Knowledge Management Dilemma at Airbus

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Abstract
In today's knowledge-based economies, exploitation of the existing knowledge in an organization and resulting creation of new knowledge has become vital. This journey of Knowledge Management (KM), however, doesn't come without impediments and hardships. The presented study focuses on one such situation arising in Airbus, the world's leading aircraft manufacturer. This qualitative research reveals that the implementation of KM practices in large organizations can be a challenge in management of change. Although, Airbus developed a very expensive and specially developed ICT-based platform for knowledge sharing and exploitation, its use could not reach the desired levels. This study analyzes this situation in light of the culture, structure, and economic condition of Airbus and presents some recommendations for a smooth implementation of the KM system.
Keywords: Knowledge Management, Airbus, KM Practices

This case study reports the change management issues, the Filton plant of Airbus in Bristol faced, during the implementation of its newly built Knowledge Management (KM) system. The study was conducted in August 2007. This was the time when the company was going through crises due to the delivery delays of its latest innovation, the giant A380 passenger aircraft. This case analyzes the implications of this crisis and other cultural issues contributing towards creating some resistance against the KM system implementation in the Filton plant of Airbus in Bristol.

Knowledge Management at Airbus

Knowledge Management (KM) efforts in Airbus started in 1996 when MOKA (Methodology of Knowledge Acquisition) was launched with the intention of acquiring useful engineering knowledge. Later, KBE (Knowledge Based Engineering) started in 2001. KM in those days was an integral part of the KBE department. In 2004, efforts of the KM staff won the confidence of the top management and as a part of a reformation program called Route 6, budget was allocated to form a separate KM department. The KM tools RISE and Yellow Pages were launched in the beginning. RISE (Reuse, Improve and Share Experience) is a 'Lessons Learnt' database and Yellow Pages contain contacts of all Airbus employees throughout Europe with their brief introductions and expertise.

The role of a KM department at Airbus is that of a facilitator. The operational centers of the organization like Engineering, R&D and Finance are considered to be the owners of their knowledge. The KM department helps them elaborate their knowledge strategy and diagnose their knowledge needs. The KM department also ensures the efficient use of the available tools of knowledge sharing and dissemination and provides innovation management methods. Figure 1 shows the flow of activities performed to diagnose the M needs of an operational center and prescribe a solution. This entire process at Airbus is called the Knowledge Management Overall Diagnosis (KMOD).

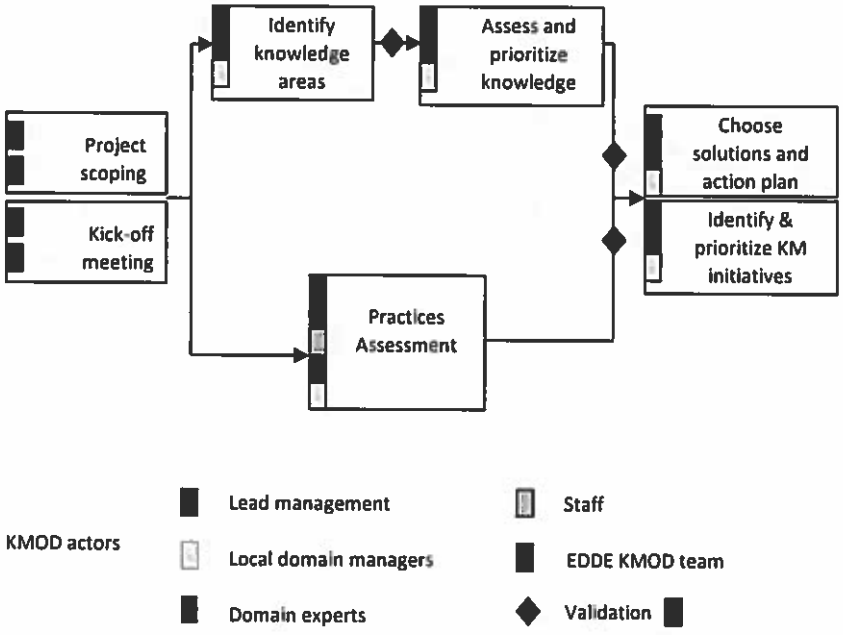

Figure 1: The KMOD Process
Source: Airbus S.A.S (2005)

The KMOD process is run by the Engineering KM team (EDDE). It includes the identification, assessment and prioritization of knowledge areas running parallel to the assessment of suitable practices for a particular department or operational center. The steps of identification and assessment of knowledge areas and suitable KM practices are performed under the supervision of a domain expert. A domain expert is a person having expert level knowledge in the related discipline. The lead management and the local domain managers are also considered to be the critical players in pursuing these practices once started, and are therefore an essential part of the entire process. Each step either ensures the presence of the respective representatives from the lead management or gets the decisions validated by them. Once the

knowledge needs of the department or operational center are determined, the knowledge solution is devised, the action plan is prepared and the KM initiatives are prioritized. The result of this process is a knowledge map showing the criticality levels of different knowledge areas and an action plan suggesting different actions to effectively fulfil the knowledge need of the operational center. With the help of this process in different departments the KM force at Airbus is facilitating the management of relevant knowledge through a series of different KM tools. A brief description of these tools is given below in order to help understand the work dynamics needed to overcome the resistance against their implementation.

1- ExTra

ExTra stands for Expertise Transfer and is a program aimed at obtaining, codifying, and making available for use the knowledge of employees before they leave the company. Some of the actions taken through ExTra are:

- Writing lessons learnt
- Structuring an overlapping period
- Contributing to a Book of Knowledge (BoK)
- Conducting a training module
- Organizing conferences
- Setting-up a series of meetings
- Managing a forum including FAQ

By using these methods, Airbus aims to preserve and make the most of the experience and knowledge of the employees leaving the company.

2- Yellow Pages

Yellow pages accessible through the intranet portal of Airbus enable a user to find the contact details, current roles, past experience and other relevant information about a colleague. The yellow pages at Airbus are praiseworthy for their comprehensiveness but with an unsupportive culture and lack of user feedback and measuring standards, whether improvement is needed and what improvements to make are difficult to determine.

3- Communities of Practice (Professional Networks)

Communities of Practice are groups of people having common interests. These communities are commonly known as professional networks at Airbus and are differentiated according to their size, i.e., the number of contributing members. The usefulness of these networks is measured by the frequency of meetings and contacts between the members. In this context, three scenarios are defined (Airbus S.A.S, 2005):

SCENARIO S: 8 experts meet once a month for a two-hour lunch to keep in contact,

SCENARIO M: 50 material engineers from F, D, UK and E meet twice a year to exchange the latest findings. In between, they share emails and interesting documents in eRoom,

SCENARIO XXL: 3000 CATIA V5 (a product development software tool) users communicate in a lively web space on the Airbus web portal with newsletters, forums, FAQ, Yellow Pages, work spaces and web events to help each other.

These networks are supported by the KM team in terms of consultation, coaching and training for the people in building their own CoP and taking it along its life cycle. It is believed in Airbus that the KM team does not itself form a CoP, rather it encourages its formation and facilitates its growth and smooth working.

4- RISE: Reuse Improve and Share Experience

RISE is a 'lessons learnt (LL)', 'best practices' and 'design rationale' data base accessible through the Airbus intranet portal. RISE offers a set of solutions for sharing and reusing lessons learnt. Airbus believes (Airbus S.A.S, 2005) that a proper use of RISE could avoid at least 5% of rework modifications.

5- KCP: Knowledge Capturing and Publishing

KCP helps Airbus employees keep up to date on best practices in doing a certain task in various parts of the organization. Employees are encouraged to continuously update and upgrade the best practice database commonly known as a Knowledge Book.

6- Business Search

Business search is a knowledge management platform which provides a single sign-on (SSO) one click access to the numerous internal and external sources of diverse data. The size of Airbus and its transnational nature of work have caused its knowledge repositories to be of various different types and architecture. Business search combines all of them through a single search engine. It translates the syntax of the business search into the syntax required by the database it is linking to and vice versa. Business search reduces the searching time considerably and makes all of the knowledge available throughout Airbus facilities around Europe.

Effectiveness of KM Tools and Resistance to Change

The knowledge management system at Airbus has been designed to draw benefit from and return benefit to the intellectual capital it possesses in the form of the huge workforce and its decades long innovative history. It has developed and used most of the tools and techniques available in the research literature or in practice in other organizations. Its intranet portal contains enormous information

databases that are available to its employees in the form of applications like RISE and KCP repositories. Experience and expertise of its employees are fully exposed to each other in the presence of yellow pages. The Airbus transnational KM team EDDE and local individual KM departments are fully equipped to help its employees form and successfully run communities of practice for the creation and exploitation of knowledge. The drainage of useful knowledge caused by retirement and resignation has been minimized through the expertise transfer program called ExTra. The European aircraft industry is, hence, aware of the need for creation, dissemination and exploitation of the organizational knowledge and is fully equipped with the necessary tools in order to continuously innovate on its own knowledge to remain in the market. Airbus has immense knowledge management capability, but are the enablers all in place and do the employees have the will to make use of this capability is a question, however, that needs to be answered.

Despite the presence of all these computer databases and portals, their use was not found up to the satisfactory level. The response from the interviewees, when asked about the culture and KM implementation, clearly showed a discomfort about the resistance from the employees against the use and implementation of the KM tools made available by them. There appeared to be both internal and external factors contributing towards the resistance against using the KM tools. Following could be a few of them.

The Structural Dynamics

Airbus has a typical matrix structure, with several layers of management, in which every individual is controlled by two managers. One is the functional manager and the other is the operational manager, with specific programs in between. The operational side controls all the program management activities, and possesses all the resources, while the functional side facilitates the determination of and compliance with the strategy. Responsibilities are not equally divided between these two sides in terms of managing the individual and the proportion of management control over individuals is also prone to variation, depending on the stage of the project or the program. However, the annual performance report is usually completed by the functional manager. The functional manager is also considered to be more supportive and helpful in pursuing the KM activities, but since the budget resides with the operational managers, decisions are usually taken by them. These functional and operational positions of managers are not confined within a national boundary. There are cases where the functional manager is based in Toulouse while the operational manager is in Bristol. This was particularly true for the coordinator taking care of the KM activities related to Airbus A380.

The Cultural Dynamics

The setup of administrative and design offices at the Filton plant of Airbus indicate a very open and cooperative culture. The offices have an open layout with partitioned half-walled cubicles for different groups in a big hall instead of separate rooms. Most of the KM members sit in the same partition with the head of the KM team sharing the space with them. The communication within and out of these cubicles around the hall is open and informal and regular queries about different formal and informal matters continuously get exchanged. The interviews revealed that the KM department team members had clearly-defined responsibilities and no one member completely knew about the expertise of their colleagues which indicated a focus on individual specializations.

In the beginning, the KM team decides to target only engineering department and the finance & administration for the implementation of KM practices. The finance and administration department is viewed by the KM team as having a culture of cooperation, sharing and flexibility. They are perceived to welcome new ideas which can help them improve their work. The culture of engineering on the other hand is viewed as somewhat rigid and inflexible. Although the engineering people are more open to new ideas, their mindsets are the most difficult to change as they question everything before accepting these new ideas as part of their work. This attribute of the engineering department is believed to be due to the emphasis on safety needs in their workplace. To ensure the safety of the aircraft, no change in the established design and manufacturing practices is made unless fully tested and authenticated and this psychology extends to their ground level working style.

With regard to the implementation and working of the KM tools, the KM team believes that although the top management supports these efforts, middle management does not appear committed to the KM system and does not believe in the usefulness of these tools. On the shop floor, the workers are observed to be bound by strict production schedules. Due to the limited time availability, feedback from the knowledge users is sparse and hence the measurement of performance, benefits and shortcomings of the tools and improvements required is very difficult. Furthermore, no component of the incentive system was found to be directed towards motivating the workers for using the KM system.

The Economical Dynamics

As already pointed out, at the time of the study, Airbus was going through a tough period due to delays in order deliveries of A380 aircrafts. These crises triggered the process of downsizing and outsourcing most of the manufacturing tasks. With this anticipated reduction in manpower, a program named as Power 8, and the expected takeover of the management of the manufacturing part of the company by a large manufacturing competitor, retention of the organizational knowledge acquired even more importance and became an essential part

of the business strategy of Airbus. The ExTra program is an example of a knowledge retention initiative taken by Airbus. ExTra stands for Expertise Transfer, a program dealing with the capturing of knowledge of the employees leaving the job or retiring. Due to the job insecurities of workers and financial issues, this program became a big challenge for the KM department.