

Service Science
MGMT 150 / COGS 152
University of California Merced
Fall 2007

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Lecture Monday, 6 – 9 PM
Room COB 120

Office hrs By appointment

UCMCROPS F07-MGMT150COGS152 LEC

Grades

Three short papers	10 points each
Class participation	10 points
Final paper	60 points

Assignments

Sept 10	One-page paper due: Describe a specific business service you use, explaining how it relates to Teboul's (or other) definition of service
Oct 8	One-page paper due: Describe a potential topic for your final paper
Nov 5	Two-page paper due: Explain the topic of your final paper
Dec 10	Final paper due: Maximum length, 10 pages

Rules Papers must be double-spaced with 1-inch margins on all sides, and formatted in a legible font (such as Times Roman) with font-size 12. Papers must have a title, your name must be at the top of each page, and each page must be numbered. All papers must include references formatted in a standard style, either following *The Chicago Manual of Style (15th edition)* or the *Publication Manual of the American Psychological Association (5th Edition)*. All papers must be clearly written (see Strunk and White's classic, *Elements of Style*), and must be proofread so they contain minimal typos and the like.

What will you learn in this course?

The US economy – and economies of all industrialized nations – are made primarily of service jobs (about 80% of jobs in the US are service jobs), and the gross domestic product comes primarily from service (more than 70% in the US). Experts suggest that these numbers will only increase over time. So chances are that when you get out of school, you are going to be working in a service job or in the service sector.

In this course, you will learn about service. You will learn what service is, why it is different from other sectors and other jobs, and why it is important. You will learn about problems in service, such as measuring performance, increasing quality, and creating innovation. You will learn how some have recently begun to study service from a variety of different perspectives – including social sciences, cognitive science, management, engineering, and others – to address these problems. You will learn how interdisciplinary research might be effective in studying and understanding service. In the end, you will be able to have an informed and intelligent conversation about the nature of service, how to think about measurement in service, and how to increase innovation in service. And you will be (at least a little more) ready for the workforce you are about to enter.

So what is service science, anyway?

Service science is the study of service, which can be broadly defined as actions that one takes on behalf of another (such as washing a car or managing web servers). But there really is no such thing as service science today – there is no single accepted, integrated, interdisciplinary scientific study of the service economy or of service jobs. Service science is more like a movement whose goal is to focus attention on service-related problems. In service science, the basic unit of analysis is the *service system*, a configuration of people, technologies, and other resources that interact with other service systems to create mutual value. Many systems can be viewed as service systems, including families, cities, and companies, among many others. Just as computer scientists work with formal models of algorithms and computation, someday service scientists will work with formal models of service systems.

More precisely, *service* is the application of resources (including competences, skills, and knowledge) to make changes that have value for another. For instance, in information technology (IT) outsourcing services, a service provider operates the computing infrastructure for a service client. The provider augments the client's capabilities, taking on responsibility for monthly service-level agreements and year-over-year productivity improvements. The formal representation and modeling of service systems is nascent, largely because of the complexity of modeling people, their knowledge, activities, and intentions. Service system complexity is a function of the number and variety of people, technologies, and organizations linked in the value creation networks, such as professional reputation systems of a single kind of knowledge worker or profession, work systems composed of multiple types of knowledge workers, enterprise systems, industrial systems, national systems, and even the global service system. Knowledge workers depend on their knowledge, tools, and social-organizational networks to solve problems, be productive, continually develop, and generate and capture value. Service science must combine formal models with models of human behavior to understand service systems.

Readings**Book** (available at the UC Merced Bookstore)

Teboul, J. (2006). *Service is front stage: Positioning services for value advantage*. Insead Business Press.

Book Chapters (available through University Readers)

Fitzsimmons, J. A., & Fitzsimmons, M. J. (2005a). The role of services in an economy. *Service management: Operations, strategy, and information technology* (4th ed., pp. 3-15). New York: Irwin/McGraw-Hill.

Fitzsimmons, J. A., & Fitzsimmons, M. J. (2005b). The nature of services. *Service management: Operations, strategy, and information technology* (4th ed., pp. 17-35). New York: Irwin/McGraw-Hill.

Fitzsimmons, J. A., & Fitzsimmons, M. J. (2005c). Technology in services. *Service management: Operations, strategy, and information technology* (4th ed., pp. 105-125). New York: Irwin/McGraw-Hill.

Fitzsimmons, J. A., & Fitzsimmons, M. J. (2005d). Service quality. *Service management: Operations, strategy, and information technology* (4th ed., pp. 127-171). New York: Irwin/McGraw-Hill.

Fitzsimmons, J. A., & Fitzsimmons, M. J. (2005e). Service supply relationships. *Service management: Operations, strategy, and information technology* (4th ed., pp. 477-495). New York: Irwin/McGraw-Hill.

Glushko, R. J., & McGrath, T. (2005). Introduction. *Document engineering: Analyzing and designing documents for business informatics and web services* (pp. 4-36). Cambridge, Mass.: MIT Press.

Herzenberg, S., & Alic, J. A., & Wial, H. (1998). Reorganizing work: Using knowledge and skill to improve economic performance. *New rules for a new economy: Employment and opportunity in postindustrial America* (pp. 83-106). Ithaca: ILR Press.

Heskett, J., & Hallowell, R. (2007). Case 16 Shouldice hospital limited (abridged). In C. H. Lovelock, & J. Wirtz (Eds.), *Service marketing: People, technology and strategy* (6th ed., pp. 592-601). Upper Saddle River, N.J.: Pearson/Prentice Hall.

Lovelock, C. H., & Wirtz, J. (2007a). New perspectives on marketing in the service economy. *Service marketing: People, technology and strategy* (6th ed., pp. 4-31). Upper Saddle River, N.J.: Pearson/Prentice Hall.

- Lovelock, C. H., & Wirtz, J. (2007b). Customer behavior in service encounters. *Service marketing: People, technology and strategy* (6th ed., pp. 32-65). Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Lovelock, C. H., & Wirtz, J. (2007c). Distributing services through physical and electronic channels. *Service marketing: People, technology and strategy* (6th ed., pp. 98-123). Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Lovelock, C. H., & Wirtz, J. (2007d). Designing and managing service processes. *Service marketing: People, technology and strategy* (6th ed., pp. 232-259). Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Moon, Y., & Quelch, J. (2007). Case 4 Starbucks: Delivering Customer Service. In C. H. Lovelock, & J. Wirtz (Eds.), *Service marketing: People, technology and strategy* (6th ed., pp. 498-510). Upper Saddle River, N.J.: Pearson/Prentice Hall.
- Spangler, S., & Kreulan, J. T. (2007). Mining customer interactions. *Mining the talk: Unlocking the business value in unstructured information* (pp. 21-70). Upper Saddle River, N.J.: IBM Press.

Articles (available through UCMCROPS)

- Butler, P., Hall, T. W., Hanna, A. M., Mendonca, L., Auguste, B., Manyika, J., & Sahay, A. (1997). A revolution in interaction. *The McKinsey Quarterly*, 1997/1, 4 – 23.
- Glushko, B. & Tabas, L. (in press). Bridging the front stage and back stage in service system design. To appear in *HICSS 2008*.
- Harmon, E. Hensel, S. C. & Lukes, T. E. (2006). Measuring performance in services. *The McKinsey Quarterly*, 2006/1, 31 – 39.
- Hutchins, E. (1995). How a cockpit remembers its speeds. *Cognitive Science*, 19, 265-288. Available at http://hci.ucsd.edu/lab/hci_papers/EH1995-3.pdf
- Johnson, B. C., Manyika, J. M., & Yee, L. A. (2005). The next revolution in interactions. *The McKinsey Quarterly*, 2005/4, 20 – 33.
- Maglio, P. P., Kandogan, E., & Haber, E. (2007). Distributed cognition and joint activity in computer-system administration. In M. S. Ackerman, C. Halverson, T. Erickson, & W. A. Kellogg (Eds.), *Resources, co-evolution, and artifacts: Theory in CSCW*. New York: Springer.

- Maglio, P. P., Srinivasan, S., Kreulen, J. T., Spohrer, J. (2006). Service systems, service scientists, SSME, and innovation. *Communications of the ACM*, 49, 81-85.
- Normann, R. & Ramirez, R. (1993). From value chain to value constellation: Designing interactive strategy. *Harvard Business Review*, 71, 65 – 77.
- Palmisano, S. J. (2006). The globally integrated enterprise. *Foreign Affairs*, 85, 127 – 136. Available at <http://www.ibm.com/ibm/governmentalprograms/samforeignaffairs.pdf>
- Spohrer, J., Maglio, P. P., Bailey, J. & Gruhl, D. (2007). Steps toward a science of service systems. *Computer*, 40, 71-77.
- Tien, J. M. & Berg, D. (2003). A case for service systems engineering. *Journal of Systems Science and Systems Engineering*, 12, 13 – 38.
- Vargo, S. L. & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68, 1 – 17.

Optional Readings (available through UCMCROPS)

- Arthur, W. B. (1999). Complexity and the economy. *Science*, 284, 107 – 109. Available at http://www.santafe.edu/~wbarthur/Papers/Pdf_files/Econ_&_Complex_Web.pdf
- Beardsley, S. C., Johnson, B. C., & Manyika, J. M. (2006). Competitive advantage through better interactions. *The McKinsey Quarterly*, 2006/2, 52 – 63.
- Bryson, J. R., Daniels, P. W., & Warf, B. (2004). *Service worlds: People, organisations, and technologies (Chapters 1 – 2)*. New York: Routledge/Taylor & Francis, pp. 1 – 34.
- Cherbakov, L. Galambos, G, Harishankar, R., Kalyana, S. & Rackham, G. (2005). Impact of service orientation at the business level. *IBM Systems Journal*, 44, 653 – 658. Available at <http://www.research.ibm.com/journal/sj/444/cherbakov.pdf>
- Coase, R. (1937). The nature of the firm. *Economica*, 4, 386 – 405. Available at <http://www.cerna.ensmp.fr/Enseignement/CoursEcoIndus/SupportsdeCours/COA SE.pdf>
- Frei, F. X. (2006). Breaking the trade-off between efficiency and service. *Harvard Business Review*, 84, 93 – 101.

- Gadrey, J. (2002). The misuse of productivity concepts in services: Lessons from a comparison between France and the United States. In J. Gadrey & F. Gallouj (Eds). *Productivity, Innovation, and Knowledge in Services: New Economic and Socio-economic Approaches*. Cheltenham UK: Edward Elgar, pp. 26 – 53.
- Heskett, J. L., Jones, T. O., Loveman, G. O., Sasser, W. E., Schlesinger, L. A. (1994). Putting the service profit chain to work. *Harvard Business Review*, 72, 164 – 174.
- Hill, T. P. (1977). On goods and services. *The Review of Income and Wealth*, 23, 315 – 338.
- Hill, P. (1999). Tangibles, intangibles and services: A new taxonomy for the classification of output. *Canadian Journal of Economics*, 32, 426 – 446. Available at http://www.csls.ca/journals/sisspp/v32n2_09.pdf
- Karmarkar, U. (2004). Will you survive the services revolution? *Harvard Business Review*, 82, 100 – 107.
- Mann, C. (2003). Globalization of IT services and white collar jobs: the next wave of productivity growth. *International Economics Policy Briefs, IIE, No PB03-11*. Available at <http://www.iie.com/publications/pb/pb03-11.pdf>
- Papazoglu M. (2003). Service-oriented computing: Concepts, characteristics and directions. In *Proceedings of the Fourth International Conference on Web Information Systems Engineering*. Available at <http://infolab.uvt.nl/pub/papazogloump-2003-51.pdf>
- Rust, R. T. & Chung, T. S. (2006). Marketing models of service and relationships. *Marketing Science*, 25, 560 – 580.
- Schultze, U. & Bhappu, A. D. (2005). Incorporating self-serve technology into co-production design. *International Journal of E-Collaboration*, 1, 1 – 23.
- Smith, A. (1776). *The wealth of nations*. (Chapter 1). Available at <http://www.econlib.org/LIBRARY/Smith/smWN.html>

Syllabus

- Aug 27 Lecture 1: Service Science
- Sept 3 *No Lecture: Labor Day*
- Sept 10 Lecture 2: Service Systems
Reading: Teboul (2006) Chapters 1 – 4
 Spohrer et al (2007)
First Assignment Due
- Sept 17 Lecture 3: Service Design
Reading: Teboul (2006) Chapters 5 – 6
 Fitzsimmons & Fitzsimmons (2005a, 2005b)
Optional: Hill (1977, 1999); Gadrey (2002)
- Sept 24 Lecture 4: Service Work I
Reading: Hutchins (1995)
 Maglio, Kandogan, & Haber (2007)
Optional: Bryson et al (2004)
- Oct 1 Lecture 5: Service Work II
Guest: **Jeanette Blomberg, IBM Almaden Research Center**
Reading: Butler et al (1997)
 Herzenberg et al (1998)
 Johnson et al (2005)
Optional: Beardsley et al (2006)
 Schultze & Bhappu (2005)
- Oct 8 Lecture 6: Service Marketing
Guest: **Steve Vargo, University of Hawaii**
Reading: Lovelock & Wirtz (2007a, 2007b)
 Vargo & Lusch (2004)
Optional: Rust & Chung (2006)
Second Assignment Due
- Oct 15 Lecture 7: Service Information
Guest: **Ravi Nemana, UC Berkeley**
Reading: Heskett & Hallowell (2007)
 Spangler & Kreulen (2007)
- Oct 22 Lecture 8: Service Computing
Guest: **Bob Glushko, UC Berkeley**
Reading: Glushko & McGrath (2005)
 Glushko & Tabas (in press)
Optional: Cherbakov et al (2005)

- Oct 29 Lecture 9: Final Paper Discussion
- Nov 5 Lecture 10: Service Design & Engineering
Guest: **Doug Morse, Oracle Corporation**
Reading: Lovelock & Wirtz (2007c, 2007d)
 Tien & Berg (2003)
Optional: Papazoglu (2003)
Third Assignment Due
- Nov 12 No Lecture: Veterans Day*
- Nov 19 Lecture 12: Service Supply Chain
Guest: **Hans Bjornsson, UC Merced**
Reading: Fitzsimmons & Fitzsimmons (2005c, 2005d, 2005e)
- Nov 26 Lecture 13: Service Economics
Guest: **Todd Neumann, UC Merced**
Reading: Harmon et al (2006)
Optional: Arthur (1999)
 Coase (1937)
 Smith (1776)
- Dec 3 Lecture 14: Service Value-Creation
Reading: Norman & Ramirez (1993)
 Palmisano (2006)
Optional: Heskett et al (1994)
 Karmarkar (2004)
 Mann (2003)
- Dec 10 Lecture 15: Service Innovation and Service Science
Reading: Maglio et al (2006)
 Moon & Quelch (2007)
Optional: Frei (2006)
Final Paper Due