***I was in charge about the content***

**1-Introduction to TIC**

**1-1-Definition of TIC**: To define Information and Communication Technologies (ICT) we are supposed to define the following three components: information, communication and technology.

a. Information: The information has two meanings:

a.1. from a technical point of view: information is a sign, a symbol, an element that can be transmitted and stored;

a.2. information in the sense of intelligence: data which provides knowledge,

information about an object or event.

b. Communication :Communication is how information flows.

It is carried out through a network which includes at least

a transmitter, a transmission channel and a recipient (the receiver).

c. Technology: Technology is the application of a design technique to the realization of a product.

d. Information and communication technologies (TIC):

Information and communication technologies (TIC) bring together all

techniques that contribute to digitizing and digitizing information, processing it, storing it and make it available to one or more users.

**2- Different types of TIC:**

TIC brings together a set of resources necessary to manipulate information and

particularly the computers, programs and networks necessary to convert it, store it,manage, transmit and find it.

According to the OECD (Organization for Economic Co-operation and Development), the TIC sector is the sum of three sectors: the IT sector, the electronics sector and the computer sector.

telecommunications. We therefore distinguish the following categories relating to the TIC sector

on fait le schéma

▪ The IT sector in which we have: IT equipment, office machines,

personal computers, mainframes, servers, network hardware, peripherals, cards..

▪ The electronics sector (microelectronics) in which we have: electronic components,semi-conductors, printed circuits, consumer electronics equipment (televisions,radio receivers, record players, video recorders), measuring instruments, measuring instruments navigation, computers, productivity..

▪ Le secteur des télécommunications dans lequel on a : équipements professionnels de transmission, commutateurs, relais, terminaux (fixes ou mobiles) destinés aux usagers, câbles, fibres optiques..

Other areas are closely linked to TIC:

▪ Computer networks.

▪ Multimedia.

▪ radio and television broadcasting networks (via radio, via satellite, via cable network);

▪ radio and television receivers.

▪ IT services and software.

▪ Electronic commerce (e-commerce), which refers to the exchange of goods and services.

between two entities on the Internet.

▪ electronic media.

**3- Avantages des TIC :**

TCI makes it possible to:

▪ flexible access to information (the Intranet allows you to retrieve information from all workstations, whatever the time),

▪ facilitate the sharing of information (Internet, Intranet),

▪ promote group work (groupware, workflow, collaborative platforms),

▪ simplify data exchanges between companies or between sites (EDI),

▪ facilitate communication and cooperation between team members (mailing list,blog, wiki),

▪ establish a collective memory.

We can summarize the immediate contribution of TIC in four essential points:

▪ time compression;

▪ compression of space;

▪ compression of stored information;

▪ flexibility of use.

TIC is an irreplaceable asset in:

▪ rapid circulation of information,

▪ the collective development of action plans and new ways of doing things,

▪ coordination of action, memorization and capitalization of experiences,

▪ rapid access to very diverse knowledge,

▪ the opening of new customer services.

**4-Google Services :**

Google's suite of services plays a crucial role in the TIC landscape. This section delves into the various services offered by Google, their integration, and collaborative features.

Certainly! Here's a shorter overview:

1. **Search and Information:**
   * Google Search
2. **Communication and Collaboration:**
   * Gmail
   * Google Calendar
   * Google Hangouts/Meet
   * Google Drive
   * Google Docs, Sheets, Slides
3. **Productivity and Organization:**
   * Google Keep
   * Google Tasks
4. **Web Browsing:**
   * Google Chrome
5. **Operating System:**
   * Android
6. **Maps and Navigation:**
   * Google Maps
7. **Video Sharing:**
   * YouTube

Quelques photos

## 5-Microsoft Tools :

### 5-1-Microsoft Office Suite :

Microsoft Office Suite remains a cornerstone for productivity. Word, Excel, PowerPoint, and Outlook offer collaborative features and AI-driven enhancements for diverse tasks.

### 5-2-Azure Cloud Services :

#### 5-2-1-Cloud Infrastructure : Azure's core services like Virtual Machines and Storage provide a scalable and flexible cloud infrastructure.

#### 5-2-2-data and Analytics:

Azure's data management services and AI capabilities in SQL Database and Synapse Analytics empower data-driven decision-making.

#### 5-2-3-Collaboration Platforms:

Microsoft Teams serves as a central hub for communication, while SharePoint enhances document management and collaboration. Integration with development tools creates a cohesive ecosystem.

## 6-Git and GitHub:

### 6-1-Version Control with Git:

#### 6-1-1-Fundamentals :

#### Git basics, including repositories and branches, underpin efficient version control.

#### 6-1-2-Distributed Version Control :

#### Git's decentralized model supports offline work and independent contributions, fostering collaboration.

### 6-2-GitHub as a Collaboration Platform :

#### 6-2-1-Repository Management:

GitHub's repository features, like issues and pull requests, organize projects and facilitate communication.

#### 6-2-2-CI/CD Integration:

GitHub Actions and CI/CD integrations automate testing and deployment, enhancing the development pipeline.

### 6-3-Importance in Software Development:

#### 6-3-1-Collaboration in Software Projects: Git and GitHub seamlessly enable collaboration in software development, even across distributed teams.

6-3-2 Open Source Contributions: GitHub's role in open-source projects fosters a global community, exemplified by successful open-source initiatives.

**7. TCI tools:**

**7-1-**Computers:

The beginning of the information age was marked by the undisputed reign of large computers, but theyare hardly numerous: in 1961, there were 6,000 in the world. Most of them work with punch cards at the entrance and store information on tape magnetic. Terminals are generally installed in a site separate from the rest of the company,the organizational and hierarchical model is centralized.

It is now possible to exchange information between different remote computers. The computer is quickly become the heart of the processing and management of a large part of the information produced and consumed in the company. With the increase in constant powers and the decrease regular costs, computers are now present at all levels.

A computer has a brain, a nervous system, organs, and we can communicate

with him provided you know his language. His memory is immense but he is not intelligent because despite progress, the computer is only a machine that translates human thought. SO, he will always remain dependent on man and the instructions that the latter communicates to him.

We are still waiting for more powerful computers for maximum service and

conviviality. The new ergonomics are very resource-intensive; the images in three

dimensions and all forms of animation and interactivity require capacities and

considerable processing speeds.

7-2-Softwares:

A computer without a program is not usable. It is necessary to give him information for him to collaborate. You must first explain to him what is expected of him and then give him the instructions for action. The set of these instructions is called a program, and the set of programs available on a computer is called software. The program must be written in a language that the computer can understand.

Every computer is made up of a set of programs called an operating system.

or basic software. This operating system is delivered with the computer by the manufacturer.User can add specific and personal programs.

7-2-1- Basic operating systems or software:

An Operating System (OS) is a program which:

▶ controls the execution of all other programs (applications)

▶ multiplexes resources between applications.

▶ abstracts away from complexity. It hides the complexity of the underlying hardware from the users.

We find an operating system preinstalled on any type of computing device: computer personal, smartphone, touchscreen tablet, e-reader, game console,..

Les principaux systèmes d'exploitation sont classés en deux catégories :

Un tableau

7-2-2-Application software:

These are programs developed to meet specific needs. Softwares applications are programs developed for an application which can be either general or

specialized. There is software that addresses standard issues such as programming languages programming (C language, Visual Basic, etc.) and Office tools (Microsoft Word,PowerPoint,..).

7-3-Smart chips:

To protect data, businesses and consumers are now using credit cards.

smart chips in several applications, such as:

▪ banking operations.

▪ access to electronic messaging.

▪ starting the computer.

If the level of security required is higher, a smart card is probably a good option best choice. A fingerprint can be easily saved in the memory of the

chip, which allows more elaborate validation using a reader with biometrics. When the employee presents his card to the reader, he is also invited to present his biometric reference (digital print). This way of doing things ensures that the person presenting the card is the person for whom the card was issued. Depending on the case, access will be approved or refused.

## 8-Conclusion :

In conclusion, the successful integration of TIC and related technologies offers significant transformational potential. However, this requires an ongoing commitment to training, safety, and judicious change management. Benefits, such as improved efficiency, faster decision-making, and improved collaboration, make ICT a strategic investment for modern organizations.