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VIEWPOINT

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The New Discipline of Services Science

It's a melding of technology with an understanding of business processes and organization -- and it's crucial to the economy's next wave

If the film *The Graduate* were remade today, the word of career advice whispered in Dustin Hoffman's ear might well be "services" instead of "plastics."

Services have come to represent more than 75% of the U.S. economy, and the field is growing rapidly. In the information-technology business, services have become even more important. Without a doubt, the information-services sector is a great place for high-paying jobs.

But there's a shortage of skills where they're needed most -- at the intersection of business and IT. As companies build more efficient IT systems, streamline operations, and embrace the Internet through wholesales changes in business processes, a huge opportunity exists. Nonetheless, little or no focused efforts are preparing people for this new environment or to even to thoroughly understand it.

SPOTTING WEAK POINTS. The IT-services sector is in dire need of people who are talented in the application of technologies to help businesses, governments, and other organizations improve what they do now -- plus tap into totally new areas. The complex issues surrounding the transformation of businesses at such a fundamental level require the simultaneous development of both business methods and the technology that supports those methods. This is the seedbed for a new discipline that industry and academia are coming to call "services science."

Services science would merge technology with an understanding of business processes and organization, a combination of recognizing a company's pain points and the tools that can be applied to correct them. To thrive in this environment, an IT-services expert will need to understand how that capability can be delivered in an efficient and profitable way, how the services should be designed, and how to measure their effectiveness.

This new academic discipline would bring together ongoing work in the more established fields of computer science, operations research, industrial engineering, management sciences, and social and legal sciences, in order to develop the skills required in a services-led economy.

NO GOING SOLO. There's more to this than meets the eye. Not only are new curriculums required in our universities but more research and development focus has to be applied to ensure that the necessary processes, technologies, and techniques are developed. Evidence will have to be gathered to demonstrate effectiveness, as is done in any science.

The task is large and the implications far-reaching, so this kind of R&D will have to be based on a closer collaboration among industry, academia, and government. Joint research projects are already under way at University of California at Berkeley, Stanford University, and the Georgia Institute of Technology, to name just a few.

It will be a major change. Today, IT-services training is mostly accomplished through individual companies' on-the-job programs. This may have been adequate before, but it's not any longer, especially with increasing globalization and competition from cheaper labor markets made possible through technologies like the Internet. Like everything else, labor is governed by the rules of supply and demand. In the job market, this translates to higher salaries for those who have in-demand skills.

EMBRACING INNOVATION. America has moved from an agrarian-based to a manufacturing-based to an information-based economy. We're now entering a new phase where value will be found in what we do with information to improve business, government, and people's lives. Call it an innovation-based economy, where profits and jobs will go to those who have the skills to capitalize on the explosion of new opportunities at the intersection of business and technology.

The world rewards those who stay ahead of the curve. The creation of an academic discipline and the commitment of R&D investment to support this kind of services environment are important means of doing just that. By collaborating with universities and encouraging a cross-disciplinary approach to services science, corporations and research organizations can play a large part in developing the skills of the 21st century workforce.