A model of integration between knowledge management and business processes of industrial small and medium-sized enterprises

Dr. Maha Mahmoud Talaat mustafa

*(information systems & computer Department, Sadat Academy for management sciences, Egypt)

mahatalaat4@yahoo.com

ABSTRACT

The objectives of this research is to provide an integrated study on the subject of integration between knowledge management and business processes, to identify the needs for different aspects of necessary knowledge for the development of small and medium-sized enterprises, where young investors seek to develop their knowledge by trying to increase the sources of access to information so that they can comply with the requirements of constant change in the organizations they have, and thus the development of their institutions, where those institutions need knowledge to identify the changes occurring in each sector of production and service, whether local or foreign, which enables them to provide products or services on the level of high quality.

They also must service work to develop and employ methods of conducting research targeting product, and management development of systems for promoting good products or services. Capturing knowledge can be through knowledge management by browsing of pages published by various organizations on the Internet and, recognizing everything new in the field of manufacturing or production used by various institutions, and therefore constantly developing products according to the needs of different categories of consumers.

Keywords - Business processes, knowledge management, business information systems, small and medium-sized enterprises

I. INTRODUCTION

The acquisition of knowledge, and provision of competitiveness to organizations, by the process of gathering information, and analysis and use of statistics results, can help finding many elements, which can serve the senior management in the use of statistical tools. Thus, there is need for statisticians, who must identify the recent trends in knowledge discovery and data mining, and can break the constraints between analysts and managers.

Organizations face now major challenges according to external pressures such as the nature of place of work, in addition to that, in previous years, organizations encountered economic crises, and therefore many organizations restructured their business processes by allowing them to knowledge management, leading to the importance of improving the strategy to be clear and understandable to knowledge management, so as to promote the intellectual capital of organizations; hence, organizations can compete actively with other institutions. Anyway, organizations must do the following:

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1. Re-thinking in how to develop the skills of its workforce, enabling them to benefit from the information and its application.

2. Adapting the intellectual capital so that it can make a significant difference in the performance of business processes of the organization.

3. Improving policies and strategies and the applications of business processes, through knowledge management.

4. Support work knowledge through the use of information and communications technologies ICT tools

5. To provide expertise basics to core labor workers.

6. To maximize the use of knowledge so as to ensure improved levels of the quality of services and products.

7. A focus on the importance of educating employees on the basis of being the primary source of knowledge and assets, as suppliers of knowledge to the organization.

8. The discovery of available knowledge, and the integration of knowledge and business processes.

9. Obtaining knowledge from the real sources of information, such as databases for research and ideas, as well as personal interviews with experienced workers, which is a primary way to discover knowledge.

II. CONCEPT OF KNOWLEDGE MANAGEMENT

Knowledge management can be defined as the process of applying the concept to get systematic and structured management and dissemination of knowledge through the organization in order to work more quickly and to re-use of the best technologies in order to reduce the cost of re-work from project to another.

Knowledge management can be also described as following-up previous information content to describe the work activities in business processes, and what can be saved from the viewpoint of possibility of improving workplace in the future in some cases.

Knowledge management solutions have proven to be the most successful way in the acquisition, storage and dissemination of knowledge, which can be shown even of tacit knowledge through lessons learned and best practices in business practices.

Focusing on intellectual asset management is an activity of knowledge through which we can add value to the work, of the organization, not described before as a knowledge asset, such as patents or trade secrets, trademark, intellectual property, which depend mainly on the expertise of workers.

Knowledge management is a structured cooperation between members of the organization, technology, structure and operations of the business organization in order to add value through the reuse of knowledge or its innovative outputs, and then participation and implementation by providing the Organization with valuable lessons and the best applications learned, which can be described as the memory of the organization which enables it to continue organizational learning.
III. THE IMPORTANCE OF KNOWLEDGE MANAGEMENT IN THE MODERN ORGANIZATION

Some issues could be stated for knowledge management as follows:

1. Knowledge is created and updated through the task of knowledge management.
2. The design, storage, distribution and application of knowledge are of the tasks of managing information technology.
3. The use of knowledge management tools is to search, organize and publish knowledge content.
4. Knowledge Management works as a gateway to allow the flow of knowledge among individuals through the discovery and retrieval of content through information technology.
5. Knowledge management facilitates the transfer of knowledge from one person to another or from a source of information to someone.

The need to manage information and knowledge in the institutions

When managing information and knowledge in the institutions, it should take into account the following elements:

1- Sources of information.
2- The external environment (political, social, economic)
3- Past experience of the workers.
4- The interrelationships between the elements of the information system.
5- Working mechanisms within the organization.
6- Supply and demand for information.

But until the activation of the role information and knowledge management, the organization must work through the following four principles, that govern the work in knowledge management:

1- Participation and collaboration between employees: When you start in any small project it has to be specified what business processes are carried out transparently and clearly, as well as there is a need to identify those who are expert consultants who will assist the organization in its inception, and determine who can share information, ideas, and advice for employees in the small project. At this stage, in the start-up phase of the small or medium-sized enterprises they must identify the following:

A - Priorities.
B - The responsibilities and roles.
C - The work plan and activities taking place in each phase.

2- Flexibility: There is no single model for the development is suitable for all cases, therefore there must be a flexible plan associated with the planning process for knowledge management,
such that it can be adapted to the changing circumstances surrounding the small project, especially those activities relating to the strategy design and implementation.

3- **Continuity**: It must be sure that small project continues to maintain sustainability, and therefore there must be appropriate knowledge suitable for all activities in business processes, as well as encouraging access to high quality of products.

4-**Emphasis on the comprehensiveness of the information**: The project gets little observation in its inception, while it requires a great deal of observation of the role of knowledge management, which could not be pursued at small-scale project due to lack of absorptive capacity, which enables them to carry out the activities of business processes, through which the organization directs its development strategies; thus it must include the knowledge required to manage daily operations, and to determine the impact on:

A - Operational objectives.

B - Working procedures.

C - Workers experience and skills gained.

**IV. ROLE OF INFORMATION SYSTEMS AT THE ACTIVATION OF THE EFFICIENCY OF SMALL-SIZED ENTERPRISES**

The potential and capabilities of users on the use of information systems contribute much in the activation of the efficiency of the small enterprises; and also its ability in realizing added value through interaction with business processes in small and medium-sized enterprises; and it appears in the ways and methods of doing business which can be grouped prior experience (documented and stored in the information system, that can be retrieved when needed), allowing the ability of users to achieve better performance by identifying the prior experience in the field of their work so as to enhance the performance of employees, as well as enable them to accelerate the execution of the required tasks as a whole.

**Taking advantage of the potential information systems**

To take account of success in the integration between knowledge management and business processes, we need to:

1- Achieve integration of direct value of the activities of the organization, through the integration which brings added value with knowledge management.

2-Selection of integration areas that can be compatible with the needs of work and that may be, for example, exchange of information or access to new markets, or to participate in the design with the supplier of raw materials and production requirements, or generating a new idea.

3-Emphasizing to secure the information participants, so that leaking information cannot be allowed between the competitors.

4-The transition to innovation means looking for a way to take advantage of knowledge to achieve added value, as well as interaction with staff, in order to generate new ideas and to overcome the limitations that may impede the production of the idea.

**Knowledge management characteristics as an intellectual asset**

Characteristics of knowledge management as an intellectual asset: can be summarized in the following:
1- Knowledge is the origin of the organizations values, which can be considered as the main source of competitive advantage.

2- Use of knowledge does not reduce its amount.

3- The transfer of knowledge does not result in losing it.

4- Knowledge exists but the ability to use it requires skills.

5- A lot of valuable knowledge in the organization disappear at the end of the working day, unless it is documented.

6- Sharing of knowledge can be after it is documented to enable the organization for maintaining and developing it within the organization.

V. INTEGRATION BETWEEN KNOWLEDGE MANAGEMENT AND BUSINESS PROCESSES

The integration of knowledge management must be in all activities of the business processes in the organization, as well as much of the organizational activities; moreover, knowledge management must be a goal in itself to complete business processes, which means that the information system that supports business processes must also support knowledge management.

There are two types of tasks that are in the way of integration between knowledge management and business processes

1- **Common tasks**, which describe the structural configuration of the business processes.

2- **Knowledge management tasks**, which describes the tasks associated with the design, storage, application and dissemination of knowledge through business processes.

Both types of tasks require a set of permits for the use of organization resources, tools and applications.

**Elements that is contained in the Integrated Relationship between knowledge management and business processes**

1- Tasks that are performed during the business processes.

2- The person who is appointed to carry out the tasks, assigned to him.

3- Arrangement (logical order), on which the implementation of the tasks is performed.

4- Data which is used, and the established information, or handled between different tasks.

**A general framework for knowledge possession**

Capabilities required in the knowledge management system for the knowledge possession can be summarized as follows:

1- Cooperation in order to maximize the areas of knowledge related to business processes.

2- Design in accordance with the objectives and the requirements from the design.

3- Applying recommendations for studies that are followed within the organization.
4- Identifying initiatives for the use of means or tools for certain knowledge.

5- Identification of methodologies and applications necessary to facilitate establishing of knowledge.

6- Definition, owning, developing, preserving and dissemination, of knowledge.

7- Benefit from the different manifestations of knowledge assets.

**Small enterprise development through knowledge management**

To enable small institutions to develop themselves through knowledge management they must answer the following questions:

1- How to avoid reinventing the same thing every day.

2- How can learning from past experiences will be faster.

3- How to avoid repeated mistakes at work.

4- Is it possible to link learning with work practice.

**Establishing a framework to approximate the learning process, and continuous self-learning, for the establishment of knowledge**

To facilitate the process of self and continuous learning in order to create the knowledge, it is necessary to divide the work, in small-scale projects, into three stages, design, procurement and production, where the starting phase of the production is the design phase, as the designers begin to follow the recent trends in production, and to propose methods of manufacturing it. Through team work in design management phase, the needs of design could be determined, moreover, the knowledge that is generated during the design phase takes the greater part of the three stages of manufacturing.

**Practical steps of self- and continuous learning, that are needed to create knowledge**

1- Determining learning needs in the workplace.

2- Establishing knowledge infrastructure.

3- Starting knowledge representation.

4- Improving innovation and learning.

5- Generating knowledge culture.

**VI. RESEARCH METHODOLOGY**

The main objective of the research methodology was to get the effect of knowledge management on the organizational business processes. The research methodology allowed the collection of qualitative and quantitative primary data from expert workers in SME by undertaking face-to-face detailed interviews.

**The research problem nature and phenomena**

The research problem phenomena about the development of small-scale project, according to the continuous change in the external environment, in which there is a need to increase information
and knowledge to enable researchers to increase their compatibility with those changes, as well as the need to review different ways of developing small and medium size enterprises, through the study of knowledge management tools.

**The research problem**

The expeditionary study showed that small-scale institutions suffer from some problems when attempting to interaction and integration with the circumstances surrounding any small project, due to lack of knowledge, thus hampered from achieving key objectives, which are established for these institutions; those problems can be identified in the following points:

1 - There are many problems and challenges for knowledge management and integration with business processes, which are essential problems associated with models of production (industrial, agricultural, or service), and how to manage them.

2 - The initial application of knowledge is to confront (for the production of products or services) the difficulty in performance, both financial and administrative.

3 - Many knowledge management systems programs face failure, at the practical application, due to the interaction and integration with business processes.

Accordingly, the focus of the research problem can be in:

"The presence of several problems facing small and medium-sized enterprises in Egypt due to the inadequacy of the Action Plan for information and knowledge management, with the need for such knowledge, through an integrated information system with business processes to those institutions."

**The research Objectives**

1 - To identify the concepts associated with the ownership or acquisition of knowledge to small and medium-sized enterprises.

2 - To learn how to employ knowledge in business processes.

3 - To evaluate the results of knowledge management on the practical application and future business processes performance.

**Model assumptions**

Model assumptions are based on the following:

1 - The integration of knowledge management in all activities of the business processes, and the need for integration between them and the daily activities that take place in the organization.

2 - The knowledge required for this operation includes the following:

   A - Complaints and suggestions.
   B - Insurance against risks.
   C - The use of software to do so.

3 - The ability of most organizations workers in small and medium-sized enterprises, to benefit from most of the possibilities available through knowledge management.
4 - Evaluation of information systems for business processes based on integration with knowledge management, which should be the determining inputs, outputs, and workflow during the processing of the data.

Questions are asked of the organizations responsible for the small or medium enterprises, to assess the knowledge management it has.

1 - Is knowledge and information has been exploited in the past? (Through the answer to the open question of No. (1) in the form, accepted by the Inquisition (73%)

2- Were there errors resulting from the use of old models in the development of the organization you have? (Through the answer to the open question number (2) in the form accepted by the Inquisition (34%)

3- Was the gradual demand for information, learning, knowledge and wisdom wrong? (Through the answer to the open question number (3) in the form accepted by the Inquisition (48%)

Through field study, and by asking many of the officials of the institutions, in small in size enterprises, it became clear that dealing with the information or knowledge led to the development of institutions in many forms, but the way in which the knowledge management varies, from one institution to another, and how various institutions are seeking to reach the methods, through which, they are building knowledge at their institutions.

The results of the field study

The results of the field study showed that the use of various sources of information to get information, in order to increase knowledge in the enterprise has become essential in most enterprises, but it is not considered enough, because there are a lot of information that are not available in these sources, such as libraries and information centers, which are open sources, but can be obtained from other secondary sources of information, such as personal interviews with experts in the field of work; moreover, it became clear that there is an increase in the sales of the products, as a result of product development constantly, according to the information which is obtained from various sources of knowledge about the organization, as a result of the use of the Internet as an information source.

The user can access to a variety of external information sources, which were not previously available to access.

The study and analysis of the field study results, and discussion about it, show that the increase of knowledge in the organization has a good effect on the organizations that use knowledge management, but the problem lies in determining what is required, for organization, of knowledge which can be employed to serve the organization.

VII. FIGURES AND TABLES

Design of questionnaire

The questionnaire form was designed to test the hypotheses of the research, where the selected sample of the research population are assessed in small-scale enterprises. The questionnaire forms were distributed to some employees of those samples, who were chosen randomly in small and medium size institutions. The questionnaire forms were distributed at the matter, to enable the required data to be obtained, from those who answered the questionnaire forms. The following table shows the types of industries in which the questionnaire forms were distributed:
Table (1) illustrates the types of industries in the research sample

<table>
<thead>
<tr>
<th>No.</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nutrition and related food products</td>
</tr>
<tr>
<td>2</td>
<td>Chemical industries</td>
</tr>
<tr>
<td>3</td>
<td>Production of transcripts antiquities</td>
</tr>
<tr>
<td>4</td>
<td>Cosmetics industry</td>
</tr>
<tr>
<td>5</td>
<td>Jewelry psoriasis</td>
</tr>
<tr>
<td>6</td>
<td>The production of popular robes</td>
</tr>
<tr>
<td>7</td>
<td>Handmade carpets from yarn wool sheep, and rug industry</td>
</tr>
<tr>
<td>8</td>
<td>Production of copper artifacts</td>
</tr>
<tr>
<td>9</td>
<td>Production of handmade arabesque, and bamboo products</td>
</tr>
<tr>
<td>10</td>
<td>Traditional ornaments for women</td>
</tr>
</tbody>
</table>

The demography of participants

<table>
<thead>
<tr>
<th>Gender</th>
<th>Educational level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
</tr>
<tr>
<td>No</td>
<td>42</td>
</tr>
<tr>
<td>%</td>
<td>47%</td>
</tr>
<tr>
<td>total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Recognition of KM as an Asset base through the answer to the closed ended question no. (4) in the questionnaire

<table>
<thead>
<tr>
<th>Industry</th>
<th>yes</th>
<th>Can’t say</th>
<th>no</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-nutrition and Related Food Products</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>2-Chemical industries</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>3-Production of transcripts antiquities</td>
<td>8</td>
<td>1</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>4-Cosmetics industry</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>5-Jewelry psoriasis</td>
<td>8</td>
<td>1</td>
<td>-</td>
<td>9</td>
</tr>
</tbody>
</table>
6-The production of popular robes | 5 | 1 | 2 | 8  
7-Handmade carpets from yarn wool sheep, and rug industry | 7 | - | 1 | 8  
8-Production of copper artifacts | 7 | 1 | 1 | 9  
9-Production of handmade arabesque, and bamboo products | 9 | 1 | - | 10  
10-traditional ornaments for women | 6 | 1 | - | 7  

Creation of knowledge through the answer to the closed ended question no. (5) in the questionnaire

<table>
<thead>
<tr>
<th>industry</th>
<th>yes</th>
<th>Can't say</th>
<th>no</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-nutrition and Related Food Products</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>2-Chemical industries</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>3-Production of transcripts antiquities</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>4-Cosmetics industry</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>5-Jewelry psoriasis</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>6-The production of popular robes</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>7-Handmade carpets from yarn wool sheep, and rug industry</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>8-Production of copper artifacts</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>9-Production of handmade arabesque, and bamboo products</td>
<td>9</td>
<td>-</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>10-traditional ornaments for women</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>7</td>
</tr>
</tbody>
</table>

Opportunities provided by the integrated relationship between knowledge management, and business processes

A table showing the opportunities provided by the integrated relationship between knowledge management and business processes, and the repeated answer in the open question no. (1) in the questionnaire form
As is clear from the field study and by limiting the open-ended questions; the research found that the disadvantages associated with poor knowledge management in the integrated relationship between knowledge management and business processes were as follows:

Shortcomings associated with the integration with the mismanagement of the integrated relationship between knowledge management and business processes

A table showing the disadvantages associated with poor knowledge management and the integrated relationship between knowledge management and business processes, and the repeated answer in open question no. (2) in the survey questionnaire form

<table>
<thead>
<tr>
<th>No.</th>
<th>Disadvantages</th>
<th>Repetition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There are some weaknesses and difficulties in communications among the different organizational departments &amp; sections.</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Lack of commitment of workers towards the management.</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Complexity of works mechanisms and actions in the beginning of the small project.</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Lack of facilities that support knowledge management.</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>The use of old technology.</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Difficulties in the integration between knowledge management and business processes.</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>There are several team work groups that does not seek to obtain knowledge, use, or shared.</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Business units in the small and medium-sized enterprises do not make committees to apply the usual knowledge.</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>The organization does not hold events (such as seminars or forums) to display the knowledge that have been assembled in order to share.</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>The obtained knowledge are not linked to the basic objectives of the business processes.</td>
<td>1</td>
</tr>
</tbody>
</table>
There are no clear and specific procedures for obtaining knowledge and participating in it.

Information is accessed without being stored in a manner to facilitate its retrieval when needed.

There is no specific technology used to store and retrieve knowledge.

Sharing tools of information are not used in knowledge management.

There are no specific criteria when creating a database for business process of the organization.

As is clear from the field study, and by limiting the open-ended questions that the solutions proposed to overcome the disadvantages associated with the mismanagement of integrated relationship between knowledge management and business processes are as follows:

A table showing the proposed solutions to overcome the disadvantages associated with the mismanagement of integrated relationship between knowledge management and business processes, and the repeated answer in open question no. (3) in the questionnaire form:

<table>
<thead>
<tr>
<th>No.</th>
<th>The proposed solution</th>
<th>Repetition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Finding a motivation for employees to develop and possess knowledge.</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Providing experiences to the employees to develop and own knowledge in order to reach the best methods used in the work.</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Developing innovative skills among workers.</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Training employees on how to manage knowledge</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Balance between basic elements of generating knowledge of individuals, technology and business processes</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Assessment of the benefits resulting from the application of knowledge management to see the shortcomings, weaknesses and the positive aspects.</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Encouraging work teams to learn from similar small projects to begin to learn the tacit knowledge.</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Documentation of any lessons learned resulting from the application of knowledge management to take advantage of them in the future.</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Making classification of information, which is to take the advantage of them and their application in the management of knowledge in order to facilitate retrieval?</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Mapping of the topics that have been applied by the use of knowledge management, and coding each subject so as to facilitate retrieval when it is needed.</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Trying to simplify the shared information that can be understood by all employees within each working group.</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Making records for all employees explaining on it, their basic skills, and working groups that they work on.</td>
<td>1</td>
</tr>
</tbody>
</table>
Hypotheses Testing
To test the research hypothesis, one-way analysis of variance ANOVA model was used, where the average for each answers of a sample was taken of the existing organization in the sample, the average rounded to the nearest whole number, and then were loaded from survey represented by each institution, so that the institutions represented at the levels, as in the questions, are representative of this replicates of the hypothesis before distributions have been analyzed statistically

The data were analyzed using the statistical program SPSS/PC and the degree of significance was 5%

Finally, the test of the result was significant, meaning that the alternative hypothesis for both hypotheses was accepted and null hypothesis was refused.

First hypothesis
There are no significance relationship between the way of working in a small-sized enterprises and knowledge management.

Null hypothesis
There are no significance relationship between the way of working in a small-sized enterprises and knowledge management.

The alternative hypothesis
There is a significance relationship between the way of working in a small-sized enterprises and knowledge management.

The ANOVA analyses of variance table for the first hypothesis the first is as follows:

Analysis of variance ANOVA table for the testing of the first hypothesis

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1756.194</td>
<td>9</td>
<td>1951.324</td>
<td>23.950</td>
<td>00 00</td>
</tr>
<tr>
<td>Within Groups</td>
<td>6517.908</td>
<td>80</td>
<td>81.474</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>204079.822</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The second hypothesis
There are no significance relationship between the use of knowledge management tools at Small and medium-sized enterprises, and the susceptibility on innovation, including agreeing compatibly with the changes in the external environment.

Null hypothesis
There are no significance relationship between the use of knowledge management tools at Small and medium-sized enterprises, and the susceptibility on innovation, including agreeing compatibly with the changes in the external environment.
The alternative hypothesis
There is a significance relationship between the use of knowledge management tools at Small and medium-sized enterprises, and the susceptibility on innovation, including agreeing compatibly with the changes in the external environment.

The ANOVA analysis of variance table for the second hypothesis was as follows:

Analysis of variance ANOVA table for testing of the second hypothesis

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>22948.055</td>
<td>9</td>
<td>2549.784</td>
<td>17.885</td>
<td>0000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>11405.545</td>
<td>80</td>
<td>142.569</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>34353.600</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VIII. CONCLUSION

Results
1-Through the study, methods to facilitate the potential application of applied scientific research was determined, which constitutes a practical application and continues to form knowledge management policies of different institutions, and cooperation with various points of production for each part or region of the country.
2- small-sized enterprises could be developed, through a vision for the development of small-sized enterprises, with the support of knowledge management,
3-Through the research, the best possible methods to be used to take advantage of knowledge management and to identify the information and knowledge needs of small institutions were examined.

Recommendations
Based on the findings from the study it recommends the following:
1-Encouraging organizational innovation and continuous self-learning among workers in order to increase the value of knowledge assets of the organization.
2-Support the vision, creativity and the ability to identify and complete the opportunities and take advantage of them.
3-Trying to obtain the required knowledge for the organization with an emphasis on practical application.
4-Providing the necessary technology for knowledge management, allowing maximizing the benefits resulting from learning.
5-Improving the level of services to increase efficiency and effectiveness to continue to obtain a competitive advantage.
6-Support competitiveness by changing business environment through knowledge management under the framework, and of the pre-defined objectives
7-Support the ability to enable the organization to transform change and explore opportunities that can be obtained by dealing with the changing external business environment.
8-Encouraging small business owners to take advantage of information available in the internet.
9-Trying to discuss different methods to support knowledge management in small-sized enterprises.
10-Scheduling of more general activities to overcome the problems of surplus information over the limit.

**Results and recommendations for the research study**

<table>
<thead>
<tr>
<th>Serial</th>
<th>The result</th>
<th>Recommendation for the result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There is a need to enable the capacity to identify, measure, manage, share and update the necessary information assets</td>
<td>Reviewing all information assets within the organization and trying to take advantage of them.</td>
</tr>
<tr>
<td>2</td>
<td>Poor organizational performance as a result of the difficulty of reaching the necessary information required</td>
<td>The establishment of an information system that allows organizing the information in the manner which facilitates the search for the required information when needed.</td>
</tr>
<tr>
<td>3</td>
<td>Lack of interest to support the continuous and self-learning necessary to improve the knowledge management system.</td>
<td>Providing a way to access the necessary information at any time without regarding to geographic location where the staffs exist.</td>
</tr>
<tr>
<td>4</td>
<td>Inability to co-innovation in order to achieve best practices in business processes.</td>
<td>A reference can be consulted to include innovative practices related to the quality of the industry, which could work with.</td>
</tr>
<tr>
<td>5</td>
<td>The difficulty of remote management and reviewing of the available stock of units of production for marketing from different locations.</td>
<td>Improving methods of working with the database of the organization inventory, as well as improving compatibility between the data and some of them, and get the information results to be provided to customers with respect to the quantities of the product available in stock</td>
</tr>
<tr>
<td>6</td>
<td>Lack of interest in identifying marketing opportunities resulting from the changing business environment, and to achieve a competitive advantage through it.</td>
<td>Improving workers access methods to the information required for the organization that may lead to reduce time and increase customer satisfaction.</td>
</tr>
</tbody>
</table>
Acknowledgement

This research project would not have been possible without the support of many people. The author wishes to express her gratitude to all the people who support her in order to accomplish the research, and all those who contributed to the emergence of this work properly. And wishes for all success and prosperity.

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