

GSJ: Volume 12, Issue 8, August 2024, Online: ISSN 2320-9186

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## **Pitfalls of knowledge management during organizational change management and suggested solutions**

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**Abstract.** It is evident that organizations that apply knowledge management framework get benefit of the data and information required on any occasion while making sure that all elements including accountabilities, processes, technologies and governance are performing accurately. During a change in the organizational process, project, service or any other factor may result in disturbing the knowledge management framework. And once the change is managed, there are high chances that interrelationship of information might affect and do not provide appropriate results when is retrieved on different occasions. Our studies highlights the possible pitfalls faced by knowledge management framework while managing a change and proposed an extended framework to manage any change in organization. This research paper conducts a secondary research and a primary research to get the opinion of professionals while they face issues in managing KM framework during change management. This research proposed an integrated framework to be applied to manage change under KM framework so that pitfalls of KM might be reduced during an organizational change.

**Keywords:** *KM framework, Pitfalls, change management, Interrelationship, KM elements*

## 1. Introduction

Knowledge management framework can be applied to any organization regardless of its size and economic worth. But it is very important to understand the difference between data, information and knowledge. It is a step by step process to understand the difference between data, information and knowledge. Data is the first instance that becomes and information and then transformed to knowledge where data is the observations, recorded facts or any other techniques to gather it. Information is the combination of different data or we can say that different kinds of data records combined together to provide a meaning full information. Where knowledge is a deep insight with all of contextual meaning for all information provided. So, it is a simple approach that data and information can be stored easily even though the entities are interrelated but when it comes to knowledge management, things might get broader where all elements of knowledge management framework including people, processes, contents and strategies are explicitly and implicitly involved (Rowley, 1999).

Organizations have to recognize the KM framework components at least the most basic ones. The first component of KM framework is to know what is needed. The identification of possible needs and requirements is one of the most important components and it is the beginning of KM framework implementation. Once, the organization understand the identification of needs, the next steps is to recognize and identify the resources of knowledge from where the organizations may get the knowledge. The third component of KM framework is to attain, create or eliminated (if required) the knowledge related resources. These might not only be the resources but processes and environments as well. The next step is to understand how to retrieve the knowledge in such a way that all contextual information should also be included and the last one is the storage methodology (Demarest, 1997).

Even though, by addressing the basic components of knowledge management, this might create really a complex model because of closely related and dependent disciplines because of wide range of processes and systems. Whenever an organization choose to manage the KM framework, there are three questions that must be answered and it is very important to implement the KM framework appropriately to get the optimized results when required. The first question for KM framework implementation is what type of knowledge is required and how it should be displayed. In this question, the informational context must be recognized with the relevant stakeholders under specific privileges. The next question of implementing KM framework is to know why such kind of knowledge is required. It is the important query to know before displaying any kind of information to any of the organizational stakeholders. It is also obvious to retrieve the relevant knowledge and information on a specific timeline. There are many situations in organizations when the information shouldn't be provided after some deadlines (Davenport & Grover, 2001).

Change management is one of the crucial tasks in the organizations and many corporate level organizations follow change management services and standards provided by different certified organizations. In general, there are five major steps of change management. The first step is to get the organization prepared for change either this is a project, process, strategy or product base change. This is the crucial phase in which the management starts preparing the employees and other stakeholders for the understanding of the importance of current change and making up their minds. Some changes might include financial deviations and time delays that might not get successful because of the sponsors' interest. So, it is the important time when a change should be recognized by each stakeholder and each of either external of internal stakeholders might be prepared for this. The second step is to plan the change and this change must be addressed to the strategic goals and objectives, performance indicators, stakeholders and team members as well as the project scope. Once the change plan is finalized, now this is the time to implement the change and in order to implement the change, all steps should be followed that are outlined for implementation must be followed regardless of the type of change. The change types might be the company's structure, systems, strategies, processes, culture, employees' behavior or any other type. The most important and difficult step is to embed the change into the culture of the organization and change manager should be very specific and professional to let the culture adopt the change. It is not just the final step to implement the change but also to review the progress and analyze the results is also one of the major tasks to make sure that the change is implemented successfully (Change, 2014).

The need raises of an appropriate method to manage a change especially for those organizations who already applied knowledge management framework and a change is going to happen because it is a complex situation when all the entities of knowledge management framework may receive the relevant information during the change. There is a high risk during the implementation of a change management service that some of the information may not get processed or stored in a way that is compatible to the knowledge management framework. So, we can say that there are possible pitfalls for KM framework during a change and it is essential to design a process, procedure or a framework that help to support the change management services of any type.

## 2. Background

There are many organizations in the world that are practicing knowledge management but if we look back, this strategy is not much adopted and most of the organizations were not appropriately aware of the benefits of knowledge management just a couple of decades ago even though, the term knowledge management official came into reality in 1990s. The main purpose of this term is to refer a multi-disciplined approach in order to receive the strategic and organizational objectives and goals by making the best use of knowledge and this term was first used by Peter Drucker who was also called knowledge expert. We know that not for decades but for centuries, the human quest for understanding and gaining knowledge of any type has been the basic behavior and wherever we have reached till now in the field of technology, this is because of the knowledge. Even the boom of Information Technology finally revolve around getting all types of knowledge and to use it effectively. Capturing different situational information and knowledge, keeping it stored and getting it retrieved on demand has always been a useful techniques for the organizations to get benefit.

Even till now, there are not much recognitions in the field of Knowledge Management and no significant notions used by different researchers or experts and there is no generation notion accepted so far. But overall, the KM utilizes explicit knowledge using technical approaches and the main focus of KM systems is the knowledge acquired by people, computer based information and knowledge. In order to get this knowledge, different tools and technologies including operating systems, emailing portals, software systems, online system, databases, web servers and application servers are utilized. However, the information, settled in an appropriate framework where all elements and components of KM framework are connected is the main asset of Knowledge management. So, we can say that there is a systematic management of knowledge that is really helpful and it is possible now to differentiate different competitive factors for individuals, corporations as well as for nations (Wiig, 1997).

Knowledge management helps to achieve the realities from different complex situations and connected information alive in such a way that all enterprise' activity areas must be covered. If we dig deeper, KM also helps to support in getting information in more complex situations when management decides to systematically integrate and manage the importance of knowledge management related activities and each enterprise wishes to be the unique and tries to manage knowledge when managing it is a legion. There are other complex situations when customized approaches are to be formed so that the enterprise might achieve the best applicable solutions. After all this complexities, KM has reached to a sophisticated model where it offers applicable elements with all interrelated components generalized for any organization. KM experts have to focus on specific areas to manage the information in such a way that is providing body of knowledge as per the standards maintained by KM framework (Scardamalia & Bereiter, 2010).

## 3. Problem Statement

There are little number of organizations especially in UAE who applied KM framework to manage valuable assets related to knowledge and the framework results are precise and the system is working fine. But if a change happen in any of the process of organization, There are not suitable procedures to adopt the change in such a way that implemented knowledge management framework may remain smooth as previous because when a change happen in organization, it has its own procedures to follow that are not pre-defined in KM framework. So, there are high chances that might come into a dangerous situations that its implementation may not result appropriately after the change is implemented. There is no such an integrated framework available to align both in such a way that KM framework effectiveness remains the same during and after change.

### 3.1. Aims and Objectives of the Research

#### 3.1.1. General Objectives

In order to proceed this research, it is required to conduct a secondary research to understand the Knowledge Management framework and interrelationship amongst entities involved. This is also required to understand how different types of changes were handled by different organizations to have enough idea about change management services. After appropriate understanding of both terminologies, it is required to know the credibility of KM implementation to organizations and it is also a valuable review to know how changes have been managed so far in some of the organizations who implemented KM framework and what possible issues and problems have been faced by them.

### 3.1.2. Specific Objectives

- The first objective of this research is to review the situations how organizations tried to manage the change effectively and what pitfalls are to be faced by implemented KM framework during and after the change.
- The second objective is to conduct a primary research to deeply understand the issues found in managing an organizational change and keeping KM framework processes and procedure aligned with the change management service by taking the opinion of KM professionals working locally.
- The third and final objective of this research is to propose an integrated model to align KM framework processes and procedures with the organizational change management of any type.

## 4. Literature Review

This is the section where we are going to conduct a secondary research by reviewing different journals to the related topics. Our topics are related to knowledge management as well as the change management and in this section, we are going to produce a rigorous information for the reader to understand both of the technologies and a relationship between them and how our topic is previously researched with what possible outcomes.

### 4.1. KM Framework

As we discussed in the previous sections, KM framework has four main elements and in which people, process, content and technologies are involved. The given picture shows the relationship between these elements. Throughout these elements, it is essential to provide a continuous improvement with flexibility and knowledge driven learning and improvement. And there is another aspect to maintain during KM processes to be committed to leadership as well as to promote the culture of knowledge seeking and exchange as well (Eppler & Burkhard, 2007).



Figure 1: Knowledge Management Framework

#### 4.1.1. Culture

Organizations who try to implement knowledge management framework encourage to seek and share knowledge. This is the most critical area to gain the success in any KM program if implemented to any organization and here is the dependencies of behavior for all types of entities including people and other stakeholders of the organization. It is not an appropriate approach to believe that different Information technology based tools will only help to make an effective KM program implementation (Rai, 2011).

#### 4.1.2. Continuous Improvement

The emphasis of any KM program is to make sure that there is a continuous knowledge gaining process and there is an appropriate improvement in each of the processes and procedures because of the application of KM program and there are innovations in businesses as well found. It is essential that KM program implementation may help to evolve the provided changing demands of the businesses and organizational objectives in such a way that internal and external influential forces may get appropriate knowledge sharing possibilities. If this happens in a sophisticated way may be the pointing factor that the progress towards organizational maturity is happening and in continuous improvement (Beckett et al., 2000).



Figure 2: KM Program (cont. improvement)

#### 4.1.3. People

No doubt that people are the most important factor of any KM program and it is much essential for all the individuals who are internally or externally involved in the organization must accept the KM behaviors of seeking and sharing knowledge and information effectively. Company cultures must be adopted by the KM program elements aligned with the people’s mental approach and organizational environment should reflect that people are following KM functional areas in a sophisticated manner. People must be provided specific privileges including different possibilities and levels to interact with knowledge management program to make sure that all the information is added to the KM program (Parikh, 2001).

#### 4.1.4. Business Process

There are critical and different business processes that should be monitored in such a way that all data and information must be captured appropriately and no doubt that it is a critical step to capture the knowledge integrated with different business processes. However, KM program is one of the best ways to support any business program including infrastructure, measurement, change management and governance in order to review the potential improvements in businesses. Suppose that if any small or medium business organization is selected and there is a requirement of a process to be ensured and remained relevant to the changing needs of the organization, then KM program might be very helpful for such situation. If there are governance based processes, then we can say that critical decision making might be very helpful through KM program implementation and different business goals and objectives might be aligned with the requirements of governance process changing needs (Mahmoodzadeh et al., 2009).

#### 4.1.5. Content

It is very tactical approach to understand the content for any business to implement a KM program. It is required to know what content is required for a specific business process, role or any other procedure for the KM program. To know about content life cycle is the primary goal during implementation of KM program implementation and it is also essential to know who created this content. The people, organizations or any other stakeholders might need the content and KM program requires to know this information with full context. The procedures of accessing the content is also required by the KM program. The categorization of the content in different context, tools and technologies, search and retrieval process, captured information formats and approaches and consistency of the content details are the key factors required for KM program implementation (Zhao, 2010).

#### **4.1.6. Technology**

No doubt that technology is one of the consideration focused by KM program implementation but it is not the prime consideration for selecting the strategy and approaches because most of the technologies are providing general procedures of data mining, data analytics, queries management as well as the retrieval and storage procedures. However, these are the rules and regulations defined, specified and designed by KM programs to implement how the selected tools and technologies will behave to create, process, store and retrieve knowledge in KM program specifications. These tools and technologies might be including the team sites, networking packages and other social networks to facilitate the KM program. In order to bridge the gap between tools, technologies and people who are going to benefit from the KM program, training sessions are normally introduced to use the technologies effectively so that there should not be any misconception related to the benefits of using technologies as well as all stakeholders should not feel it a burden (Misra et al., 2003).

### **4.2. A Framework for Change**

Change management is a sophisticated process and more or less there are more than six processes to follow in order to complete the change management service in any organization. The change might be on any type and different types may vary one or two processes to be merged with others depending upon the type of change but overall process remains the same.

#### **4.2.1. Define Change Initiatives**

The first and foremost important step is to define the change initiatives. Here is the time when it is required to analyze the organizational tracks carefully and it is a useful point to define the roles and key responsibilities of all players who are going to be involved in change directly or indirectly either they are change strategists or implementers. They might be the recipients of the change. Change strategists are the key people, individuals or factors who are responsible for the initial type of work where they require to identify the need of change and also creating an appropriate vision of the desired outcome of the change. It is also their job to decide what change is suitably feasible till what level and who is going to sponsor it or who is going to defend it. Their main role is to support of overall process of change by any means. As long as the change recipients are concerned, these are the people who are going to adapt to the required change and this might be the largest group of the organization. The change initiative must be credible enough for all types of audiences who are targeted otherwise, there is no further step to follow and the change is just dead from the beginning (Kuipers et al., 2014).

#### **4.2.2. Evaluate Climate for Change**

Here is the time to review the climate for change that is going to be implemented and this is the time for strategists and implementers to understand explicitly as well as implicitly how the organization is functioning currently and what are the environments the organization is facing. SWOT analysis is very helpful in this stage to know the current overall climate of the organization. In fact, such information will be supportive to understand scenarios and to develop alternatives that might support the proposed change of any type. It will also be helpful for designing an attractive and fool proof implementation plan for change management. so, in other words, we can say that this is the analysis time when the environment can be analyzed either feasible enough for upcoming change or not (Cameron & Green, 2019).

#### **4.2.3. Develop and implement a Change Plan**

Once the climate is appropriately evaluated for a change, this is the time to craft the implementation plan for the change management. Here is the time to specify the goals and objectives of the change and there must be clearly defined roles and responsibilities for strategists, recipients and implementers at this stage of planning. The process of change during this planning phase must specify the content of the change, procedures to follow, information required to be processes (retrieved, stored, formatted etc..) and optimized approach. The plan should be provided in simple and flexible way that all of its relevant stakeholders should understand it without any issue (O'Donovan, 2008).

#### 4.2.4. Let the Culture Accept the Change

It is very important that all the change management procedures adopted during the implementation of change management must become the root of the available environment of the organization and it should be merged into it in such a way that should provide relevant and renewed culture. It is one of the prominent errors if the change does not get involved and merged in an organization in such a way that it does not become the culture of the organization. The change model provided to the organization should be implemented in such a concrete manner that it should seem the rooted part of the organizational functions (O'Donovan, 2008).

### 5. Methodology

Being very less professionals available in the market of UAE, it was hard to conduct a survey to find out how KM framework is implemented and till what extend the change is also managed when there is an implementation of KM framework. In this regard, it is recommended to conduct the interview from a professional who has enough experience in UAE and other countries. He is Mr. Rupert Lescott, the director of Knowledge Management in PwC Middle East Consulting firm. He has worked with many public organizations in UAE to implement KM framework and he has also been the part of Slack (a Messaging software company) to implement KM framework. By reviewing many other options, it was considered the best way to get the opinion from an expert about current issues faced by organizations. The questions asked during interview, only an expert with extensive experience can answer. An on call interview was conducted and the interview questions were pre-designed so that not to get distracted during the interview.

#### 5.1. Interview

Questions	Answers
What organizations like to get implemented the KM framework?	As long as UAE's atmosphere is concerned, private organizations and SME are not much concerned to get KM framework implemented because of less information about it. So far, three public sector organizations have got it implemented and two private corporate sectors.
The organizations who got KM framework implementation, are they satisfied of their decisions?	In fact, there were situations one of them faced while they were required to receive previous data in order to validate some current information but they were unable to do so because of insufficient KM procedures. It has been more than a couple of years that KM framework is implemented and whatever the knowledge they inquire from their system, it is available easily.
Any of those organizations went through the change management process after they implemented KM framework? If yes, what kind of change they implemented	One of those organizations went through the change management process where they were required to restructure all of their running systems to integrate in one system. This restructure was complex enough that all organizational structure, entities identification process and many other relevant information needed to be restored.
During the change management, do you believe that implemented KM framework helped the organizations to immediately get the knowledge required by the latest implementation of change? If yes, till what extent? If no, then how KM framework can help otherwise.	As I mentioned earlier, in fact, restructuring of entities and that kind of information can be managed by KM easily because this is the main job of KM framework to keep the information of all previous and latest entities with complete relevance so that the information should never be lost. The problem came when they tried to integrate the information from previously designed systems to a new Integrated system, even though the information was all available. A six month data migration contract was given to an external IS contractor to retrieve the information from previously managed systems and to transfer to new system so that the linkage to previous systems should be disconnected in order to achieve optimized results.

<p>Is there any complete procedure to manage any kind of change that no issues should be faced by running KM framework and the framework should automatically be updated?</p>	<p>We can say that to some extent, there are possible changes that can be considered no harm to the currently implemented KM framework generally if these changes are happening during or after implementation of any type of project. But if a change is going to restructure everything from design or from planning phase of any type of project, product (rebranding, marketing etc..), there would be the issues in previously managed KM framework and the organization may need an expert to be called to revise KM framework so that it provides the best of its services.</p>
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## 5.2. Analysis

After a review of the answers given by the KM expert, it was found that there are not much organizations that know the benefits of KM program implementation. I believe that most of the organizations who applied KM program were government departments and because of no issues in funding as well as to be keen in applying the best international practices, these organizations didn't hesitate to let KM program implemented. In fact, there are many situations that if a change happens in organization, KM framework is helpful and supports the change management services and also it helps to retrieve and update the data and information before and after the change. KM program also keeps itself updated so that it helps the organization in future to extract the knowledge of any kind, of any date and for any type without any issue. But what I found that this mechanism does not apply to all types of changes. If there are minor changes where the overall structure of the organization remains the same but there are intermediate changes to support the organizational objective to enhance its performance. But if there are major changes that really change the organization to a notable extent might put the KM program into trouble. During a major change, the available KM program might help the change management services to provide any kind of information, but KM program itself may become out dated or obsoleted and there might be a requirement of completely new KM program to be implemented to support the current structure derived after a mega change. This might bring a situation that previously managed knowledge may not be available to the organization easily. So, here it can be concluded that there must be an integrated framework with KM program and change management services that may support any kind of change and there is no data loss.

## 6. Integrated KM and Change Management Framework

Integrated KM and change management framework provides the solution in mutual communication method adoption in which the flow of information and data is bi-directional throughout the change process. It introduces a way that each of the elements of KM program are updated through data analytics layer that provides a comprehensive data mined to a data mining block through change management service. Figure 3 provides the flow of information throughout the process.



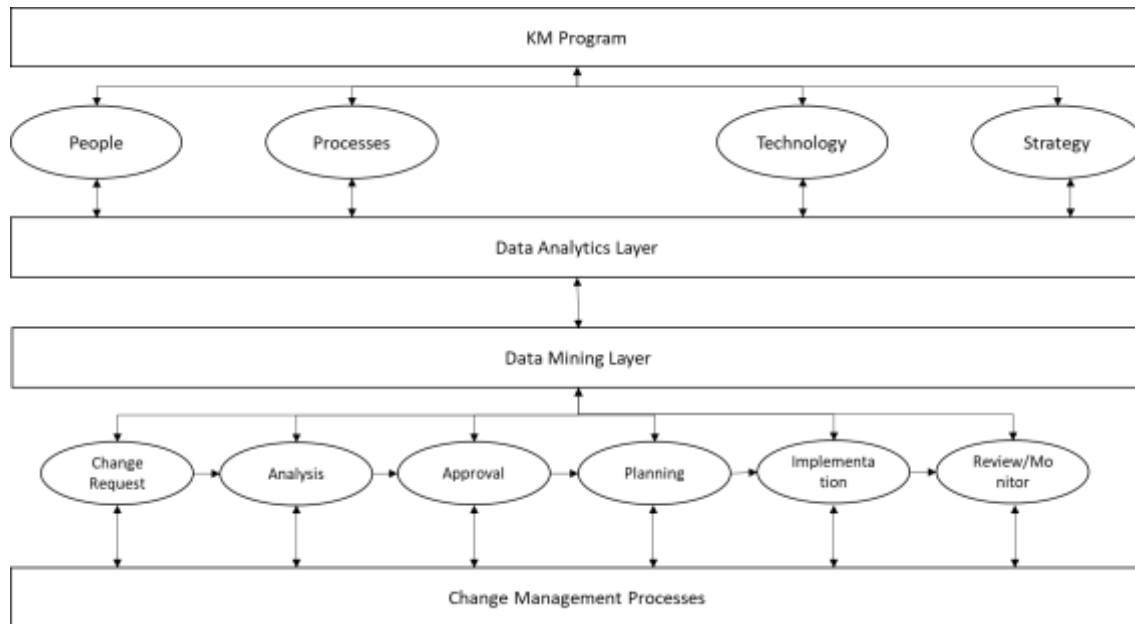


Figure 3: Integrated KM and Change Management Framework

In this process, if any of change request is going to happen, overall system will be updated that information will flow to data mining layer and this information will also be updated through KM program if there is a need of knowledge. Change request details will also be updated throughout the elements of KM program via data analytics layer. Both data analytics and data mining layers are the combination of AI based excellent tools that understands complete information with its contextual background. So, it is obviously proven that no knowledge management elements will miss any data if required to be maintained. The process is bidirectional in which knowledge is traveling on both sides of the data analytics and data mining layers to maintain all the procedures and processes aligned. For example, a knowledge kept stored in data mining layer can be available on demand to any of the KM components after a filtration process through data analytics layer. If any of the information previously available with KM components and required during any of the process of change, it will again be analyzed through so to be stored appropriately in the system and then available to change management process immediately. So, this Integrated framework is supportive for any kind of change either it starts from the planning stage of a project change or from the implementation phase. Regardless of the volume of the change, the knowledge will be managed precisely.

## 7. Conclusions

It is concluded that KM framework itself is a comprehensive technology to manage the all types of data, information in such a way that any contextual knowledge is also available to any of the stakeholders of an organization where required precisely, timely and with completely demandable format. KM framework also supports the change management services somehow but there are situations where KM framework cannot support and might be bulked with the information that does not mean valuable to the organization during change management services. So, in this situation, the requirements of proposing an integrated solution by implementing the AI based latest technologies and tools might help to the organizations for a better KM program implementation. Organizations who really tend to manage their knowledge for all kinds in all situations are the main target for such an integrated framework.

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