

Information and Human Evolution

**Agrarian, Industrial
and Information
Society**



Outline

- *How to define an information society?*
- *How the concept Information Society has been evolved? Agrarian, industrial and information society.*
 - *Discussion Time*
- *What were and what are the reasons for the development of the information society?*
- *Policy and Regulation for information Societies*

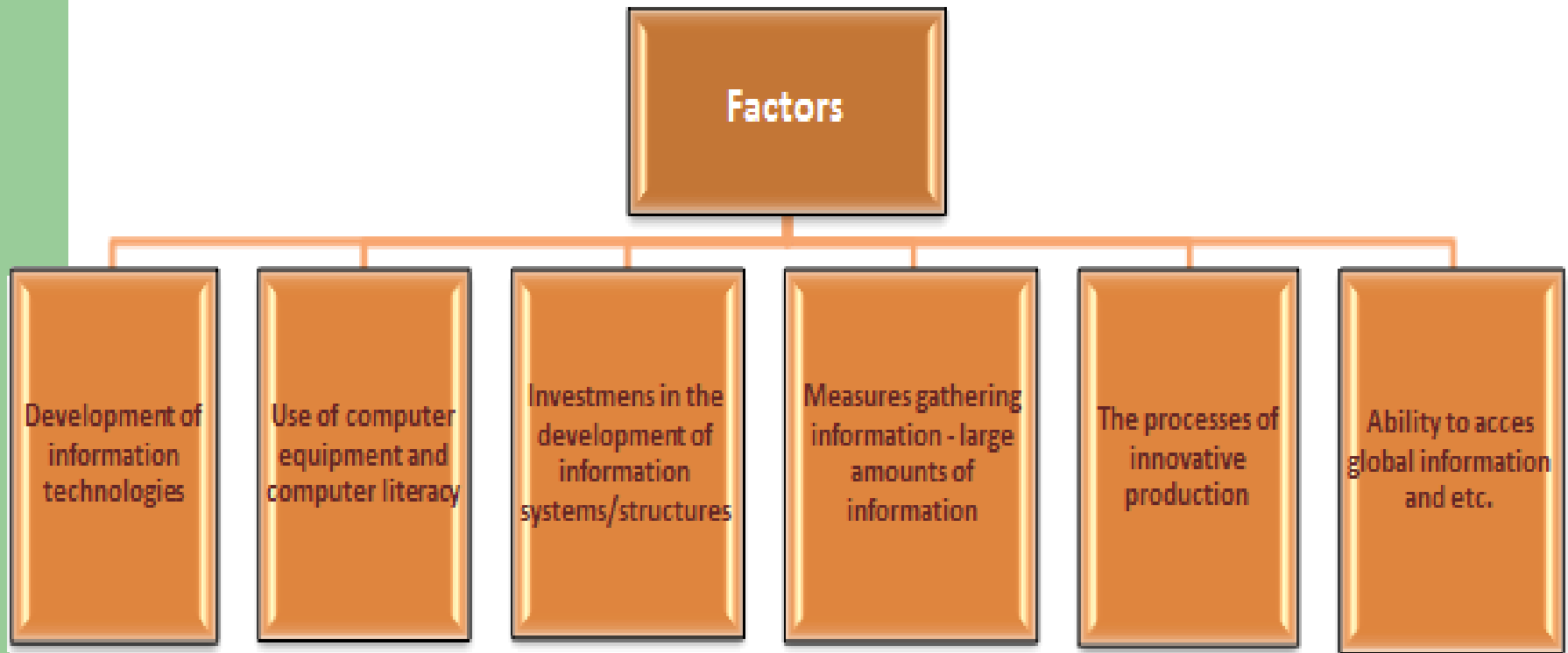
Information society

- Rapid development and expansion of information technologies has created favorable conditions for the emergence of global society in the latter decade.
- New information technologies penetrate not only into business, work environment, life of state and world, but also into human's daily routine and mode of life. All this forms fairly new phenomenon - the information society.
- This is a new type of the society that is organically linked to the practice of information technologies in various fields of life and activities. The main features of this society:

The main features of this society

- Information infrastructure - telecommunications, computer networks, databases, information systems and others.
- The ability / proficiency of society's members to use measures of information technologies - skills to work with computers, to introduce new working methods, to access and use global databases, be able to process data, to communicate with other persons through the Internet and etc.

factors of the information society's development



AGRARIAN SOCIETY

- An agrarian society is a social system where there is concentration of most
 - **active population,**
 - **production,** and
 - **capital is in agriculture** and **extraction** from nature.
- Three stages were there:

Historical Developments of agricultural society

- *Hunting, Fishing, and Gathering Societies (1st stage)*
 - This society is characterized by **subsistence economies (no surplus production)**
 - **Scarcity of food** was the major problem
 - The basic units of social organizations were the **household** and **local clan**.
 - The **division of labor** was simply based on **age** and **sex**.
 - Men ... hunting, deep-sea fishing
 - Women Gathering, shore fishing and preserving

Cont...

- ***Horticultural Societies (2nd stage)***
 - People began to **plant and cultivate crops**
 - Major shift from **subsistence** economy to **economic surplus**
 - The technology was so **primitive** --- ex. digging stick,
 - But Able to **produce surplus**:
 - producing more than the **bare necessity**
 - people have got **more time** to devote on other pursuits: **art, religion, writing**, etc.
 - Relative **abundance** and a **settled way of life** resulted in:
 - Development of **complex and stable institutions** outside the family:
 - A **religious structure** with **full time priests**
 - A **government** with bureaucrats, tax collectors, and hereditary ruler

Cont...

- ***Agrarian Society: (3rd stage)*** The agrarian society was characterized by:
 - Drastic increase in the **efficiency of production** as a result of
 - **better technology.**,
 - Harnessing of **animal**,
 - Development of **metal tools** (the use of the **wheel**),
 - Improved method of irrigation and fertilization.
 - Even more people became **free from direct production** as a result of the **advances in technology**.

Cont...

- As a result of this there was
 - A rapid growth of: ***Technology, Trade, Reading and writhing, Science, Art***
 - Accumulation of wealth that created **social inequalities**:
 - Some people had **more control over surplus** and became **elite**, Others became so **poor and slaves**
 - In place of a simple class structure of horticulture society, a **complex class system** developed:
 - ***Merchants, soldiers, scholars, officials, and kings (with higher social status)***. The poor peasants----- **90%** of the pop. (all the above groups are **dependent** on the labor of the poor peasant)

What is the role of information in agrarian society?

- Information gathering and processing became increasingly important
 - **for the functioning of the state,**
 - like in, collection of **taxes,**
 - establishing **property ownership,**
 - **Supervising** worriers, priests, craftsman, artisans and slaves.

Cont...

- **Information about kinship and property** became an important part of culture.
- Regarding Innovation in information processing:
 - The **early writing** developed from **pictures** and this was part of **religious information** system

INDUSTRIAL SOCIETY

- Industrial society is a social system whose **mode of production** focuses primarily on
 - **finished goods** with the aid of **machinery**.
- It is a social system where there is concentration of most **active population, production, and capital** in
 - Industry and manufacturing.

Cont...

- Important events
 - The industrial revolution started in **England** from the mid **17th c. to 19th C.**
 - Between **1780 and 1840** introduction of **steam engines** in textile, coal, and iron works
 - **Machines** replaced **tools.**
 - **Mechanical, electrical** and **fossil-fuel energy** substituted human and animal power.

Cont...

- The effects of the above changes include:
 - The dominance of the **modern factory** in the economy
 - Shift of production from **home** to **factory**, from **rural** to **urban**.
 - Explosive growth in **productivity** and **surplus production**
 - **Drastic Transformation** of the agricultural societies within few decades because of: Large scale **energy production**, The **engineering of manufacturing tools** and **Mass production**

Cont...

- **Labor transformation** due to industrialization:
 - Human labor was **freed** from **agricultural production** and increasingly from the **industrial production** as a result of increase in **energy** and **technology** (working certain number of days for their lord)
 - **Free mobility** of labor
 - **migration** from rural to urban areas
 - **greater surplus labor**
 - extremely **low wages** (favorable for industrial expansion)

Major features of social life:

- Greater social inequalities:
 - **Extremes of wealth and poverty** became quite common
- Large scale of **unemployment** and **social unrest** that resulted in:
 - Initially, **destruction of machinery** by workers to save the **manual labor** from **displacement**
 - Later on, struggling for **better wages** through organizing **labor union**

Cont...

- **Industrialization promoted**
 - **Formal education** (expanded dramatically), **Growth of science and knowledge, Mass media, Culture of democracy**
- **Freedom of information** became one of the **corner stone** of democracy in industrial society.
 - Citizens being able to **exchange information freely**
- Because of the **spread of literacy and scientific knowledge, modern information** became a new **collective property**.

Discussion

- How you can differentiate Information Society?
- Information Society Characterized By?

INFORMATION SOCIETY

- Information society is a social system in which the economy is highly dependent on
 - **gathering**,
 - **Processing** and
 - **transmission** of information.
- It is characterized by:
 - high degree of **computerization**,
 - large volume of **electronic data transmission**,
 - Economic profile dominated by **industries** and **occupations** related to information production and distribution.

INFORMATION SOCIETY

- An information society is a society where the **creation, distribution, use, integration and manipulation of information** is a significant economic, political, and cultural activity. Its main drivers are **digital information and communication technologies**, which have resulted in an information explosion and are profoundly changing all aspects of social organization, including the economy.
- Key concepts: information, ICT as a driver.

Knowledge Society (KS)

- **KS** is a society which bases to a great extent on analysis and application of knowledge for improving the human living.
- **NB!** A *knowledge society* differs from *information society* in that the former serves to transform information into resources that allow society to take effective action while the latter only creates and disseminates the raw data .

Knowledge Society (KS)

- 9.01.2014
- Google:
 - “information society” – 1 580 000
 - “knowledge society” – 621 000
- Yahoo:
 - “information society” – 2 350 000
 - “knowledge society” – 380 000

What were/are the most important reasons/prerequisites for the development of the information society?

- ***The storage capacity:***
 - The amount of electronically stored information grows exponentially (1986 – 2.6 exabyte; 2007 – 295 EB; 1 EB = 10^{18} bytes).
- ***The capacity of communication channels:***
 - The growth is exponential as well (1986 - 281 petabyte/day, 2007 – 65 EB/day; 1 PB = 10^{15} bytes).

Cont....

- ***Computing power:***
 - Growth about 4 degrees (1986 – 3×10^8 MIPS, 2007 – 6.4×10^{12} MIPS; 1 MIPS = Million instructions per second).
- From the middle of 20th century, the markets had tremendously expanded.
- Innovation to improve production became the main prerequisite of competitiveness and sustainability.

Information society consists two major processes:- Production and Consumption

- **Production:**

- Innovation and wide-scale production of **Hardware:** computers, telecommunication devices, equipment's for printing, image creation and transmission, etc
- Wide scale production of **Software:** Application of Software, Systems software
- Production of **vast quantity of Information** itself.
- A **vast quantity of information** is produced (through Internet, fax, telephone, radio, TV,
- There is a large amount of **Research and Development (R&D)** activity

Cont...

- **Consumption:**

- High level of consumption of information that is justified by **wide adoption** of information and telecommunications **technologies**; PCs, Telephones, TVs, etc
- Therefore, Information society denotes society at an **advanced stage of development** and it is also stated as **Post-Industrial Society**.

Criteria for the Development of Information Society

- **Technological criteria:** IT as the key **enabling force**: wide application of IT in:
 - Offices, factories, educational institutions, home.
- **Social Criteria:** Information as a **factor** to improve the **quality** of life
 - Wide spread of information literacy, End-user access to high quality information

Cont...

- **Economic criteria:** Information as a key economic factor as a:
 - Resource, service, Commodity, source of added value, source of employment
- **Political criteria: Freedom of information** resulting increased participation
- **Cultural Criteria.:** Recognition of the **cultural values** of information.
 - **Promotion** of information values in the interest of **national** and **individual** development.

Three Stages in the development of Information society

- Information -Rich.,
- Information –Based,
- Information- Dominated.

Cont...

- **Information Rich Society (1960's – 1970's)**
Basic Characteristics are:
 - Growing emphasis on **information Production**-including
 - Creation of large volume of information and
 - Expansion of research in universities and research institutes, drastic increase in the number of **books** and **journals**

Cont...

- **Introduction and wide diffusion of IT: Effects were:**
 - **inexpensive** data recording and storage and **fast** processing and transmission of information
- **higher employment** in information related occupation

Cont...

- **Information Based Society (1980's – 1990's).**
- Characterized by 3 trends:
 - Globalization,
 - Specialization,
 - Connectivity.

Cont...

- **Globalization:**

- The ability to move information instantaneously worldwide.
- Through rapid development of:
 - international telephony,
 - Internet,
 - Cable/satellite TVC.
- These reduced or completely removed the international boundaries to the movement of information.

Cont...

- **Specialization:**

- With the rapid diffusion and adoption of information devices like:
 - Telephones , cellular telephones , fax machines,
 - PCs , TV;
- Each of them are specialized in **specific use of information and** Each of them have **specialist suppliers** of equipment, software, information

Cont...

- **Connectivity: Increased connectivity.**
 - **Internet technology** became predominant with efficient transmission of **text, data, graphics, voice and pictures.**
 - The major factor for the wide use of this technology is
 - the **declining price** in communication and PCs.

Cont...

- **Information Dominated Society (1990,s – 2000's).**
 - Information **Production, transmission** and **use** has become the leading to the production or consumption of material products.

Cont...

- Major characteristics
 - Information became a **major product**
 - In US information production constitutes more than half of the GNP (Gross national product)
 - Information has increasingly become a **commodity** in its own right
 - sales of data sets, sales of SW, sales of TV Programs
 - Information media beginning to **converge** each other
 - Information becoming a **culture**

Policy and Regulation for information society

- **Information policy** is the set of all public laws, regulations and policies that encourage, discourage, or regulate the creation, use, storage, access, and communication and dissemination of information.

Policy and Regulation for information society

- The obvious reason for the need of information policy deals with the legal issues that can be associated with the advancement of technology.
- More precisely,—the digitization of the cultural content made the cost of the copy decreasing to nearly zero and increased the illegal exchange of files, online, via sharing web site or P2P technologies, or off line (copy of hard disks).

Policy and Regulation for information society

- As a result, there are many grey areas between what users can and cannot do, and this creates the need for some sort of regulation.

Objectives of Information Policy

- To strengthen internal control and prevent unauthorized and improper access to data, thereby ensuring the appropriate protection of information assets
- To appropriately protect the confidentiality and integrity of information assets

Objectives of Information Policy

- To ensure that information is not revealed to unauthorized third parties during the process of transmission or as a result of unintentional actions
- To ensure that all information security accidents or suspected security flaws have appropriate reporting mechanisms so that superiors are notified and these incidents are appropriately investigated and handled

End of 3nd chapter

Make your self ready for
mid term exam