



Open Innovation Approach to University-Industry Development

Professor Pasi Malinen

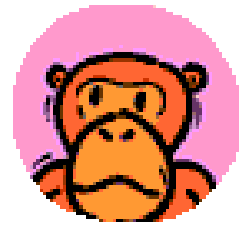
D.Sc. (Econ. & Bus. Admn.)

BID Business Innovation and Development

@ University of Turku

pasi.malinen@utu.fi

Nothing new under the sun?



*“Inventions have long since reached their limits,
and I see no hope for further developments”*

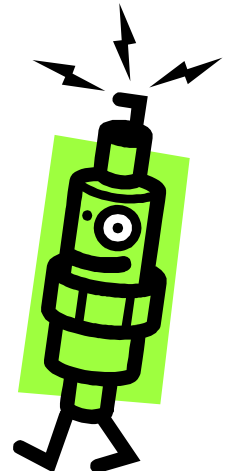
-- Roman engineer Julius Sextus Frontinus, 10
C.E.

“Technology advancement will not stop”

-- Naoyuki Akikusa, *Fujitsu, i2010* conference
2006

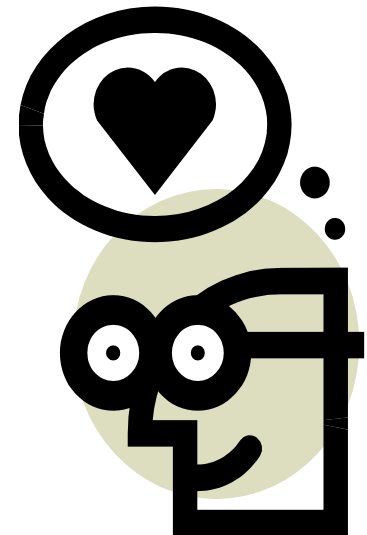
Innovation (Schumpeter 1934, Baumol 1990)

- A new good or a new quality of a good
- A new method of production not previously tested, that does not need to be founded upon scientific discovery
- Opening a new market, ie. a market that a firm has not previously entered, whether or not this market has existed before (Ansoff's product/market matrix)
- A new source of supply of raw materials, irrespective of whether this source already exists or has first to be created
- **The carrying out of new organisation**



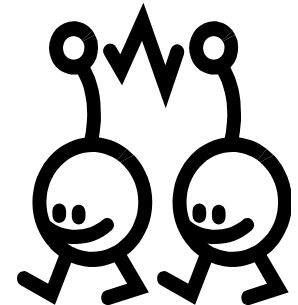
The shifting paradigm for organisational success

- Old success factors:
 - Size
 - Role clarity
 - Specialisation
 - Control
- New success factors:
 - Speed
 - Flexibility
 - Integration
 - **Innovation**



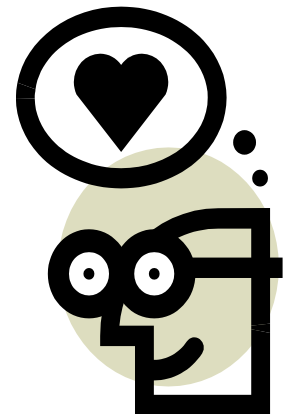
Current trends in technology/innovation

- From technology development to innovation
- Customer/end-user focus
- Digitalisation of products and services
- Blue ocean strategies, long tail
- Communities
- Co-operative R&D
- Complementary skills involved in R&D
- International focus from the beginning
- Flexibility



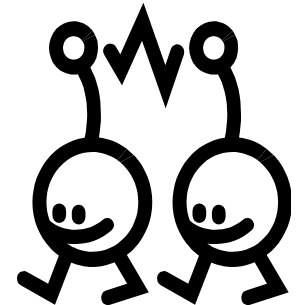
”Megatrends of innovation activities”

- Developing/producing everything in-house =>
 - Outsourcing production to low-cost countries =>
 - Outsourcing some R&D activities near production =>
 - Outsourcing most research near R&D & production =>
-
- In University settings: From projects to collaboration

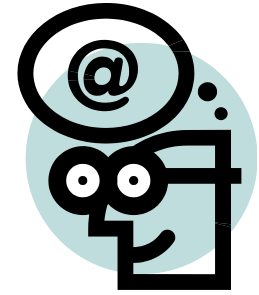


The Role of Universities

- Development projects funded by external sources, such as the EU, require University presence
- Funding changes in the University sector – More external funding
- Companies want to use Universities' knowledge and knowhow -
RELEVANCE
- Universities learn from University-Industry collaboration



Open innovation?



- Henry Chesbrough; Eric Von Hippel
- Innovations as open systems
- User innovation vs. manufacturing innovation
- Functional definition (Von Hippel):
 - "User innovation => developer expects to benefit by using it"; OSS as an example
 - "Manufacturer innovation => developer expects to benefit by selling it" => innovation protected as intellectual property

User innovation (Von Hippel/MIT)



- Users are the actual developers of many/most new products, both physical and information products + combinations of the two
- Users generally freely reveal their innovations
- User-developed innovations are a major feedstock for products commercialised by manufacturers
- User innovation is "good thing" that increases social welfare
- User innovation is steadily increasing as enabling computing and communication technologies improve

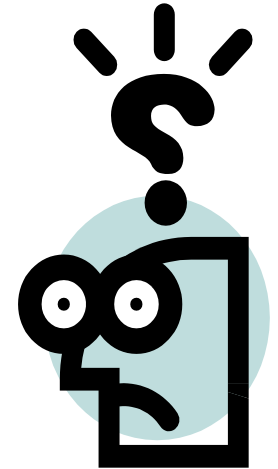
User and manufacturer innovation differ (Von Hippel)

- Users tend to develop functionally novel innovations:
 - The first sports-nutrition bar
 - The first scientific instrument of a new type
 - "Convenience was the mother of invention" => WebCam in Univ. Of Cambridge
 - www => Berners-Lee: "It was something I needed in my work!"
- Manufacturers tend to develop dimension of merit improvements:
 - A better-tasting sports-nutrition bar
 - Improvement to an existing type of scientific instrument



Many commercially important consumer products have roots in user innovation (Von Hippel)

- Health products – Gatorade
- Personal care – Protein-based shampoo, feminine hygiene
- Sports equipment – Mountain bike, skateboard, scuba gear,...
- Apparel – Sports bra
- Food – Chocolate milk
- Office – White-out liquid
- Software – Email, desk top publishing



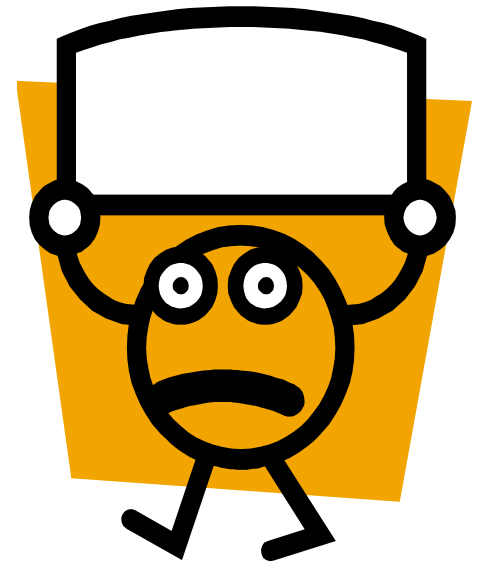
Why open innovation?



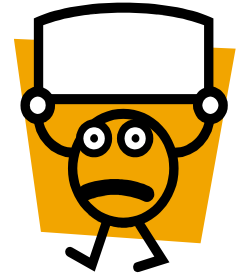
- Shortened time to market
- Lack of R&D&T resources (rise in R&D costs, decreased product revenues), collaborative R&D
- Changes in consumption patterns:
 - “Why customers want custom products? Because they have custom needs!”
 - From common culture to post modern culture
 - Communities, niche groups
 - “People do not buy technology but solutions to their problems”
- Changes in company strategies

Results of open innovation activities

- Some companies are moving from "build only" specialisation, product innovation is left to user community (T-shirts etc.)
- User-centred innovation is increasing as computing and communication costs drop
- More collaborative R&D
- Use the lead-users in development, use expertise (nerds, top athletes, scientists,...)



Changes in the company culture & mindset (wikipedia)



Closed innovation Principles

The smart people in our field work for us.

To profit from research and development (R&D), we must discover it, develop it and ship it ourselves.

If we discover it ourselves, we will get it to market first.

The company that gets an innovation to market first will win.

If we create the most and the best ideas in the industry, we will win.

We should control our innovation process, so that our competitors don't profit from our ideas.

Open innovation Principles

Not all the smart people work for us. We need to work with smart people inside and outside our company.

External R&D can create significant value; internal R&D is needed to claim some portion of that value.

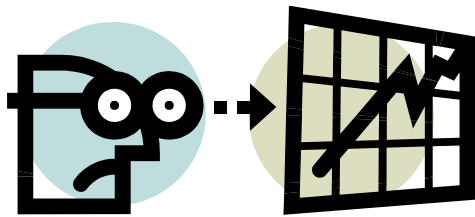
We don't have to originate the research to profit from it.

Building a better business model is better than getting to market first.

If we make the best use of internal and external ideas, we will win.

We should profit from others' use of our innovation process, and we should buy others' intellectual property (IP) whenever it advances our own business model.

University-Industry collaboration in the future



- More University-Industry collaboration
- Collaboration becomes part of day-to-day activities in Universities
- Industry needs more external R&D: from projects to collaboration
- Example: BID's PhD+MBA

“Anyone who has never made a mistake has never tried anything new.”

“Imagination is more important than knowledge.”

“Any intelligent fool can make things bigger and more complex. It takes a touch of genius - and a lot of courage to move in the opposite direction.”

