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VIRTUAL TOOLS FOR REAL DIPLOMACY

by Mark Weiser

I'm very excited to be talking to you because the era of computing that we're starting to get into is about to explode. The next ten years are going to require your expertise, the expertise of diplomacy, of understanding human beings, of understanding human affairs. The very poor computer technology that we've been using for 50 years is going to get better connected with your sets of skills.

So I'm going to talk about what I think is going to come. I wish I had the technology to deliver right now.

Allow me to give you an example of what technology is like. If you have an image of a computer in your mind at all, it's probably one of two things. When I first started in computing, it was of a mainframe computer, a giant box behind glass walls that needed to be specially protected and that had hundreds or thousands of people that used it, in some cases seemed to worship it. Or, you may have an image of a more modern kind of computer. You may have one on your desk, a personal computer. You may have one in your home. You may even have a little one on your lap or in your pocket. Now, you know, we have lots of people devoted to it, but it often seems as though each of us has a kind of devotion to our computer which it doesn't return unfortunately.

Neither of these models puts technology in its place. We should neither be looking at a big computer, nor have what seems like an overly personal

relationship to a machine in front of us. The next era of computing that the Internet is helping to bring out, will be an era in which the technology gets behind us and becomes usable to accomplish the things we really want to accomplish. This era I call ubiquitous computing, I think finally will bring about some of the promise of computer technology to increase the ability for human beings to accomplish our goals.

I was a little concerned about talking to the diplomatic community. So I used the Internet to find out something about diplomacy. I browsed the Internet, and I found a definition from Henry Kissinger: "national interests have a tendency to clash and diplomacy is the means for reconciling them." Fortunately I was able, through a careful reading, to discover that he was talking, in fact, about information and communication in this definition. So I felt reassured I would be talking to an audience that could make sense of what I was saying.

I found one other definition on the Internet of what diplomacy is, and it's this one: "Diplomacy is the art of saying 'nice doggie' while looking for a stick." I don't know if this is the one that you frequently use or not. (Laughter.)

Again, this definition basically has communication and looking for information as a core of it. So I realized I would be in good company here as we talked about how to communicate and use information more effectively, a problem all human beings share.

Probably a lot of you know this, but it's useful to review a little bit. The World Wide Web consists of two parts.

There is publishing of information, and then there are browsers of it. Those are people or computer systems that are looking at the information that someone has published on the World Wide Web. The fundamental fact of the Internet and the web is that all of a sudden the whole world, due to efforts of people like Bob Kahn, has agreed on how their computers are going to talk to one another.

This is as though everyone woke up one morning and were talking French. The French would like this, of course, but it wouldn't matter what we all woke up talking a long as it was the same thing. Somehow in the past five years, all computers in the world have converged on talking a set of protocols. So that you can now, sitting anywhere in the world, browse what anyone publishes on the web anywhere else in the world because of this agreement that did not exist five years ago.

So that creates the World Wide Web. That is a kind of instant Esperanto, and it is as though overnight the world has changed just as much as we all woke up speaking a common language and understanding 17th century French

poetry. It would be remarkable, and the web is remarkable in the same way.

So both publishing and browsing are opportunities for diplomacy. Obviously in publishing you can persuade. You can get your point of view across, and browsing is a way you can listen in, find out information, and discover communities around the world.

Now, there's one thing that's wrong with the publishing/browsing model that I need to point out, and that is that it really is two-way. It is not, in fact, publishing like publishing a newspaper and then you have readers. Every time you're doing anything on the World Wide Web, there's an information exchange. So every time you look at something on the web, the publishers can, if they want to, keep track that you've done that or, if they want to, they can try to start up a dialogue and have a conversation. "Oh, you're looking at this page. What are your comments about it?" The web is inherently two-way.

That means that in addition to publishing textual information, it can do two-way video conferencing. It can be used to conduct real time or delayed dialogues, transforming what you can do compared to other media.

And this is, of course, being exploited, as in the White House web site. In addition to finding out information, they're asking for comments from viewers, and they're trying to engage in a dialogue.

On the State Department web page, similarly, in addition to finding information, you can send E-mail to the State Department. I didn't try sending any E-mail to see if I would get a response. Probably someone in this room would be responsible for that. So I won't get one today. But Israel is actually one up on us in the United States. On the Knesset web page, you can click this real audio bubble to hear the speeches, recorded speeches. I actually had a chance to talk to Prime Minister Netanyahu about this, and he said it has changed the kind of speeches that are being given because they're now being given to the world, and the Knesset members are aware of that fact. He thinks that it has lowered the quality of the speeches, but I'm not sure.

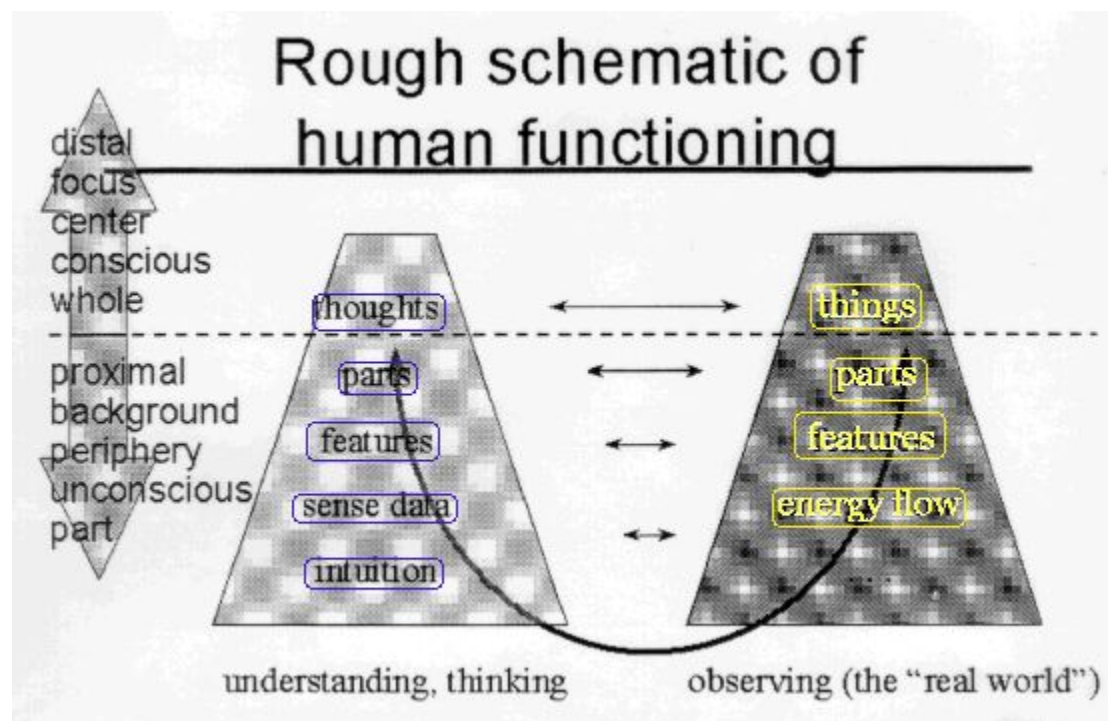
So these are examples of diplomacy happening on the World Wide Web already.

Now, one of the downfalls of the Internet is this feeling and reality of information overload, of more information coming into our lives. I think that information overload is really a problem of the poor state of our computer technology at the moment. Information overload has always complicated human affairs, including driving down the expressway or dealing with a body politic. There are huge amounts of information that require an enormous amount of intelligence and attention and time to properly attend to, and there's

almost never enough time to do it right, and one is called to act anyway.

The number of bits flowing past any of us as we're driving down the expressway listening to the radio, talking to our spouse and drinking a cup of coffee while looking for the exit is much more than you ever get from just browsing the Internet. So people are good at this. We're good at this, but right now our technology delivers information to us in a way that gives us this feel we have information overload when we talk about what's wrong there and how it's going to get fixed.

I have a sort of little diagram of what happens when people are interacting with things in the world.



On the left-hand side I have a triangle that shows any of us schematically, and up at the top of that pyramid is our sort of conscious thoughts, the words coming in, the words you're hearing me say right now.

And below that pyramid in the lower part of the iceberg is all of our learning, our training, our history, our understanding of English, the parts of our ears that understand these vocalizations and so on, all the parts that we're not aware of.

Over on the right-hand side, in that same triangle, at the top are the objects or

the things we're aware of. So you're aware of my words, which are for me inside me, but for you are out there in the world. Below these words are components and physical processes and so on which you don't pay attention to.

So I think of this as a theory of everything since it has people and it has the whole world over on the right-hand side.

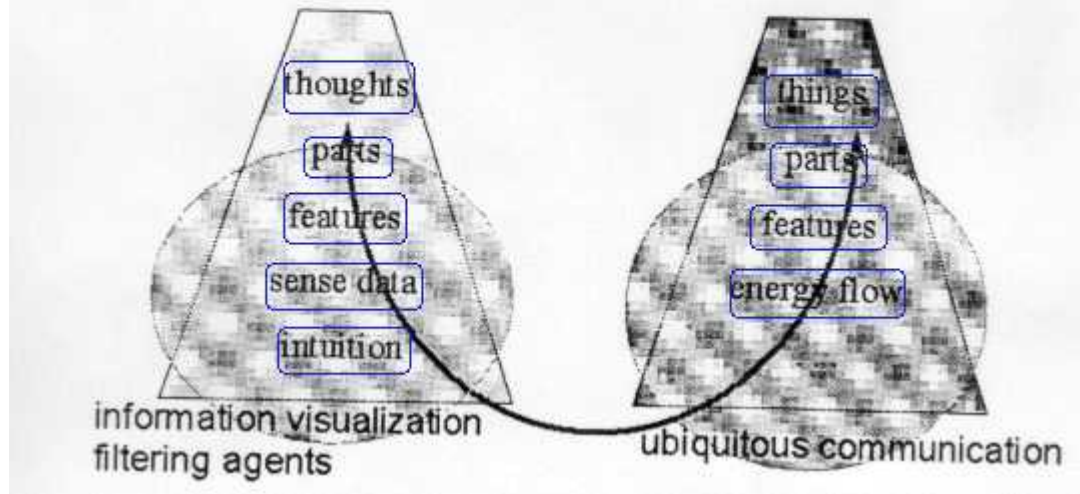
In diplomacy, in human affairs, we have to understand all of this. It doesn't work to just work at the surface, of course, as you well know. You have to know what kind of reverberations you're causing down in the feelings and historicity of people that you're talking to.

So diplomacy deals with this whole picture, but most of the technology design, unfortunately, just deals with the surface. So when you look at the design of a computer interface (if you've used a computer recently), there are little icons and a mouse, and pictures that represent files and so forth. That's basically a very surface view of those objects. If you actually started to treat one of those pictures as though it were a file, and tried to hand it to someone else or tried to scribble on its cover or do any of the things that you do with a real file, you would realize there's nothing underneath it.

Today technology design and our computers exist at this surface level. They don't do much for the real where most of us live and most of our world lives, namely, in this part below the surface, the part where people have intuitions about what's the right thing to do, the part where we decide to take action even though we don't have the right information.

Technology is on the way, however. I'll give a couple of examples. To me this is the revolution that the Internet is now bringing us to. We will move past this surface and move into technology that we no longer think about as technology, but we just use to get the important tasks of life done.

Effective Technology in the Twenty-first Century



On the left-hand side I've written down at the bottom "agent technology" and "information visualization technology," and I'll give a tiny example of information visualization, but I think our next speaker [Jack Dangermond, President of Environmental Systems Research Institute] will give vastly more impressive versions of that in geographic information systems.

And on the right-hand side I've written "ubiquitous computing," which is a way of embedding technology in the world so that you can use it with hardly even thinking about it.

Let me just give an example of this kind of information visualization. The idea is to show a lot of information on a screen so that you are looking into a rich space, essentially so that your peripheral vision is engaged, not just your surface vision.

Using a computer today is a lot like trying to go through life with blinders on or looking through a one-way telescope. If you tried to walk down even a hallway in this hotel, you would find yourself bumping into walls. People would bump into you because you would have no peripheral vision. You'd have no sense of what was going on.

Well, today computer screens are basically designed that way. Whatever you're doing on that screen, there is no peripheral vision offered on that screen.

I'll show you a couple of slides to illustrate. Here is one that is able to show

several thousand components of a complex hierarchy and allows you to browse them. It was carefully designed for your brain to feel like you're looking at real objects, which involves moving them at a certain rate and sort of being attuned to the part of your brain that happens before conscious thought.

The second example is just an example of looking at documents in a huge document space. I know you can't read any of these words, but there are basically about 100 pages here and one page has been pulled way forward and on the proper screen is readable. Yet all of the other papers in this rich space are also visible and, in fact, can be used.

I don't have any pictures of ubiquitous computing because part of the goal of such computing is for computers to be invisible so that they're out of your way.

One of the most important developments is the ability to get information everywhere, like browsing the World Wide Web on your wristwatch.

Now, why would you want to do this? You may want to know the weather. You may want to know whether your kids are home from school yet. You may want to know what was that announcement President Clinton just made. We will be more informationally informed, as much as we want to be, in a very lightweight way through computers information sources that will be embedded all around us in the world, in our clothing, on our wrists, and so forth.

A key thing that will enable this is cryptography, the ability to keep information secret from people that you want to keep it secret from. Cryptography is a very well developed technology. It's all over the world and its use is well known. In my opinion, in spite of the attempt to put various regulations around cryptography, the genie is out of the bottle, and that's a good thing. It enables people to keep the secrets that they want to keep. In spite of some of the down sides of that, cryptography is going to be good for all of us and good for what the diplomatic community needs to do to keep its secrets and provide its very rich world of classification of documents that I understand you all use.

To summarize, from a kind of dry, unfamiliar and sometimes even frightening world of using the PC today, we're moving to a world of technology, the World Wide Web, the Internet, and so on, which has moved past the point where you have to care that it's technology at all. Technology has started to move to the point where the most important skill for using computers is going to be to have a humanities degree, to understand people. You're using technology to do things with people, which makes, I think, many of the people in this room and the diplomatic community in general the experts, and technologists like me will move into the background as perhaps we should.

Just a couple more examples of the things I found on the World Wide Web that are evocative uses of Internet technology. A Zimbabwe web site, with a place where you can click into a dialogue. There seems to be a very active discussion going on. Here are the first few lines of several hundred thousand lines of a very rich dialogue of Zimbabweans, talking to each other and talking to expatriates in the United States, and so forth.

I also very surprisingly found the Ukrainian Ministry of Internal Affairs web page, which is also encouraging this kind of dialogue. However, when I went to the dialogue page, there was only one message posted there, which said, "Isn't anyone paranoid about posting to the Ukrainian Ministry of Information?" (Laughter.)

And no one replied to that. (Laughter.) So I guess it was true.

Ours are the very early days in the implications of the World Wide Web and information technology and diplomacy in world affairs. It's going to be the experts in human affairs who are going to make these things happen.

Technology is an enabler, but it is going to be you all who are going to have to or who will really make this stuff come alive and use it to cause an impact and make the world a better place.

Finally, technology is about communication, and it's about connecting to other people. I think we're finally going to get the technology behind us over the next ten years so we can get a lot of good done in the world with this ubiquitous technology. Thank you.

Edited remarks by Dr. Mark Weiser, Chief Technologist, Xerox Palo Alto Research Center, at the Virtual Diplomacy Conference of the United States Institute of Peace, Washington, D.C., April 1-2, 1997.

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