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**University of Sciences and Technology HOUARI**

**BOUMEDIENE**

**[Faculty of Informatic](https://ischool.utoronto.ca/)**

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**Report**

**THEME :**

**Information And Communication Technologies And Technologies Related To TIC**

**Presented by :**

**Mr : ZAAF Mohamed [Ishak](https://www.enfant.com/prenoms/garcons/ishak-11597)**

**Supervised by Mr/ R. BOUCHEKIR**

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**1- Introduction**

Information technology “evolved in the 1970s. Its basic concept ,however, can be traced to the world war II alliance of the military and industry in the development of electronics, computer and information theory. After the 1940s, the military remained the major source of research and development funding for the expansion of automation to replace manpower with machine power.

Information and communication technologies for development refer to the application of information and communication technologies (TIC) towards social, economic, and political development, with a particular emphasis on helping poor and marginalized people and communities. TIC for development is grounded in the notions of “development, growth, progress and globalization and is often interpreted as the use of technology to deliver a greater good.

Information and communication refers to technologies that provide access to information through Telecommunication. It is similar to information Technology but focuses primarily on communication technologies. This includes the internet, wireless network, Cell phone, and other communication medium. For example: people can communicate in real time with others in different countries using technologies such as instant messaging, voice and video conferencing , social networking website like face both allow users from all over the world to remain in contract and communicate on a regular basis. TIC is one of the wonderful gifts of modern science and technology which brought tremendous changes in library and information science. It has opened up a new chapter in library communication and facilitated global access to information crossing the geographical limitations. TIC has a profound effect on the progress and development of human civilization. The tools used in TIC include computer programs, databases, communication networks, analysis and design methods programming languages, artificial intelligence, knowledge bases, etc. TIC has long-standing influence in almost all areas of human activity.

The TIC products are helpful to store, retrieve, manipulate and transmit information electronically. Information and communication technology has revolutionized the concept of libraries. The libraries are also changing their role to meet the demand of users for retrieving desired information which was not possible by the means of traditional libraries. Today TIC is generally understood to encompass both equipment and services that facilitate the electronic capture, processing, display and transmission of information

**2- What is TIC**:

Information Communication Technology is a common term referring to the technologies used for collecting, storing, editing and communicating information. TIC means the use of computer-based technology and the Internet to make information and communication services available in a wide range of users.

TIC is Hardware and Software that enable society to create, collect, consolidate and communicate information in a multimedia format and for various purposes. The term TIC includes any communication device or application, encompassing, radio, TV, cellular phones, computers and network, hardware and software, satellite systems and so on, as well as the various services and application associated with them. TIC is playing a vital role in the current and future development of society and nation.

TIC has affected all spheres of life and also the library. Information and communication technology is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. Information and communications technology (TIC) refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions.

**3- Definition:**

According to the Encyclopedia of Computer Science, “**Information Communication Technology** (TIC) is an imprecise term frequently fundamental to broad areas of technologies and associated with the use of computers and communications”.

According to UNESCO “TIC is a scientific, technological and engineering discipline and management techniques used in handling information and application and social, economical and cultural matters”.

**4- Etymology :**

The phrase "**information and communication technologies**" has been used by academic researchers since the 1980s. The abbreviation " TIC " became popular after it was used in a report to the UK government by [Dennis Stevenson](https://en.wikipedia.org/wiki/Dennis_Stevenson,_Baron_Stevenson_of_Coddenham) in 1997, and then in the revised [National Curriculum](https://en.wikipedia.org/wiki/National_Curriculum_(England,_Wales_and_Northern_Ireland)) for England, Wales and Northern Ireland in 2000. However, in 2012, the [Royal Society](https://en.wikipedia.org/wiki/Royal_Society) recommended that the use of the term " TIC " should be discontinued in British schools "as it has attracted too many negative connotations". From 2014, the National Curriculum has used the word **[computing](https://en.wikipedia.org/wiki/Computing" \o "Computing)***,* which reflects the addition

of [computer programming](https://en.wikipedia.org/wiki/Computer_programming) into the curriculum.

Variations of the phrase have spread worldwide. The United Nations has created a "[United Nations Information and Communication Technologies Task Force](https://en.wikipedia.org/wiki/United_Nations_Information_and_Communication_Technologies_Task_Force)" and an internal "Office of Information and Communications Technology"

**4- Information and communications technology (TIC) vs. Information technology (IT):**

The acronym **(**TIC**)** is sometimes used synonymously with IT. However, **(**TIC**)** is generally used to represent a more comprehensive list of all components related to computer and digital technologies.

IT is more about managing the technologies related to information, and its various technical aspects, including software, hardware, and networking. IT management does not include considerations of telecommunications devices and technologies while **(**TIC**)** does. IT can be considered a subset of **(**TIC**)**.

**5- The technologies included in TIC**

TIC encompasses the internet-enabled sphere and the mobile one powered by wireless networks. It includes antiquated technologies, such as landline telephones, radio and television broadcast -- all of which remain widely used alongside today's cutting-edge TIC pieces, such as artificial intelligence and robotics.

The internet, internet of things, metaverse, virtual reality and social media are also part of TIC, as are cloud computing services, video conferencing and collaboration tools, unified communications systems and mobile communication networks. Emerging, work-in-progress or still-nascent technologies like 5G/6G, Web3, and quantum computing are also in the TIC universe.

Any technology, infrastructure like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box, component, or device that enables communications, data sharing, and global connectivity between humans and between humans and machines is included in the umbrella term TIC.



Figure1 : This chart identifies several key categories that are components of information and communications technology.

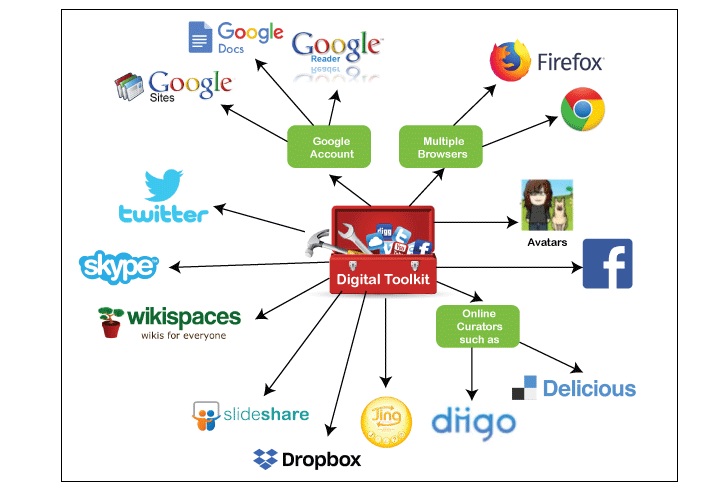
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Figure 2 : This figure identifies some ICT Tools.

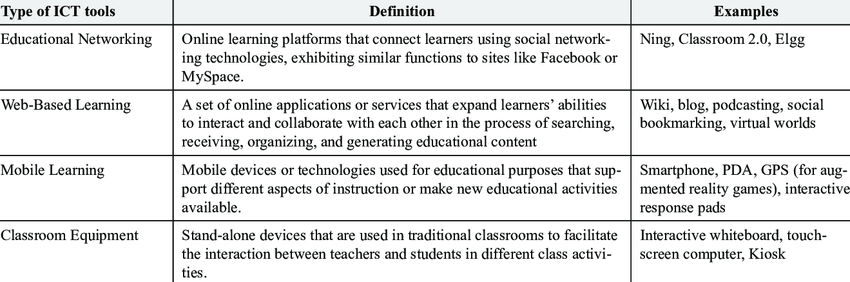
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Table 1 : This table identifies some type of ICT Tools.

# 5.1 GOOGLE’S PRODUCTS AND SERVICES

FIGURE 3: Google AdWords

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FIGURE 4: GoogleAdSense



FIGURE 5:.Google Toolbar Plug-in for Web Browser

## TABLE 2: Other Notable Products and Services by Google

|  |  |
| --- | --- |
| **Product/Service Name** | **Description** |
| Google Earth | Satellite Imagery of geographical locations |
| Google Maps | View driving maps and directions |
| Google Local | Search for local businesses and shops |
| Google News | Search for news stories |
| Google Video | Search for TV programs and video clips |
| Google Desktop Search | Search for offline information stored on computers |
| Google Image Search | Search for images online |
| Google Sketch Up | 3-D model design tool |
| Google Check out | Online payment processing service |
| Google Search Appliance | Enterprise search engine |
| G Mail | Web-based email client |
| G Talk | Internet instant messaging and VoIP |
| Orkut | Online social network community |
| Froogle | Electronic shopper product search |
| Others: Google Page Creator, Google Analytics , Picasa ,Blogger, Google Mobile, Google SMS, Google Finance, Google Groups, Google Scholar, Google Pack, Google Book Search, Google Code, Google Alerts, Google Calendar | |

**5.2 Microsoft Tools and services**

Microsoft Office 365 applications provide enterprise solutions that can be adapted for any organization. Popular Microsoft [Office 365](https://www.thinkebiz.net/technology/sharepoint/) applications include Word, Excel, PowerPoint, Outlook, OneNote, Access and Publisher.

Although, there are applications that are useful and often overlooked, such applications are: SharePoint, Exchange Server, Yammer, MyAnalytics, OneDrive, Skype for Business, Microsoft Teams and Power BI. Let’s take a look at some of the over 30 Microsfot Office 365 applications:

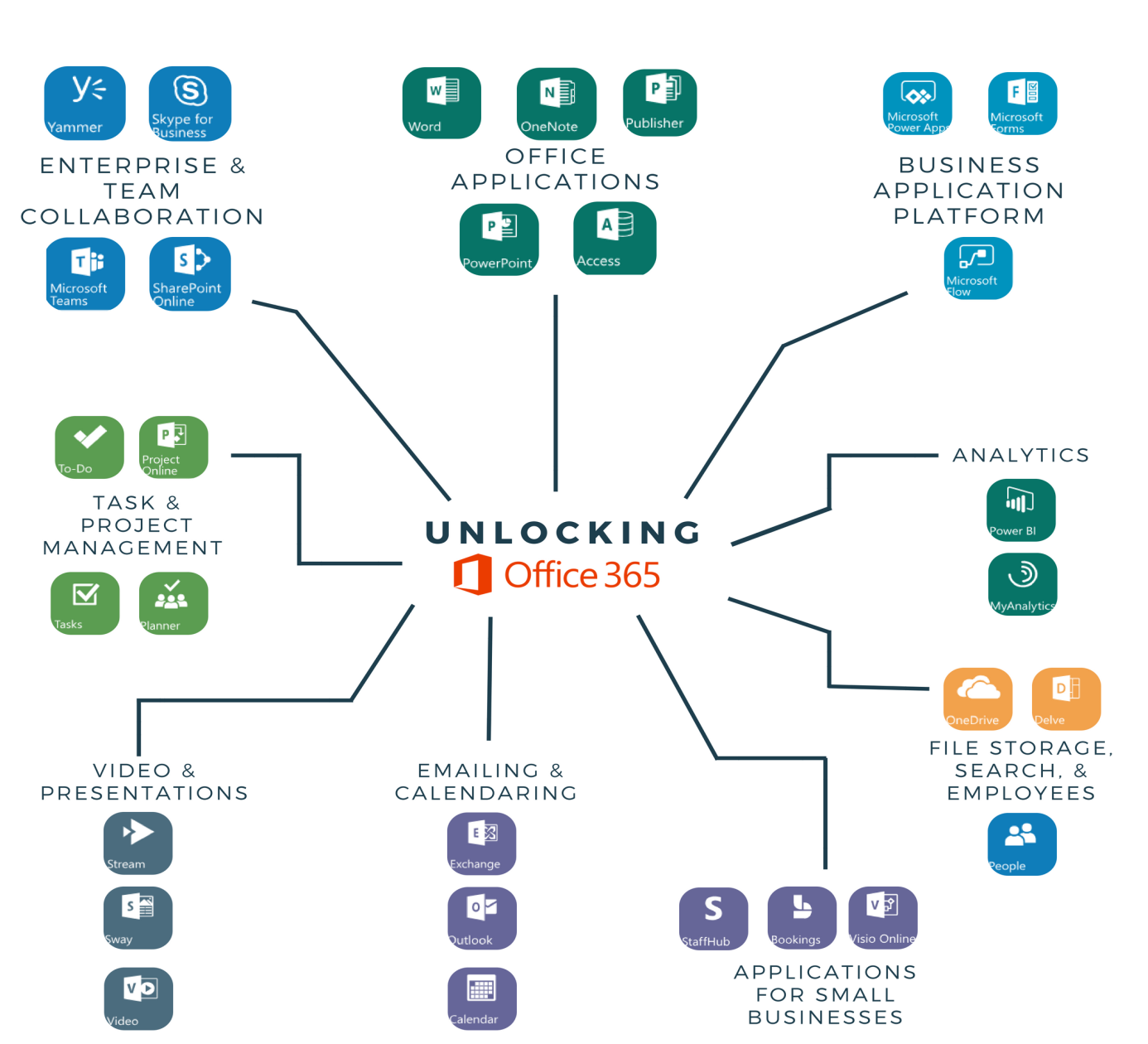
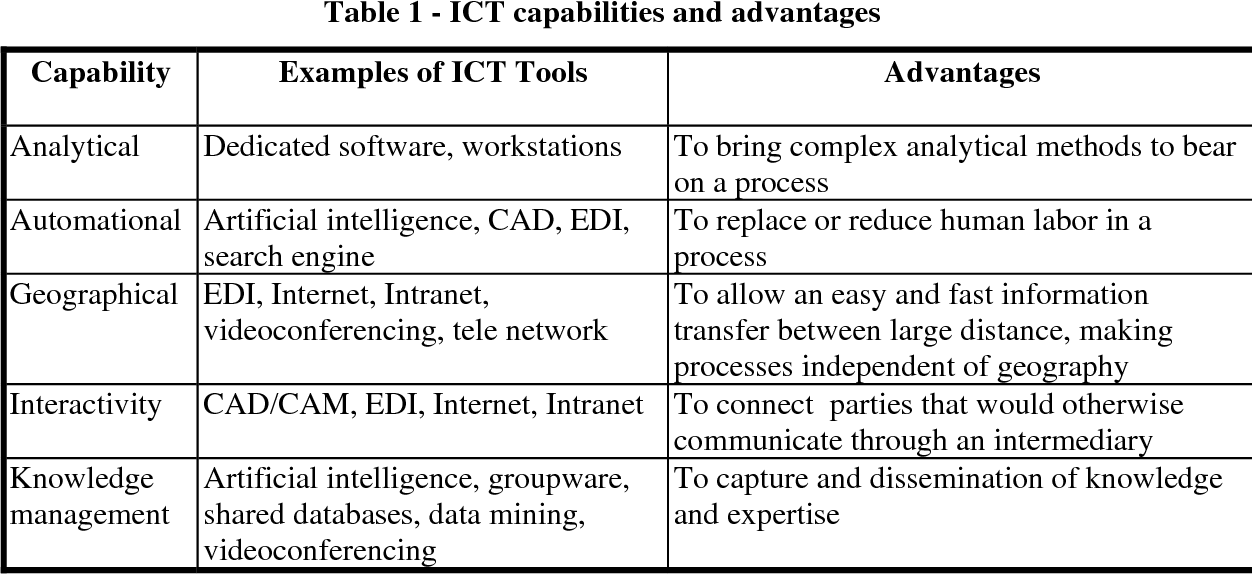


FIGURE 6: Microsoft Tools and products

**6- Avantages of TIC Technologies And Tools**

There are various advantages of TICtechnologies and Tools:

* Cost-efficient
* Provide the facility for easy student management
* Direct classroom teaching
* Improved modes of communication
* Eco-friendly-Eliminate the usage of paper
* Direct classroom teaching
* Minimize cost and saves time
* Improved data and information security
* Web-based LMS tools link teachers, students, researchers, and scholars and education together.
* Teachers are able to teach better with graphics, video and graphics.
* Teachers can create interesting, well-designed and engaging classroom activities.
* Provide better teaching and learning methods
* To spread awareness about the social impact of technological change in education.
* Promoting and improving the digital culture in universities, colleges, and schools.
* Automated solutions to paper-based manual procedures and processes.



**7- Technological capacity**

The world's technological capacity to store information grew from 2.6 (optimally compressed) [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) in 1986 to 15.8 in 1993, over 54.5 in 2000, and to 295 (optimally compressed) [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) in 2007, and some 5 [zetta bytes](https://en.wikipedia.org/wiki/Zettabyte_Era" \o "Zettabyte Era) in 2014. This is the informational equivalent to 1.25 stacks of [CD-ROM](https://en.wikipedia.org/wiki/CD-ROM) from the [earth](https://en.wikipedia.org/wiki/Earth" \o "Earth) to the [moon](https://en.wikipedia.org/wiki/Moon" \o "Moon) in 2007, and the equivalent of 4,500 stacks of printed books from the [earth](https://en.wikipedia.org/wiki/Earth" \o "Earth) to the [sun](https://en.wikipedia.org/wiki/Sun" \o "Sun) in 2014. The world's technological capacity to receive information through one-way [broadcast](https://en.wikipedia.org/wiki/Broadcast" \o "Broadcast) networks was 432 [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) of (optimally compressed) information in 1986, 715 (optimally compressed) [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) in 1993, 1.2 (optimally compressed) [zettabytes](https://en.wikipedia.org/wiki/Zettabytes" \o "Zettabytes) in 2000, and 1.9 [zettabytes](https://en.wikipedia.org/wiki/Zettabytes" \o "Zettabytes) in 2007. The world's effective capacity to exchange information through two-way [telecommunication](https://en.wikipedia.org/wiki/Telecommunication" \o "Telecommunication) networks was 281 [petabytes](https://en.wikipedia.org/wiki/Petabytes" \o "Petabytes) of (optimally compressed) information in 1986, 471 [petabytes](https://en.wikipedia.org/wiki/Petabytes" \o "Petabytes) in 1993, 2.2 (optimally compressed) [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) in 2000, 65 (optimally compressed) [exabytes](https://en.wikipedia.org/wiki/Exabytes" \o "Exabytes) in 2007  and some 100 [exabytes](https://en.wikipedia.org/wiki/Exabytes) in 2014. The world's technological capacity to compute information with humanly guided general-purpose computers grew from 3.0 × 10^8 MIPS in 1986, to 6.4 x 10^12 MIPS in 2007.

**8- What is a useful concept of TIC:**

It depends on the local culture and the particular TIC available and how it is configured and managed. The understanding, management and configuration of the available technology might vary the concept of TIC from

* A collection of tools and devices used for particular tasks, eg, publishing, course delivery, transaction processing...
* An organised set of equipment (like a 'workshop') for working on information and communication
* Components of integrated arrangements of devices, tools, services and practices that enable information to be collected, processed, stored and shared with others
* Components in a comprehensive system of people, information and devices that enables learning, problem solving and higher order collaborative thinking, that is, TIC as key elements underpinning a (sharable) workspace.

**9- Aims & Objective :**

Information and communication technology (TIC) has become, within a very short time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy.

UNESCO aims to ensure that all countries, both developed and developing, have access to the best educational facilities necessary to prepare young people to play full roles in modern society and to contribute to a knowledge nation. Because of the fundamental importance of ICT in the task of schools today, UNESCO has previously published books in this area as a practical means of helping Member States: for example, Informatics for Secondary Education: A Curriculum for Schools (1994) and Informatics for Primary Education (2000). Rapid developments in ICT now demand a completely new document in place of the first of these publications.

**10- Disadvantages of TIC**

* **Blackmail** – Using the internet to threaten to cause damage with the intent to extort from any person any money or other thing of value.
* **Unemployment**- Using the computer instead of human resources employers are save huge amount of money but employees are losing their jobs as not needed anymore.
* **Privacy** – Information technology may have made communication fast and more convenient, it has also brought along privacy problem. From cellphone signal interception to email hacking,about their once private information becoming public knowledge.
* **Computer virus**- worms, Trojan, malware, spam any or all can chaos and disrupt our daily lives.
* **Social media**- They became addicted to the phones, IPod, gaming consoles forgetting about outside activities and communication in the society.

Conclusion –: Information and communication Technology(ICT) tools and techniques

utilization has been spread widely in every work of human being and all kinds of

organizations. ICT has improved the library services than traditional one and now become

the demand of the users as well as organization to fulfill the necessary requirements on time.

With the use of ICT, library professionals role has been change totally. The provision and the

use of information and communication technology is a part and parcel of the entire system, to

the student, information and professional and the institution. Communication for technology

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**11- Conclusion:**

Information and communication Technology (TIC) tools and techniques utilization has been spread widely in every work of human being and all kinds of organizations.

TIC has improved the library services than traditional one and now become the demand of the users as well as organization to fulfill the necessary requirements on time.

With the use of TIC, library professionals role has been change totally. The provision and the use of information and communication technology is a part and parcel of the entire system, to the student, information and professional and the institution. Communication for technology provides those who have communication challenges a way of expressing their wants and needs. People of all age and abilities can use and benefit from using communication technology.

The biggest challenges facing the library profession today is preparing the professionals to use technology effectively. It can be said that the library and information professional communities are being affected by a range of ICT development and so find their roles changing worldwide. Information Communication Technology helps people many ways.

Communication technology helps people easily communicate to other and makes life more convenient. Although communication brings a lot of benefits. So, people must responsible while using the communication technology properly.

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