

# The Everyday Acts of Many: The Mobile Renaissance

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If any of you have heard the news this morning<sup>1)</sup>, you might be aware that it has already been somewhat of a long morning for HP. This morning we announced that while we exceeded our top-line growth objectives for the fourth quarter, we missed on the bottom line.

So before I get started, I have one question for you: Do CEOs get to ask for a recount?

So now let's get our heads into Comdex. For all of you Comdex veterans who faithfully attend these keynotes year after year, for those of you who walk the show floor with your eyes practically closed, this year I'd like to do something different. Keynoters typically stand upon the stage and talk about the future of technology, but usually only so far as it applies to the next rev of their product. And while all of that is well and good, it seems to me that we could all benefit from a broader perspective. And so, with that in mind, I'd like to start today not by looking forward, but by looking backward - 500 years. Yes, backwards. Because I think in an industry that believes it can outrun history, sometimes the most valuable lessons are the enduring ones. That's a lesson I've subscribed to for a very long time.

Some of you may know that I've studied medieval history. And what drew me to that subject was a curiosity about what triggered the transformation from the medieval era to the Renaissance, what caused the

shift from medieval thinking to enlightened thinking, from a local focus to a focus beyond geographic boundaries; most importantly, what sparked a century of sustained and enduring human achievement.

When Galileo and Copernicus and Levenholt turned the theory of an earth-centered universe on its head, they forced people to rethink religion, politics, commerce, individual responsibility. Hundreds of years of dogmatic parochial thinking gave way to curiosity and possibilities. Leaders began looking at how governments could benefit everyone, not just themselves. Artisans were given freedom to create. Scientists and engineers were given license to question and to experiment. Invention flourished.

But perhaps the most compelling thing about this era was that the Renaissance wasn't triggered by a single act of bravery or ingenuity. It was a collection of acts by individuals of many different talents. It was not fueled by the bold acts of a few but by the everyday acts of many.

Now, of course, there are hundreds of parallels we can draw to the current period we live in. In an era where technology is liberating imagination, removing barriers, connecting us all whether we are in Laos, or Lyons, or Las Vegas. And I would argue that we are at the beginning of a second Renaissance, the Digital Renaissance. And once again, millions of ideas and inventions are coming to market.

Now while some may say that the Digital Renais-

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1) On November 13, 2000 (Comdex, LAS VEGAS, NEVADA)

sance is all about technology, I began to look to history for lessons. In the transformation from the medieval era to the Renaissance, it was actually belief in human potential that represented the greatest shift - the notion that an open society is what fuels progress. Now, of course, there is a different type of lesson to Renaissance history that teaches us what's truly at stake here.

And that lesson has to do with individuals and companies, patrons of this Digital Renaissance and the role that we play in keeping this second Renaissance going. Because the first Renaissance did come to an end, and it came to an end because of a return to dogmatic, parochial, dare I say it, closed and proprietary, ways of thinking.

As you listen, ask yourself how the decisions you make, the actions you take, the technologies, the standards, you support affect the long-term trajectory of what has been one of the most intellectual, stimulating and economically prosperous periods in recent history.

So, let's move forward in history a bit. Let's think about past Comdex shows. Remember when it was all about the next killer app. Then, not too long ago it was about browsers and portals. Now it's about Linux and Bluetooth and mobility. And notice how the conversation has shifted over the years. The innovations and inventions we pay homage to are less and less defined by a few big companies and more and more defined by many individuals and companies working together.

Last year here at Comdex I talked about HP's vision of where the Internet heads next. We said that in order for the Net to become truly useful, it would have to become invisible and pervasive. It would have to become more personal, more friendly. I talked about a world where you wouldn't have to work the Web, instead the Web would work for you. I talked about

the emerging technology landscape and how, in order for business leaders to create lasting value for their customers and shareowners and employees, we need to focus on solutions that address the intersection: simple, easy-to-use information appliances giving access to useful e-services over an always-on Internet infrastructure. And I said last year that we would rev up HP's inventive capabilities and point them at this intersection of information appliances, e-services and an always-on Internet infrastructure.

One year later, the intersection of these three forces of technology is where the most meaningful change is being shaped and where the most innovative, useful and significant invention is happening. Because a new Net is emerging - a Net that is no longer bound by proprietary technologies or closed computing architectures or the classic PC or even electricity. We are witnessing a Net that is being shaped and defined more by the people and businesses that use it than the technology.

Today we're going to take a look at how the Net is evolving as a populist tool. That is, a tool that goes beyond the ability to not only transform business, but also to transform society and even to transform our daily lives. We're going to talk about the Net through the context of how it fosters personal creativity, business transformation, mobility, how it can enable a do-it-for-me world and how the intersection powered by the underlying open standards of the Net will ultimately enable us to solve societal problems using the collective power of all the world's people.

At HP we're finding that inventing at the intersection can foster better personal experiences, because when you and business leaders are thinking about this intersection, you're thinking hard about how people experience your product, your company, your services.

Are they useful, is it reliable, is it simple, is it

convenient?

In essence, thinking in this way will enable you to help customers concentrate on the things that matter most to them, while technology does the rest. It is about optimizing the Net so people can unleash their personal creativity, and I mean personal creativity in the broadest sense: achieving, learning, communicating, and creating to their heart's delight.

I'd like to tell you a story that underscores this point. It's about a hundred people in countries across the world. Now many of these folks didn't see themselves as particularly creative. Most only had a passing interest in technology. But a team within HP wanted to prove just how empowering technology could be. And so we sent 100 of our digital cameras, PCs, and printers to 100 people around the world. We didn't care to impress them with technology or impress them with reliability, although I have to admit that one guy in Canada did tell us that his camera froze in transit so he put it in his oven for ten minutes and it worked perfectly.

But we didn't ask them to evaluate the cameras, we didn't ask them to rate the speeds and feeds. Instead we gave them very simple instructions: Take lots of pictures. Now these are some of the images that came back. These are the photos of a Tibetan monk taken while he was on a bus leaving Tibet. He knew very little about cameras, which is why his photos are upside-down and a little bit offset, but I think you'll agree that they're absolutely compelling.

Or these pictures, taken by Calvin Ng, age 11, who lives in Singapore. He used his remarkable photographs to gain some status with the boys in school. I love this one in particular, the caption he gave it reads: It looks like the sky needs a haircut. Or these, by Leslie Hirsch, a 40-something cab driver in San Francisco who wanted to document the adventures of her day-to-day life. Or

Joseph Ole Simel, a leader of the Masai in Kenya, whose photos help us understand a culture that most of us may never see up close.

The 100 Cameras Project demonstrates what happens when the Net and technology serve the greater interest of connectedness between people. People took pictures of everything. They printed them out, they emailed them in, they shared them with others, and along the way, their talent surprised their friends, their family, and in many cases, they even surprised themselves. At HP, we were inspired.

This symbolizes what's possible when you make technology so easy to use and so reliable, so intuitive, that it fades to the background and creativity comes to the foreground. It underscores the importance and relevance of the open standards of the Net, which make it possible for all of us to experience these digital photographers' world and in the process learn something about our connection to other human beings. By the way, I encourage you to see this project for yourself at our Web site when you get a chance.

So, let me get back to how all this relates to the intersection that we talked about - this philosophy of putting people and their experience first. This is the key strategic imperative if you want to capitalize on the intersection. It's what we're doing in our own business to drive customer loyalty.

It's why our new PhotoSmart cameras use great technology developed by HP Labs that make it virtually impossible to take a bad picture. It's why we're putting smart chips on our ink cartridges so that they can alert you when you're running low on ink and automatically trigger an e-service to order more. It's why we built great features into our Jornada Pocket PC, like MP3 music capabilities so even while you're checking mail you could be logging onto a music e-service to create your own personal sound track.

What we're learning is, to help make the Internet useful, meaningful, indispensable, you have to start with people, not with technology. Now hold that thought. Because we're going to build on it. Let's examine the flip side of great experiences. Because behind every solution that puts people first, is a business that thinks differently. Let me explain.

Over the past five years, conversation about Internet technology has centered on making business processes more efficient. E-commerce was essentially about making the process of interacting and transacting with customers more efficient. E-business was about making back-end systems and processes more efficient. And this is why most of today's e-business and e-commerce implementations are little more than automated extensions of traditional processes.

At HP we see the world differently. We see e-services as the truly transformational framework for business. In an e-services world, we think of your business as a set of independent services: e-mail, accounting, inventory, management, HR - independent services that you would list and pay for only when you need them, rather than expensive business infrastructures that you must support and maintain.

With e-services, you could reach your customers wherever they are, even when they're on the move, because anything with a chip in it becomes a platform for the delivery of services. In an e-services world, all things become revenue opportunities - capital assets, material assets, key competencies, know-how, a world-class process. They all can be delivered as an e-service over the Net, generating new revenue.

In an e-services world, business processes can be formed dynamically on the fly to complete a task or to fill an order. The lesson here is that real transformation comes from an understanding of the linkages, the relationships, the intersection. And it's by understanding

the relationships between these that businesses master the key drivers of competitive success - namely, first, how to transform a customer experience. Second, how to transform value creation and finally, in the process, transform entire industries.

Let me make this a little more concrete. At HP, we spend a lot of our time thinking about how to improve the customer experience. What if we could respond to their needs instantly? What if we could extend the customer experience beyond the traditional boundaries of interaction? For example, at HP, we're turning printers into smart Internet appliances. Thanks to Stamps.com, your HP printer is now your local post office. Thanks to Encryptix.com, your HP printer is now a ticket office for movies, for sporting events, to the theater. We're announcing a number of alliances and offerings at this show that will make it possible for you to walk up to an HP printer with your cell phone and print your e-mail messages or your customer presentations.

Now all of this, of course, requires new technology. HP intellectual property is in both the printers and in the underlying infrastructure. Now, let's talk about how e-services can transform the value-creation process. Collaborative trading communities and exchanges have the potential to wring all the inefficiencies out of manufacturing and supply chain management processes, to create perfect markets - markets where everything happens in real time and response times go to zero, where information flows freely so that all participants have access to the information they need, where all goods and services are traded, creating spot market for everything.

In HP we're participating in online auctions to sell excess inventory and buy parts in short supply. And in this process, we've been able to trim our inventory cost by 30%. We free up working capital, which can then be poured back into R&D and product development,

which improves the value creation process. We're learning that by participating in and mastering this new supply chain model we can transform the way we create and deliver value. The point of all this is that all you need is one company in an industry to catch on to the power and the potential of inventing at the intersection, and they become the tipping point for their entire industry. For example, if one car manufacturer masters the model of turning cars into mobile portals, all other automakers will have to follow.

The first broadcast company to link printing to television content in a meaningful way will transform this medium, creating value for viewers, for advertisers, for broadcasters. So that's just a very quick view of what I see as the transformational power and opportunity of the next Internet era. What we need to keep in mind is that in this new world, transforming customer experience, transforming the value-creation process and transforming industries are all interrelated. One triggers the other.

Think about how you might use e-services to catalyze business transformation in your own company or for your own customers. So, to continue building my argument, put people first and embrace the intersection in your strategy. And now let's open up our lens even wider. Let's venture around the world to Finland, to Japan, to Singapore - three places where e-services are delivering what people want when and where they want it, and transforming how businesses profit, all in the context of mobility.

Now we believe there's a lot to learn from these countries and so we've been conducting street-level research to really get at what people's aspirations are for living life in motion. We met Kako, a housewife in Japan, who uses mobile technology to regain freedom, because with her mobile phone and messaging services, she can be anywhere and still fulfill her responsibilities

as a mom.

Anari, a doctor who chooses to be available 24 x 7 and balances work and life by using mobile messaging to receive everything from information about his patient's EKG to his son's morning reading. And Mishi, Ataki and Suiko - these are Junior High School students who use mobile phones to expand their network of friends by playing online games and exchanging messages. By studying these people and hundreds more, we've learned how truly mobile cultures work.

We've learned how in a mobile culture the concept of community gets reinvented. Mobile technology allows people to interact with others near and far and manage social networks in new ways. We've learned how in a truly mobile culture, the concept of time gets reinvented. Mobile cultures tend to live more in the moment, more impulsively, more spontaneously. And we've also learned how in a mobile culture, the concept of communication gets reinvented. It, too, becomes more spontaneous, more intimate, more frequent.

In mobile cultures, turning your phone off in a restaurant or in a meeting is bad form. And you might turn off the ringer, but you're still receiving messages all the time. Always-on access is, in fact, the norm. It's expected.

Here, in North America we may think we're a mobile culture, but if you take a trip to Tokyo or Helsinki, it becomes immediately apparent that we are not - at least not in the same way. In the U.S., we talk about the next step in mobility as bringing today's Web site to PDAs and to phones or shrinking the Net experience so that you can carry it around in your pocket. But in fact, that is a PC-centric view of mobility.

When you study people and what they want to do when they're on the move, a different set of require-

ments emerge. Mobile e-services enable customers to conduct short-session, information-driven transactions that can be completed very quickly, while people are on the go. And in the work we've been doing through our mobile e-services bazaars in Finland, Singapore and Japan, we're playing a significant role in inventing the first generation of mobile e-services that have come to market, including transactional services like banking and travel reservations, information services like checking the sports scores and real-time news, search services including things like yellow pages or translation services, entertainment services like custom-ringing tones or games, personal services like calendaring and your address book, and communication services like short messaging and mail.

Now all of these services represent huge revenue opportunities. SMS alone, Short Messaging Services, now represents about 8% of the total mobile revenue in Europe - \$10 billion and that figure is growing exponentially. So far, more than 200 partners have worked with us to bring mobile e-services to market. Our goal is to bring the inventions and lessons learned in our mobile e-services bazaars to our work with customers here in the U.S. and beyond.

Everything we're learning in the bazaars is guiding our investment in mobile technology. Together with partners, we're giving devices Bluetooth capability so that those devices can engage in spontaneous communication with other Bluetooth-enabled devices. We think we're in a unique position to help proliferate the standard, because of the sheer volume of products we ship. We're bringing Bluetooth capability to our Omnibook notebooks and to HP printers. HP Labs is also inventing ways to view streaming media, including live video, on a PDA across today's networks.

And we've optimized our Internet infrastructure offerings to enable service providers to develop, deliver,

manage and build for mobile services. At HP, we're taking a holistic approach to the mobile market. It expands our partnership to telco leaders and our commitments to standards-based technologies as the connectivity fabric in our appliances, our always-on Internet infrastructure solutions, and our deep research into mobility - not just mobile technology, but mobile lifestyles.

I'm hoping that you're starting to see that at each level of magnification my story is building. With the open standards of the Net, you can think about people first, not technology, and deploy e-services to deliver the experiences people want - and deploy them over mobile and fixed appliances that work together to transform the way we work, the way we live, the way we play. And so let's carry that world view one step further.

Because a true mobile solution isn't about putting the Internet in your pocket. It's about using the Internet to deliver the services you need based on where you are, whatever context you're in - your car, your office, in someone else's office, in a hotel, running through the airport. It's not only about delivering mobile e-services to your appliance, it's about letting that appliance take full advantage of the resources in the world around it.

Now what do I mean by that? What I mean is that a new model of computing is rapidly emerging. It's about the physical and digital world being intertwined to deliver what you need based on where you are and what you want. Appliances, infrastructure and e-services will be brought together, connected and harnessed spontaneously to perform tasks and then disconnected when the task is complete and they no longer need each other. We're talking about federated architectures that will couple together everything from technology resources, like processor cycles, storage, IO, memory, and devices, to application-level business and consumer

services, like messaging, travel, financial services.

Let me give you some examples. First, let's talk about appliance-to-appliance federation. There's an opportunity here if you look at how your mobile appliance links up with other appliances in a given environment to complete a task. After all, every day you move through environments that are full of information appliances like PCs, printers, ATM machines, televisions, door locks and toll booths, and increasingly all of these are becoming Net-connected.

Every device in that environment can become a resource or a service to anything else in the environment by connecting to an open standards-based always-on Internet infrastructure to access e-services. Imagine being able to see the real-time ETA of your bus, or a user interface for every light switch, temperature control or piece of AV equipment in a conference room, all on your PDA.

At HP we've created the technology to enable the interactions that I just described, and we're working with partners to bring them to life now - not some time in the future next year. At the heart of all this capability is our suite of CoolTown technologies. Last year while I was here, I talked about this. CoolTown is a vision of the world where everyone and everything is connected to the Web through wired or wireless links. It's a world where humans are mobile, appliances are connected, services are everywhere and everything has a Web page.

The CoolTown architecture is built on open Web standards and includes Web and application servers for embedded systems, software that allows appliances to connect simply and quickly in spontaneous interaction and a dynamic framework for creating location-aware, context-aware applications. That's right - Web servers don't have to be big. Our CoolTown software is the underlying fabric that will enable an exciting new way

of delivering mobile Web services.

So, in this world that I'm describing, everything and anything with a microchip in our CoolTown software suite can become a platform for the delivery of e-services. We're taking device connectivity to the Net, building on the power of Internet and Web protocols that are already ubiquitous. And every person, every place and everything can have a Web presence.

In this new world, some appliances will require extraordinary computing power. These appliances may not actually rely very much on the Net, except maybe for software updates. Other appliances will actually require very little resident intelligence. They will draw on the resources and capabilities of the Net to get things done. The printer ink cartridges that I mentioned earlier are smart enough to order more ink when they run low, but that's it. That's enough.

Other appliances are going to be somewhere in between, using resident intelligence and the resources in e-services made available on the Net. So, the picture I'm painting is not a world of smart everything, but rather a world of useful things - appliances and environments that are smart enough to perform tasks of all types. And thanks to the open architecture of the Net, these systems, which often know little or nothing about each other in advance, can be smart enough to collaborate when they need to, to deliver the experience you want - no detailed device profiles needed, no frustrating incompatibility issues for us to deal with.

Now this idea of devices working in concert over the Net is also reflected in a partnership we're announcing today, a partnership with a leading brand in the mobile space, Nokia. Together with Nokia, we're enabling Nokia phones to connect with printers and print anything that lives on the Web. Anything - directions, coupons, basketball game tickets, messages.

In a world where Web servers can be embedded in

anything, this partnership is an early step for the distributed services-based computing model where appliances can link up to deliver services. Let me turn now to the second part of computing at the intersection: the vision of traditional PCs or workstations federating together to tackle a specific challenge. This is what most people actually think of when they think of peer-to-peer computing.

Our technical computing group has worked with customers to implement the infrastructure needed to make this happen. Imagine coupling together hundreds of ordinary desktop computers on a regular basis, like maybe every night, to make your excess capacity available as a service. This is what services-based computing is about.

And we've extended this station so that applications can share the full set of resources typically available on a powerful workstation, CBU, memory, IO, and storage. And the same model can be implemented across the Internet, securely in addition to within a corporate Internet.

Our e-utilica solution has taken this notion to market. It is the world's first plug-and-play Internet data center. It allows apps on tap, storage and compute capacity on demand by renting it out in a totally secure way. And to hammer on a theme here, e-utilica supports our commitment to openness. It supports multiple architectures: HP-UX on PA RISC, and Windows and Linux on IA32.

So there's device connectivity and systems connectivity, and now let's talk about connectivity between application services. In this case, multiple applications in different locations, maybe even living in different places on the Net, combine to create a task-specific capability or higher-level service. These next-generation applications will be characterized by how they deliver custom experiences for the individual users and by their

ability to integrate process logic and relevant information from across the Net to deliver an answer.

Consider virtually integrating a company's financial management system with a third-party market and credit data service - all designed to monitor balance sheet and refinancing opportunities. Or, envision that every time you arrive in a new city, a whole new set of location-specific services - services that you've expressed an interest in - will make themselves available to you and to your mobile device. Mobile e-services relevant to Las Vegas is what you want when you're here, but when you're in New York, you may want e-services that point you to the best new restaurant in midtown.

This is what services-based computing is all about. Now, doing all this requires a new set of technologies, like massively scalable and flexible naming systems, security approaches that enable truly faithful interaction between anonymous devices and systems, and advertisement and discovery modules to let different resources and systems find each other. We've designed and developed that capability at HP. It's called e-speak. It's our software specification framework for locating and brokering e-services.

While others chose the local area network and remote method invocation models as their design center, e-speak was built from the ground up for Internet-based application services. It can scale to tens of millions of nodes, it has a tremendously flexible naming system and at its core, it understands that these types of architectures demand an XML message-based approach.

As an aside, you may have read about our acquisition of Bluestone software. By adding Bluestone's highly acclaimed XML-based Web application server and tools to our portfolio, we're creating the richest development platform for the service interaction model that I'm describing. We believe that in order to enable this next-generation services-based computing model, a



vendor-neutral, standards-based approach must be applied to the new technologies that are emerging. Incidentally, this is why we asked for very substantial changes to the charter of the UDDI consortium - namely, equal voting rights for all members as a condition for our participation.

And it's also why we're contributing our e-speak open source technology to the effort. So now that I've gone to great lengths to describe the world we're focusing on at HP, I want to underscore a key philosophy that I have mentioned a couple of times today. And that has to do with open standards, open systems and open architecture. At HP we were advocating openness long before it was popular or vital. But now that the technology landscape I outlined today is unfolding, we are evangelizing openness in our industry with increased vigor. And that's because economic vitality, business transformation, personal creativity - true meaningful progress in all of these are dependent on open standards.

Why? Because in a world that's fueled by open standards, actions become cumulative. When your invention can add to the inventions of others, you get the network effect. If the world is built on open standards, developers can be free to focus on delivering the best possible experience and rely on the works of others to round out a solution.

But most of all, open standards provide a way to solve some of the deepest challenges we face as a global society. So my final story focuses on these challenges. We've spent most of our time today talking about solutions that serve the one billion or so people on the planet that have access to technology. And so I'd like to turn our attention to the four billion people on the planet who currently don't have access to technology or the social and economic opportunities of the digital age - the four billion people who live in

impoverished areas in Africa, Asia, Latin America, parts of Central Europe, as well as the U.S.

HP recently announced a world e-inclusion strategy, but it's about making the four billion rural poor an integral part of our business focus. It stems from the belief at HP that it is not enough for HP scientists to be focused on the future of computing five to ten years out. We also need to be thinking about the future of markets five to ten years out - where will new ideas come from, where will new business models come from, where will talent come from, where will our customers come from?

If you believe like I do that we are living in an era that's defined by the power of ideas, the power of connections to people, to knowledge, to information, and if you believe like I do that really smart people are everywhere in the world, then you need to acknowledge that there is an untapped market of four billion people out there - people brimming with ideas.

This is not about helping people cross the Digital Divide by giving them technology handouts and hand-me-down PCs. This is about coming up with new people-centered, sustainable approaches in the partnerships to solve the problems of the world's uneven distribution of information technology, economic resources and wealth.

Now for some, inclusion may mean access, for others choice, and for others, it means commercial opportunities. HP's approach is anchored in our belief that now that the traditional barriers to technology are being removed by cost, bandwidth, literacy, electricity, we can think in very inventive ways about solving problems in education, in medicine, in commerce and in employment in these rural villages. The solution might be as simple as a transistor radio-like device that would send a weather report e-service off the Net, allowing a small fishing village to get weather alerts. That can help

fishermen steer clear of threatening weather.

There are solutions like a Linux-based shareable device that costs around \$150 and can be funded by the content that flows through it, making technology deployable in areas of the world where it wasn't economically feasible to do so before. Or, they might be as elaborate as a telecenter that HP and 15 other partners have put together in Costa Rica. It's equipped with Net-connected PCs, learning tutorials and medical services. It's fully self-sufficient, capable of running on solar power and can serve a village for decades.

In San Marco, Costa Rica, a coffee cooperative that previously got \$1 per pound of coffee, which sold in Europe for \$15 per pound, is now using a telecenter to get up to \$6 a pound. Last month, HP announced its world e-inclusion program and goals for 2001.

We know this effort will create social benefit, but we also expect that reaching out to these people will contribute to our financial growth. We believe it is important to explore new ways to tap into the potential of four billion people. It is an extraordinary opportunity, full of complexity and challenge. In the words of the University of Michigan professor C.K. Prahalad, there is no lack of opportunity, just a lack of imagination.

Together with our partners we are intent on proving that imagination and invention can go a very long way. So if you're interested in getting involved, please make sure that you visit us in our booth today. Many of the leaders of our e-inclusion initiative will be there to talk with you in person.

We've talked about five different ways the Net is evolving and the underlying frameworks and technologies that make it possible.

A Net for personal creativity. This Net teaches us that all meaningful advancements start by focusing on people and what they want. A Net that's optimized to transform business teaches us that business strategy and

technology implementation are inextricably linked and that by focusing on the intersection of services, appliances and always-on infrastructure, true transformation happens and exponential value can be created.

The mobile Net shows what happens when you make those e-services available anywhere and everywhere by way of mobile appliances - virtually everything on earth where the physical and the digital world are intertwined to deliver what you need, based on where you are and what you want. This is about applying the power of the Net to unleash the inventiveness and economic power of four billion more people in the world.

If we as an industry expect to achieve a world that works in this way - where mobile and fixed devices can federate and deliver e-services, where embedded computing makes devices smart enough to accomplish that, where a focus on what people want supercedes a focus on technology for technology's sake, where the contributions of four billion more minds fuel the world economy - it is going to require a change in the way we think and in the way we behave. This world will require companies and leaders who support open standards, open systems and open architectures in their solutions and in their business strategies.

The Internet, which started out as an organic standard invented by a public institution, has become the engine of growth for economies around the world. The next phase of growth will be exponential, but only if every solution that you contribute can connect with every other solution on the planet. Anything less holds everyone back. It is medieval thinking.

As an industry, our first forays on the Net have largely been about inventing new ways of doing old things. But our next forays on the Net are about inventing things that have never existed before.

And so when you leave this room today I want you to think about what you will do to fuel and accelerate

this great next Renaissance, to support the open standards making it possible to apply your own inventiveness towards contributing to the solution, to liberate the people of your own company to invent

solutions that change the world, to trust others to add their own inventiveness to your solution. Ask yourself these questions and then remember that this Renaissance, like the first, will be about the everyday acts of many.

## ● 저 자 소 개 ●



Carleton S. Fiorina ([www.hp.com](http://www.hp.com))

Carleton (Carly) S. Fiorina is president and chief executive officer of Hewlett-Packard Company. Prior to joining HP, Fiorina spent a total of nearly 20 years at AT&T and Lucent. During the past two years, as president of Lucent's Global Service Provider Business, the division dramatically increased its growth rate, rapidly expanded its international revenues and gained market share in every region across every product line. In addition, she spearheaded the planning and execution of Lucent's 1996 initial public offering and subsequent spin-off from AT&T, one of the largest and most successful IPOs ever. Prior to Lucent, Fiorina held a number of senior positions at AT&T. She began her career with the company as an account executive. She became president and chief executive officer of HP on July 17, 1999, and will join the HP board of directors. The board elected Fiorina to succeed Platt, who recently announced his intention to retire.

Fiorina was born on Sept. 6, 1954, in Austin, Texas. She holds a bachelor's degree in medieval history and philosophy from Stanford University; a master's degree in business administration from the Robert H. Smith School of Business at the University of Maryland at College Park, Md.; and a master of science degree from MIT's Sloan School.

Fiorina is a member of the board of directors of the Kellogg Company and Merck & Co., Inc. She recently was elected to the U.S. China Board of Trade. Previously she held positions on the boards of directors of the USA Republic of China Economic Council; Goldstar Information & Communications, Inc. of Seoul, Korea; and AT&T Taiwan Telecommunications of Taipei. She also served on the board of the Telecommunications Industry Association.