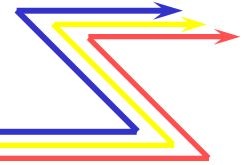


# Miten tunnistaa innovaatio?

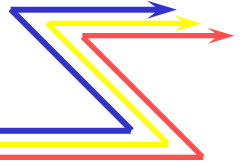
(How to recognise and identify  
an innovation?)

Esa Soppi MD, PhD, MBA  
M.I.T. Consulting Ltd.

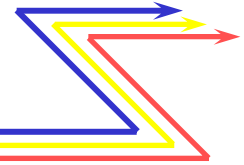


- Definitions
- Entrepreneurship
- Systemic innovation
- Principles of innovation & the Dos and the Donts

# Definition of innovation

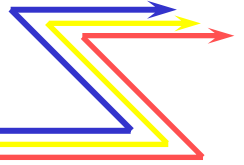


- The UK government defines innovation as follows:
- "successful exploitation of new ideas"

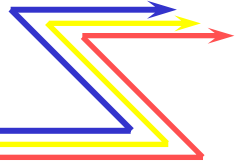


- Innovation =  
Creativity (= Idea + Action)  
+ Productivity
- Effective innovation requires ongoing  
productive-drive, determination and  
persistence
  - These need to be efficient!

David Archibald



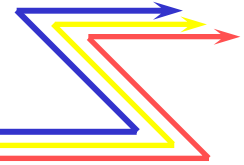
- The creation of something in the mind
- The act of starting something for the first time; introducing something new
- A creation resulting from study and experimentation



- is the conversion of knowledge and ideas into a benefit,

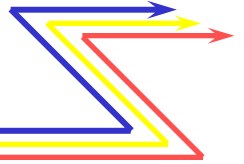
which may be for commercial use or for the public good;

- The benefit may be new or improved products, processes or services.



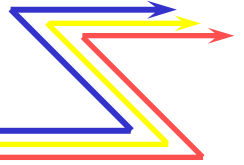
1. The act of something new
  - A human act
2. Something newly introduced
  - Something = not just material
  - A change
3. A contrary to established customs
  - A context/concept
4. Implementing new ideas to create value
  - An intention

# Innovation requires...



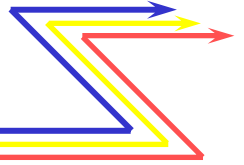
1. Stopping long enough to gather new information about the situation
2. Testing ideas that show up

Joyce Wycoff, InnovatioNetwork



# Innovation and Entrepreneurship

# The entrepreneur...

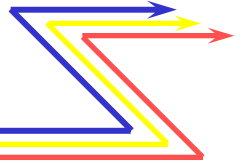


- shifts economic resources out of an area of lower and into an area of higher productivity

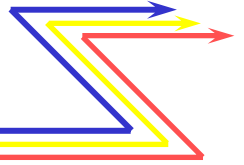
JB Say, around 1800

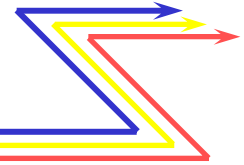
- Who is an entrepreneur?

# An entrepreneur

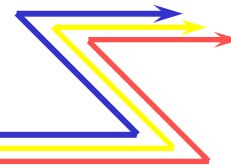


- US definition of entrepreneur
  - One, who starts his/her own, new and small business
- German definition
  - The entrepreneur = Der Unternehmer
  - One with power and property
- Suomalainen määritelmä
  - Der Unternehmer = yrittäjä, työnantaja

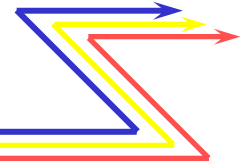




- McDonald's, an entrepreneurship
  - Not the hamburger, but the management concept, the process and the standardized product, the outlook of restaurants, training and standards are **Innovations**
- McDonald's franchise restaurant
  - Nothing to do with entrepreneurship
  - Still the franchise owner is **Yrittäjä** taking a business risk

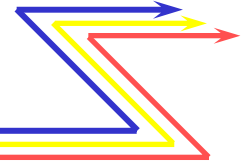


- Entrepreneurs are a minority among new businesses
  - They create something new, something different; they change or transmutate values = Innovate
- Entrepreneurship is not a personality trait
  - People who need certainty are unlikely to make good entrepreneurs
  - The essence of any decision is uncertainty



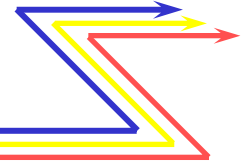
Entrepreneurs innovate!

Innovation  
is the specific instrument of  
entrepreneurship



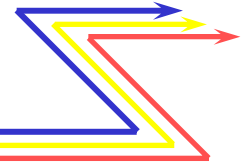
Every practise rests on theory,  
even if  
the practitioners themselves are  
unaware of it!

Innovations?

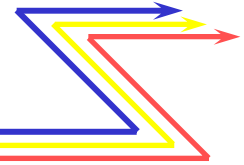


# Introduction to innovations

## Examples



- Molds used to destroy bacterial cultures creating nuisance
- In the 1920's Alexander Fleming discovered that there is more behind the nuisance than the molds are creating



- 1955-1965

Imitation

Bad quality

Short-lived products

Cheap

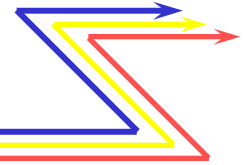
- 1975 ->

• Innovation

• Quality goods

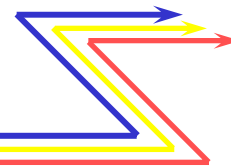
• Durable

• Good value for money

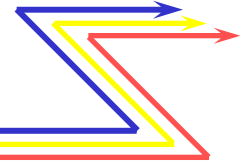


- George Stephenson (born 1781)
- First locomotive 1815
- First working locomotive 1825
- Carl Ritter von Ghega (born 1802)
- Semmering-Railway in Austria
- Steam locomotive powerful enough to make the way in the Alps

# The Viagra story



- Sildenafil
- Vasodilatator
- Potential anti angina drug
- Trials started 1991
- In 1992 some male study subjects do not return their study medication
- When questioned they report enhanced erection
- In 1993 trials started in erectile dysfunction



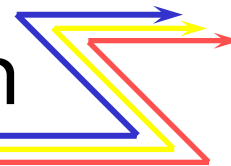
What is common in these cases?

Bright idea – flash of genius

or

Practise of systemic work

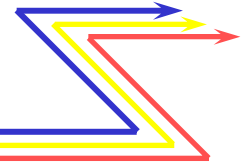
# Theory on practise of systemic innovation



- Systemic innovation consists in the purposeful and organized search for changes, and in the systemic analysis of the opportunities, such changes might offer room for economic or social innovations
  - Sources within the organization
  - Sources outside the organization

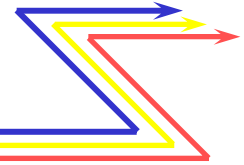
P.F. Drucker Innovation and entrepreneurship

# Sources within the organization

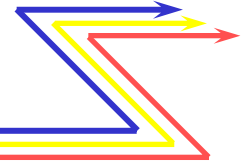


- The unexpected
  - The unexpected success
  - The unexpected failure
  - The unexpected outside event
- The incongruity
  - between reality as it actually is and reality as it is assumed to be or ought to be
- Innovation based on process need
- Changes in industry or market structure

# Sources outside the organization



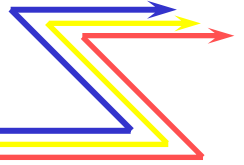
- Demographics
  - Population changes
- Changes in perception, mood, and meaning
- New knowledge,
  - both scientific and nonscientific



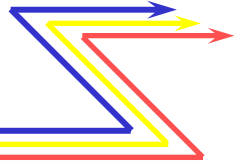
# Sources within the organization

## Innovation

# The unexpected

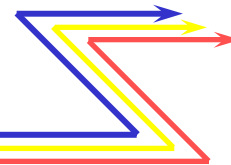


- Sir Alexander Fleming; Penicillin
  - THE UNEXPECTED SUCCESS
- Thalidomide; sedative during pregnancy
  - Congenital malformations
  - THE UNEXPECTED FAILURE
  - > a discovery of potential antiangiogenic drug for cancer
- Tamiflu; influenza A
  - Avian influenza; THE UNEXPECTED OUTSIDE EVENT



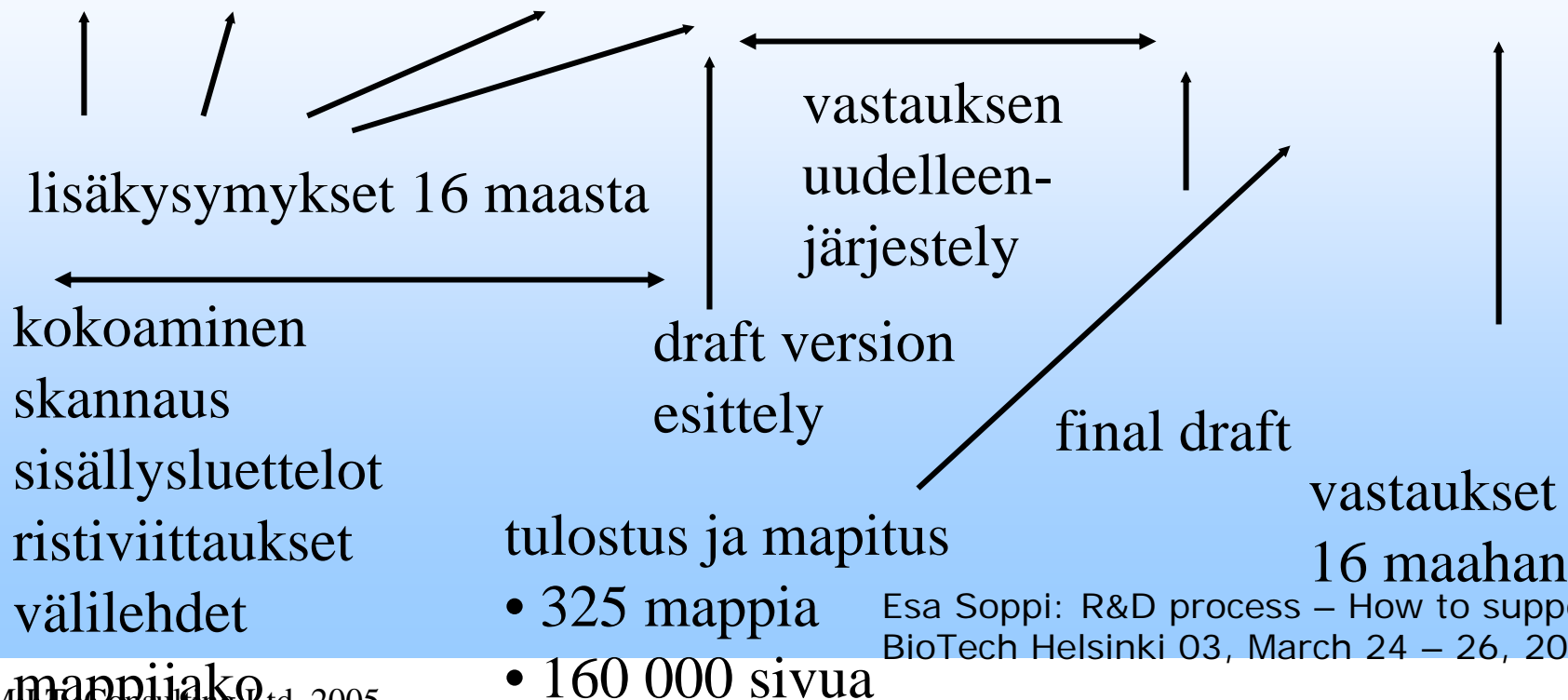
- Diagnosis of autoimmune thyroiditis and hypothyreosis
  - Thyroglobulin and thyroid microsomal (TPO) antibodies are equally important and were always requested together, some 15 yrs ago
    - Only in 1% of patients thyroglobulin antibodies have some clinical significance
- Diagnosis of ANCA-positive vasculitis
  - It is stated even today that positive IF results should be confirmed by specific EIA-tests of PR-3 and MPO
    - Fundamentally wrong!

# Innovation based on process need



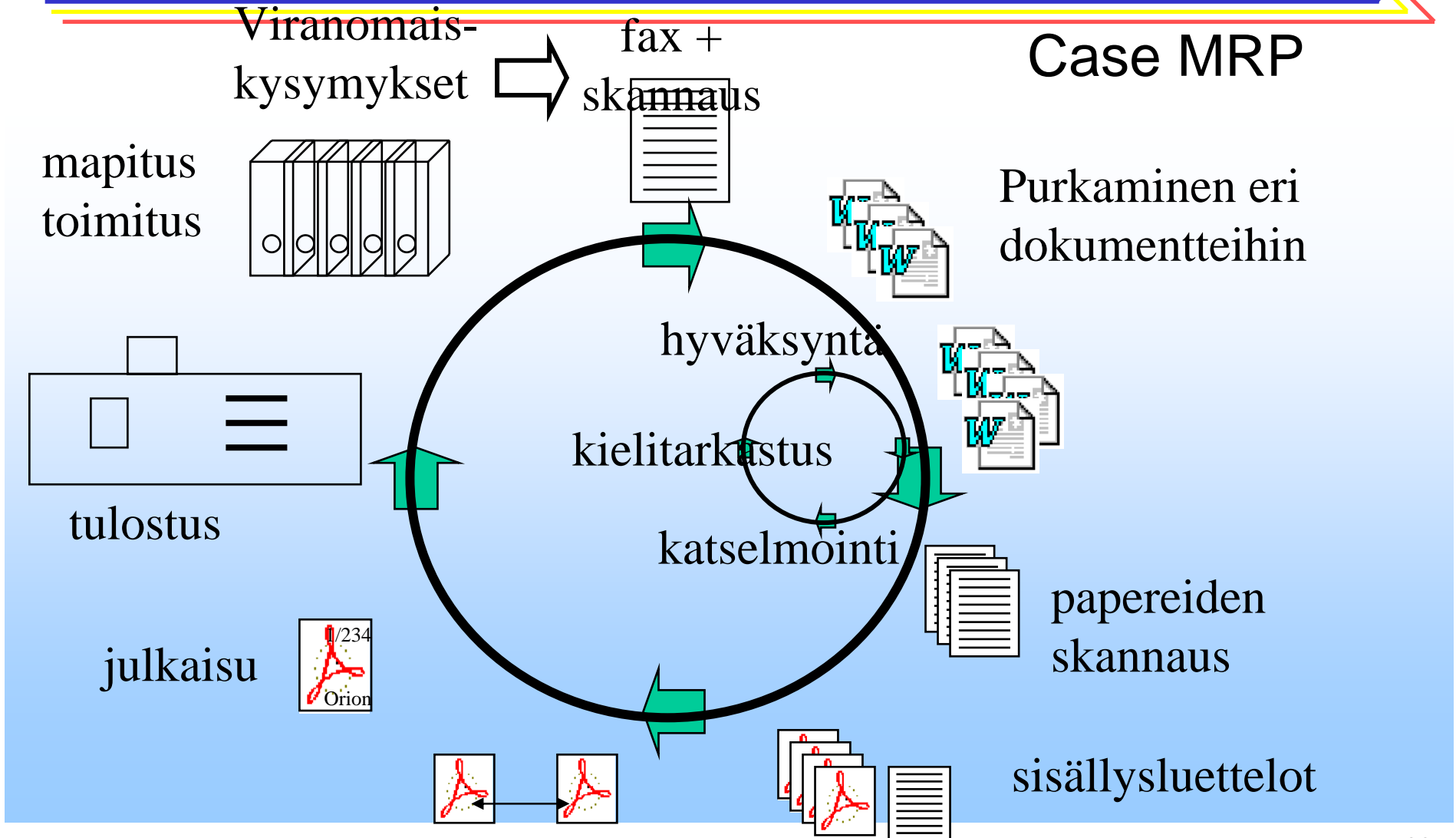
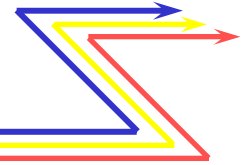
## Case MRP

1 2 3 4 5 6 7 8 9 10  
pe la su ma ti ke to pe la su

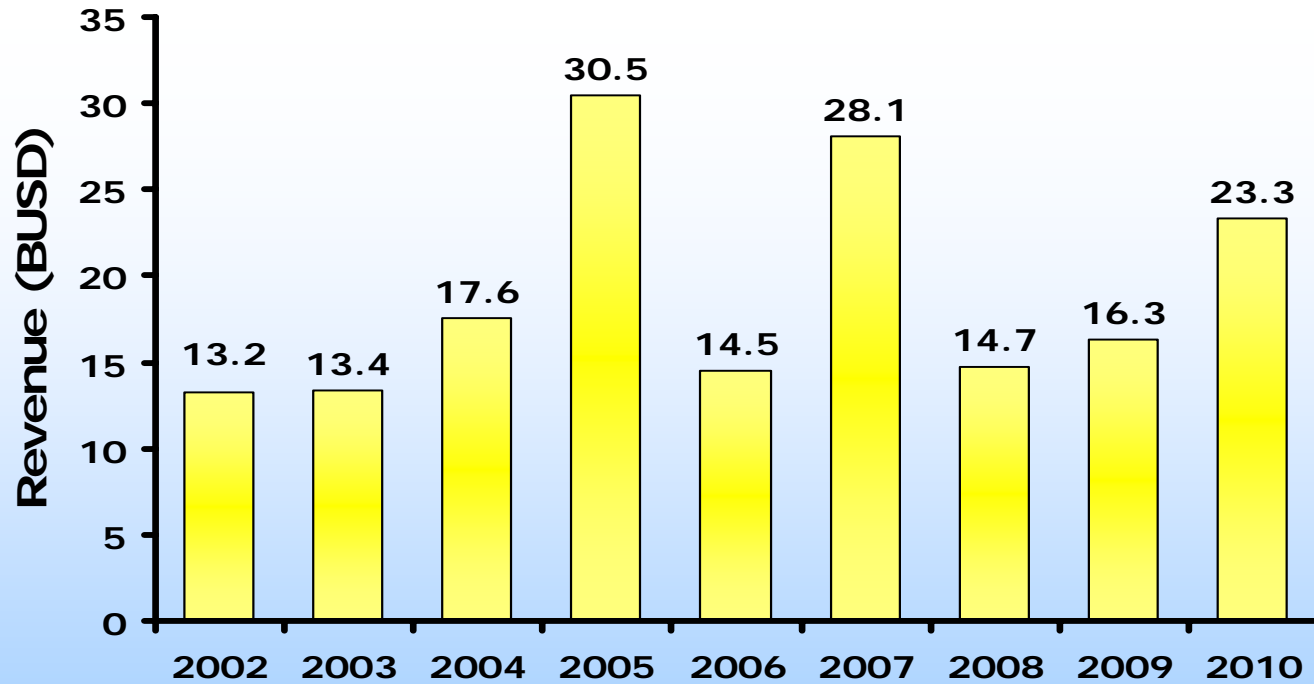
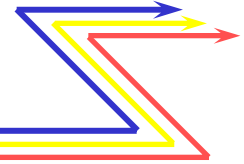


Esa Soppi: R&D process – How to support it?  
BioTech Helsinki 03, March 24 – 26, 2003, Helsinki

# Innovation based on process need

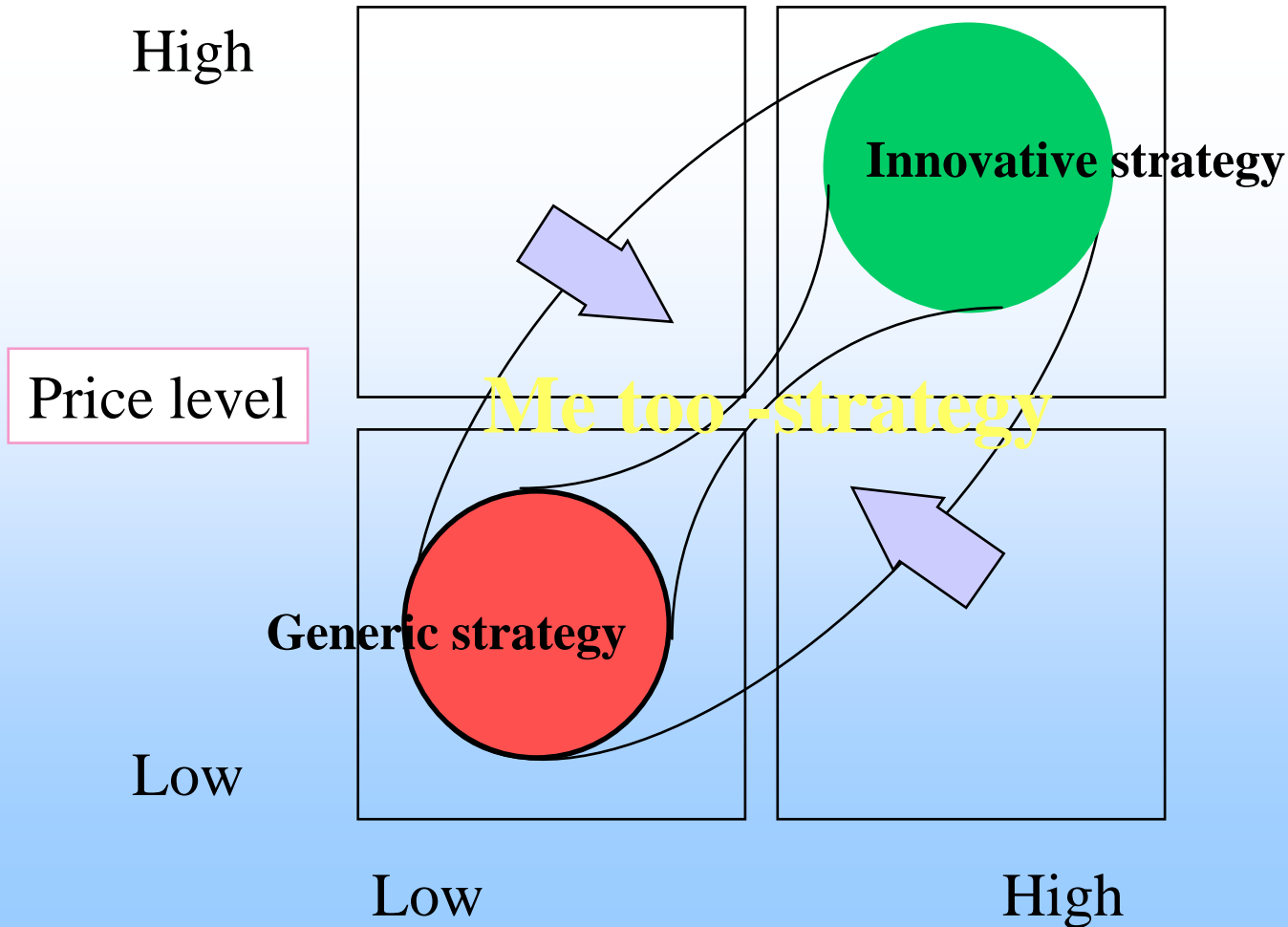
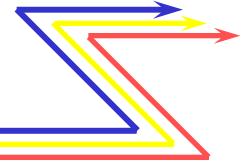


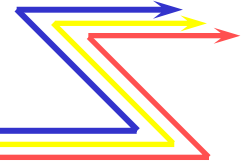
# Changes in industry or market structure



Examples molecules	2002	2003	2004	2005	2006	2007	2008	2009	2010
Augmentin Clarityn Zestril	18								
Neurontin Flixotide Cipro-floxacin		24							
Procrit Klexane Durogesic Diflucan			23						
Zocor Pravachol Zithromax Zoloft				32					
Actos Stilnoct Paxil Neupogen					22				
Norvasc Fosamax Efexor Risperdal						28			
Serevent Tavanic Aciphex							28		
Lanzo Cellcept Topimax								22	
Gemzar Aricept Singulair Seretide									15

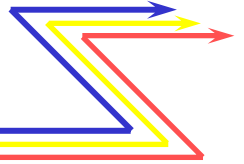
# Business strategies of pharmaceutical industry





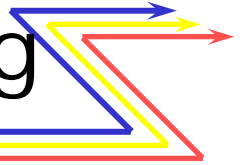
# Sources outside the organization

# Innovation



- Population changes
  - Population is aging
  - Diabetes type 2
    - Increasing (incidence and prevalence) exponentially
    - Leading cause of dialysis already today!
      - New drugs are coming
  - Hypercholesterolemia
    - Changing cut of points and perception of stepwise risk profile
      - Sales of Lipitor exceeded 10 BUSD
  - Hypertension
    - Half of patients are not treated adequately
    - Too small doses of, and too few drugs including diuretics are used
    - "New diagnostics" (24h ambulatory blood pressure monitoring)

# Changes in perception, mood, and meaning



Product business system, development cycle



Death Valley

Short

Long



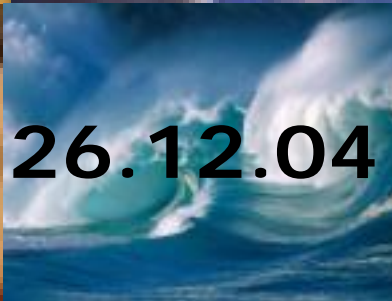
Napa Valley

Long

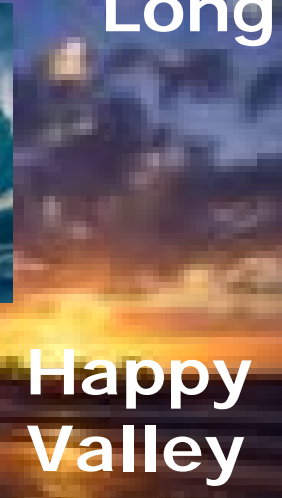


Silicon Valley

Short



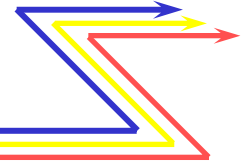
26.12.04



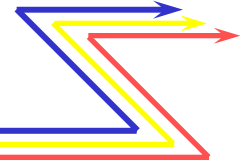
Happy Valley

Product life cycle

# New knowledge, both scientific and nonscientific

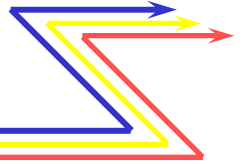


Development of (biotech) drugs	Lipitor
IT- business	Vioxx Bextra



# General principles of innovation

Quotations from ideas by Peter Drucker

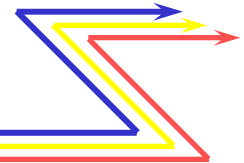


1. *"Purposeful innovation begins with the analysis of the opportunities. It begins with what I have called **the sources of innovation opportunities**.*

*In different areas, different sources will have different importance at different times."*

2. *"Innovation is both conceptual and perceptual.*

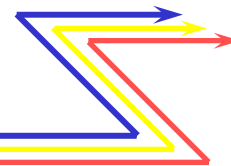
*The second imperative of innovation is therefore to go out to look to ask to listen. This cannot be stressed too often."*



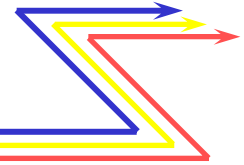
3. *"An innovation, to be effective, has to be simple and it has to be focused. It should do only one thing otherwise it confuses".*

*"Everything new runs into trouble. If complicated it cannot be repaired or fixed. All effective innovations are breathtakingly simple.*

*.. Even the innovation that creates new uses and new markets should be directed to specific, clear applications".*



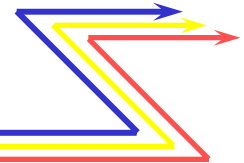
4. *"Effective innovations start small. They are not grandiose. They try to do one specific thing".*
  
5. *"But - and this is the final "do" - a successful innovation always aims at leadership.....all strategies aimed at exploiting an innovation, must achieve leadership within a given environment. Otherwise they simply create an opportunity for the competition."*



*1. The first is simply... not to try to be clever.*

*Innovations have to be handled by ordinary human beings, and if they are to attain any size and importance at all, by morons or near-morons.*

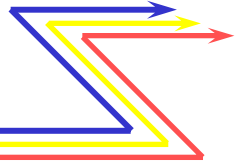
*Incompetence, after all, is the only thing in abundant and never-failing supply. Anything too clever, whether in design or execution, is almost bound to fail.*



2. "Don't diversify, don't splinter, don't try to do too many things at once.

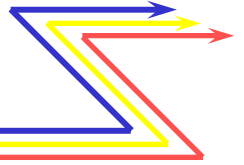
This is, of course, the corollary to the "do": be focused! Innovations that stray from a core are likely to become diffuse. They remain ideas and do not become innovations.

The core does not have to be technology or knowledge. In fact, market knowledge supplies a better core of unity in any enterprise, whether business or public-service institution, than knowledge or technology do".



3. *“But there has to be a core of unity to innovative efforts or they are likely to fly apart.*

*An innovation needs the concentrated energy of a unified effort behind it. It also requires that the people who put it into effect understand each other, and this, too, requires a unity, a common core. This, too, is imperiled by diversity and splintering”.*

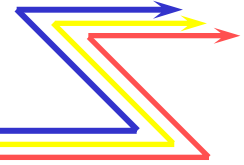


4. "Finally, don't try to innovate for the future.

## **Innovate for the present!**

An innovation may have long-range impact; it may not reach its full maturity until twenty years later".

Quotations from ideas by Peter Drucker



"Genius is one per cent inspiration and ninety-nine per cent perspiration.

Accordingly, a 'genius' is often merely a talented person who has done all of his or her homework."

Thomas Alva Edison