

14. April 2010

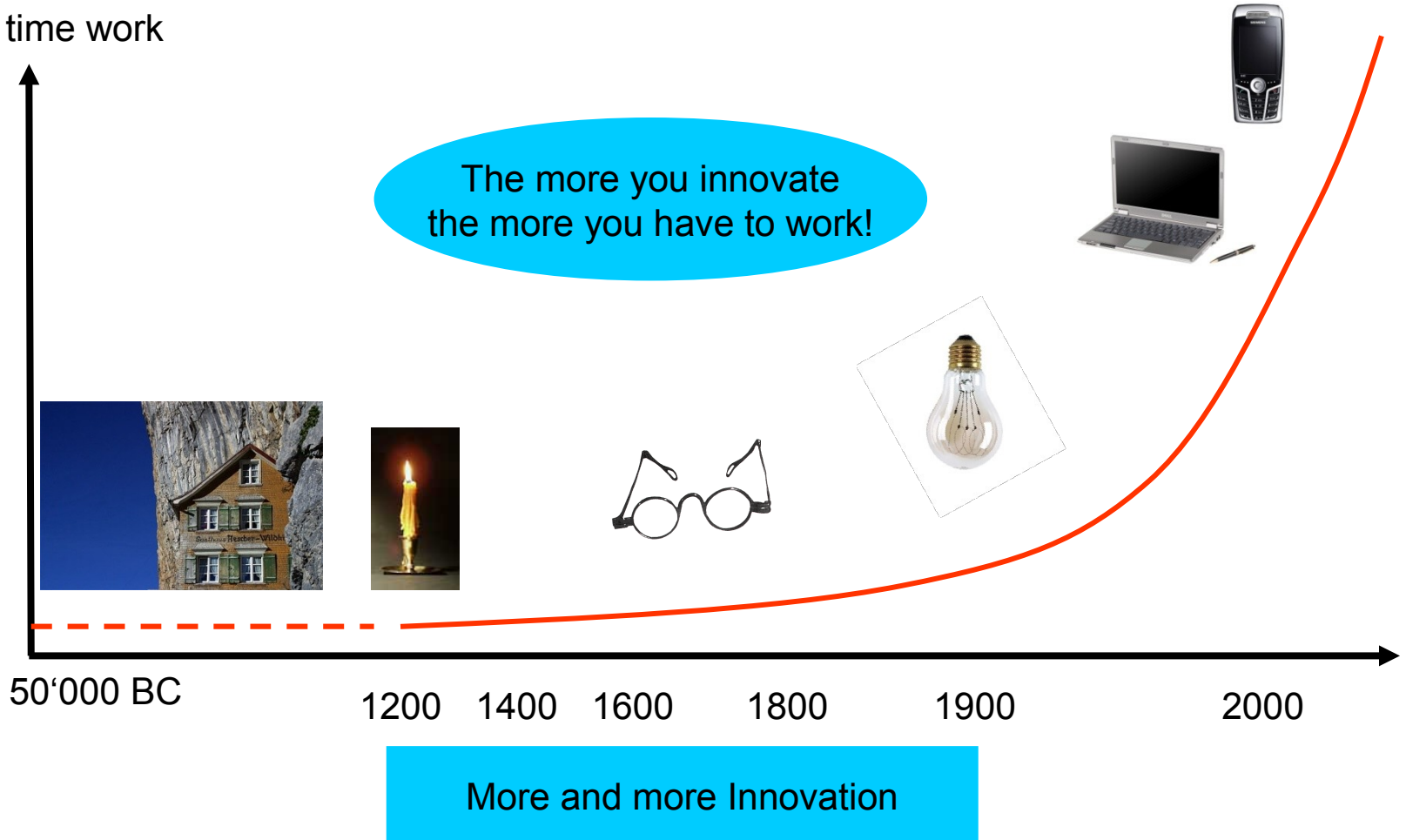
Zürich

Prof. Dr. Roman Boutellier

Vizepräsident für Personal & Ressourcen

**Life time work: 50'000 B.C. 15'000 hours**  
**2000 A.C. 150'000 hours**

Life time work



# Coca-Cola: Small innovation, big impact?

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- Coca Cola always in 1<sup>st</sup> place in fridge
- Less space for other beverages
- More sales

# Innovation = Trial and Error ( < 30% survive first year) 204 Coca Cola products in Japan 2002



# Product innovation is already a routine in many industries



Toyota Corolla: more than 30 m sold since 1966  
10 generations in 40 years

# Some oligopolies transfer innovation to suppliers

Holcim  
Lafarge  
Cemex

- 70% of world market
- no product innovation
- **process** innovation bought from:
  - ABB
  - Polysius
  - FLS
  - ...
  - (some Chinese)
- No surprise
- 2% improvement/year
- economy of scale (incl. innovation!)



**Strategy not based on innovation**

**Nevertheless: 2% productivity increase/ year**

# Holcim makes efficiency reviews to improve productivity

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15 experts  
3 weeks

check 33 specific fields e.g.

- Raw material mix
- Housekeeping
- Safety
- ...



Master plan: 2 years



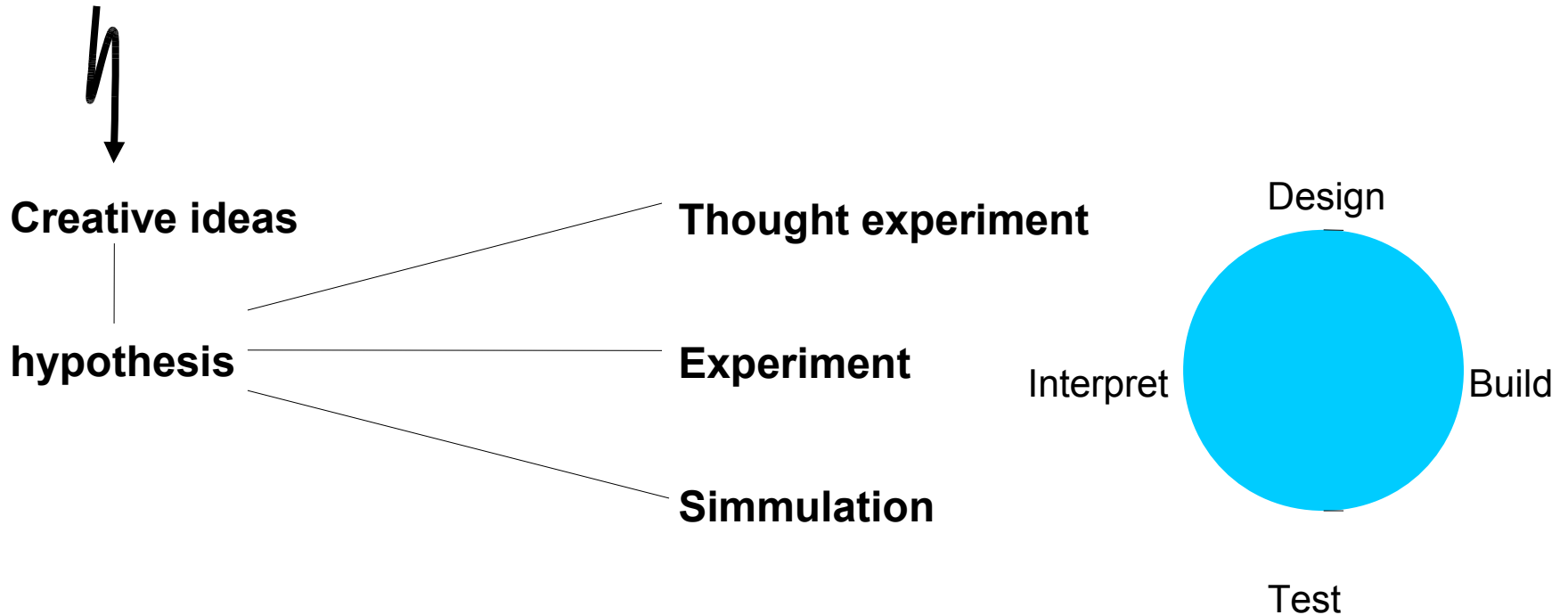
Quarterly reporting on progress



Overall check after 3 years  
(Ø PBPs ~ 3 years)

# The faster you learn, the more efficient you are

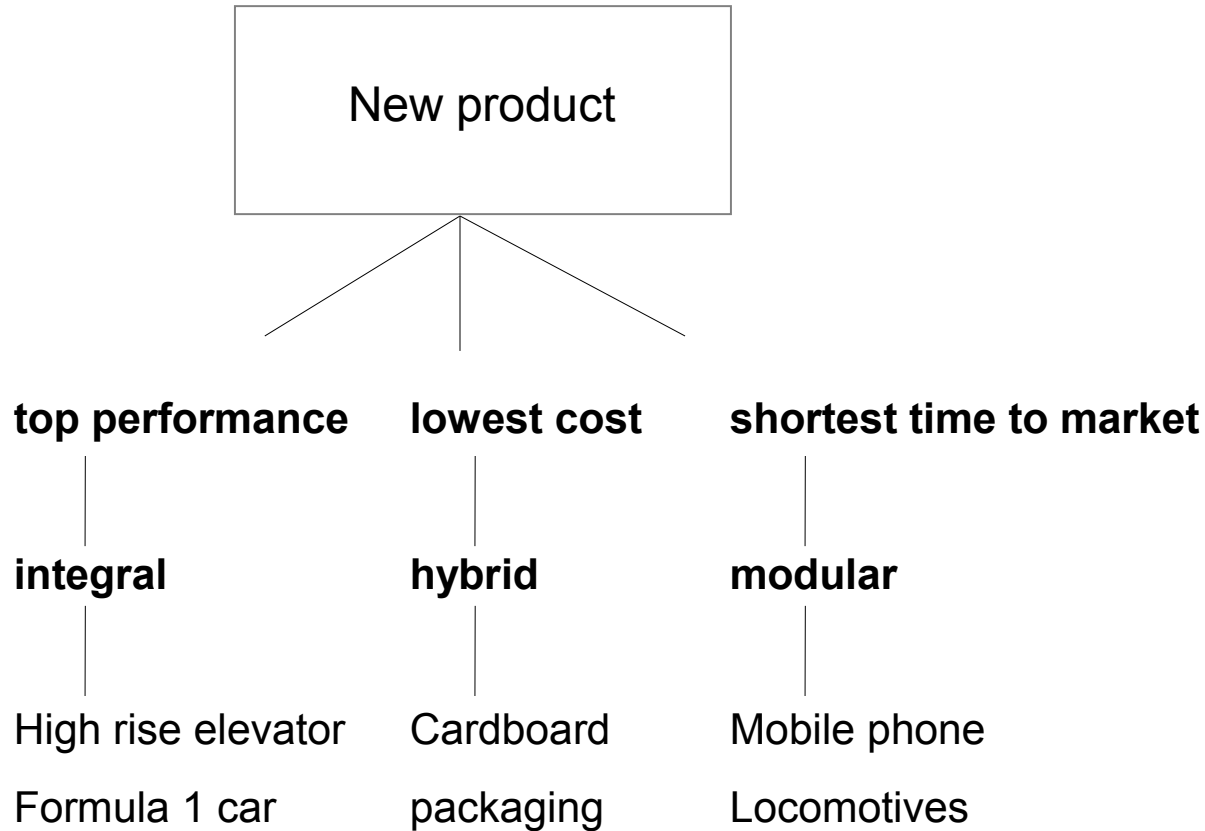
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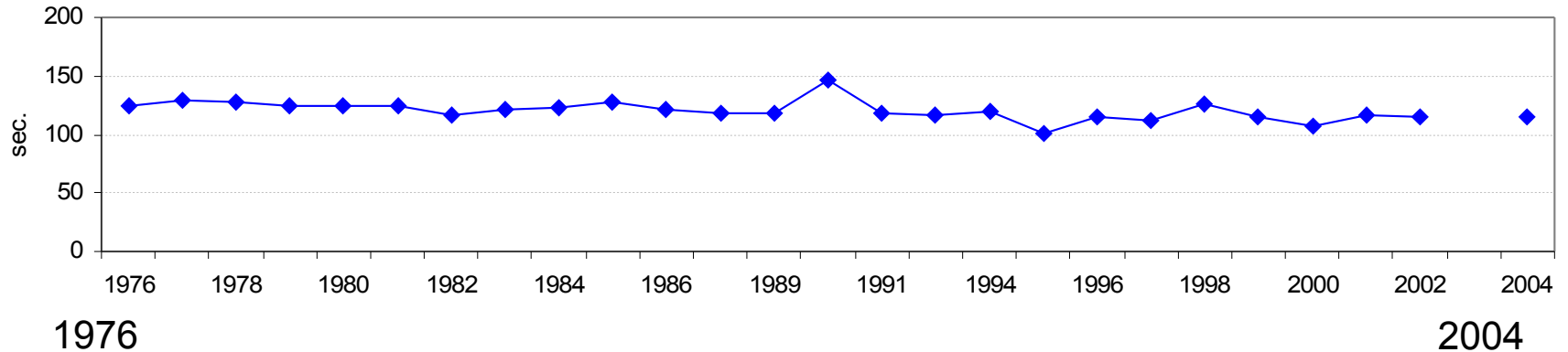
# Different products need different methods to manage development-efficiency

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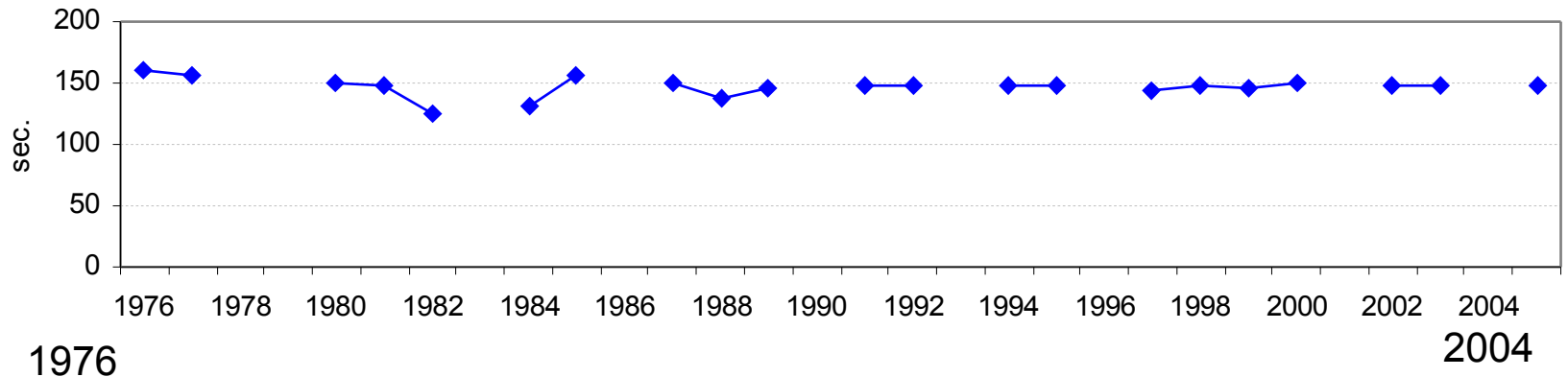
# Regulations make technical differentiation impossible, slow down innovation

Hahnenkamm, Kitzbühl, downhill



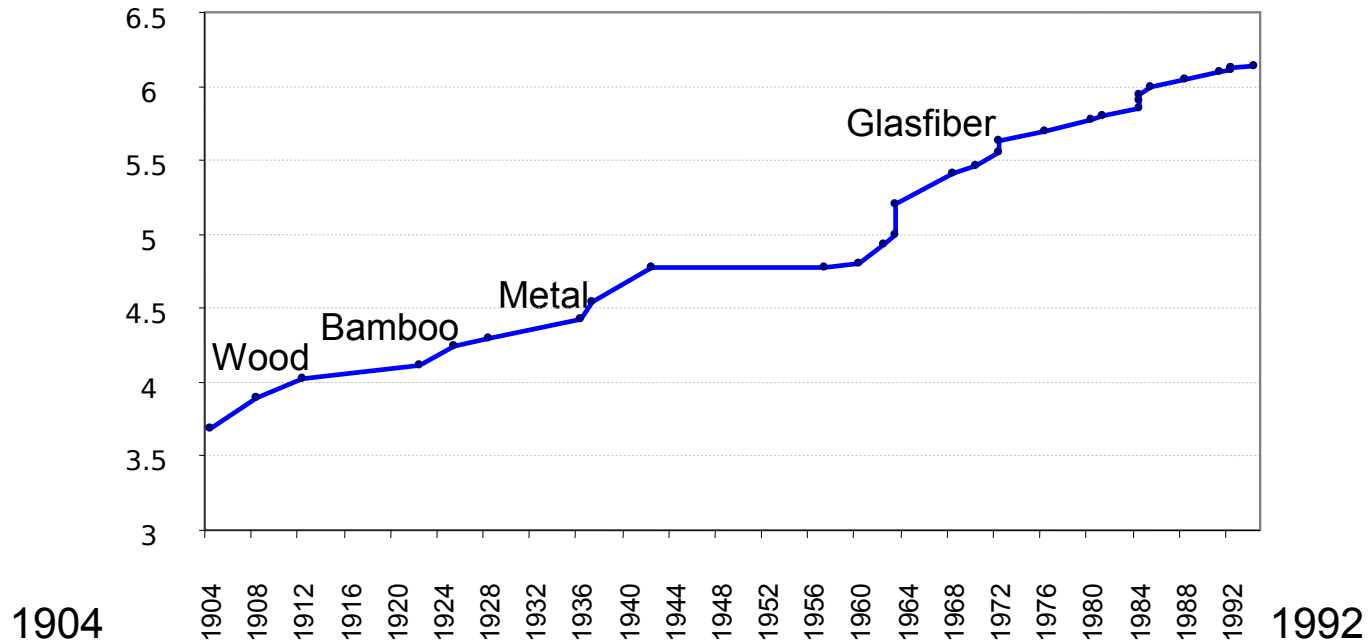
<http://www.hahnenkamm.com>

Lauberhorn, Wengen, downhill



<http://www.lauberhorn.ch>

# Pole vault: Technology makes the difference, + ½ % p.a. since 1904

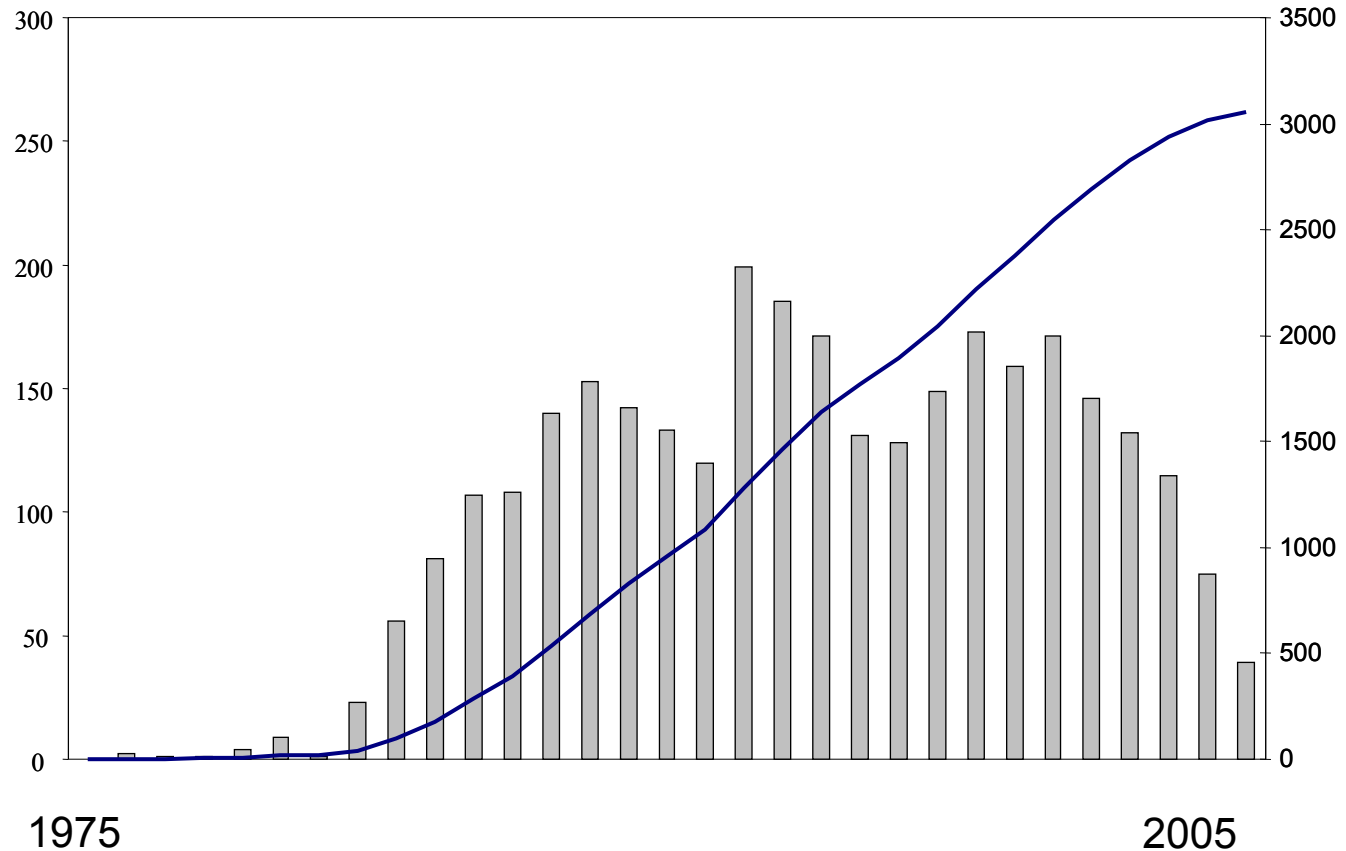


No Rules → Innovation!  
Side effects?

Data basis: [www.leichtathletik.de](http://www.leichtathletik.de)

# From technology driven innovation to design: Ski-industry

Patents



# Blacksocks: The internet is coming despite the dot-com-bubble-burst

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CH Market 30 mio pairs socks, 130 mio CHF

1950 15 local producers

1970 Consolidation

1990 Foreign competitors

2005 Abolition of quotas, one 100% producer left (Nuthofil)



## Blacksocks 1998

- Sock subscription over internet
- Only black, no sorting
- Pleasant surprises



Blacksocks 2004: 130 000 pairs sold

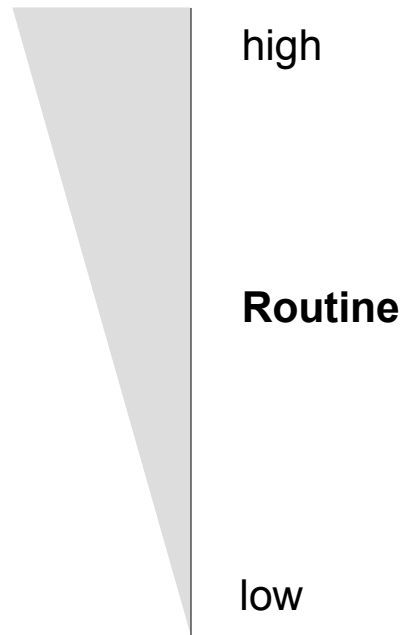
2006: 500 000 pairs sold cumulative

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# Every company has 3 generic processes: Routine moves forward

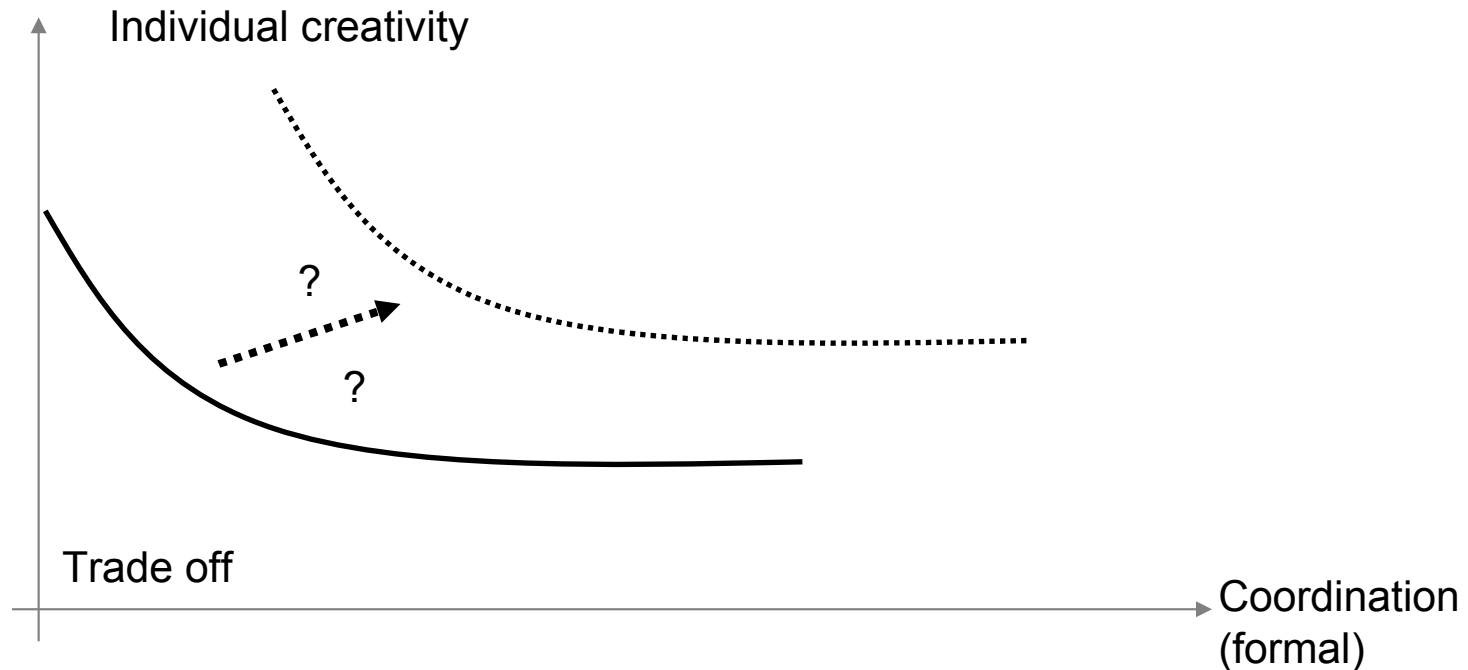
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- Actual cash flow  
Order – make – delivery
- Choice of cash flow  
Strategy
- **Future cash flow**  
**Innovation**



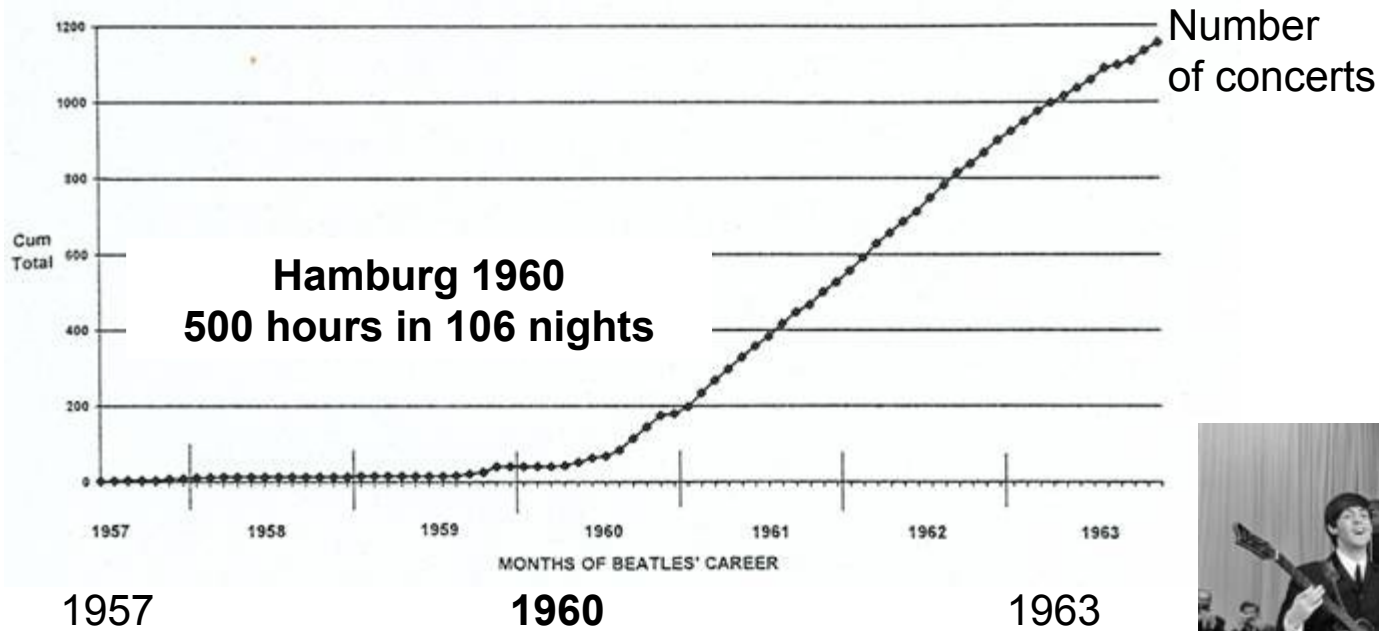
2005: More than 700'000 companies have ISO 9001  
A defined, documented innovation process

# Basic dilemma: Individual creativity versus coordination



- Time can be traded for coordination
- Spontaneous coordination in small groups only

# Even the Beatles had to work longer to get “creative”



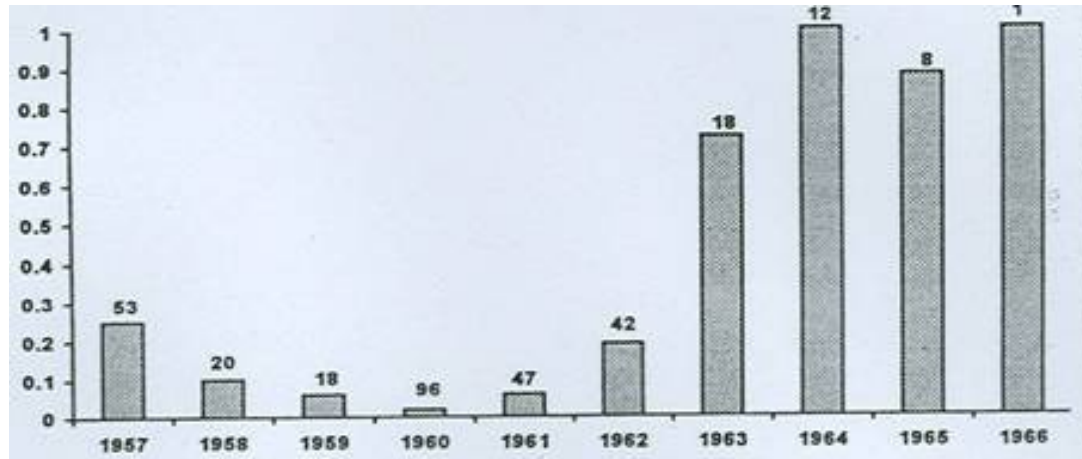
**5000 – 10000 hours to become an expert  
(50 000 Junks of knowledge)**

W. Weisberg, Creativity and Knowledge. In Sternberg, Creativity, Oxford 2004, p.239, Herbert Simon



# The Beatles learned existing music before getting creative

Proportion  
of own songs  
(+ absolute  
number)



Training period

250 songs in repertoire



Creative period

39 own songs enter  
repertoire

**Practice, not info gathering**

W. Weisberg, Creativity and Knowledge. In Sternberg, Creativity, Oxford 2004, p.240, 241

# No efficiency without routine

## The bigger innovation of the 20<sup>th</sup> century: Innovation!

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„ Civilization advances by extending the number of important decisions which we can perform without thinking about them. “



A.N. Whitehead  
1861 - 1947

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Introduction to Mathematics 1911, chapter 5