

What is communicated and why?

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Why do we communicate?

P The actor wishes to influence

?In some specific area

?Some specific audience or party

P The receiver wants to know or experience something

What is communicated?

Information?

P Binary data

P Text, as characters or numbers

P Data base records

P Files

P Multimedia products containing

?Text

?Sound

?Video

Hierarchy of information

PRAGMATIC INFORMATION

KNOWLEDGE

INFORMATION

DATA

WHAT IS DATA?

- P** Data is plain material, e.g. bits without any interest in their meaning
 - P** Typically data is viewed as binary units, 0 or 1
 - P** Data may be also characters, either 7 or 8 bit long (often called bytes)
 - P** All communicated information is eventually data
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What is information?

- P Data becomes **information**, if it has some value to the user
 - P The user draws some conclusions on the basis of data, understands its meaning
 - P Information is valuable to the user
 - P Value may be esthetic, economic, or ethical
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What is knowledge?

- P Data or information is related to a wider context
 - P Different information has to be interpreted according to the situation
 - P The user needs information to improve his/her knowledge of the situation
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Forms of pragmatic information

- P** Artistic, esthetic, experience information, entertainment information.
 - P** Philosophical, religious information.
 - P** Ethical, social information, about human relationships.
 - P** Commercial, marketing and sales information.
 - P** Information user wants pragmatic information
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Users of information

P Government

P Business

P Private individuals

Needs of information

- P The users need information in their operations
 - P The needs are related to what the user wants to and needs to do
 - P For system design and planning it is necessary to observe the user and to record what is done
 - P It may be enough to replicate that with newer technology
 - P New technology may also change what the user wants to do: there may be new opportunities
 - P The user knows best his/her needs
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Typical industries

- P Chemical industries
 - P Mining and metallurgy
 - P Mechanical manufacturing industries
 - P Energy production and distribution
 - P Food industries
 - P Electronics and computer manufacturing
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Information content providers

- P Government information production
 - P Religious organizations, churches
 - P Political and benevolent organizations, charities
 - P The Press, information agencies
 - P Publishers, authors of books and articles
 - P Radio and television companies, CATV operators
 - P Film and video producers
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Value of information

- P The user is willing to **pay** for valuable information
 - P “Free” information usually has little value
 - P Such information is produced which brings income to the producer (copyright)
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Security

- P Data security is vital
 - P Transactions of the user should be safeguarded
 - P Personal or confidential data should be safe
 - P Financial losses should be avoided
 - P Information criminals should be caught and punished
 - P All this requires planning, hard work and discipline
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Business communications

- P Business communications has highest value and has best means of data communications
 - P Manufacturing industry is a good example of communication needs and applications
 - P The purpose of the business is to produce income to the owner
 - P Communications can improve the efficiency and productivity of business operations
 - P Communications also cause investment and running costs, require personnel and training
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Communications in manufacturing

P Fetching of raw materials such as wood requires planning and large scale operations. On the basis of needs the purchasing department (e.g. forest department) specifies the types and quantities of raw materials needed within a given period. The purchasing agents make deals with the seller of the raw material and the transportation will be planned, organized and executed. The Purchasing department needs its own database system and communication network to run its operations. The operations are usually distributed over large areas.

Manufacturing, sales

P Sales persons inform which products and how much are needed by the customer. When the order (100 rolls of 60 g LWC paper) is received e.g. from a publishing house, the order is filed into the data base of the Sales department. The orders will be sorted and moved to the Manufacturing department, which will eventually respond to the order. Sales agents and their customers are widely distributed and need to communicate very reliably.

Manufacturing, actual manufacturing

- P** The actual manufacturing consists of a number of processes which may occur in one or many plants and which often use subcontractors.
 - P** Manufacturing needs inputs from Sales department and raw materials from Purchasing department, which must be coordinated to the capacity available.
 - P** Manufacturing processes are controlled by their own internal computers and databases.
 - P** Manufactured goods will be packed and delivered to the customer. In some cases wholesale and retail commerce are needed with their databases.
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