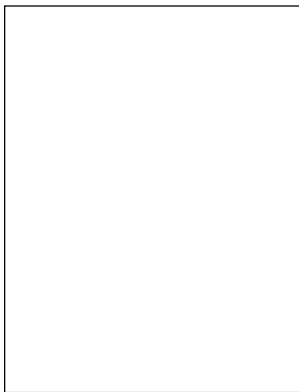


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 EDITORIAL

SERVICES SCIENCE MOST RECENT ACADEMIC DISCIPLINE IN SCIENCE



Services Science. The title sounds unfamiliar but it is the most recent academic discipline in science. University of North Carolina has introduced graduate course up to Ph.D., in Services Science from last year and University of California, Berkley has already started operating the course. What is 'Services

Science' or more explicitly 'Services Science, Engineering and Management' or 'SSEM' in short? Services Science is an amalgamation of computer science, industrial engineering, mathematics, operations research, business strategy, management sciences, social sciences, and legal sciences to develop the skills needed by the 21st century workforce.

IBM, the largest information technologies and business solution provider in the world, introduced the concept of "Services Science" first in the world and started exploring its potentiality as a separate academic discipline to train people in to improve economy. This new discipline aims to deliver service more efficiently by understanding how to create and deliver reusable assets.

"Service" may mean different concepts to different people, but generally by service we mean any act,

performances etc. provided by any person or organization for the benefit of the other. Teachers teaching students, doctors treating patients, cooks preparing foods, foods served in restaurants are all examples of providing some services. The person or organization providing services is known as service provider and who receives the benefit is known as client. There is always a relationship between the service provider and the client at the expense of certain kind of fee by which a value (benefit) is created. Therefore, service is a broad concept ranging from hotels and restaurants to medical clinics and hospitals, from barbershop to delivery of software solutions. When a patient goes to a hospital, the hospital charges a fee and the patient gets a health assessment and recovers from

illness. This is the basic principle underlying all transactions between a service provider and clients. Services require assessment, during which service provider and the client get to understand one another's capabilities and goals. In this particular example, a patient should know whether the hospital is licensed, doctors are qualified and have the right kind of expertise and facilities to treat. On the other hand hospital and doctors should have the right to go through the patient's medical history, gather information on the current ailment and may verify payment capability and insurance details (except extreme

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emergency). Only when the provider and the client coordinate their work, the process is optimized and both create and add values. Service contract, therefore, will spell out mutual responsibilities and expectations.

The above is a simple example in the area of consumer service. In the areas of business services (IT outsourcing, business process outsourcing, contracts and service level agreement), these assessments are far more complex. In business services, if the client does not install the new IT systems and train the people suitably to use the new system properly, the client will not be able to reap the benefit of the service. In order to get the maximum benefit out of the system, the service provider therefore monitors and assesses to see that the client is performing its responsibilities. The client, on the other hand, checks to see that the service provider also applies enough effort to perform its task as promised.

There is a migration of workforce globally from manufacturing and agriculture sectors to services sector. In India about 2 per cent of the agricultural work force has migrated in the last ten years. According to the present concept, except manufacturing industry and agriculture, all others are services. In service industry the products are not physical objects but some kind of services. With technological innovations, improved global communications and business growth, services now account for more than 50 per cent of labour force in Japan, Brazil, Germany and Russia, and 75 percent of the labour force in United States and United Kingdom. In India, labour force in service sector constitutes 23 percent of the total labour force and is increasing at a rapid rate. The per capita income in agriculture and industry sector is increasing at a rate of 2.10 and 2.51 per cent respectively, while the same is 2.88 per cent in services sector. According to statistical data, income from service industry accounts for 70 per cent of GDP in the developed countries and service industry takes over 75 per cent of economy in USA. In India, 48 per cent of the GDP comes from services. India's share of world trade is about 0.75 per cent, while its share from services is about 1.5 per cent.

As was emphasized by APJ Abdul Kalam, the President of India (now Professor Kalam), that the services sector if developed in conjunction with the other two important basic sectors namely agriculture and industry can be considered a sector to find new jobs and individual prosperity.

Historically, scientific research has been changing course in order to help in developing an economy. In the past, scientific research was geared to support and assist

manufacturing, which was once a dominant force in the world economy. Computer Science, for example, appeared as a separate discipline with the progress of information technology and developing economy in recent years. In the beginning, computer science was a part of mathematics and electronics engineering and was focused towards hardware design. Increasing need of software was slowly recognized over time. The integration of software and hardware provided new functionality and applications, which helped to grow business and computer science was born. Interestingly, it is again through the effort of IBM that the first computer science class was started at Columbia University in USA in 1946.

Technological advances continue to produce faster processors, increased storage capacity, expanding bandwidth following Gilders' Law, which predicts the doubling of communications power every six months, with an increasing growth in the network devices. But all these technological advances can not meet today's business challenges all by themselves, unless companies create new and innovative business designs and link with this advancement of technologies to get the maximum benefit out of everything to grow business. With the improvement and reliability of Internet, new technology can make it easier and less costly to transact businesses between enterprises. Software can be delivered as services through networks. In this new era of computing and information services, neither technology nor business can result in any breakthrough innovation without association of the other. It is not that one is dependent on the other, but it requires a symbiotic relationship. They must evolve together as organic partners in the continuity of innovation.

Now that economies are shifting from manufacturing and agriculture to services, industrial and academic research facilities need to apply more scientific knowledge to practices of services to find better ways of using mathematical optimization to increase productivity and efficiency on demand. And this is the legitimacy of the birth of this new science. Universities must examine the need for new programs at the intersection of current disciplines. According to experts, the services science will teach the new workforce of "responsiveness, variability, resiliency, and focus"—only then we will see the actual benefits of this branch of science. □

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