



Lecture 1

ICT role in key sectors of development of society. Standards in the field of ICT

Plan of the lecture

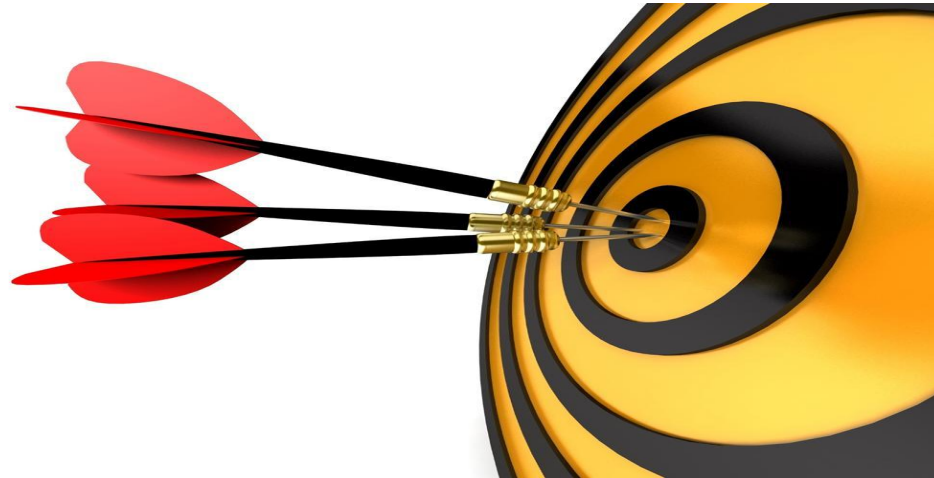
1. Definition of ICT. Subject ICT and its purposes.

An ICT role in key sectors of development of society.

2. Standards in the field of ICT. Communication

between ICT and achievement of the objectives of a sustainable development in the Millennium Declaration.

Purpose: To prepare students using of modern computer information technology.



ICT is an acronym that stands
for **Information**
Communications Technology.



Definition of ICT

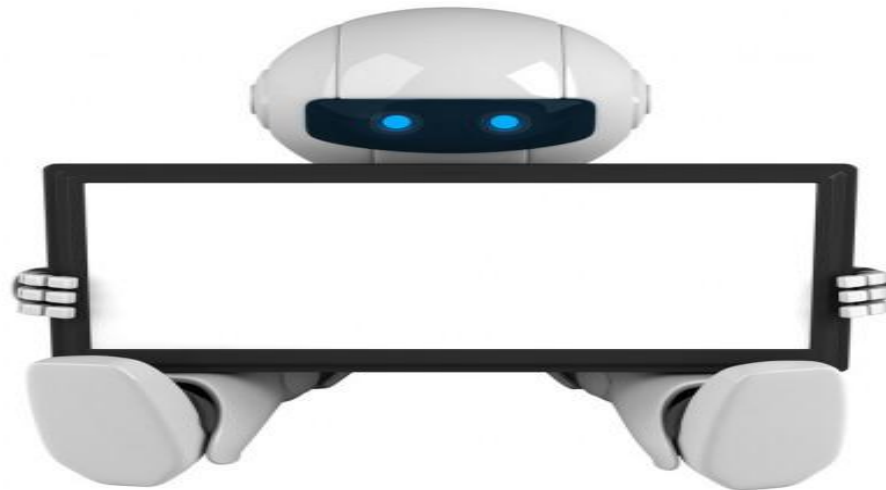
ICT (information and communications technology) is the technology required for information processing, in particular, the use of electronic computers, communication devices and software application to convert, store, protect, process, transmit and retrieve information from anywhere, anytime.



Subject ICT and its purposes

ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form.

For example, personal computers, digital television, email, robots.



Subject ICT and its purposes

A good way to think about ICT is to consider all uses of digital technology that exist to help individuals, businesses and organizations use information.



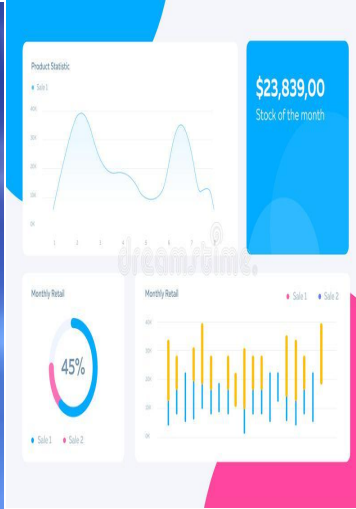
The components (structure) of information technology:

1. **Information** is a set of physical processes signals perceived by the subject through the sense organs.

Mathematical



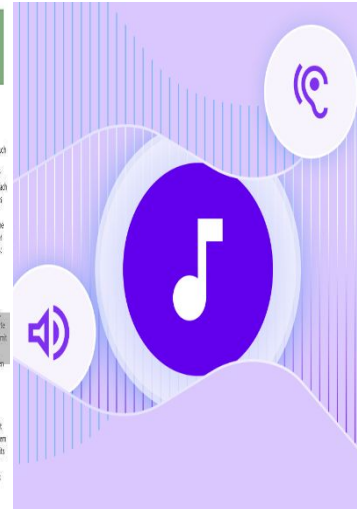
Graphics



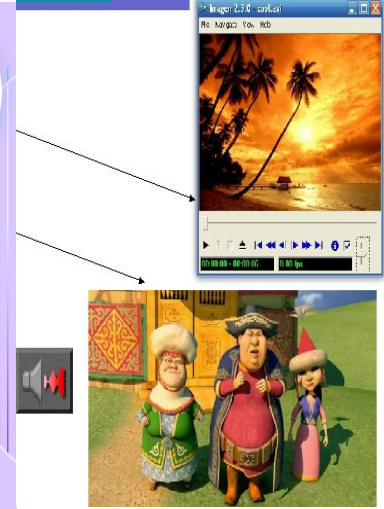
Text

Entertainment Today's Highlights
Test-Nennungsspezifisch bei Nutzung der Getty Images Coverage Pro Coverage Produktversion
PRO-TEST
"Sie haben von Pro Coverage für Anna Olszewski...
Frederick von Thun, der Anna Olszewski mit dem Wortes 'Sie, die mit' die...
Anna Olszewski: "Mein Bruder und ich unterstützen Sie gegenseitig!"
Anna Olszewski: "Mein Bruder und ich unterstützen Sie gegenseitig!"
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Sound



Video



The components (structure) of information technology:

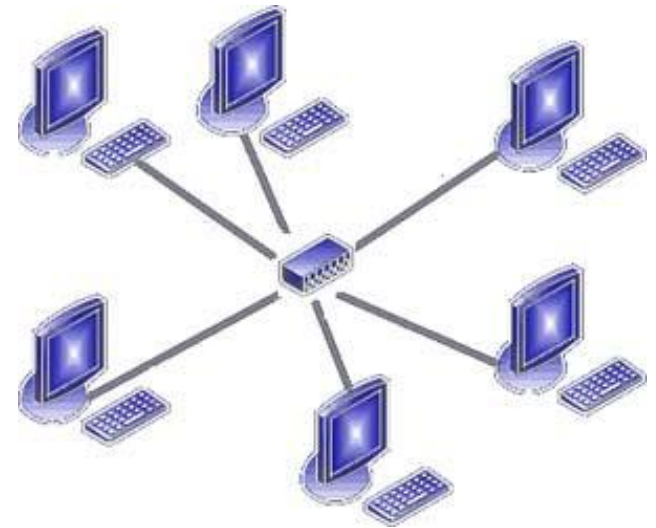
2. **Data** is data obtained by measuring, monitoring, logical or arithmetic operations presented in a form suitable for storage, transmission and processing.

Words and numbers		Numbers only	
Long	Short	Long	Short
1st April 1985	1 Apr 85	01/04/1985	1/4/85
2nd January 2001	2 Jan 01	02/01/2001	2/1/01
15th May 2012	15 May 12	15/05/2012	15/5/12
23rd August 2015	23 Aug 15	23/08/2015	23/8/15
12th December 2022	12 Dec 22	12/12/2022	12/12/22

The components (structure) of information technology:

3. Information processes. The concept of information is inseparable from the concept of information processes. Information processes include:

- transmission of information;
- receiving the information;
- data storage;
- processing of information and its presentation for use;
- use of information.



The components (structure) of information technology:

4. Data processing

All information supplied to the computer, or encoded digitized, all characteristics data assigned to the number. Thus, the computer operates with no sound, or video image, and a series of numbers. And it does not process sound or video, and the number. After the treatment, the number again converted into sound or video and we hear the music and see the cartoon on the computer screen.

Table1-Data processing

decimal system	binary system
0	0
1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001
10	1010
100	1100100
1000	1111101000

Kilobyte (KB). **1** KB = **1024** bytes.

Megabyte (MB). **1** MB = **1024** KB.

Gigabyte (GB). **1** GB = **1024** MB.

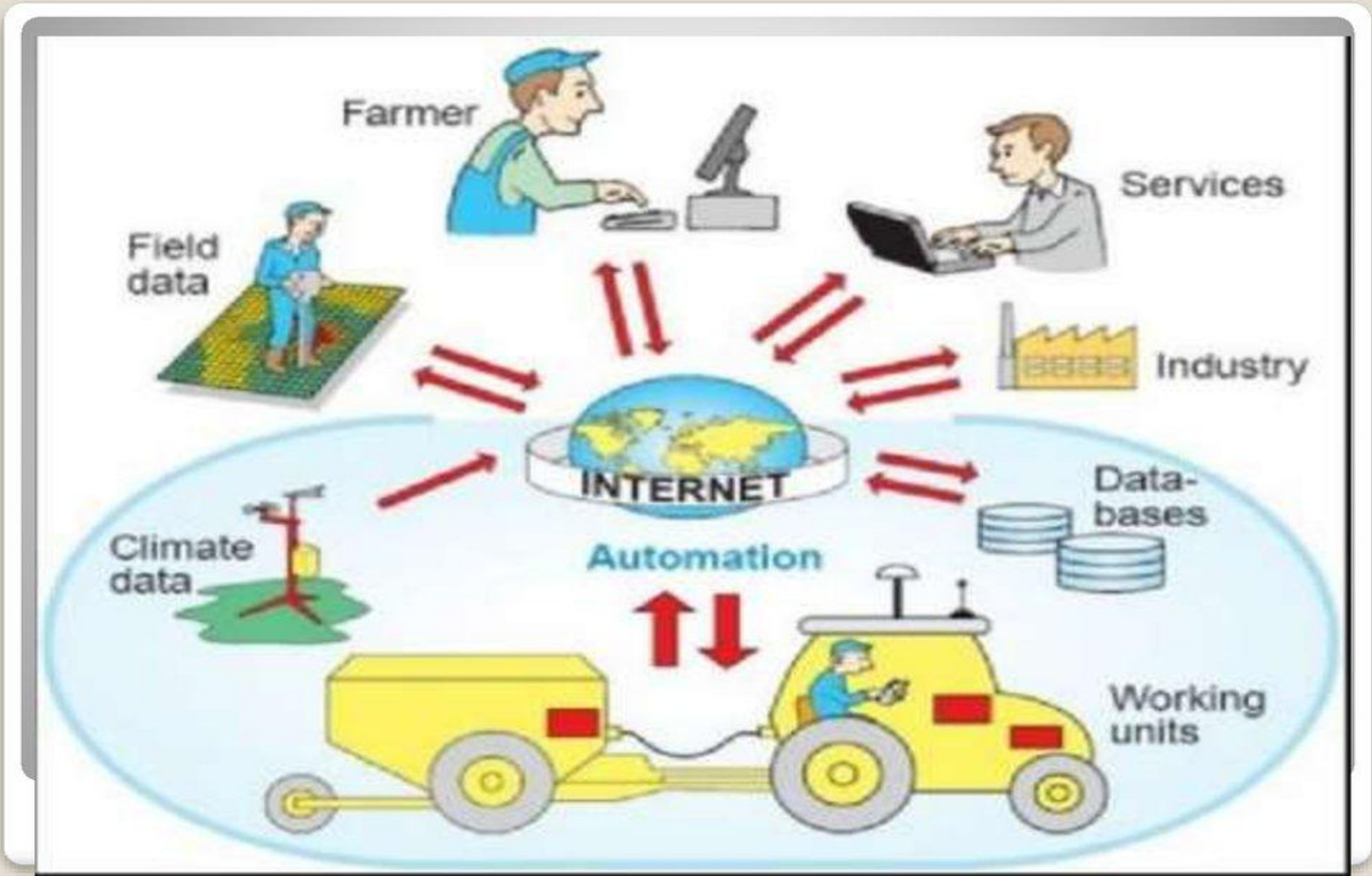
Terabyte (TB). **1** TB = **1024** GB.



Impact of ICT on society

Developments in ICT have provided exchanging of information anytime, anywhere in the digital format lend by computers. This technological convergence has brought an enormous impact in everyday life. Such as the use of email and cellular phones at home and the workplace and linked to all facets of society: business, education, communication, scientific exploration, knowledge management etc.

ICT role in key sectors of development of society



ICT standardization is the voluntary cooperation for the development of technical specification that outlines the properties for a particular product, service, or procedures.



- ETSI – the European Telecommunications Standards Institute
- CEN – the European Committee for Standardization
- CENELEC – the European Committee for Electrotechnical Standardization



Millennium development goals

- **Goal 1:** *Eradicate extreme poverty and hunger*
- **Goal 2:** Achieve universal primary education
- **Goal 3:** Promote gender equality and empower women
- **Goal 4:** *Reduce child mortality rate*
- **Goal 5:** Improve maternal health
- **Goal 6:** Combat HIV/AIDS, malaria, and other diseases
- **Goal 7:** Ensure environmental *sustainability*
- **Goal 8:** Develop a global partnership for development

Questions:

1. What is the definition of ICT and its purposes?
2. What is the ICT role in key sectors of development of society?
3. What kind of standards do you know in the field of ICT?
4. What kind of communications do you know between ICT and achievement of the objectives of a sustainable development in the Millennium Declaration?

References

1. June J. Parsons and Dan Oja, New Perspectives on Computer Concepts 16th Edition - Comprehensive, Thomson Course Technology, a division of Thomson Learning, Inc Cambridge, MA, COPYRIGHT © 2014.
2. Lorenzo Cantoni (University of Lugano, Switzerland) James A. Danowski (University of Illinois at Chicago, IL, USA) Communication and Technology, 576 pages.
3. Craig Van Slyke Information Communication Technologies: Concepts, Methodologies, Tools, and Applications (6 Volumes). ISBN13: 9781599049496, 2008, Pages: 4288
4. Utelbaeva A.K., Utelbaeva A.K. Study guide for lectures on discipline “Computer science”, Shimkent 2008, 84 pages.

Resources:

1. <http://www.intuit.ru/studies/courses/3735/977/lecture/14671>

Thanks for your attention!

