**UNIVERSITY OF MOHAMED BOUDIAF M'SILA**

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**Option :management and international trade**

N° :

# The Impact of Information Technology on Knowledge Management

## Case of study: M'sila University

**Thesis submitted in partial fulfillment of the requirements of the Master degree of management and international trade**

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*The first thanks is to Allah; then, to my supervisor*

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*without him I wouldn't do it or develop*

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*because the paper is not enough to mention each*

*of them all. Anyway, thank you so much; also,*

*With special thanks to library workers.*

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# *General Introduction*

## 1. Introduction

Twenty-first century is called fast changing world. Universities which engaged in teaching and research are nowseen to occupy an important place in knowledge production and knowledge transfrormation systems that are directly related to innovation and capitaliztion on their knowledge assets contributing to economic progress,aiding in regional development, and so on. According to the role of universities in knowledge production as one of the organizations, Organizations have begun to recognize knowledge as one of the principle assets in case of effective manage. Anyway, in order to integrate and capitalize on the combined knowledge of employees across the organization, many organizations have attempted to implement Knowledge Management initiatives and programs. However, Another aspect of Knowledge Management is to put technology into perspective.

Knowledge Management creates a user-centered environment that ensures easy access and ethical use of appropriate information resources. Effective policy and training; as well as, a ubiquitous, unobtrusive information technology infrastructure are essential to Knowledge Management program for providing stewardship of the collection, storage, organization, retrieval, archiving, and access to data and information.

**Issue :**

Information Technology is so important at university .And for using it, the researches recommended knowledge management

So, the study problem can be perceived by having detailed and scientific answers to the following questions:

- What is the infrastructure that provides an appropriate platform of Information Technology at M'sila university?
- Is there any requirement of Knowledge Management at M'sila university?
- How far does Information Technology affect Knowledge Management?

**2. Hypotheses:**

Based on the objectives described in chapter one and also on the gap in the literature as discussed in chapter two, the following alternative hypotheses have been formulated.

- Administration of faculties does have enough application ofInformation Technology.
- There are enough requirements of Knowledge Management at M'silauniversity.
- There is a significant effect of Information Technology on Knowledge Management at M'sila university.

3. **Research Objectives**:

- Aims and objectives of this research are as follows:

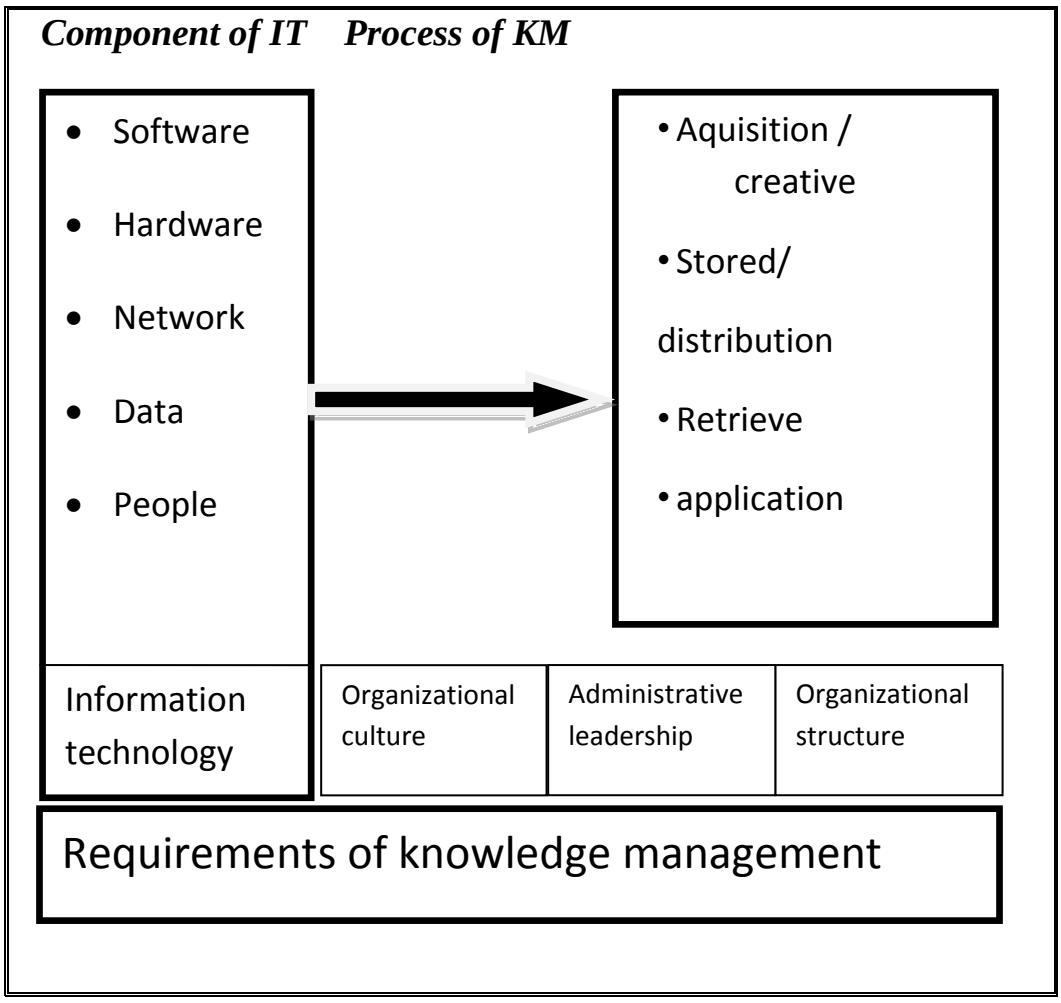
- To identify the applications of IT tools and techniques that are used by M'silauniversity.
- To determine the requirement of Knowledge Management at M'sila university.
- To know how long does Information Technology impact on Knowledge Management atM'sila university.

**4. Focus of study:**

One of the success keys of Knowledge Management is Information Technology. Accordingly, the present study focuses on Information Technology and Knowledge Management at M'sila university.

There are various ways to conceptualize the relationship between Knowledge Management and Information Technology. As a matter of fact, KM focuses on the process, but IT focuses on the component of knowledge that an organization acquires or creates …

**The Research Model**




**Source:** student design depended on theory framework**.**

5. **Limitation of study :**

- Period of time: from January to Mai
- Place : university ofM'sila (7 faculties and 2 institutions)

6. **Structure of the study:**

The study has been structured into five chapters. The introductory chapter includes the focus of the study, introduction of research, the objectives, and the background of study.The scope of further research in Knowledge Management is also covered here"the approach to the study". The second chapter covers theory framework of Information Technology and Knowledge Management. The analysis

of the study is presented in chapters three and four (analyses of the interviewand questionnaire) and result of the analysis as well. The final chapter concludes the study with a summing up.

## 7. Background of study:

| Title and year | searcher | Result from the research |
|---|---|---|
| 1. The Impact of Information Technology on Knowledge Management Practices in *Jordanian Industrial Companies* 2012 | KamelMohamad Hawajrehand Abdel-Aziz AhmadSharabati | *The results of the study indicated that there was a positive significant relationship between Information Technology and Knowledge Management practices.* |
| 2. The role of Information Technology in successful Knowledge Management 2013 | Zahra Haji Anzehaie and Nasser Bai**.** | *between Information Technology and Knowledge Management from the faculty' perspective, there is a significant positive correlation . The research findings on the importance of IT as one of the factors affecting KM in Tehran's Physical Education Faculties underlined. Thus, it is recommended that requirements for improving Knowledge Management be provided.* |
| 3. THE ROLE OF INFORMATION TECHNOLOGY IN | MitaliChugh, NeerajChugh, | *IT supports the categorization and collaboration ofexplicit forms of knowledge at low cost. Information* |

| | | |
|---|---|---|
| KNOWLEDGE MANAGEMENT 2013 | D.K. Punia, AlokAgarwal | *Technology is animportant enabler for KM initiatives in organizationswith the usual caveat that the KM problem has othersignificantsocial and cultural dimensions.* |
| 4. Health Information Technology in the Knowledge Management of Health Care Organizations 2015 | MehdiKahouei,ZohrehMolanoroozi, MinaHabibiyanandSorayyaSedghi | *It was concluded that Health Care Organizations need an HIT clearly designed with KM and they have to recognize where knowledge is resided* |
| 5. Impact of available requirements of Knowledge Management on improving the performance in faculty of economic, trade and management at M'sila university 2016 | Kanzabessaa | Requirements of Knowledge Management contributes in improving the perfmance |

The table above shows the studies background which study the same variables ( information technology and knowledge management). the difference to my study will explain in the table below:

| | The difference in this study |
|---|---|
| First study | Non-profit organization different statistic tools;we use one-sample. Sample size is less than 50 |
| Second study | There weretwo questionnaires used for data collection instead of that, we use interview and questionnaire. |
| Third study | This study focus on theory framework but in this study focus on practice this theory at university |

| | |
|---|---|
| Forth study | Questionnaire and interview are used instead of only questionnaire to know how mach does IT effect KMatM'sila university |
| Fifth study | Statistical population of the study is all members of the university Faculties. The requirement of this study are performance and effectiveness . |

## 8. Conclusion

Preparing to our research and methodology framework in this chapter, we provide a general introduction to talk about the purpose of this research, hypothesis, and research model.

# *Chapter two*

# *Theoretical framwork*

## Introduction

There are many ways of looking at knowledge management and different organisations will take different approaches especially information technology companies. And information technology is used in many fields until it has became part of every type of organizations. In this part we will talk about:

1. basic concept of information technology.
2. basic concept of knowledge management.

## 1. basic concept of information Technology

The term of Information Technology (IT) seems very popular in these days. It has become so important that most companies and organizations have IT department. In this chapter we will talk about :

- **What is Information Technology**
- **Information technology objectives and uses**
- **Components of Information Technology**

### 1.1. What is Information Technology

There is a lot of definitions of Information technologydepending upon their use .we mention:

First definition:

Information Technology (IT) is a technology which uses computers to gather, process, store, protect, and transfer "information". [1]

Information Technology, or IT, means all the technology-including computer and telecommunications-that is used to deal with data and "information".[2]

Second definition

Information Technology is a field of engineering, which is derived from combination of computers and telecommunication science and "employed instores in order to, retrieve, transmit and manipulate data".[3]

Third definition

Information Technology refers to all forms of technology applied to processing, storing, and transmitting information in electronic form.[4]

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[1]Dario IlijaRendulic, **Basic Concept of information and communication technology,** Open Society for Idea Exchang ( ODRAZI), Zargeb, Croatia, 2011, P 01

[2]Busisiwe H Nwosu, **Introduction to information and communication technology B H Nzosu**, 2008, http://alison.com , p 13

[3]Ali ShabanesFahani and Mohammad Reza FarajTabrizi, **information technology adoption and related policy issues in Malaysia**, university technology Malaysia, 2012, p 43

[4]Henry C.Lucas, Jr, **information technology for management**, jacobs foundation, Zurich, Switzerland, 2009, p11

Information Technology (IT) in its broadest sense encompasses all aspects of computing technology. IT, as an academic discipline, is concerned with issues related to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies.1

From the different viewpoints, the IT means all the technology-including computer that applied to processing, storing, and transmitting information Efficiently and effectively

## 1.2.Information technology objectives and uses

### 1.2.1. information technology objectives:

The objectives of IT are to provide better means of information of data messages in the form of written or printed records, electric, audio or video signals by using wires, cables and telecommunication techniques, IT plays a vital role in information handling due to developments such as reduction in computing time, capabilities of files on video discs, use of T.V as readymade information screen,

Télécommunication and satellite communication facilities etc. The objectives of I Tin ICLs can be categorized into the following four groups[2] :

In general:

- Supporting technical functions associated with acquisitions, technical processing, serial control, SDI/CAS, OPAC and circulation work.
- Supporting information storage, retrieval and dissemination systems.

In management[3]:

- Information technology solves business problems:

[1]Barry M Lunt and others, **information technology**, curriculum guidelines for undergraduate degree, 2008,p08

[2]Ibrahim Zalzadeh,**The Use of Information Technology in Academic Departments of Library and Information Science in Iranian Universities**,the Degree of Doctor of Philosophy,University of Pune, India,2008, p109

[3]Valerie Bryan, **information technology management**, FloridaAtlantic University,2014,p308

If there are no business problems, there is little need of information technology. Management today requires the detail measurement of service delivery and the consequential analysis and review of that service . information technology will not make better managers. IT will increase the viability of information in different ways, and assist in the decision-making process. IT does not shut down inefficient recreation centers, managers do. A manager must learn to frame information requests so as to address business problems.

- IT increases personal Productivity :

Part of any good agency in the desire to see its employees grow professionally and personally. IT skills arethe language of business . just about every device manufactured today has keypad, keyboard, or set of buttons as an interface. People who use a number of these devices learn they are similar in operation. Using a bank machine is much like navigating through on automated voice response telephone system. Using a computer is much the same.The advent of the Graphical User Interface(GUI) has made the operation of computer easier to learn. This interface ( the look and feel) allows the user to learn intuitively.Instead of reading manuals, the user simply looks at the screen and selects the option that make sense. Software application are written with help on screen in the computer program , instead of in large intimidating manuals . As users need assistance, they simply press the help button. Part of the released efficiency of an organization is the progressive development of information skills.[1]

Culturally . IT makes a large world look small.Those who have the skills knowledge to navigate cyberspace will participate fully in the global village of the future. It is to them that prosperity will belong .

[1] idid, p309.

### 1.2.2. **information technology uses**:

Computers can perform better than humans in a wide variety of situations. They can process data at increasingly high speed, handle complex equations, operate large scale systems, pilot trains, ships or airplanes and outperform humans at many menial repetitive tasks. They can work at any time of day or night and often require only basic maintenance. They store vast amounts of information that can be shared within an office, an organization or internationally. Typical uses of computers in the work place[1]:

• work stations allow employees access to efficient word processing, spreadsheet, database and presentation software, to name a few applications.

• email lets employees send information and communicate with employees/ clients throughout the world.

• newer technology, such as laptop computers and cell phones, allow people to work away from the office yet be in constant contact.

• business can be conducted at any time, day or night, with companies in other countries and time zones.

• computerized answering services can take messages and re-direct calls to the appropriate offices.

• material which was once sent out for mass copy can now be produced with high quality.

- results in the workplace, thanks to large computerized photocopiers.

The uses of large-scale computer applications in business such as[2]:

➢ Management information systems (MIS) are computer systems designed to get information to company managers when they need it. They usually deal with things such as budgets and sales targets.

[1]Idid, p309

[2]Option,Henry C. Lucas, Jr, p560

➢ Decision support systems (DSS) are aimed primarily at higher-level managers. They collect data from different sources and put it in a form which can help top-managers make decisions. They allow sophisticated "what if?" scenarios like: if wages increases are held.

### 1.3. Components of Information Technology Infrastructure

IT infrastructure plays an important role in the operationof every firm[1].

In the following point we will explain what IT infrastructure means and their components.

Information Technology infrastructure underpins the distributed operational and administrative computing environment. Hidden from the application based world of end-users, technology infrastructure encompasses together and facilitates efficient data flows. Yet information technology infrastructure involves more than just the mechanics of data system; it also includes people providing supports and in support of user and enterprise computing. [2]

There are many components dividing of IT infrastructure:

IT infrastructure[3]: provides platform for supporting all information systems in the business in the business.

- Computer hardware
- Computer software
- Data management technology
- Organizes, manages, and processes business data concerned with inventory, customers, and vendors.
- Networking and telecommunication technology

[1]MariNyrhinen**, IT infrastructure. structure, properities, and process, Helsink school of economics**, Finland, june 2006, p04

[2]KlodianaGorica, lavdoshAhmetaj and others**, Managing IT infrastructure for information society develop**, article university of tirrana, 2014, p125

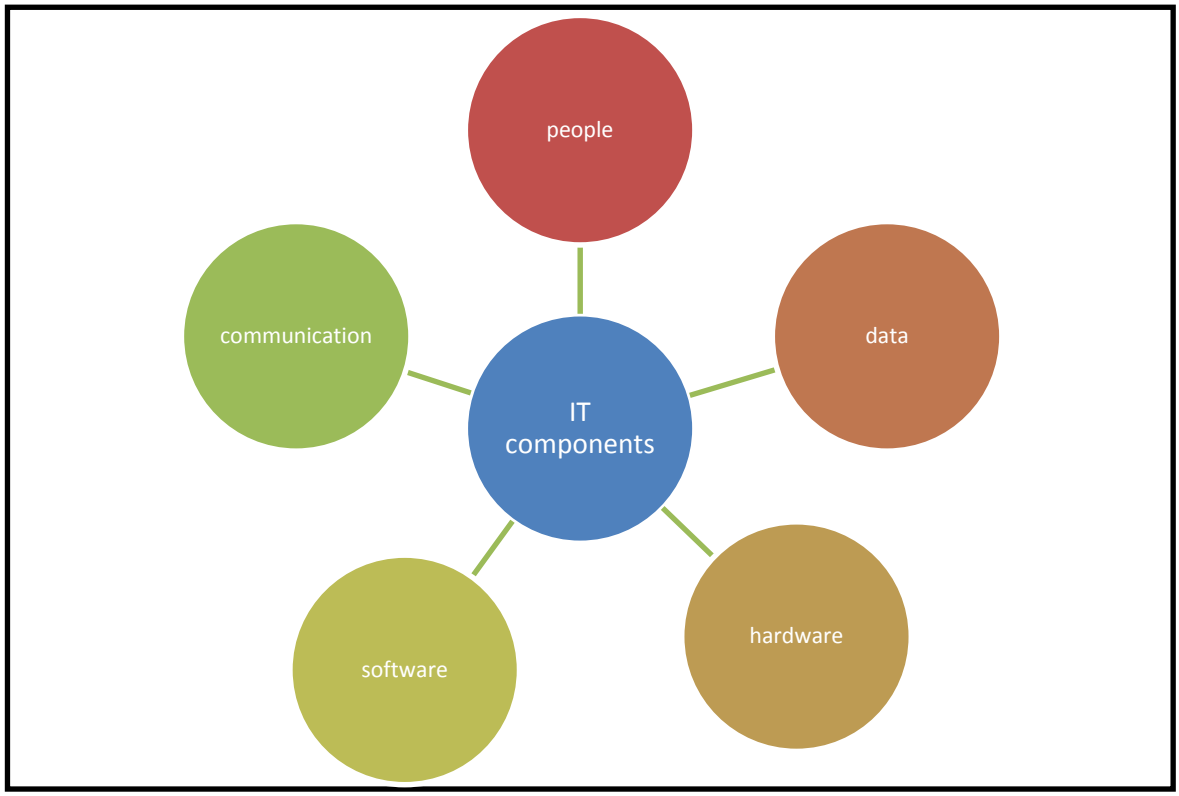
[3] Bryan Bergeron, **essential of knowledge management**, john wileyand sons, inc, Newjerssey, Canada, 2003,pp130-131

- Technology services

Eg, consultants for systems integration with legacy systems

Information technology components are[1]: people, Data, hardware, software, communication.

**Figure2 : IT component**




**Source** : idid, p08

This study defines IT components as follows[2]:

1. People: the most important part as they make end users more productive.
2. Communication can be defined as the process of transmitting information and common understanding from one person to another.[3]

Users of IT can use Network[1]:

[1]Mihreteabw/ Gebriel, **enterprise IT,** Bahirdar university institute of technology , 27/02/ 2006ec , p08 .

[2]idid, p08.

[3] Fred C. Lunenburg, **Communication: The Process, Barriers, And ImprovingEffectiveness** , Sam Houston State University, VOLUME 1, NUMBER1, 2010, p01.

- LAN (Local Area Network) - a small network that physically connects nearby computers (computers within the firm, organization, or a household)
- WAN (Wide Area Network) - a larger network that covers a city or a region,
- Internet – a world network of connected computers, connected through WAN and LAN
- Intranet - a smaller network, closed version of internet to which only certain (authorized) people are granted access (members of an organization)
- Extranet – an intranet version, to which only certain people are granted access (not exclusively members of an organization, but also outsourced experts for performing common tasks),
- World Wide Web (WWW) - one of the services that can be used on Internet which enables us to view and search contents in a form of web-pages
- other services on Internet that can be used:
  - Instant messaging (IM) - Google Talk, Skype, Windows Live Messenger, Yahoo!Messenger
  - Voice over Internet Protocol (VoIP) - protocol used for voice transfer over IP network; itbasically enables us to use internet in order to make phone-calls
  - Really Simple Syndication (RSS) – used for dissemination of information or articles etc. Published on web page using RSS channel (RSS news usually consists of title, few sentences and link to a web page where users can read the whole article). Users have to subscribe to RSS channel in order to receive news in their RSS

[1]Option,DarioIlijaRendulić, p04.

reader. This eliminates a need for visiting a web page in order to find out latest news

- oweb log ( blog)
- opodcast - digital file that contains audio or video record.

3. Software:
   - The equipment that processes the data to create information is called hardware. It includes the keyboard, mouse, monitor, system unit, and other devices. Hardware is controlled by software.[1]
   - set of commands that are "understandable" to the computer; instructions to it palpable parts, giving orders what to do.[2]
4. Hardware[3]:
   - Computer components that are physical, touchable pieces or equipment.
   - It consists of system unit, input/ output, secondary storage and communication devices.
   - The four types of computer:
   - Supercomputer- the most powerful of computer type of computer
   - Mainframe - occupy specially wired, air conditioned room
   - Minicomputer – desk-sizes machines used for specific purposes
   - Microcomputer – include the desktop, notebook.
5. Data[4]:
   - Data may be viewed as some disconnected collection of facts about a domain that have little intrinsic interest
   - is simply the discernable difference between alternative states of a system.

[1]Melinda Jamison, Information technology , the internet and you, The McGraw-Hill Companies, 2004, P05

[2]Option,DarioIlijaRendulić, p01.

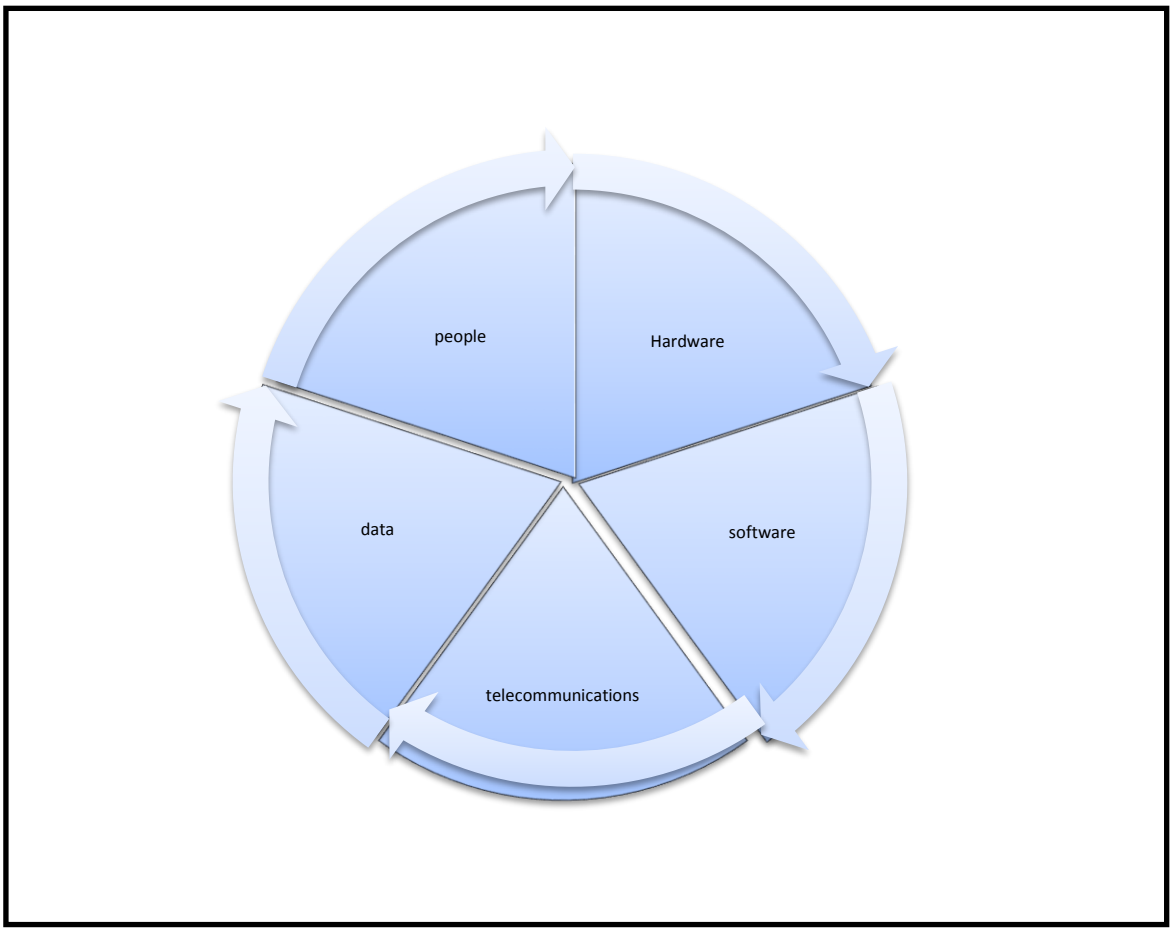
[3]Option,Mihreteabw/ Gebriel, p08.

[4]SurabhiDeshpande and SudhanshuDeshpande**, Information Technology and Knowledge Management: An Explorative Study,**BharatiVidyapeeth's Institute of Computer Applications and Management, New Delhi, February 25 – 26, 2010, p03.

IT infrastructure should be seen in both public and firm level.A firm`s information technology portfolio its total investment in computing and communications technology. The information technology portfolio thus includes hardware, software, telecommunications, electronically stored data, devices to collect and represent that data , and the people who provide it services.[1]

From different dividing of IT component , the important ones are:

**Figure3: IT firms infrastructure**




**Source**: student design

The foundation of the information technology portfolio is the firm`s longer term information technology infrastructure, which in turn is linked to external industry-based. Infrastructure such as bank payment systems, airline reservations systems, and automotive industry supply chain networks, and to

[1]Option,KlodianaGorica, p125.

public infrastructure such as the internet and telecommunications networks. The combination of internal and external information technology infrastructure make up the firm`s information technology infrastructure. The technology components are converted into useful shared services by a human information technology infrastructure composed of knowledge, skills, standards, and experience. The services notion of it infrastructure is very powerful. It also provides more certainty to the provider as to their responsibilities, and allows for more precise planning.[1]

The infrastructure services often include telecommunication network services , management and provision of large-scale computing ( such as serves or mainframes) management of shared customers data bases ,research and development expertise aimed at identifying the usefulness of emerging technologies to the business ,and firm wide intranet these emerging technologies are the bases for bettering information communication technology infrastructure and developing new services which in turn will help in building better information systems and networks in an information society.[2]

[1]idid, p 125.

[2]idid, pp 125-126.

## 2. Basic concept of knowledge Management

We will talk about :

- What is knowledge management
- Why knowledge management
- knowledge management processes
- Information technology IT for knowledge management

### 2.1. What is Knowledge Management

There is many definition of knowledge management. We mention**:**

**First one**:

Knowledge Management is deliberation, systemic business optimization strategy that selects, distils, stores, organizes, packages, and communicates information essential to the business of a company in a manner that improves employee performance and corporate competitiveness. This definition from a practical business perspective[1].

**Second:**

Knowledge Management means all organizational strategies to create an ‘’intelligent’’ organization. These strategies comprise with respect to individuals the organization-wide level of competencies, education and ability to learn of the members of the organization, with respect to organization as a system creating, using and developing collective intelligence and the collective mind and with respect to the technological infrastructure if, to what extent and how efficiently the organization use ICT suitable for the organization’s way of doing business[2].

**Third:**

Knowledge Management is the systemic management of an organization’s knowledge assets for creating value and meeting tactical and strategic requirements. It consists of initiatives, processes, strategies, and systems that

[1]Option,Bryan Bergeron, p08.

[2]Ronald Maier, **knowledge management systems**, spriger, 3rd edition, 2007, p 55.

sustain and enhance the storage, assessment, sharing, refinement, and creation of knowledge[1].

**Forth**:

Knowledge management is the planning, organizing, motivating, and controlling of people, processes and systems in the organization to ensure that its knowledge-related assets are improved and effectively employed[2].

**Fifth:**

Knowledge management is the management of The activities and the processes that enhance the utilization and the creation of knowledge within an organization, according to tow strongly interlinked goals, and their underlying economic and strategic dimension, organizational dimensions, socio-cultural dimensions, and technological dimension; patrimony goal, and a sustainable innovation goal''[3].

From the different definition of knowledge management , knowledge management is the systemic management ( planning, organizing, motivating, and controlling of people) that selects, distils, stores, organizes, packages, and communicates information essential to the business of a company that improves employee performance effectively.

## 2.2. Why knowledge management

The major business drivers behind today's increased interest in and application of knowledge management (KM) .[4] four key areas[5] :

[1] **Knowledge Management**, tutorials point, 2015, www.tutorialspoint,com, p01.

[2] William R.king, **knowledge management and organization learning**,kats graduate school of business, university of pittsburgh,2003, p04.

[3] Michel Grundstein, **three postulates that change knowledge management paradigm**, lamsade Paris dauphine niversity, Paris,2012, p09.

[4] Kemal Dakir, knowledge managementin theory and practice, elsevier, butterworth-heinemann, Oxford, UK, 2005, p18.

[5] option,www.tutorialspoint,com , p03.

2-1-Globalization of business: Organizations today are more universal i.e., they are operating in multiple sites, multilingual,and multicultural in nature.

2-1- Learner organisations:Organizations are adopting to a lean strategy where they understand customer value and focus on key processes to continuously increase it. The ultimate goal is to provide perfect value to the customer through a perfect value creation process that has zero waste.

2-2- Corporate amnesia:We are freer as a workforce, which creates issues regarding knowledge continuity for the organization and places with continuous learning demands from knowledge worker. We no longer expect to spend our entire work life with the same organization.

2-3- Technology advances: The world is more connected with the advent of websites, smart phones and other latest gadgets. Advancements in technology has not only helped in better connectivity but also changed expectations. Companies are expected to have online presence round the clock providing required information as per the customer needs.

Today's work environment is more complex because we now need to attend daily to the increase in the number of subjective knowledge items. Filtering over 200 e-mails, faxes, and voicemail messages on a daily basis should be done according to good time management practices and filtering rules, but more often than not, workers tend to exhibit a "Pavlovian reflex" when they note the beeps announcing the arrival of new mail or the ringing of the phone that demands immediate attention. Knowledge workers are increasingly beingasked to "think on their feet," with little time to digest and analyze incoming data and information, let alone retrieve, access, and apply relevant experiential knowledge. This is due both to the sheer volume of tasks to address and to the greatly diminished turnaround time. Today's expectation is that everyone is "on" all the time—as evidenced by the various messages expressing annoyance when voicemails are not responded to promptly or e-mails are notacknowledged.Knowledge management represents one response to the

challenge of trying to manage this complex, information-overloaded work environment.

KM for Individuals, Communities, and OrganizationsKnowledge management provides benefits to individual employees, to communitiesof practice, and to the organization itself. This three-tiered view ofKM helps emphasize why KM is important today .[1]

For the individual, KM[2]:

- Helps people do their jobs and save time through better decision making andproblem solving.
- Builds a sense of community bonds within the organization.
- Helps people to keep up to date.
- Provides challenges and opportunities to contribute.

For the community of practice, KM[3]:

- Develops professional skills.
- Promotes peer-to-peer mentoring.
- Facilitates more effective networking and collaboration.
- Develops a professional code of ethics that members can follow.
- Develops a common language.

For the organization, KM[4]:

- Helps drive strategy.
- Solves problems quickly.
- Diffuses best practices.
- Improves knowledge embedded in products and services.
- Cross-fertilizes ideas and increases opportunities for innovation.
- Enables organizations to stay ahead of the competition better.

[1]Option,KamalDalkir,p18

[2]Idid18

[3]Idid,p19

[4]Idid19

- Builds organisational memory.

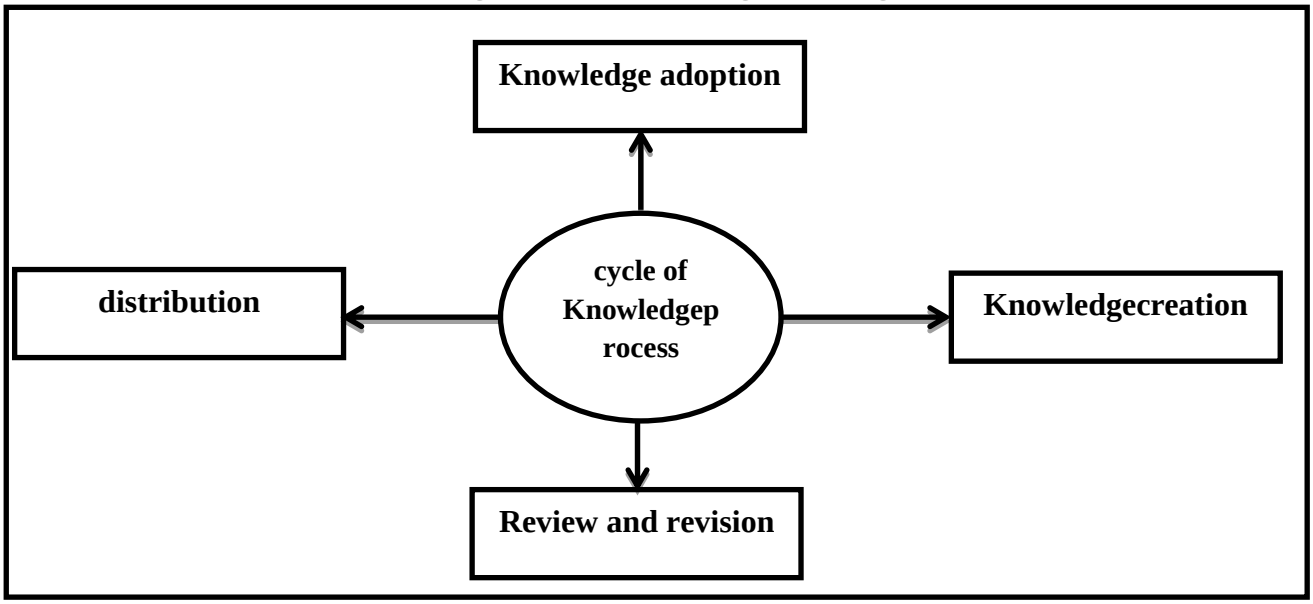
### 2.3.Knowledge Management processes

The KM process can be viewed as a kind of process that is responsible for the implementation of the KM initiative, the design of organizational and ICT instruments as well as for knowledge controlling and knowledge process redesign. In other words, the knowledge management process administers and steers the knowledge cycle in an organization and comprises goal setting, implementation and evaluation of the organization's KM initiative.[1]

sure you gain a healthy balance between the business process/project-driven approach, and the KM methods and tools-driven approach.[2]

The knowledge development cycle is defines the knowledge management process in an organization, as a cyclic process from knowledge creation to knowledge review and revision[3]:

**Figure 4: Knowledge Management**




**Source:**Andreea M. Serban,JingLuan,**overviewof Knowledge Management,**Volume, Issue 113Spring 2002 ,p15

[1]Option, Ronald Maier, pp214-215

[2] Ronald Young, **Knowledge ManagementTools and Techniques Manual**,Asian Productivity Organization,japan,2010,p 03

[3]Option, Andreea M. Serban,Jing Luan, p14

In other study knowledge management involves eight discrete stage as well as a tracking function. These stages constitute the KM life cycle: 1. Knowledge creation or acquisition, 2. Knowledge modification, 3. Immediate use, 4. Archiving, 5. Transfer, 6. Translation/ Repurposing, 7. User access, 8. Disposal.[1]

The knowledge process starts with the creation of knowledge within a knowledge-intensive business process. The knowledge created is then first valued, e.g., by a subject matter specialist, a knowledge broker or a community. The subsequent step adds value to the knowledge in that it is e.g., classified, structured, formatted, linked to other knowledge elements or contextualized. Then, the knowledge might have to be stored, no matter whether the knowledge element is a document or a link to an expert. Then it is distributed to participants that are potentially interested (knowledge push) or it is retrieved in the course of a search initiated by participants(knowledge pull) before it can be applied either within the same business process or, in a different business process. The experiencesmade during the application of knowledge are then collected as feedback and used to improve the knowledge so that it is kept actual and relevant, links to participants who have recently applied the knowledge can be updated and the degree to which it has proven successful in application can be evaluated systematically.[2]

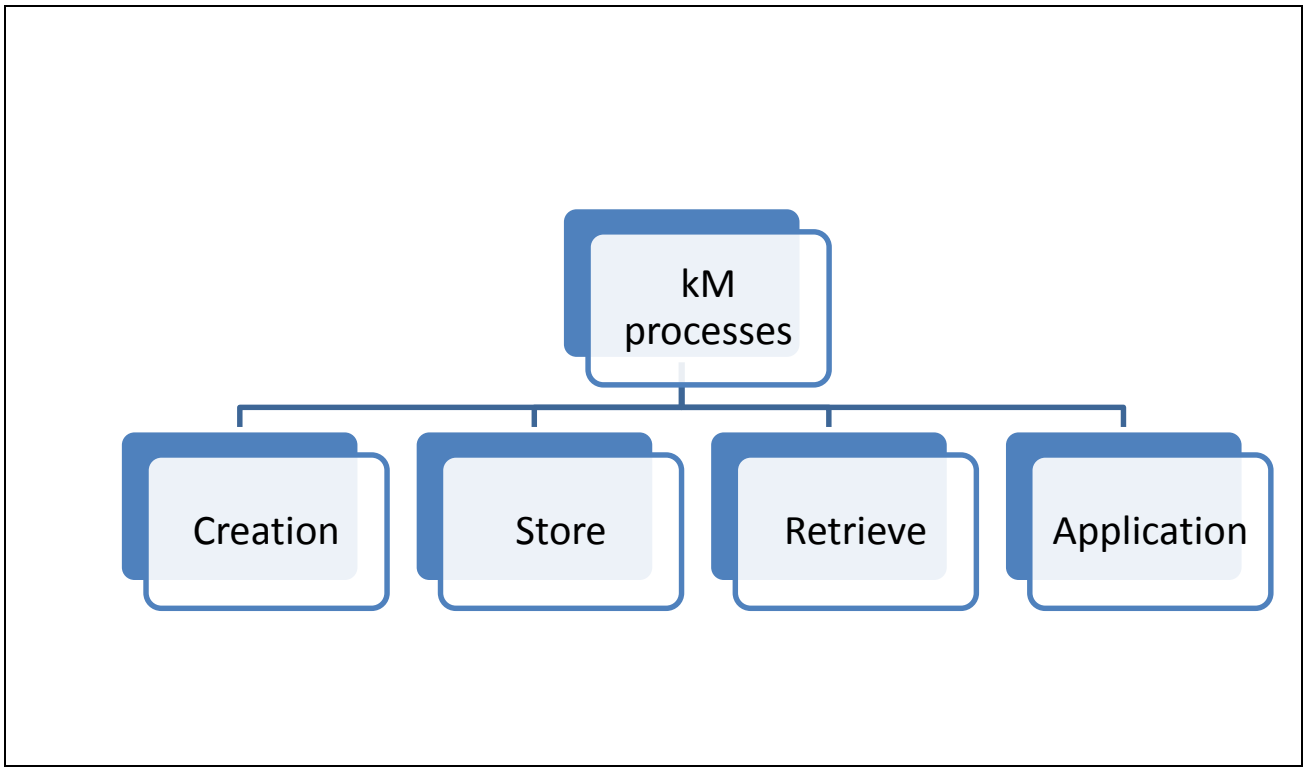
We develop a systematic frame work that will be used to further analyze and discuss the potential role of information technologies in organization knowledge management. This framework is grounded in the sociology of knowledge, and is based on the view of organizations as social collectives and knowledge systems. According to this framework , organizations as knowledge

[1]Option,Bryan Bergeron, ,p 84

[2]Option ,Ronald Maier,p 215

systems consist of four sets of socially enacted:Creation, Storage/ Retrieval, Transfer and Application [1]

**figure5: knowledge Management processes**




**Source**: Student design

**Knowledge creation:** is an activity that occurs throughout daily activities, at work or in social setting.[2]

**KnowledgeStorage/ Retrieval:**In order to facilitate assimilation, knowledge can be stored using a number of different conceptual models including the following : documents, rules, cases, diagrams, Bayes' Nets diagrams and files.[3]

[1] Maryam Alvi and Dorthy E. Leither MIS, **knowledge management and knowledge management systems**, journal article the University of Minnesota Management Information Systems Research Center, Vol. 25, No. 1 (Mar., 2001), p 115.

[2]FunmilolaOlubunmiOmotayo, **Knowledge Management as an important tool in Organisational Management: A Review of Literature,** Libraries at University of Nebraska, Lincoln, Spring 4-10-2015, p08.

[3] Daniel E. O'Leary, **theory for knowledge assimilation**,Marshall School of Business, University of SouthernCalifornia, Los Angeles, CA 90089-0441oleary@usc.edu.200,p05.

**Knowledge Transfer(KT)**: is identified as one important topic in the area of knowledge management/strategic management. it occurs when employees transfer job relevant facts, ideas, suggestions and expertise with one another.[1]

**Knowledge Application:**It refers to activities associated with the flow of knowledge from one party to another.[2]

## 2.4. Information Technologies (IT) For Knowledge Management

There is an ongoing lively debate about the role that information technology can play for knowledge management. [3]

On the one hand,leveraging knowledge effectively requires the use of IT, and thus, universities and higher education institutions need to begin harnessing those technologies to realize the potential capabilities and value of KM. Although KM in organizations is more than just implementation of IT, it requires IT as enablers that can promote knowledge creation, store, distribute, and retrieve knowledge for reuse. These activities of KM cannot be achieved without IT as enablers in this 21st century where the need for rapid access for relevant knowledge is rising tremendously.[4]

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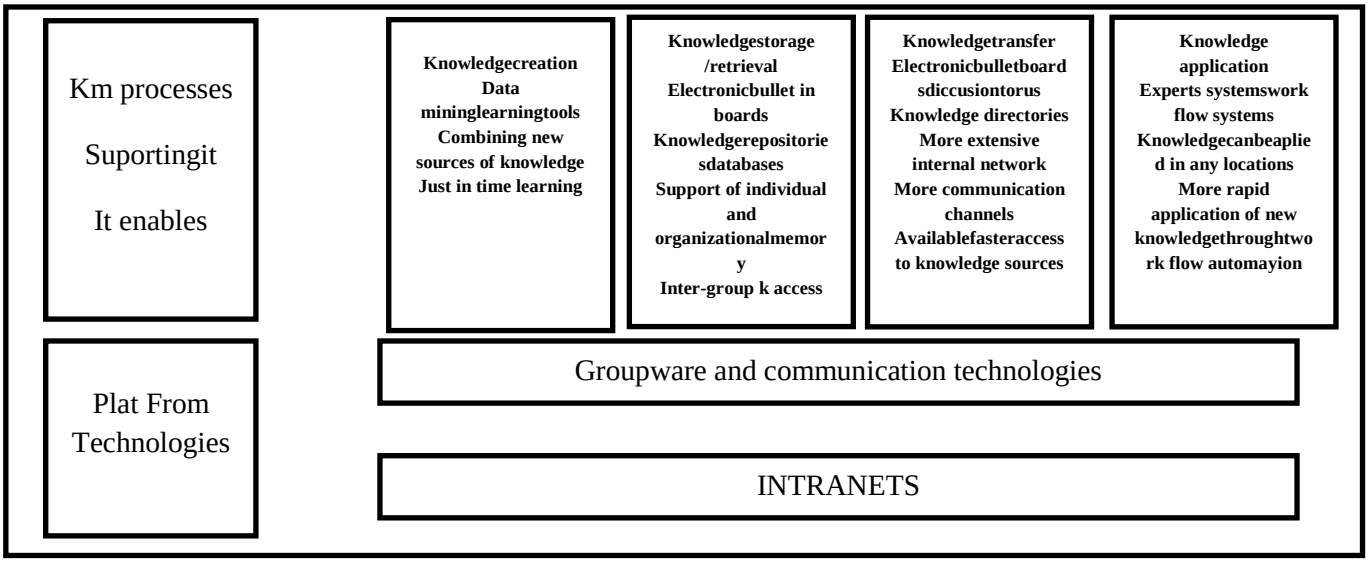
[1] Eva Dorn and AraksSahinyan,**Effects of Information & Communication Technologies on Knowledge Transfer,**Report No. 2011:063,University of Gothenburg, Sweden,2011,p07.

[2]MohdGhazaliMohayidin, NorAzirawani and others , **The Application of Knowledge Management in Enhancing the Performance of MalaysianUniversities,**www.ejkm.comat 10 :00-25-05-2017,p302.

[3]Uwe M. Borghoff and Remo Pareschi, **Information Technology for Knowledge Management**, Rank Xerox Research Centre, Grenoble Laboratory 6, chemin de Maupertuis. F-38240 Meylan, France , 1997 , p02.

[4] Nor ashikin Ali and HidayahSulaiman and other, **The Role of Information Technology for Knowledge Management Paradigm in Higher Education**, JOURNAL OF INFORMATION SYSTEMS RESEARCH AND INNOVATION, http://seminar.utmspace.edu.my/jisri/ at 8:00-28-01-2017 ,p61.

**Figure6: Information technology in knowledge management.**




**Source:** Nor ashikin Ali and HidayahSulaiman and other, The Role of Information Technology for Knowledge
Management Paradigm in Higher Education, JOURNAL OF INFORMATION SYSTEMS RESEARCH AND INNOVATION, http://seminar.utmspace.edu.my/jisri/ at 8:00-28-01-2017,p126

Information technology is used pervasively in organizations, and thus qualifies as a natural medium for the flow of knowledge. A recent study from the American Productivity and Quality Center shows that organizations embarking in knowledge management efforts generally rely, for accomplishing their goals, on the setting up of a suitable IT infrastructure. At the other hand of the spectrum, leading knowledge management theorists have warned about the attitude that drives management towards strong investments in IT, possibly at the expense of investments in human capital; see for The danger that this viewpoint sees is that IT-driven knowledge management strategies may end up objectifying and calcifying knowledge into static, inert information, thus disregarding altogether the role of tacit knowledge. Knowledge management strategies of this type would bring back the ghost of the infamous, and none too far in time, re-engineering days, when the corporate motto was “More IT, less

people!"; they conjure grim scenarios of organizations with enough memory to remember everything and not enough intelligence to do anything with it.[1]

Part of the problem here derives from a linguistic ambiguity: nowadays informationtechnologies are as much about creating direct connections among people throughsuch applications as electronic mail, chat-rooms, video-conferencing and other typesof groupware as they are about storing information in databases and other types ofrepositories. As for information databases, they can also be fruitfully re-thought, in aknowledge management perspective, as resources for the sharing of best practicesand for preserving the intellectual capital of organizations. Generally speaking,investments in IT seem to be unavoidable in order to scale up knowledgemanagement projects. The best way of applying information technology toknowledge management is probably a combination of two factors: on the one hand,the awareness of the limits of information technology, and of the fact that any ITdeployment will not achieve much, if it is not accompanied by a global culturalchange toward knowledge values.[2]

[1] Daisy Kansal and Deepak Sengar, **Knowledge management with information technology**, International Journal of Information Technology and Knowledge Management January-June 2011, Volume 4, No. 1, p. 201-204.

[2]Option, Uwe M. Borghoff and Remo Pareschi, p4.

## Conclusion

To sum up, having considered theory framework``the mean concept of information technology and knowledge management``. In the next chapter, we identify methodology of research.

# ChapterThree
# ResearchMethodology

## 1. INTRODUTION " MSILA university"

University"Med. BOUDIAF"M'Sila, established in 1985, and it is a multidisciplinary public institution. Now it hasmore than **29,629** students, **1,402** teachers, **1,265**technical, and administrative staff which spread across seven faculties: Technology, Science, Mathematics and Informatics, Law, Political Science, Economics, Literature and Languages, and Human and Social Sciences. Also, it has two national institutes: Management of Urban Technology and Science and Techniques of Physical and Sports Activities.

University "Med. BOUDIAF"M'Sila works and encourages scientific research in tune with the challenges of globalization. It currently has 23 Research laboratories approved by the Ministry of Higher Education and Scientific Research on several domains. Cite commitment to an open to the world is reflected today by the signing of several agreements cooperation with universities in several countries (France, Romania, Turkey, Tunisia, United Arab Emirates, Jordan, etc ...). These agreements are designed to facilitate scientific exchange, the mobility of teachers, researchers, students, and university staff. In this perspective,University Med. BOUDIAF M'Sila also wants to listen to the needs of its socio-economic partners in human resources and skills by organizing training related to the world of work. The rapprochement between the university and the local and national economic sector is now a strategy for the implementation of promising projects. Thus, several agreements have been signed with national and international companies. The University-Business Partnership has become one of the priority issues in a changing economic environment.[1]

## 2. Research Design.

The aim of the research design is to ensure empirical evidence to be obtained which can be interpreted to determine if the research hypotheses set for this study

[1] http://www.univ-msila.dz/fr/?page_id=28, at 9 :00,23April 2017

could be confidently accepted or not accepted. therefore, consists of identifying specific variables, developing hypotheses, and collecting data via a survey through a predetermined interview and questionnaire that will yield data which can be statistically tested in support of the hypotheses or otherwise. The statistical tools and techniques used in the research, which provide empirical evidence, were discussed later in the chapter.

## 2.1. Research Method .

Research is driven by a compelling need or inquisitiveness and at times to formally confirm an observation/belief. In short, research is really a systematic journey to find/prove/confirm a set of assumptions/hypotheses. The methodology to be followed for a specific research would be driven by the nature of the problem as well as area and type of research. The researchmethod in thisstudyisDescriptive.

## 2.2. Hypotheses:

Based on objectives described in chapter one and also based on gap in literature as discussed in chapter two.

The following alternative Hypotheses have been formulated:

- Administration of faculties have available application and infrastructure of Information Technology.
- There are enough requirements for Knowledge Management at M'sila university.

  ➢There are enough requirements for Organizational Culture at M'sila university.

  ➢There are enough requirements for Organizational Structure at M'sila university.

➢There are enough requirements for Administrative Leadership at M'sila university.

➢There are enough requirements for Information Technology atM'sila university.

- There is an effect of Information Technology on Knowledge Management at M'sila university.

  There is an effect of Software on Knowledge Management at M'sila university.

  ➢There is an effect of Hardware on Knowledge Management at M'sila university.

  ➢There is an effect of Communication on Knowledge Management at M'sila university.

  ➢ There is an effect of Data on Knowledge Management at M'sila university.

  ➢There is an effect of People on Knowledge Management at M'sila university.

## 2.3. Data Collection.

For any research it is imperative to define both the types and sources of data to be collected.

The data that needs to be collected to meet the purpose of the research. It was decided to collect the primary data for this research through a survey of selected M'sila university . To enable collection of data uniformly and consistently, a questionnaire approach was selected. The questions included in the questionnaire were designed for generation of a realistic and thorough primary data in addition to interview with computing engineering.

## 3. Sampling design

The proposed research targets subjects who are working as managers at M'sila university. The survey was conducted in 7 faculties and 2 institutions,

The sample size is 44. Many respondents were not willing to share their view perceptions with regards to their knowledge.

Several issues or problems that could possibly have affected the nonparticipation in this survey include the following:

- busy schedule,
- lack of understanding of the purpose of the research,
- and lack of awareness of the importance of the survey,

The data for the research was collected through a questionnaire and was analyzed using statistical software 'Statistical Package for Social Sciences' (SPSS) version 20 for windows.

A total of 59 questionnaires were distributed among the managers of M'sila university, of which 44 filled-up questionnaires were received back .The years of experience in working, level of education, and job at university summarized in Table n°1

**Table1:Distrebutionof questionnaire**

| | Item | Category | Frequency | Percent |
|---|---|---|---|---|
| 1 | Level of education | Master | 5 | 11.4 |
| | | phd | 7 | 15.9 |
| | | others | 32 | 72.7 |

| | | | | |
|---|---|---|---|---|
| 2 | Experience | Less than 5 years. | 18 | 40.9 |
| | | From 5 to 10 years | 15 | 34.1 |
| | | From 11to 15 years | 4 | 9.1 |
| | | More than 15 years | 7 | 15.9 |
| 3 | Profession | Teach managers | 11 | 25 |
| | | Just mangers | 33 | 75 |

**sourse**: SPSS outputs

4. **Questionnaire:**

A questionnaire comprises a formalized set of questions for eliciting information. The function of the questionnaire is measurement; hence, mini-questionnaire development is a collaborative and interactive process. Therefore, the questionnaire was designed after careful deliberation of the structure of the questionnaire.

A survey questionnaire was designed and distributed to the respondents to collect primary data for the study. The study made use of a method approach comprisingclosed-ended questions in the questionnaire. In setting up the questionnaire, continuous questions (where the respondent is presented with a continuous scale) were framed. The Likert scale is employed, which is a rating scale that requires the respondents to indicate a degree of agreement or disagreements with each of a series of statements , typically, each scale item has the five response categories, ranging from “completely disagree” to “completely agree” [Likert (1932)]. All 48 items were measured on a five-point

Likert-type scale, ranging from ‘‘completely disagree’’ (1) to ‘‘completely agree’ mutation of the measurement error‘ needs to be carefully addressed. The

survey is examined by expert teachers in the topic of Knowledge Management and Information Technology look appendix N03

## 5. Reliability Analysis

The purpose of the reliability testing was to examine the properties of measurement scales and the items in order to obtain the overall index of internal consistency of the scales . Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is most commonly used when multiple Likert questions are used in the survey questionnaire that form a scale, and to determine if the scale is reliable.

Table 4.3 depicts the reliability analysis of the dataset used for the factor analysis. It shows the Cronbach's alpha value of the dataset

**Table 2: Reliability Statistics**

| Categories | N items | Alpha cronbach |
|---|---|---|
| Requirement of Knowledge Management | 20 | 0.635 |
| Impact of Information Technology on Knowledge Management | 28 | 0.721 |
| Total | 48 | 0.78 |

**Source:** SPSS outputs

(alpha) of the entire data set used for factor analysis is 0.78, whichαThe reliability test exceeds the common threshold value recommended.

Cronbach's alpha exceeded the acceptable level of 0.60

Therefore, the measurement model in this research shows satisfactory reliability, convergent validity, and discriminant validity.

## 6. Interview

One to one interview between the interviewee and the researcherwas carried out at the offices of the interviewee. Each interviewtook between 10 to 20 minutes. We make 5 interviews .

Semi structured Interview guide will be used to collect data from the key informants 5 engineers of computing because of the following reasons:

- the method offers high response quality,
- it takes advantage of the facilitators' presence, and
- combines questioning, cross-examination and probing approaches

**Data Analysis Tools**

This test is done on the SPSS software version 22.

- A **frequency distribution table** is an arrangement of the values that one or more variables take in a sample. Each entry in the table contains the frequency or count of the occurrences of values within a particular group or interval, and in this way, the table summarizes the distribution of values in the sample
- **Mean**: The average value of the entire set of numbers
- The **standard deviation** shows how much variation or "dispersion" there is from the "average" (mean, or expected value). A low standard deviation indicates that the data points tend to be very close to the mean.
- The **coefficient of variation** (CV) is defined as the ratio of the standard deviation to the mean. it is a helpful statistic in comparing the degree of variation from one data series to the other although the means are considerably different from each other.
- **T-tests**: tests for the means of continuous data One-sample . Underlying these tests is the assumption that the data arise from a normal distribution.
- **The Wilcoxon signed-rank** test is a non-parametric statistical hypothesis test used when comparing two related samples, matched samples, or repeated measurements on a single sample to assess whether their population mean ranks differ (i.e. it is a paired difference test)
- The **Shapiro-Wilks** test for normality is one of three general normality tests designed to detect all departures from normality. It is comparable in power to the other two tests.

  The test rejects the hypothesis of normality when the p-value is less than or equal to 0.05

## 7. Conclusion

Keeping in view the objectives of the study interpretations were made through analysis, the findings were compared with the hypotheses to assess its tenability which are based on the analysis and suggestions for improving IT based services for the benefit of researchers and suggestions for further research have been given.

# *Chapter Four*

# *Hypotheses Testing and Data Analysis*

## 1. Introduction

This chapter exhibits an extensive data analysis and the results of the statistical testing. Data analysis is done using reliability analysis and statistical software SPSS. This chapter focuses on the results and discussion based on the tables generated by SPSS. At the beginning, the proposed framework is discussed and then data analysis is done for the required competence level followed by data analysis of the existing competence level. The hypothesis testing results are then discussed and summarized. Subsequently the summary of the results are presented.

## 2. Test Hypotheses

The hypotheses to be tested in this research are as follows:

H0,1: Administration faculties don't have enough application of Information Technology

H1,1: Administration of faculties have available enough application or infrastructure of Information Technology.

H0,2: There aren't enough requirements for Knowledge Management at M'sila university.

H1, 2 : There are enough requirements for Knowledge Management at M'sila university

H0,3 : There is no significant effect of Information Technology on Knowledge Management at M'sila University

H1,3: There is a significant effect of Information Technology on Knowledge Management at M'sila University.

### 2.1. Test hypothesis N 01

H0,1: Administration of faculties don't have enough application of Information Technology

Engineer of computing wereasked aboutInformation Technology. Their responses are summarized in Tablen°03

**Table 3: Comparative interview among engineers**

| | Engineer of computing 1 | Engineer of computing 2 | Engineer of computing 3 | Engineer of computing 4 | Engineer of computing 5 | Agreement | disagreement |
|---|---|---|---|---|---|---|---|
| Experience | Between 5and 10 years | | | Less than 5 years | Between 5and 10 years | | |
| Training | university | | | | | university | |
| Software | G _pedagogy , Progress | | | | | G _pedagogy , Progress | |
| communication | Internet (Facebook, Cite of faculty, Email) INTRANET , EXTRANET | | | Internet (Linked in..) | Internet(Facebook, Cite of faculty, Email) INTRANET ,EXTRANET | | Linked in |
| Programs for: | Manager and students and teachers | | | | | | |
| Purpose of using IT | To earn the time To make work easy | | | | To Integrate the whole departments | To earn the time To make work easy | |
| Programs not using | ERP :establishment resource planning | | | | | ERP :establishment resource planning | |

Source: STUDENT DESIGN

Data analysis presented in the comparative interview among engineers (table 3) tells that the Information Technology processhas the same implementation in all the faculties, and institutes exception in Communication,mainlythe differencewas

in social media like "linked in". Besides, there are some programs do not use ERP (Establishment Resource Planning). However, We have accepted the main alternative hypothesis (administration of faculties have available enough application or infrastructure of Information Technology).

### 2.2. Test hypothesis N 02

H0,2: There aren't enough requirements for Knowledge Management at M'sila university.

- In order to test this hypothesis, we have divided it into requirements of Knowledge Management as bellow:

- H0,2,1:There aren't enough requirements for Organizational Culture at M'sila university.
- H0,2,2:There aren't enough requirements for Organizational Structure at M'sila university.
- H0,2,3:There aren't enough requirements for Administrative Leadershipat M'sila university.
- H0,2,4:There aren't enough requirements for Information Technology at M'sila university.

**Table 4:** discloses **Test of Normality** using Shapiro-Wilk:

| | Shapiro-Wilk | | | Test result |
|---|---|---|---|---|
| | Statistic | Df | Sig. | |
| MEANC | .917 | 44 | .004 | abnormality |
| MEANS | .932 | 44 | .012 | abnormality |
| MEANI | .958 | 44 | .108 | Normality |
| MEANL | .966 | 44 | .225 | Normality |

Source : outputs of SPSS

The table above resumes the Test of Normality results in which we have found that Organization Culture and Structure are abnormal. So directly, the hypothesis is going to be tested as bellow:

**Table5:Hypothesis test summary**

**Hypothesis Test Summary**

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| 1 | The median of MEANC equals 3.000. | One-Sample Wilcoxon Signed Rank Test | .000 | Reject the null hypothesis. |
| 2 | The median of MEANS equals 3.000. | One-Sample Wilcoxon Signed Rank Test | .000 | Reject the null hypothesis. |

Asymptotic significances are displayed. The significance level is .05.

**Source:** outputs of SPSS

From the table above, we refuse null hypotheses and we accept alternative hypotheses which are:

- H1,2,1:There are enough requirements for Organizational Culture at M'sila university.
- H1,2,2:There are enough requirements for Organizational Structure at M'sila university.

The table n° 6 presents one -sample test of normality hypothesis as below:

**Table 6:One-Sample Test**

| | Test Value = 3 | | | | | |
|---|---|---|---|---|---|---|
| | | | | | 95% Confidence Interval of the Difference | |
| | T | Df | Sig. (2-tailed) | MeanDifference | Lower | Upper |
| MEANI | 5.018 | 43 | .000 | .34375 | .2056 | .4819 |
| MEANL | .408 | 43 | .685 | .03977 | -.1569- | .2364 |

Source : SPSS outputs

The table n°6 shows that sig of Information Technology is 0.00 less than 0.05 that means we refuse null hypothesis and accept alternative hypothesis (There aren't enough requirements forInformation Technology at M'sila university), And sig of Administrative Leadership is 0.685/2 more than 0.05. So, we refuse alternative hypothesis and accept null hypothesis (There aren't enough requirements forAdministrativeLeadershipatM'sila university).

After that we resumed the subhypotheses in the table below:

**Table 7: Result of the main hypotheses N 2**

| | Hypotheses | Decision |
|---|---|---|
| H1,2,1 | There are enough requirements for Organizational Culture at M'sila university. | Accepted |
| H1,2,2 | There are enough requirements for Organizational Structure at M'sila university. | Accepted |
| H1,2,3 | There are enough requirements for Administrative Leadership at M'sila university. | Refused |
| H1,2,4 | There are enough requirements for Information Technology at M'sila university. | Accepted |

**Source: student design**

The table above summarizes the results of the second main hypothesis. So that we can partly accept it.

### 2.3. Test hypothesis N 03

H0,3 : There is no effect of Information Technology on Knowledge Management at M'sila university.

H1,3: There is an effect of Information Technology on Knowledge Management at M'sila university.

H0,3,1 : There is no effect of Software on Knowledge Management at M'sila university.

H0,3,2 : There is no effect of Hardware on Knowledge Management at M'sila university.

H0,3,3 : There is no effect of Communication on Knowledge Management at M'sila university.

H0,3,4 : There is no effect of Data on Knowledge Management at M'sila university.

H0,3,5 : There is no effect of People on Knowledge Management at M'sila university.

-For testing the hypotheses, first, we test their normality as below:

**Table 8 :Tests of Normality( third hypothesis)**

| | Shapiro-Wilk | | | Test result |
|---|---|---|---|---|
| | Statistic | df | Sig. | |
| MEANM | .925 | 44 | .007 | abnormality |
| MEANP | .964 | 44 | .188 | normality |
| MEANN | .954 | 44 | .076 | normality |
| MEAND | .925 | 44 | .007 | abnormality |
| MEANR | .981 | 44 | .684 | normality |

**Source**: SPSS outputs

- Impact of Software and Data on Knowledge Management are abnormal.
- Impact of Hardware, Communication, and People on Knowledge Management are normal.

**Table9: Hypothesis Test Summary**

**Hypothesis Test Summary**

| | Null Hypothesis | Test | Sig. | Decision |
|---|---|---|---|---|
| 1 | The median of MEANM equals 3.000. | One-Sample Wilcoxon Signed Rank Test | .000 | Reject the null hypothesis. |
| 2 | The median of MEAND equals 3.000. | One-Sample Wilcoxon Signed Rank Test | .028 | Reject the null hypothesis. |

Asymptotic significances are displayed. The significance level is .05.

**Source:** SPSSoutputs

The table above shows the hypothesis test and decision. So, there are a rejection of the null hypotheses and acceptance of the alternative ones (H1,3,4 : There is aneffect of Data on Knowledge Management at M'sila university. H1,3,1 : There is an effect of Software on Knowledge Management at M'sila university).

The table n°10 exhibits one- sample test of normality hypotheses as below:

**Table10: One-Sample Test**

| | Test Value = 3 | | | | | |
|---|---|---|---|---|---|---|
| | t | Df | Sig. (2-tailed) | MeanDifference | 95% Confidence Interval of the Difference | |
| | | | | | Lower | Upper |
| MEANP | 3.284 | 43 | .002 | .30909 | .1193 | .4989 |
| MEANN | 9.007 | 43 | .000 | .67857 | .5266 | .8305 |
| MEANR | 4.141 | 43 | .000 | .46023 | .2361 | .6844 |

**Source**: Spss outputs

The table n°10 shows that the sig of Hardware, Communication, and People are ordinary (0.02/2), (00), and (00) which are less than (0.05) that means we refuse null hypotheses and accept alternative hypotheses mainly:

H1,3,2:There is an effect of Hardware on Knowledge Management at M'sila university.

H1,3,3: There is an effect of Communication on Knowledge Management at M'sila university.

**Table11: Results of the Third Hypothesis**

| | Hypotheses | Decision |
|---|---|---|
| H1,3,1 | There is an effect of Software on Knowledge Management at M'sila university. | Accepted |
| H1,3,2 | There is an effect of Hardware on Knowledge Management at M'sila university. | Accepted |
| H1.3.3 | There is an effect of Communication on Knowledge Management at M'sila university. | Accepted |
| H1,3,4 | There is an effect of Data on Knowledge Management at M'sila university. | Accepted |
| H1,3,5 | There is an effect of People on Knowledge Management at M'sila university. | Accepted |

**Source**: Student design

According to the previous table, and after summarizing the results of the third main hypothesis; we can completely accept it.

# 3. Result Analyses:

## 3.1. Result analyses of hypothesis n°01

H1,1: Administration of faculties have available enough application or infrastructure of Information Technology.

-The table below resumes the component of Information Technology at Msila university .

**Table12: Resume of IT Components**

| IT Components | Detail at Msila university |
|---|---|
| Hardware | the physical components of a computer |
| Software | Programs: G_pedagogy , Progress |
| Data | better means of information of data messages provides to users of this information (students, teachers, managers, workers….) |
| Communication | Internet( social media like facebook and youtube and others; but no effectiveness ) intranet ,extranet |
| People | University training, |

**Source: student design**

As the table above shows that the faculties of university use Hardware, Software, and Data. Furthermore, there is a communication tools and people getting trained from the university (IT components). Because of this we accept the first hypothesis.

## 3.2. Result analyses of hypothesis n°02

For doing result analyses; we have used statistic tools, the mean, Std. Deviation, Coefficient of variation (CV ), and observation.

**Note**: CV= (Std. deviation÷Mean)×100.

## Table 13 : Rank of KM requirements

| Items | | Mean | Std. deviation | Coefficient of variation (CV) | Rank |
|---|---|---|---|---|---|
| **Organizational culture** | | | | | |
| **1** | The College provides clear guidance on using knowledge . | 3.55 | .875 | 24.65 | **2** |
| **2** | The college encourages individual and group initiatives. | 3.41 | .897 | 26.30 | **4** |
| **3** | Cooperation culture is one of principals of The College. | 3.36 | .865 | 25.74 | **3** |
| **4** | The college offers lot of tools that help learning and acquiring knowledge. | 3.61 | .868 | 24.04 | **1** |
| **Organizational culture** | | **3.48** | **.051** | **14.63** | **2** |
| **Organizationnal Structure** | | | | | |
| **1** | Responsibilities and authority are distributed evenly between each levels. | 3.32 | .934 | 28.13 | **3** |
| **2** | The college management is flexible enough to share information. | 3.32 | .771 | 23.22 | **1** |
| **3** | Management has effective communication channels. | 3.32 | .883 | 26.60 | **2** |
| **4** | There is an integration and coordination between different administrative levels in the knowledge assets. | 3.39 | 1.083 | 31.95 | **4** |
| **Organizationnal Structure** | | **3.33** | **0.57** | **17.12** | **3** |
| **Administrative Leadership** | | | | | |
| **1** | The management shares workers in decision- make. | 3.16 | 1.010 | 31.96 | **1** |
| **2** | College management is a successful example in professionalism. | 3.00 | 1.100 | 36.67 | **3** |
| **3** | College management listens to the users' opinions for continuous improvement. | 2.98 | 1.000 | 33.56 | **2** |
| **4** | Users are Enabled to do their job effectively. | 3.02 | 1.131 | 37.45 | **4** |
| **Administrative Leadership** | | **3.04** | **0.65** | **21.28** | **4** |
| | | | | | |
| **1** | Computers and accessories are enough to finish the work on time. | 3.30 | 1.193 | 36.15 | **6** |

| | | | | | |
|---|---|---|---|---|---|
| **2** | Softwares are updated on request concurrently. | 3.30 | .978 | 29.64 | **3** |
| **3** | Emailsare the most used in communication. | 3.41 | 1.187 | 34.81 | **5** |
| **4** | the Information is available to users at College website. | 3.14 | 1.212 | 38.60 | **7** |
| **5** | The department uses social media to communicate with the users. | 3.36 | 1.059 | 31.52 | **4** |
| **6** | New softwaresare available to facilitate the storage and retrieval of information when needed. | 3.77 | .912 | 24.19 | **1** |
| **7** | Coordination between the various administrators and the computing officer at the faculty is coordinated on a permanent basis. | 3.45 | .901 | 26.12 | **2** |
| **8** | You get regular trainings and configurations on using computing . | 3.02 | 1.191 | 39.44 | **8** |
| **Information Technology** | | **3.34** | **0.45** | **13.59** | **1** |

**Source: student design relayed at SPSSoutputs.**

Throughout the previous table, it seems to be the Information Technology is at first in order as one of the requirement of knowledge management in M'sila university on average 3.34 and standard deviation 0.0045 in such a way that most of the university administrations have New Softwares which areavailable to facilitate the storage and retrieval of information when needed; Also, there is a Coordination between the various administrators and the computing officer at the faculty is coordinated on a permanent basis even though its users haven't yet been receiving instructions and courses on how computing works, and electronic faculties sites do not provide enough data that users need. However, Organizational Culture the second on average 3.48 and standard deviation 0.051 in such the university offers a lot of tools that help learning and acquiring knowledge; moreover, it provides clear guidance on using knowledge, and encourages individual and group initiatives. Anyway, what comes in third is Organizational Structure on average 3.33 and standard deviation 0.57 in such a way the faculties of the university contain a college management which is flexible enough to share information, it has effective communication channels, and there is an integration and coordination between different administrative levels in the knowledge assets; However, the average value of the fourth one is less than the preceding ones.

Finally, the Administrative Leadership comes at the end on average 3.04 and standard deviation 0.65 because of the inexistence of the following:

- The management shares workers in decision-make.
- College management listens to the users'opinions for continuous improvement.
- Users are enabled to do their job effectively.

Therefore, we have partly accepted the second hypothesis.

## Analysis hypothesis N3 :

**We analyse the impact of IT on KM in the table below:**

**Table 14: rank of impact of information technology on knowledge management**

| | | Mean | Std. deviation | Coefficient of variation (CV) | Rank |
|---|---|---|---|---|---|
| **Hardware** | | | | | |
| **1** | The University provides the necessary equipment to acquire and create knowledge. | 3.77 | 1.118 | 29.66 | **6** |
| **2** | computers and peripherals are relied upon to store and retrieve knowledge. | 3.73 | .758 | 20.32 | **1** |
| **3** | Hardware and equipment are sufficient to produce knowledge for all USERS. | 3.39 | .920 | 27.14 | **4** |
| **4** | Technology is constantly updated to store and retrieve knowledge. | 3.23 | .886 | 27.43 | **5** |
| **5** | Hardware is able to distribute and transfer of knowledge easily. | 3.70 | .851 | 23.00 | **2** |
| **6** | The college offers technological tools to facilitate the application of knowledge. | 3.66 | .939 | 25.66 | **3** |
| **impact of Hardware on KM** | | **3.58** | **0.535** | **14.95** | **2** |
| **Software** | | | | | |
| **1** | Management provides software that helps to acquire and create knowledge. | 3.39 | 1.039 | 30.65 | **4** |
| **2** | experiences are saved and stored as expert systems | 3.11 | .895 | 28.78 | **2** |
| **3** | Teamwork software is available at all organizational levels for the distribution and transfer the knowledge. | 3.23 | 1.198 | 37.09 | **5** |
| **4** | Management relies on knowledge systems that help to apply knowledge. | 3.68 | .983 | 26.71 | **1** |
| **5** | Feedback in Software implementation is used when needed. | 3.14 | .905 | 28.82 | 3 |

| | | | | |
|---|---|---|---|---|
| **impact of Software on KM** | **3.31** | **0.62** | **18.8646** | **3** |
| **Network** | | | | |
| Management has external networks that help to acquire and create knowledge. | 3.32 | .959 | 28.89 | **6** |
| The Internet helps to acquire knowledge permanently. | 4.05 | .806 | 19.90 | **1** |
| the Internet Helps to get required databases at the time. | 4.16 | .834 | 20.05 | **2** |
| The knowledge is transferred and distributed according to Intranet . | 4.07 | .873 | 21.45 | **3** |
| Management uses external networks with relevant parties to distribute and transfer knowledge. | 3.48 | .902 | 25.92 | **4** |
| Management uses social media to transfer and distribute knowledge. | 3.18 | 1.040 | 32.70 | **7** |
| Networks allow using of available knowledge. | 3.50 | .928 | 26.51 | **5** |
| **impact of Network on KM** | **3.67** | **0.49** | **13,58** | **1** |
| **Data** | | | | |
| Management provides sufficient databases to allow the acquisition and creation of knowledge. | 3.02 | 1.110 | 36.75 | **6** |
| The Department has a data and knowledge repository that covers information about students and users. | 3.34 | 1.077 | 32.25 | **3** |
| The databases are stored and retrieved with high flexibility. | 3.25 | 1.014 | 31.20 | **2** |
| The management of students and users Provide mechanisms for data retention required when needed . | 3.32 | .909 | 27.38 | **1** |
| The databases support the distribution and transfer of knowledge process. | 3.23 | 1.054 | 32.63 | **4** |
| The database facilitates the application of knowledge. | 3.34 | 1.098 | 32.87 | **5** |
| **impact of Data on KM** | **3.25** | **0.63** | **19.48** | **4** |
| **People** | | | | |
| Training courses are organized for users to optimize the use of available equipment. | 3.16 | 1.160 | 36.71 | 4 |
| The experiences of users are largely saved in the rules of knowledge systems. | 3.32 | 1.196 | 36.02 | 3 |
| Electronic medias are used to publish the knowledge that users needed. | 3.93 | 0.950 | 24.17 | 1 |
| Managers have sufficient skills to apply and acquire the knowledge. | 3.43 | 1.065 | 31.05 | 2 |
| **impact of People on KM** | **3.46** | **0.73** | **21.30** | **5** |
| Training courses are organized for users to optimize the use of available equipment. | 3.16 | 1.160 | 36.71 | 4 |
| The experiences of users are largely saved in the rules of knowledge systems. | 3.32 | 1.196 | 36.02 | 3 |
| Electronic medias are used to publish the knowledge that users needed. | 3.93 | 0.950 | 24.17 | 1 |
| Managers have sufficient skills to apply and acquire the knowledge. | 3.43 | 1.065 | 31.05 | 2 |
| **People** | **3.46** | **0.73** | **21.30** | **5** |

As we can see that the prior table tells the following:

-The Hardwares helps to store and retrieve knowledge, and distribute and transfer knowledge easily. But it does not provide necessary equipments in order to acquire and create knowledge in contrast with the others in terms of the degree and importance.

- The Impact of Software on KM appears highly when it comes to the application and storing of the knowledge management, but low when it comes to the acquirement, creation, transformation, and distribution of it.

- The Impact of Communication is higher on of all KM processes except for the acquirement and creation of knowledge.

As the results tell that the university faculties do not exploit the media social sites sufficiently to transfer and distribute knowledge.

-Data and people have an impact on KM processes, but it was extremely low especially in acquiring, creation, and application of it.

In any case, through the preceding of them all and the interview made with informatics engineers of M'sila university faculties it appears that the impact of Network and Hardwares on KM is so highly obvious that they come at first and at second on average 3.67 and 3.58 and standard deviations 0.49 and 0.53 in a row while the other components of IT are less influential on KM; however, Softwares on average 3.31 and standard deviation 0.62; then, the final ones are Data and People on average 3.25 and 3.46 and standard deviation 0.63 and 0.73 in a row.

## 4. Conclusion

Relying on the provided data of the questionnaire and the interview, it can be concluded that there is a trend towards using the components of IT and KM processes. Due of that we have found positive result of the impact of Information Technology on Knowledge Management.

# *Chapter five*
# *General conclusion*

## 1. CONCLUSION.

After we have tackled the most important concepts related to IT, its components, KM and its processes theoretically; tested the study hypotheses; and analyzed its results practically; we are going to present the study results, the possible suggestions, and the study prospects as follows:

1- The study results:

- The first hypothesis

-H1,1: Administration university faculties have enough application of Information Technology

- - The second hypothesis:

**-H1, 2 : There are enough requirements for knowledge management at M'sila university**

The hypothesis results confirmed the following:

- There are enough requirements for Organizational Culture at M'sila university.
- There are enough requirements for Organizational Structure at M'sila university.
- There aren't enough requirements for Administrative Leadership at M'sila university.
- There are enough requirements for Information Technology at M'sila university.

-The third hypothesis:

**-H1,3: There is effect of information technology on knowledge management at M'sila University.**

-The hypothesis results confirmed the following :

- There is effect of data on knowledge management at M'silauniversity.
- There is effect of Software on Knowledge Management at M'sila university.

- There is effect of hardware on knowledge management at M'sila university.
- There is effect of network on knowledge management at M'sila university.
- There is effect of people on knowledge management at M'sila university.

-This subsidiary hypothesis has ensured that IT influences on knowledge management of M'sila university, but its impact on the distribution and transformation of knowledge is greater than the other processes. Besides, its impact on the acquiring and creation of knowledge is the least. However, communication tools, especially the network, has also a great impact on knowledge management of the university

## 2- Suggestions:

- Employees should take part in making decisions.
- For continual improving, it is advisable to listen to the university employees opinions and suggestions.
- Enable employees to do their work effectively.
- Provide possible materials to acquire and create knowledge.
- Take care of the application and the evaluation of data.
- Provide wide data basis that include all knowledge users need.
- Activate and exploit Progress program.
- Expand and spread the internet over classes and join it with the university central administration.
- active
- Rehabilitate and give courses to the informatics engineers of the faculties on how to use updated IT by the help of a broad experts.

## 2- The study prospects :

- Impact of information technology on knowledge management in private sector
- The impact of social media on knowledge management at M'sila university
- The impact of intranet on sharing knowledge management
- The reality of information technology on knowledge management

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## Appendix N03

## List Of Questionnaire Judgment

- Houhoumostafa
- Gasmikamal
- Berkatihsin

**ABSTRACT**

This study seeks to study the impact of IT on KM in M'sila university, Algeria. For the sake of reaching this objective, we have dealt theoretically with the most important concepts and basic correlations related to approaches that have a relation with IT and its components (hardware, software, data, communication, and people) and with KM and its processes (acquirement and creation, storing, transformation and distribution, and application).

A questionnaire has been made to answer the research questions and obtain reliable data. Several statistical tests have been used to validate the research hypothesis. Also, it has been recognized that the university faculties have sufficient IT processes, but the use of them does not go with updated application; besides, they do not have the whole KM requirements because they do not have Organizational Leadership. Moreover, the results confirmed that there is an impact of IT, which has a statistical proof, on KM especially on Communication. But this impact on Transformation and Distribution of knowledge was the highest; then, the impact of KT on Acquirement and Creation of knowledge was the lowest.

**KEY WORDS**: information technology, knowledge management , requirementts of KM, KM processes.

**ملخص**

يهدف هذا البحث إلى دراسة مدى تأثير تكنولوجيا المعلومات على إدارة المعرفة بجامعة المسيلة بالجزائر، ولبلوغ هذا الهدف فقد تناولنافي الإطار النظري أهم المفاهيم والارتباطات الأساسية المتعلقة بالمقاربات ذات الصلة بتكنولوجيا المعلومات ومكوناتها) الأجهزة، البرمجيات، قواعد البيانات، الاتصالات، الأشخاص)، وإدارة المعرفة وعملياتها– الاكتساب والتوليد، التخزين، النقل والتوزيع، التطبيق.

تم الاعتماد على الاستبيان والمقابلة كأداة أساسية في الحصول على المعلومات والاستعانة بالعديد من الأساليب الإحصائية لتحديد طبيعة البيانات والاختبارات المناسبة لكل فرضية، ولقد تم التوصل إلى كليات الجامعة تتوفر على القدر الكافي من أدوات وسائل تكنولوجيا المعلومات، إلا أن استخدام تلك الأدوات لا يمتد إلى أهم التطبيقات الحديثة، كما أن كليات جامعة المسيلة لا تتوفر على كل متطلبات إدارة المعرفة، حيث أنها تفتقد إلى توفر عنصر القيادة التنظيمية ، كما أكدت النتائج على وجود تأثير ذو دلالة إحصائية لتكنولوجيا المعلومات على إدارة المعرفة خاصة بالنسبة لعنصر الاتصالات، كما أن هذا التأثير كان على نقل وتوزيع المعرفة بدرجة أكبر مقارنة بباقي العمليات الأخرى، والتي كانت عملية توليد وكتساب المعرفة أقل تأثرا بتكنولوجيا المعلومات بجميع مكوناتها

**الكلمات المفتاحية:** تكنولوجيا المعلومات، إدارة المعرفة، متطلبات إدارة المعرفة، عمليات إدارة المعرفة.