

IS 2000: A New Role for Corporate IS Departments and People*

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Eventually, after you have downsized, reorganized, decentralized, recentralized, outsourced, re-tooled, re-trained, and renamed the DP/MIS/IS/IT function enough times, the resulting organization will no longer resemble today's IS departments in purpose, functions or capabilities. It will no longer focus on data processing or information systems. Instead, it will reflect a new role for computers and computing professionals in the enterprise.

How Did IS Get Where It Is?

This is a time of tremendous change and occasional turmoil for the computing departments of large organizations, as it is for their vendors and their customers. In this paper we will examine the nature of this change, and the evolutionary trends and resulting stresses that cause the changes. But first it is worth pointing out that our real problem, the source of all of our headaches, is our incredible success.

When IBM first introduced the concept of business data processing in the 50's, they were no less than visionary. Up until that time, computers — massive and temperamental machines — were used to "compute," to calculate. (The word "computer" was a job title for members of giant calculating teams during the second world war.) There were no databases and no database technology. There was no software business. No programmers. No business applications.

It took 40 years of invention and hard work to create the systems that are so critical to modern organizations. We have achieved more than the pioneers could have imagined. We

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have built the most complex technology infrastructure in the world, and it works. In our organizations, clerical tasks are automated on a global scale. We have brought so much precision and power to record keeping, data tabulation, and business transactions, that running a concern without computers is now unimaginable. Now computing is taken for granted.

And here lies our problem. The business impact of information systems, the bottom line on all of our equipment, ingenuity, and methodology, is now taken for granted. Data processing is considered a commodity to be outsourced when possible. At the same time, the technology continues to grow. The computer revolution isn't over. We know that computers are not limited to information systems applications. But we in corporate IS feel that we are missing the boat.

We have, because of our success, become encumbered with the tools, methodology and organizational structure we created. We naturally tend to stick with what worked in the past:

- We have amassed an enormous capital asset in equipment and software systems. The investment has paid for itself many times over, but now the data center is like a child that has grown up but failed to leave home.
- Secondly, our methodology, the way we conduct our business, from requirements gathering to code checking, is designed for the kinds of systems we used to build, not for the ones we must build now. New habits are harder to learn than new tools.
- Finally, the IS organization itself is structured and positioned as a tool for "increasing productivity" by automating clerical tasks. For saving money. That's why IS still reports to the CFO. And organizations, especially large ones, change even more slowly than their constituents.

The result has been fossilization of the vision. Our success led to growth, and procedures, and resistance to change. For example, "client/server" is inevitable, not because it will save anybody money. It won't, in the long run, as you well know: Whatever savings departments expect to realize on their centralized computing charges will be more than made up for by UNIX systems administrators and help desks. Computers are not just for saving money in the way we do things. Computers are for doing things we couldn't do before.

How did we get where we are? All of this was a natural, logical evolution, like the dinosaur's. While we continue to think of automation in terms of cost reduction and productivity improvements, the perceived value of incremental increases in productivity of already well-automated departments is very low. (How much productivity can you squeeze out of payroll or accounts receivable, after all.) And we have become isolated from the areas of the business that need us most to help them compete. Isolated, by our technologies, methodologies, and organizations, from the places where we can still make a dramatic impact by helping our business colleagues do things no one has done before.

What's Wrong With the Current Situation in Corporate IS?

Before we call for a radical change in the role of computers and computer folk, let's take an honest look at the current situation in corporate IS. I describe here several symptoms, all caused by one problem: fossilization due to sustained success.

- Mutual respect and team orientation are not common practice between IS and their business counterparts. Analysts and their clients often have a “history” that precludes healthy working relationships.
- Analysts are often frustrated that their business colleagues never knowing exactly what they want, and then changing their minds. Of course, this is unavoidable if we use computers at the rapidly-changing leading edge of the business and not just in the back office. But this is inconsistent with accepted systems development methodology.
- Business managers want to have an understanding of technology alternatives and limitations, but analysts don't tend to be the "explaining" type. They're the analysis type.
- And by the time they'd finished explaining, the technology would have changed anyway. New technology now appears at a rate that is difficult to absorb and turn into competitive advantage.
- Departmental and personal computing technology often results in inefficient and unimaginative systems, while simultaneously creating significant hidden demands on IS.
- IS staff is shrinking because of the perception that continued investment in IS does not “increase productivity.” As a result, our people are retrenched, threatened and defensive — disoriented and sometimes paralyzed by downsizing, outsourcing and the constant reorganizations in their departments. We are reorganizing to try to fit into our new niche.

What Niche is Computing Evolving Toward?

Both the nature of business and government organizations and the nature of computing and related technology have changed and are continuing to change.

Our organizations are, for what seem like natural reasons, become larger, even globalized, in order to compete. The skilled work force is not growing as rapidly. Thus the individual's "span of control," needs to be greater. Simultaneously, the business cycles are speeding up. The typical product life-time is a fraction of what it was 20 years ago. The bottom line, in the modern enterprise, is change.

Of course, for all these pressures large organizations change slowly. Technology has changed very rapidly. We are dealing with a lot of technologies: chips, operating systems, networks, programming environments, artificial intelligence, multi-media, etc. All of it changing

rapidly, relative to us. As my mentor Egon Loebner once pointed out, technologies evolve in their own time frame just as species evolve over geological time. But, unlike species, which seem to "evolve toward" unfilled ecological niches, technologies seem to evolve toward unfilled human needs.

Sometimes the course of this evolution is not apparent to the inventor. In fact, often the closer you are, the less perspective you have on the eventual impact of a new technology. Toward what niche is computing technology evolving? Computing networks are evolving into a new medium for sharing experience. How do I know? Because that is the most unfulfilled human need!

The ultimate value of computing technology is not in the keeping of records or analysis of data, but rather as part of a new kind of communications medium. If this is true, then we will see radical change in the vision of corporate computing and the role of computer professionals in the organization. If helping people share what they know is, in fact, the future of computing, then consider these consequences:

- The classical DP Analyst is a disappearing breed. The role of the systems analyst is changing, along with the role for which we use computers in the business. She will be more concerned with the business and the customers and with the potential competitive impact of new technologies, and less concerned with systems architecture, software development and computer equipment. That can be left to contractors: Outsourcing just moves the line between our work and our tools.
- IS will be re-oriented (and repositioned in the org chart) toward making money (new products and services), not just saving money (increasing productivity and eliminating labor costs).
- Computer systems will be used strategically (to support marketing, sales and service programs), requiring methodologies that are linked on a daily basis to changing business strategies and events.
- New methods and procedures must be more interactive and flexible than those developed 20 years ago when we were automating only bookkeeping, transactions and other clerical tasks. The old methodologies are not wrong, they just don't extend to modern-day computer applications. Legitimate issues like systems performance, reliability and security are sometimes overemphasized too early in the business redesign process, precluding flexibility and creativity. In a sense, IS has become separated from the business's strategy and day-to-day concerns by its system specification methodology, and neither party can afford this separation any longer.
- Communication, in the broadest sense, is the key. That is the essential point of the trend to flatten the organization: to improve communication from the workers to the execs and back, so they can deal with a rapidly changing global marketplace. Similarly, that is the key to Total Quality Management: communicating from the outside (customers) in through the ranks to the decision makers and back out again.

- IS people generally feel more skilled in technology than in communication or facilitation. We don't feel it is our role to help people understand each other. Unfortunately, it is currently no one else's role either. It must be done, and analysts might adapt extremely well to this new role.
- Perhaps even more importantly, IS must change its data-oriented view of computing to a communications-oriented perspective. We have put the technology in place to make the computer a new communications medium. But we haven't changed our conception of our systems, our tools, or our methodologies in a way that will allow this to happen. The potential impact on organizational productivity and collaboration are exciting, but still poorly understood.

How Do We Get There From Here?

Change is painful. None of us do this really well. Old skills, tools and habits must be given up. New ones must be learned. Whether its graphical user interfaces, object-oriented programming, client/server architecture, business fundamentals, or active listening skills, we are all going back to school.

However, no matter how much effort we put out on our own, the problem cannot be addressed by or within IS alone. It is an enterprise-wide situation. There must be more involvement by IS people in the business (generating ideas for how to use automation, educating execs about what is possible), and more involvement in technology by business managers (conceiving systems ideas and determining their specifications). Addressing one group alone will not solve the problem. And the new IS organization will not grow up from the roots or emerge magically out of the chaos.

Sometimes when you release an upgrade, incremental improvements will do. Sometimes it is best to start again from scratch, from first principals. The day-to-day concerns of keeping the IS organizations and all of the current systems going will, forever, preclude real change. The time to start that change is now. And you can't let not knowing what IS "Release 2.0" will look like prevent you from starting to figure it out — together. The process must involve both IS and the business units, and must be directed from the top.

Leadership is required, and will differentiate those who survive. If you don't have leadership in your organization, perhaps it's your turn. And it must happen soon. Computing will be dramatically more important to corporate competitiveness in the very near future than it is now. It is up to IS professionals to make this happen.