



William Henry Gates wurde 1955 in Seattle geboren. Er besuchte die private Lakeside School und fing mit 13 Jahren an zu programmieren. 1973 begann er an der Harvard University zu studieren und entwickelte während seines Studiums eine Version der Programmiersprache BASIC für den ersten Microcomputer: MITS Altair. 1975 gründeten Bill Gates und sein Jugendfreund Paul Allen die Firma Microsoft und verkauften ihr BASIC an namhafte Firmen wie MITS, NCR und Intel. Bill Gates verließ in seinem letzten Studienjahr die Harvard University, um seine Energie ganz auf Microsoft zu konzentrieren. 1981 kaufte er ein Betriebssystem von der Firma Seattle Computer Products, SCP-DOS, das er später in MS-DOS umbenannte. 1983 kam die erste Version von Windows auf den Markt, 1990 hatte er mit der Version 3.0 den Durchbruch geschafft. Somit konnte er seine Vision des Personal Computing erfüllen.

Microsoft beschäftigt heute mehr als 55.000 Mitarbeiter in 60 Ländern, die Erträge im Geschäftsjahr 2003 beliefen sich auf 32,18 Milliarden US-Dollar.

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# The Digital Decade

Vortrag beim Consulting Congress com.sult 2004, der von der Create Connections Networking & Lobbying GmbH veranstaltet worden ist.

It's a great pleasure to be here and to talk with you about some of the exciting possibilities ahead. My simple message will be that technology is creating more opportunities for businesses to work in new ways in this decade than ever before. This comes down to a variety of factors. Over the last few decades there have been some very amazing breakthroughs that have changed the framework of how we think about business. This started really going back to the original PC in the 1980's and the miracle of exponential improvement in hardware capability is one of the factors that are very important to recognize. Gordon Moore of Intel talked about the idea that every two years the power of the microprocessor would double and that's not the only thing that improves exponentially. The storage capacity of PCs has more than doubled every two years. The data rate, the speed of data going down an optic fiber has more than doubled every two years. So starting in the 1980's we had this unbelievable platform to run software on. Before that time people thought of computers as simply something in the backroom. Managing documents, printing checks, or keeping large databases and in no way did they think about it as an individual tool. The way that information was managed was entirely paper-driven. Long meetings, lots of phone calls, knowing that human-to-human transmission of information really required people to be in the same place and even so was quite inefficient.

Now the 1990's something that came along and really changed the picture is another miracle and that's the connecting of all these machines together. The standards of the Internet were adopted for every computer on the planet and now we can take a computer and connect up to information that's half way around the globe without paying an extra or even without being tracked because the communications costs are taken for granted and those prices are so low. Having this connectivity really opened people's minds up that something revolutionary was going on here. And that the way

**Some very amazing breakthroughs**

**The storage capacity of PCs has doubled every two years**

**1990's: Connecting of all these machines together**

**There was a view that things would happen overnight**

that we collaborate, the way that we plan, the way that we buy and sell that it would be phenomenally different. In fact in the late 1990's there was almost too much excitement about this. There was a view that things would happen overnight. And people ignored the fact that there was a number of pieces still to come into place. There was not an infrastructure that allowed data in one company to be understood by the software running in another company. There wasn't an infrastructure for the reliability and security that we need before we use this infrastructure as the primary way that we collaborate and do business. And so the foundation that came out of the 1990's was very important but also there's a lesson from the 1990's that people can get ahead of themselves in terms of not thinking through the business models or expecting radical changes to take place overnight.

**We're bringing a new level of software connections**

This decade will actually be the decade that the greatest impact on how we do business and business productivity takes place. And this is because we are building on the continuing advances of hardware and hardware connections. And we're bringing a new level of software connections. We're bringing new levels of security and reliability because of the large investment levels that the technology industry is putting into those issues. So we are really completing the picture. And so it's in this decade we can say it's a digital decade. At the start of this decade if we'd taken away computers there would have been an impact. People would have been unhappy not to have e-mail or word processing but in many ways business could have gone on. By the end of this decade these software processes will be embedded and assumed not just for the leading-edge businesses but across the board. My message today to you is as consultancies that for your customers choosing their path in terms of how to best use software and new software within their organizations and for connecting up to others really will be the key issue for competitiveness in this decade. Now when we think about this innovation it's generating a lot of devices. There's excitement about the PC, the PCs moving to a new form factor called the tablet PC where you can take notes, you don't have to have the keyboard. In meetings at Microsoft everyone comes with their tablet PC that's connected up to that wireless network. And these are getting smaller and lighter. And in fact the readability off the screen means that we are seeing a shift that information that you would have gotten, like a magazine on paper, more and more will be read entirely off the screen. The fact that when you get that information you can look into it in more detail, take a sales report and see the information by time period, by product type, and annotate it and send up that visual what you're seeing off to other people. That's really a productivity advance that once people have it they won't give it up. So the PC is innovating quite a bit. Larger displays on the desktop, more portability, lower cost, speech input, ink

**The key issue for competitiveness in this decade**

**Larger displays on the desktop, lower cost, ...**

input. We also have the excitement around the mobile phone. Of course, the mobile phone is moving to be more than just a voice device but a data device as well. And some people have talked about the idea that isn't there a competition between the PC and the phone. To me this is absolutely wrong. The pocket-size form factor is very, very important. It is something that is natural to use, to carry that around.

But that is complementary to the larger screen device. If you want to write a document, if you want to fill out your tax returns you'll use a larger screen device. If you want to go out and just take something that will fit in your pocket you'll take the phone. So there's an imperative to make these things work together. For example, if you want to be notified about something that is changing, that's important to you, software should know which device you have with you and should know what you're doing, know the context to understand if interrupting you with this new information is appropriate or not. And so we need to think of software not just on each of these individual devices but software that's working for the user across all of these devices. We have even taken these form factors to the next level by introducing a smart watch. We call this the Spot Watch. It came out in the United States just this last month and we'll have it out in Europe in the next year and this brings what we call glanceable information where if you want to see the soccer score or the weather forecast or traffic or even get a message or see your schedule it's right there on your wrist. And again, this is a device that is purely complementary so whether it's the TV set or the car, the pocket, the wall-sized screen - all of these things need to work together.

And of course that brings us back to software. Software that doesn't create boundaries, what we call seamless computing. So instead of you manually thinking about sinking devices and moving information around that should happen for you. So, for example, if you take a photo on your cell phone and you do some voice annotation about your excitement having that show up on your PC and to be able to organize an email around we need to make that very, very simple. If you are trying to collaborate on a project we've created this advance called Sharepoint where any employee can create a new site, invite other people to work with that. Making that work so that you can even visualize that information across different devices and across different organizations - that's extremely important. Making it so that your PC at work and your PC at home automatically share. Making it so that as you are doing scheduling you can see your home schedule and your work schedule either separately or bring those together. So that computer scheduling becomes something that really helps people organize their lives far better than they do today. Now these hardware advances are important to track

**The mobile phone  
as a data device**

**Software that's working  
for the user across  
all of these devices**

**„Spot Watch“**

**Seamless computing**

**„... we need to make  
that very simple“**

**The advances change things qualitatively**

**Wi-fi networks**

**The low cost of Intel Windows server machines**

**Making it easier to customize software**

because they enable us to do more powerful software. And the advances are not just quantitative in nature, higher performance, higher network speed. They also change things qualitatively, as we get these flat-panel screens, the LCD screens that provide large area and are inexpensive on the desk top the way we do the user interface and the way that we work with documents changes. When I had a smaller screen and somebody would send me a five-page document, instead of reading it off the screen I would print it out to read it. But now that my screen is very high resolution, very large, I read those documents entirely off of the screen so that's a shift in behavior caused by hardware advance. The wireless networks are really phenomenal. Both the data networks that the mobile providers have invested in and these Wi-fi networks that are showing up at work so that you can carry your portable into meetings, at home so that you can take your music and put it onto any speaker, take your video and put it on any screen. We're just at the beginning of the impact of Wi-fi. It keeps getting better and better but already it's a critical mass being built into all portable PCs.

In the area of performance it's important to note that we reached a very important transition last year and that is that the low cost of Intel window server machines that have always been the best in price performance have now achieved the highest benchmarks, that is the highest absolute performance as well. So there is a dramatic shift taking place from expensive mainframe and Unix systems down onto the Intel windows platform. So if we think of an IT budget, think of the big elements in it, the hardware piece is becoming a smaller percentage. Even as we buy more hardware to have extra capacity, to have redundancy, for failover capability that hardware piece is less and less. The package software piece has also stayed fairly small because with the philosophy that Microsoft has had about high volume, low price, the inherent competitiveness because of the volume of package software that has always stayed a very small percentage. And so the cost that we really need to innovate to help out with are mostly personnel costs, software development costs, operation cost, maintenance cost, and that's where these software advances can make a very big difference. Making it easier to customize software, letting you visualize business processes, making the IT tasks that required manually visiting individual machines, making software do those things automatically - whether it's updating, making sure the performance is there. It's really software that can change that equation in a very exciting way. There are many issues about software - and it's not just the power of software - but also the issues that surround security, performance, reliability, these are all critical. And in fact if you look at the Microsoft R & D budget the biggest area of spending are these things that by doing them right they become issues you don't have to worry about and so you can

focus in on the new capabilities. We do a lot of studies of what requires IT manpower. You know managing a directory today or backing up the systems today and so we measure very concretely how R & D is going to reduce these activities. We measure the reliability very carefully and understand what the source of a problem is. Is it the device drivers, is it that it's too complex to write the application, is it some element in the architecture coming together? And so we get constant improvement by being able to monitor and look at this information.

The top issue today on this list in terms of the concerns people have is: as they turn things away from paper-based systems to computer networks will the security be there? And security of course encompasses the privacy issues, if I put a medical record on these systems will it stay private, it incorporates issues like spam. If I'm using email will I be overwhelmed with things that are not interesting to me and the issue about viruses? Will they come and create instability in these systems? Only by thoroughly answering those questions and addressing what we call trustworthy computing will we be able to achieve the full potential of the software advances and the productivity that I have talked about. And getting that productivity is very important. Productivity advances allow the economy to create jobs, move to a new level of wealth, not just in a zero-sum way where one country wins and another loses but where every country together is participating in raising the standard of living. So we've got to get at these productivity advances and trustworthy computing is one, if not the major thing that people see as a necessary step there. There is a lot of focus now in the industry on these issues. For example, take the issue of how you authenticate yourself, how do you prove who you are. If you are using a password system, and that password has been compromised that becomes the weak link in the system. So we need to move to using biometrics and smartcards which is now a very straightforward thing to do. We need to move to a way of certifying software, what's called common criteria. That's now a global standard that Microsoft is very excited about. Another key imperative is that we need to have the software always be up to date. All of things you've seen in the news about viruses would have been avoided if the software had been up to date. That is, the minority of customers that were applying the latest improvements were not subject to those problems. So clearly Microsoft and other participants haven't made it as easy as it needs to be to keep up to date. We need to make it automatic and we've been working hard with our customers on that, showing them exactly how these updating capabilities work. In Windows itself we're putting in an automatic update feature. We started that last year, we're explaining to people why that's now the default and that's very important. We communicate about these issues with a website which is our Protect website that's clearly articulating what are the

**„We do a lot of studies of what requires IT manpower“**

**Security encompasses the privacy issues**

**„We need to move to using biometrics and smartcards ...“**

**Automatic update feature**

**The issue of authentication**

key things that people need to do. Keeping their software up to date, applying what's called the firewall approach in the right way and auditing that with software that we'll provide and that will give people this dramatic improvement in security. We need to stay vigilant on this because there are many issues including that issue of authentication, how that's done and done properly because in an IT system if there's a weak link that compromises all of the other different elements.

**Collaboration moves to a new level**

Microsoft is working on a lot of things that advance the platform and let people write applications in a simpler way. The power of applications has been improving year by year. As we move to the graphics interface the ability to visualize data got a lot better. One clear message here though that is that we're not nearly at the ultimate what can be done here. If we look at the insight people have into their businesses and trends software can help them with that far better than they do today. Even basic issues about how you organize meetings and let people who are not present in that meeting participate there's far more to be done. We have a thing called Live Meeting that lets you not just have a phone call with someone at a distance but connect your screen to their screen and so if you're working on a budget, or you are training them, or going through something complex, you can share that screen and even edit the document together, chat together and so collaboration moves to a new level. Both real-time collaboration through things like Live Meeting, and a synchronous collaboration through things like Sharepoint. And so every two or three years the major software systems take these scenarios and bring them to a new level.

**XML: The ability to express rich information in a standard way**

Now there's one tool that has become very central to these knowledge-worker activities is Microsoft Office. Today when you think about giving a presentation people will often think about Powerpoint which I'm using here. We've added some new capabilities. For example, Infopath relates to the move to XML. Those of you have been tracking the XML revolution are I'm sure very excited about the progress that's taking place. What is XML? Well, it's the ability to express rich information in a standard way. And so medical records, financial records will all be expressed so that can be moved between companies. You know, for example, the medical record. Different software can work with that medical record. You don't have to have a paper-based system. Governments as they do e-government, a key thing they have to think about is taking all the paper forms and moving those to be digital using XML. So this XML theme is really unlocking computers to work in a better way. And the way that we move XML data around the Internet is called web services and so people often talk about XML web services because having those formats and having those ways of moving them around independent of what computer system is being used is a huge advance. These ad-

**Web services**

vances are being driven by the leaders in the industry, driven in a way that the IBM systems, the Microsoft systems and other systems will be compatible in using XML web services. And it's affecting all of our software. Office is a great example of that. About half of the new work we did in this latest version was about XML including adding a module infopath just for XML entry. We also added a thing called One Note that lets you take notes, record the audio, bring in video, link to the web in very interesting ways.

One thing that is interesting is that a lot of companies in the IT sector has been cutting back. Obviously, during the late 1990's there was a bubble in terms of valuations, in terms of number of startups, in terms of IT investment, those things went to record levels. And I think it's fair to say that in these next two decades we won't see something like that again. People will be far more realistic looking at investments in business models and yet these investments are still very important at the right level. A lot of our customers are saying to us come to us with software advances that simplify our environment and bring down the overhead. And as you do that we will invest the money saved in the new activities in XML web service applications, in tablet computing, in wireless meetings, in using Sharepoint to collaborate in different ways. And that's a very healthy way for people looking at IT to simplify and create new empowerment to get more value out of those knowledge workers. Given the scale of the opportunity we are somewhat unique in continuing to increase our R & D investment at substantial levels. This year we will spend 6.8 billion which is the largest technology budget in the world. The second behind us in that would be IBM who is very R & D oriented but at 5.4 billion they spend that across hardware ships and many different operating systems whereas we are focussing this on taking Windows and Office into this XML services world in providing that in our high-volume approach to everyone. XML web services are subject to lots of good standards, bodies work. These are just like the protocols of the Internet, widely available common infrastructure. The fact that the industry stayed together on these is very important. This is the piece that will allow e-commerce to be real. Not just a simple thing where the transactions that have no problems proceed across the Internet. But even the complex things that are more typical of business transactions. Our thrust to implement to make sure our software adopts these things in the leadership way we call doc net. There's a real business imperative here in terms of connecting companies, connecting people, connecting up applications that before would have been isolated. And so we really showcase what can go on there. Now it's important for us to do this in a very advanced way. And over time that means having even a new version of Windows that builds in these concepts in a very deep fashion. Today when you use a PC there's too many con-

**„One Note“**

**During the late 1990's there was a bubble in terms of valuations ...**

**Microsoft's R & D investment 2004: 6,8 billion USD**

**Widely available common infrastructure**

**Connecting companies**



**Using a PC: too many concepts to learn**

**New version of Windows**

**For every dollar of software licence we receive, our partners are doing eight USD of business**

**The new software elements really will change business productivity**

cepts you have to learn. Searching email is different than searching photos which is different than searching files. The way you organize lists and interact with lists are all very different. We can take some of things that made Windows successful already to a new level. Now the graphics interface we standardized the interface to some degree. But by hemming a much richer database at the center of the system we can take that to a new level so that dealing with photos, music, contacts, files, mail is all done in a rich but similar way. So searching, moving those things around will become common-sense. And so this bet on this new version of Windows is something that we are engaged in. We have copies already out in the hands of developers. They are giving us feedback and over the next two or three years we'll fully develop this and it will drive the web services activity forward.

Now there's one interesting thing about the Microsoft business mall that I wanted to emphasize in particular. And that is how dependent it is on partners. We decided not to be in the hardware business, we decided not to be in the large-scale system integration business. We decided not to be in many areas so that we could focus on building software platforms. And so over time the key to our success has been other people providing software and services on top of our platform. And over the years we have had many different programs to share information, to reach out, to make sure that this partner ecosystem is very strong. Economically, it's a pretty simple equation. For every dollar of software licence we receive, our partners are doing about eight dollars of business. And that's done locally where the solutions are being built. And so I've shown here some numbers that are pretty amazing just in terms of the scale of this partnership program. Of course, this encompasses some very large partners like Excenture all the way down to very small partners who would have only a few employees and it's important to us to work across that entire range. You as consultants are people we want to embrace in this partnership spirit in terms of sharing best practices, making sure you are up to date on our software. You get access even before those new things are coming out. So that's part of why I'm here and glad to be increasing the level of dialogue that we have.

So let me just conclude with my view about this decade. This is the decade where the new software elements really will change business productivity. Even more than in the nineties and that has now underestimated because of that bubble cycle we went through and I actually like the fact that people are underestimating this. It's fun to be coming out with releases that will surprise people in terms of their capabilities. Software advances whether it be security or collaboration features like Sharepoint are key to this. And yet to really deliver the value here we've got to make sure that partners

are building services and applications around it. So I'm very excited to see how this comes together and the things that we together can build out of it. Thank you.

*Im Anschluss an die Key Note Speech richtete David Ungar-Klein, Initiator von com.sult 04, einige Fragen an Bill Gates:*

**COM.SULT 04:** What is your vision of the next "big thing" in particular in creating new opportunities and challenges for consultants?

**GATES:** Well, I think that as we thought about consulting historically, it is mostly thinking about sitting down face to face and a lot of discussions taking place. I think the role of the consultant will be enriched in the sense that the consultant will also be able to go in and navigate the data about the company and look in and look for problems. And so even many cases where you are not going on to the premises of that customer, checking in, seeing their trends, looking at their cost system, connecting to the way that their information provides incites and helping them with that. I think that is sort of the next level of consulting. There is a lot to be done to get employee base to embrace these changes, to get people to be open-minded, the fact that there can be new capabilities. Really why do companies need consultants? Why don't they figure these things out themselves? Well, when you have to make a discontinuous change, when you have to be more optimistic about the new approaches, somebody coming in from outside, who has seen that in other locations, can understand how to explain that and how the human and technology pieces come together.

**COM.SULT 04:** How does Microsoft proceed in the development of new business ideas? Is there a "visionary team"? Maybe something like a tool to manage and select innovations within Microsoft?

**GATES:** We are very lucky that we can fund in our environment lots of what we call incubation ideas and we are very careful to keep that incubation small which for us is less than ten people until they achieve certain milestones. A lot of people have enough of a track record and a credibility they can start an incubation and be extremely vague what it's about. But if they want to get and have more than ten people then they really have to have a prototype, that is literally a piece of software that although some of it may be mopped up you can step through and see exactly what they are trying to do. And they have to have sat down with a very demanding leading edge customer and step through the prototype and talked about what the benefits of that are. It might be a developer, it might be an application developer. And so by having this framework that it is very easy to incubate but then

**The role of the consultant will be enriched**

**Human and technology pieces come together**

**Incubation ideas**

**Prototype**

**We need to see trends very early on**

**Fundamental issues**

**A new level of global competitiveness**

more fairly formal about going from that incubation to the full blown project, that helps us a lot. We try and stay in touch with all the great things going on. One of the programs we are very proud of is how we work with the leading universities around the world and exchange researchers and are sitting and talking to them. And that we because of our success are investing more in things like speech recognition, computer vision, computer learning, actually than any organization. So we can help fund some of these research activities around the world. I spent a lot of my time reading, trying to track what is going on. We need to see trends very early on. I even do what I call think weeks, where I go off a couple of weeks and just read information and think about how it all comes together and how that should affect our strategy.

**COM.SULT 04:** You are standing here in front of consultants and top managers. What is the message the consultant should take to the client and vice versa, from your presentation?

**GATES:** The issues of how information is managed inside a company are fundamental. And so historically people have thought of technology consulting and sort of management consulting as two separate things. And certainly in terms of certain very technical things there still is that separation. But for most issues I don't view that separation as being very effective. I think it is hard to be a pure management consultant without helping people see how software systems can empower their people and let them work in new ways. And so we want to be a good partner not just to the classic technology consultants, but to the whole range of consultants. And hopefully we are going to kick off some new relationships here.

**COM.SULT 04:** How can consultants contribute to Microsoft's mission of making life in the office easier?

**GATES:** The idea of work being done in different locations around the world has become very feasible. And that is even before things like Live meeting and Sharepoint have gotten to their full capabilities. And so coming to grips with the fact that the world is a large place with lots of college graduates coming out of countries like India and Egypt and China and each country thinking through, ok how are we going to renew innovation in our country? How are we going to make sure we keep up with this new level of global competitiveness? And really not just examine the local companies, but also look around the world. I think that is probably emerging as the issue. Some people think about this is just a jobs issue. I think about it as taking all these human resources that are now becoming available through software collaboration and using that to drive a new level of productivity and a new level of innovation.