

Innovation Management

“The management of the economic application of ideas, technology or processes in new ways to gain a competitive advantage”



**I Congreso Internacional de
Gestión Tecnológica e Innovación
Agosto 14 y 15 del 2008. Bogotá
D.C. – Colombia**



Industrieberatung Consultores Empresariales

Es una red internacional de socios comerciales con una gran experiencia laboral a nivel internacional.

El foco de la consultoría se basa en las siguientes áreas:

- ▶ Estrategia de negocios
- ▶ Planeación de producto y de proceso
- ▶ Planeación de mercadeo y ventas



WATER TECHNOLOGY



Schlaf- und Sitzkomfort
Know-How made in Germany





... is to introduce a systematic approach to innovation management, answering the questions as follows:

- ▶ Why is innovation management a prerequisite for business success?
- ▶ What are the challenges for first class innovation management in companies?
- ▶ What are the steps to introduce excellent innovation management?

Specialization

**Trend to higher
specialization in
research and business**



Outsourcing

**Trend to concentration
on the core business**



Short innovation cycles

**Trend to higher
complexity of
innovations**



The objective is to manage the acquisition and evaluation of information from

- markets/customers,
- competitors and
- the own corporation

Knowledge Management

The objective is to manage the deployment of resources in terms of

- manufacturing flexibility,
- organizational behavior,
- financial structure and
- market responsiveness

Business Success

Innovation Management

Change Management

The objective is to manage the economic implementation and exploitation of new ideas and discoveries to achieve sustainable

- business growth and
- profitability

What is Innovation Management?



Innovation management are concerned with all activities in a company which support the improvement and the development of new products, services and processes ...

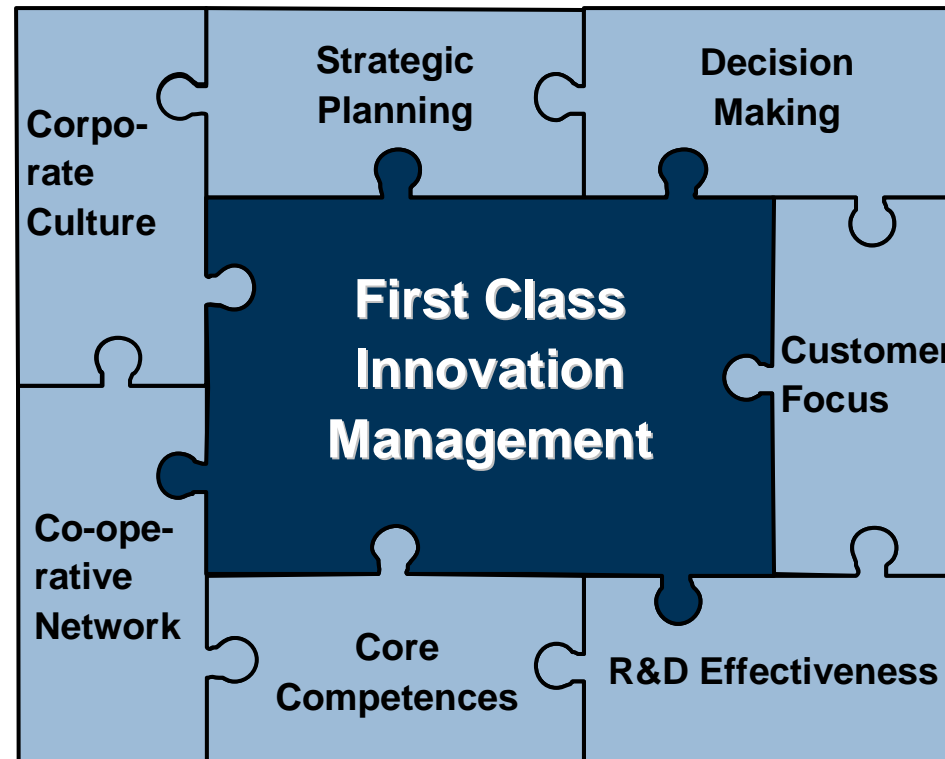
and

... are concerned with the implementation of the structure of an organization, the internal processes, the management techniques used and an innovation culture in an organization, to promote the development of new ideas and business opportunities.

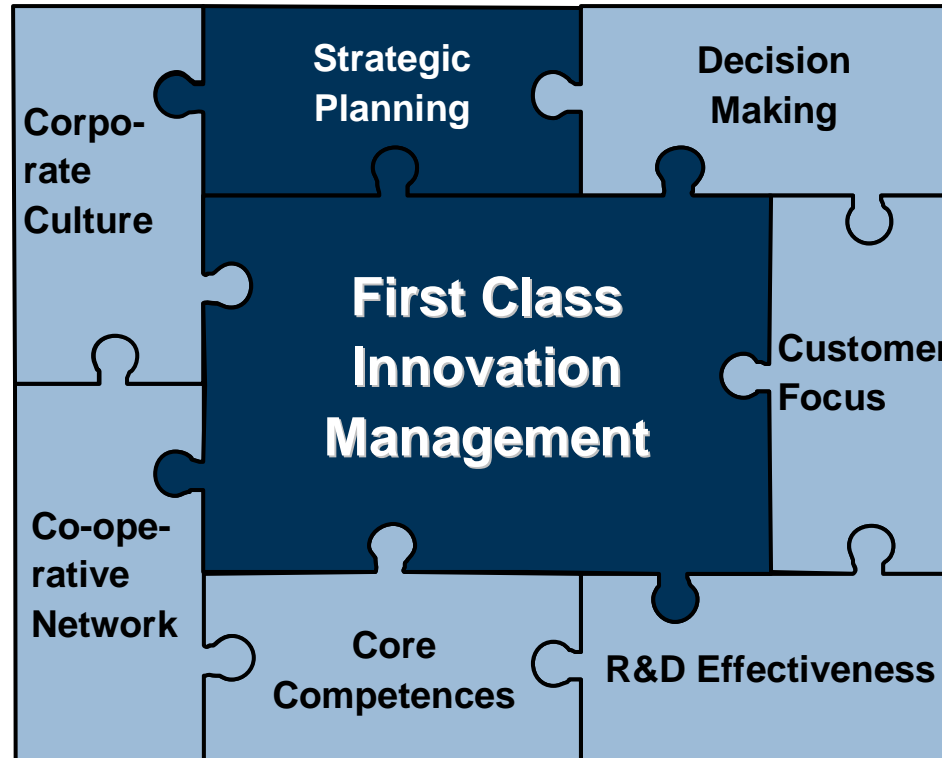
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"I was close to a breakthrough when
the grant money ran out."



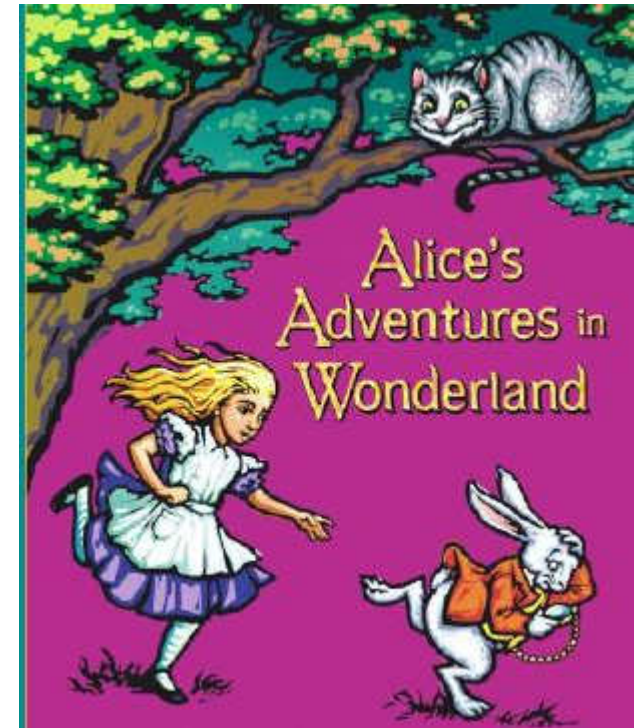
Are there long-term goals to give strategic direction to corporate R&D?



Strategy is not a detailed plan or program of instructions; it is a unifying theme that gives coherence and directions to the actions and decisions of an organization.

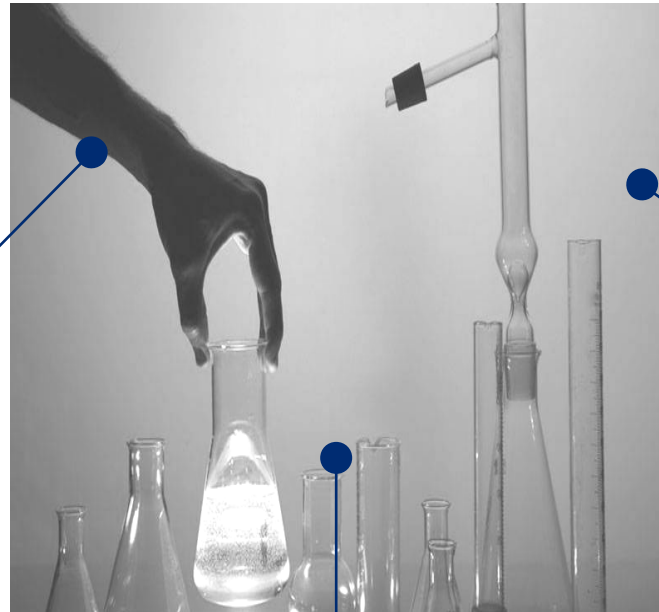
“Would you tell me, please, which way I ought to go from here?” asked Alice.
“That depends a good deal on where you want to go.”

Lewis Carrol,
Alice’s Adventures in Wonderland



Ambitions

To what extent should **incremental** or **radical** innovation be emphasized? Is the emphasis on product modification, product development or on basic research?



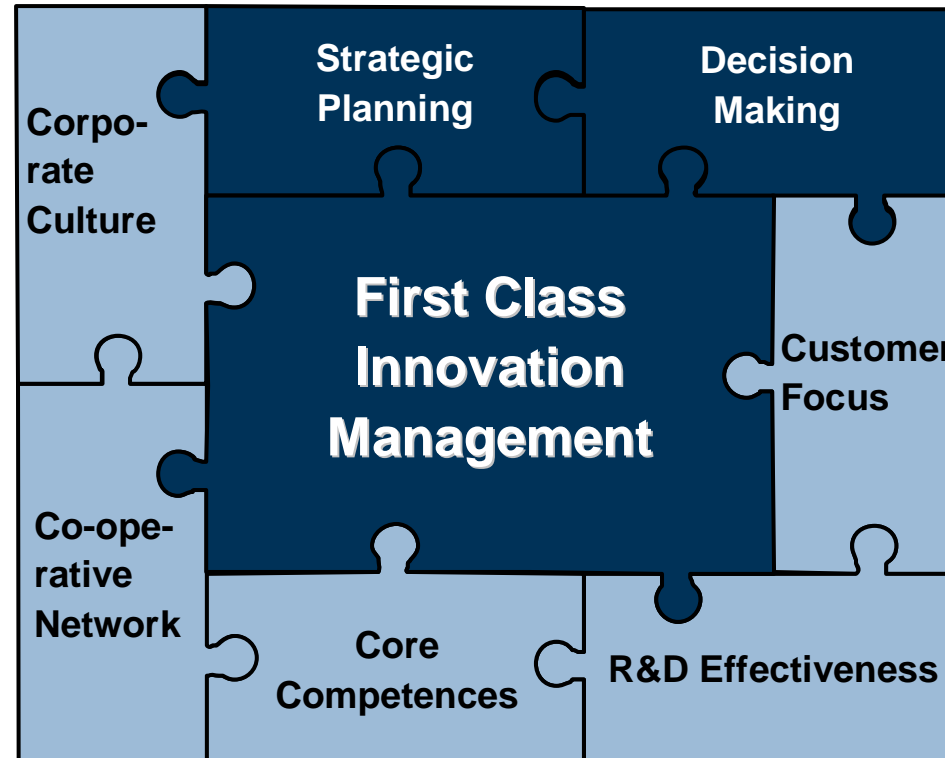
Position

Should the company maintain an **offensive** posture, seeking to lead innovation in the industry or adapt a **defensive** posture, responding quickly to competitors` developments?

Resources

Which **technological competences** are necessary to support the business strategy? Should R&D be done in-house or contracted out? Should it be centralized or decentralized?

Are there long-term goals to give strategic direction to corporate R&D?



Is there a standard decision making process to steer and control R&D-projects?

Decision making is the study of identifying and choosing alternatives based on the values and preferences of the decision maker. Decision making is an essential skill for effective leadership.

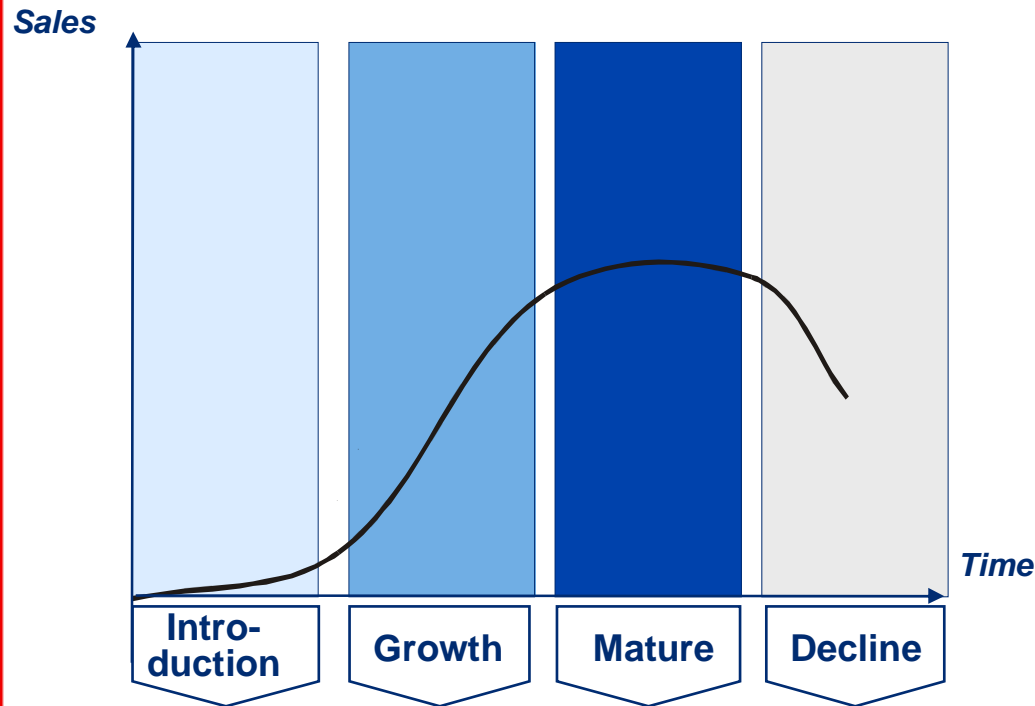
“In any moment of decision the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing.”

Theodore Roosevelt

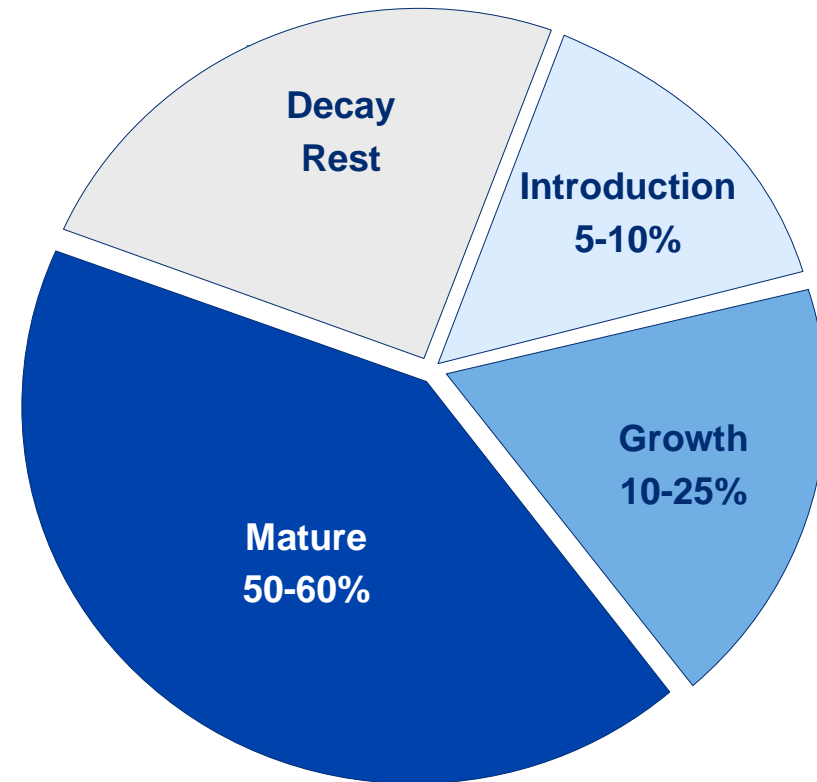


Product Life Cycle

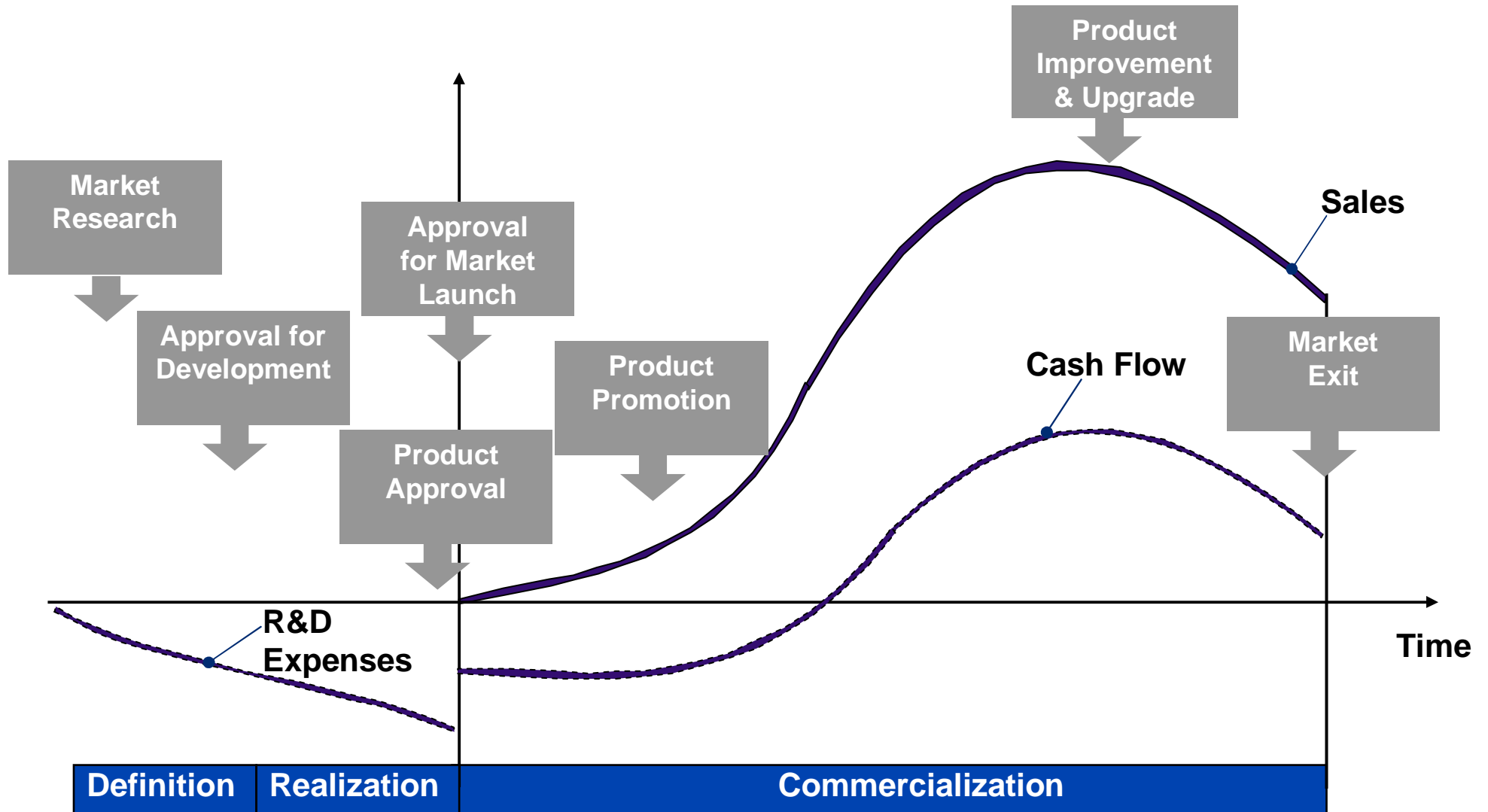
Innovation Cycle



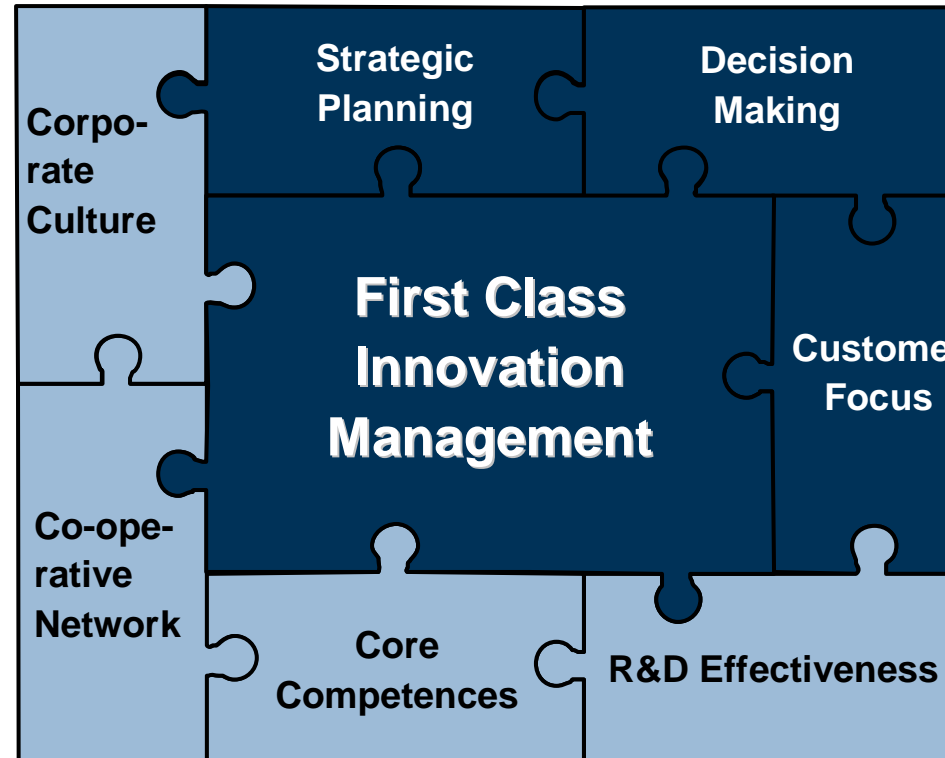
Product Portfolio



Optimized mix of products and services according to the innovation cycle is a characteristic of successful companies.



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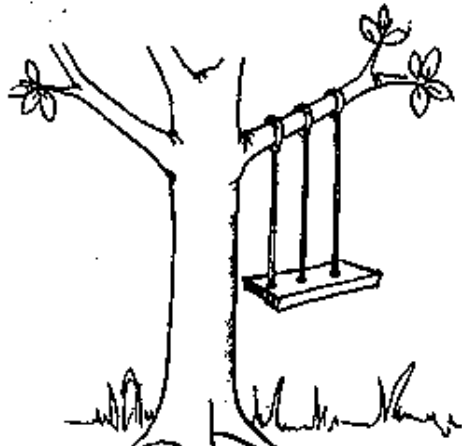
Are the specifications of the development projects in line with customers requirements?

Customer focus ensure that the voice of the customer is properly captured and heard throughout the organization, so that business operations, people and supporting processes work together to deliver value.

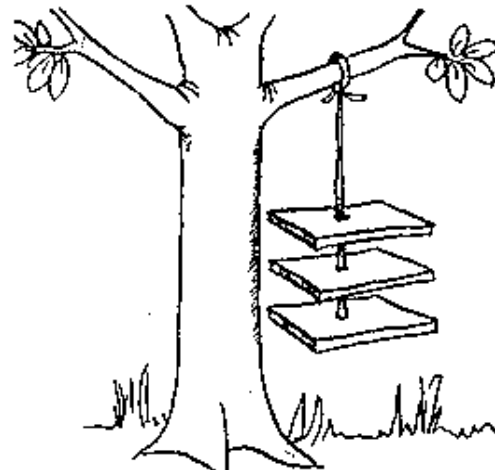
“The worm on the fishhook must be tasty for the fish and not for the angler.”

Chinese saying

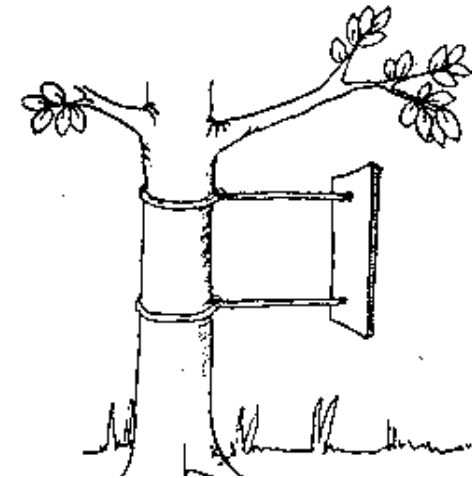




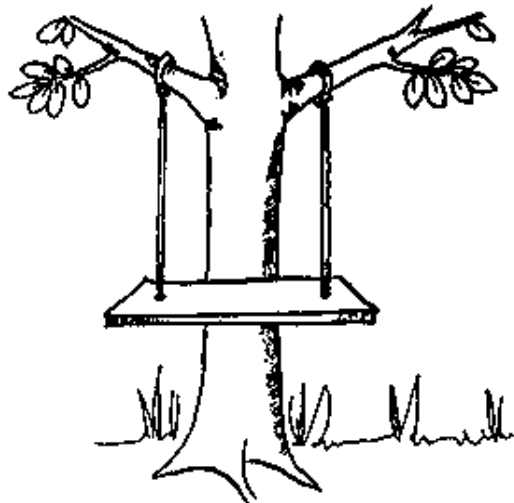
What the customer said...



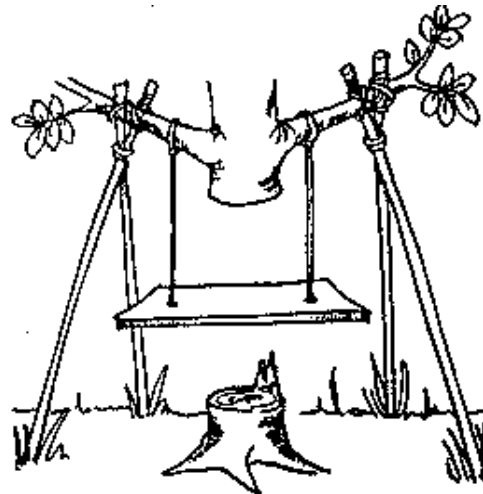
what the salesman understand



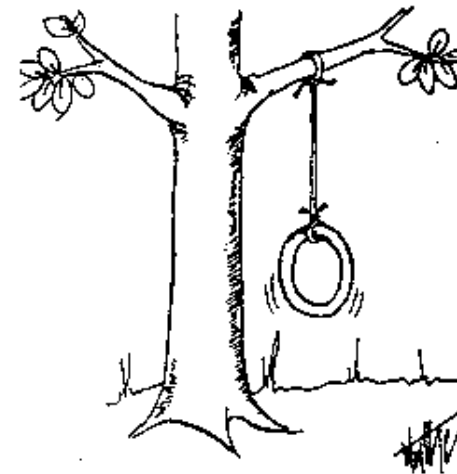
Solution of the R&D



Implementation in the Production



*Problemsolving at the installation
of the Customer Service*



...what the customer required

Available on the right time

Availability of the products via the accessible distribution channels at the time of the demand.

High Product Quality

Products with state of the art technology features and optimized quality.

Successful Products

Environmental friendly

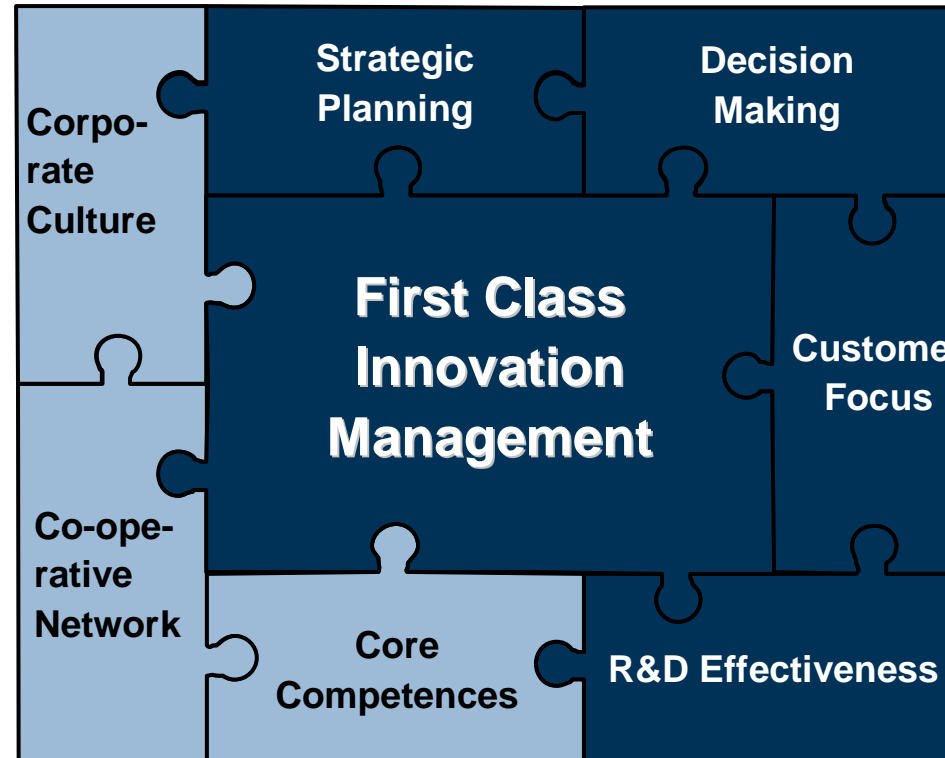
Products that are produced with environmentally consciousness and which are recyclable.

Low Product Lifecycle Cost

Good price/cost relation taking into account the whole lifecycle: purchase, installation, maintenance,...



Are there long-term goals to give strategic direction to corporate R&D?



Is there a standard decision making process to steer and control R&D-projects?

Are the specifications of the development projects in line with customers requirements?

Is there a systematic process to allow creativity and to create commercially successful products?

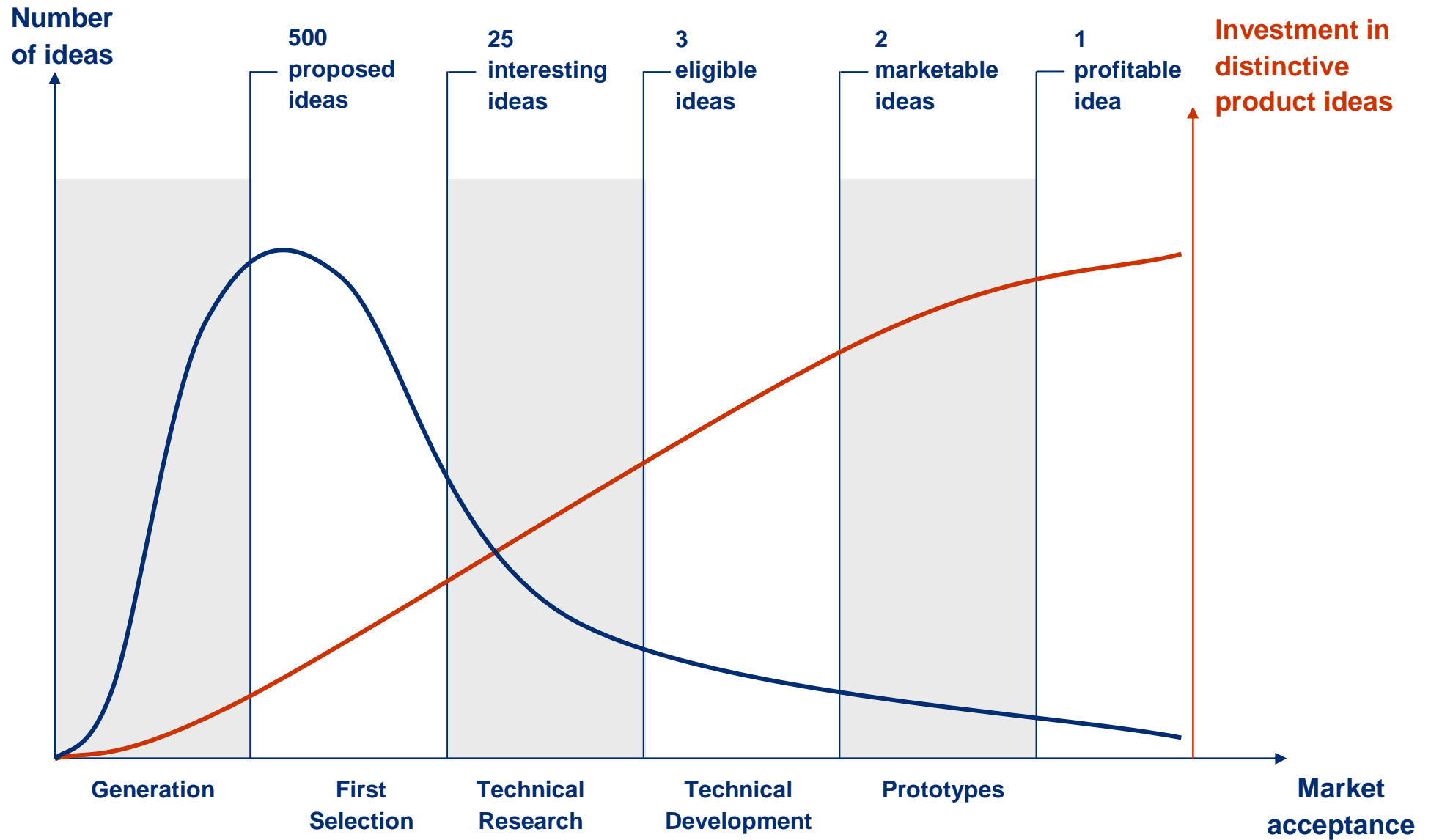
Idea Management is the discipline that enables the systematic capture, sharing, and exploiting of ideas across the organization to achieve innovations with success on the market.

**"You have to kiss many frogs,
in order to discover one prince!"**

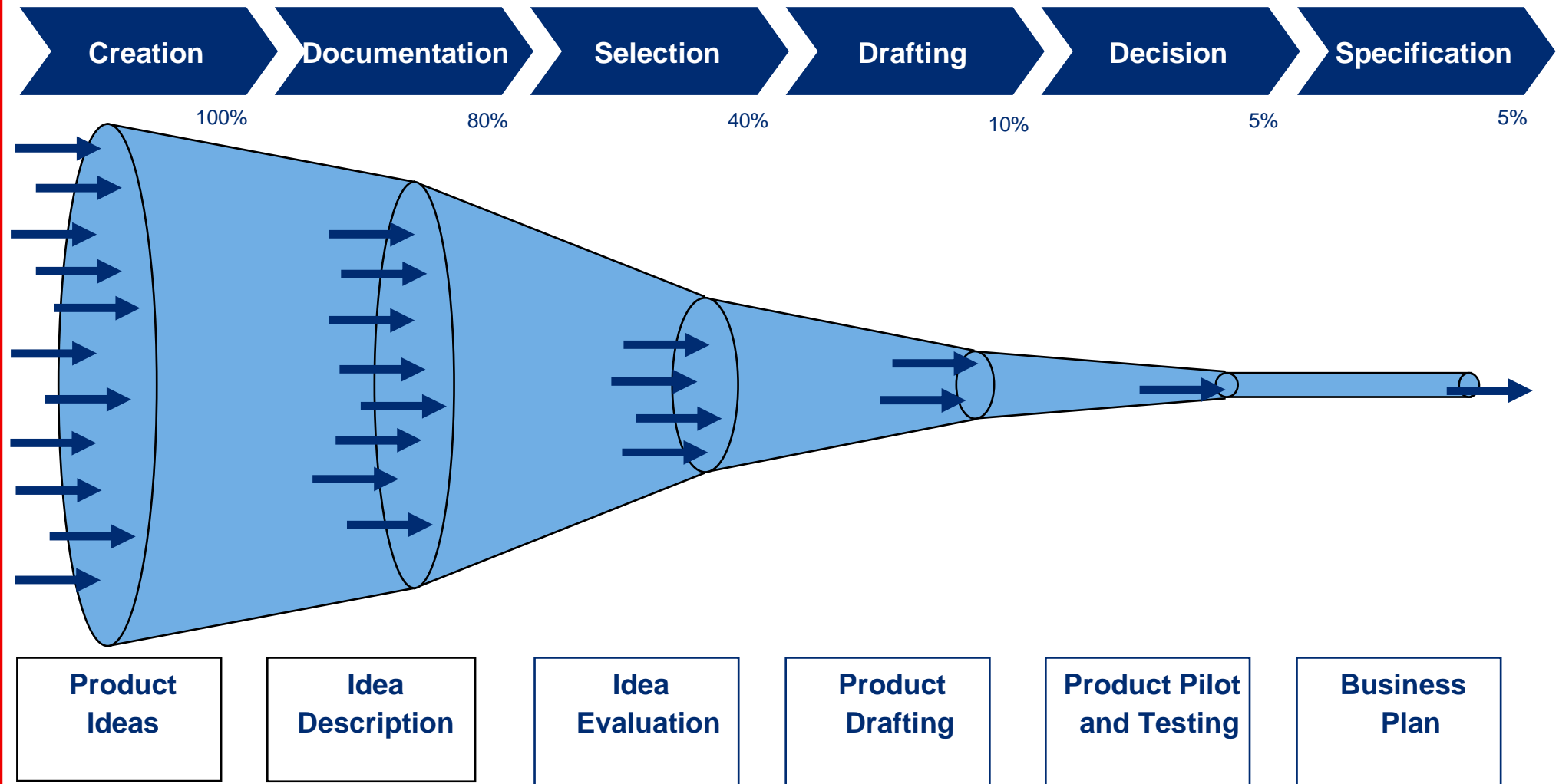
Arthur Frey,
3M Inventor of the post-it



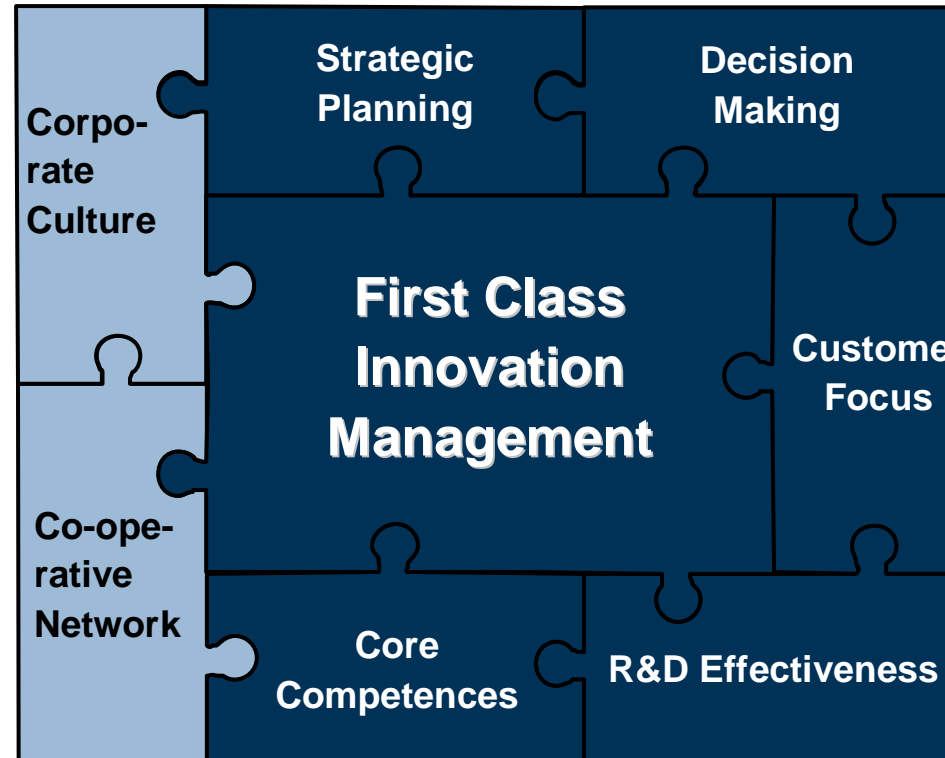
Idea Management and investment risks



Source: Wiese, Kayser



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Is there a systematic process to allow creativity and to create commercially successful products?

Is there a portfolio of technologies, skills, know how and products to keep the company growing and profitable?

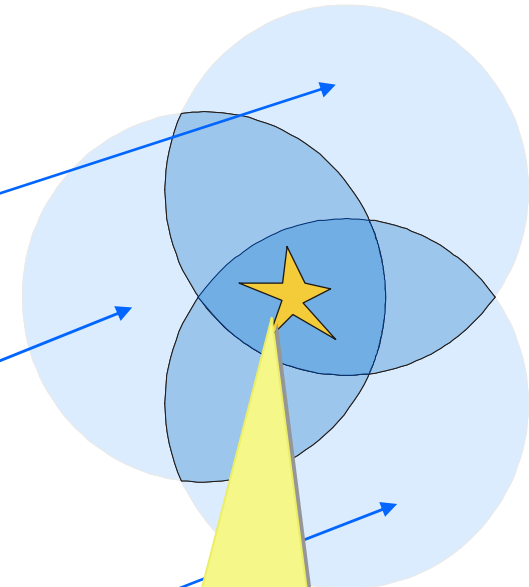
Core competences are distinctive internal skills, know how and knowledge in all functions of the value added chain. They give potential access to a wide variety of markets, give significant contribution to the competitiveness of the company and are difficult for competitors to imitate.

“... an area of specialized expertise that is the result of harmonizing complex streams of technology and work activity.”

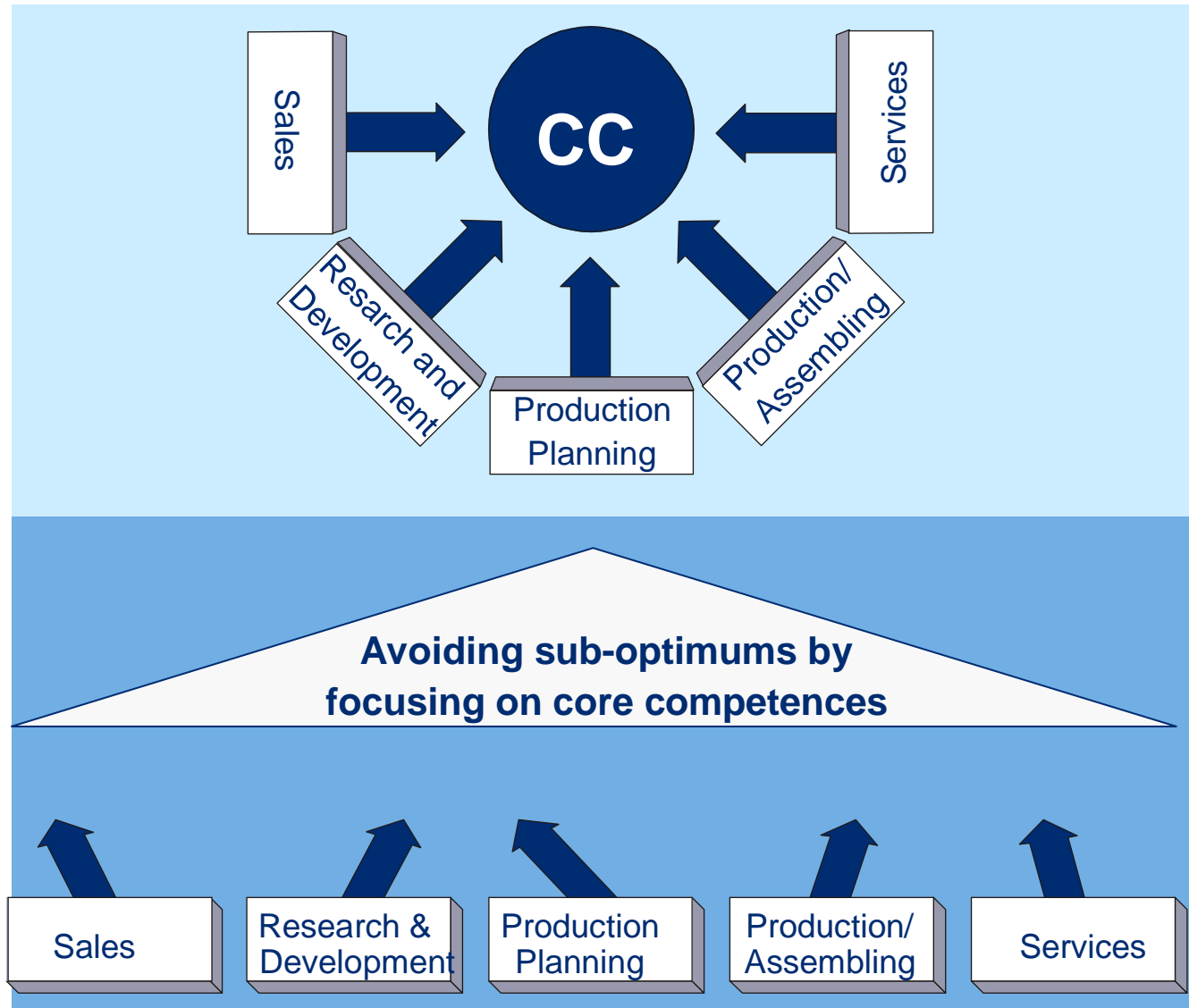
**C.K. Prahalad and Gary Hamel,
Harvard Business Review, 1990**



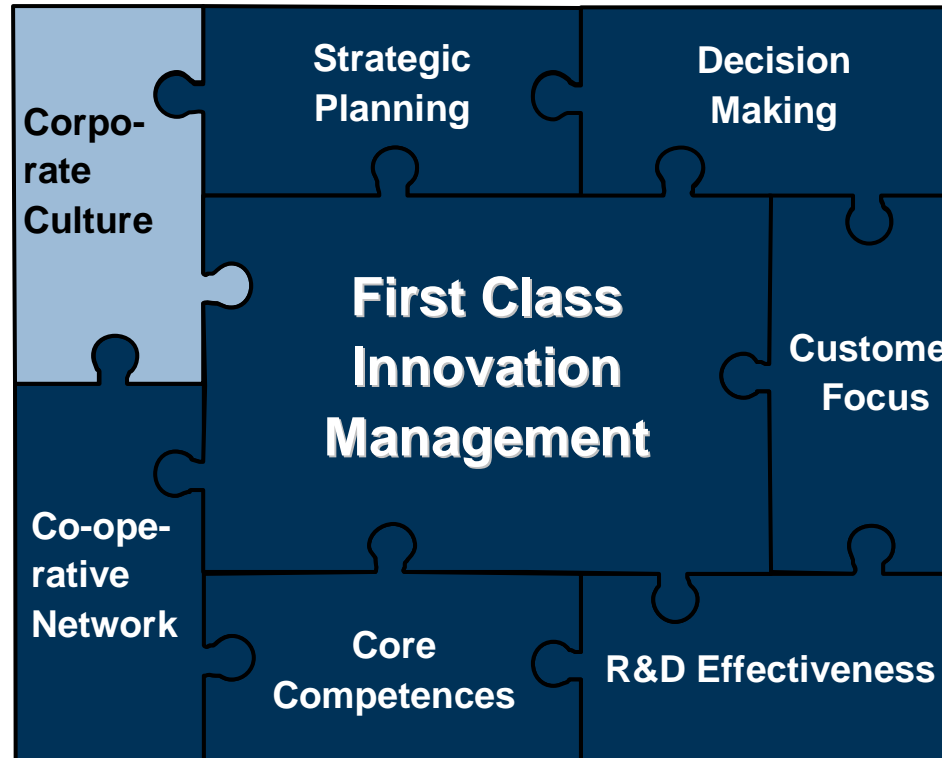
	Personnel	Tools Equipment	Information Know how
Firm Infrastructure			
HR Management			
Technology Development		Laboratory CAD	
Procurement			
Inbound Logistic			
Operations	Technicians Worker		
Marketing & Sales			Market requirements
Outbound Logistic			
Service			



**Planning and
manufacturing of
high precise
machine tools for
niche markets**



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Is there a systematic process to allow creativity and to create commercially successful products?

Is there a network of partners to share the burden of R&D work and to allow co-operative product solutions?

Is there a portfolio of technologies, skills, know how and products to keep the company growing and profitable?

A Co-operative network is a formal relationship formed between two or more parties to meet a critical business need while remaining independent organizations. The alliance often involves technology transfer like access to knowledge and expertise, shared expenses and shared risk.

“If you work alone you are adding your efforts, if you work intelligently in a network there is a chance to multiply your efforts!”

**Joachim Milberg
Chairman, Supervisory Board
Bayerische Motoren Werke (BMW) AG**



Example of a system partnership: Aviation industry, Boeing's 787

Who makes the parts and where the engineering jobs are

Numbers of engineers are projections for the end of 2005 made by Boeing's first-tier partners, and may not include all engineering specialties. Production workers are not included.

CHINA

COMPANY	ENGINEERS
Chengdu Aircraft Industrial Group:	NA
Rudder	
Shenyang Aircraft Group:	NA
Vertical fin leading edge	
Hafei Aviation Industries:	NA
Wing to body fairing panels	

SOUTH KOREA

COMPANY	ENGINEERS
Korean Air:	NA
Wing tips	
Tail cone	

JAPAN

COMPANY	ENGINEERS
Kawasaki Heavy Industries:	190
Midfuselage section	
Fixed trailing edge	

Fuji Heavy Industries:	130
Center "wing box" fuselage section	

Mitsubishi Heavy Industries:	250
Wing box	

TOTAL ENGINEERS: 570

AUSTRALIA

COMPANY	ENGINEERS
Boeing's Hawker de Havilland unit:	80
Movable trailing edges	
Inboard flaps	

UNITED STATES

COMPANY	ENGINEERS
Spirit Aerosystems (Wichita, Tulsa):	670
Nose section (Wichita, Kan.)	
Engine pylons (Wichita)	
Fixed leading edges (Tulsa, Okla.)	
Movable leading edges (Tulsa)	

Vought (Charleston):	100
(Dallas):	300
Rear fuselage sections (Charleston, S.C.)	

Goodrich Aerostructures:	160
Nacelles (Chula Vista, Calif.)*	

Boeing (Frederickson, Pierce County):	95
Vertical fin	

(Boeing Everett plant): 3,600

TOTAL ENGINEERS: 4,925
plus 200 support staff (Everett)

CANADA

COMPANY	ENGINEERS
Boeing Canada (Winnipeg):	60
Wing to body fairing assembly	
Aft pylon fairings	
Wing to body fairings	
Main landing gear doors (body)	
Main landing gear doors (wing)	

ENGLAND

COMPANY	ENGINEERS
Messier-Dowty:	30
Main landing gear	
Nose landing gear	

SWEDEN

COMPANY	ENGINEERS
Saab:	NA
Aft cargo door	
Forward cargo door	

ITALY

COMPANY	ENGINEERS
Alenia:	770
Midfuselage sections	
Horizontal stabilizer	

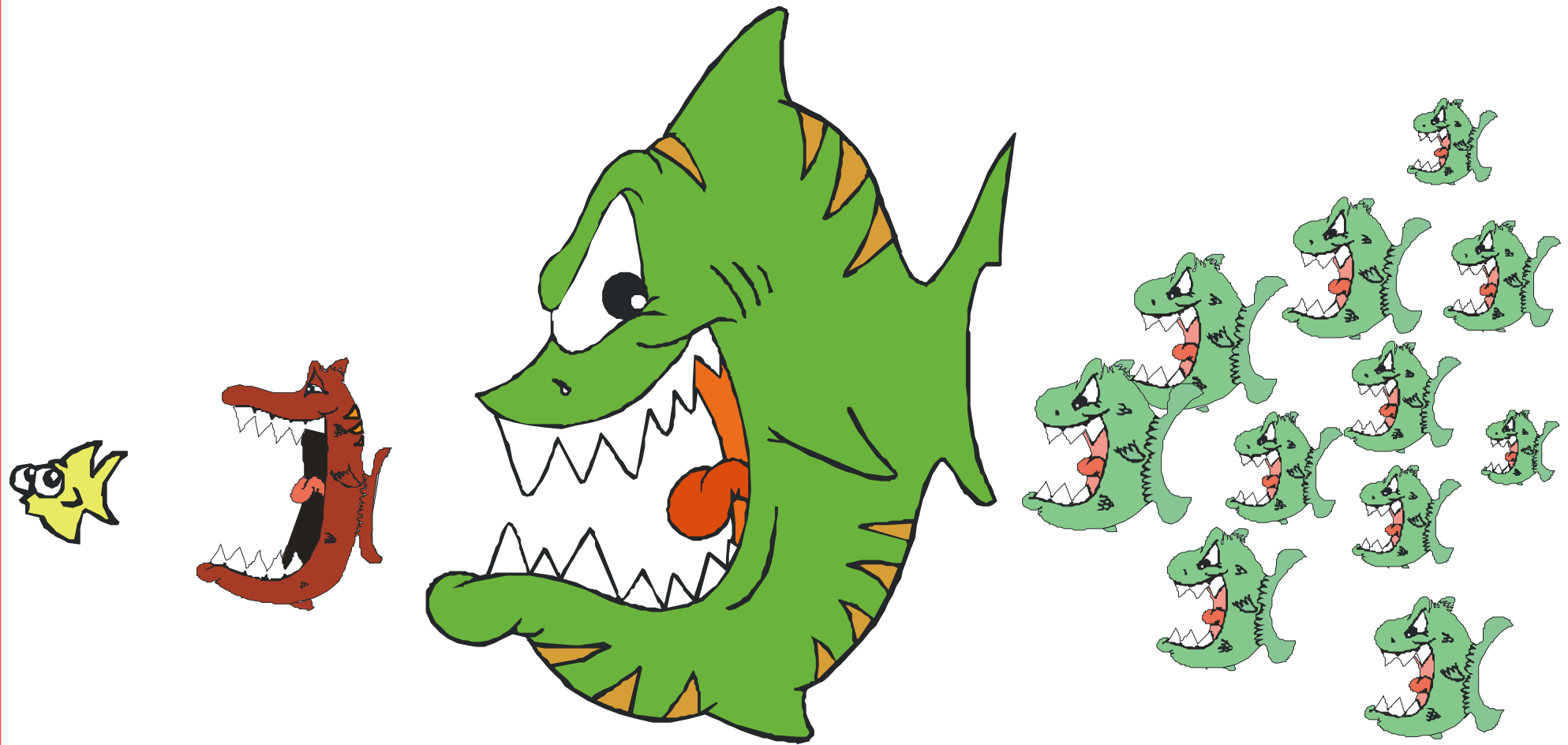
FRANCE

COMPANY	ENGINEERS
Latecoere:	NA
Aft passenger doors	
Forward passenger doors	

Source: Boeing documents

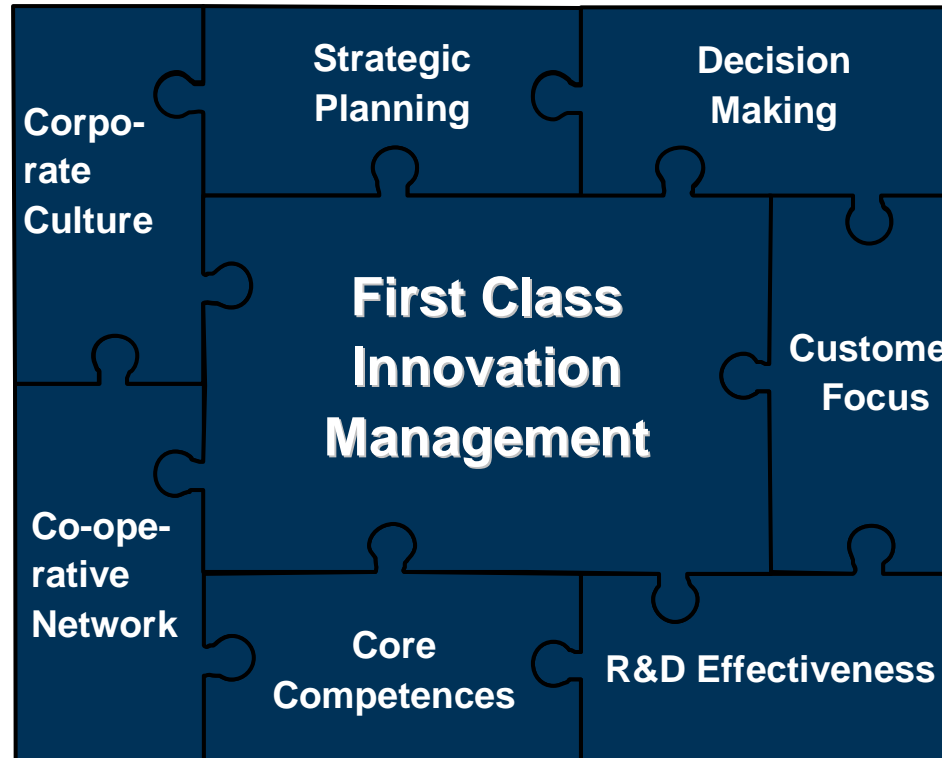
REPORTING BY DOMINIC GATES / THE SEATTLE TIMES
GRAPHICS BY MARK NOWLIN / THE SEATTLE TIMES

... be flexible and bundle competences



Is there a corporate culture of innovation that integrates multidisciplinary skills and knowledge?

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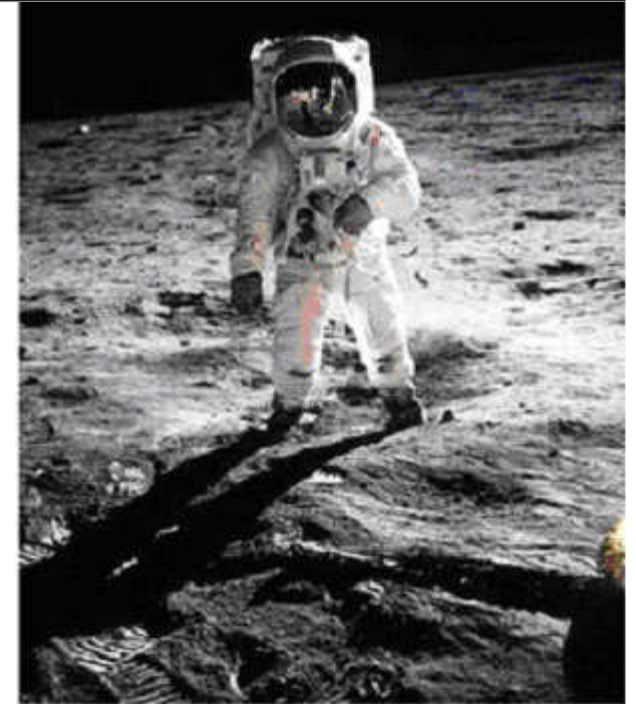
Corporate Culture is the set of important beliefs and values that members of an organization share in common.

A group of US Senators were visiting NASA at the time when funding was under threat. One Senator asked a man cleaning the floor:

"So what are you doing here?"

The man answered:

"I'm here putting a man on the moon."



**Every single person must know
what they are doing,
why they are doing it,
and above all,
must be fully committed
to doing what they are doing.**

**Innovations will not happen
without the people being an
enthusiastic part of the effort.**



„It won't work here“

„We've tried it before“

„This isn't the right time“

„It will cost too much“

„It can't be done“

„Let's discuss it at our next meeting“

„It's not the way we do things“



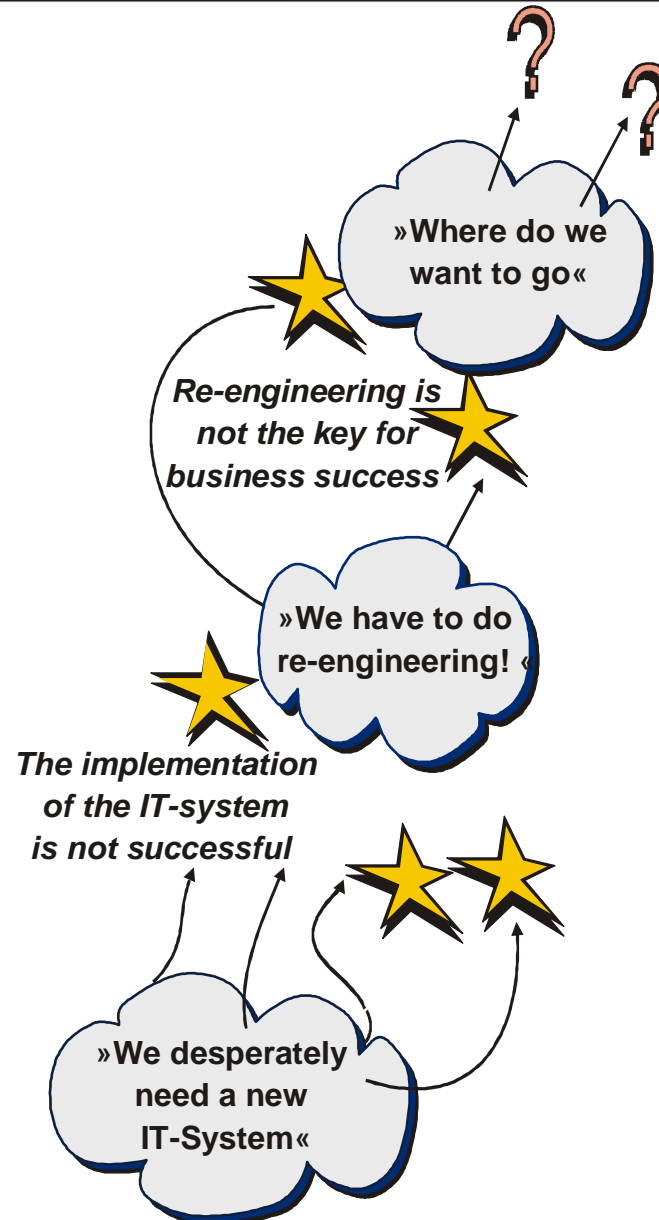
„I've got a great idea“

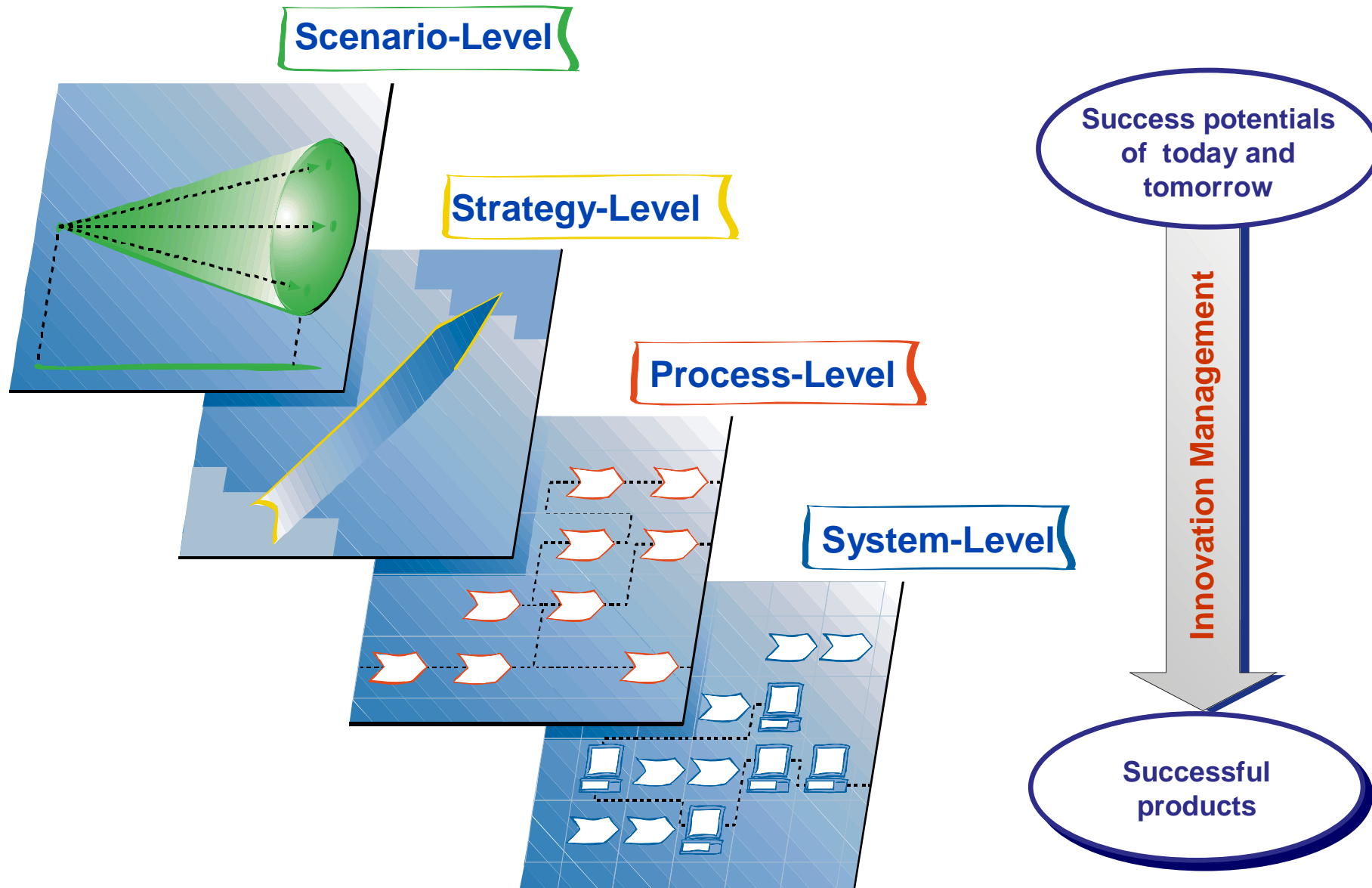
„We've done all right without it“



"I love this room, so many happy memories of killing innovation..."

“Traditional” approach in many companies







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*Industrieberatung
Consultores Empresariales*

*Christian J. Bruszies
Ing. Industrial, MBA*

Phone 8005315

Cel. 316 5289485

info@consultores-co.com

www.consultores-co.com

*Thank you
for your attention!*

