

Business Management in the Czech Republic

INNOVATION

MICHAŁ JIRÁSEK
(EVA ŠVANDOVÁ)

ROADMAP OF THE LECTURE

1. Importance of innovations
2. Innovative thinking
3. Fundamentals of innovation theory
4. Typologies of innovations
5. Creation of the innovations (sources, innovation cycle)
6. Protection of innovations
7. Innovations in the EU
8. Innovations in the Czech Republic
9. Back to theory
10. Bonus: The most innovative companies

IMPORTANCE OF INNOVATIONS

Why are innovations important?





Introducing iPhone

iPhone combines three products — a revolutionary mobile phone, a widescreen iPod with touch controls, and a breakthrough Internet communications device with desktop-class email, web browsing, maps, and searching — into one small and lightweight handheld device. iPhone also introduces an entirely new user interface based on a large multi-touch display and pioneering new software, letting you control everything with just your fingers. So it ushers in an era of software power and sophistication never before seen in a mobile device, completely redefining what you can do on a mobile phone.

-  Widescreen iPod ↻
-  Revolutionary Phone ↻
-  Breakthrough Internet Device ↻
-  High Technology ↻

In a galaxy long time ago...



JUST ONE OF THE SUCCESS FACTORS?

Success Factor

	Financial	Non-Financial
Tangible	<ul style="list-style-type: none"> • Economic growth • Liquidity • Product t/service costs • profitability 	<ul style="list-style-type: none"> • Delivery time • Quality of product • Production volume • Productivity • Stock turn time • Service volume
Intangible	<ul style="list-style-type: none"> • Brand value • Goodwill • Value of immaterial properties 	<ul style="list-style-type: none"> • Competencies • Customs satisfaction • Customer retention • Innovation • Motivation • Personnel satisfaction

ASK IN KODAK...

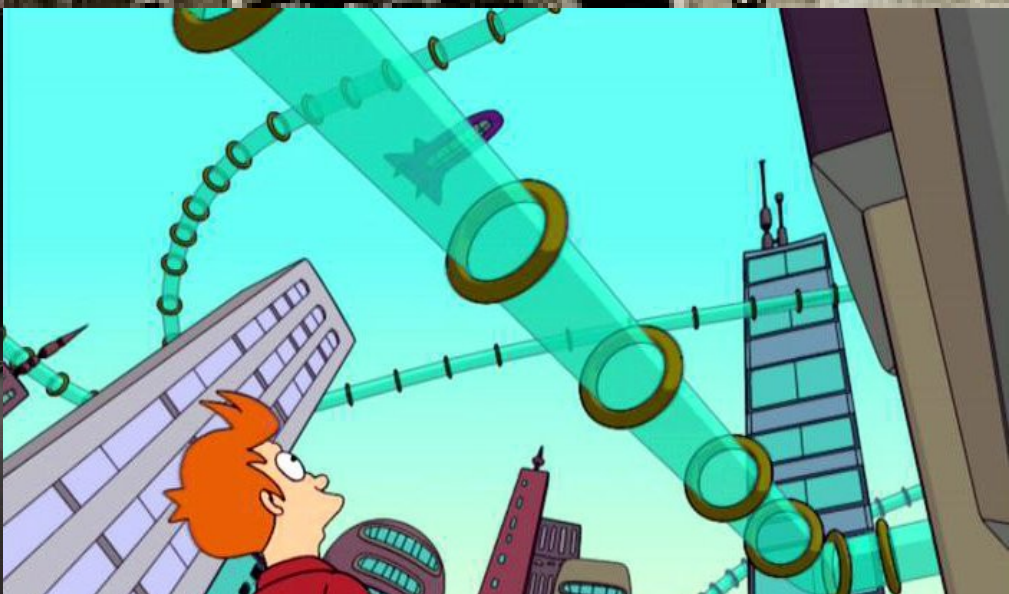


INSIDE THE BOX

“If I had asked people what they wanted, they would have said faster horses.”

- Henry Ford

IT IS A VALUE THAT MATTERS



WHAT A CUSTOMER WANTS?





TO THE THEORY

WHAT IS INNOVATION

Schumpeterian innovation

- innovation vs. imitation



New combination of existing production factors
(Schumpeter)

Innovation according OECD (Oslo Manual):

- Product innovation
- Process innovation
- Organizational innovation
- Marketing innovation

WHAT IS INNOVATION

Innovation is

the renewal and enlargement of the range of products and services and the associated markets;

the establishment of new methods of production, supply and distribution;

the introduction of changes in management, work organization, and the working conditions and skills of the workforce. (European Commission definition)

WHAT IS INNOVATION

Nice definition:

Every change with a positive impact on a firm (Jirásek)

TYPES OF INNOVATION

Object of innovation (Oslo manual):

- Product innovation
- Process innovation
- Marketing innovation
- Organizational innovation

Radicality of innovation

- Radical innovation
- Incremental innovation

Christensen innovation – according impact on existing market

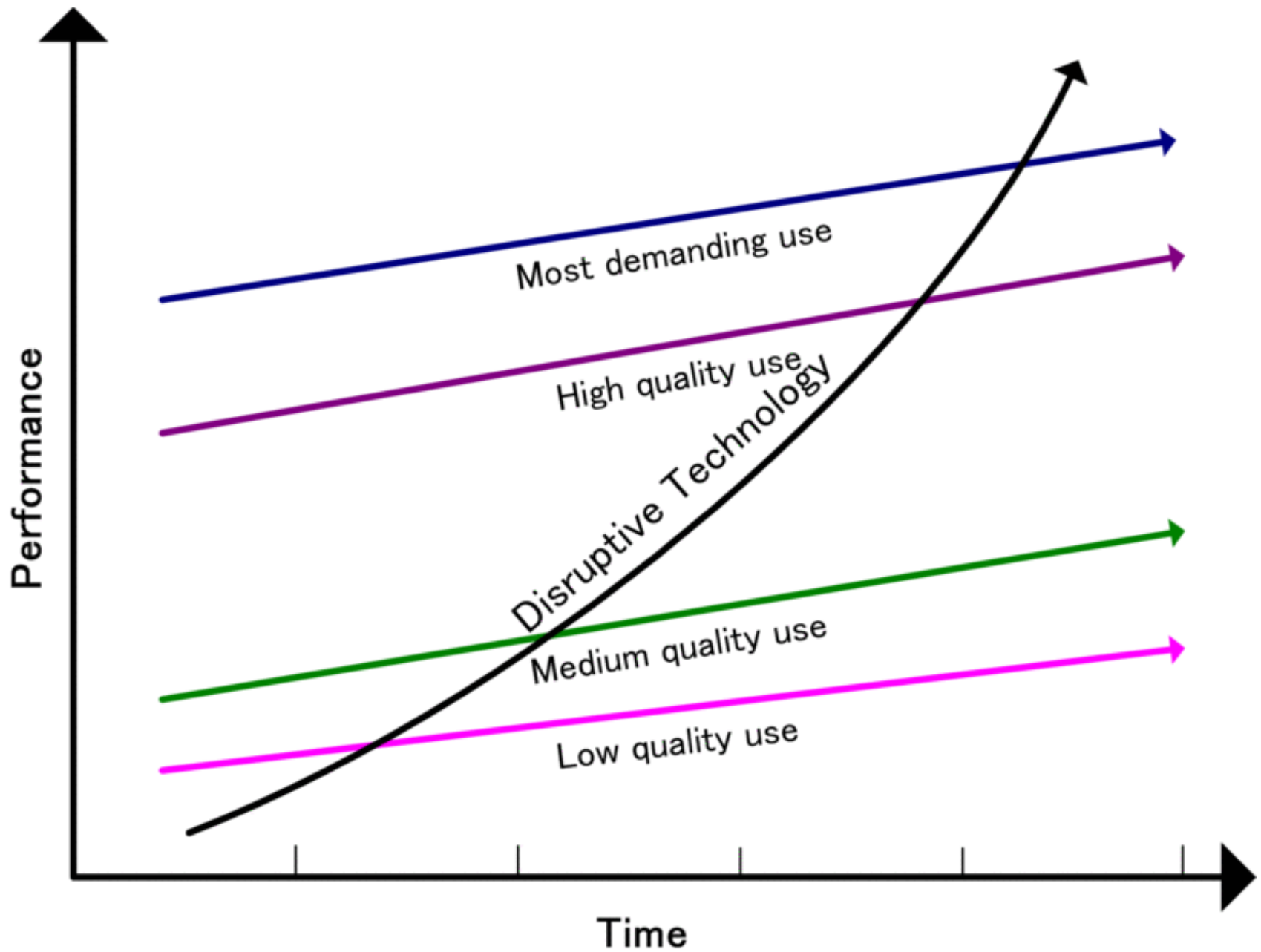
- Disruptive
- Sustaining

Chesbrough:

- Open
- Closed

INNOVATION LEVELS ACCORDING VALENTA

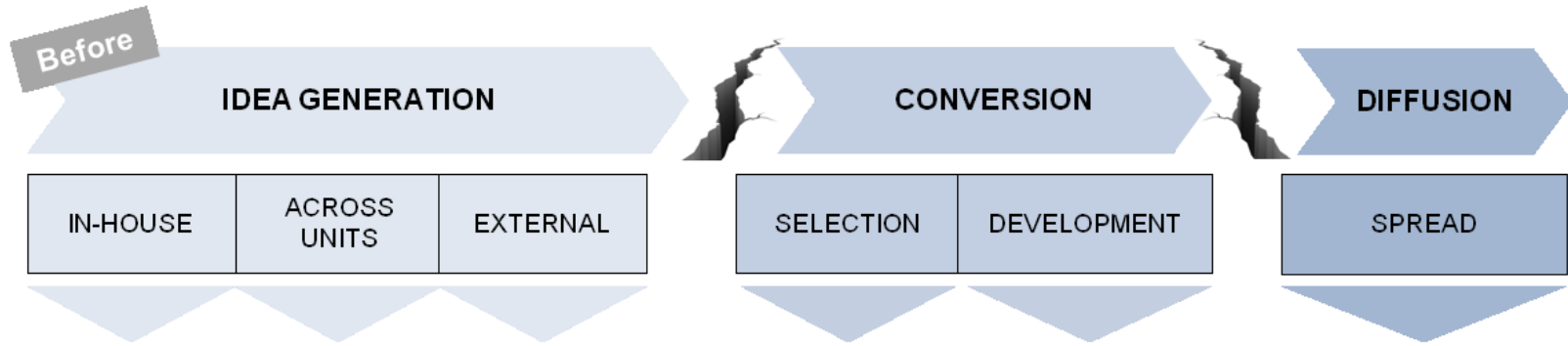
	Level	What changes	Example
- N	Degeneration	Decrease of features	Depreciation
0	Regeneration	Recovery of features	Servicing, repairs
1	Quantity	Quantity of factors	Additional manpower
2	Intensity	Speed of operations	Faster in one factor
3	Reorganization	Distribution of operations	Swap of operations
4	Adaptation	Ties to other factors	Design
5	Variant	Partial quality	Faster machine
6	Generation	Design resolution	Machine with electronics
7	Kind	Design conception	Nuclear power plant
8	Family	Technology principle	Non-woven textiles
9	Tribe	Approach to nature	Gene manipulation



MODEL OF INNOVATION PROCESS



FIGURE 1.7: Simplified model of the innovation process

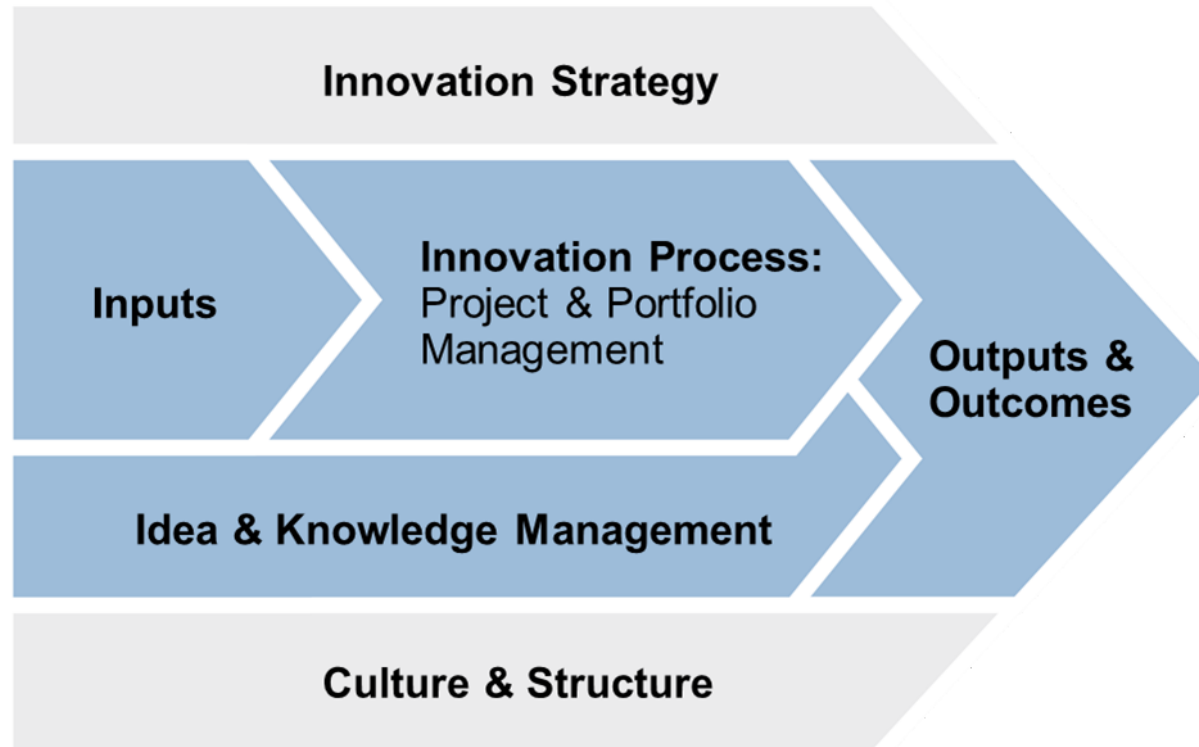


KEY ISSUES	Do we create good ideas on our own?	Do we create good ideas by working across the company?	Do we source enough good ideas externally?	Are we good at screening and funding new ideas?	Are we good at turning ideas into viable products, businesses, and best practices?	Are we good at diffusing developed ideas across the company and taking to market?
	KPIs	# of high-quality ideas generated within a unit	# of high-quality ideas generated across units.	# of high-quality ideas generated from outside the firm	% of funded ideas that lead to revenues; # of months to first sale	% of funded ideas that lead to revenues; # of months to first sale



Identification and closure of gaps

KEY ACTIVITIES AND SUCCESS FACTORS OF THE INNOVATION



SOURCES OF INNOVATION

Internal

- Own research and development
- Technical departments – projection, technology, construction
- Production
- Marketing and selling
- Logistics (purchasing and supply)
- Servicing
- Owners

External

- Customers
- Suppliers
- Competition
- Consultants
- Universities and other research institution
- Expert publication
- Internet
- Exhibitions
- Investors
-

BARRIERS OF INNOVATION

- Motivational
- Communication
- Economical
- Technological
- Personal
- Organizational
- Ecological

INTELECTUAL PROPERTY RIGHTS

Patents

Utility models

Trademarks

Industrial designs

Geographical indications and appellations of origins





EUROPEAN UNION

INNOVATION AND EUROPEAN UNION

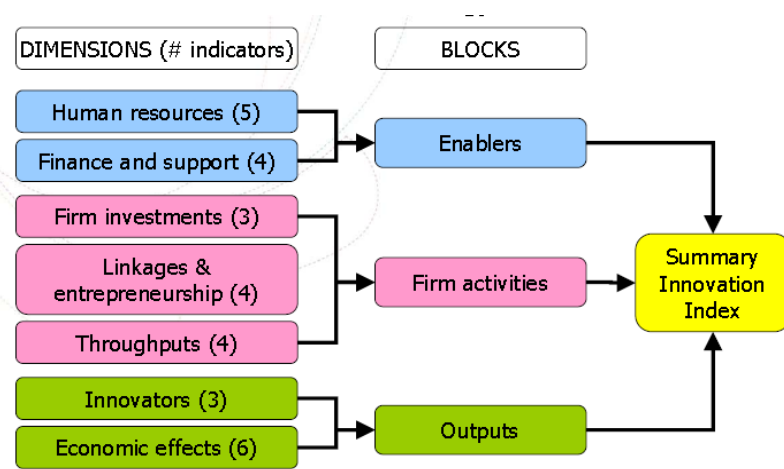
Innovation and EU

- Lisbon strategy
 - Adopted in Lisbon
 - Goals translated into the Framework Programmes for Research and Technological development
 - November 2009 – Wim Kok revised
- EUROPE 2020

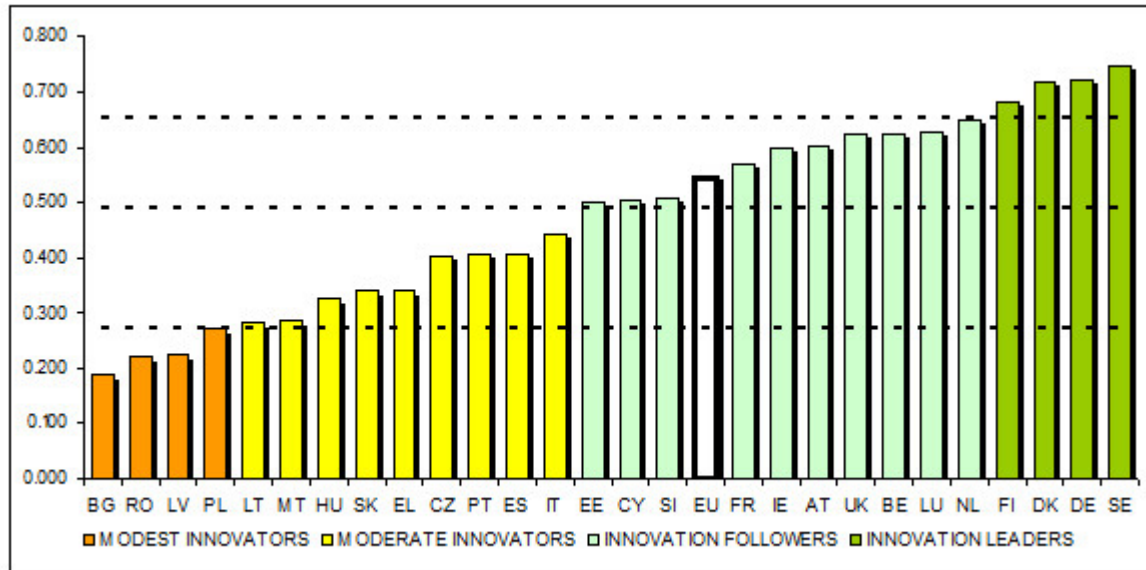


Trendchart

- EIS
- Innobarometr
- CIS



EU MEMBER STATES' INNOVATION PERFORMANCE, 2013



Source: Eurostat



CZECH REPUBLIC

CZECH NATIONAL INNOVATION SYSTEM

National Policy of Research, Development and Innovation in the Czech Republic for 2009–2015 approved by the governmental resolution no. 729

No legally defined institution responsible for innovation that prepares and implements innovation policy.

MIT, MRD, ME

Innovation governance system:

Governmental bodies: The Ministry of Education, Youth and Sports (MEYS), The Research and Development Council (R&D Council), The Ministry of Industry and Trade (MIT), National Economic Council (NEC), Technology Agency of the Czech Republic.

Bodies responsible for implementation of policies: CzechInvest , Czech-Moravian Guarantee and Development Bank, Czech Science Foundation , The Technology Centre of the Academy of Sciences of the Czech Republic , The Association of Innovation Entrepreneurship of the Czech Republic , The Czech Chamber of Commerce

INSTITUTIONS

Development:

- Excellence centres, Business incubators, Research and science parks, universities
- Industrial Property Office
- Grant agency (primary research)
- Ministries (applied research) – especially MIT, MEYS

Realization:

- Czech Trade
- Czech Export Bank
- Export Guarantee and Insurance corporation
- Czech Confederation of Commerce and Tourism

Companies with innovative activities in the Czech Republic in 2010–2012					
Indicator	Companies with innovative activities		Indicator	Companies with innovative activities	
	Number	%		Number	%
Czech Republic	9 765	43.9%			
Ownership			Size		
Local	7 122	41.0%	Dsmall /10-49 emp./	6 466	38.2%
International	2 643	54.1%	Medium /50-249 emp./	2 402	57.6%
Sector			Large /250+ emp./	897	78.7%
Mining and drilling	27	23.2%	Regions (NUTS 2)		
Manufacturing	5 516	48.3%	Prague	2 269	45.1%
Utilities (power, water,...)	97	35.5%	Central Bohemia	892	42.6%
Water and waste	182	34.0%	South-west	992	43.1%
Wholesale, excl. Automotive	1 970	42.3%	North-west	621	38.7%
Logistics	426	19.2%	North-east	1 296	43.3%
ICT	788	64.8%	South-east	1 613	44.4%
Banking and insurance	188	55.9%	Central Moravia	1 222	47.4%
Engineering, R&D	571	38.0%	Moravia-Silesia	860	43.6%

BARIERS FOR INNOVATIONS IN THE CZECH REPUBLIC

2010-2012:

1. Lack of financial resources in a company (56 %)
2. Too high costs of innovations (52 %)
3. Uncertain demand for innovated products/services (43 %)
4. Lack of qualified personnel (34 %)
5. Innovations not required (33 %)
6. Market controlled by established companies (32 %)
7. Lack of financial resources outside a company (24 %)
8. Not necessary to innovate due to previous innovations (20 %)
9. Difficulties to find a partner for cooperation (18 %)
10. Lack of information about a market (14 %)
11. Lack of information about a technology (8 %)

EXPENDITURES ON INNOVATIONS IN THE CZECH REPUBLIC

2012:

1. Purchase of machines, tools, software (48 %)
2. Research & Development (26 %)
3. Purchase of R&D services (18 %)
4. Other expenses...

INNOVATION ENVIRONMENT IN THE CZECH REPUBLIC

Weaknesses

- Low number of students studying technical studies and science
- Lower support of innovation by national institutions
- Low number of innovative companies
- low support of spin-off firms
- Low emphasis on patents
- Bad experience with realization of research results in practice
- Low volume of risky capital
- Absence of the innovation law
- Insufficient innovation infrastructure

INNOVATION ENVIRONMENT IN THE CZECH REPUBLIC

Strengths

- Tradition of industrial production and traditional innovative potential of workers
- Growing interest of Universities to cooperate with industrial companies
- Development of science and technology parks
- Programmes supported by government
- Interest of the public in innovation issue

SUM IT UP AND MOVE
FURTHER

WHY ARE INNOVATIONS IMPORTANT (ACADEMIC RESEARCHES) AND FACTORS INFLUENCING THEM?

Increase in customer value, starting the growth

Relationship between country employment and radicalism of the innovation

Traditional companies which have survived, are those employing qualified personnel, being less bureaucratic, investing more in flexible production

Decentralized companies within uncertain environment were more innovative than centralized one (Russel, 1990)

Innovative industrial companies = higher level of formalization x
innovative service companies = lower level of formalization
(Damanpour 2007)

Successful innovation is normally a source of temporary market power, eroding the profits and position of old firms, yet ultimately succumbing to the pressure of new inventions commercialised by competing entrants.

TOOLS TO INFLUENCE INNOVATIONS

Systematic innovation management

- Corporate strategy
- Collection of innovative incentives
- Stipulate the priorities of innovation topics
- Seeking for innovation ideas and creation of innovation specification
- Discussion on the specification
- Feasibility study
- Decision
- Processing of the project
- Realization of innovation
- Innovation work evaluation

Investment into the R&D?

- higher R&D spending does not guarantee "more creativity, higher profit or a greater market share"

Cooperation

BONUS: THE MOST INNOVATIVE COMPANIES

THE MOST INNOVATIVE COMPANIES

Which companies do you consider most innovative?

2006

1. Apple Computer
2. Google
3. 3M
4. Toyota Motor
5. Microsoft
6. General Electric
7. Procter & Gamble
8. Nokia
9. Starbucks Coffee
10. IBM

2005

1. Apple Computer
2. 3M
3. General Electric (tie)
3. Microsoft (tie)
5. Sony
6. Dell
7. IBM
8. Google
9. Nokia (tie)
9. Procter & Gamble (tie)

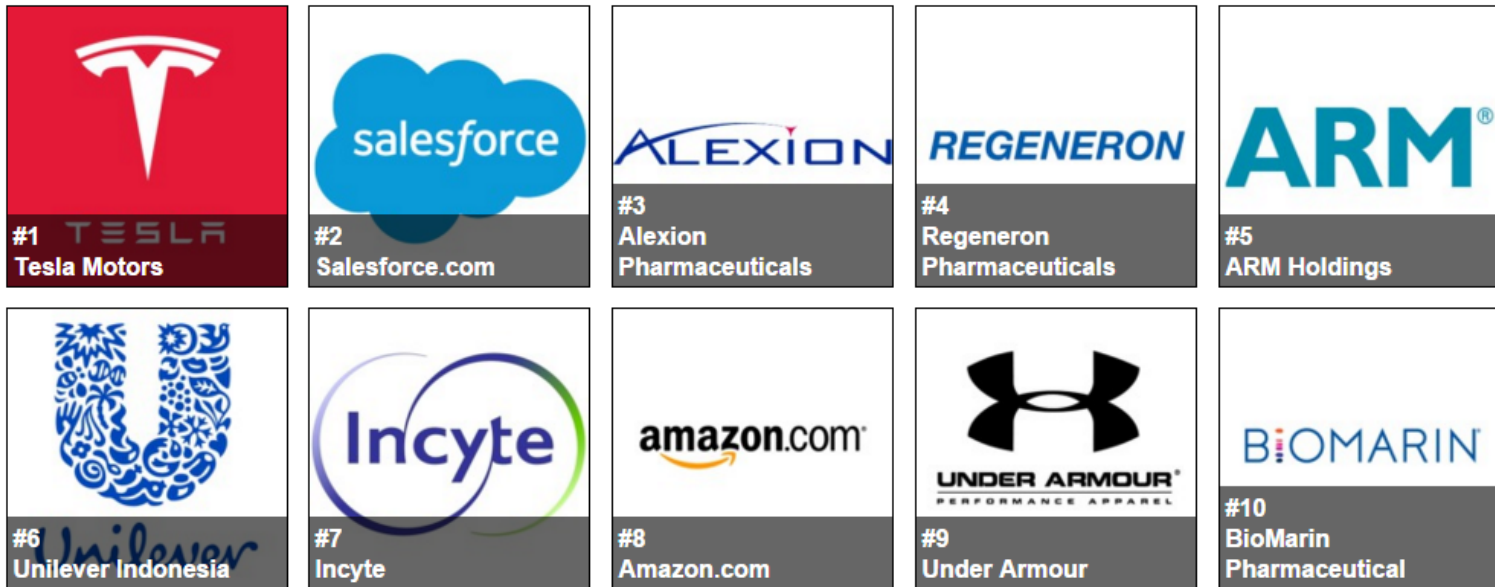
THE MOST INNOVATIVE COMPANIES 2008



THE MOST INNOVATIVE COMPANIES 2015

What do you think?

ACCORDING TO FORBES...

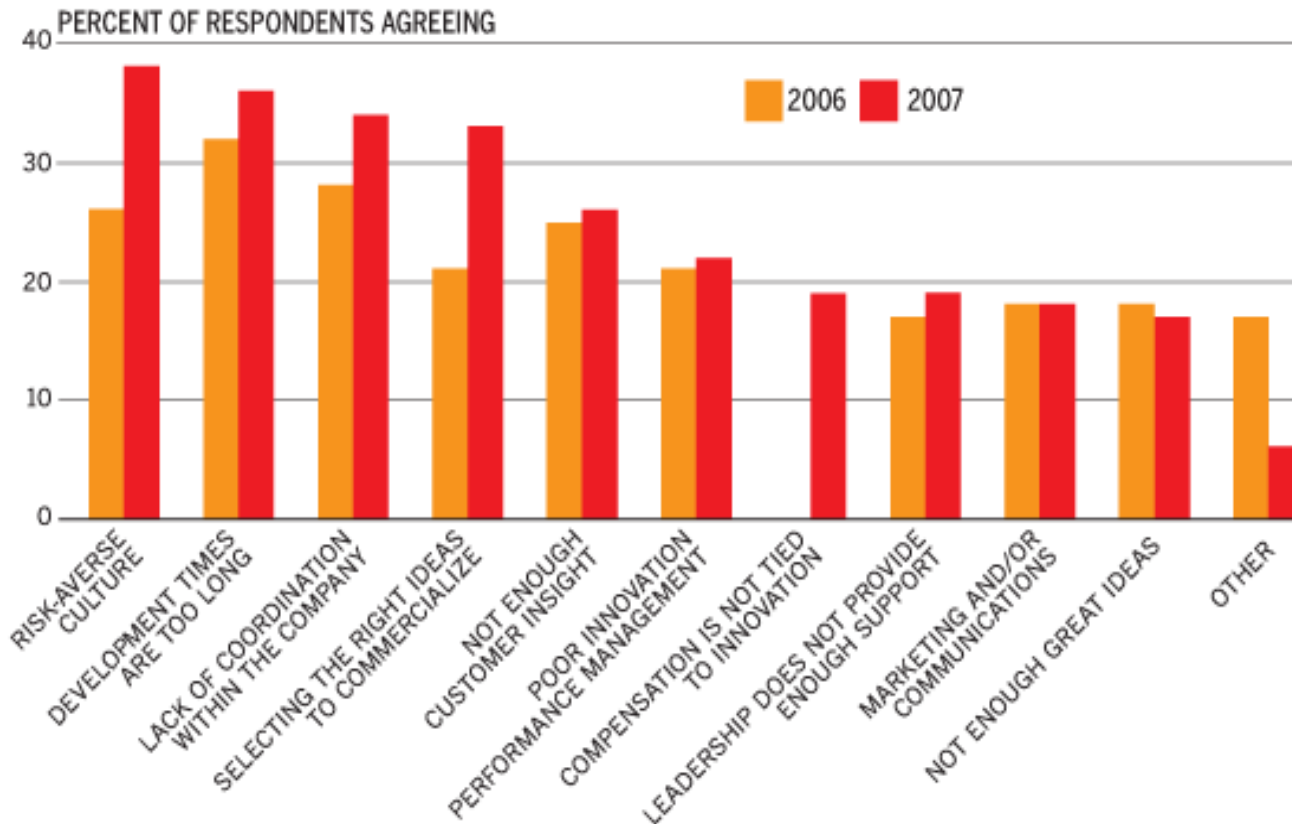


More on: <http://www.forbes.com/innovative-companies/>

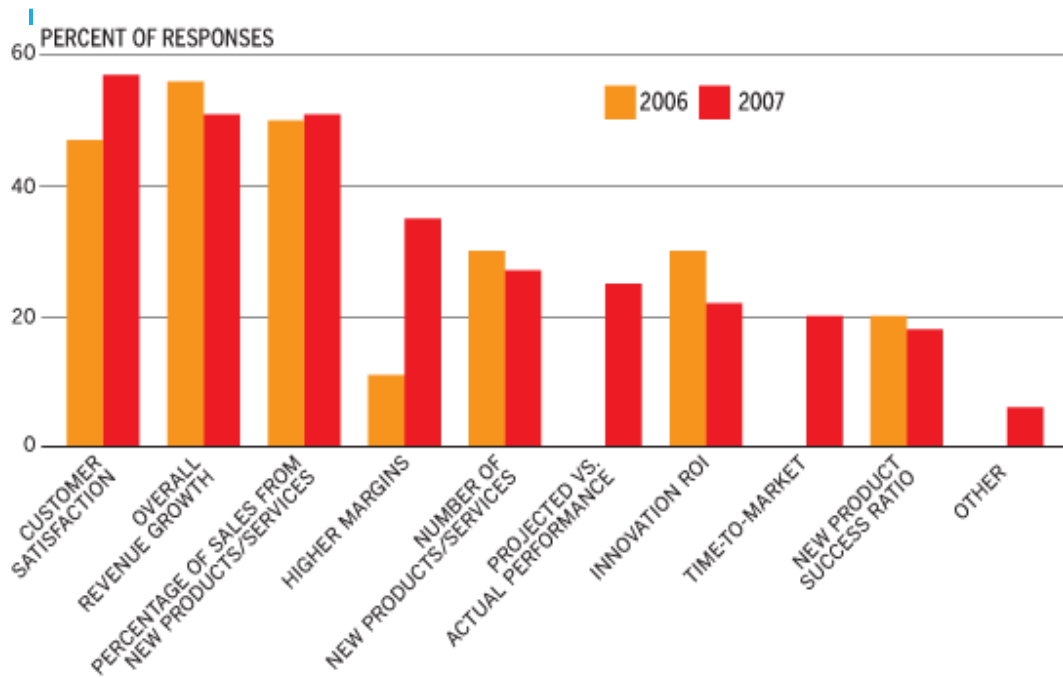
Alternatively: <http://www.fastcompany.com/section/most-innovative-companies-2015>

MOST INNOVATIVE COMPANIES SURVEY OF SENIOR EXECUTIVES 2007

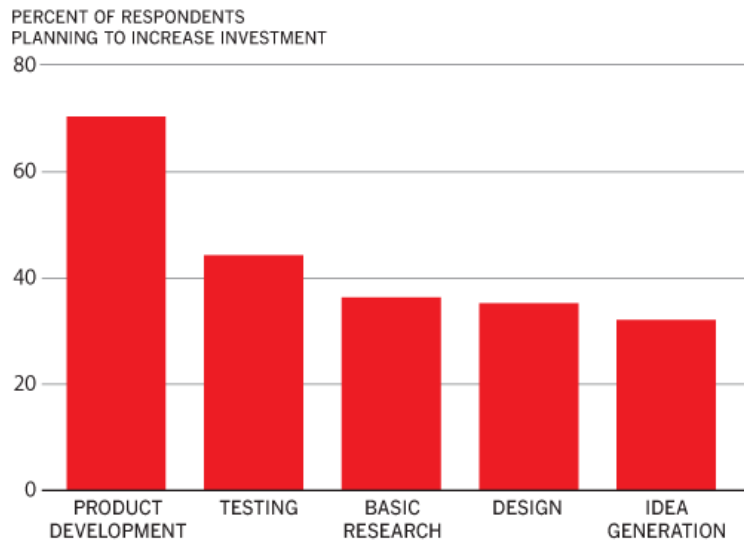
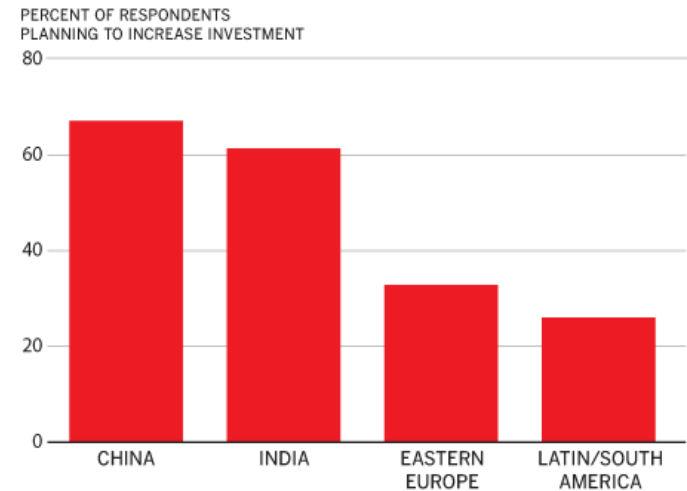
What are the biggest obstacles to generating a return on your investments in innovation?



How does your company measure its success with innovation?



If your company is planning to increase its R&D investment in low-cost regions this year, in which of the following regions will you focus your attention?



If your company is planning to increase its R&D investment in low-cost regions this year, which of the following types of investment will you make?

BONUS 2: VIDEOS

Short videos on Youtube:

- <https://www.youtube.com/watch?v=I9ykkOA1mJw> (1:20)
- <https://www.youtube.com/watch?v=liyMkOfycOg> (2:19)

The Simpsons, 26x12, The Musk Who Fell to Earth

TEDx speech (on Youtube):

- The art of Innovation | Guy Kawasaki:
<https://www.youtube.com/watch?v=Mtjatz9r-Vc> (21:15)



THANKS!

SOURCES (PICTURES)

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S5: iPhone: <http://cdn.macrumors.com/article-new/2013/04/iphone.jpg?retina>

S6: Robots: <https://www.flickr.com/photos/jurvetson/7408451314>

S8: Kodak: <https://www.flickr.com/photos/pranavbhatt/7324849448>

S10:
https://en.wikipedia.org/wiki/Royal_Mews#/media/File:Royal_mews_brougham.jpg

https://commons.wikimedia.org/wiki/File:Grandpa%27s_first_car,_Model_T_coupe,with_artillery_wheels_Edward_a_O%27D.jpg

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S11: Hamburger:
<https://www.organicconsumers.org/sites/default/files/bnt.png>