



Importance of skills (knowledge) for research and innovation

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Výzkumný ústav
anorganické chemie, a.s.
ČLEN SKUPINY UNIPETROL

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EVROPSKÁ UNIE
EVROPSKÝ FOND PRO REGIONÁLNÍ ROZVOJ
INVESTICE DO VAŠÍ BUDOUCNOSTI



OP Výzkum a vývoj
pro inovace

Innovation vs. Research – local example

Two biggest FAME manufacturers

Production of 1,5 mio t rape seed (48 % VO)

Big potential for innovations

Production of epoxymethyl oleate

1. Green epoxy resins
2. Green polyalcohols for PUR
3. Green lubricants

Research vs. Innovation

RESEARCH:

1. New type of a very active catalyst
2. Lab testing of kinetics
3. Description of a reaction mechanism
4. Publications / conference presentations

Research vs. Innovation

INNOVATION

Q: What is the innovation or contribution to a competitiveness?

A: Successful creation of added value via the production of a new product with a big market potential (market growth 4-8%/y), with no environmental impact and with a social acceptance.

What skill / knowledge do we need in S&R

Literature and theoretical analysis

Thermodynamics + kinetic measurements

Analytical methods

Lab synthesis of catalysts

Mathematical simulations

What skill do we need in an innovation process ?

1. Science/Research
2. Engineering
3. Marketing
4. Competition
5. People
6. Environment

State of the art knowledge - information

Literature – access to publication databases

Patents – access to patent databases

Current/predicted situation: conferences

Not-published information: personal contacts

Engineering

Construction material selection

Long term process testing – direct & indirect industrial parameters determination

LCA

Impact on environment

HAZOP

Analysis of the (*social*) environment

Competitors analysis - benchmarking

Own company: two type of CEO

A: Supporting: „ O.K. do the research...”

B: Questioning: „KPI, profit, money.....“

People from production

Knowledge of people – „skill for team“

Psychological skill: team building

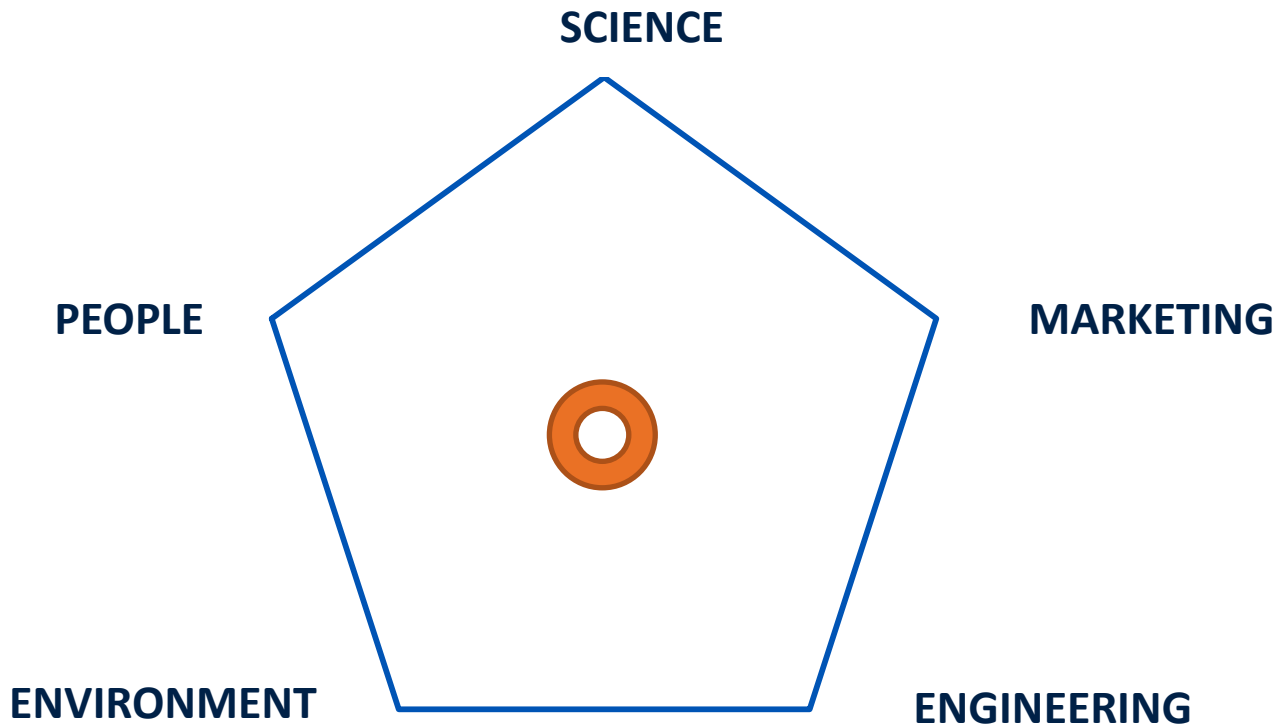
inventor

initiator

„diligent bee“

doubter/critic

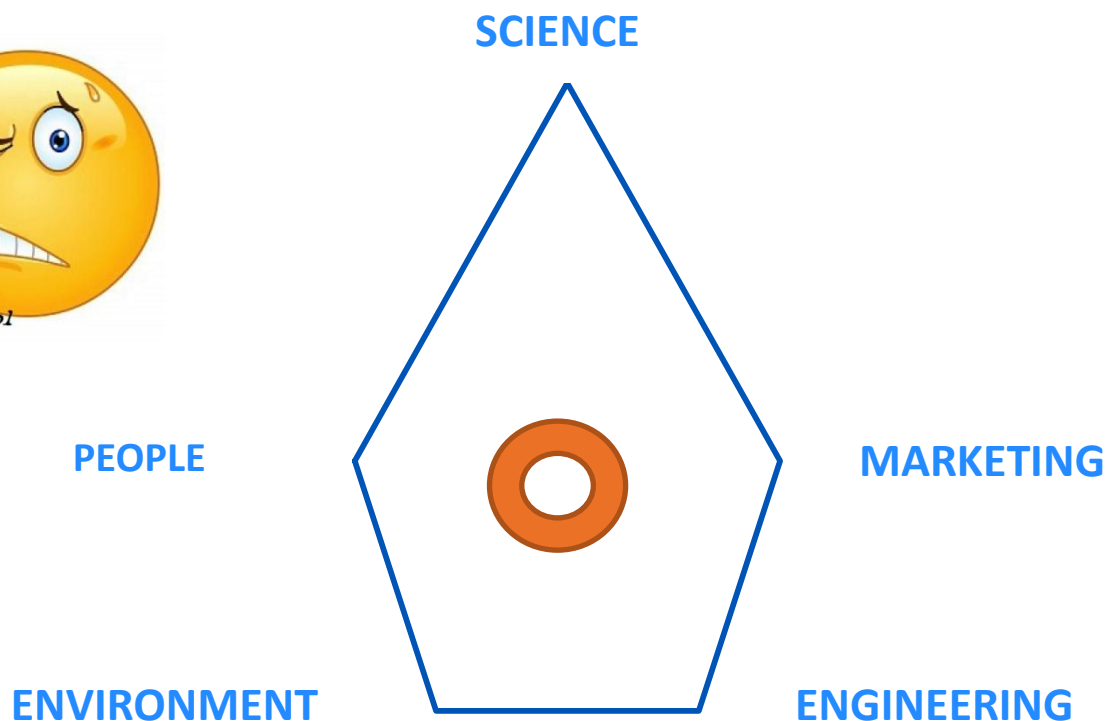
INNOVATION PROCESS – skill / knowledge balance = **FASCINATING ADVENTURE**



INNOVATION PROCESS – lack of skill/knowledge balance = **SAD AND RISKY JOB**



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CONCLUSIONS

Selection - science and/or innovation

Fill the gap between science and innovation

Combine all knowledge types

Not to undervalue any knowledge types

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