

# The new way of teaching a project work – an open innovation platform for students



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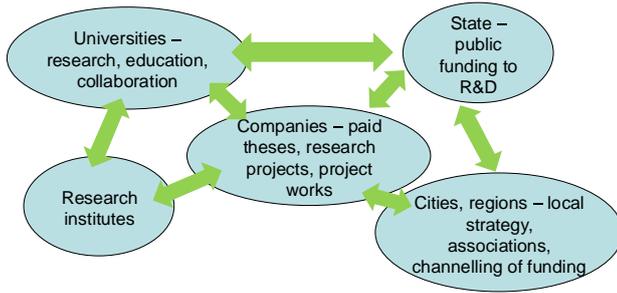
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## Collaboration – a Finnish way to innovation

- History from heavy industry via large telecom / IT companies to new breed of start-ups in an open society
- Many radical changes, yet innovation always a key success factor, obtained with dedication and collaborations



## New skills expected from future professionals

- Creativity and innovativeness<sup>[1]</sup>
  - Willingness and ability to work in a new way<sup>[2]</sup>
  - Business skills<sup>[1] [2]</sup>
  - Service skills<sup>[2]</sup>
  - Technological skills<sup>[2]</sup>
  - Usability of technology and productization<sup>[1]</sup>
  - Design skills<sup>[2]</sup>
  - Risk management and an engineer's ability to see things three steps ahead<sup>[1]</sup>
  - A sense of responsibility and ethics<sup>[1]</sup>
  - Internationalism<sup>[2]</sup>
  - Understanding of differences in people as potential<sup>[1]</sup>
  - Ability to network<sup>[2]</sup>
  - Collaboration<sup>[1]</sup>
  - Shared expertise<sup>[1]</sup>
  - Collective learning and facilitating skills<sup>[1]</sup>
  - Ability to learn by doing<sup>[1]</sup>
  - Problem-based thinking, reflection of own activity<sup>[1]</sup>
  - Ability to communicate own expertise to others<sup>[1]</sup>
  - Ability to stand stress and uncertainty<sup>[1]</sup>
- "Super individuals" are not needed – it is essential that the necessary competencies are found in teams and networks.

=> Therefore: A new project work concept that aims at learning how to innovate in multicultural collaboration

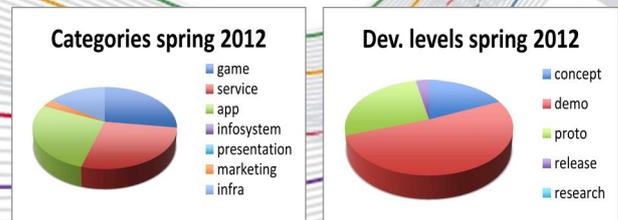
## Main elements of learning in Innovation Projects

- Shared learning in diverse teams
- Learning by doing
- A learning space in Demola – unlike university premises
- Around ten workshops on various product development issues
- Reflection by writing weekly blogs and end report
- Testing of achievements in team, with partner, in pitches and presentations
- Teacher only monitors and supports learning
- Learning of many essential things: innovation, product development, collaboration, multicultural work
- Utilisation of all skills – total support for students' development

## Comparison with traditional project works

Attribute	Traditional project work course	Innovation Project course
Uncertainty, risk level	Moderate risk	High risk, high uncertainty
Scope	Defined	Defined
Mental focus	Processes, routines, execution	Substance, business
Main quality factors	Fulfilling customer needs, total quality of action, re-usability of results	Value and re-usability of concept, new possibilities – creative thinking, product potential
Relation to tradition, rules, thinking patterns	Follow rules, use heuristics	Break rules, think differently
Main reusable result	Product, documents	Idea, conclusion, principles
Lifecycle emphasis	All equally	Concept, fuzzy front end feasibility study, proof of concept, marketing
Working environment	Closed, homogeneous, one culture, team work alone	Open space, networking, heterogeneous, multicultural, international, all teams in one space
Communication	Inside team, rhythmic with teacher / long cycle	Inside team, between teams, short cycle with customer/partner, networking
Language	Native language	English
Product rights	Customer	Team
Skill set	Systematic project work, professional action, development & research methods, teamwork	Problem solving, teamwork, creativity, handling uncertainty
Learning experience	Project work, project management, how methods and theory work in practice, teamwork	Project work, team work, potential of creativity, intercultural working

## The types of systems developed in projects



## Innovation Project practices

- System in which the companies order demos of the new ideas from the student groups in order to weigh their usefulness as products or services
- Technical or even social ideas.
- Every year two project rounds, in spring and autumn.
- About 150 students participate per round.
- International students strongly along.
- Demola provides training workshops in product development and the product business.
- Students usually enrol on courses in educational institutions, on which a teacher directs their learning and which may have additional teaching.
- Web site [www.demola.fi](http://www.demola.fi).
- Demola operates within New Factory, an "innovation factory" <http://uusitehdas.fi/innovation-factory>
- Projects have three main phases
- Partner's representative as team members
- Teachers have only a supporting role
- 5 to 10 credit points
- Grading used at UTA, not at TUT, TAMK

**References** [1] I. Mielityinen (ed.), "Suomi tarvitsee maailman parasta insinööriosaamista", Tekniikan akateemisten liitto, Finland, 2009, 70 pages.  
[2] "Oivallus loppuraportti", Elinkeinoelämän keskusliitto, Finland, 2011, 42 pages.

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