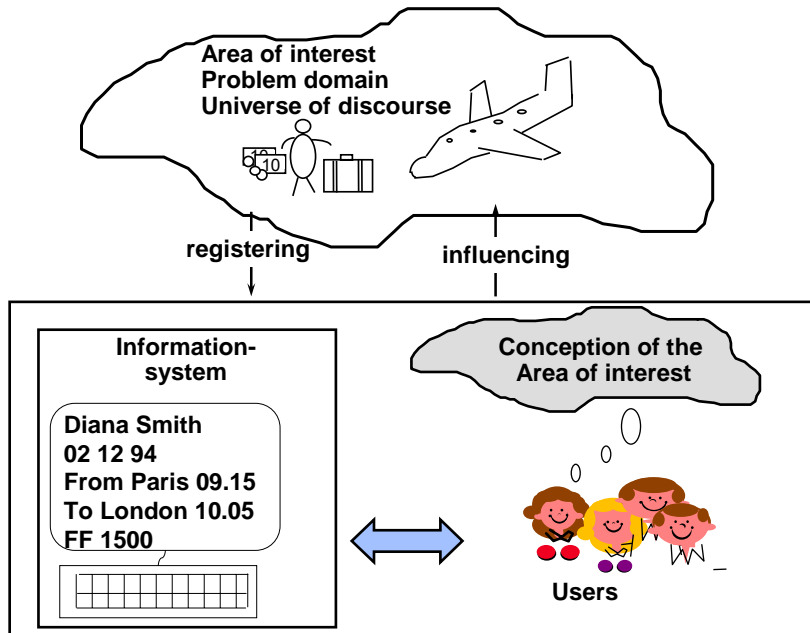


Does IT matter?

Jens Kaasbøll

1

The relation between an information system and the world



2

Data, information and knowledge (Boddy et al 1.2)

- Data
 - Symbols in electronic or other material
- Information
 - Data that a person interprets to represent something
- Knowledge
 - People's experience, into which new information may be assimilated or which may be altered by new information

3

Determinism (1.5)

- Technology is the dominant influence
- Managers and users
 - Technology is coming, and we have to adapt to it
 - We have to make our information available on the web
- Research
 - The capacity of IT has doubled every 18 months. What will the consequences be?
 - What will be the impact of electronic business on global trade?

4

Social choice (1.5)

- People shape and determine what technology they will use
- Managers and users
 - We design new technology so that it gives us a competitive advantage
 - How can we utilize IT to improve the relation to our customers?
 - I avoid using the system since it doesn't support my tasks
- Research
 - How can IT be shaped to support collaborative work in remote areas?
 - How can a modelling tool be made to fit development practice?

5

Interaction (1.5)

- People who are able and willing can change technology while being influenced from the existing structures
- Acknowledging both unchangeable structures and the capabilities of individuals and collectives for making changes

6

Research purposes

- Explain
 - Qualitative studies of cases
 - Why were projects on telemedicine abandoned?
- Predict
 - Quantitative studies of factors influencing an outcome
 - What is the impact of programmer competence on project leadtimes?
- Change
 - Action research
 - How do we go about when replacing the software in the system which provides information to the management?
 - Taking explanations of similar cases and factors predicting success and failure into account

7

Enterprise Resource Planning - ERP (2.3)

- Semi finished software covering all functions of a company
- Tailoring
 - Configuration by parameters designed by the vendor
 - Customisation by adding functionality
- Efficient data processing
- Long and costly adaptation
- Freezes the organizational structure
- Costly
 - US\$ 50 000 per user per year

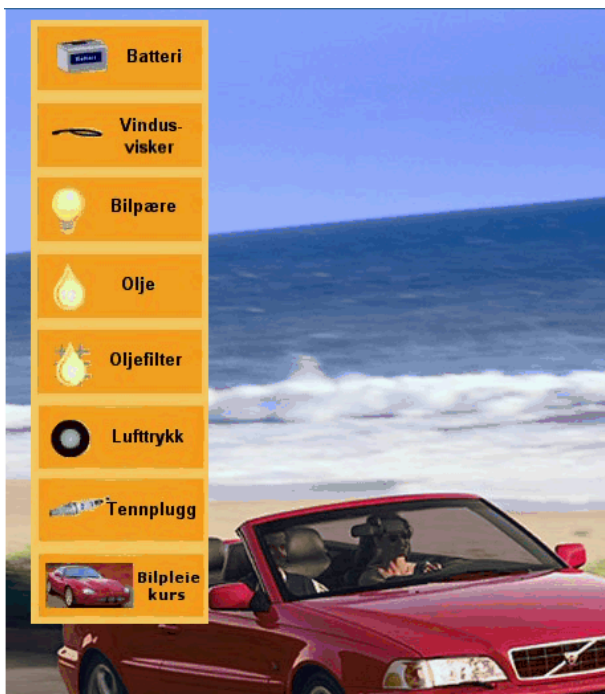
Knowledge management systems - KM (2.4)

- Change the way organisations
 - create
 - store
 - transfer
 - use

knowledge

- Often
 - Share practices
 - This is how we do it
 - Create corporate knowledge bases
 - Structured in a database
 - Create knowledge networks between people
 - Who knows what

9



Information system on car parts and models in a petrol station

Support work

63% bulletin board

50% car catalogue

36% map

10

KM processes

| | Knowledge creation | Knowledge storage | Knowledge transfer | Knowledge use |
|-----------------------|---|---|--|---|
| IT enables | Combining new sources of knowledge Just in time learning | Support of individual and organisational memory | More extensive network of knowers More communication channels | Application in many locations Rapid application of new knowledge |
| Supporting technology | Data mining Learning tools | Bulletin boards Knowledge bases | Discussion forums Knowledge bases | Expert systems Workflow systems |
| Platform | Groupware and communication technologies Intranets and sometimes extranets | | | |

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Customer Relationship Management – CRM (2.5)

- Information systems for
 - recruiting
 - satisfying
 - retaining
 profitable customers
- Predictable customer behaviour
 - Customers who purchased recently are more likely to buy again compared with customers who have not purchased in a while
 - Customers who purchase frequently are more likely to buy again compared with customers who have made just one or two purchases
 - Customers who spend the most money in total are more likely to buy again

12

To: jensj@ifi.uio.no
Subject: Much better than Viagra

Hello,
Try this revolutionary product, CIALIS Soft Tabs.

Cialis Soft Tabs is the new impotence treatment drug that everyone is talking about. Soft Tabs acts up to 36 hours, compare this to only two or three hours of Viagra action! The active ingredient is Tadalafil, same as in brand Cialis.

Simply dissolve half a pill under your tongue, 10 min before sex, for the best erections you've ever had!

Soft Tabs also have less sidebacks (you can drive or mix alcohol drinks with them). No prior prescription needed.

You can get it at: <http://monarchic.net/soft/>

From: "Eloy Durham" <RYNZF@aaascreen.com>
To: tom.tannas@usit.uio.no
Subject: Mortgage Refinance Application Fri, 01 Jul 2005 21:22:07 -0800
Date: Sat, 02 Jul 2005 01:17:07 -0400

Content-Type: text/html;

Re: Refinance Application

You have been pre-approved for a \$440,000 Home Loan at a 3.35% Fixed Rate. This Second Mortgage is being extended to you unconditionally and your credit is in no way a factor.

To take Advantage of this Limited Time opportunity

All we ask is that you visit our Website and complete The 1 minute post Approval Form

[Visit our secure web-form](#)

13

Already confirmed? We Sincerely apologize [Click Here](#) to be removed...

To: jensj@ifi.uio.no
Subject: Amazon.com recommends Don't Make Me Think: A Common Sense Approach to Web Usability and more.

Dear Jens J Kaasboll,
Amazon.com has new recommendations for you based on [3 items](#) you purchased or told us you own.

[Don't Make Me Think: A Common Sense Approach to Web Usability](#)
[Homepage Usability: 50 Websites Deconstructed](#)
[Rate These Items](#) [See More Recommendations](#)

You were recommended ...
Because you purchased or rated ...

[Don't Make Me Think: A Common Sense Approach to Web Usability](#)

List Price : \$35.00
Price : \$23.10
You Save : \$11.90 (34%)

[Designing Web Usability : The Practice of Simplicity](#)

[Rate This Item](#)
[See Related Items](#)

You are 1,549 times more likely to purchase this item than other customers.

...

We hope you like these recommendations and would love to hear your [feedback](#) on our recommendations algorithm.

For problems unrelated to this e-mail, please contact [customer service](#).

Sincerely,
Amazon.com

We hope you enjoyed receiving this message. However, if you'd rather not receive future e-mails of this sort from Amazon.com, please visit your [Amazon.com Account](#) page. In the Personal Information box under the Account Settings heading, click the "Update your communication preferences" link.

CRM – failures

50% US

80% European

- Poor change management
- No technical problems
- What is needed
 - Customer strategy
 - Change ways of working and existing IS
 - Educate personnel
 - Multiple channel communication adds to the challenge

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Inter Organisational systems – IOS (2.6)

B2C Business to consumer

- Products and services for sale

<https://www.dnbnor.no/>

B2B Business-to-Business

- Electronic transactions without manual work

```
<from>Clothing Company</from>
<order>
<deliveryDate>20051108</deliveryDate>
<item><amount>120</amount><type>Wool B843c8</type></item>
<item><amount>33</amount><type>Silk w85c12</type></item>
</order>
```

16

IOS - Reintermediators

- Price
- Supplier information
- Customer experience

<http://www.travelocity.com/>

<http://www.google.no/>

17

Complexity during development (2.2)

| | Operational | Monitoring | Decision support | Monitoring | Communication |
|----------------------|-------------|------------|------------------|------------|---------------|
| Individual | | | | | |
| Team / department | | | | | |
| Company | | | | | |
| Inter-organisational | | | | | |

Technical and organisational complexity

18

Purposes of classifications of information systems

- Identifying types of software
- Identifying factors having impact on success and failure
- Presenting the idea to people and persuading them to accept it

19

Single versus multiple users

| | Single | Multiple |
|---|--------------------------------------|-------------------------|
| Opinions | 1 | Many and different |
| Competence | A specific level | Varying |
| Consequences of not following instructions of use | The single user knows the deviations | Others don't understand |
| Software tools | Text processor, spreadsheet, | Database, e-mail, web |

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Formal versus semiformal data

- Formal
 - Relational database
 - Structured searches
 - Input checks, correct or erroneous
 - Calculations
 - Graphs and animations
- Semiformal
 - Editors
 - Search in free text
 - Syntax checks in natural language
 - Hyperlinks

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Operational versus semipermanent data

- Operational
 - Representing customers, products, materials, accounts, etc
 - Large volumes
 - Formal and semiformal
 - Rapid changes
- Semipermanent
 - Representing capacity, staff, buildings, rules, regulations, etc
 - Fewer items
 - Semiformal and formal

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Semistructured systems requiring accept from a substantial number of users

- Single user tools
 - Text processor, spreadsheet
 - Each user adapts to the tool, customizes it and controls its use
- Multi user system
 - Database, web
 - Management decides purposes and enforces its use
 - Developers adapts it to the organisation
 - People learn to use it and adapts their routines
- Groupware
 - Synchronous and asynchronous communication of any kind of data
 - E-mail, news, chat, electronic meeting rooms
 - Controlled access and manipulation of shared data
 - File systems organized for groups, workflow management
 - Less commitment from management
 - Developers adapt it to the users and their tasks and routines
 - Appealing to most users

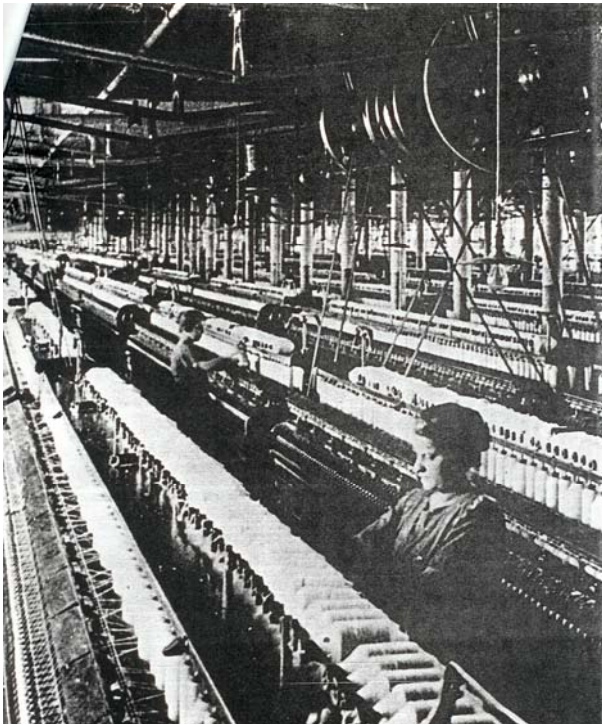
23

IT Doesn't Matter

- Nicholas Carr, Harvard Business Review, 2003
- IT has become a common infrastructure
 - no company has specific advantage from using IT
- Investments in IT in US

| | |
|------|-----|
| 1965 | 5% |
| 1985 | 15% |
| 2000 | 50% |
- The strategic value of IT is lost
- Strategic advantages come from scarcity, not ubiquity

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Electrifying power transmission

Pacific Mills, Mass.,
USA, 1915

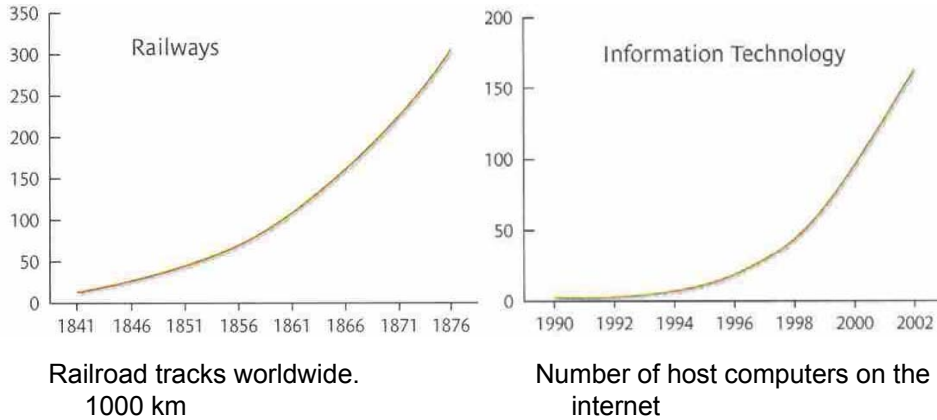
25

Opportunities for advantages

- A short period until
 - the competitors have followed suit
 - a novel solution makes the advantage outdated

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Infrastructure



27

The adolescence age is over

- Capacity skyrockets
- Falling prices
- Commoditisation
- The opportunities for gaining IT-based advantages are already dwindling
- The "best business practices" are built into the software you can buy
- IT vendors position themselves as service suppliers and shops
- The investment bubble has burst

28

Consequences for IT management

- Reduce investments – little return
- Cut costs – outsource
- Reduce risks – IT blackouts are costly

29

Does IT Matter?

- John Seely Brown and John Hagel III, Harvard Business Review 2003
- Return on investments require business innovations
- Incremental innovations rather than Big Bang
- Strategic impact comes from cumulative effect of smaller changes
 - Comparison with other infrastructure is wrong due to the generality of IT
- Hal Varian, Harvard Business Review 2003
- Data is gathered in huge piles waiting to be analysed

30