

# **The Integration of Knowledge Management into the Lebanese Graphic Design Business Sector**

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*(Received on Nov. 2017, accepted on Feb. 2018)*

**Abstract.** Despite the continuous research on knowledge management processes and the wide spread of knowledge management concept, knowledge management is not applied in many of the Lebanese graphic design companies. Thus, the aim of this research is to provide an analysis of knowledge management processes and to propose practical implications on how the application of knowledge management processes can improve the Lebanese graphic design business sector. The scientific literature analysis concerned with knowledge management processes along with the survey carried, reveal that the absence of the application of knowledge management might have negative consequences on the Lebanese graphic design business sector.

**Keywords:** knowledge management, organization, evaluation, performance, knowledge management processes, graphic design.

## **1. Introduction**

Many research works related to knowledge management have been carried in the south Mediterranean region, but none have handled knowledge management application in the Lebanese graphic design business sector. Knowledge in organizations is highly stressed by researchers as an essential asset for maintaining a competitive advantage and as a unique success factor for the survival of businesses in the knowledge economy (Fang et al. 2014; Lee, Wong 2015; Palvalin et al. 2015; Kavusan et al. 2016; White, Cicmil 2016; Roper et al. 2017).

The present market is full of intense competition and organizations need to have a deep knowledge in their work processes in order to gain competitive advantage. The knowledge era imposes on businesses to sustain their competitive advantage through a continuous research for information that will distinguish their products and services from their rivals. Also, if business owners and managers are expected to invest in knowledge management, the only reason that will motivate them to do so is the expected outcomes from their investment. Thus, the purpose of this research is to provide an analysis of knowledge management processes including knowledge development, knowledge acquisition, knowledge distribution, and knowledge preservation and to show how they can provide productive suggestions for the Lebanese graphic design companies. For reaching this such methods as, comparative analysis, literature analysis, survey and descriptive statistics analysis was employed.

### **Knowledge management concept**

No wonder that the world's economy is referred to as a knowledge economy, where the intellectual capital of organizations is the real fortune they possess. The global focus has changed its compass direction towards new ideas; realizing the value of the human mind capabilities and trying to discover and invent methods to detect, acquire, share, store, and refine knowledge. Knowledge management has received a lot of researcher's attention due to its strong relation with organizational performance (Liao 2011; Lin et al. 2014; Calvo-Mora et al. 2016; Inkinen 2016; Lim et al. 2017; Wahda 2017). Knowledge is an intangible resource and has become the solution to success for organizations. Therefore, managing knowledge has become the primary concern of researchers. Scientists and business practitioners have defined knowledge management in various ways, among the recent definitions "Knowledge management is the activity of generating, processing, and storing knowledge within knowledge bases (Feng et al. 2017). The definition by itself sheds light on a continuous process that ends with storing knowledge for current and future use.

Through time, many organizations have shut down because they didn't have

the knowledge on how to cope with the new market competitive pressures. The fatal mistake that these organizations have committed can be summarized in not applying knowledge management. Therefore, it's essential for organizations to have an in-depth understanding of knowledge management, and to directly imbed knowledge management processes in all of their organizational functions.

Knowledge management in businesses has moved from managing the current information and from creating information systems to trying to acquire the knowledge of employees to create new knowledge and inventions in order to improve organizational learning and productivity (Känsäkoski 2017). The organizational shift of managing the present information towards acquiring the knowledge possessed by employees increases the organizational performance from many aspects; such as, enhancing creativity, decreasing training costs, and fostering a knowledge sharing culture. Table 1 provides various definitions of researchers in recent literature.

Table1. Definitions of knowledge management (created by author)

Author(s) year	Knowledge management (KM) definitions
(Svetlik, Stavrou-Costea 2007)	Knowledge management is a about delivering the right knowledge to the right people at the right time.
(Spender 2008)	Knowledge management is concerned with recognizing the business' knowledge assets, gathering and preserving them, improving them through scientific management methods, and finally delivering the results to the appropriate place in the organization where they
(Lopez-nicolas, Meroño-cerdán 2009)	Knowledge Management is linked to the processes of generation, organization, dissemination, and utilization of the organization's knowledge.
(Mowery 2010)	Knowledge management is the management of processes affecting the creation, sharing, and application of knowledge related to organizational strategy, marketplaces, innovation capability within the
(Cantner 2011)	Km aims to make best use of the organization's knowledge assets and to renew them continuously.
(Andreeva, Kianto 2012)	Knowledge management refers to detecting, sharing, and applying the collective knowledge in an organization to assist in sustaining a competitive

(Alegre <i>et al.</i> 2013)	Knowledge management consists of the processes of acquiring, storing, and implementing the collective knowledge in an organization to enhance its
(Lin 2014)	KM is a vital and a continuous process, effectually and scientifically handling organizational knowledge to ease the advancement of organizational performance.
(Luo, Lee 2015)	KM helps in formulating an enhanced organizational strategy, maintaining a competitive advantage, creating information systems, make a better use of information technology.
(Chu 2016)	KM is the systematic process of gathering, organizing, and communicating the knowledge inside the organization in order to have an improved workforce.

If we look at the various definitions given by scientists, we notice the way they emphasize the role of knowledge management in improving organizational performance. Also, scientists stress the important role of knowledge management in assisting organizations to sustain a competitive advantage. Therefore, knowledge management is an essential asset that has to be applied by organizations in order to be able to identify, acquire, implement, share, and store the knowledge within the organization.

**Knowledge management processes**

“Knowledge management processes can be defined as all the activities inside or outside the organization’s environment that are directed towards knowledge, as it involves knowledge creation, detection, sharing, implementation, storage, and refinement” (Matar 2016). In this research work will focus on four knowledge management processes consisting of: knowledge development, knowledge acquisition, knowledge distribution, and knowledge preservation. To help make a better understanding of knowledge management processes table 2 provides an illustration of various researchers’ point of view for KMP.

Table2. Different researchers’ point of view of knowledge management processes (Matar 2016)

Author(s), year	Knowledge management processes
Wee, Chua 2013	Knowledge creation, knowledge sharing and knowledge reuse.

Wang, Yang 2013	Identify knowledge, capture knowledge, share knowledge, and apply knowledge.
Sa´nchez <i>et al.</i> 2014	Knowledge acquisition, transfer, and utilization.
Calvo-Mora <i>et al.</i> 2015	Create, store, transfer and apply knowledge.
Carriona <i>et al.</i> 2015	Absorptive capacity, knowledge transfer and knowledge application.
Asma, Abdellatif 2016	Acquisition, capitalization, diffusion and utilization of knowledge.
Sousa, Loureiro 2016	Creation, organization, storage and reutilization.
Allal-Chérif <i>et al.</i> 2016	Identifying, formalizing, organizing, storing and disseminating knowledge.
Cerchione <i>et al.</i> 2016	Knowledge creation, storage, transfer/sharing, and application.
Cerchione, Esposito 2016	Knowledge creation, storage, sharing.

Knowledge management processes refer to the way organizations handle knowledge. Knowledge management processes work as a cycle and each process contributes to the other. Organizations should know to how to apply each process, and to implement the supporting activities needed for each process. The four knowledge management processes composed of knowledge development, knowledge acquisition, knowledge distribution, and knowledge preservation will be handled below suggesting how they can be implemented in the graphic design business sector.

Knowledge development is the process of knowledge creation in organizations (Bhatt 2000). The literature concerned with knowledge development emphasizes that organizations should focus on their workers as the most important source of knowledge generation (Lucas 2010; Li *et al.* 2012; Erickson, Rothberg 2013; Conchado *et al.* 2015; Kamuriwo *et al.* 2017). Therefore, graphic design companies should understand the various forms of knowledge that can exist; and thus, to be able to differentiate between these forms in order to better exploit the knowledge of their designers.

Nonaka and Takeuchi (1995) classified knowledge as explicit and tacit. The explicit form can be found in documents, databases. This form of knowledge can

be communicated and articulated easily in organizations. The tacit knowledge cannot be easily communicated through a medium like the explicit knowledge. This type of knowledge is mainly found in personal experience, and the only way to acquire this type of knowledge is through personal contact such as mentoring. It's considered the main source of the competitive advantage of the organization. For instance, a graphic designer has his own tacit knowledge that makes him more creative in his designs, and the only way to copy his style is to observe the way he designs. According to Nonaka and Takeuchi two dimensions of tacit knowledge exists:

1. The technical dimension: It includes the know-how, personnel skills, and crafts.
2. The cognitive dimension. It includes the values, beliefs, and mental models which are deeply embedded in persons (Qiu et al. 2012).

Knowledge in graphic design can be also divided into tacit and explicit. The designers' explicit knowledge can be captured through verbal communication, but the designers' tacit knowledge cannot be easily transformed, unless the designer is motivated by his company to share what is found in his mind (Rusly et al. 2015).

Fu et al. (2006) have spoken about 4 types of knowledge that an organization should possess when thinking of a product design: market knowledge, human knowledge, technology knowledge, and procedural knowledge.

Those four types of knowledge are adapted to designers as following:

- Market knowledge is the knowledge relating with the market where the company operates, it includes customers, suppliers, competitors, etc. It's essential for e designers to have a deep understanding of what satisfies their customers in order to overcome their competitors. Designers should have meetings with their customers, read topics that related to their field, and to know the software and techniques used by their competitors in the graphic design industry.
- Human knowledge is the knowledge embedded in peoples, such as

capabilities, know-how, inventiveness, etc. Every designer possesses a human knowledge that his coworkers can make use of. Human knowledge is very essential because it is the main building stones of creativity and innovation. Designers should be motivated to share their tacit knowledge so it's transferred from individual tacit knowledge to become group explicit knowledge. Each designer should watch the way his coworker works and try to acquire the footage steps used by other designers and make it as built-in capabilities.

- Technology knowledge is the technological literacy of the employee. Technological literacy is considered on the main competitive advantage of the organization; especially if the organization has patents and inventions under its name. The more the designer has technological literacy, the more he will be able to deliver faster designs. Continuous training on new design software in this case is a must.
- Procedural knowledge is the knowledge and the experience of performing a certain task from its beginning to the end. The more the designer is knowledgeable in performing tasks, the more the organization will achieve economies of scale (Yuan Fu et al. 2006).

The human knowledge is tacit where the technology knowledge, market knowledge and procedural knowledge are explicit. Moreover, Nonaka and Takeuchi (1995) view knowledge creation as a “spiraling process of interactions between explicit and tacit knowledge”. The interaction of the explicit and tacit forms results in new knowledge.

Nonaka and Takeuchi's famous SECI model (socialization, externalization, combination, and internalization) can be adapted to graphic designers as following:

1. Socialization: the tacit knowledge of the designer will be transferred through social contact by the means of conversations, experience sharing, and training among other designers.
2. Externalization: In this process the tacit knowledge of the designer is

transformed into explicit knowledge. Since it's difficult to transform the tacit knowledge of designers, the use of visual aids methods should be applied.

3. **Combination:** In this mode present explicit knowledge of the designer is combined with other external or internal explicit knowledge, systemized to form a new complex knowledge. Graphic design companies should focus on communication as a mean to transfer such type of knowledge
4. **Internalization:** in this mode the explicit knowledge is transferred into tacit knowledge. Other designer's explicit knowledge (free-lancers for example) can be transferred to tacit knowledge for the graphic designer's company. This process can be achieved through learning by doing, and applying tracking software that can record and maintain video footage which can show the process and resources used.

### **Knowledge acquisition**

Most of the research work done on knowledge acquisition has stressed its importance in enhancing the organization's innovation capability (Cusumano et al. 2008; Kavusan et al. 2016; Martin-Rios, Erhardt 2016; Kao et al. 2017; Roper et al. 2017). Knowledge acquisition is a process that consists of a range of techniques for acquiring information from internal and external sources of the organization. Therefore, organizations that are willing to acquire knowledge should know well the sources of their information. Moreover, most of the literature in knowledge acquisition handles two categories of external knowledge. The first category includes customers, suppliers, competitors, and industrial data on advances. The second category includes organizations outside the industry like research laboratory, academies, and consultants etc.

Graphic design companies are more likely to acquire information from its customers, and information about technological advances from the industry. In addition, the graphic design work is mainly technical and depends on the know-how of the designer. Gareth et al. (2016) have discussed process mapping as ineffective tool for knowledge acquisition. Process mapping can be applied in



graphic design work to capture the knowledge of the designer since it is concentrated on making an understanding of business processes, and to obtain knowledge resources that are difficult to acquire. It also captures knowledge about processes that might be gone if employees quit the organization. Interviewing designers is an effective tool in process mapping in order to capture their tacit knowledge. Two personnel usually conduct the interview; one to interview the “process owner” and another to map the process. Process mapping is very essential in knowledge acquisition because it allows acquiring the knowledge that exists in people and processes (White, Cicmil 2016).

### **Knowledge distribution**

Knowledge sharing refers to a behavior where individuals inside of the organization share, ideas, experience, skills, and knowledge to others (Zhang et al. 2017). Organizations that encourage and motivate knowledge sharing inside of their organizations are able to maintain their competitive advantage more than their rivals. Therefore, motivating employees to exchange their knowledge is very fundamental for organizations. Also, organizations should investigate what motivates more their employees to share their knowledge, such as financial incentives or in-kind incentives. Knowledge sharing makes designers adopt to work in teams. When two designers interact and share their knowledge, many of the psychological barriers will be broken. Furthermore, the organization would not have a high dependency over the employee, because all what is it known and possessed by him will be shared inside of the organization. Graphic design companies can apply the following knowledge distribution activities:

- Organizing seminars that are given by senior designers to new designers
- Watching on weekly basis one-hour video of footage in the design field they are less competent in.
- Organizing workshops where new designers can learn new design techniques

### **Knowledge preservation**

As mentioned previously, knowledge is the most valuable asset that an

organization has, and just like any asset it should be preserved for current and future use. Moreover, many organizations have shut down because some key employees have left. Graphic design companies can face the same destiny if they don't plan well. For instance, some customers may be accustomed to certain employee who is fast at delivering projects; if this employee leaves the company, some customers may follow him. Thus, the company will lose a key employee and some of its customers. Graphic design companies can apply the following knowledge preservation activities:

- Conducting entry and exit interviews
- After action reviews
- Job shadowing
- organizing meetings for companies' retirees
- Mentoring programs
- Creating a knowledge repository

To summarize Table 3 provides knowledge management processes with supporting activities that should be applied:

Table3. Knowledge management processes applied in graphic design and supporting activities (created by author)

<i>Knowledge management processes</i>	<i>Supporting activities</i>
<i>Knowledge development</i>	Identifying the required knowledge internal or external, and the type of the knowledge explicit or tacit. Transforming tacit knowledge of the designer to explicit knowledge. Suggesting new ideas and systematically creating new
<i>Knowledge acquisition</i>	Locating the needed knowledge. Acquiring the needed knowledge from outside or inside from company' designers. Applying methods to acquire the needed knowledge such as process mapping.

<i>Knowledge distribution</i>	Organizing seminars that are given by senior designers to new designers. Watching on weekly basis one-hour video of footage in the design field they are less competent in. Organizing workshops where new designers can learn new design techniques.
<i>Knowledge preservation</i>	Conducting entry and exit interviews. After action reviews. Job shadowing. Organizing meetings for company's retirees. Mentoring programs. Creating a knowledge repository.

In conclusion, Knowledge management processes work as a cycle in organizations, and each one of these processes contribute to the other. Graphic design companies should identify knowledge by asking where is the knowledge required to perform the task. Then, to acquire it from the person who is responsible for this knowledge, and to share it with the right people that will use this knowledge. Finally, companies should know how and where to save this knowledge.

## **2. Knowledge management implementation problem: The Lebanese graphic design business sector**

A survey was carried on November 25, 2017. The survey samples size of 50 companies of Lebanese graphic design companies of the population composed of 150 with a confidence level of 90 percent, confidence interval 10. It included 14 questions that were aimed at testing the awareness of the designers about knowledge management, the implementation of knowledge management in their organization, the organizational behavior towards knowledge sharing, the designers willingness to share information, learning methods preferred by the designer, the designers' preference for sources of knowledge, organizational trust, motivational incentives preferred by the designer, knowledge sharing barriers, the tendency of the organization to outsource knowledge, and organizational tendency to preserve and give access to knowledge.

The survey sample included 50 designers working in different graphic design

companies in Beirut city and who are experts in the field of graphic design. The purpose of the survey is to gather information about the implementation of knowledge management in their organizations. Due to the difficulty of arranging appointments with the designers in their companies, the survey was designed through Google forms and the electronic link of the survey was sent to designers' emails.

The following is a summary of the statistics explaining the results of the survey:

- 66% of the respondents said they never heard of the term knowledge management, while only 5% said yes indicating previous knowledge and 24 % said that they might have heard of the concept. The findings show that the majority of the respondents have no knowledge management orientation.
- 100 % of the respondents saying no when asked about the availability of a knowledge management department. The respondents indicate a clear absence of the application of knowledge management throughout a knowledge management department.
- 90% percent of the respondents said no with only 10% said yes about their organization compensating a knowledge sharing behavior. The results show that knowledge sharing process is not encouraged through compensation.
- 72% of the respondent said that they are not willing to train another employee, and 28% said that they will. Employees tendency not to train others employees impedes knowledge creation, as it in literature knowledge creation occurs as process of socialization.
- 66% of the respondents said that they were motivated through financial incentives while 34% said they were motivated through in-kind-incentives. The findings indicate that organizations should focus more on financial incentives in order to encourage their designers to create and share knowledge throughout the organization.
- 40.8% percent of the respondents said that they don't like to exchange

their knowledge with coworkers due to job security reasons, while 34.7% consider it as additional work and 24.5% refuse for personal preference. The results indicate that knowledge hoarding is due to the fact that designers fear to lose their job, consider it as additional work, and some for personal preference.

- 58% said that they don't trust their organization while only 42% said that they do.
- 38% of the respondents said that they will perform better if they don't have to go back to their supervisors, while 32% said no and 30% said that it doesn't make a difference. Organizations should provide some autonomy for their designers, as it proves to increase their productivity.
- 75.5 % said that culture is a barrier for knowledge transfer while 24.5 said that it's due to infrastructure. The result indicates that designers consider culture as a knowledge sharing barrier; and thus, organizations should invest in creating a knowledge sharing culture.
- 52% of the respondents prefer personal methods while 48% prefer technological methods.
- 70% of the respondents said that they rely on mixture of sources when they seek knowledge, while 24% rely on external sources and 6% rely on internal sources.
- 60% of the respondents said yes when asked about their organizations hiring freelancers, while 40% said no. The results indicate that organizations are incurring additional expenses for their reliance on external knowledge of the freelance designers.
- By pure luck 50% if the respondents said yes about being demotivated when their organizations hire freelancers and 50% of the respondents said no.
- 62% of the respondents said that their organizations don't preserve knowledge, while only 10 % said yes and 28% of the respondents have

limited access.

The survey reveals that there is an absence of orientation and awareness about knowledge management concept with a 66% of the respondents unaware of the concept. There is a clear lack of the application of knowledge management with (100%) of the respondents saying that they don't have a knowledge management department at their organization. The unwillingness level of the employees to share their knowledge is very high with a 72% of the respondents not willing to share their knowledge. Knowledge sharing is not encouraged due to the fact that 90% of organizations don't compensate a knowledge sharing behavior. Also, knowledge development is highly affected by the fact that 40.8% don't exchange their knowledge due to the fear of losing their job and 58% of the respondents don't trust their organization, and only 28% of the respondents have limited access to their organization database. Also, sixty percent (60%) of Graphic design companies hire freelancers, and fifty percent (50%) of designers are demotivated due to this fact. Moreover, the tendency of designers to acquire knowledge from a mixture of sources with a (72%) is considered a good indicator for knowledge acquisition process; since employees rely on internal and external sources for acquiring information. As for knowledge preservation, it's evident with a percentage of 62% that the majority of the Lebanese graphic design companies don't preserve knowledge in their organization. Thus, knowledge management is not applied in the Lebanese graphic design companies of the respondents. The absence of a knowledge repository indicates that those Lebanese graphic design companies don't retain knowledge; that in turn is used for future knowledge creation and sharing.

Practical implications for the implementation of knowledge management processes into the Lebanese graphic design business sector based on the survey:

Knowledge creation practical implications

- It's necessary for the Lebanese graphic design companies to establish a knowledge management department that will foster the knowledge creation process, as it's linked to the increased creativity of the designers

(Balestrin et al. 2008).

- It necessary for managers of graphic design to have an understanding of the role of knowledge creation in enhancing flexibility and performance of their organization (Mihi Ramírez et al. 2012)
- It's essential to transform the designers' tacit knowledge into explicit knowledge, as this process is considered one of the key knowledge management practices required for successful business (Lindblom, Tikkanen 2010).
- It's necessary to apply knowledge creation techniques such formal and informal meetings, project teams, external interaction between designers working within the same company or outside in order to capture the knowledge that originates through the process of socialization (Spraggon, Bodolica 2008).
- Since graphic design process is extremely technical and heavily relies on tacit knowledge, companies should encourage knowledge creation by the mean of: direct shadowing with colleagues, applying tracking software that can record and maintain video footage which can show the process and resources used, and management can request periodical reports detailing performance- related criteria.

Knowledge acquisition practical implications

- It's necessary for the Lebanese graphic design companies to locate and acquire the needed knowledge from internal and external sources of the organization such as the human knowledge, market knowledge, procedural knowledge, and technological knowledge.
- It's necessary to apply knowledge acquisition techniques such as conducting interviews, and process mapping.
- It's necessary to apply more advanced information technologies such as software that can record the footage steps of the designer during the design process in order to capture his procedural knowledge.

#### Knowledge sharing implications

- Graphic design companies should build a knowledge sharing culture, as it significantly increases the resources of the company and reduces the time spent into the design process (Lin 2007).
- It's significant to transfer the precise knowledge needed to the designer.
- Information technology should be applied and mainly the usage of visual aids to demonstrate graphic design related work in the field designers are less competent in, as in literature the right employment of IT can accelerate knowledge-sharing capabilities (Mohamed et al. 2006).
- It's necessary that the human resource managers compensate a knowledge sharing behavior through financial incentives and in-kind ones, as it proves to motivate a knowledge sharing behavior (Smale 2008).
- It's necessary to organize workshops inside the organization and to attend workshops of other organizations.

#### Knowledge preservation implications

- It's necessary to establish an organizational repository to retain knowledge inside of the Lebanese graphic design companies especially that the majority of designers surveyed indicated that their organizations don't preserve knowledge.
- It's necessary to conduct entry and exit interviews with designers in order to retain the maximum possible knowledge inside the company (Coffey, Hoffman 2003).
- It's essential for graphic design companies to conduct knowledge retention activities such as after-action reviews, Job shadowing, and organizing meetings for companies' retirees, as the company face the risks of losing knowledge in a world of layoffs, retirements, staff turnover (Caroline Martins, Meyer 2012).

### **3. Conclusion**

Knowledge management concentrates on people inside of the organization who



are considered to be the creators of knowledge and the main essential contributors to knowledge generation. The Lebanese graphic design companies should apply knowledge management, and continuously evaluate knowledge management processes in their organizations in order to increase their performance.

The Lebanese graphic design companies should identify and acquire all the necessary knowledge for their organization, and apply knowledge management techniques to improve the knowledge management cycle.

The analysis of the statistics from the survey conducted on the Lebanese graphic design companies reveals that there is a lack of knowledge management implementation; and clearly shows from the results the absence of the implementation of knowledge management processes. The practical implementation should be taken into consideration if the Lebanese graphic design companies are willing to make a return from their future investment in knowledge management.

Further research will be carried on improving employee creativity via knowledge management processes in the Lebanese graphic design business sector.

As for any research, readers should consider this research work within the context of limitation, mainly pertaining to the survey database that could barely be reached by the Lebanese graphic designers.

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