's see, why hasn't it happened? Well, for one, Europe has had slower deregulation of its telecommunications, and what's essentially occurred is that in the U.S. when you make a phone call, voice or Internet, you don't really pay by the minute. Well in Europe, you generally do. When you have 21 million people on America Online, kids are chatting and it's not such a big thing to go online for an hour or two and see what's happening in eBay, etc. Well in Europe, basically that's a per-minute charge, which is a huge depressant factor for demand for computing because if bandwidth is expensive, then you don't really have a great incentive to use your computer. That's starting to change. British Telecom has just rolled up flat rate DSL just in the last few days which is exciting. I think telecom deregulation is coming in a lot of European countries. The population is larger, the economy is roughly the same size, and the market is less than half the size today... the computing market. I think there's huge upside in Europe, and it's a great area of growth for us.

- 10) Dell has been on the front line of new technology for 20 years, and I was wondering, what do you see is the next big technological breakthrough?

The next big technological breakthrough? Photonics is a big deal, and it's finding its way into networking and also into semiconductors, so you'll have optical networks, optical processors, which is delivering massive performance improvements, which unlocks all sorts of new capabilities, you have WAP (Wireless Application Protocol) technology. So for example, the cellular networks are optimized for voice, but when you have things like 1X, RTT, CDM, and GPRS, and the Edge network coming, you'll have a hundred kilobit and then ultimately megabit wireless in your notebook computer, so we would like to be able to see the Internet unleashed on your notebook computer, and then you won't



have to go back to go back to your desk or your dorm to access the Internet. You can take it with you, and that, I think, is very very exciting. If we don't have fast communications, a fast processor doesn't do you a whole lot of good, but as you get this fast processor, like a cable modem or a DSL line, you want a gigahertz or 2 gigahertz PC, and we're seeing that from our customers.

11) Is Dell doing anything to stimulate the preservation or promotion of the truly local economies who are trying to compete against purely Internet-based distribution companies? I just wondered if you had any programs or projects headed in that direction?

Well, I'll give you a philosophy on that. I think what we do is sell tools of modern capitalism that include computing and communications. Everyone has a free shot at them: large companies, small companies. The thing that differentiates them is not if they are big or small; it's are they fast? And sometimes, there's really fast, big companies, and sometimes there's really fast, small companies. The reverse is also true. You can have slow, big companies; you can also have slow, small companies. I think it's a free-for-all. The general trend at least up until recently -- and may still be the case -- is there's a tremendous amount of capital available for new business creation, which is a great thing, and the great thing about the culture in our country, and in Austin in particular, is that people are willing to take risks and try new things, knowing that not all of these will succeed. That is going to spawn a lot of new businesses, half the size today... the computing market. I think there's huge upside in Europe, and it's a great area of growth for us.

12) What do you think is driving or devaluing the Internet companies? Do you think it's going to continue or settle down to these levels or come back up?

Well, it's a good question. I think the valuations in many cases reached excesses that were totally illogical. Does it make sense to apply risk capital to create new businesses? Absolutely. If you look at the amount of capital that's being deployed and the rate at which it's being deployed, you can make a couple of assumptions: One is that there are a whole lot more smart people starting new companies than ever before. It's conceivably possible, given the flow of capital and the potential awards, but if you look at the magnitude, it's a little hard to believe in its entirety. I think another factor has been the can't-miss attitude. In other words, if you look at the distribution of IPO's last year up until a few weeks ago, you would likely conclude that you should invest in every one. And the reason is that they go up, and a lot of them go up a tremendous amount right when they go public, and only a very small percentage go down just a little bit, and if that persists for a very, very long period of time, you get excesses. People start buying on margin; you get people investing with no fundamentals. I can give you examples of companies in our business that compete with us, or purport to compete with us, and the numbers just don't make sense. I think it's a real good time for the individual investor to sit back and say, "What's going to be sustained here?" I think the excesses are not healthy for anyone involved, including the



people who kind of risk their careers on these ideas that may not be totally sound because they're sort of induced by this kind of over-capitalization.

13)Michael, I want to thank you for what you've done for software in general in Austin. I get the trickle-down effect from Dell as everyone who's in software technology. As one of the most admired executives in America, what kind of advice would you have for younger executives or people who are wanting to build a strong infrastructure, a strong company, based on your own experience as an executive, some of the lessons you've learned over the last seven or eight years as you've built what I say is a tremendous, tremendous vision that is still growing?

Well, thank you for your kind words. I think first of all you would look for sustained competitive advantage. You'd look for unique differentiation. You look for creating some new thing that hasn't been done before. You have to be willing to experiment. A lot of people are kind of hesitant to fail. That's a bad strategy for a startup. You have to be willing to try things and make improvements based on what worked and what didn't work and be fundamentally connected to customers and be willing to try lots of different things early on to come up with an answer, and then when you tap into some value, to really hone it and to try for more of it.

14)And for you personally, what has been one of your greatest "A HA!s" or lessons learned over the last seven or eight years, as you kind of reflect on your own personal growth as an executive?

I think the biggest thing that I've focused on is hiring talent and surrounding myself with as many bright, capable people as we possibly can inside our business to help it grow. Last year, we hired 9,000 people at Dell. We need a tremendous amount of talent. We added seven billion dollars in new revenue in one year, and this year, estimates are we'll add a little more. So that's a big challenge in terms of growing, developing talent, bringing new talent into the organization. That has to be I think the primary focus for a growth company.

15)You have already talked about Dell doing some work in Europe. How important do you see it for e-business as a whole to deal with customers in their native language?

I think it's very important. We have built Web sites in about 40 different languages. One really adds insult to injury if we ignore business in the language and on the terms of the local culture. If you go to Dell.com and pick a country, you'll find it's totally localized with localized content and feel, and that's very, very important. It also gives you the ability to segment the market more effectively and deal with the unique things that go on in the market.

16)Is there a future for Broadband and wireless?



We need competitive, broadband access for customers through multiple mechanisms. As the cost of that comes down, it's going to really open up the Internet to lots of small businesses and to individuals in a very, very different way than the 56K type of modem. I'm not a stock analyst, so I can't make any recommendations on a particular stock, but broadband is certainly a huge theme and one that is very, very important and is only going to grow. All right, thanks very much for your attention.