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Zürich

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Vizepräsident für Personal & Ressourcen
Life time work:

- 50’000 B.C. 15’000 hours
- 2000 A.C. 150’000 hours

The more you innovate, the more you have to work!

More and more Innovation
Coca-Cola: Small innovation, big impact?

- Coca Cola always in 1st 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

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
Different products need different methods to manage development-efficiency

New product

- top performance
  - integral
    - High rise elevator
    - Formula 1 car
- lowest cost
  - hybrid
    - Cardboard packaging
- shortest time to market
  - modular
    - Mobile phone Locomotives
Regulations make technical differentiation impossible, slow down innovation

Hahnenkamm, Kitzbühel, downhill

Lauberhorn, Wengen, downhill

http://www.hahnenkamm.com

http://www.lauberhorn.ch
Pole vault: Technology makes the difference, + ½ % p.a. since 1904

Data basis: www.leichtathletik.de

No Rules → Innovation!
Side effects?

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

R. Boutellier

31994e
From technology driven innovation to design: Ski-industry
Blacksocks:  
The internet is coming despite the dot-com-bubble-burst

<table>
<thead>
<tr>
<th>CH Market</th>
<th>30 mio pairs socks, 130 mio CHF</th>
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</thead>
<tbody>
<tr>
<td>1950</td>
<td>15 local producers</td>
</tr>
<tr>
<td>1970</td>
<td>Consolidation</td>
</tr>
<tr>
<td>1990</td>
<td>Foreign competitors</td>
</tr>
<tr>
<td>2005</td>
<td>Abolition of quotas, one 100% producer left (Nuthofil)</td>
</tr>
</tbody>
</table>

![Sock Subscription](image)

**Blacksocks 1998**

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

**Blacksocks 2004:** 130 000 pairs sold

**2006:** 500 000 pairs sold cumulative
Every company has 3 generic processes: Routine moves forward

- 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)

No efficiency without routine
The bigger innovation of the 20th century: Innovation!

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

A.N. Whitehead
1861 - 1947

Introduction to Mathematics 1911, chapter 5