

How Can Higher Education Respond to the Services Challenge?

Steven Allen, NC State University

In economically developed countries, dramatic increases in productivity in agriculture and manufacturing have freed resources to be allocated to services. Statistics on gross domestic product by sector actually underestimate the volume of services activity. As manufacturing companies continue to outsource the physical production of goods, the remaining jobs focus on services such as communication, design and research.

There is no reason to believe that services will be exempt from the threats of outsourcing and global competition that are affecting the goods-producing sectors of our economy. Many programming and customer support jobs already have migrated overseas. Higher education must take steps now to ensure that our graduates are prepared for a global service-based economy.

In terms of both academic degree programs and research activity, services currently are a low priority item in our universities. Engineering schools stress fields such as chemical engineering, electrical engineering, mechanical engineering, and materials science, with most of the emphasis on manufacturing. Business schools emphasize traditional headquarters functions such as finance and marketing, paying negligible attention to technological or industry context. The same pattern is observed in spending on research and development at both the federal and private level. Almost all private R&D is conducted by companies in manufacturing; the service sector does virtually no research. Bottom line: we have a mismatch between our capabilities and our opportunities.

Higher education must respond to the call from industry to develop academic programs and research agendas that will develop a more systematic and innovative approach to identifying, creating and delivering services solutions. This will require an integrated, multidisciplinary approach. The IBM white paper "Services Science: A New Academic Discipline" identifies four major components of a business where instruction is necessary: business strategy, business process, people and the workforce, and the underlying technology. Computer science programs focus on technology; engineering programs (and to a limited extent business schools) focus on process; business schools focus on strategy and management. But barring unexpected breakthroughs in longevity, who is going to have time to get degrees in three different areas?

Universities must encourage collaboration among services-related disciplines. At NC State we are using two existing degree programs to jumpstart our services program: the MBA and the Masters of Science in Computer Networking. Starting this fall, the MBA will launch a new concentration in Services Management with two tracks, one emphasizing the management of relationships between service providers and their clients and the other emphasizing service innovation. MSCN is a professional masters program with most requirements in engineering but some in management, making it an ideal platform from the engineering direction. Starting this fall, MSCN will launch a new concentration in Services Engineering. This concentration will include an introductory course on services management and engineering (team-taught by MBA and MSCN faculty) along with two new courses on services technology. MSCN students also will take MBA courses in managing people, technology strategy, and business processes.

The Colleges of Engineering and Management also will be engaged in the following activities:

- Develop websites to share information about the new courses and concentrations
- Conduct basic and applied research relevant to services
- Support doctoral training in services
- Launch modules for executive education and lifelong learning
- Develop additional masters-level courses to enrich the curricula
- Create a joint masters degree program