

Ubiquitous Computing: Betriebswirtschaftliche Anwendungen und deren Auswirkungen

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Der Computer im 21. Jahrhundert

Die Informatisierung des Alltags


Zürich, am 21. und 22. März 2005

Agenda

- Technology Trends
- Business Drivers
- The Internet of Things
- Management Agenda

Integrated information systems...

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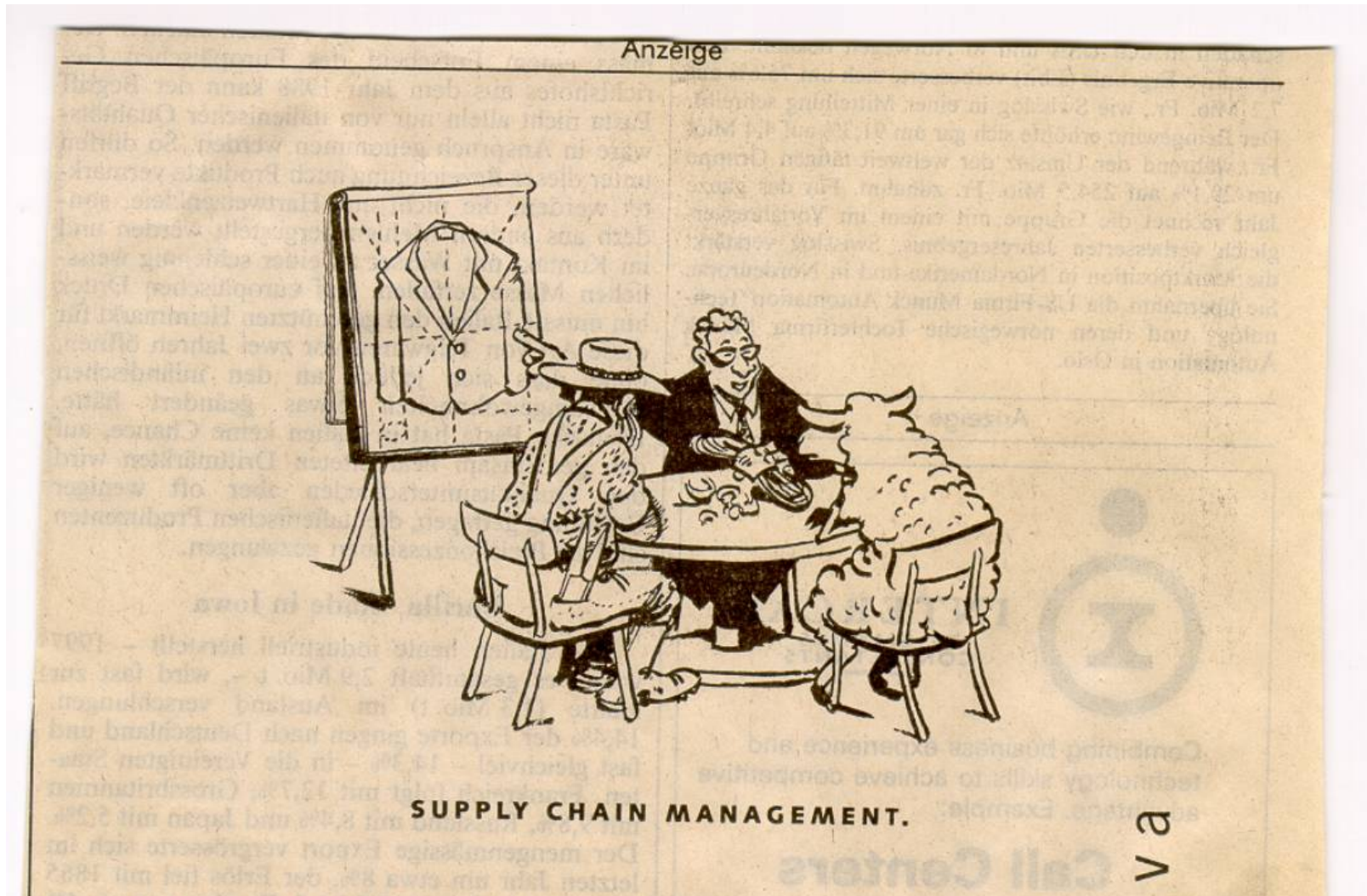
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... and e-Business systems up to now fail to integrate the real world



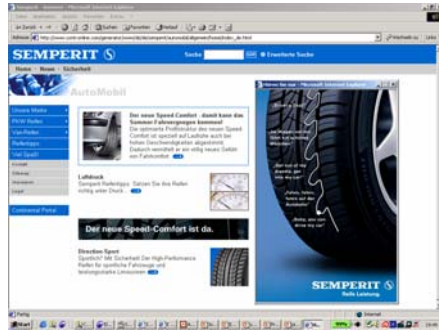
Quelle: NZZ

What is the next integration step?



The integration of reality

Virtual world



Real world



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But what is it good for? No technology for technologies sake.



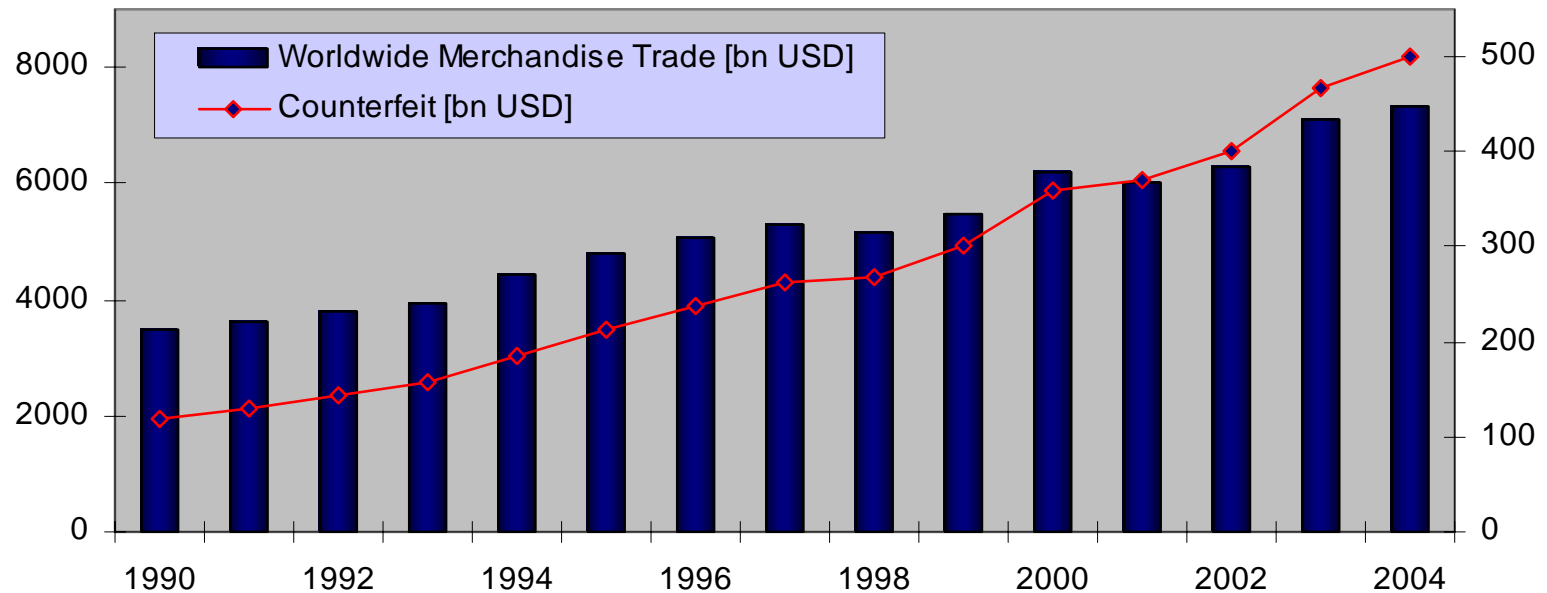
The lack of integration between the real and the virtual world causes many tough business problems

- Out-of-stock
 - Average OOS level in retail industry: 8.3%
 - Average OOS level in direct store delivery product categories in US: 7.4%
- Shrinkage
 - Average shrinkage rate for supermarkets/grocery in US: 1.5% of sales
- Unsaleable products
 - Cost of unsaleable food and grocery products in US: 1% of sales
- Data inaccuracy
 - Mean difference between physical and book inventory in a single case study: 6.8 units per SKU or on average 35% of target inventory

Source: C. Tellkamp, E. Fleisch, Auto-ID Lab St. Gallen

Counterfeiting...

- Up to seven percent of world trade is in counterfeit goods
- The music-, software- and luxury goods industry suffer enormous losses due to counterfeit. However, other sectors are also heavily affected:
 - Approx. 5 percent of all **car spare parts** are illicit products
 - 5 to 8 percent of **pharmaceuticals** are fakes
 - Up to 12 percent of all **toys** sold in Europe are plagiarism

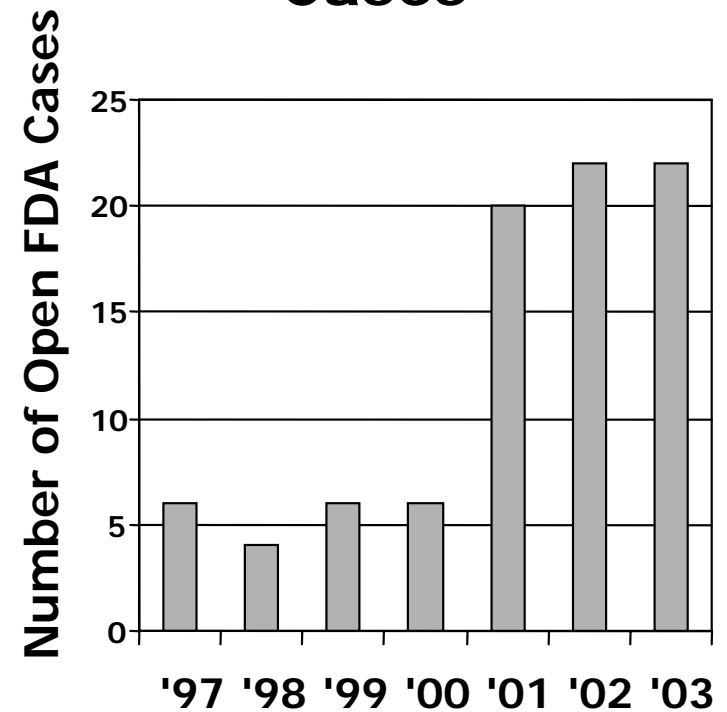


Counterfeiting...



Source: FDA, Combating Counterfeit Drugs, February 2004

Counterfeit Drug Cases

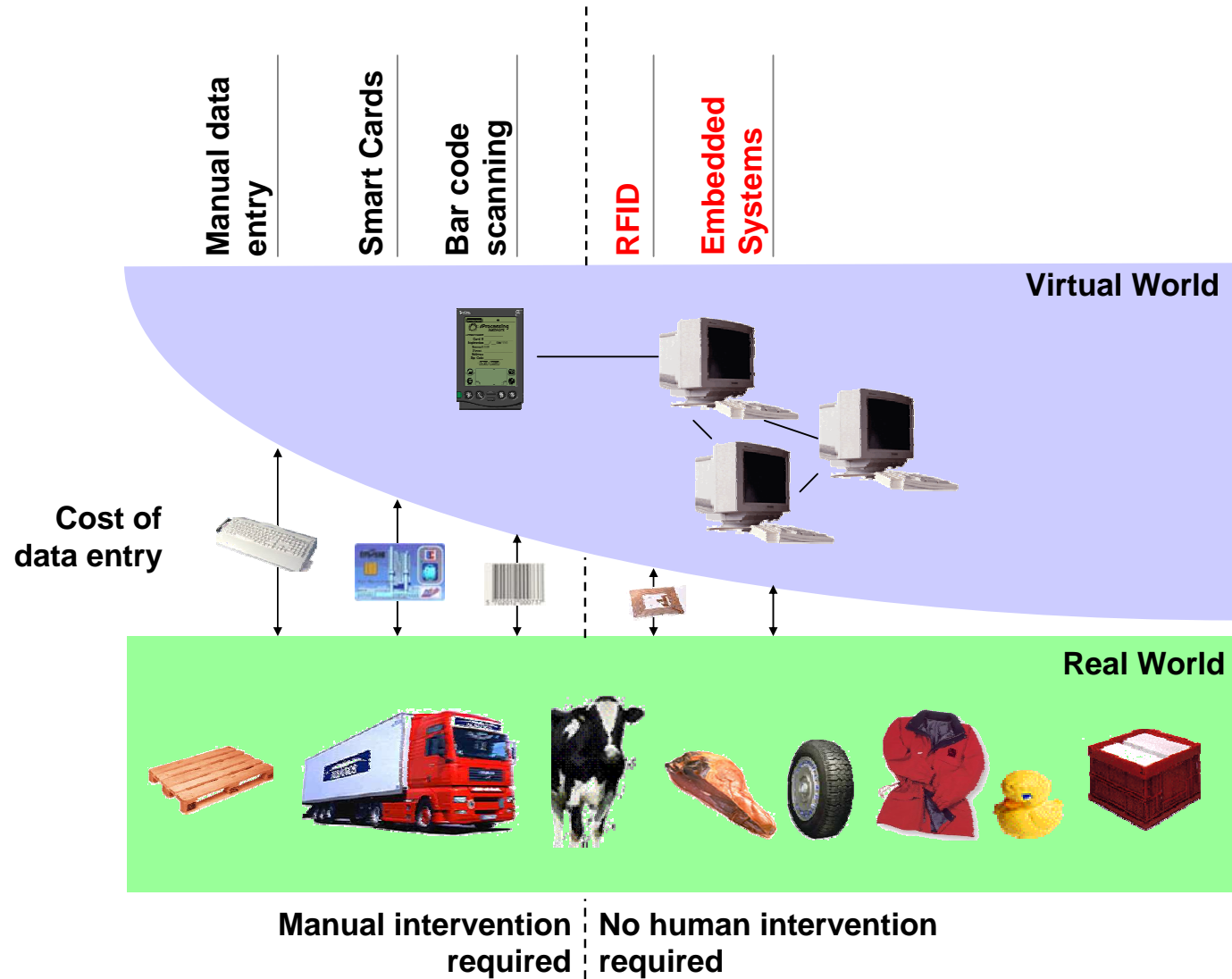


... being one of the most serious ones

- 192,000 People died in China in 2001 because of fake drugs
- 1 Million counterfeit birth control pills have caused unwanted pregnancies
- 100 Children died in Nigeria after taking cough syrup that was actually antifreeze
- Counterfeit bolts blamed for Norwegian plane crash that kills 55 passengers
- 80 Percent of drugs in the major pharmacy stores in Lagos were counterfeit
- Malfunctioning counterfeit parts discovered in \$7 million worth of open heart surgery pumps
- 7 Children died when their bus crashed because of fake brake pads made from sawdust
- Counterfeit shampoo found to contain harmful bacteria
- Risk of explosion is high in counterfeit batteries

Counterfeiting is not a victimless crime

That's why ubiquitous computing is a logical next step in enterprise computing



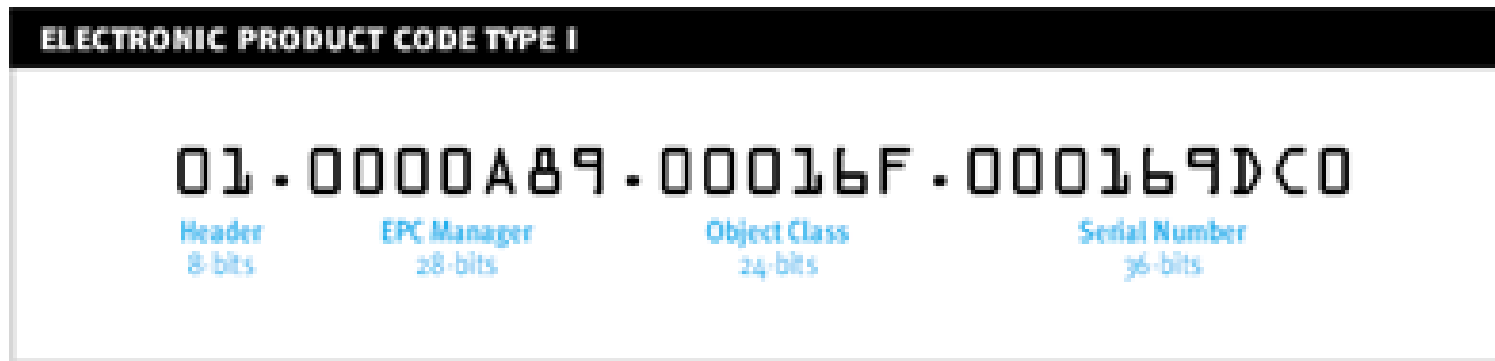
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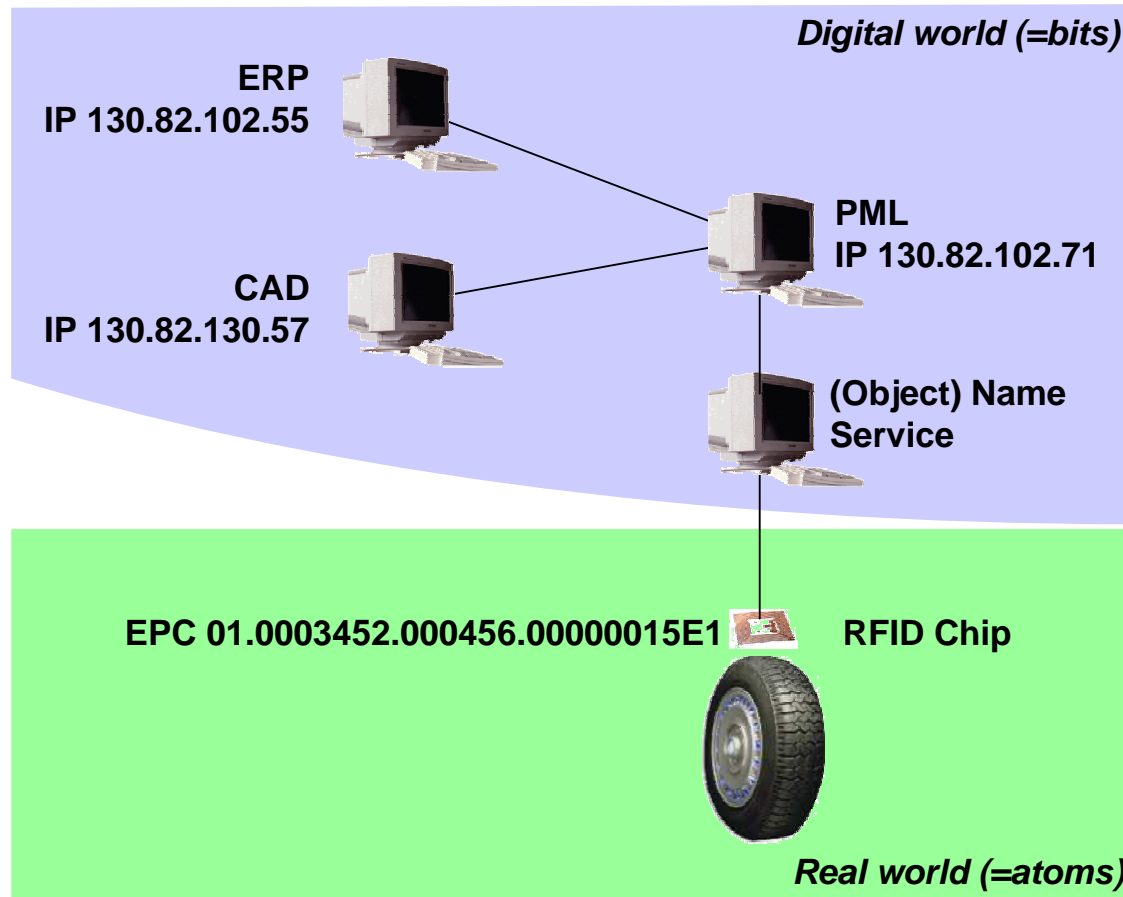
Automatically connecting objects around the world is a vision of many powerful player.

- Gillette
- Wal-Mart
- P&G
- Unilever
- Kraft
- Philip Morris
- Nestle
- Best Buy
- Target
- Tesco
- Home Depot
- CVS
- Sun
- Philips
- Intel
- ST Micro
- Canon
- Alien
- BT
- NTT
- Metro
- Mitsui
- Pfizer
- Sara Lee
- USPS
- UPS
- DoD
- UCC/EAN
- Accenture
- IBM
- Coca-Cola
- Pepsi
- Kodak
- NCR
- SAP
- Symbol
- ...

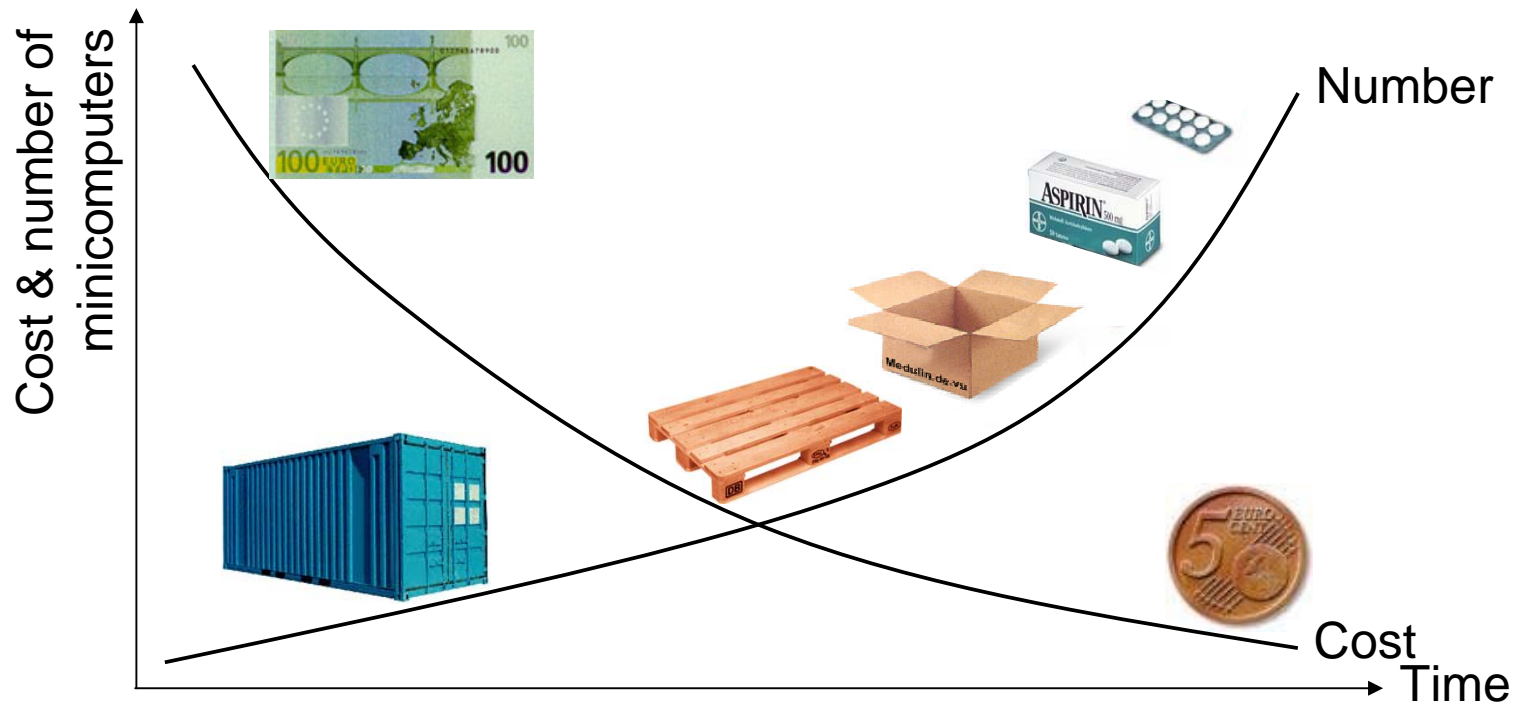
So, we started to number the world ...



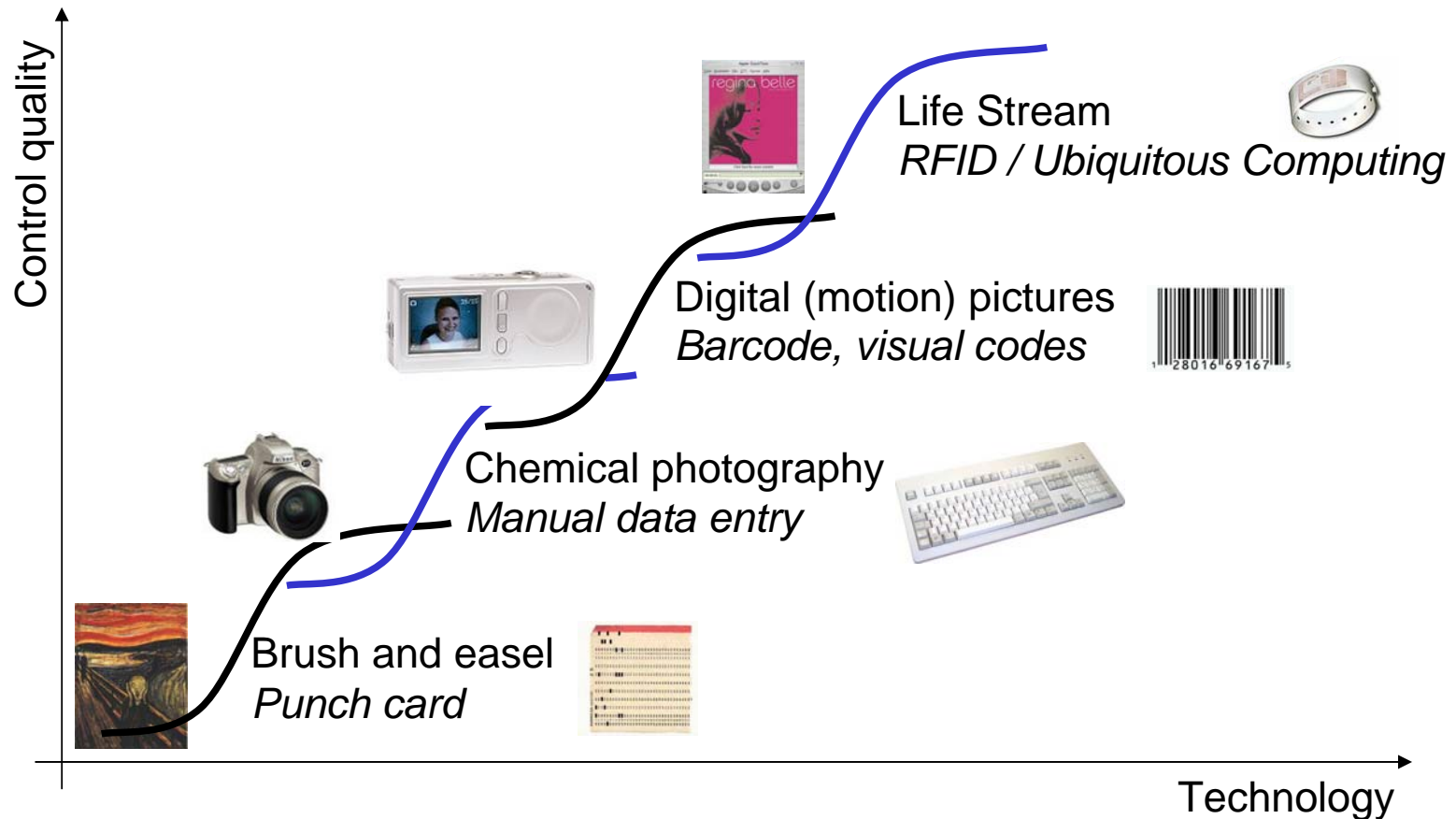
... and built the infrastructure for the Internet of Things ...



... to track every physical object in the world.



Because only what you can measure you can manage. RFID leads to better processes, new products and new services.



Better processes: Libraries around the world are tagging media.



Beginner and
Advanced
Cassette Tape Series



Better security measurements: From ePassport to eTickets and secure banking applications...



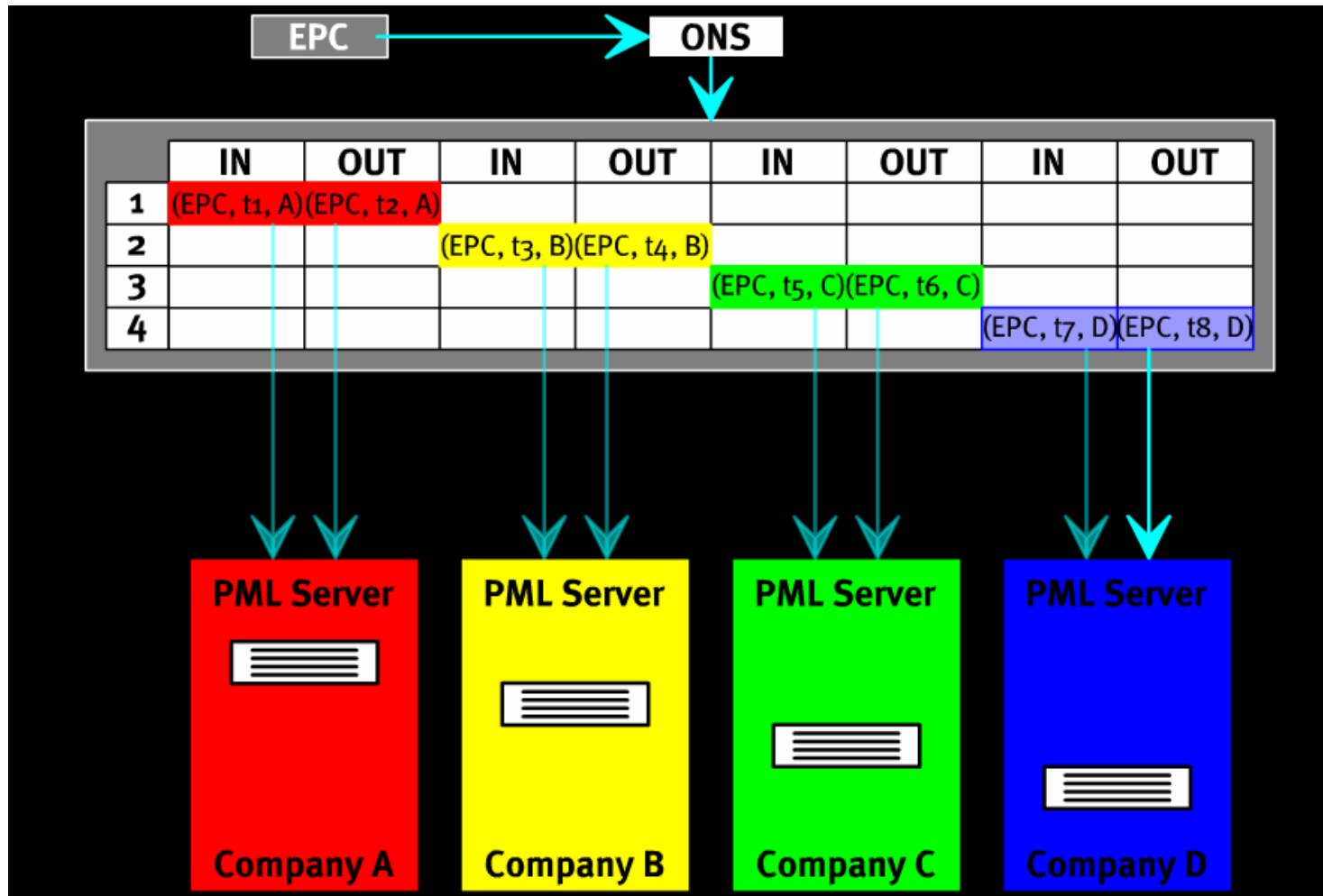
Smart Products: Guns and bikes link functionality to the proximity of jackets ...



... Atomic goes for „smart“ Skis

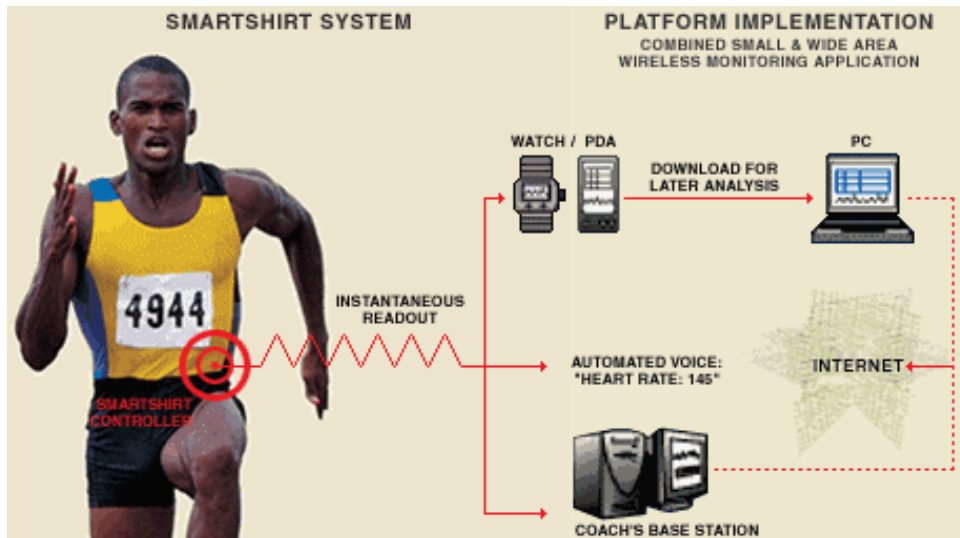
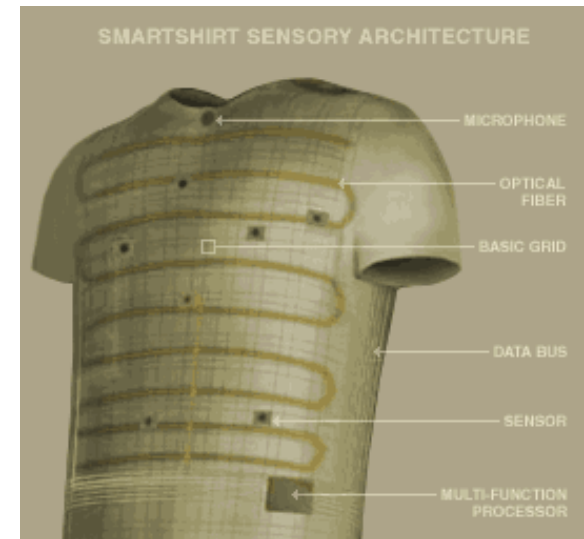


Smart services: RFID enables many new services, from track & trace, proof of origin, counterfeit protection, maintenance...



Source: Auto-ID Lab Health Care Initiative

...health monitoring...



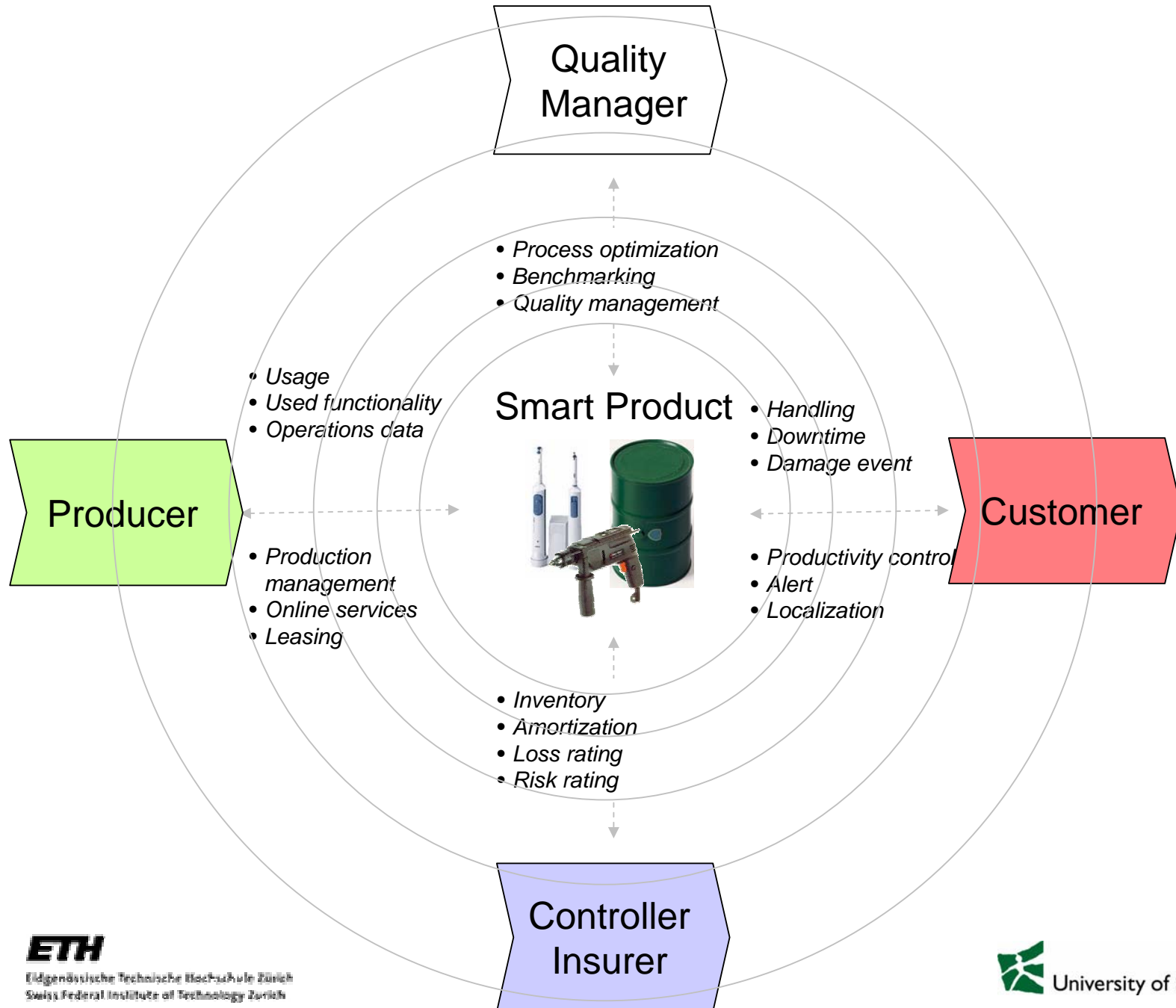
... to pay-per-use models



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Guideline: Good products want to communicate.



Manage the privilege of privacy.



Progress has no alternative.

For questions please contact:

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