How technical universities may provide innovation services

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Management at DTU 1/1 2011:
I. Board of Governors, 10 members
II. Executive Board, 6 members

Balance 2005:
Turnover 275 mil USD

Facilities:
Buildings 353,000 square meter in Lyngby
and
125,000 square meter in Scion•DTU A/S in Hørsholm.
Staff:
800 Scientists
900 Technical and administrative

Students:
6000 Students
600 PhD students
DTU has defined *innovation* as 'the third task' of the university, alongside research and education (the fourth task, actually, but …)

- The DTU management now specifically negotiates KPI’s for innovation in the departments’ scorecards
- The DTU departments are treated to a number of services to facilitate meeting their innovation goals
- IPU is one of those services
Synergy in three domains
IPU

- A non-profit organisation at the TU of Denmark
- Research and development projects on contract
- Commercialisation of ideas, innovations, and patents
- 50 full-time staff
- 70+ associated DTU staff
- Co-location with DTU colleagues on campus
- Turnover: ~ 6 mill EUR/yr

... since 1956
The mission of IPU

... to offer highly qualified innovation, consultancy, and collaboration services with specialists in key engineering and communication technology fields.

... to boost the business capacities of client companies by creating innovative, visionary, and sustainable solutions.

... to promote such research, and carry out such engineering projects, which are of technological and/or scientific significance, and which are of importance to the society and the business community.

... to promote the collaboration between the university and the private and public sector.
Distinctive feature: Co-location of DTU & IPU colleagues
Types of services from IPU

- Strict product, process or materials development
- Technical advise, problem solving and arbitration
- Project facilitation, process management, benchmarking...
- Implementation of new methods & procedures
- Strategic analysis and planning
- Organisational development
- Continuing education and on-the-job training
- Support of commercialisation of DTU-based ideas, inventions, and patents
Supporting facilities at DTU & IPU

- Usability lab
- Metrology center
- Rapid prototyping facilities
- Prototype workshop
- Indoor environment center
- MEMS & nanostructure manufacturing facilities
- Acoustics lab
- Materials testing lab
- Polymer center
- …
Supporting technologies and competencies at DTU & IPU

- Surface layer & surface treatment technology
- Materials technology
- Process technology
- Machine elements & tribology
- Mechanics
- Fluid dynamics
- Thermodynamics
- Sound & vibration
- IT & Communications
- Socio-technical analysis
- ...

(IPU logo)
Specific innovation competencies

- Innovation management
- Systematic design
- Industrial design
- Conceptualisation
- Creative techniques
- Sketching, rendering, illustrations, …
- Mechanisms design
- Man-Machine Interface design
- Design for X: DFM, DFA, DFQ, DFE’n, …
- Multi-product development
- Product/service development
- Detailed design
ReElight: Dynamic bicycle light
LINDE + WERDELIN: Biformeter
National Health Service: Brightness Acuity Tester
Novo Nordisk: Cooling bag
National Health Service: Pellet distributor
Coloplast: Ostomy bag – and product development procedures
StressMeter: Stress-O

StressMeter A/S
Novo Nordisk: Pen
Envacare: Hospital bed remote control
Maersk: Catheter
Process technology: surface treatment
MEMS, micro- and nano technology
Aker: design of heavy duty equipment
Process technology: lasers
IPU Strategidag 2011

Four different ways of wind scanning

- WindScanner (Long-range)
- Spinner integrated upwind looking wind lidar
- WindScanner (Short-range WindScanner)
- WindScanner (Offshore scanning)

Steen Andreasen, 24.05.2011
Long Range Scanner
Short Range Scanner
Off shore wind scanning
In conclusion

- IPU is a non-profit, tech-trans company located on campus at the university
- IPU has its own staff of full time employees, highly educated, skilled and trained in innovation
- IPU’s staff is co-located (share the buildings and facilities) with the staff of the university: professors, associated professors, etc.

Benefits to the university

- provides technology services beneficial to industry and society, adding to the esteem of the university
- provides professional development of research and lab equipment, enhancing the output of the scientific work
- acts as a partner with the university and with industry in international cooperative projects