

# Course: Economics of Innovation

A decorative graphic consisting of a large orange circle at the top center, a smaller orange circle at the bottom right, and two teal lines connecting them diagonally.

Topic: Nature of innovation

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# ***CHARACTERISTICS OF SUCCESSFUL INNOVATING COMPANIES - 1***

- Systematic collection of all impulses that could lead to innovation
- Creativity of employees
- Ability to evaluate the possibility of the innovation idea
- Good team work
- Project-based approach and ability to manage projects

# ***CHARACTERISTICS OF SUCCESSFUL INNOVATING COMPANIES - 2***

- Cooperation with external experts (universities, research laboratories...)
- Proper rate of risk-taking
- Employees' motivation (the employees are willing to improve the product and the operation of the whole company)
- Continued education of employees
- Ability to finance the innovation activities

# Definition of innovation - 1

- “Technological innovations are defined as new products and processes and major technological modifications to products and processes. An innovation is considered performed if it is introduced to the market (**product innovation**) or implemented in the production process (**process innovation**). Innovation includes many research, technological, organizational, financial and commercial activities.

# Definition of innovation - 2

- R&D represents only one of these activities and can take place during various stages of the innovation process. It can play not only the role of the original source of the innovation ideas but also the role of problem solution framework, which can be turned to at any stage of the implementation.,,

OECD, Frascati Manual 1992

# Oslo Manual

- **Product innovation**

- A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.

- **Process innovation**

- A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

- **Marketing innovation**

- A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

- **Organisational innovation**

- A new organisational method in business practices, workplace organisation or external relations.

- Technological innovations – based on specific technology, invention, discovery,
- Social innovations – in critical historic periods more important than technological ones (mail, educational system, social system, health care, ...)

# DEGREE OF NOVELTY

- **Incremental innovations**
- **Radical innovations**
- **Systemic innovations**

# Classification of innovations

SYSTEM	New series of cars, planes, computers, TV	New generation (MP3 and download as substitution of CD)	Steam engine, ICT, biotechnology, nanotechnology
COMPONENT	Improvement of components	New components for existing systems	Advanced materials improving component properties
	INCREMENTAL		RADICAL
	„do better what we already do“	„new for the company“	„new for the world“

# INNOVATION PROCESS

- **Research and development (R&D)**
- **Production**
- **Marketing**

Innovation is an opportunity for something new, different. It is always based on change.

Innovators do not view any change as a threat but as an opportunity

# FOCUS

- Use the limited resources in the most effective manner; focus on one of the following:
  - **Operational output**
  - **Top-quality products**
  - **Perfect knowledge of customers**

# RECOMMENDATIONS

- Solve the correct problem correctly – be effective and efficient
- Manage innovation as a project
- Analyze risks
- Use models, scenarios, computer simulation
- Study examples of successful and unsuccessful innovation projects

# WHAT TO DO

1. Start with analysis and study of opportunities.
2. Go among people, ask questions, listen
3. Effective innovations are surprisingly simple. They must be focused on specific needs and on specific final products.
4. Effective innovation start on a small scale.
5. A successful innovation always tries to win a leading position, otherwise you create opportunities for your competitors.

# WHAT TO AVOID

1. Don't try to be too "clever". All that is too sophisticated will almost certainly go wrong.
2. Don't try to do too many things at once. Focus on the core of the problem.
3. Don't try to make innovations for the future but for today. An innovation can have a long-term impact but there must be an immediate need for it.

# Three conditions for innovations

1. Innovation means work, hard, concentrated and thorough work. If these qualities are lacking then there is no use for the big talent, cleverness or knowledge.
2. Successful innovations must build on your strong points. The innovation must be important to the innovator.
3. Innovation must focus on a market, must be controlled by the market (market-pull).

# **CASE STUDIES**

- **Hospital products**
- Hospital beds, intensive care beds, medical furniture and other equipment increase the comfort of patients and help the nurses.
- **Nursing-care products**
- *Nursing beds, bed accessories, bedside cabinets, mattresses and other furniture.*

# No comment ...

1990



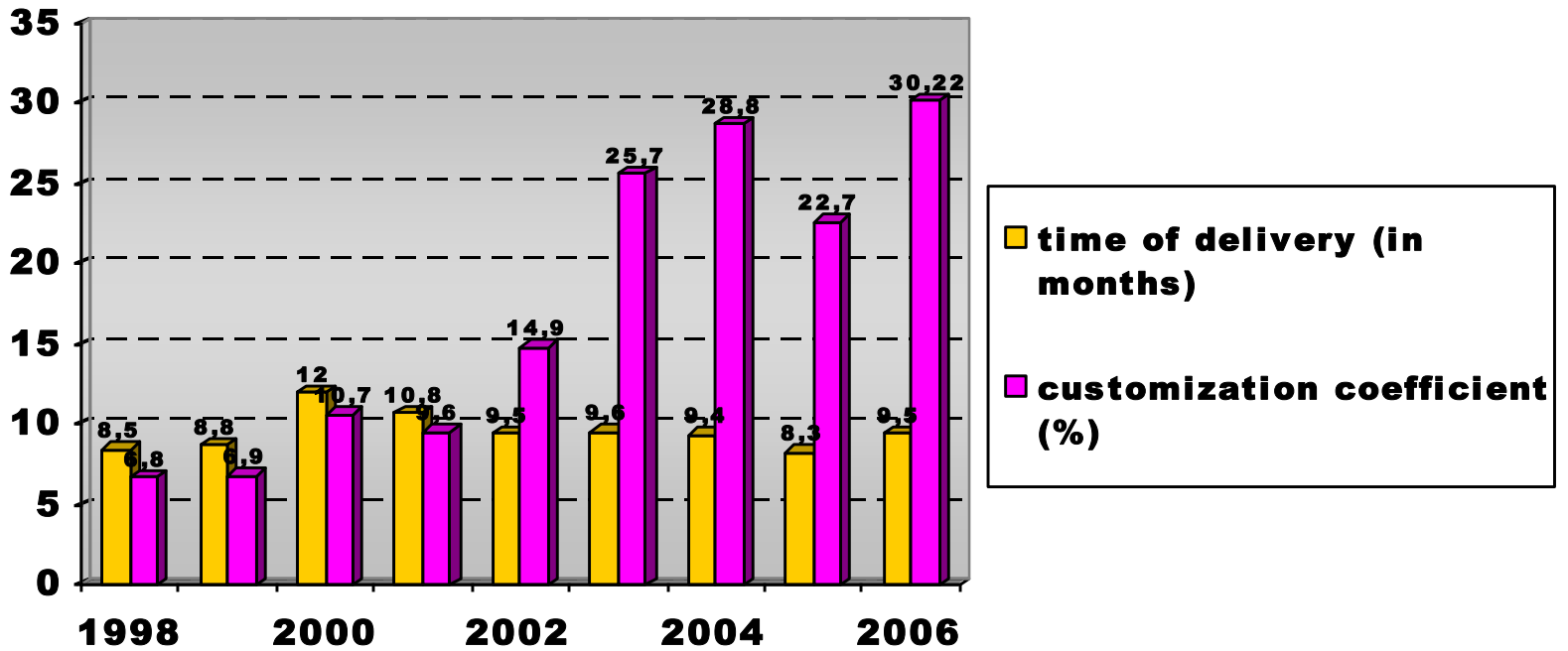
2005



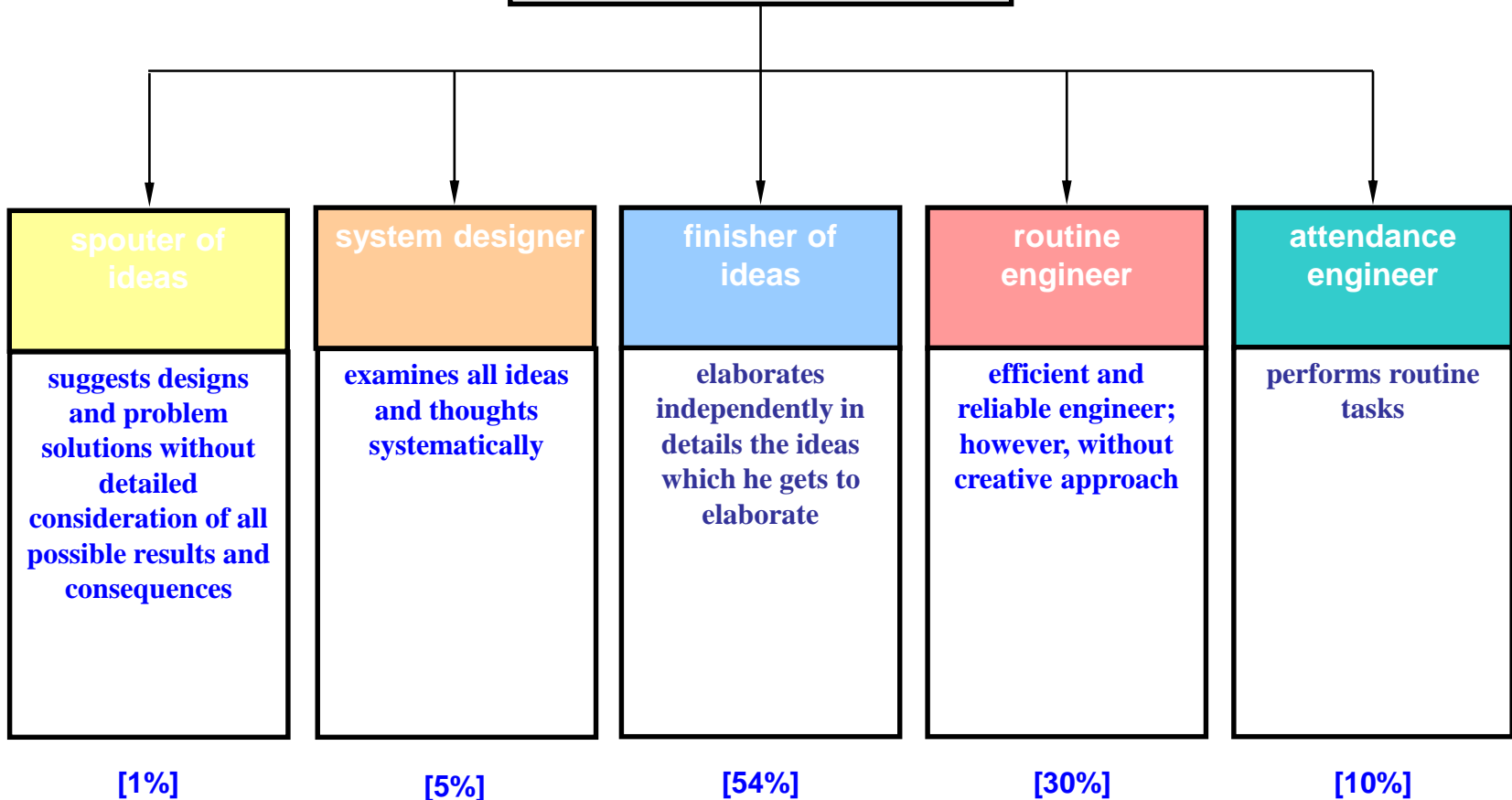
# TOSHULIN

## **Development of new machines:**

- 1. Customized – the machines developed for the specific customer according to its requirements – market pull**
- 2. Prototypes – there is no specific customer – market push**



## Types of design engineers



# **Contipro**

**Con**nective

**t**issue

**pro**ducts

**RNDr. Vladimír Velebný, CSc.**

# Holding – current state

- 167 employees
  - sales (2008) – 242 mil Kč
  - export – 98% of total sales
- one of the biggest producers of hyaluronanu inthe world

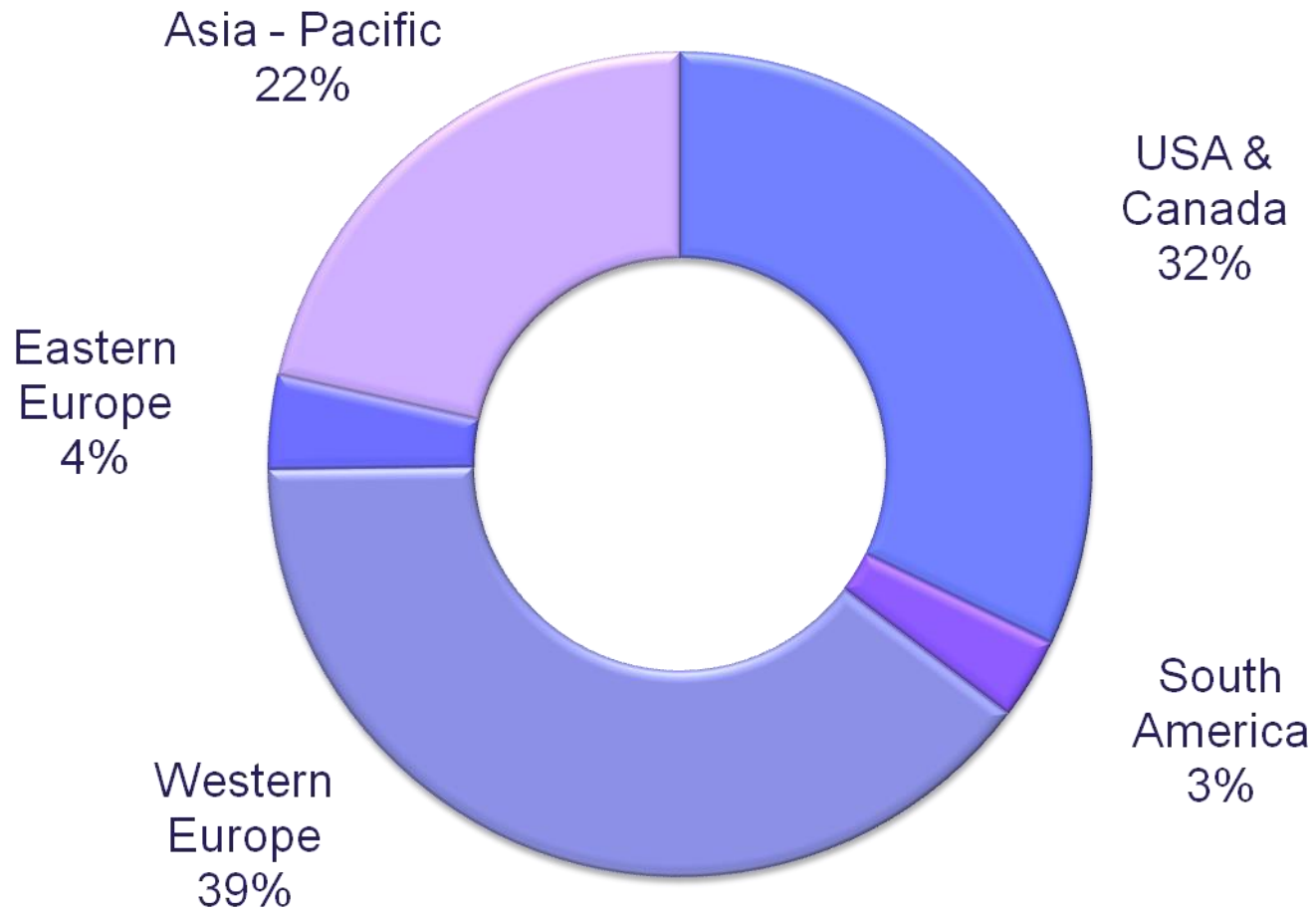
◎ 30% of the world market

◎ 60% of the European market

- Customers in 43 countries



# Sales in regions



## **3 pillars of success**

- 1. Maximum attainable quality**
- 2. Sharing expenses with customers**
- 3. Development of original products**

# 3M and post-it notes



# More about 3M

*A Century of Innovation The 3M Story*

[http://solutions.3m.com/wps/portal/3M/en\\_US/About/3M/](http://solutions.3m.com/wps/portal/3M/en_US/About/3M/)

# iGO – distribution of batteries

- Batteries and accessories for notebooks, mobiles, cameras and other equipment
- Vision: to develop and sell simple and elegant solutions, facilitate the use of electronic devices
- online catalogue, e-commerce, CRM
- Customer - targeted marketing, flexibility
- Growth of sales by 80% in the first year, by 100% in the following year

[http://corporate.igo.com/about\\_us.aspx](http://corporate.igo.com/about_us.aspx)

# Adaptors



- Patented technology [iGo Technology](#), powering of mobile electronic devices using single (universal) adaptor;
- [Power Technology Patent Brochure](#) (PDF)

# Bang & Olufsen

- [www.bang-olufsen.com](http://www.bang-olufsen.com)
- **VISION:** „**Courage to constantly question the ordinary in search of surprising, long-lasting experiences.**“
- Founded in 1925 in Struer, Denmark, Bang & Olufsen a/s is world renowned for its distinctive range of quality audio, video and multimedia products that represent our vision: Courage to constantly question the ordinary in search of surprising, long-lasting experiences. Bang & Olufsen employs over 2.550 staff members and had a turnover of DKK 4.092 million (EUR 548,6 million) in the 2007/2008 financial year.
- Bang & Olufsen manufactures a highly distinctive and exclusive range of televisions, music systems, loudspeakers, telephones, and multimedia products that combine technological excellence with emotional appeal. Bang & Olufsen products are sold by over 1.200 dealers in more than 100 countries in an extensive network of retail stores. Approximately 65% of these stores are B1-stores, which exclusively sell Bang & Olufsen products. The B1 stores account for 81% of the total turnover.
- **Production also in the Czech Republic**

# Bang & Olufsen – products



# More case studies

- IBM Case Studies:

<http://www.ibm.com/search/?en=utf&v=14&lang=en&cc=us&lv=c&q=case+study+innovation&x=13&y=5>

- Industry podcasts: Midsized clients and experts in seven industries share their insights -

<http://www->

[1.ibm.com/businesscenter/smb/us/en/mbpodcasts?&ca=smbIndustryPodcasts101706&tactic=&me=W&met=inli&re=smbibmcomTopPagesIndustriesPromo1usen101706](http://www-1.ibm.com/businesscenter/smb/us/en/mbpodcasts?&ca=smbIndustryPodcasts101706&tactic=&me=W&met=inli&re=smbibmcomTopPagesIndustriesPromo1usen101706)

# Reference and source

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