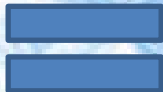


Organizational Innovation Management Model

Challenges and Opportunities



Dr. Nader Nada





Agenda

What is Relationship Between Innovation and KM?

Why do we need innovation?

Who needs innovation?

How to innovate?

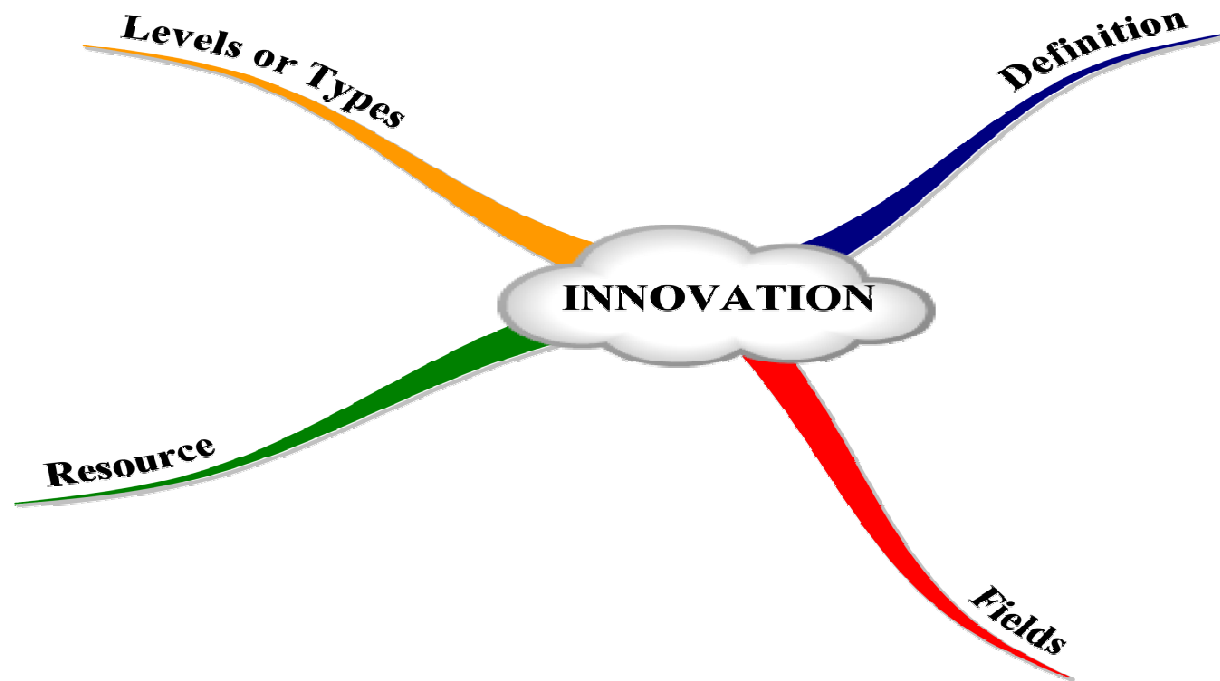
Questions and Discussion.

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What is relationship between: Innovation and KM?



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What is relationship between: Creativity, Innovation and KM?

Definition

CREATIVITY = COMING UP WITH NEW IDEAS

INNOVATION = CREATIVITY+KNOWLEDGE.

Creativity and innovation concern the process of creating and applying new knowledge. They are at the very heart of Knowledge Management.

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What is innovation challenge?

Challenge

Our challenge today is to build effective technology-based systems that support us in 'making knowledge productive' and take into account the ways in which we think and behave.

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What is innovation?

❑ Innovation of Product

- Improve prestige/image.
- Increasing market share.
- Improve earning power/profit.

❑ Innovation of Process

- increasing productivity.
- improve the quality.
- improve safety.

Fields

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What is innovation?

❑ Innovation of Service

Example: New services with added value to customers (intangible).

❑ Organizational innovation

Example: introduction of the team work in the enterprise.

❑ Business Model innovation:

Example: Amazon, Low-cost airlines, Dell

Fields

INNOVATE OR DIE





What is innovation?

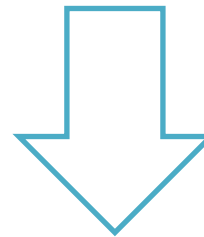
Levels or Types

Incremental Innovation

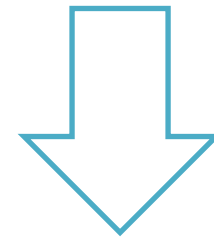
- Market and Customers are known
- Technologies are managed
- Focus: cost, quality, properties

Radical Innovation

- New, substituting technologies.
- New applications.
- Radical improvements, new technologies.



Extrapolation of the known,
"Transpiration" (95% of all R&D-expenses)



Conquest of the unknown,
"Inspiration" (5% of all R&D-expenses)

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The (economic) dimensions of innovation

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Collective

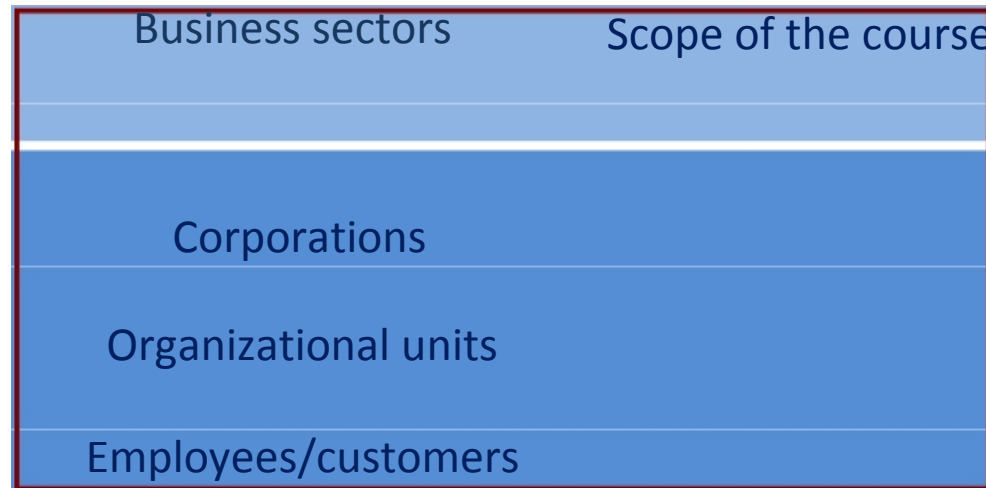


Individual

Macroeconomic level

World economy

Economic/political areas



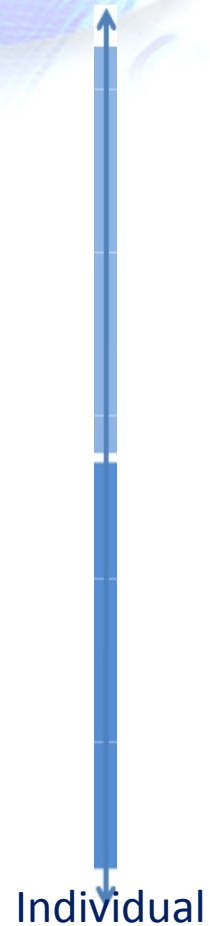
Microeconomic level



The (economic) dimensions of innovation

INNOVATE OR DIE

Collective



Macroeconomic level

Business sectors

Corporations

Organizational units

Employees/customers

Microeconomic level

Individual



The global R&D spending 2007-2008

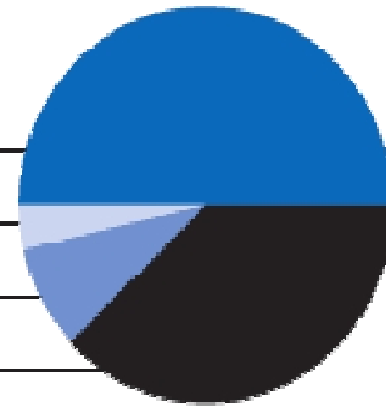
Total Spending: US\$982 billion

Innovation 1000 **50.1%**

Innovation 1001–2000 **3.7%**

Smaller companies and private companies **8.7%**

Government, not-for-profit, and other **37.6%**

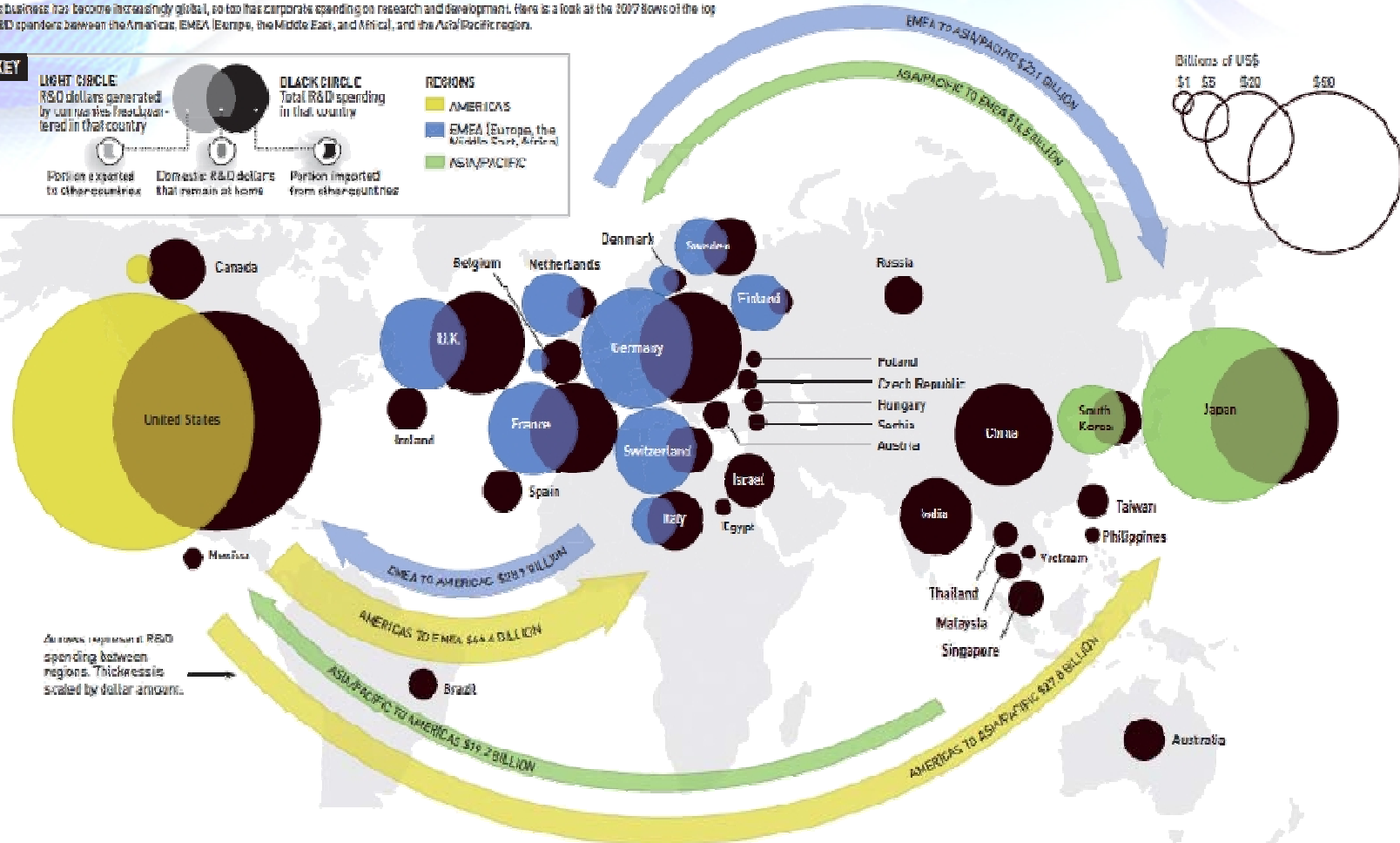
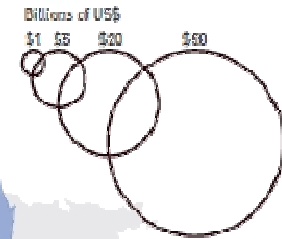
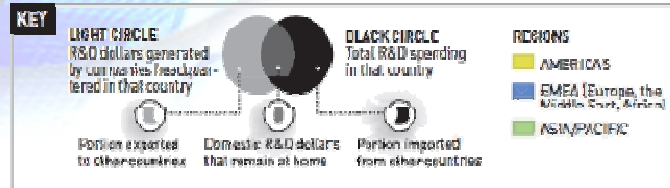


The Global Innovation 1000 companies spent more than half the money invested in R&D worldwide — 12.5 percentage points (about 32 percent) more than governments and 80 percent of the total spent by all corporations worldwide.

Source: OECD, World Bank, International Monetary Fund, and Booz & Company analysis

The world of R&D 2007-2008 (I)

As business has become increasingly global, so too has corporate spending on research and development. Here is a look at the 2007 flows of the top R&D spenders between the Americas, EMEA (Europe, the Middle East, and Africa), and the Asia/Pacific region.



An arrow represents R&D spending between regions. Thickness is scaled by dollar amount.

Source: Booz and Company 2008

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The world of R&D 2007-2008 (II)

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TOP R&D GENERATORS (by home country of HQ)

U.S.	US\$146.1bil.
Japan	71.6
Germany	30.7
France	19.7
U.K.	18.1
Switzerland	16.8
South Korea	11.1
Netherlands	9.2
Finland	7.7
Sweden	6.8

TOP R&D USERS (includes domestic spending)

U.S.	US\$108.5 bil.
Japan	40.4
Germany	27.8
China	24.8
U.K.	23.3
France	19.8
India	13.1
Canada	9.0
Italy	7.8
Sweden	7.2

TOP SOLE R&D "IMPORTERS" (for countries generating less than US\$1 billion in R&D)

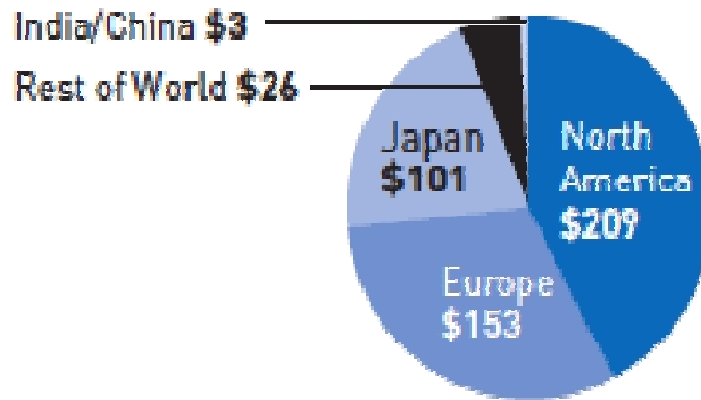
China	US\$24.7 bil.
India	13.0
Israel	6.5
Australia	4.3
Spain	4.0
Ireland	4.0
Russia	3.7
Singapore	3.2
Taiwan	2.4
Brazil	2.3

Source: Booz and Company 2008

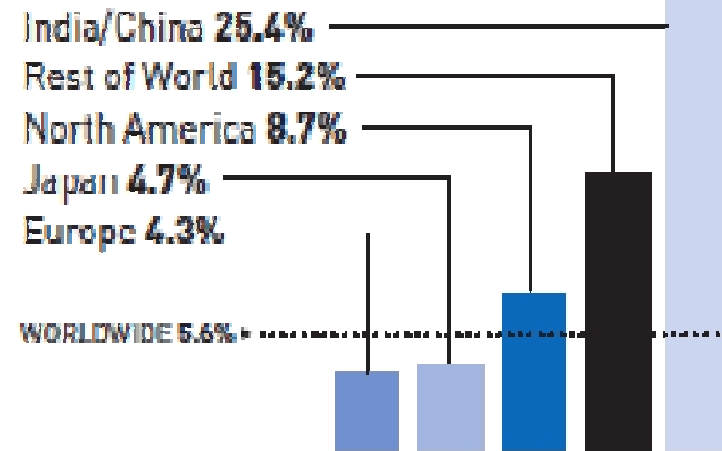
Innovation spending & growth by region 2007

Companies headquartered in North America, Europe, and Japan continue to dominate R&D spending, accounting for more than 94 percent of the total. However, spending is growing far more quickly at companies based in India, China, and the rest of the world.

Total 2007 Spending: US\$492 billion

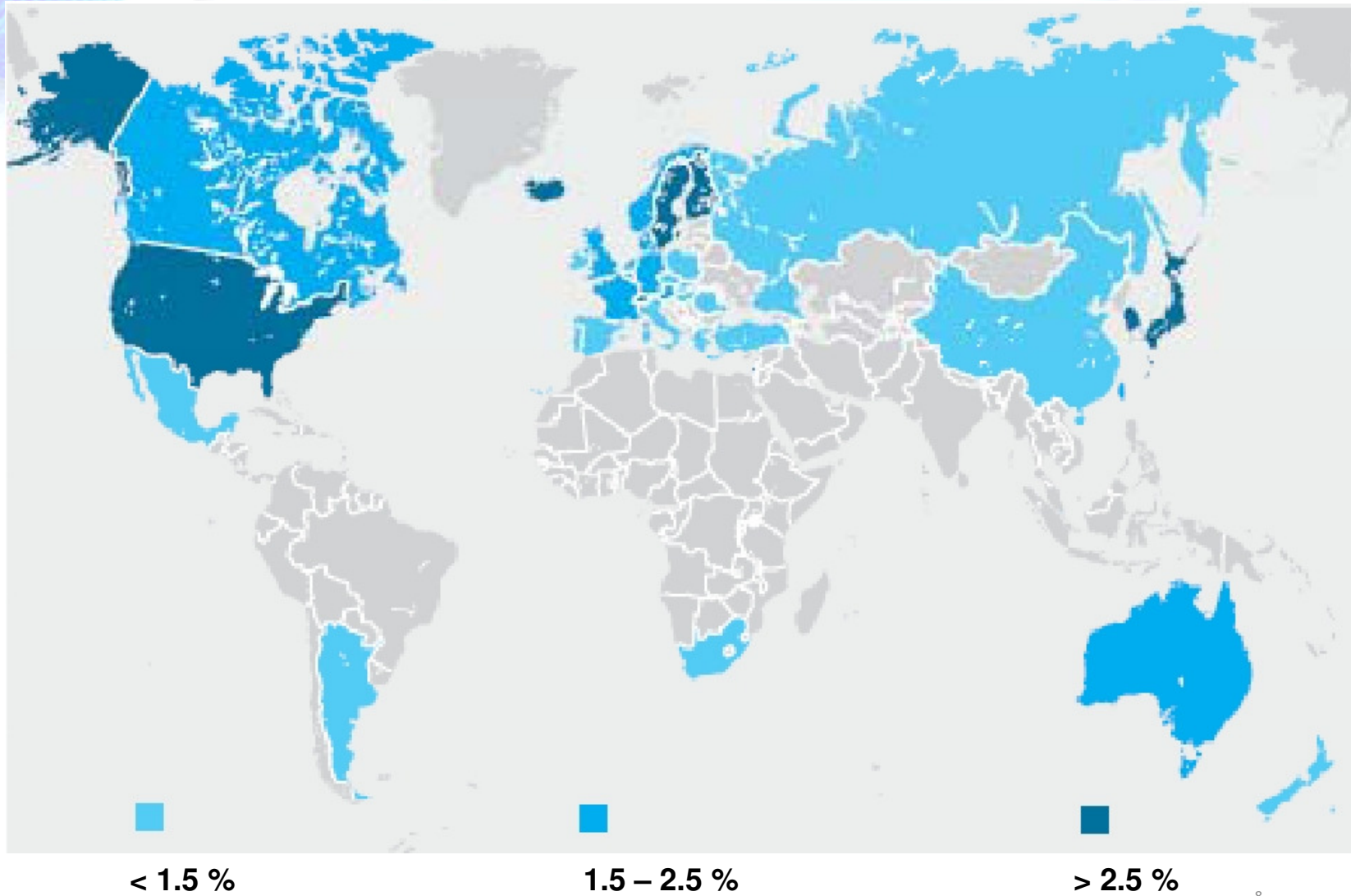


Five-Year Compound Growth, 2002-07



Source: Bloomberg data (2007), Booz & Company analysis

International comparison of the share of gross domestic expenditures for R&D in GDP 2005



Source: BMBF 2008

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The most innovative countries

How innovative is our country?

How would you assess it?

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The most innovative countries □ GCR (I)

Methodology

Basic factors

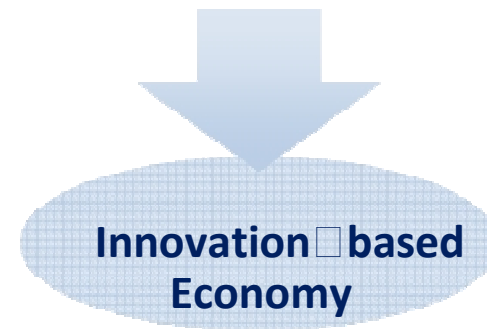
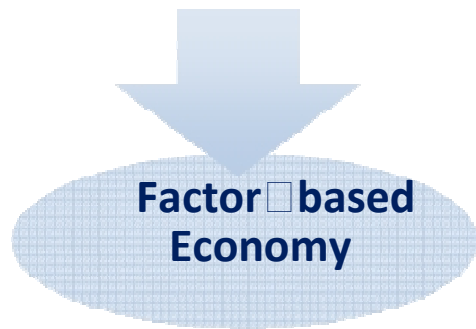
- Institutions
- Infrastructure
- Macroeconomic stability
- etc.

Efficiency factors

- Efficiency of goods market
- Efficiency of labor market
- Development of finance & markets ... etc.

Innovation factors

- Quality of scientific institutions
- Company spending on R&D
- University □ industry collaboration
- etc.



Weighting

Development phase/column in %	Basic factors	Efficiency factors	Innovation factors
Factor □ based development phase	60	35	5
Efficiency □ based development phase	40	50	10
Innovation □ based development phase	20	50	30

Source: Global Competitiveness Report 2009/2010



The most innovative countries GCR (II)

OVERALL RANK		COUNTRY	2009		
2009	2008		BASIC REQUIREMENTS	EFFICIENCY ENHANCERS	INNOVATION FACTORS
1	2	Switzerland	3	3	3
2	1	USA	28	1	1
3	5	Singapore	2	2	10
4	4	Sweden	5	7	4
5	3	Denmark	4	6	7
6	6	Finland	1	12	6
7	7	Germany	8	14	5
8	9	Japan	27	11	2
9	10	Canada	10	4	12
10	8	Netherlands	12	10	9

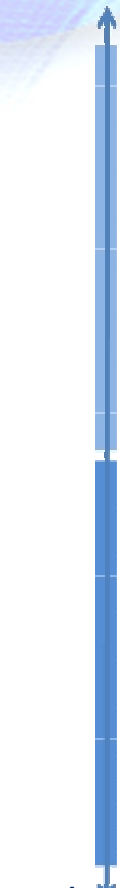
Source: Global Competitiveness Report 2009/2010



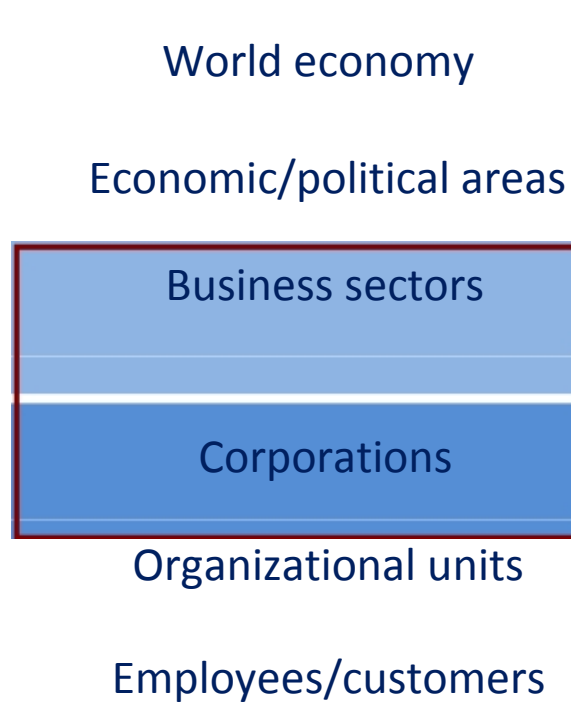
The (economic) dimensions of innovation

INNOVATE OR DIE

Collective



Individual



Macroeconomic level

Microeconomic level



The top 20 spenders 2007

RANK 2007	RANK 2006	COMPANY	R&D SPENDING 2007, IN US\$ MILLIONS	CHANGE FROM 2006	ASA % OF SALES	HEADQUARTERS LOCATION	INDUSTRY
1	1	Toyota	\$8,386	7.6%	3.6%	Japan	Auto
2	6	General Motors	\$8,100	22.7%	4.5%	United States	Auto
3	2	Pfizer	\$8,089	6.4%	16.7%	United States	Health Care
4	18	Nokia*	\$7,727	9.0%	11.1%	Finland	Computing and Electronics
5	4	Johnson & Johnson	\$7,680	7.8%	12.6%	United States	Health Care
6	3	Ford	\$7,500	4.2%	4.3%	United States	Auto
7	7	Microsoft	\$7,121	8.2%	13.9%	United States	Software and Internet
8	16	Roche Holding	\$6,985	27.3%	18.2%	Switzerland	Health Care
9	11	Samsung	\$6,536	6.3%	6.2%	South Korea	Computing and Electronics
10	8	GlaxoSmithKline	\$6,478	-4.4%	14.2%	Britain	Health Care
11	14	Novartis	\$6,430	20.8%	16.5%	Switzerland	Health Care
12	13	Sanofi-Aventis	\$6,208	2.4%	16.2%	France	Health Care
13	10	IBM	\$6,153	0.8%	6.2%	United States	Computing and Electronics
14	12	Intel	\$6,755	2.0%	15.0%	United States	Computing and Electronics
15	25	AstraZeneca	\$5,162	32.3%	17.5%	Britain	Health Care
16	20	Honda	\$5,142	6.5%	4.9%	Japan	Auto
17	19	Merck	\$4,883	2.1%	20.2%	United States	Health Care
18	17	Mitsubishi	\$4,850	-4.1%	6.1%	Japan	Computing and Electronics
19	15	Volkswagen**	\$4,757	25.9%	3.2%	Germany	Auto
20	21	Sony	\$4,553	-4.3%	5.9%	United States	Computing and Electronics
			\$129,493	8.0%	7.6%		
			TOTAL	AVG.	AVG.		

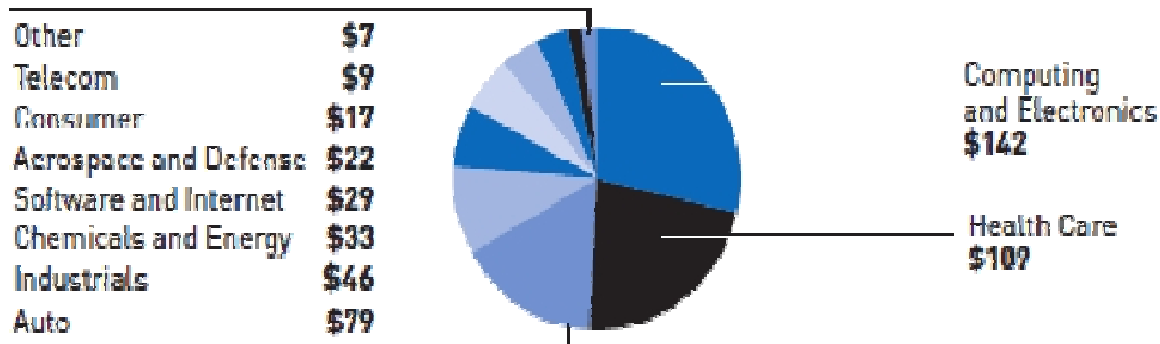
INNOVATE OR DIE



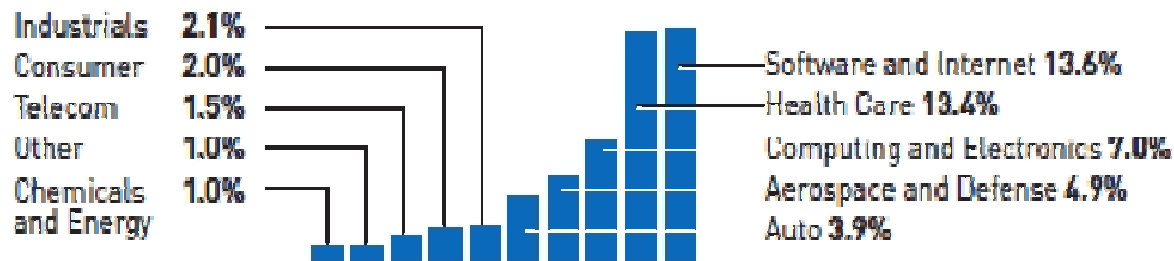
Innovation spending & intensity by industry 2007

The computing and electronics, health-care, and auto sectors continue to dominate overall R&D spending, with a combined total of \$330 billion. The software and Internet sector, along with health care, spent the most on R&D as a percentage of sales by a wide margin.

Total 2007 Spending: US\$492 billion



2007 Intensity (R&D as a % of Sales)





The world's most innovative companies 2008 (I)

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Google



The Walt Disney Company



TOYOTA



HONDA



amazon.com

Microsoft®

NOKIA

Connecting People



invent



TATA



Reliance Industries Limited



Nintendo®

SONY



DAEWOO















P&G





The world's most innovative companies 2008 – BCG (I)

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1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

Source: BCG/BusinessWeek 2008





The world's most innovative companies 2009 – BCG (II)

Processes

Products

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Customer experience

Business model

Source: BCG/BusinessWeek 2008





The world's most innovative companies 200 – BCG (III)

Methodology

- Interviews with
 - the 50 executives of the 2701 world-wide biggest enterprises
 - the Senior Management members of the BusinessWeek Market Advisory Board
- Response rate about 10%

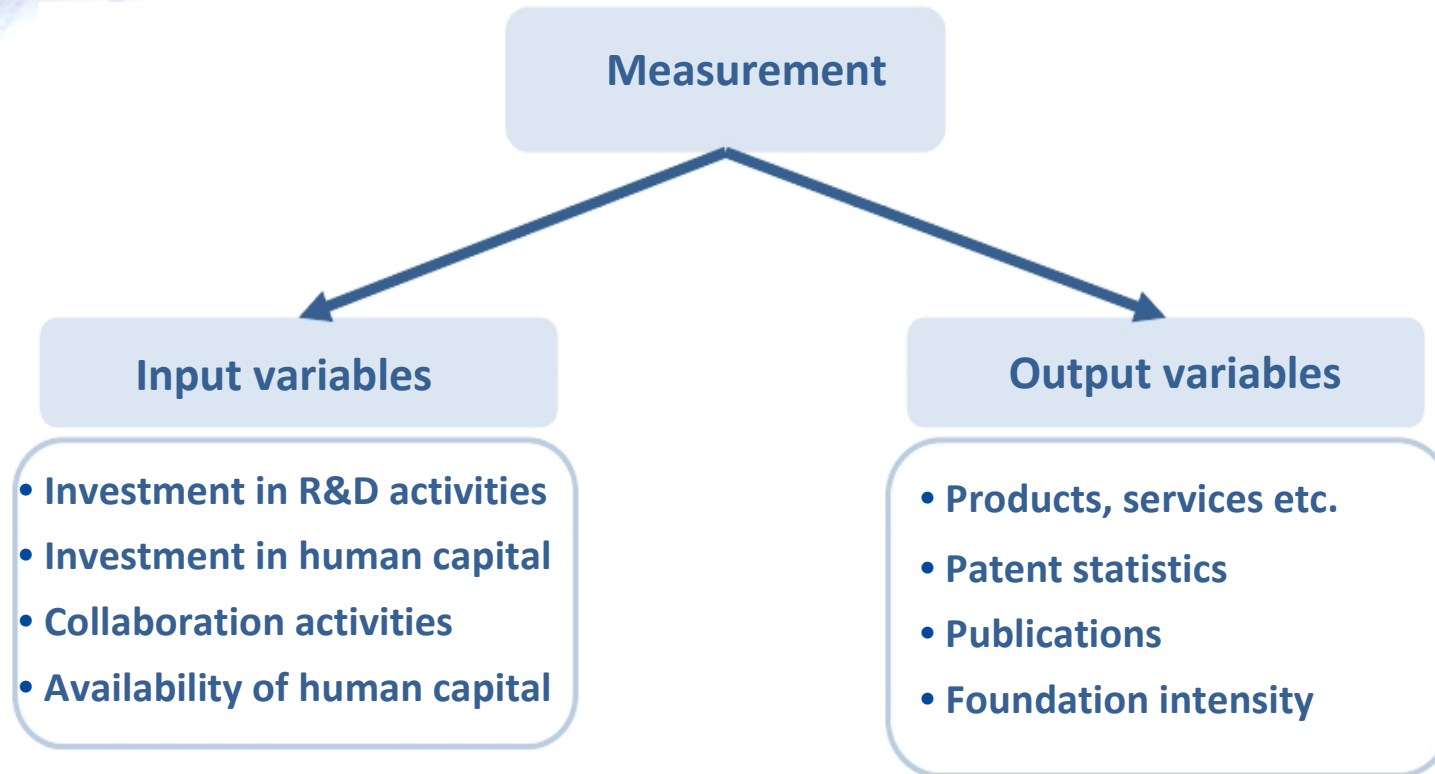
Weighting:

- Identification of companies in the interviews (80%)
- in addition to the interviews: financial key figures (20%)

Source: BCG/BusinessWeek 2008

Key figures for assessing the innovation activity

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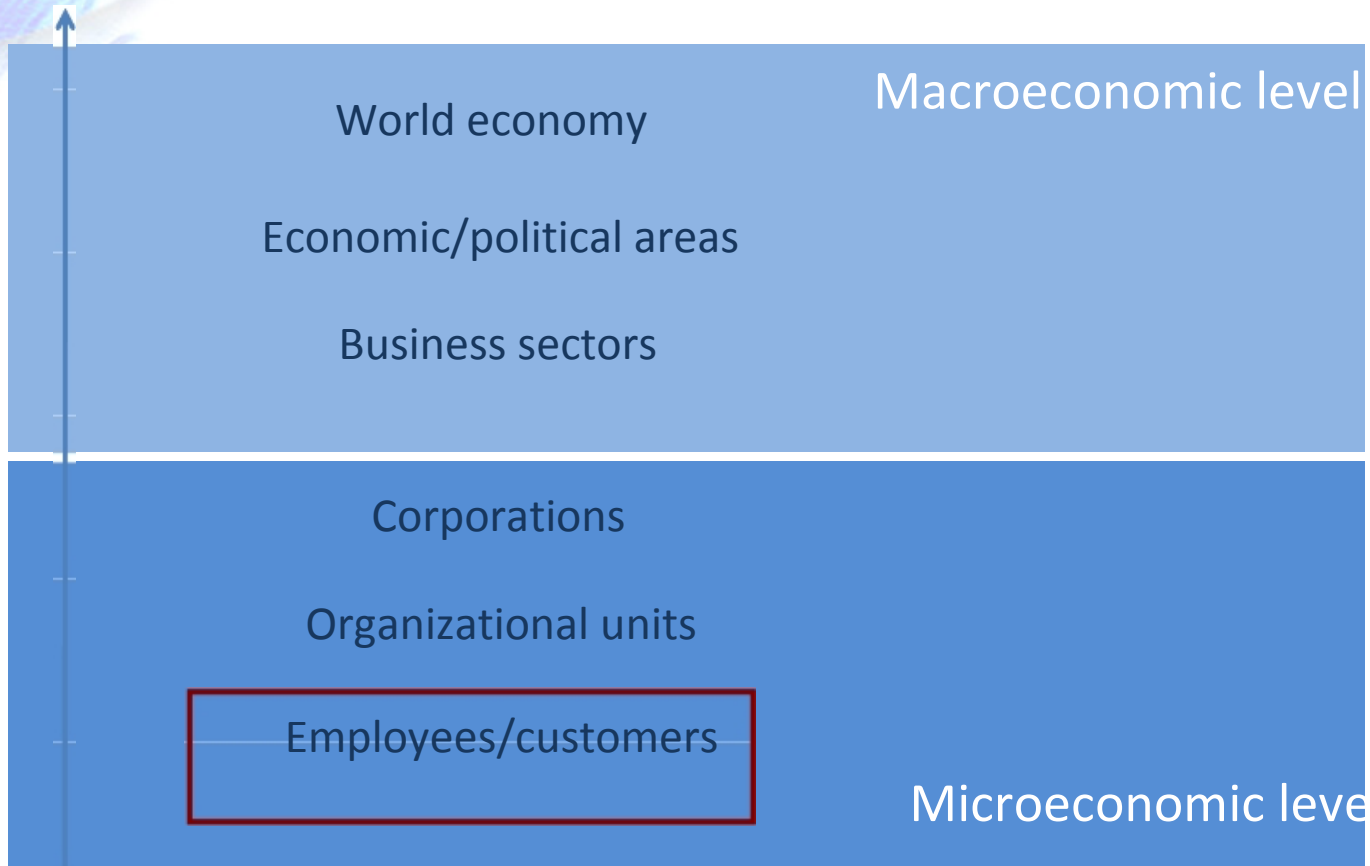
Source: Welsch, 2005



The (economic) dimensions of innovation

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Collective



Individual



The adoption of new ideas

How, why and to what rate do innovations spread through cultures?

Rate of adoption

„the speed with which members of a social system adopt an innovation. It is measured by the length of time required for a certain percentage of the members of a social system to adopt an innovation.“

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Innovative Companies Case Studies

IBM Smart Planet
Apple
Google
Amazon
Toyota

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Egyptian status on innovation promotion?

**The Ministry of Communication and
Information Technology and ITIDA
Initiatives**

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A High-End Destination

ICT Innovation and Entrepreneurship



EGYPT

A Rising Star for Global ICT
Innovation and Entrepreneurship



Egypt: The Future of Innovation

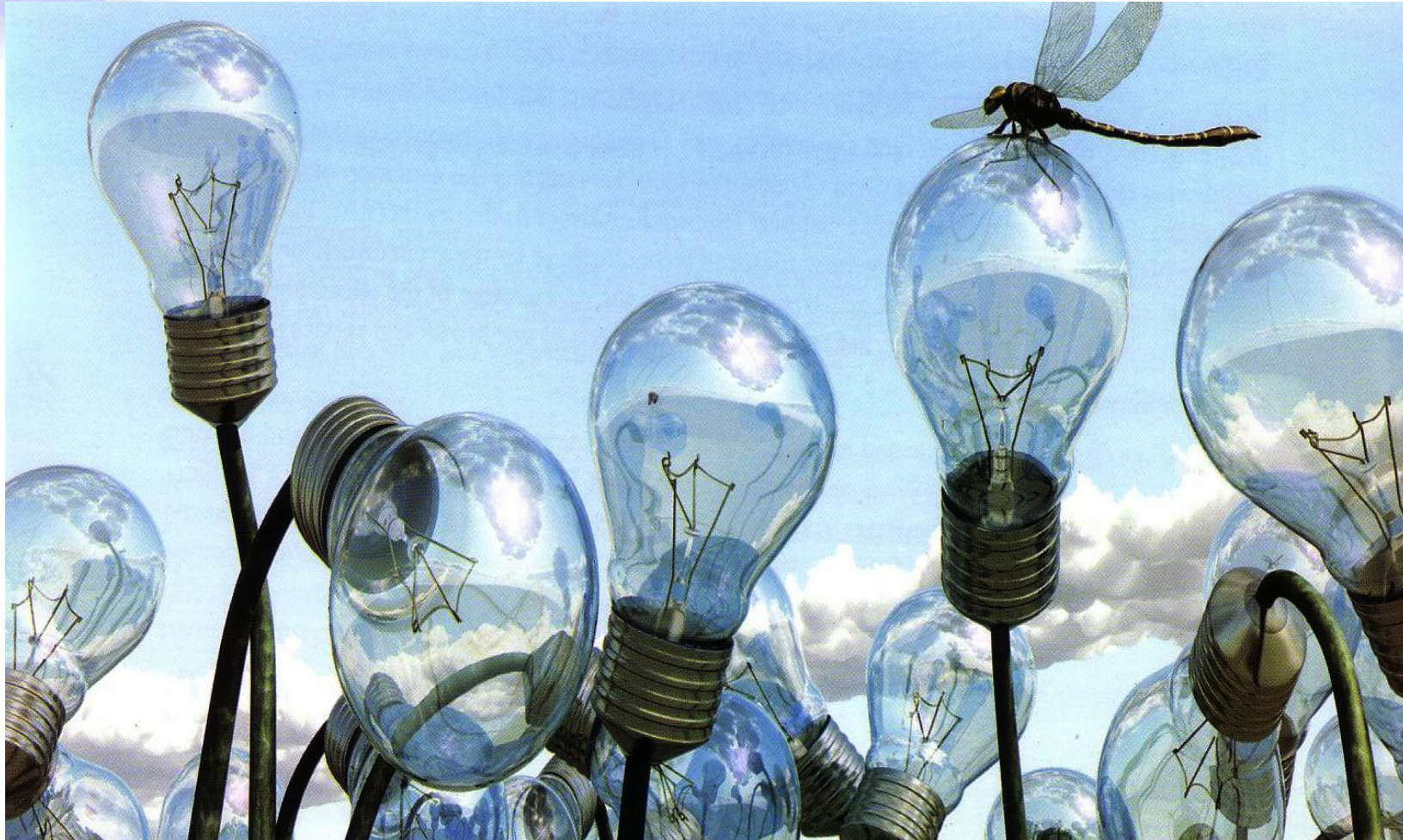
Take the Next Step

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Creating Future Entrepreneurs

Entrepreneurial Training and Education



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Making it Happen
Innovation and Entrepreneurship Center



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Sources of innovation?

Sources

- Unexpected Problem(s).
- Change in perception.
- Industry and market changes.
- Process needs.
- Demographic changes.
- New knowledge.

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Why do we need innovation?

Reasons?

- Emerging Technologies
- Competitor Actions
- New Ideas
- External Environment

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Why do we need innovation?

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Benefits

- Reduce costs and expenditure
- Address new opportunities, fast
- Maximize options
- Become productive quickly
- Improve quality
- Minimize risk
- Improve customer satisfaction



Who needs innovation?

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Who?

- All organizations: profit or nonprofit and small or large organizations.
- Any organization needs to add value to it's customers.
- As long as you live you have to seek for more innovation.

“INNOVATE OR DIE“



Who needs innovation?

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Who?

- Who is Driving innovation
 - Businesses,
 - Clients,
 - Society



Why do we need innovation?

Innovation for clients

- New products & services.
- Risk & compliance.
- Business processes & models.
- Culture & management.
- Green IT & energy efficiency.

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Why do we need innovation?

Innovation for society

Tackling the grand challenges of the 21st century...

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Why do we need innovation?

Innovation for society

- Climate & environment.
- Energy.
- Education.
- Transportation.
- Healthcare.

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Why do we need innovation?

**How can we make tomorrow's
chips even smaller and more
powerful?**

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Why do we need innovation?

Cutting-edge research

What is needed for
the next revolution in chip
technology?

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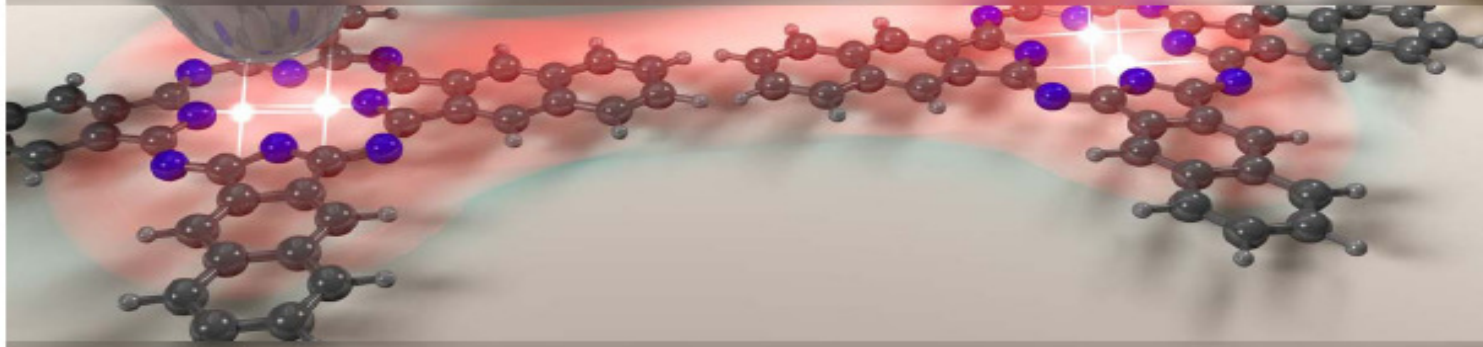




Why do we need innovation?

Cutting-edge research

fundamentally new concepts



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Why do we need innovation?

Cutting-edge research

Helping gain deeper insight
into processes

**by enabling true-to-life
simulations**

to discover new drugs, design
new materials, understand
climate change or the
functioning of the human brain

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Why do we need innovation?

Cutting-edge research

How can supercomputers help shape the future?



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Why do we need innovation?

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Innovation for Clients

How could Finnair reduce advertising costs and increase customer satisfaction?





Why do we need innovation?

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Innovation for Clients

with Customer Equity
and Lifetime Management
system





Why do we need innovation?

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Innovation for Clients

How can you make sure that your goods arrive where and when you need them?



Why do we need innovation?

Innovation for Society

How does Research improve the quality of life?

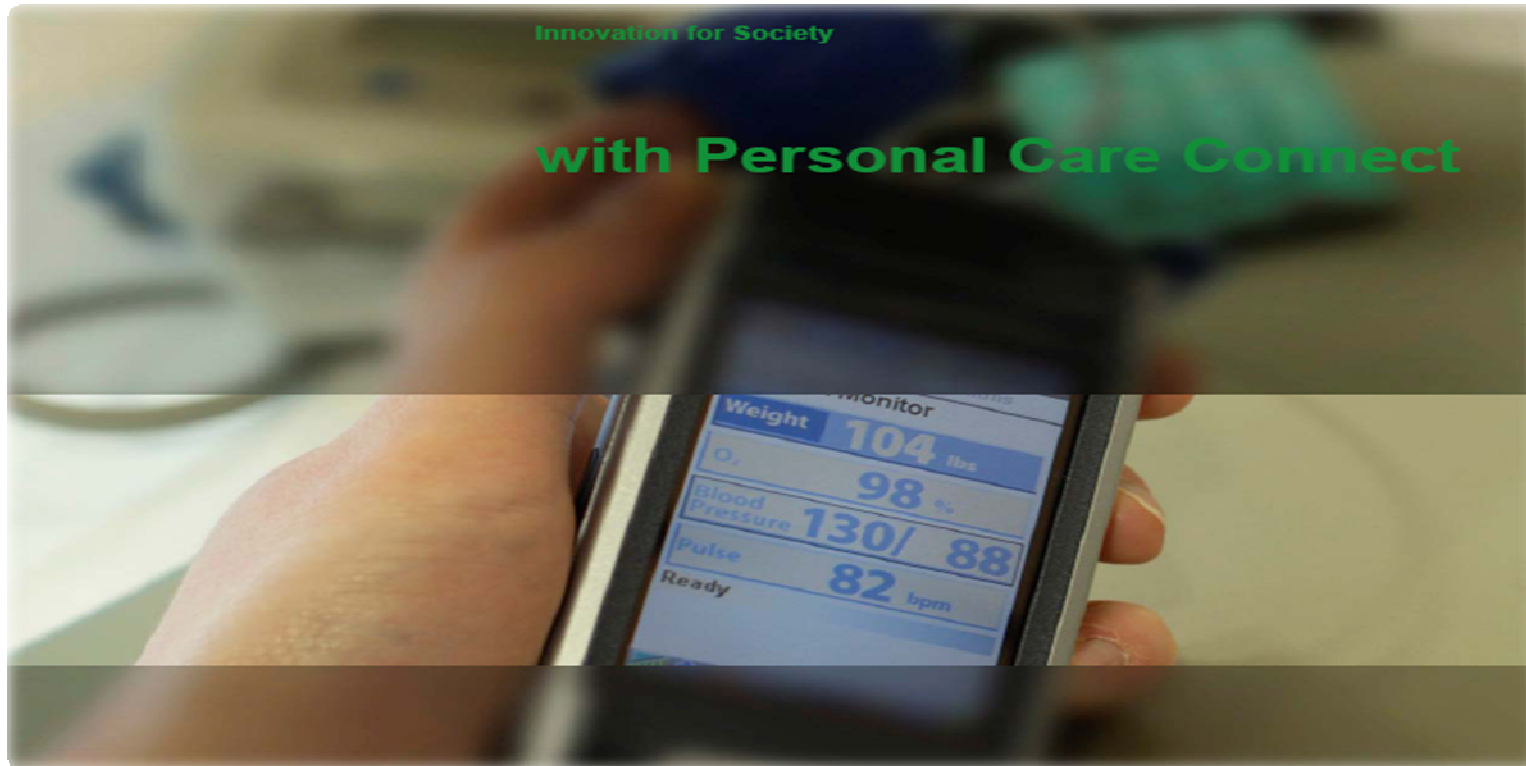


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Why do we need innovation?

INNOVATE OR DIE





Why do we need innovation?

Innovation for Society

Remote patient monitoring by wireless Bluetooth technology and mobile phones with **Personal Care Connect** allowing chronic patients and the elderly to stay at home

INNOVATE OR DIE



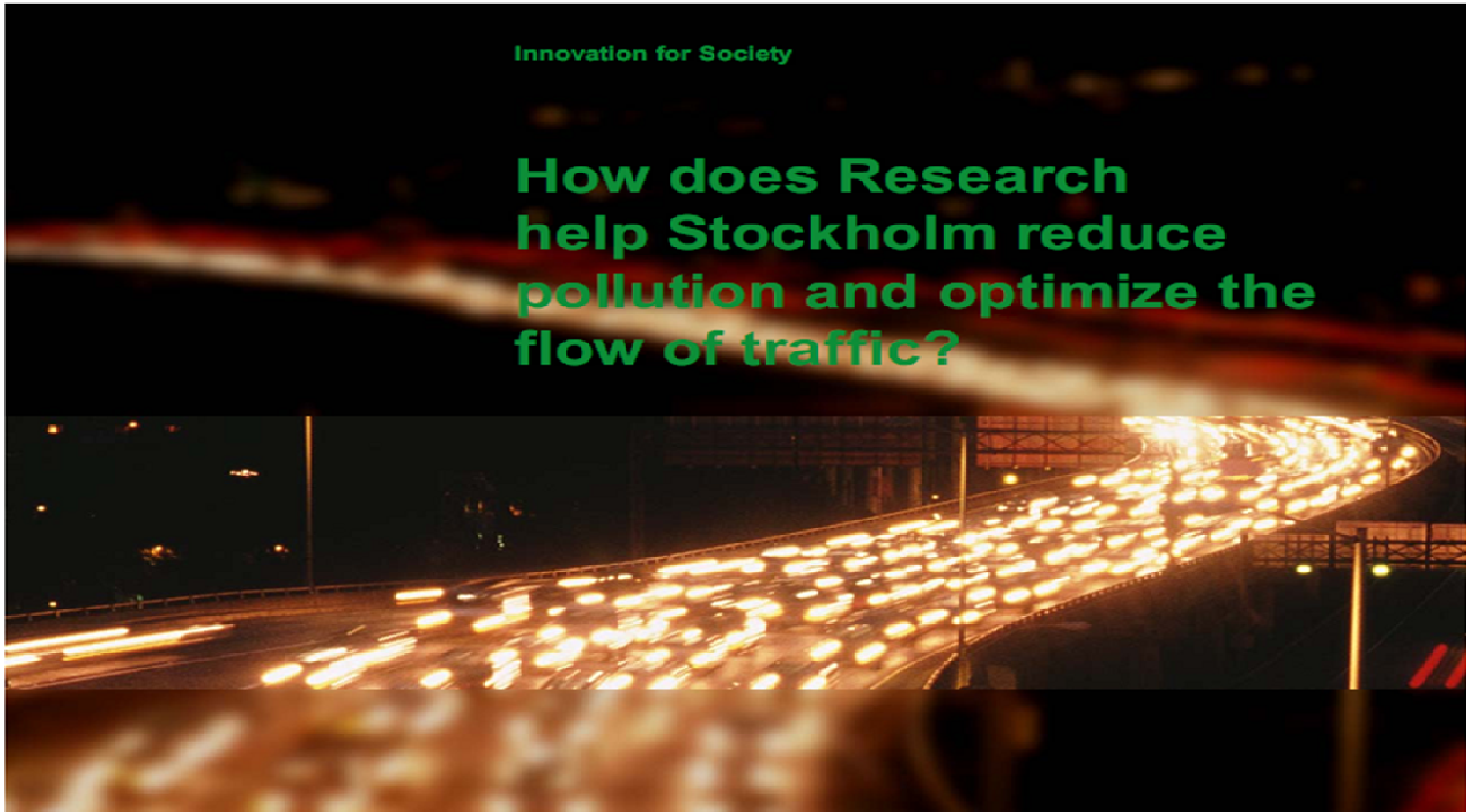


Why do we need innovation?

INNOVATE OR DIE

Innovation for Society

How does Research help Stockholm reduce pollution and optimize the flow of traffic?





Why do we need innovation?

Innovation for Society

with road user
charging system

Improving the quality
of life in cities

INNOVATE OR DIE





Innovation for Society

How does an IT company
help fight the next
pandemic?

INNOVATE OR DIE





Why do we need innovation?

Innovation for Society

Using supercomputer
to anticipate virus mutations

with project **Checkmate**
—a groundbreaking change
from reactive disease
control to proactive pandemic
prevention

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How to innovate?

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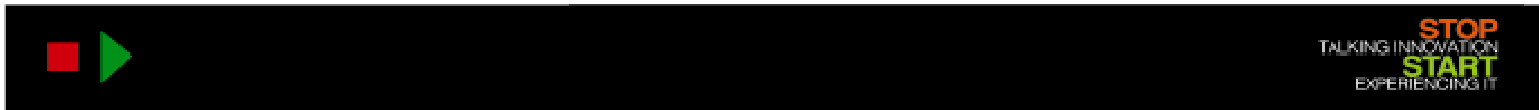
STOP
TALKING INNOVATION

This presentation will help you to make sense of the next major wave of disruptive change

- Software as a Service
- 3D Internet
- Web 2.0
- Social Software
- SOA
- Wikis
- Web Analytics
- Mobile Devices
- Virtual Worlds
- Folksonomy
- Micro-blogging
- Mobile 2.0
- Mashups
- Blogs
- Wisdom of crowds
- Semantic Web
- Micro-payments
- Telepresence

How to innovate?

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To 'crack the code' of Value 2.0, we employed a variety of research methods

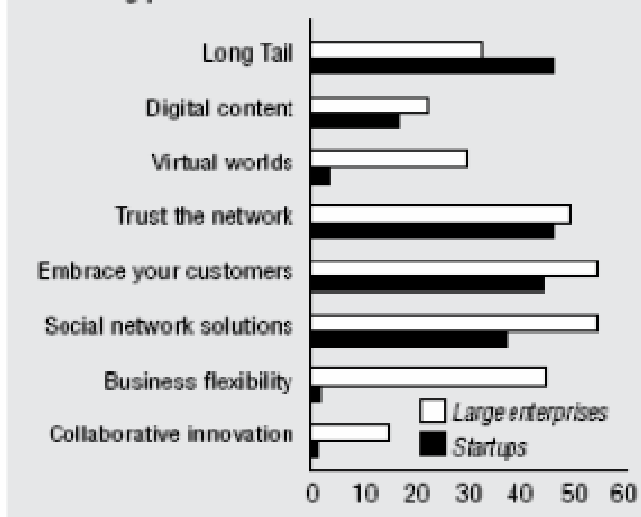
Research

- Examined Over 100 start-ups
- Examined over 40 large enterprises
- Polled over 500 business experts
 - Technology Analysts
 - IBM business leaders
 - Venture Capital Community

Results

- Innovative, large enterprises tend to experiment with multiple new rules of Value 2.0
- Technology Start-ups tend to focus

Percentage of start-ups and large enterprises exhibiting particular new rules.

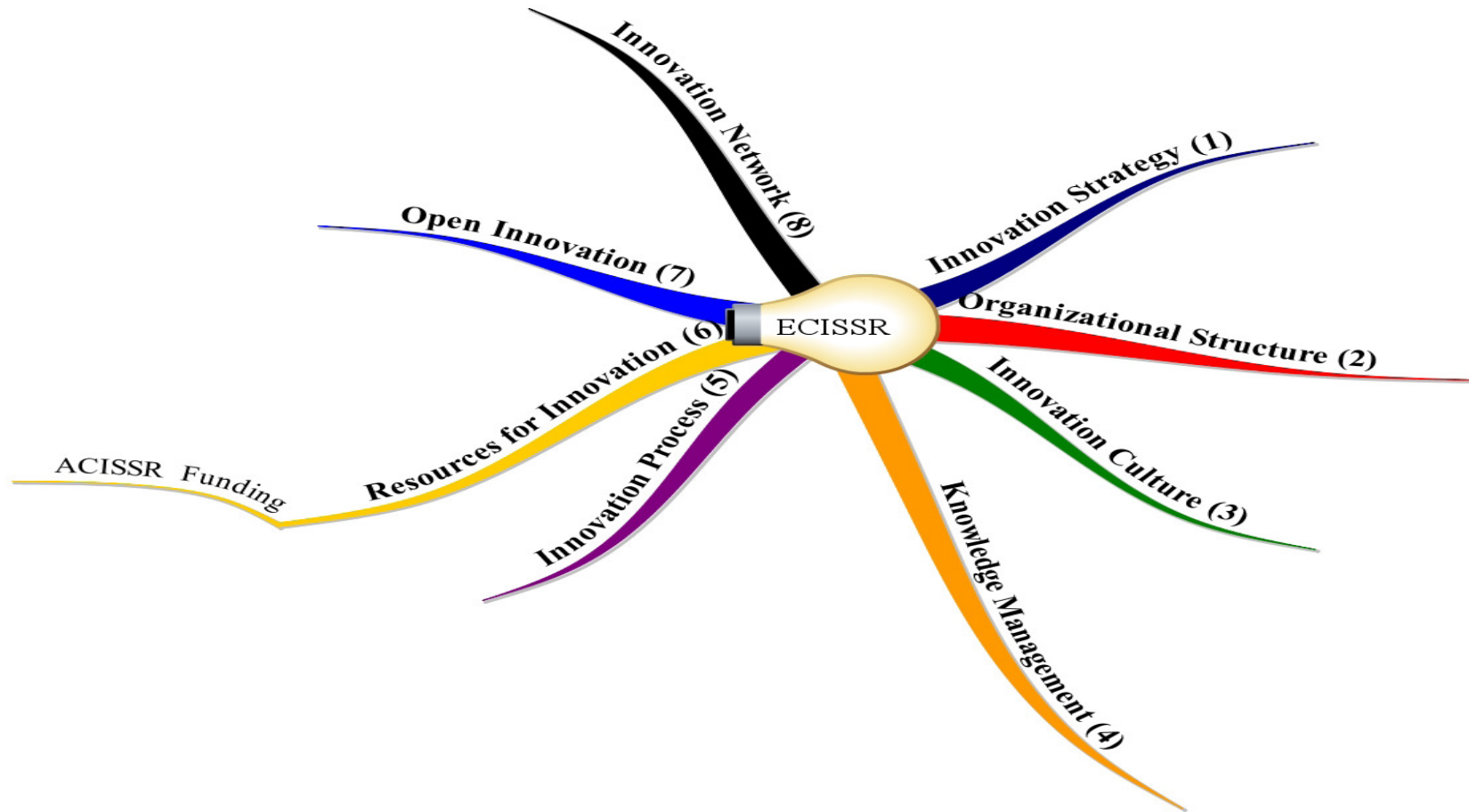


Note: sum of percentages is greater than 100% as companies may exhibit more than one new rule.





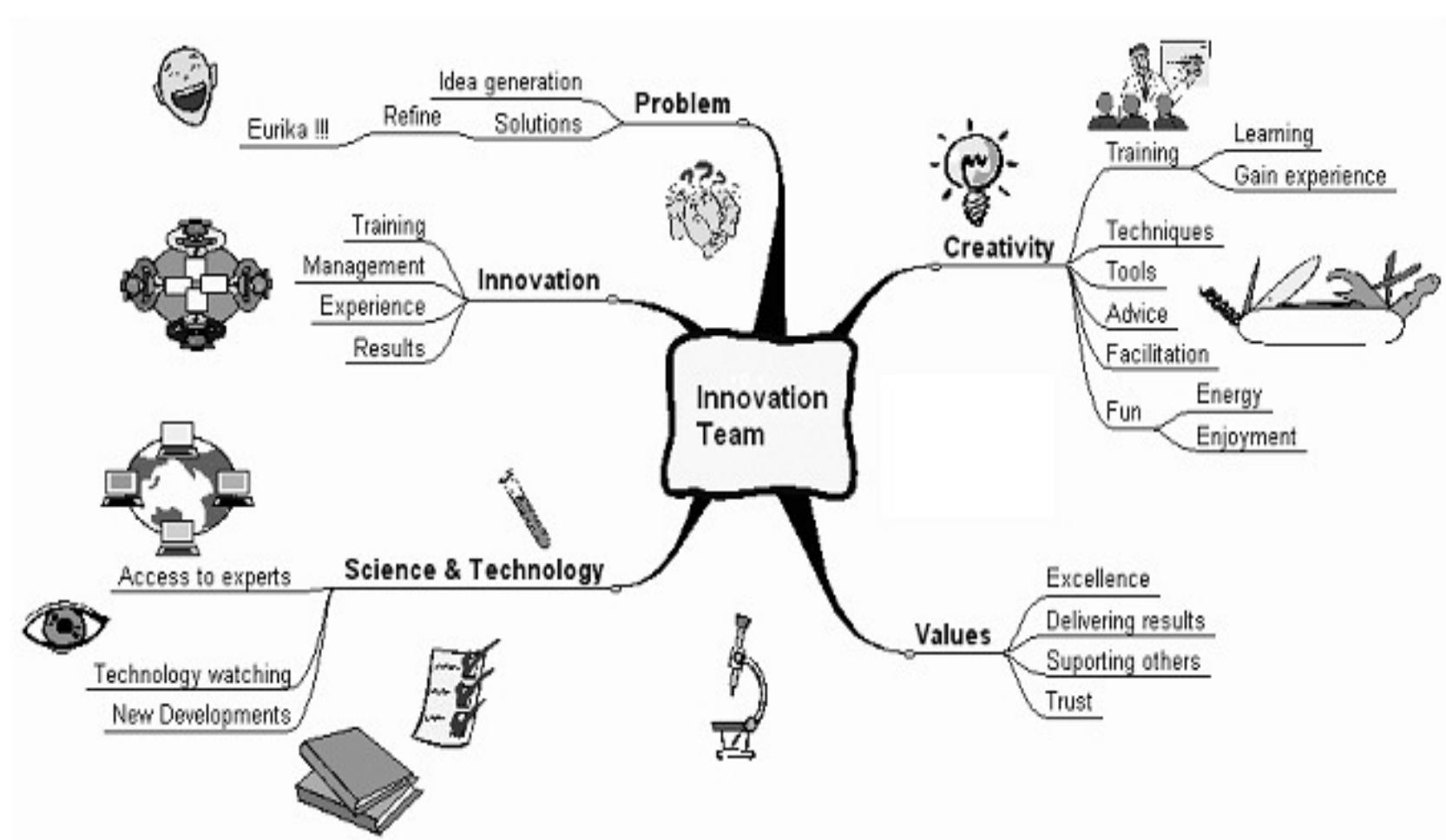
Organizational Innovation Framework Model



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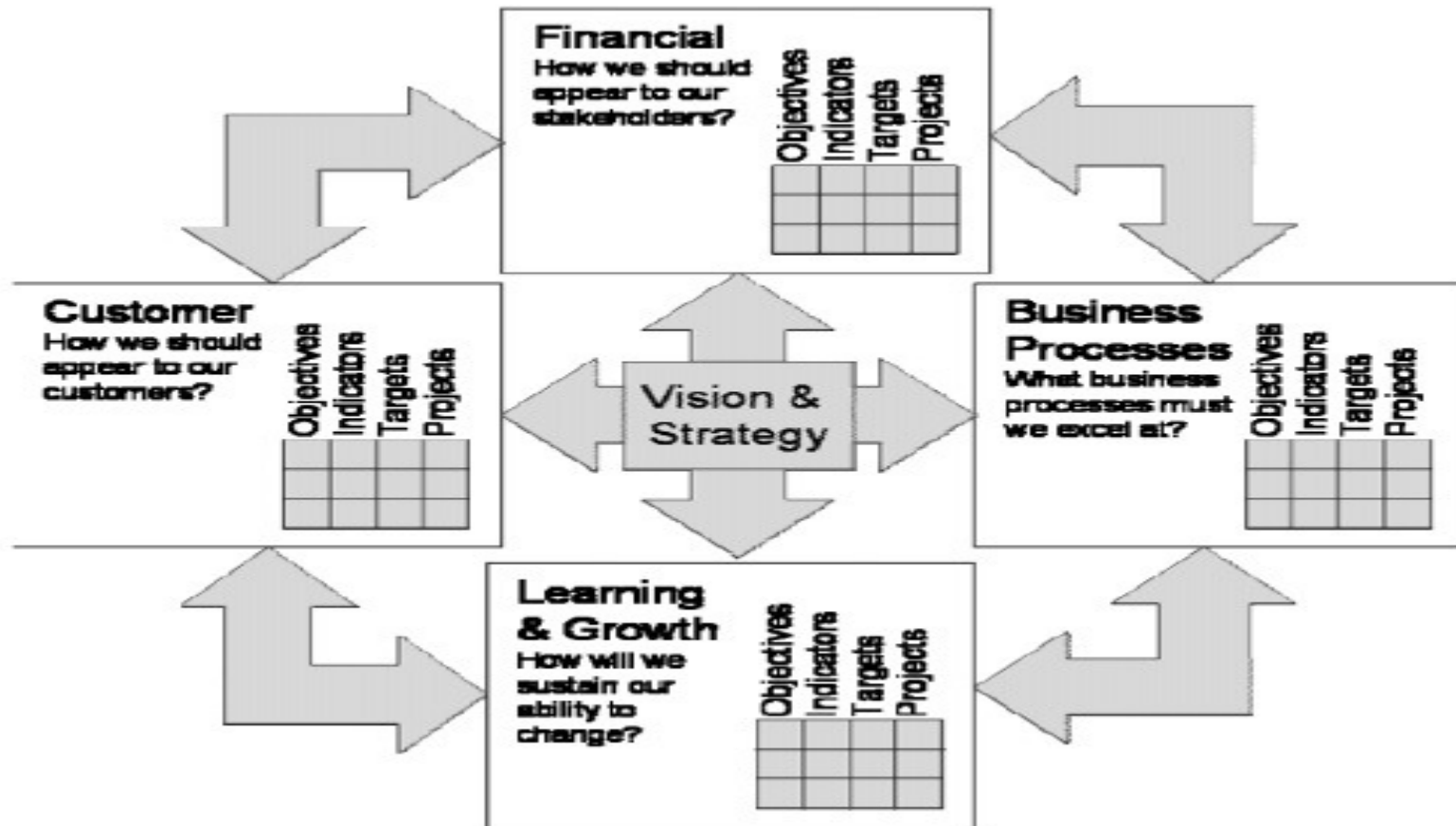
Innovation Framework and Methods



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How to Measure Innovation?

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Recommendations

- Curriculum =
- Innovation Center
- MCIT Initiative
- Collaboration (CoIN)
- Open Innovation

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Thank you

Dr. Nader Nada

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