

Education for Service Innovation: Why Now?

(20060405 v6)

Jim Spohrer and Paul P. Maglio, IBM Research

Why does demand for some professions rise and then fall (blacksmiths and telephone operators) while others (lawyers and financiers) just keep increasing? The obvious answer is that some professionals solve problems that come and go. Others solve problems that will be with us as long as there are people choosing new professions, science and technology advances, and organizational change. The study of high value configurations of people (knowledge workers), technology, and organizations -- and how value is created and captured from reconfiguring networks of these three fundamental building blocks of economies and societies -- is the study of *service systems*. Innovative activity is fundamentally a service activity, from education, to R&D, to bringing innovations to market.

The number and variety of service systems is on the rise, given population and education growth, abundant technologies and scientific advances, and proliferation of diverse organizations. There is no end in sight, from government services, healthcare services, educational services, retail services, business services, financial services, and all manner of new information services -- expanding, growing, and interconnecting value chains. Each year there is an array of new knowledge workers from nanotechnologists and quantum computing specialists to experts in genomics and proteomics. Indeed, the future looks bright for the profession that studies and improves service systems, coordinating people (knowledge workers), technology, and organizations to accelerate value creation and capture.

There is just one problem -- the profession doesn't exist! But how can this be?

We have professions that study people, professions that study every area of natural science and technology, and professions that study organizations -- but so far, we have no profession based on a deep body of scientific knowledge and powerful enabling tools that studies service systems. We have nothing that puts it all together to understand value creation and capture in service chains, even though all modern economies are increasingly service economies, and developing economies, such as India, are magnets for new information services. Quite simply, there are no *service scientists* yet. Sure we have operations researchers and business consultants, but we do not have service scientists. Without service scientists there is a very real possibility, that just like in a supply chain when there is a build up of inventory at one stage, competitors can enter the picture and capture value based on the fundamental breakthroughs of others.

One reason for this "missing profession" is that until recently innovation in services was thought to be nearly impossible. From Adam Smith to William Baumol, services were said to resist improvements. A second reason is that most services already have expert practitioners, or specialists, who make needed improvements. A third and probably the most important reason is that the technological and organizational landscape looks quite different today than it did two hundred years ago. Professions and academic disciplines

that integrate across domains or “silos” tend to be born with great difficulty. Two hundred years ago no one needed service scientists, value chains evolved slowly, technology and business innovation evolved slowly. Even fifty or sixty years ago -- before the invention of the modern computer -- no one needed service scientists. We might go so far as to say that before the internet and global outsourcing, you didn't need service scientists.

However today, the alarm clock is going off -- we are waking up, looking around, and realizing we need service scientists, both to address the problems and more importantly to seize the innovation opportunities. The first step is to promote education for service innovation, and fund research that may one day provide the needed conceptual foundation for a science of services, and the profession of service scientists.