

## **INTERVIEW: MICHAEL SCHRAGE ON UBIQUITY**

Author of several acclaimed books and numerous articles in such publications as *Fortune* and *Technology Review*, Michael Schrage is also a world-traveling consultant to all businesses great and small. He has been at MIT for many years, and his new academic home will be in that institution's Sloan Management School.

UBIQUITY: Where have you been the last couple of months?

SCHRAGE: God – too many places. I've been in Spain, the U.K. I took the red eye in from California to begin the week. I was in Washington for bio warfare thing. I'm now at MIT with horrendous e-mail issues, because I'm transferring from the Media Lab to Sloan.

UBIQUITY: Well, as you well know, when we founded this little publication we had the temerity to call it Ubiquity, so I'd like to ask you today if you have any thoughts about the increasing ubiquity of information and information technology over the passing years, months, and days?

SCHRAGE: I do have some thoughts. What I've relearned about technology is the importance of language. Precision and rigor of expression are just critical not just for communication but for design. In software, programming demands a greater degree of precision in language. I just finished a piece for "Technology Review," reviewing recommendation engines a la the iTunes recommendation engine, and Amazon's recommendation engine, and I just finished a cover story for the magazine of the business association called the Conference Board magazine on the future of advice, because I think the future of advice is a cool topic because it turns out that there really are differences between advice and recommendations.

UBIQUITY: What is that?

SCHRAGE: Well, it's like the line that you and I used in a previous interview, way back in 1998, a whole decade ago, when we were talking about the information revolution, and I made the point that the real impact of these technologies isn't on information management but on relationships.

UBIQUITY: Right. You talked about kilologues, dialogues and megalogues, kilologues.

SCHRAGE: Funny, isn't it: That's what Wikis became. The question then was, how will conversations and dialogues scale in this new environment? It turns out we discussed the exact, right question, and finding the right question matters. Flowing from that question is the answer in which you get, to use Donald Tapscott's phrase – which I don't like, but what the hell – Wikinomics.

You know, the whole notion that you have technical infrastructure and apps that literally allow not dozens or hundreds, but thousands of people to meaningfully interact in an environment where the whole is greater than the sum of the parts. Wow. Mr. von Hayek is spinning in his grave, but with pleasure, not with despair on this.

UBIQUITY: Power to the people, done right.

SCHRAGE: Exactly. So, looping that back to my other point that, which is that we're talking about dialogues, kilologues, and megalogues, we need to figure out what do those kinds of interactions mean? Here's one thing it means: design becomes different when, instead of designing an information system, I'm designing an advice system, because it means something quite different if you come to me for INFORMATION versus if you come to me for ADVICE versus – and I admit the distinction is subtler, but it also matters – versus you come to me for a RECOMMENDATION. Advice is a more generic form of a recommendation.

UBIQUITY: You first explored these differences quite a long time ago.

- SCHRAGE: Yes. One thing I learned doing work in expert systems and artificial intelligence is that there's a world of difference when you design a system to 'automate expertise' versus one to 'augment expertise'. There's a world of difference when you treat technology as a mechanism, platform, or medium, to take the human being out of the loop, as opposed to use technology to add value to the human being. The design principle - the organizing principle that you pick - becomes much more important in this new environment. For example, Google up to now has been all about SEARCH, but I'm going to say without fear that within five years, Google's most important brand extension will be as the place where you go to search for advice.
- UBIQUITY: Let's pause for a moment and go over the difference you're making between recommendation and advice. So when you go to Amazon, what are you looking for? Recommendation or advice?
- SCHRAGE: That's what's so interesting, because of course Amazon has different genres of recommendation. There's the recommendation based on "people like you." Then there's the genre of recommendation based on purchases that you've made in the past. So what you have first is YOU as the unit of analysis, then PEOPLE LIKE YOU as the unit of analysis. And then there's the ITEM as the unit of analysis, i.e., "If you buy an item like this, you may be interested in these kinds of items as well."
- UBIQUITY: And what do you end up with?
- SCHRAGE: A portfolio. And you can weight that portfolio different, because some people are more impressed by what people like them have purchased, whereas other people, perhaps narcissistically, are much more interested in they themselves have chosen. Other people are more interested in the nature of the items themselves, the nature of the items. So, you have different units of analysis for those kinds of recommendations. I always consider advice to be like a course of action. I think that recommendations and advice are more like siblings than like cousins.
- UBIQUITY: Is there perhaps an element of interaction in advice?
- SCHRAGE: It's funny that you say that, because one of the examples I used in my piece was that whereas everyone now knows what an FAQ is (frequently asked questions), the more probing question to my mind is, what's an FSA (frequently sought advice). Once you get the advice what you really want to do is to iterate around that, to interact around that. It's the immediate next question or questions. You say, "Thanks for that advice, now what about X?" And I think that's the difference from a recommendation. I mean, you've identified an interesting point, which is, what's the nature of the interaction that you want to pursue? One of the things that I like (and that is very underappreciated) about Google – and this is going to begin to drift into a ubiquity conversation – is that when you do a search on Google you refine your own thinking. Sometimes you're looking for just one thing, and Google fails if you don't find that explicit thing; for some people, that's 80 percent of the searches they do. For other people it's maybe 10 percent of the searches they do. But 90 percent of the people fall between that 10 percent and 80 percent. It's been my experience that the real value of a Google search for me is that, you know, I do the first cut, and then I see some interesting things. And it's usually the third or fourth iteration or search that I'm not just refining my search, I'm refining my thinking.
- UBIQUITY: By getting a better feel for what you're really looking for?
- SCHRAGE: Exactly. That's the central value of Google for me. I would wager that when you look at how you actually interact when you search, it's not just a matter of finding the needle in the haystack, it's a matter of deciding what haystack makes the most sense to investigate. That's not possible without the iteration. You know, when people say that Google is a search company, I think they grossly misunderstand what Google is, because Google is not really a search company: Google is an INSTANT search company. The little gedanken experiment I offer is, if I made you the following value proposition case, that Google would give you a 10 X – an order of magnitude – improvement in the quality of search, but that you have to wait 6 minutes for that result - Do you think that Google's value to you would go up or down? Overwhelmingly people say, down. It's the INSTANTANEOUS nature of Google's search that provides

its main value. So the Google that wins in the marketplace is not a search company. It's an instant search company. The value of instant search is not that you find stuff faster, it's that you can ITERATE faster.

UBIQUITY: Right.

SCHRAGE: Google's value for me is that I can do 5 or 12 searches very, very fast. The irony – or perhaps it's not ironic, maybe it's just appropriate – is that, what I'm initially looking for turns out to be not what I really want, and that the act of searching has transformed or fundamentally altered what it was I'm really looking for.

UBIQUITY: So searching on Google is often like stirring the pot, or getting a feel for a subject, right?

SCHRAGE: Right.

UBIQUITY: Do you think using Google is a way of thinking almost?

SCHRAGE: Absolutely, that's why I like the word "browsing." It's comparable to the way that you browse the shelves of a bookstore. With that comparison in mind, you would think that it'd be easier to browse on Amazon than Google, but in fact Google is the more browsable search vehicle than Amazon, because Amazon is simply delivering you particular books or items with associated recommendations attached to them. So, yes, I do believe that Google and search are – dare I use the word – paradigmatic of a new cognitive prosthetic. You literally see arrays of choices, some of which are more related than others. Yet you always have the option to refine. You see the first 20 things, then you have the option to refine the search – and the option to add another word, subtract a word – the option to hit return and look at the next list of 20 or 10, or not. You're given choices on how to refine, or redefine, or extend, what it is you think you're browsing and looking for. I don't even think that's subtle; it's humongous. I've mentioned before that one of the ways that Google "has changed my life" in a constructive way is that, whenever I'm meeting new people, I Google them first. That is a self-discipline I now impose upon myself. If I'm meeting new people for lunch or breakfast, I Google them.

UBIQUITY: What are your thoughts about the un-Googleable?

SCHRAGE: I just think that if you're not on Google in some sort of way, I do think that says something, as I'm sure you'd agree. But I want to get to your point. Your point is, Does Google represent a different way of thinking? The answer is yes. In the same way that some people take notes or sketch, I think that we're increasingly seeing people search, in places like meetings. I think when you're in meetings with you have some people, when they hear something, start Googling it. I'm doing work with Microsoft. We're putting together with Microsoft and outside advisors, conferences for Microsoft. Somebody mentions a name, there's always somebody who Googles the name. Sometimes we get a YouTube attachment of the copy of them giving a talk somewhere. That's becoming a new norm.

UBIQUITY: You predicted 90 percent of this stuff 10 years ago. When Michael Schrage talks, people should listen.

SCHRAGE: Umm, you're too kind. But if you accept Moore's Law - if you accept certain technology trends as sustainable and persistent - that means certain things that used to be very expensive become very cheap. I think what's so fascinating about the last 10 years is that things that were very, very expensive are now very cheap. And things that were very cheap are now very expensive.

UBIQUITY: Examples?

SCHRAGE: You know, energy was cheaper 10 years ago – on a relative basis. Pollution – the right to pollute – was cheaper once upon a time. So, there's an interesting, let's call it economic or innovation inversion going on, which is that a lot of things we grew up with being capital-intensive and expensive, are now almost give-aways. Not only couldn't I get four gigs of memory in 1998 for anything less than \$100,000, but the idea that I could get four gigs of memory given away in a keychain that I put in my pocket would have

seemed crazy. But what's at issue is not just the availability or the cost. It's – dare I use the word – the UBIQUITY of it. It's UBIQUITOUS.

UBIQUITY: You're using words we love.

SCHRAGE: Yes. Now, let's go on with a further example. If I had told you in the year 2000 that, within the decade, not only would my e-mail be free, my instant messaging be free, my web searching be free, but that I would be able to get more instant messaging, more e-mail storage space and better search out in the real world than I would from my corporate office with an IT department where we pay experts great money to do these things – well, I would have laughed in your face.

I would have said, well, you really don't understand what IBM is trying to do. So this is the other inversion that has occurred; what goes on outside of the enterprise is usually far faster, better and cheaper than what goes on inside the enterprise. What's one of the biggest complaints that CIOs have today? I can answer this question with first-hand knowledge: their two biggest complaints are, one, that people are trying to bring in their personal technologies from the outside, and, two, as the result of people's outside-the-firewall experiences, they have unreasonable expectations about what corporate IT can do. What's going on is disintermediation. Who needs IT departments? Well, sometimes you do, but sometimes you don't. In a, dare I say it? ubiquitous form, they're being disintermediated.

UBIQUITY: Let me ask you, whether you use things like MySpace and Facebook.

SCHRAGE: I want to be careful how I say this but I avoid IM, I avoid Facebook, I avoid LinkedIn. I think that they are terrific technologies, and I like them a lot, but I don't want that kind of intimacy and sharing. I don't. I don't want it. That's not my idea of a good time. Even though I was on the board of TicketMaster, I don't like going to rock concerts, or any kinds of concerts. Nor do I like going to movies with 400 people in the audience, because I find today's audiences loud, rude and distracting. That undermines my ability to enjoy the movie. But it's not like I'm antisocial. I'm sure you remember the whole J.D. Salinger thing in "Catcher in the Rye," where Holden Caulfield talks about sending a note and talking to some favorite author. Sounds very touching, of course, but then Salinger becomes a hermit, and turns out to be the exact opposite of what he writes about in "Catcher in the Rye."

UBIQUITY: Would you send a note to a favorite author?

SCHRAGE: I think if somebody writes something interesting I'll send an e-mail in a millisecond. On the other hand, a decade ago, would I have sent the person a letter? Rarely. I think like maybe twice a year I would actually go through the agony of sending somebody a letter back then. Whereas now, if somebody's e-mail is attached to an op-ed or a blog, I'll send them a note. And I've developed both personal and professional relationships as a function of that. But that's the limit of my notion of intimacy and sharing with the world at large. I don't want that kind of transparency in my life. I don't. That said, I understand why people do it. It's an amazing way to communicate. My girlfriend helps run a company, and she employs people who don't even use e-mail anymore. They use MySpace and Facebook as their mode of communicating. It's a big, big issue, that for kids under the age of 24, social networking and texting have superseded e-mail as the dominant communication modes. Those two things. Texting. MySpace, and Facebook have superseded e-mail as the preferred mode of communication. But we both comment on the fact that people post on their MySpace pages, or on their Facebook pages, stuff that we'd never do. What's so weird is that these kids – and I pick that word deliberately – these kids feel it's OK to post these things, but then they're furious if in a job interview somebody brings this up. "Well, you know, you said this on your Facebook" – as if they get to have two separate lives.

UBIQUITY: A touch of schizophrenia?

SCHRAGE: Phone interaction, e-mail interaction and face-to-face interaction have accreted, and now we have added the Facebook interaction, the video conferencing, and you have a menu of identities and personalities that you can adopt to communicate both in a professional and a personal context. Throw

in SecondLife and now you've got an avatar that's representing you. Oh, why not have two avatars represent you?

UBIQUITY: You're saying there's an increasingly schizophrenic element in modern society?

SCHRAGE: Well, here's a generalization I'm more comfortable with: you remember the book "Sybil" twenty years ago, about multiple personalities; at that time such a thing was regarded as an aberration. But now I think fair to say that 15 to 20 percent of the people in their 20s choose to be Sybils, they deliberately choose to be multiple personalities. Does that make them medically schizophrenic? No. But they would say, if they would ever read, that they're Walt Whitman: "I am vast and contain multitudes. Do I contradict myself? Surely, I am vast and contain multitudes." They don't read Whitman, but attitudes like that that would probably appeal to them.

UBIQUITY: Yes, that's a pretty funny notion. What about you, Michael, how many personalities do you have?

SCHRAGE: I'd like to use that question to launch into something interesting I observed. As you know, when you and I first met, I was writing books on collaboration because I have always been so interested in that practice. Well, one thing I observed when I was on consulting engagements is that organizations that have "360 degree" job evaluations do a much better job of more quickly adopting collaborative technologies than organizations that have typical "vertical" job reviews, in which it's obvious that you're accountable mainly to your boss. Whereas, if you're getting reviewed by people all over the organization, and maybe a customer or a supplier or two, you damn well better care about collaborative technologies. And I think what's intriguing is that when you ask how many personalities I have you could also talk with 10 people I communicate with, to get their views of me? With technology we now have the ability to have external people audit our personality. I would love to get at the end of the day, a printout or pie chart saying, "Here's who you talked with, here's how you spent the most time talking, here are the most common words you used." I would like to also surveil myself. I think I'd like to have all of my conversations on my mobile phone and my office phone, have them transcribed, and then sorted through, and then key phrases kicked out, and I'd like to be able to review what I've done over the span of a day.

UBIQUITY: Well, that would be a harsh encounter for most of the rest of us.

SCHRAGE: But hold on a second, that's what we're talking about here. I think there are a lot of people who are narcissists. Twenty-five years ago, the notion of somebody doing a video of an intimate moment with their spouse or their girlfriend or their boyfriend, that was unthinkable and literally impossible, because you had to have a production crew. That was called pornography. But there's zero economic obstacle for that kind of production now. Zero. There's nobody we know who can't afford to do that, if they are so inclined, or reclined. I discussed auto-surveillance in 'Serious Play' such as "The Magic Mirror." The question is, what if you could look into a mirror and ask what you'll look like in the future, given your current lifestyle? What would you look like in five years or 10 years? What would you look like if you gained twenty pounds, or lost 20 pounds? What would I look like bald, what would I look like with a beard, and so forth. Let me ask you, do you really believe there won't be organizations in the next three years that will have as part of their job reviews printouts of the email networks that their employees have?

UBIQUITY: Oh, yes, I'm sure there will be plenty of organizations doing that.

SCHRAGE: Yes. They do it now. What's involved is the social network, your social graph. This is, again, and I'm not just saying this because it's is the word you put in my mind, this is what ubiquity means. Because it's not a message that's ubiquitous, you want to create a certain AWARENESS of ubiquity. That's the point of ubiquity. It's a big deal, because what you're saying, implicit in your question, John, which I'm going to make explicit, is a nontrivial percentage of smart people, aware people, are going to deliberately choose to be ignorant of how they spend and how they invest their time, because they don't want to have to deal with that knowledge.

UBIQUITY: Michael, we love you. All of Ubiquity loves you. Now that's a very big deal.

**END**

[Michael Schrage's home page is <http://ebusiness.mit.edu/schrage/>. Go there and enjoy.]