


International Management
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INNOVATION



Objectives

- What is an innovation?
- Why to make innovation?
- How to manage innovation?

Recommended reading:

- **Hamel, G.** - The why, what, and how of management innovation. Harvard Business Review, February 2006, pp. 72-84.
- **Kanter, R.** - Innovation: The Classic Traps. Harvard Business Review, November 2006, pp. 73-83





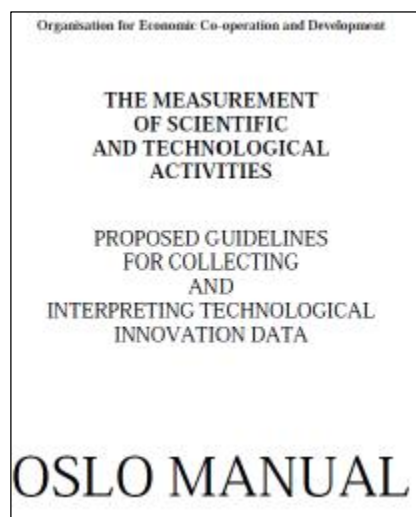
Definitions of innovation – be innovative...

- the act of introducing something new: something newly introduced
- the introduction of something new
- a new idea, method or device
- the successful exploitation of new ideas
- **change that creates a new dimension of performance** (P.Drucker)
- Etym. - latin: *innovatio* 'making new', from: *innovare* refresh, change'.



OSLO MANUAL

- The manual is a generic guide to innovation measurement.
- One of the Frascati family of manuals covering the measurement of innovation and technology.
- First version was focused on manufacturing; the second covered technology based innovation across broader range of sectors.
- This is the third version which covers a wider conceptual range and a fuller treatment of non-TPP innovation.





Definitions

- An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.



Product and Process Innovation

- A **product innovation** is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.
- A **process innovation** is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.



Organisational and Marketing Innovations

- An **organisational innovation** is the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations.
- A **marketing innovation** is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.



Degrees of Novelty

- new to the firm.
- new to the market (firm and competitors)
- new to the world (optional for surveys)
- radical or disruptive innovation (optional but impractical)



Innovation Activities

- **Innovation activities** are all scientific, technological, organisational, financial and commercial steps which actually, or are intended to, lead to the implementation of innovations. Some innovation activities are themselves innovative, others are not novel activities but are necessary for the implementation of innovations. Innovation activities also include R&D that is not directly related to the development of a specific innovation.



Diffusion of Innovation

Diffusion of Innovation is the process by which an innovation is communicated through certain channels over time among the members of a social system /E.M. Rogers, 1962/

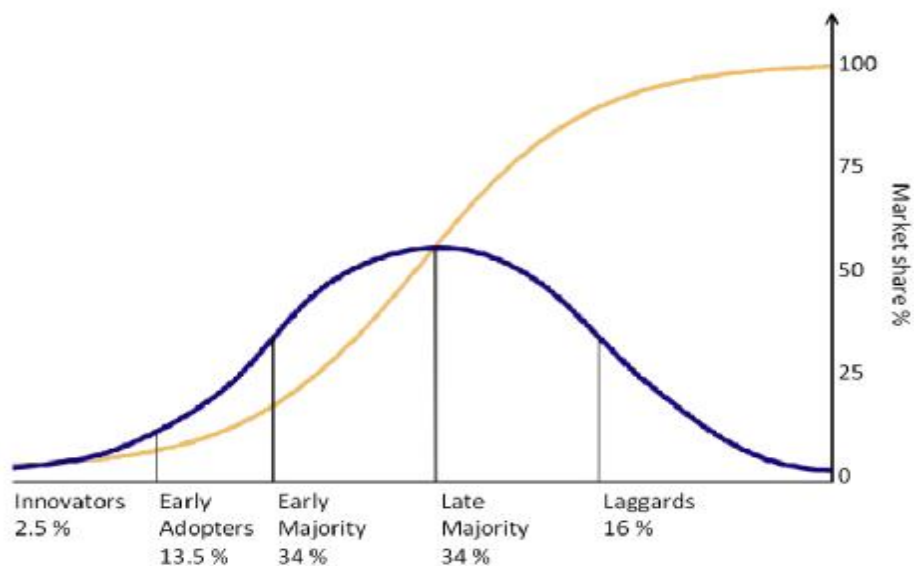


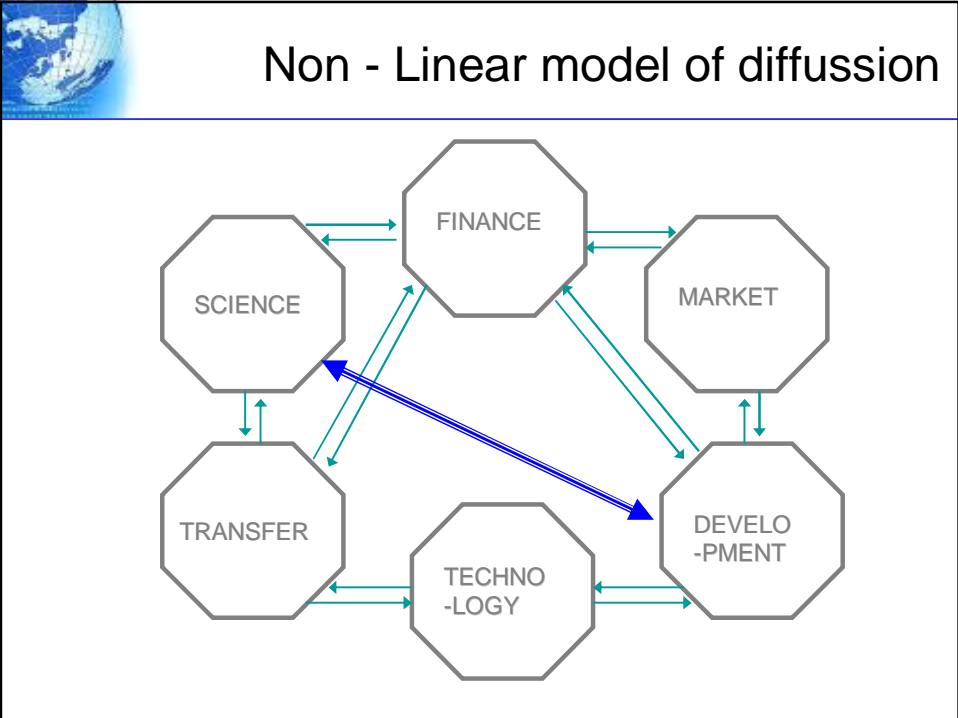
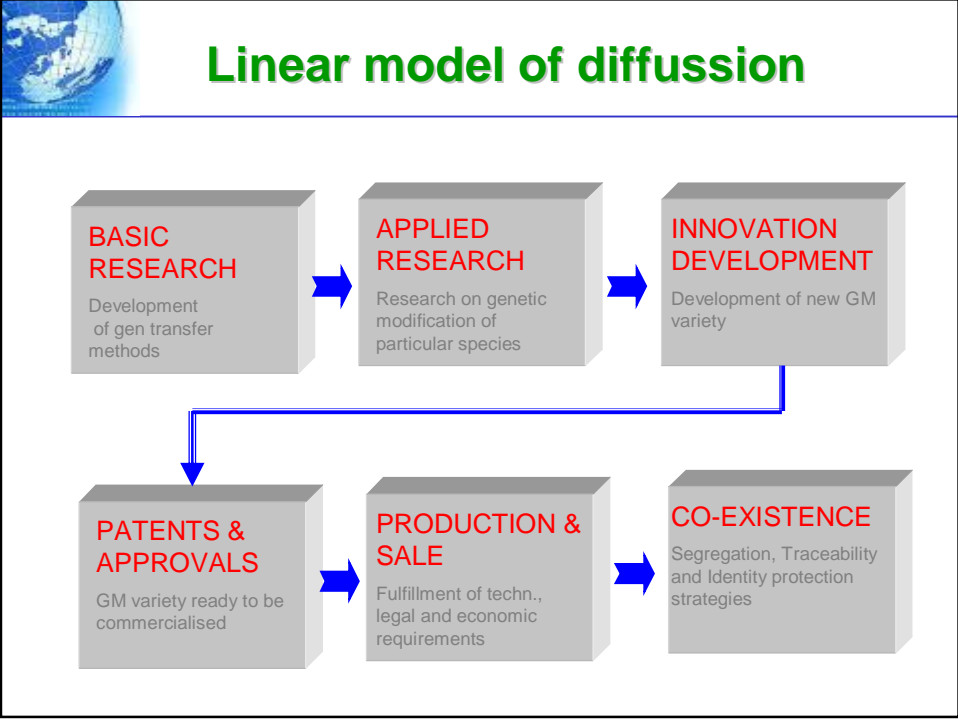
Stages of diffusion of innovation

- **Awareness** - the individual is exposed to the innovation but lacks complete information about it
- **Interest** - the individual becomes interested in the new idea and seeks additional information about it
- **Evaluation** - individual mentally applies the innovation to his present and anticipated future situation, and then decides whether or not to try it
- **Trial** - the individual makes full use of the innovation
- **Adoption** - the individual decides to continue the full use of the innovation



Stages of diffusion of innovation







Analysis of innovation in the EU



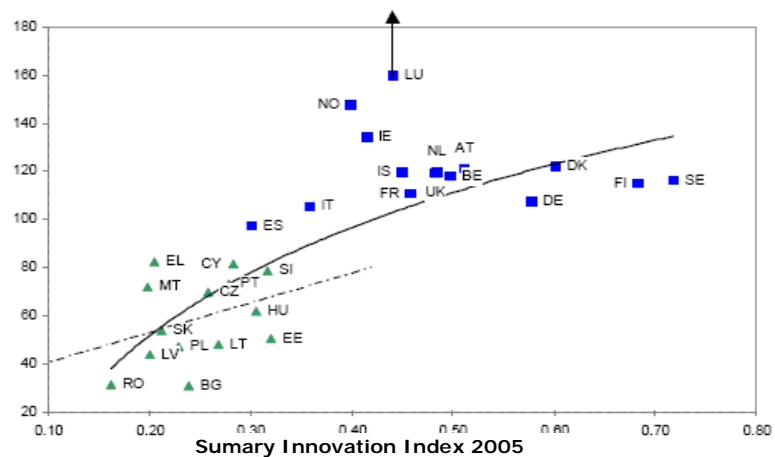
EUROPEAN INNOVATION SCOREBOARD 2009

COMPARATIVE ANALYSIS OF INNOVATION PERFORMANCE



Innovations and GDP in EU

2004
GDP per capita, EU25=100

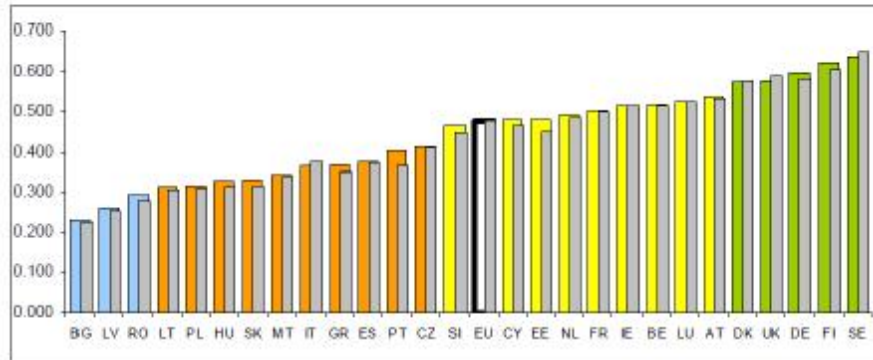


Source: European Innovation Scoreboard, Comparative Analysis of Innovation Performance, European Commission, Enterprise Directorate General, 2005



European Innovation Scoreboard 2009

Summary innovation performance EU27 Member States (2009 SII)



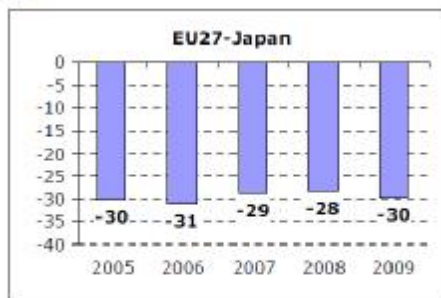
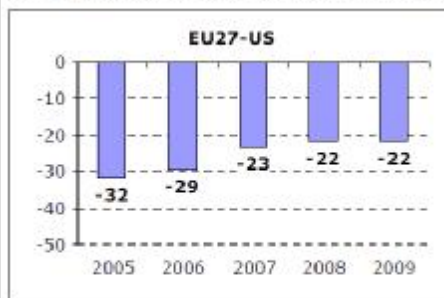
Note: The Summary Innovation Index (SII) is a composite of 29 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. The 2009 SII reflects performance in 2007/2008 due to a lag in data availability.

The grey coloured columns show 2008 performance as calculated backward from 2009 using the next-to-last data for each of the indicators. This 2008 performance is not identical to that shown in the EIS 2008 as not for all indicators data could be updated with one year. The difference between the columns for 2008 and 2009 show the most recent changes in innovation performance. The SII scores are shown in Annex E.



European Innovation Scoreboard 2009

EU27 INNOVATION GAP TOWARDS US AND JAPAN



Performance for each reference year is measured using, on average, data with a two-year lag (e.g. performance for 2009 is measured using data for 2007).



European Innovation Scoreboard 2009

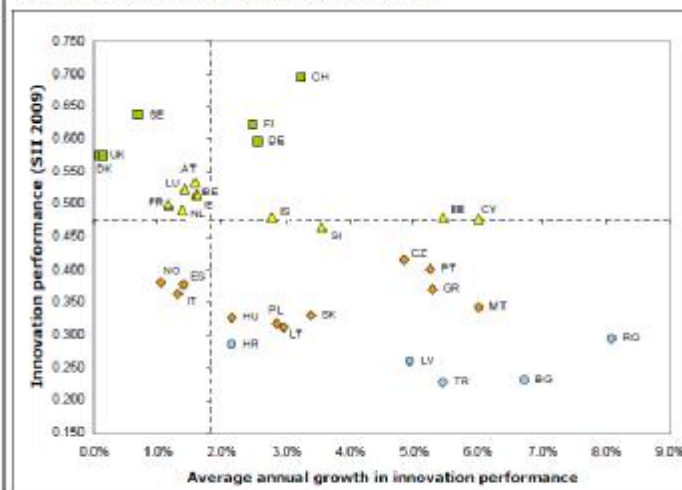
Based on a statistical cluster analysis⁹ of the SII scores over a five-year period, the countries can be divided into the following groups¹⁰:

- Denmark, Finland, Germany, Sweden, Switzerland and the UK are the Innovation leaders, with innovation performance well above that of the EU27 and all other countries.
- Austria, Belgium, Cyprus, Estonia, France, Iceland, Ireland, Luxembourg, the Netherlands and Slovenia are the Innovation followers, with innovation performance below those of the innovation leaders but close to or above that of the EU27.
- Czech Republic, Greece, Hungary, Italy, Lithuania, Malta, Norway, Poland, Portugal, Slovakia and Spain are the Moderate innovators with innovation performance below the EU27.
- Bulgaria, Croatia, Latvia, Romania, Serbia and Turkey are the Catching-up countries. Although their innovation performance is well below the EU27 average, this performance is increasing towards the EU27 average over time (Figure 3).



European Innovation Scoreboard 2009

FIGURE 3: CONVERGENCE IN INNOVATION PERFORMANCE



Colour coding matches the groups of countries identified in Section 3.1: green are the Innovation leaders, yellow are the Innovation followers, orange are the Moderate innovators, blue are the Catching-up countries. Average annual growth rates as calculated over a five-year period. The dotted lines show EU27 performance and growth.



European Innovation Scoreboard 2009

TABLE 2: INNOVATION GROWTH LEADERS

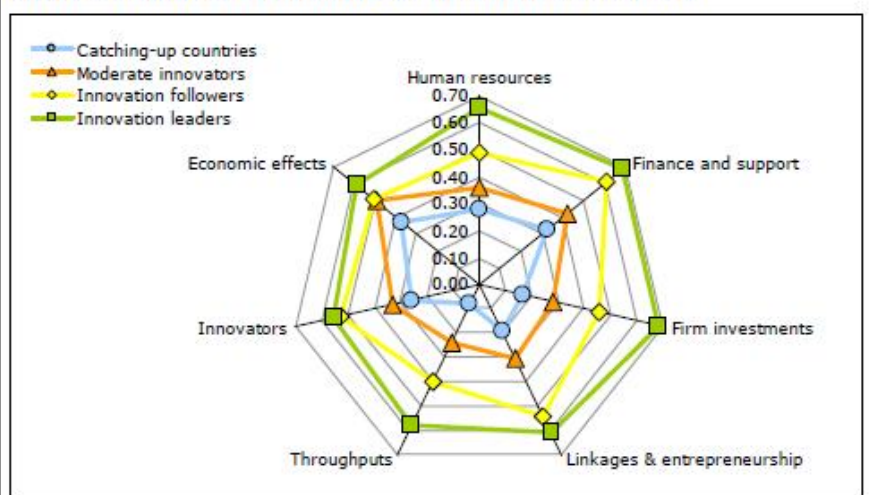
Group	Growth rate	Growth leaders	Moderate growers	Slow growers
Innovation leaders	1.5%	Switzerland (CH)	Finland (FI), Germany (DE)	Denmark (DK), Sweden (SE), United Kingdom (UK)
Innovation followers	2.7%	Cyprus (CY), Estonia (EE)	Iceland (IS), Slovenia (SI)	Austria (AT), Belgium (BE), France (FR), Ireland (IE), Luxembourg (LU), Netherlands (NL)
Moderate innovators	3.3%	Czech Republic (CZ), Greece (GR), Malta (MT), Portugal (PT)	Hungary (HU), Lithuania (LT), Poland (PL), Slovakia (SK)	Italy (IT), Norway (NO), Spain (ES)
Catching-up countries	5.5%	Bulgaria (BG), Romania (RO)	Latvia (LV), Turkey (TR)	Croatia (HR)

Average annual growth rates as calculated over a five-year period.



European Innovation Scoreboard 2009

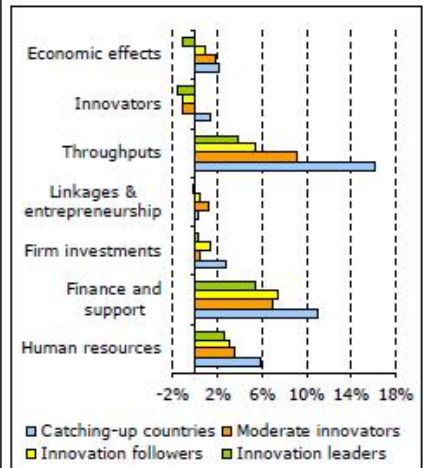
FIGURE 4: COUNTRY GROUPS: INNOVATION PERFORMANCE PER DIMENSION





European Innovation Scoreboard 2009

FIGURE 5: COUNTRY GROUPS: GROWTH PERFORMANCE PER DIMENSION

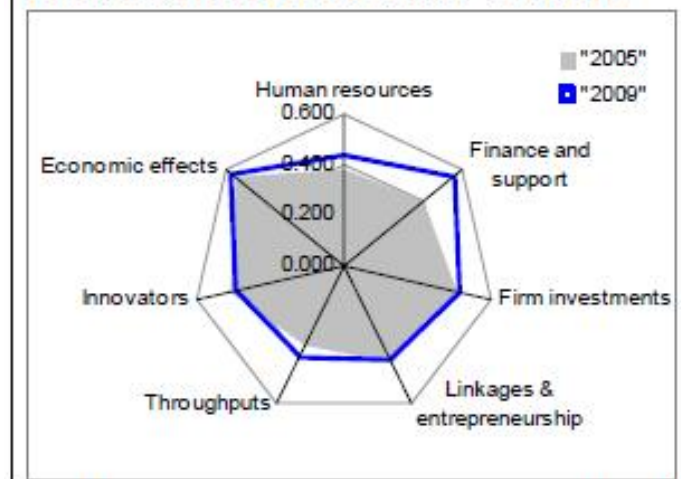


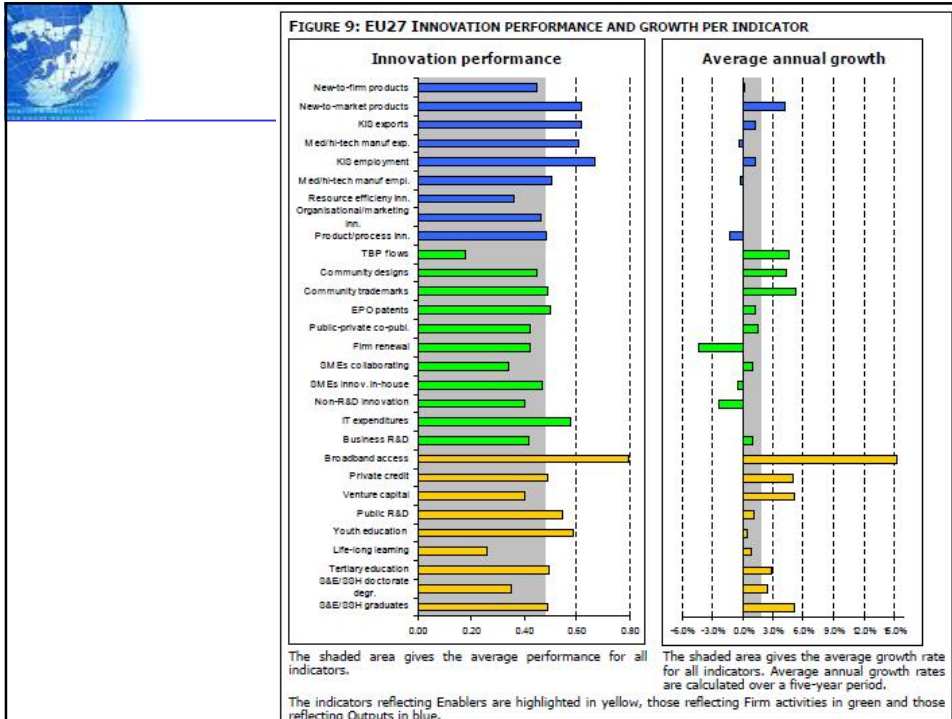
Average annual growth rates as calculated over a five-year period.

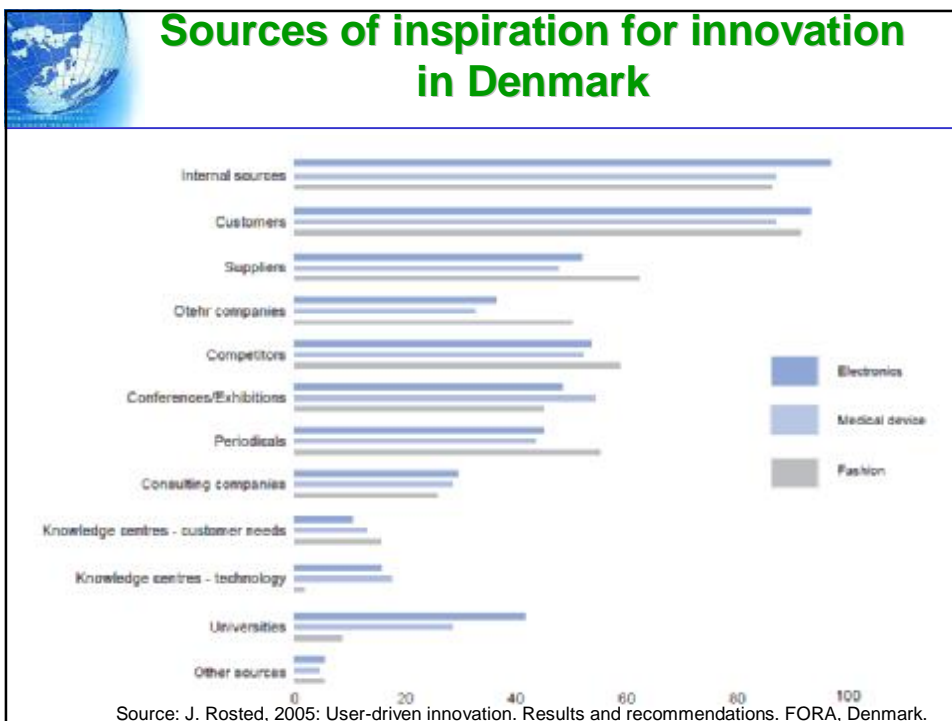
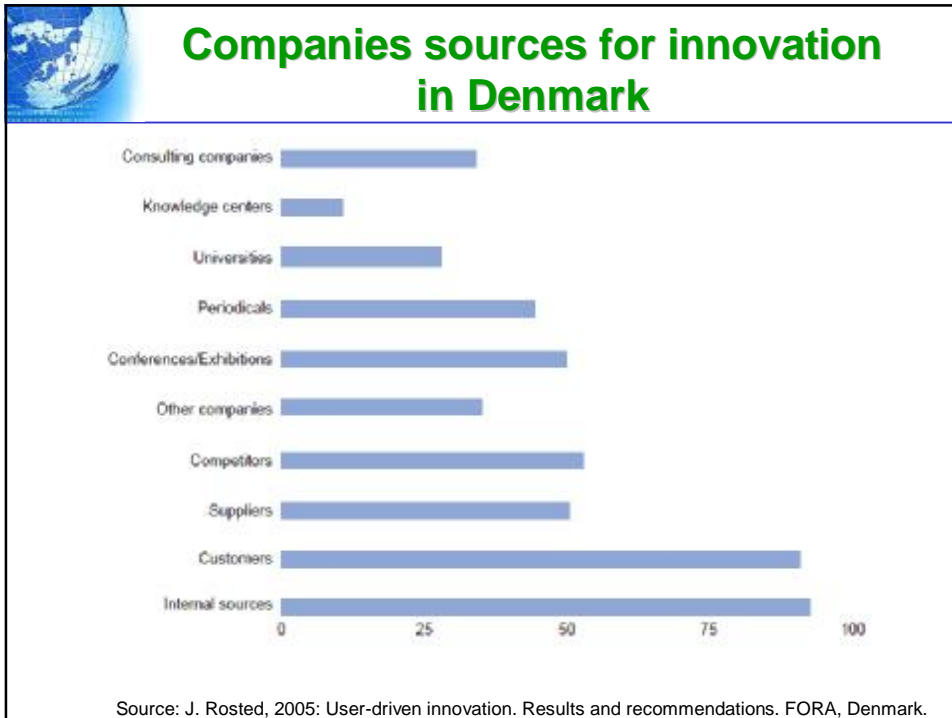


European Innovation Scoreboard 2009

FIGURE 8: EU27 DRIVERS OF GROWTH

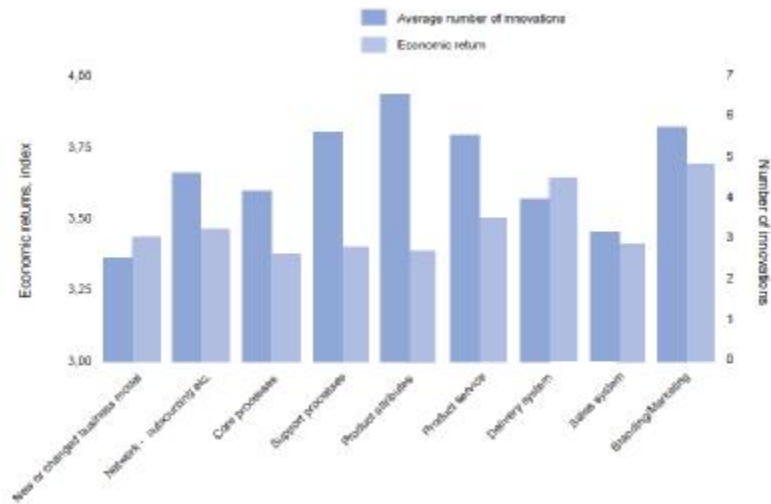








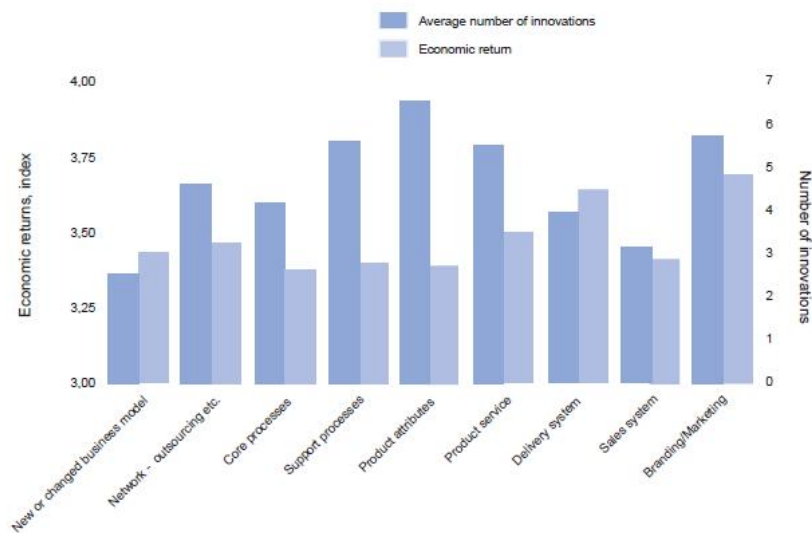
Number of innovations in the Danish fashion industry and their economic impact



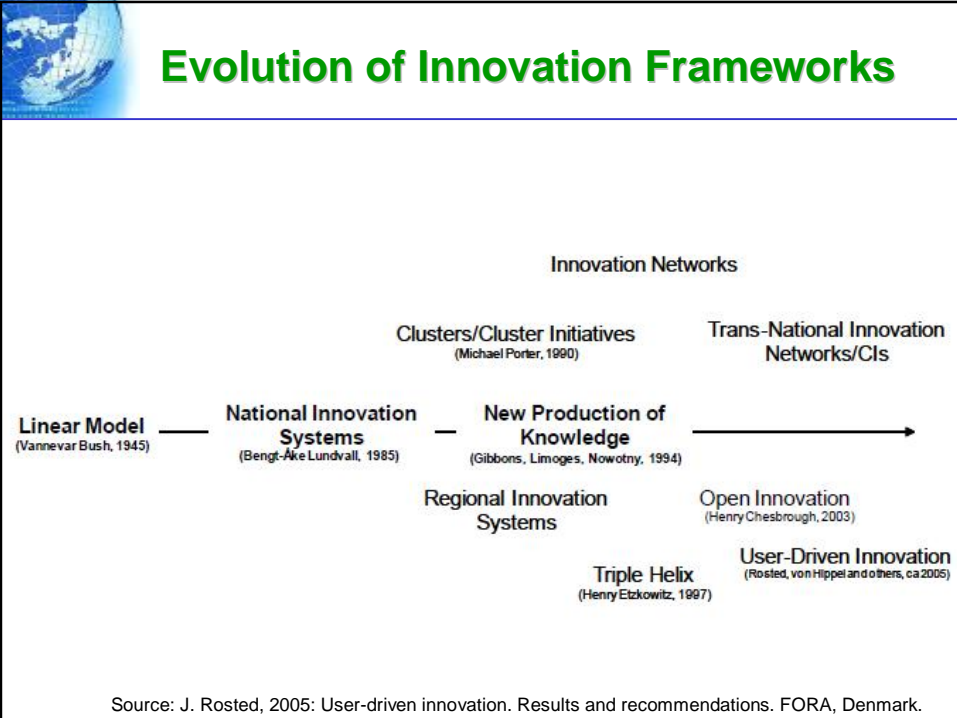
Source: J. Rosted, 2005: User-driven innovation. Results and recommendations. FORA, Denmark.



Number of innovations in the Danish medical device industry and their economic impact



Source: J. Rosted, 2005: User-driven innovation. Results and recommendations. FORA, Denmark.



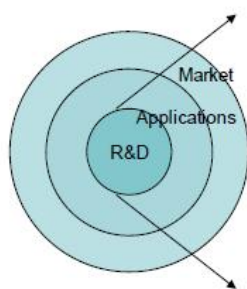


Drivers of innovation

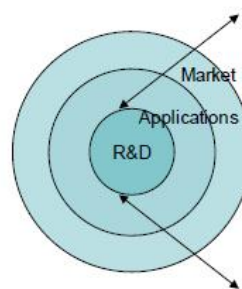
- User
- Brand
- Product
- Market
- Supply / Demand
- Research / Knowledge
- Etc...



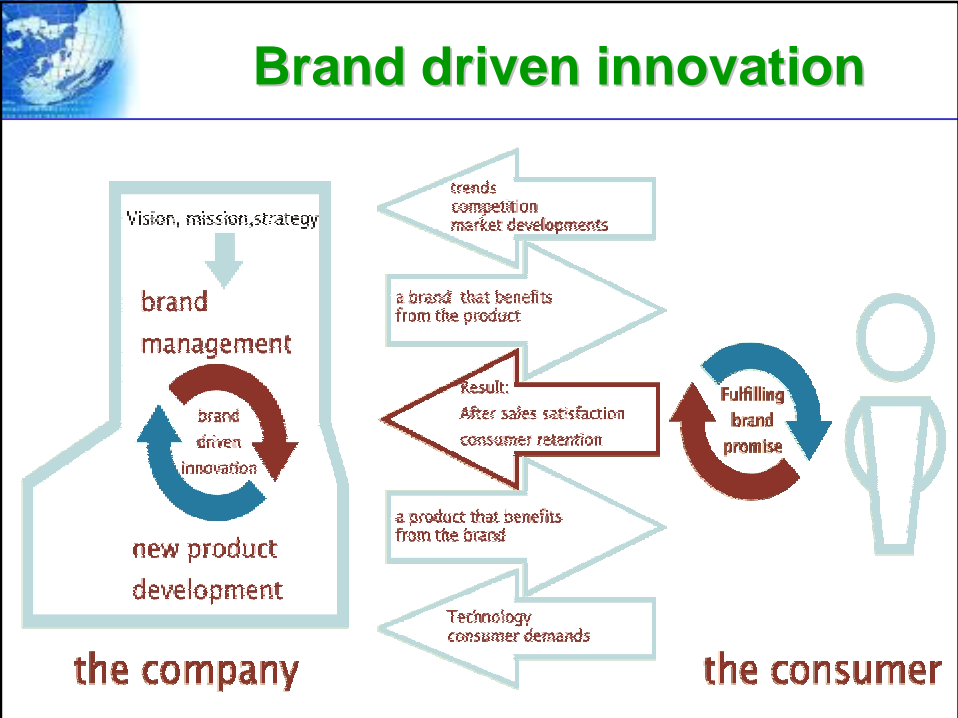
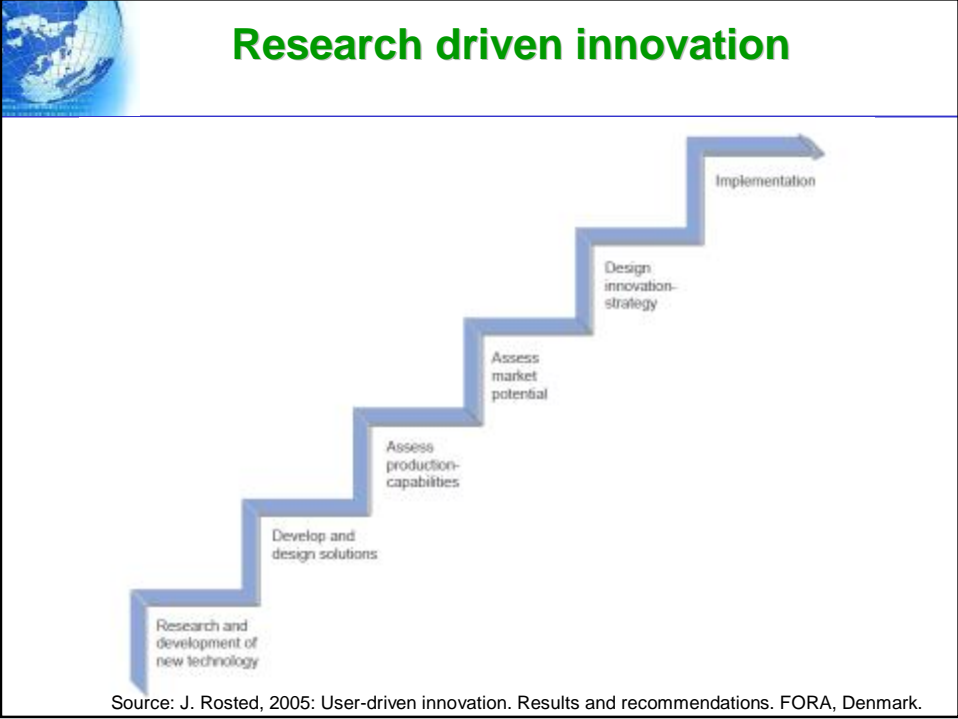
Supply vs. Demand driven innovation

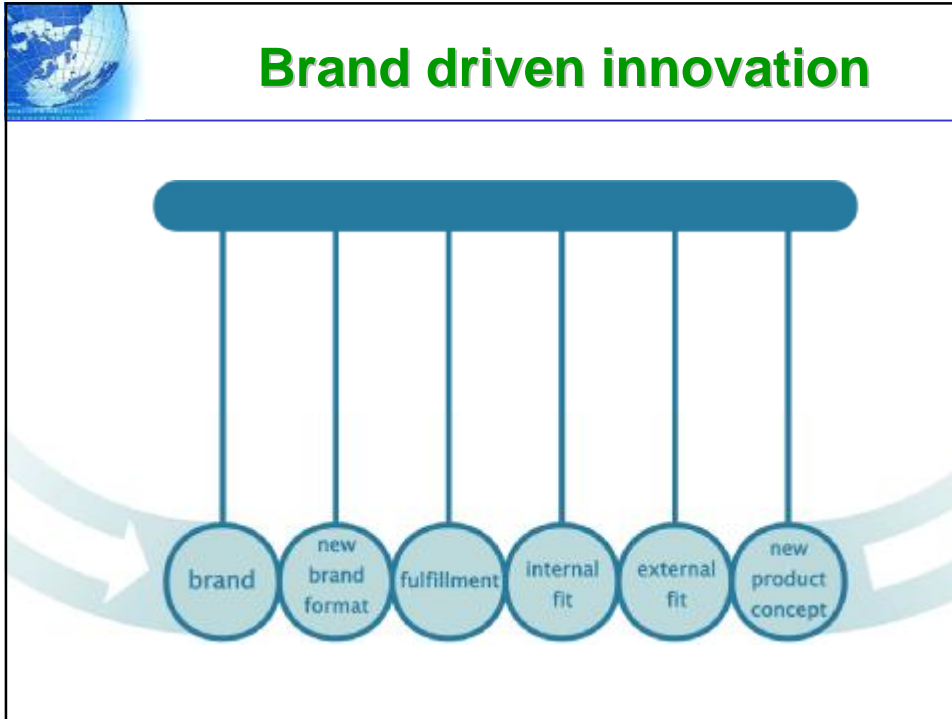


- Supply-driven approach**
- Research/technology-driven (technology push=supply driven)
 - Linear (first R&D, leads to applications, then commercialized/brought to market)



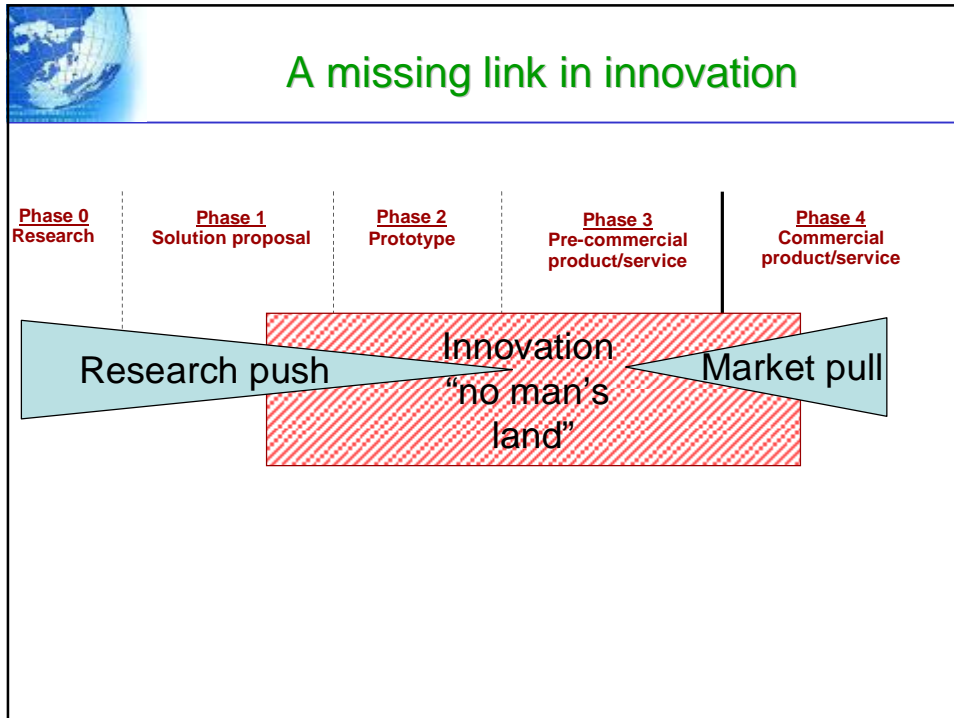
- Demand-driven approach**
- Market-driven (market pull=demand driven)
 - Iterative (market/consumer/user demand incorporated – *together with technology* – into a product/service/concept, then commercialized/brought to market)





Closed vs. Open Innovation Principles

Closed Innovation Principles	Open Innovation Principles
The smart people in our field work for us.	Not all the smart people work for us. We need to work with smart people inside and outside our company.
To profit from R&D, we must discover it, develop it and ship it ourselves.	External R&D can create significant value; internal R&D is needed to claim some portion of that value.
If we discover it ourselves, we will get it to market first.	We don't have to originate the research to profit from it.
The company that gets an innovation to market first will win.	Building a better business model is better than getting to market first.
If we create the most and the best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our innovation process, so that our competitors don't profit from our ideas.	We should profit from others' use of our innovation project, and we should buy others' IP whenever it advances our own business model.



User driven innovation (udi)

UDI is the process of tapping users' knowledge in order to develop new products, services and concepts. A user-driven innovation process is based on an understanding of true user needs and a more systematic involvement of users.

This definition encompasses two key elements: an understanding of true user needs (in order to be able to define unique experiences), and systematic user involvement in the innovation process.



Understanding of true user needs

The innovation process is based on an understanding of true user needs in order to determine new opportunities to create value. Companies today are increasingly using alternative methods to identify new opportunities to create value – areas where users' needs are currently unmet, or where problems are currently unsolved. Because many of these opportunity areas are based on needs that users cannot articulate themselves, traditional market research methods are not adequate. Increasingly, companies initiate the innovation process by using ethnographic methods in order to identify these new opportunity areas.



Systematic involvement of the user

The innovation process is undertaken with a systematic (or planned) involvement of the user. Traditionally, strategic management at companies has focused on sales, costs and profits – leaving the decision on 'what to produce' to internal R&D departments or external entrepreneurs. Today, companies can no longer rely on the random success of these ideas on 'what to produce'. In order to survive, companies must systematically incorporate the vast range of knowledge and experience that exists outside of their organizational boundaries. As part of their innovation strategy, companies plan to involve users in their development processes, tapping into users' tacit knowledge and involving users more directly as part of the development team.



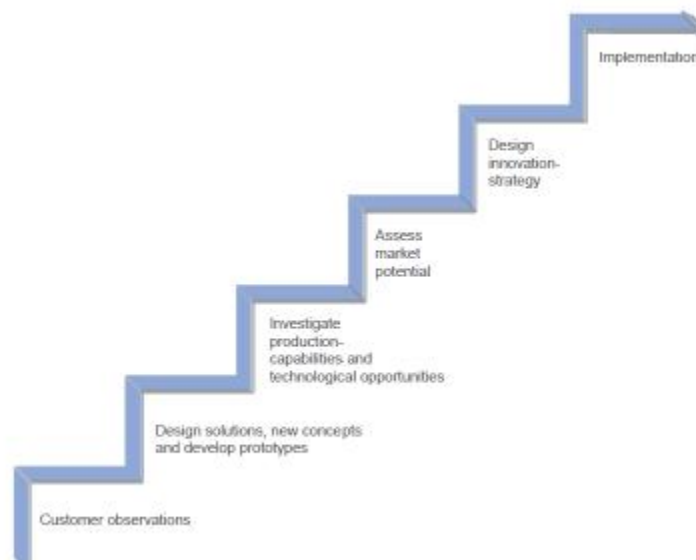
User driven innovation

User-Driven Innovation Context and Cases in the Nordic Region

- User-driven Innovation encompasses both meeting user needs and involving users in the process
- Companies are adopting new approaches to innovation, requiring a different logic and combination of competencies
- The public sector can support these activities through awareness raising, knowledge institutions and platforms for user involvement



UDI proces



Source: J. Rosted, 2005: User-driven innovation. Results and recommendations. FORA, Denmark.



Origin Living Labs

- MIT, Boston, Prof William Mitchell
 - MediaLab and School of Architecture and city planning
 - 'Living Labs as a research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real life contexts.' Applied in Europe in following;
 - 1. Bringing laboratory based technology test-beds into real-life user focused environments for validation. (INFO SOC Research on Application and Research test beds/FIRE, Future Internet Research)
 - 2. Developing MOBILITY SERVICES for citizens in a lead market environment with early adaptors or in premarket demonstrations. Focus in an user centric co-design/co-creation process and Public Private Partnerships. (IST SO e-Government..ref.Intelcities, e-inclusion and e-democracy ,AAL)
 - 3. COLLABORATIVE LivingLab Networks which are becoming global and where regional public players are driving developments and concurrent models for adoption attracting private sector for investments and participation (ENoLL and LL-Europe, Innovative city dialogues,Telecities etc.)
 - 4. NATIONAL and regional networks such as in Finland, Sweden,Netherlands, Slovenia or in Catalonia, Nordic/Baltic, Northern Kalot. In Finland initiative came from Industry/DIMES to create national beta-testing capability, where in 13 innovation locations to validate new mobility services in a real user centric models called LivingLab-Testbeds Open User driven Innovation (LITE-Open) and supported with Tekes technology and innovation program(SHOKS).



**A "Living Lab" is a ...
citizen-business-public partnership
operating in real life/work environment
providing human-centric (user-driven) innovation service**





- ## Innovation, simply like that...
- **THINKING** barrier
- 
- **IMPLEMENTATION** barrier



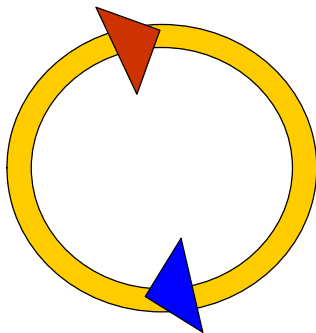
Business innovations

- Innovation involves ideas that create the future.
- But the quest for innovation is doomed unless the **managers** who seek it take time to learn from the past.
- Getting the balance right between **exploiting** (getting the highest returns from current activities) and **exploring** (seeking the new) requires organizational flexibility and a great deal of attention to relationships.



Managers change and...

- INNOVATION becomes **cyclical** each 6-8 years
(US conditions)



Reasons of global innovation speed up:

- 1970 – globalization of information
- 1980 – restructurization process, buyouts
- 1990 – www challenges
- 2000 – global recession



Every few years, innovation resurfaces as a prime focus of growth strategies. And when it does, companies repeat the mistakes they made the last time.

- **Strategy** Mistakes: Thinking Too Tight
- **Process** Mistakes: Controls Too Tight
- **Structure** Mistakes: Connections Too Loose, Separations Too Sharp
- **Skills** Mistakes: Leadership Too Weak, Communication Too Poor



Remedies for innovation mistakes

- **Strategy** remedy: Widen the search, broaden the scope.
- **Process** remedy: Add flexibility to planning and control systems.
- **Structure** remedy: Facilitate close connections between innovators and mainstream businesses.
- **Skills** remedy: Select for leadership and interpersonal skills, and surround innovators with a supportive culture of collaboration.



At an individual level – innovation declines with age!

A study of 1600 children found the following:

- at age 4-5 – **98% demonstrated innovativeness**
- at age 10 – **30% demonstrated innovativeness**
- at age 15 – **12% demonstrated innovativeness**

A similar survey of 7000 adults tested found that
at **age 31 only 2%** demonstrated innovativeness!

Source: US Office of Economic Opportunity, 2006



Capabilities of innovation

1. **Individual capability**
2. **Developmental capability**
3. **Implementation capability**
4. **Learning capability**
5. **Connectedness capability**
6. **Climate capability**
7. **Experimental capability**



Source: Hamel, Gary - Reinvent Your Company. *Fortune*, Monday, June 12, 2000



Class competition

... and the most **crazy** innovation is...

