LEARNING TASK 3-4**: GLOBAL DIGITAL DEVELOPMENT, DIGITAL & SOCIAL CHANGE**

**WEEK 3-4**

**DESIRED LEARNING OUTCOMES**

1.Explain the role of ICT in social change.

2.Understand the strengths, weaknesses, opportunities, and imminent threats of the digital age.

**CONTENT DEVELOPMENT**

**GLOBALIZATION**

Globalization or globalization is the process of interaction and integration among people, companies, and governments worldwide.

Globalization results in the expansion of international cultural, economic, and political activities.

Globalization has grown due to advances in transportation and communication technology.

With the increased global interactions comes the growth of international trade, ideas, and culture.

**Economic Globalization**

Countries that trade with many others and have few trade barriers are economically globalized.

Many countries have created free trade agreements with each other.

Under free trade agreements, countries agree to remove trade barriers. For example, they may stop charging tariffs, or taxes, on imports.

American software companies, such as Microsoft, rely on international trade to make large profits. The economy of the country of Saudi Arabia is almost entirely dependent on oil exports.

**Cultural Globalization**

Cultural globalization refers to the transmission of ideas, meanings, and values around the world in such a way as to extend and intensify social relations.

Religions were among the earliest cultural elements to globalize, being spread by force, migration, evangelists, imperialists, and traders.

Clothing styles have also become more uniform as a result of globalization. National and regional costumes have become rarer as globalization has increased.

There has also been an increasing exchange of foods across the globe.

McDonald's has more than 31,000 restaurants in 118 countries. And people all across the world are eating more meat and sugary foods, like those sold in fast food restaurants.

**Political Globalization**

Cultural and economic globalization have caused countries to become more connected politically.

They work together to open their borders to allow the movement of money and people needed to keep economic globalization working.

Because people, money, and computerized information move so easily around the globe, countries are increasingly working together to fight crime. The idea of maintaining international law has also grown.

Other international issues include terrorism, drug trafficking, and immigration.

**Causes of Globalization**

1. COMMUNICATION
2. TRANSPORT
3. FREE TRADE AGREEMENTS
4. GLOBAL BANKING
5. MNCS (Multinational Corporation)

**Digital Divide**

* A difference in access to technology between nations, regions and based on demographic factors such as income, race and age.

# TYPES OF DIGITAL DIVIDE

1. **Infrastructure**

* Basic facilities, structures, equipment, technologies and services that act as the foundation for economic activity and quality of life.

1. **Devices**

* Access to computing devices such as computers, networking gear and mobile phones. Low-end devices and aging hardware do not have access to the same services as modern high-end devices.

1. **Education**

* Access to computers in schools, the effective use of technology in classrooms and teaching of basic technology skills to students.

1. **Defensive computing**

* When users take basic precautions to reduce information security risks.

1. **Information security**

* The practice of defending information from unauthorized access, use, disclosure, disruption, modification or destruction.

1. **Blocking**

* Areas where internet services are blocked by telecom companies or government censors.

**Information System Trends**

21st century has been defined by application of and advancement in information technology. Information technology has become an integral part of our daily life. According to Information Technology Association of America, information technology is defined as “the study, design, development, application, implementation, support or management of computer-based information systems.”

**Cloud Computing**

One of the most talked about concept in information technology is the cloud computing.

Clouding computing is defined as utilization of computing services, i.e. software as well as hardware as a service over a network. Typically, this network is the internet.

Some of the benefit of cloud computing is as follows:

* Cloud computing reduces IT infrastructure cost of the company.
* Cloud computing promotes the concept of virtualization, which enables server and storage device to be utilized across organization.
* Cloud computing makes maintenance of software and hardware easier as installation is not required on each end user’s computer.

**Mobile Application**

Mobile application or mobile app has become a success since its introduction. They are designed to run on Smartphone, tablets and other mobile devices. They are available as a download from various mobile operating systems like Apple, Blackberry, Nokia, etc.

**User Interfaces**

User interface has undergone a revolution since introduction of touch screen. The touch screen capability has revolutionized way end users interact with application. Touch screen enables the user to directly interact with what is displayed and also removes any intermediate hand-held device like the mouse.

Touch screen capability is utilized in smart phones, tablet, information kiosks and other information appliances.

**Analytics**

The field of analytics has grown many folds in recent years.

Analytics is a process which helps in discovering the informational patterns with data.

The field of analytics is a combination of statistics, computer programming and operations research.

**Current Trends in Information Technology**

1. The Internet of Things (IoT)
2. Mobile web performance
3. Artificial intelligence
4. User interface
5. Mobile application

**The Internet of Things (IoT)**

Industry experts say that while the Internet of Things (IoT) had a false start particularly in regard to the augmented technology, in 2018, we should expect to see it improve our ways of doing things at home, work and even during leisure activities. This is why we expect to see it be among the biggest IT trends of 2018. The IoT is usually driven by the industry and will succeed the most if it focuses on getting solutions for some specified problems. The industry focuses on firmware and software that is hardware centric and suits those who love creating solutions and meets the demands of the engineering field.

**Mobile web performance**

A website that hasn’t been optimized for the mobile devices is now getting penalized by the search engines. Nowadays, more users are expecting a better online performance from mobile devices. This has resulted in a race for the improvement of the mobile performance. This means that the 2018 web trends will include user-triggered animations, mobile-only development, secured apps and pages and natural language processing. There will also be an increased usage of white or negative spaces.

**Artificial intelligence**

Artificial intelligence (AI) is definitely among the biggest hits when it comes to IT trends that has impacted creativity in the online space. AI can be manifested through different algorithms for machine learning. This can be manifested not only in the amount of funding that AI receives but also the wide range of applications where it is being incorporated.

**User interface**

The user interface is one area that has undergone massive revolution since the touch screen was introduced. The capability of the touchscreen has revolutionized how the end users are able to interact with the application. With the touchscreen capability, the way users are able to interact with the application. Users are now able to interact freely with what is being displayed without the need for an intermediate device such as a mouse.

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# DIGITAL AND SOCIAL CHANGE

**DIGITAL AGE**

It is also called “Information Age”, “Computer Age” or “New Media Age”. Starting in the 1970’s with the introduction of the personal computer with subsequent technology introduced providing the ability to transfer information freely and quickly.

**DIGITAL SOCIETY AND INFORMATION AGE**

Digital technologies have permeated our everyday task and interactions in the 21st century. They have changed the way we learn, work and socialize. This reliance on the use of technology in the modern world has led too much consideration of the society regarding how we engage and interact with each other and how we make use of these digital tools and communication channels.

Information Society refers to societies in which the creation, dissemination, use and manipulation of information has become significant to political, economic, social and cultural endeavors.

**THE ICT AND ITS ROLE IN THE SOCIAL CHANGE**

Information and Communications Technology (ICT)

It refers to technologies that provides access to information through telecommunications. It offers us the possibility to acquire information and to connect with other people at a speed and across distances unprecedented in history.

**THE USE OF ICT FOR SOCIAL CHANGE**

ICT is also studies how modern communication technologies affect society. Indeed, ICT is easily accessed and used everyday by users. With this idea, ICT gives a chance for people from around the world to communicate; leading to success of various advocacies.

**DIGITAL CITIZENSHIP**

* Refers to the utilization of information technology (IT) in order to engage in society, politics, and government.
* K. Mossberger, et al. define digital citizens as “those who use the Internet regularly and effectively”.

**DIGITAL CITIZENSHIP PRINCIPLES**

* Engage Positively
* Know your online world
* Choose consciously

**Engage Positively**

* Respect the rights of others to participate and have an opinion
* Ask before tagging other people or posting photos
* Report offensive or illegal content
* Stand up and speak out about cyberbullying – protect your friends
* Don’t respond to hurtful or nasty comments – block and report cyberbullying
* Speak to your parents or trusted adult about upsetting online experiences
* Report threats of violence to the police (collect the evidence to show them).

**Know your online world**

1. Learn how new skills will help you explore the online world
2. Recognize online risks and how to manage them
3. Look out for suspicious emails and scams
4. Use secure websites for financial and retail services
5. Keep passwords secret, strong and unique
6. Know how to report bullying behavior on social media sites.

**Choose Consciously**

* Choose privacy and security settings carefully and check them regularly
* Choose friends wisely online – not everybody online is who they claim to be, regularly review your connections and remove people
* If you have made a mistake apologize and take down offensive material as soon as possible
* Ask for permission before uploading pictures of your friends.

G**lobal Digital Development**

Digital development is a continuous project. It is the crucial factor for sustainability and future viability. It is a part of a larger technological process, and is the change associated with the application of digital technology in all aspects of human society.

**Infrastructure**- Tangible parts of digital technologies

**Generic Services**- Intangible parts of digital technologies. It is the software and applications

**Capabilities, skills and culture**- People that take technology in corporated to embrace the digitalization.

The combination of technologies in order to put parts of information and communication process in society into electronic network are:

* E-Government
* E-Business
* E-Health
* E-education

# TECHNOLOGICAL CHANGE

Technological change (TC) or technological development, is the overall process of invention, innovation and diffusion of technology or processes. In essence, technological change covers the invention of technologies (including processes) and their commercialization or release as open source via research and development (producing emerging technologies), the continual improvement of technologies (in which they often become less expensive), and the diffusion of technologies throughout industry or society (which sometimes involves disruption and convergence). In short, technological change is based on both better and more technology.

**Invention**

The creation of something new, or a "breakthrough" technology. This is often included in the process of product development and relies on research. This can be demonstrated in the invention of the spreadsheet software. Newly invented technologies are conventionally patented.

**Diffusion**

Diffusion pertains to the spread of a technology through a society or industry.[6] The diffusion of a technology theory generally follows an S-shaped curve as early versions of technology are rather unsuccessful, followed by a period of successful innovation with high levels of adoption, and finally a dropping off in adoption as a technology reaches its maximum potential in a market. In the case of a personal computer, it has made way beyond homes and into business settings, such as office workstations and server machines to host websites.

**Innovation**

Technological innovations comprise new products and processes and significant technological changes of products and processes. An innovation has been implemented if it has been introduced on the market (product innovation).

**1970 to 1990 Technologies**

**Intel-** In 1971, Intel released the first programmable microprocessor to the market, the Intel 4004. Three of its inventors, Stanley Mazor, Federico Faggin, and Ted Hoff, were awarded the National Medal of Technology and Innovation by US President Barack Obama for working on the 4004.

**Email-** Ray Tomlinson sent the first email in 1971 on the ARPANET. The message was merely a test message he sent to himself, and he cannot recall the content of the message. He has since been honored with numerous awards.

**DVDs-** The digital video disc (DVD) appeared in the mid to late 1990s. The superior picture and sound of the DVD helped it quickly disrupt the existing VHS tape market.

**World Wide Web-** Although originally proposed in 1989, the web was first launched and used in the early 1990s. Tim Berners-Lee (pictured), with help from Robert Cailliau, was able to connect hypertext with the internet and create the foundation for what we know as the web today. Web browsers such as Mosaic and Netscape Navigator helped popularize the web in the 1990s.

**2000-2018 Technologies**

**The GPS (Global Positioning System)**

A "constellation" of approximately 30 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location.

**USB Flash Drive**

The floppy disk of this decade, the USB flash drive is the most compact, portable data storage device used by PCs and Macs alike (and unlike many predecessors, no pre-formatting is necessary).

**Slingbox (2005)**

This genius device gives viewers access to their cable television programming anywhere with a computer and high-speed internet connection.

**Facebook**

Famously started in a Harvard dorm room in 2004, Facebook eventually rose to the top of the heap of social networking sites in the 2000s

**Camera phones**

The introduction of the camera phone in 2000 was an innovation that changed the daily lives of millions of people around the world. It allowed people to instantly take photos and videos, and dealt a major blow to the digital camera industry.

**Wikipedia**

Launched in January 2001, Wikipedia played a major role in defining the concept and purpose of user-generated content. There are now 200 versions of Wikipedia and millions of articles.

**2019 technologies**

**Robot dexterity**

Robots are teaching themselves to handle the physical world. For all the talk about machines taking jobs, industrial robots are still clumsy and inflexible. A robot can repeatedly pick up a component on an assembly line with amazing precision and without ever getting bored—but move the object half an inch, or replace it with something slightly different, and the machine will fumble ineptly or paw at thin air.

**Predicting preemies**

A simple blood test can predict if a pregnant woman is at risk of giving birth prematurely.

**“Post-industrial society”** (Bell, 1973)

The post-industrialized society is marked by an increased valuation of knowledge. This itself is unsurprising, having been foreshadowed in Daniel Bell's presumption as to how economic employment patterns will evolve in such societies. He asserts employment will grow faster in the tertiary (and quaternary) sector relative to employment in the primary and secondary sector and that the tertiary (and quaternary) sectors will take precedence in the economy. This will continue to occur such that the“impact of the expert”will expand and power will be monopolized by knowledge.

**“Fifth Kondratiev” (Perez, 1983)**

**“Structural Change and Assimilation of New Technologies in The Economic and Social Systems”**

Through generating a set of hypotheses about the inter-relationship between diffusion of new technologies and economic development, the author seeks to identify the causal mechanisms of the depressions of the trough of the Kondratiev long waves. A model of the capitalist economy and an analysis of its structural patterns and processes are proposed, and from an examination of the techno-economic and socio-institutional characteristics of the fourth Kondratiev, some institutional requirements for the next upswing are elaborated.

**“Information Society” (Webster, 1995)**

In Theories of the Information Society Frank Webster makes sense of the information explosion, taking a sceptical look at what thinkers mean when they refer to the 'Information Society' and critically examines the major post-war theories and approaches to informational development. This third edition brings the book right up to date with both new theoretical work and, social and technological changes (such as the rapid growth of the Internet and accelerated globalization), reassessing the work of key theorists in light of these changes.

**“Network Society” (Castells, 1996)**

This first book in Castells' groundbreaking trilogy, with a substantial new preface, highlights the economic and social dynamics of the information age and shows how the network society has now fully risen on a global scale.

Groundbreaking volume on the impact of the age of information on all aspects of society. Includes coverage of the influence of the internet and the net-economy. Describes the accelerating pace of innovation and social transformation. Based on research in the USA, Asia, Latin America, and Europe

**SWOT ANALYSIS OF DIGITAL AGE**

**STRENGTH**

**** Communication speed

 Automation

 Information storage

 Accurate duplication

 GPS and mapping

**WEAKNESSES**

**** Privacy concerns

 Plagiarism and copyright

 Anonymity and fake personas

**OPPORTUNITIES**

* Social connectivity
* Learning opportunities

**THREATS**

* Cyber security
* Social disconnect
* Crime and terrorism
* Identity theft

# IMPACT OF THE DIGITAL AGE ON THE SOCIAL, ECONOMIC AND POLITICAL LIFE OF SOCIETY TODAY

**1. Child Literacy -** It stands to reason that children who read and write more are better at reading and writing. Social media has helped children become more literate.

**2. Knowledge was Power -** Wikipedia and Google have democratized information where anyone is able to acquire the knowledge they may want. The ability of computers to replicate information for distribution and empowered people to share what they know.

**3. The Reinvention of Politics -** Social networks may encouraging younger people to get involved in politics. The social media is growing influence in politics, and the growing interest in politics from users of social media.

**4. Impact on Jobs and Income Distribution -** Workers are being replaced by computers that can do the job more effectively and faster.

**5. Impact on Employment -** Development of technology has a great impact in the workplace with increased productivity, efficiency, performance and eliminating the risk and human errors.

**6. Impact on unemployment -** Workers who are displaced by technological advances may find it difficult to become re-employed

**7. Impact on Social Life -** The digital age as made communication easier and faster for individual and firm of all countries but it is made harder for individual to have face to face conversation.