Types of IT systems and their organizational fit

Data and corresponding operations

Data	Operations	Software
Numbers	Checking and calculation	Spreadsheet, scientific computations
Text and hyperlinks	Formatting and searching	Text processor, e-mail, chat and search engine
Graphics	Visualisation and animation	Visualisation program and animation program
Pictures	Rotating, filtering, coloring	Image processor
Sound	Composing, distorting	Music processor
Mixed data	Synchronize and juxtapose	Web editor, video editor, browser, presentation program, multimedia viewer
Sets of data	Sequencing, sorting and searching	File manager, relational database Norgesglasset

TOOLs vs machines

•**Verktøy**
  – **Under kontinuerlig kontroll av brukeren**

•**Maskiner**
  – **Forhåndsinnstilles**
  – **Gjennomfører en sekvens av operasjoner på egen hånd uten inngripen av brukeren**

Forskjeller i betingelser for læring?

3

Énbrukersystemer

– **Andre har ikke tilgang**
+ **Brukeren har kontroll over datadefinisjoner**
+ **Enkelt å tilpasse**

Verktøy?

	Kapasitet pr gruppe	Eksamens-påmeldte	# grupper	Emne H99/V00	Stud / gruppe
1	Kapasitet	Eksamens-		Emne	
2	pr gruppe	påmeldte	# grupper	H99/V00	Stud / gruppe
3					
4					
5	30	91	5	IN102	18,2
6	32	215	11	IN104	19,5
7	30	397	16	IN105H	24,8
8	32	386	17	IN105V	22,7
9	75	43	2	IN106	21,5
10	35	256	10	IN114+114A *	25,6
11	33	305	11	IN115	27,7
12	31	221	14	IN147+147A *	15,8
13	31	293	11	IN166+166A	26,6
14	30	32	3	IN210 **	10,7
15	30	99	5	IN211	19,8

4

Flerbrukersystemer

+ Datadefinisjoner er standardiserte

+ Flere kan legge inn data samtidig uten å forstyrre hverandre

+ Data tilgjengelig for alle som har rettigheter

Verktøy?

5

Informasjonssystemer

- **Et system for**
  - **innsamling,**
  - **bearbeiding,**
  - **lagring,**
  - **overføring.**
  - **gjenfinning og**
  - **presentasjon**
  - **av data som gir meningsfull informasjon**
- **Interesseområde**
  - **Et område av verden som representeres som data i informasjonssystemet**
- **Data endres i overensstemmelse med endringer i interesseområdet**
- **ACM Digital Library**

6

Informasjonsystemets forhold til verden
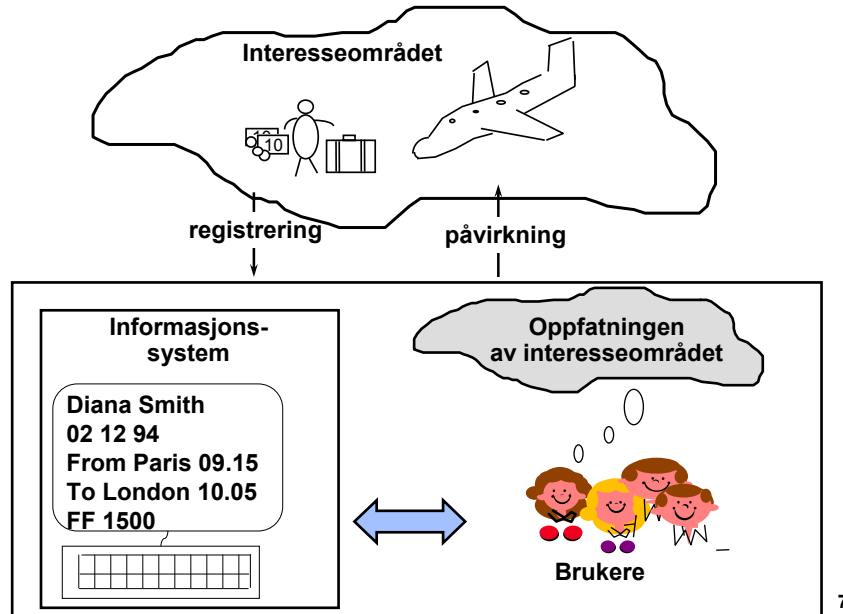
Programvareløsninger for sett av data
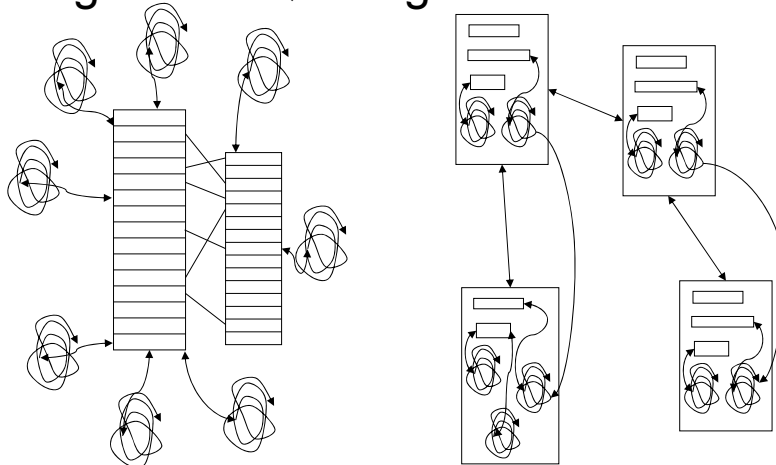
•**Database av tabeller med funksjoner som virker på tabellene**
  – INF 1050
  – Billettbestilling

•**Objekter med sammenhørende data og funksjoner ("metoder")**
•**Objektene kommuniserer gjennom funksjonene**
  – INF 1000
  – Geografiske informasjonssystemer

Enterprise Resource Planning - ERP

- **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**
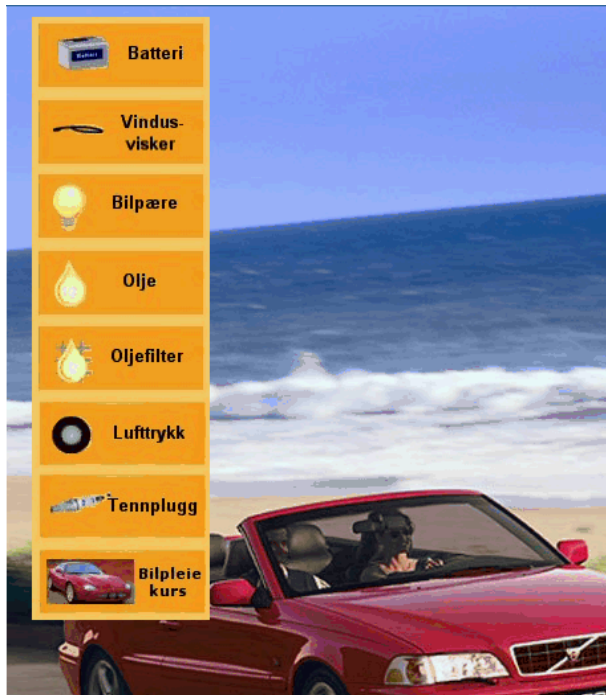- **Costly**
  - **US$ 50 000 per user per year**

9

Knowledge management systems - KM

- **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**

10

Information system on car parts and models in a petrol station

Support work
   63% bulletin board
   50% car catalogue
   36% map

11

Customer Relationship Management – CRM

- **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 Sincerly appoligize 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.   **14**

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**

15

Inter Organisational systems – IOS

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

Groupware vs. other IT

- **Eight Challenges for Developers**
  - **Jonathan Grudin (1994) Communications of the ACM, 37,1, 93-104**
- **Single user tools**
  - **Text processor, spreadsheet**
  - **Each user adapts to the tool and controls its use**
- **Multi user systems**
  - **Databases, web**
  - **Management decides its implementation and use**
  - **The organization adapts to the system**
- **Groupware**
  - **Synchronous and asynchronous communication of any kind of data**
    - **E-mail, news, chat, electronic meeting rooms**
  - **Controlled access and manpulation of shared data**
    - **File systems organized for groups, workflow management**
  - **Less commitment from management**
  - **Groupware must adapt to the organization**
    - **Appealing to all users**
  - **ClassFronter**

18

Work vs. benefit

- **Additional work from people who do not benefit directly**
    - **Some enter data**
    - **Others benefit from using them**
    - **When data entry is voluntary, people will not do the additional work**
- **Large database systems**
    - **Data entry is often mandatory**
- **Single user tools**
    - **Users enter data because of own benefit**
- **Possible way out**
    - **Provide benefits for everyone**

19

Critical mass

- **Most groupware is only useful when a large majority of group members use it**
    - **A few non-users can sabotage the benefit for all users**
- **Even equal costs and benefits for all uses will not guarantee success**
- **Large database systems with high management priority**
    - **Data entry personnel can be hired**
- **Ways out**
    - **Reduce work needed to use the system**
    - **Make the system easy to learn**
    - **Provide support personnel close to the user**

20

Social, political and motivational factors

- **People have hidden agendas**
  - **They make different arguments to different people**
  - **People will not use systems spreading the same information to everyone**
- **Statements you make for one cause can be used against you in another**
  - **People do not want to write or record their opinions**
  - **Specifically not opinions of others**
- **Systems supporting discussion are discouraged by managers who want decision making to look like developing a consensus solution**
- **Ways out**
  - **Avoid the assumption of "rational" decision making**
  - **Understand the users and their interaction**

21

Exception handling

- **Work flow systems for streamlining production chains (Stabell and Fjeldstad, 1998)**
- **Large proportions of the work involve exception handling**
  - **Systems that make exception handling more difficult will not be used**
- **Single user tools enable the user to control routines and exceptions**
- **Large data bases prescribe data definitions**
  - **To lesser extent prescribe ways or working**
- **Ways of avoiding the problem**
  - **Learn how work is done**
  - **Not how people say that work is done**
  - **Not according to routine prescriptions**

22

Frequency of use

- **Group work functionality is used less frequently than features for individal use**
  - **Groupwork functionality must require minor additional effort for learning**
- **Large database systems focus on high transaction load**
- **Possible solutions**
  - **Groupware functionality should be a logical extension of single user tools rather than a standalone software package**
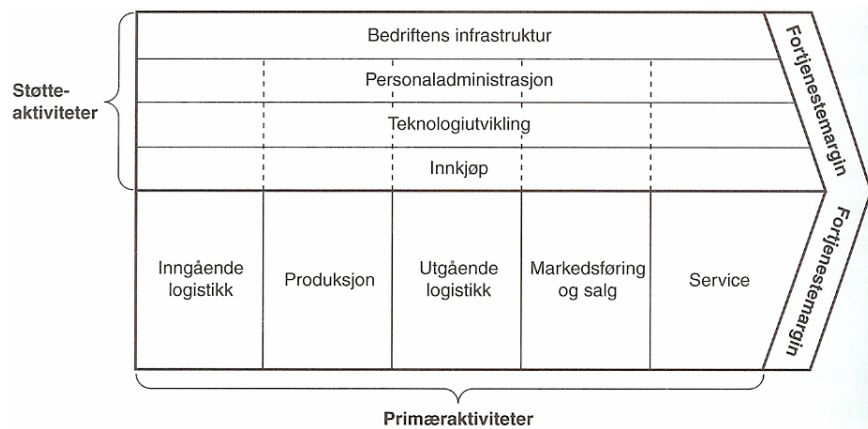 - **The systems should guide the user**

Virksomhetstyper

- **3 virksomhetstyper**
  - **Produksjonskjede**
  - **Verksted**
  - **Medlemsnettverk**
- **Ulike behov for teknologi**

Porter's verdikjede

- **Produksjonsbedrifter**

25

Produksjonskjeden (chain)

- **Transformere råvarer til ferdigvarer**

    Innkjøp → Produksjon → Distribusjon

    - **Markedsføring og salg**
    - **Service**
- **Eksempler**
    - **Samlebåndsproduksjon**
- **Økt verdiskapning**
    - **Lavere kostnader**
        - **Informasjon om varer og produksjon.**
        - **Produkter tilpasset kundenes behov**
            - **Enterprise Resource Planning**
        - **Produktutvikling: Beregninger, simuleringer**
   - **Produkter med IT**

26

Verksted (shop)

- **Løse kundenes problemer**

Problemdefiniering

Problemløsning

Evaluering

Valg

Utførelse

- **Eksempler**
  - **Helsetjenester**
  - **Advokatpraksis**
- **Økt verdiskapning**
  - **Vellykket problemløsning**
    - **Erfaringsdata. Eks. helseinformasjon**
      - **Knowledge Management Systems**
    - **Oppdaterte faglige data Eks:** http://www.lovdata.no
    - **Prosjektadministrasjon**
    - **Uformell kommunikasjon**
      - **Groupware**
  - **Godt rykte**
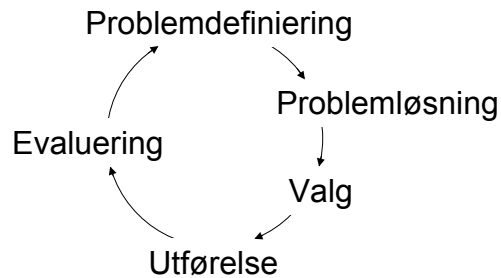
27

Medlemsnettverk (network)

- **Tilrettelegge tjenester i et nettverk av kunder**
  - **Markedsføring og kontraktshåndtering**
  - **Tjenesteyting**
  - **Utbygging av infrastruktur**
- **Eksempler**
  - **Telefon**
  - **Forsikring**
- **Økt verdiskapning**
  - **Balansert medlemsmasse**
    - **Medlemsstatistikk**
  - **Beholde og øke medlemsmassen**
    - **Masseutsendelser til medlemmene**
    - **Customer Relationship Management**

28

Oppgave

- **I hvilke virksomhetskategorier passer**
  - **Oljeutvinning**
  - **Fiskeoppdrett**
  - **Folketrygden**
  - **Utvikling av datasystemer**
- **Hvilke behov for informasjon og informasjonssystemer har disse virksomhetene?**