

Service Engineering

The service sector now accounts for over 70% of most western economies. As an example, in the U.S. fewer are employed in the agriculture sector than in either telephone call centers or hospitals. The service sector covers a wide spectrum of activities, for example education, healthcare, transportation, hospitality, government services, professional services, financial services, technical support and more. In fact, the distinction between a manufacturing and a service company is now gradually blurring, for example when after-sale services are bundled into tangible products or manufacturing companies offer consulting and outsourcing services.

The "Service Revolution" has not gone unnoticed within IE circles, both in industry and academia. (Indeed, most IE graduates work in "services".) This revolution has given rise to "Service Engineering" which is a new scientific field that caters to its needs. In this lecture, I shall survey the emergence, evolution and status of Service Engineering, through its history at the Technion's Faculty of Industrial Engineering & Management (IE&M).

Service Engineering at the Technion covers research, teaching and practice. **Teaching**-wise, an original course under that title has been developed and taught in IE&M for over a decade. **Research**-wise, a new research paradigms had to be created, notably overcoming multi-disciplinary barriers, and calling for the cooperation of practitioners with theoreticians. This culminated in the Technion's SEE lab (SEE stands for Service Enterprise Engineering), which is a research laboratory that has been creating and maintaining data repositories from large service operations, mostly call centers and hospitals, while developing state-of-the-art data-mining tools that facilitate analysis of these data sources. **Practice**-wise, one example is a wide-arching joint project with IBM Research and the Rambam hospital, on healthcare-engineering; it has been funded by IBM's OCR program (OCR = Open Collaborative Research).

Readers are welcome to browse through the websites of the Service Engineering course, the Technion SEE lab, and the OCR project. The first is <http://ie.technion.ac.il/serveng>, which includes all course material; it has also a References menu that gives access to ample Technion research material, including graduates theses of students, related seminars, and more. The second website is <http://ie.technion.ac.il/Labs/Serveng>, through which one can in fact access the SEELab server, and analyze first-hand some of the publicly available SEE data. The third is described in http://ie.technion.ac.il/Labs/Serveng/files/Project_summary_for_SRII.pdf, where one can read about the OCR project.