The Expert's Opinion

I’d like to offer some predictions, and I hope they are predictions which are not too far out because most of the predictions I think are useful for the 90s are things that we can pretty much see in existence now and extrapolate into the 90s. I’d like to go through a number of trends and factors I think will influence the 90s and then spend some time discussing their impact: the organizational impact and the impact on IS of those trends. I’m not trying at all to be comprehensive. I will try to be a little bit provocative because I think getting a few people stirred up is often a good thing.

Trends in the 90s
I’d like to talk about trends in the 90s in terms of three broad categories: environmental factors, organizational factors, and technology factors.

Environmentally, I think globalization will have an impact as well as democratization, both political as in Eastern Europe and the USSR and democratization in the sense of access to information, and also in the sense of the interest in the quality of work life. Individuals working in our organizations are very much concerned and feel they have a right to insist upon a certain quality of life in their work life. I think that whole broad democratic trend is something that we must be very cognizant of in the 90s. According to one estimate I saw, there are 50 million keyboards in use in U.S. industry. All those people who are operators, whether managers or operatives, are becoming very concerned about the access to the information and the quality of their work life. That is going to change things very dramatically in the 90s.

I also point out the worldwide labor shortage we are going to be experiencing. The U.S. is perhaps in the best position of the industrialized countries in this respect, but throughout the 90s there will be a shortage, particularly of skilled labor, and a graying population. In the seven western democracies, the statistic is that, by the year 2030 (it’s a 40-year prediction, which of course is one of those predictions that is pretty easy to make since all those people who are going to be 65 in 2030 are in fact alive today) the percentage of the population over 65 will rise from 12% to 22% in 2030, almost a doubling. So the culmination of fewer young people, more older people, and a lessening of the skill level generally available in young people is going to have a tremendous impact.

With respect to the organizational factors, the major element we must take account of is that everything is going to be faster—all of the
cycles. I foresee shorter development times for products, services, and systems. So, for the products and the services of the organizations as well as the systems that IS people are interested in, there is going to be a quickening of the pace. One interesting statistic is that in Japan right now, Toyota can take an order for a custom-built automobile on Monday and deliver that car on Friday. There is now a five-day ordering delivery cycle for an automobile in Japan, and that is going to become the rule and not the exception. That is going to have tremendous implications to organizations and people.

We are all aware of leaner staffs and flatter organizations have been happening throughout the 80s largely in response to financial considerations, although some MIS people want to take credit for it. I honestly don’t believe that IS technology has been a driving force in that, but a facilitator and enabler. But this will continue in the 90s with IS perhaps being more of a driving force and less of simply an enabler.

Finally, we are finding that increased information transfer between organizations already exists to a large degree with electronic data interchange and so forth. If companies don’t get into that business of exchanging information electronically they are going to be left behind.

Let me say a little bit about technology as a driving force. The three that I have chosen to focus on here I think will be very important. Technological forecasting is always hazardous, and so I acknowledge that I am getting into areas where one person’s opinions are perhaps as good as another’s. I haven’t been great at forecasting technology in the past, and I doubt if anyone in the room would stand up and say that they have done a great job either.

We already have computers that recognize speech and images. Those that are available now, require the user to write in capital letters, and they are fairly limited in terms of their ability to recognize written images, but within five years there should be systems available that will basically recognize even my handwriting, and that’s my ultimate test. That is clearly going to happen at an increased pace in the 90s and will open up those 50 million keyboards to the potential for many, many millions more worldwide as people who do not have typing skills and don’t want to have typing skills can avail themselves of a computer on a personal basis.

Communications is another important area. Here I would underscore the words human communications. We have to begin in focusing on human communications and not data communications, although as I previously said, I think data communications are important, too. But the focus is going to shift from data to human communications. And finally, the tremendous revolution in storage brought about by something already pretty much a fait accompli, which is optical storage devices.

There are a few things I would identify as solutions that will still be looking for problems to solve during the 90s. One such entity is Group Decision Support Systems, and what I mean here is the current generation of same-time, same-place systems to support group decision-making. My prediction is that they will have very limited impact. Now the broader area of GDSS may in fact have a greater impact, but the kind of things we are focusing on and experimenting with now I think will have very limited impact.

I would include standalone expert systems in this category as well. When I was editor of MIS Quarterly in the early 1980s, I wrote an editorial in which I called expert systems the snake oil of the 80s. Of course, I got lots of flack, lots of letters unsigned, written in crayon, and other feedback. I believe there is an important role for expert systems, but I think the standalone type that is kind of the prototype will still be of limited impact in the 90s. Parallel processing, except in science where that kind of increased capacity is very important, will have limited impact. Telecommuting has not happened and I think will not happen in part because of the emphasis on human interaction and communi-
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