Building Effective Knowledge Management Practices in Global Supply Chains

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Summary: Our research aims to develop a framework that will enable an organization to implement, measure and monitor knowledge management practice in its centralized order processing center. In addition, our research tends to find how to retain, enhance and use knowledge for decision making. Given the nature and complexity of knowledge, these solutions are designed to suit the organizational objectives, culture and circumstances. Findings in this thesis work can act as a basis to design and develop knowledge management practices required in firms managing global supply chains.

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KEY INSIGHT

- Knowledge management practices can be effectively deployed in a shared services environment.
- An application framework with integrated tools fulfill the knowledge flow improvement needs throughout the knowledge lifecycle.

Introduction

Global trading center (GTC) is a shared services organization within SmartChem. GTC is bestowed with the responsibilities of processing all orders received by SmartChem globally. SmartChem has fourteen product lines and global trading center processes orders globally for ten product lines. The ten product lines are segregated into three clusters, each cluster has two to three business units, and each business unit has four to eight sub-business units. The complexity in GTC operations arises from the fact that each sub-business unit might be providing its products in more than one country. A single product can have multiple customers and multiple suppliers. A large number of possible permutations for each product flow creates the complex information flow or order processing flow.

The GTC creates a focal point to connect suppliers all around the globe to all Asian countries. The GTC handles intra-company purchase orders and hence acts as a virtual trading organization providing a high degree of control over import or export supply chain activities for regional business units. Another reason for the existence of GTC shared services is the tax advantage for the organization. GTC deals with business process transaction whereby all documents and invoice will be consolidated and distributed directly from suppliers to customers.

The current practice of knowledge management at GTC is fragmented. GTC has process documents but the flow of knowledge is poor with high knowledge erosion. There have been some initiatives to resolve this issue, for example folder clean-up, folder taxonomy, and training needs analysis. However, these initiatives are uncoordinated and therefore ineffective.

Research Objective

SmartChem is increasing its focus on Asia Pacific region and has made significant investments in its capacity and operations in the region. As part of SmartChem initiatives for import-export operations across Asia Pacific, the company is implementing an import-export order management service and desires to leverage knowledge management practices, tools and frameworks to enable it to develop, retain and apply organizational knowledge to gain strategic advantage. Earlier, the global import-export order management practice in SmartChem was centralized at one country; but soon after winding up of its operations in that country, the entire order management practice including large data repositories, knowledge banks and staff were relocated to another country. SmartChem now faces the challenge to manage the vast existing process knowledge and streamline the import-export order management from new location.

Knowledge management practice requires a framework. This framework can be structured upon many broad elements and sub-elements, such as Process, Compliance, Technology and People. SmartChem has sufficient process documents and believes Knowledge Management is not about process documentation. Key factors promoting the need of knowledge management practice at SmartChem are identified as high attrition due to repetitive nature of job, relatively new team, complex and dynamic operations, constant reactive approach to problem solving, and tactical way of working. In this context, we raise the following research questions in the process of building effective knowledge management practice in SmartChem global supply chain,

- How is knowledge management done in organizations, especially in the context of shared services center for a large multinational organization?
- What knowledge management framework be designed in this context?
- What should be the elements and sub-elements in the structure of the aforesaid framework?
- Are there one-time measures and periodic measures for knowledge management health check?

Literature Review

Originally developed by Ikujiro Nonaka in 1990s, SECI (socialization, externalization, combination, internalization) model of knowledge dimensions is a model of knowledge creation that explains how tacit and explicit knowledge are converted into organizational knowledge. The model emphasizes four ways of knowledge conversion:

1. Tacit to Tacit (Socialization): A person-to-person interaction to share experiential knowledge, like mentorship, brainstorming, etc.

2. Tacit to Explicit (Externalization): Use of tools and techniques like diagrams, images etc. to express tacit knowledge in order to 'crystallize' it, thereby enabling its sharing.

3. Explicit to Explicit (Combination): Accumulation and processing of existing and new explicit knowledge in the form of repositories and databases for further dissemination.

4. Explicit to Tacit (Internalization): A process of learning by doing. It involves garnering insights of the process and pattern recognition.

Nonaka (1995) claims that knowledge creation follows the four sequential steps in an organization and then returns to step one to build on itself, thereby creating a "spiral" of organizational knowledge creation.

Methodology

Our study is based on the qualitative data collected through multi-stage semi-structured interviews, job shadowing, brainstorming sessions, training documents review, panel discussions, and meetings. A top-down/bottom-up approach (Paul A. Sabatier, 1986) was followed in collecting data from the SmartChem Global Trading Centre team. Figure 1 summarizes our approach. We began by understanding the business objectives from the functional head, the challenges from the cluster leads, the tactical operations from the team leads, and the business processes from order managers. Simultaneous verification of response patterns was done in interviews with order managers and team leads. The collected data was summarized and analyzed to identify appropriate integrated knowledge management tools. A framework was then defined by arranging the identified tools in a matrix. The last phase of the research included the knowledge management action plan for tool deployment. Each integrated tool was customized and a deployment road map was proposed.

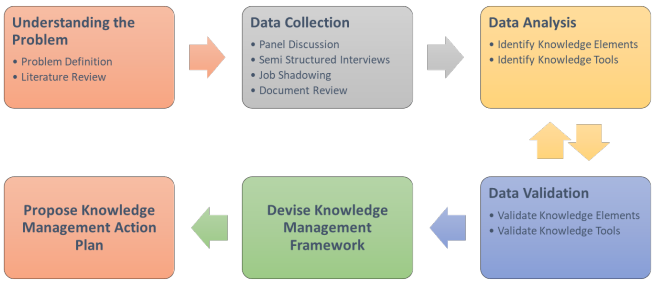

Figure 1 – Research Methodology

Personnel were selected for interviews based on the need to create a comprehensive understanding of order management process and to assess the scope of the GTC operations. Personnel across all managerial levels were selected to ensure effectiveness of the qualitative data collected through the interview or job shadowing technique.

GTC Head (GH1) Ten Product Lines							
Cluster Head (CH1) Four Product Lines		Cluster Head (CH2) Three Product Lines			Cluster Head (CH3) Three Product Lines		
Team Lead (TL1) Two product Lines	Team Lead (TL2) Two Product Lines	Team Lead (TL3) One Product Lines	Team Lead (TL4) One Product Lines	Team Lead (TL5) One Product Lines	Team Lead (TL6) One Product Lines	Team Lead (TL7) One Product Lines	Team Lead (TL8) One Product Lines
Order Manager (OM01)	Order Manager (OM06)	Order Manager (OM11)	Order Manager (OM14)	Order Manager (OM18)	Order Manager (OM21)	Order Manager (OM24)	Order Manager (OM27)
Order Manager (OM02)	Order Manager (OM07)	Order Manager (OM12)	Order Manager (OM15)	Order Manager (OM19)	Order Manager (OM22)	Order Manager (OM25)	Order Manager (OM28)
Order Manager (OM03)	Order Manager (OM08)	Order Manager (OM13)	Order Manager (OM16)	Order Manager (OM20)	Order Manager (OM23)	Order Manager (OM26)	Order Manager (OM29)
Order Manager (OM04)	Order Manager (OM09)		Order Manager (OM17)				Order Manager (OM30)
Order Manager (OM05)	Order Manager (OM10)						

Interviewed
Job-Shadowed/Interviewed

Figure 2 – Order Manager Selection

Various qualitative data collection methods such as panel discussions, semi-structured interviews, and job-shadowing were employed after selection of personnel for interaction. The responses received during the interactions were further analyzed and grouped as either a statement of work routine or an observation. Selected summary statements produced an exclusive element or elements of knowledge and sixty-one such knowledge elements were found from the summary of interactions to form the master list of knowledge elements. Knowledge elements were segregated into subgroups and groups, and classified based on onboarding and daily routine. . The three broad groups of information technology, compliance and business were part of each category, and every identified issue was common to all three groups within a category and a lifecycle stage. The identified issues encompassed the training needs, training structure, efficiency improvement initiatives, data traceability, standard operating procedures, reward and recognition system, and knowledge management key performance indices.

Results

Knowledge management practice is a tool which integrates create, store, transfer, apply and measure stages of the knowledge lifecycle in onboarding or daily routine categories. Each integrated tool aims to function across all three broad groups, namely information technology, compliance and business. Industry proven knowledge management practices or integrated tools are therefore adopted to customize between the onboarding and daily routine categories, and between resource-to-resource (RR) and resource-to-repository-to-resource (RRR) communication channels. Five integrated tools, namely knowledge management core group, knowledge repository, communities of practice, learning path, and peer mentoring are identified for deployment among the two categories and communication channels. Each integrated tool is customized for its fit in global trading center by defining implementation strategy and identifying appropriate applications. Below we discuss each knowledge management tool.

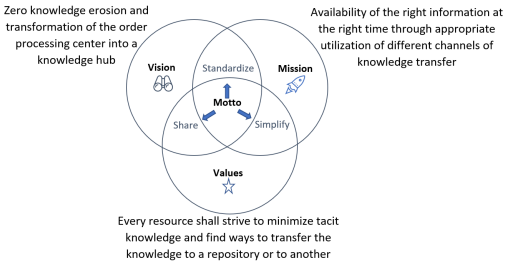

Figure 3 – KM Organizational Statements

Figure 4 – KM Application Framework

Conclusion

The SmartChem framework proposes integrated tools, a five-stage knowledge lifecycle, a comprehensive view of onboarding new employees and systematic management of knowledge from daily routine activities. The present research will propel the present disintegrated tools-based knowledge management era in shared services to a framework based organized

management of knowledge. The present research will address concerns related to high employee turnover, uninformed management decisions, and inefficient onboarding.

Limitations and future work

In the present study, SmartChem has a higher proportion of explicit knowledge and relatively lower proportion of tacit knowledge because the order processing work has a lot of statutory needs. While deploying the SmartChem framework in other shared services platforms, the proportion of explicit vs tacit knowledge plays a key role in limiting the applicability of the tactical knowledge management framework realized in SmartChem research. This needs to be explored further.

The present research can be extended to actual field validation of the proposed integrated tools in a shared services environment. In course of implementation of the proposed tools for validation, new innovative tools or advancement of old tools can be considered. As an extension of the SmartChem research, recently introduced innovative tools such as machine learning and Big Data can be explored for utilization as knowledge management integrated tool.

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