

CESUN Director Roundtable

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Where do we come from?

- A merger 10 years ago, of
 - Industrial Engineering and Engineering Management
 - Operations Research
 - Engineering-Economic Systems
- Why? Critical mass and synergies.
About 35 profs and 600 students
- In ten years, we have hired ten faculty members
- The view from the streets... (and we are not a business school!)

Structure

- No divisions but eight areas. A light organization
- A spectrum from organizational behavior to OR
- Areas organize teaching and PhD programs
- Centers and programs (ex: entrepreneurship and energy modeling)
- We agreed on some guidelines about the organization and procedures of the department (voting, chair and deputy chair etc.)
- A strategic plan last year (junior faculty)

Demand in Engineering Systems

- Small as strictly, traditionally defined
 - A large demand for other aspects and applications of engineering systems analysis
 - Demand for the tools and their development: decision analysis, stochastic processes, dynamic systems, etc
 - Applications of systems engineering methods to a wide spectrum of problems. Ex of studies and projects: management of the internet, analysis of AIDS policies, risk of failure of insurance companies, of collision of aircraft under automatic guidance, etc.
- “Tell me how to think but don’t box me in”

Integration of engineering and social sciences

- That is our forte: “People make things, mess things up, and need stuff” Plus you need to talk to them and get them to work together! Examples
 - Entrepreneurship
 - Strategy and policy analysis, integrating economics and engineering. Ex: health policy analysis (AIDS), or national security: “All things nuclear”
 - Supply chain management (and globalization of it)
- A program with the Law school, collaboration with the GSB, an inter-school program in public policy, co-supervision of thesis (socio., psychology, etc.)

Critical intellectual issues

- Change:
More focus on (multi-disciplinary) large fields of application and less on methods as such
 - Globalization and management of technology, operations, manufacturing when “the earth is flat”
 - Information systems, networks, management of IT
 - National security problems
- Growth areas (ex.)
 - Financial engineering, organizations, entrepreneurship

Funding

- A mix of federal money (NSF, NASA, FDA, NIH etc) and industry money (Microsoft, American Express, Daimler, etc.)
- Executive education and Internet teaching
- What has changed in the intellectual landscape: more focus on problems and less on methods themselves

Institutional issues

- The nature of schools (H&S, Eng., Law Medicine, Business, Education, Earth Sciences)
- The disparity of financial structures. Professional schools as independent graduate entities. The school of engineering part of the university (UG program, open to all students)

The challenges of multi-disciplinarity

- A positive feature: the possibility of individually designed majors. The trade-off: need to make sure that the students are solidly anchored in engineering
- For the faculty, at promotion time, problem of identifying peer groups and reviewers. Ex: working in finance with engineering systems tools (ex: control theory).
- But very good interactions with the rest of the school

Bottom line about MS&E

- An entrepreneurial independent, international crowd.
- The department at times looks a bit like a Petri dish...
- Exciting (including to students and prospective faculty) if a bit messy by classic engineering standards