

***EXAMINING KNOWLEDGE ASSETS:  
REENGINEERING THE MAINTENANCE WORK  
REQUEST/ORDER SYSTEM AT A GREEK OIL  
REFINERY AS AN ILLUSTRATION***

**Theme:** Strategy, Competitiveness and Learning

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## **Abstract**

This paper presents work-in-progress in the field of knowledge management processes and particularly knowledge creation and knowledge assets. The objective of the research is to understand how a project-based organization creates knowledge and to identify the emerging issues connected to the organizational knowledge creation and retention during a Business Process Reengineering (BPR) project, which has as a fundamental principle the obliteration of existing processes. More specifically, the research focuses on the knowledge assets of the Work Request/Work Order system of a maintenance organization. This exploratory study adopts a case study approach and takes an interpretative stance. The qualitative data collected are analysed through the lens of Nonaka's (1991, 1994; Nonaka et al. 2001) Unified Model of Organizational Knowledge Creation.

Key words:

Knowledge creation, knowledge assets, BPR, interpretive case study

## ***Introduction***

The emergence of knowledge management in the 1990s resulted in the enrichment of the literature with a variety of concepts, such as the knowledge society and knowledge workers (Drucker 1993), knowledge strategy (Earl 1994, 2001; Zack 1999, Hansen et al. 1999), knowledge management processes (Nonaka 1994, 1995, 1998; Inkpen 1996; Inkpen and Dinur 1998), knowledge assets (Teece 1998; Boisot 1998; Nonaka et al. 2000), knowledge stickiness (Szulanski 1996), communities of practice (Brown and Duguid 1991,1998), intellectual capital (Nahapiet and Goshal 1998), knowledge markets (Davenport and Prusak 1998) and absorptive capacity (Cohen and Levinthal, 1990) are only a few of them. Despite the arguments that knowledge management is another management fashion (Scarbrough & Swan 2001; Galliers & Newell 2001), all this research has its foundations on the work of previous authors who drew attention to the importance of context-specific knowledge (Hayek 1945), argued about the tacitness of knowledge (Polanyi 1946, 1957, 1983), explained how organizations learn and unlearn (Hedberg 1981), dealt with the issues of knowledge production and distribution (Machlup 1962, 1980, 1982), and presented a view of the firm as a repository of knowledge (Penrose 1959; Nelson and Winter 1982; Winter 1988).

The introduction of Nonaka's (1991, 1994) Dynamic Theory of Organizational Knowledge Creation, with its central theme that organizational knowledge is created through a continuous dialogue between tacit and explicit knowledge, was also a milestone in the field of knowledge management. His theory adopted a constructionist perspective (reality is socially constructed) and Plato's definition of knowledge as "Justified True Belief". Nonaka shifted the focus of attention of how economic and organizational theorists view knowledge. Until then knowledge was treated as the means for profit maximization and control respectively by economic and management theorists (e.g., Hayek 1945, Winter 1988, Nelson and Winter 1982). Nonaka's theory has initiated much discussion and has attracted a variety of comments. For example, it has been criticized for being too abstract and for providing limited help to management practitioners, due in part to the issue of measurement (Garvin 1993). However, the two recent expansions of the theory of organizational knowledge creation, specifically, the concepts of "Ba" (Nonaka, 1998), as the place of knowledge creation, and knowledge assets (Nonaka et al. 2000), as inputs and outputs in the knowledge

creation process - have moved us a few steps towards bridging this perceived gap. In the Unified Model of Dynamic Knowledge Creation, the socialization, combination, externalisation and internalisation (SECI) process, 'Ba' and knowledge assets, interact with each other organically and dynamically, to bring about incremental organizational change.

The exploratory study introduced in this paper aims at providing better understanding of how a maintenance organization, which is a typical project-based organization, creates knowledge and examines the knowledge assets of this process. The research attempts to fill a gap in the literature, which has as yet provided only a few examples of knowledge creation processes and even fewer, if any, examples concerning knowledge assets. In addition, despite the fact that many authors argue about the importance of the organizational knowledge creation processes (e.g., Grover and Davenport 2001, Zack 1999), very little is known about the influence of radical intervention programs, such as BPR, on these processes. A review of the literature concerning IT-enabled innovation in its most radical form, namely BPR, reveals that the issue of knowledge creation is either neglected or connected with the issue of organizational learning, with very few exceptions in the literature (Robey et al. 1995, Coulson-Thomas 1996, Tsuchiya 1998).

### ***The Unified Model of Organizational Knowledge Creation: A process-based perspective for research***

The Unified Model of Organizational Knowledge Creation is the most recent extension of Nonaka's Dynamic Theory of Organizational Knowledge Creation (Nonaka 1991, 1994). The latter presents a model of the knowledge creation process and proposes a paradigm for managing its dynamic aspects. Its central theme is that organizational knowledge is created through a continuous dialogue between tacit and explicit knowledge, namely the SECI process. The second element of the model is the Japanese concept of 'Ba', which is a shared context or 'space' for knowledge creation (Nonaka 1998). The third element is the concept of knowledge assets, which are the inputs, outputs and moderators of the knowledge-creating process (Nonaka et al 2000, 2001). These three elements have to interact with each other organically and dynamically. The knowledge assets of a firm are mobilized and shared in Ba, where tacit knowledge held by individuals is converted and amplified by the spiral of knowledge in socialization, combination, externalisation and internalisation, the four modes of the SECI process (Nonaka et al 2001). Organizational knowledge creation, as distinct from individual knowledge creation, takes place when all four modes of the SECI process are organizationally managed to form a continual cycle. Organizational knowledge creation can be viewed as an upward spiral process, starting at the individual level moving up to the collective (group) level, and then to the organizational level, sometimes reaching out to the interorganizational level (Nonaka 1994). The model adopts a definition of knowledge as "justified true belief". Knowledge is created by the flow of information, anchored on the commitment and beliefs of its holder. The semantic aspects of information are also important in order to build the dynamic theory of knowledge creation. Individuals are the prime movers in the process of organizational knowledge creation and their commitment is of vital importance. There are three basic factors that induce individual commitment in an organizational setting: intention, autonomy and a certain level of environmental "fluctuation". The model of middle-up-down management is suitable for promoting the efficient creation in business organizations (Nonaka 1994).

A recognized distinction of knowledge management categorizes research into a process-based framework on the one hand and a market framework on the other, with different yet complementary fundamental assumptions (Grover and Davenport 2001). The former framework focuses on the knowledge process and the context in which this process is embedded (Nonaka 1994, 1995, 1998; Inkpen 1996; Inkpen and Dinur 1998). The market framework studies knowledge from a transactional perspective, where knowledge exchanges occur in a marketplace. (Davenport and Prusak 1998; Boisot 1998; Teece 1998). The Unified Model of Organizational Knowledge Creation (Nonaka et al. 2001) belongs to the process-based framework. This argument is justified in the first instance because the Model deals with one process of knowledge management, that is, organizational knowledge creation. Other knowledge management processes are knowledge transfer, storage/retrieval and application (Alavi and Leidner 2001) or acquisition, accumulation and exploitation respectively, according to Nonaka (Nonaka 1994). Second, knowledge is viewed from a process perspective in contrast to other perspectives such as a state-of-mind, an object, a condition of having access to information and a capability (Alavi and Leidner 2001). And third, the context in which the knowledge creation process is embedded influences the outcome by promoting or obstructing the “justification of the beliefs” that becomes knowledge.

Both the process-based framework and the market framework of knowledge management research have adopted similar notions such as the concept of Ba, as the place of knowledge creation (Nonaka 1998), and the concept of Information-Space, within which the creation and diffusion of knowledge can be understood (Boisot 1995, 1998). This highlights their complementary convergence. The concept of knowledge assets belongs to the aforementioned category of the concepts that have been used by both the process framework (Nonaka et al. 2000; Nonaka et al. 2001) and the market framework (Boisot 1998; Teece 1998; Bukowitz and Williams 1999; Glazer 1998).

Knowledge assets are the inputs and outputs in knowledge creation processes (Nonaka et al. 2000; Nonaka et al. 2001). From a market perspective, knowledge has started to be viewed as an asset in its own right and not only as an enhancement of other kinds of assets. Knowledge assets are economic assets in their own right, as well. Knowledge assets are stocks of knowledge from which services are expected to flow for a period of time that may be hard to specify in advance (Boisot 1998; Teece 1998). Knowledge assets are defined as “anything valued without physical dimensions that is embedded in people or derived from processes, systems and the culture associated with an organization – brands, individual knowledge, intellectual property, licenses, and forms of organizational knowledge (e.g. databases, process know-how, relationships)” (Bukowitz and Williams 1999).

The fact that the concept of knowledge assets has gained considerable attention in the literature, even amongst the diverse streams of knowledge management thought, and despite its recent appearance, gives weight to the argument that research efforts associated with it have significant potential.

### ***Examining BPR from a knowledge management perspective***

BPR was hailed as the latest breakthrough in programmed organizational change and change management (Newell et al., 2000) and has accounted for substantial revenues during the past decade (Davenport & Short 1990). The fundamental tenet of BPR is the organization of

activities around processes rather than functions that will generate radical benefits in operational effectiveness, customer satisfaction and cost reduction, resulting in competitive advantage (Davenport 1993, Hammer & Champy 1993, Harrison & Pratt 1993). Using Whittington's (1993) four schools of thought in the field of strategy, BPR may be categorized as being located in the classical school of strategic-management thinking, which aims at profit-maximization as a result of the development of a single and defined plan through a process of deliberate analysis (Galliers 1997). IT is considered as an important driver in the reengineering process (Davenport 1993). Advocates of BPR argue that its implementation involves a major departure from existing practices (obliteration of existing practices according to Hammer 1990), which categorizes BPR as perhaps the most radical form of organizational change.

BPR uses a variety of tools and techniques. Such tools and techniques include: Process Visualisation (Barrett 1994), Process Mapping (Cypress 1994) and Benchmarking (Harrison & Pratt 1993). BPR methodologies have been categorized by Valiris and Glykas (1999) into three categories of methodology: focusing on management accounting, information systems, and organization. However, most of above-mentioned methodologies adopt a black and white approach in the way they view knowledge. This consequently influences processes of knowledge creation in which issues such as knowledge tacitness and knowledge embeddedness are grey areas.

Recently, however, the principles and practices of BPR have been questioned and this is partially due to the increased cases of unsuccessful BPR initiatives reported by practitioners. Indeed, Davenport, one of BPR founders, has described it as "the fad that forgot people" (Davenport 1996). The following paragraphs attempt to highlight issues associated with BPR and its tendency to neglect knowledge and knowledge management processes. There is now increasing recognition in the literature of the limitations of BPR (Larsen & Myers, 1999), which involves many technical and organizational risks (Carr and Johansson 1995). The obliteration of existing processes ignores organizational knowledge and learning making the control of risks associated with BPR a key consideration (Galliers 1997). There are also numerous reported failures of BPR rooted in its narrow IT focus (Watts 1993; Chan and Land 1999, Chan 2000). In addition, the outcome of a BPR programme depends on factors that influence knowledge processes such as the innovative capacity of the organization and its autonomy (Teng, et al. 1998). Moreover, one basic reason for BPR failure reported in the literature is that process changes are limited to those supported by "best practices", which is a mere transfer of external knowledge and is usually built in to current ERP packages (Larsen and Myers 1999). A knowledge-focused perspective for the diffusion and adoption of complex information technologies, using the example of BPR, argues that technology suppliers commodify knowledge and present "packaged" solutions, which create problems to potential users who need to unpack this knowledge and integrate it to existing organizational knowledge (Newell et al. 2000). Furthermore, many applications of BPR are concerned with shorter term savings of time and cost with little priority being placed on enhancing the longer term learning which could be a sustainable source of competitive advantage (Coulson-Thomas 1996). There are examples of approaches that place reengineering within the context of learning (Robey et al. 1995) and suggestions that for successful business reengineering, organizations have to change their culture through double-loop learning (Tsuchiya 1998).

In addition, BPR is seen (Mumford 1994, 1995) as but the latest in a long line of management fads, impoverished in terms of socio-technical design both because it has a weaker theoretical

and methodological foundation, and because it de-emphasizes the value of the social system in favour of the technical system. Conversely, knowledge creation is a process based on the social system, which is supported by individuals and teams that play a key role in articulating and amplifying it.

Some argue that BPR favours the process of external knowledge transfer, as most of BPR methodologies suggest that an organization can learn through customer research, competitive analysis and benchmarking. In fact, the aforementioned elements are considered critical for the success of BPR efforts (Carr 1993). Benchmarking is seen as an effective technique by which organizations can learn from customers and competitors (Rastogi, 1994; Jackson, 1997; Harrison and Pratt, 1993; Zairi and Sinclair, 1995). In addition, it is believed that customers' requirements and expectations should be defined and measured for BPR (Hall et al., 1993; Jackson, 1997; Rastogi, 1994), whilst processes should be defined broadly in terms of customer value (Rastogi, 1994). Benchmarking allows learning from other organisations' experiences in BPR, as well as learning from one re-engineering process to another in the same organization (Caron et al. 1994). This is perhaps a reflection of what is called institutional isomorphism (Dimaggio et al. 1983) that suggests that organizational change is maintained primarily because companies want to be more like each other.

On the other hand, as far as the issue of knowledge within the organizations is concerned, the BPR literature has a tendency to limit its importance to training and educational programs. So, for example, many researchers consider training and education to be an important component of successful BPR implementation (Towers, 1994; Berrington and Oblich, 1995; Zairi and Sinclair, 1995; Worsley, 1994; Bashein et al., 1994; Clemmer, 1994; Cooper and Markus, 1995). BPR-related concepts, skills, and techniques (Cooper and Markus, 1995; Berrington and Oblich, 1995; Worsley, 1994) as well as interpersonal and IT skills (Towers, 1994), and process analysis techniques (Dixon et al., 1994), are seen as important dimensions of training for BPR. It is also important to educate people in IT-related innovations for competitive advantage, as IT has the potential to reshape the business and the leadership of empowered organisations according to Bruss and Roos (1993). Business managers, line managers, IS managers, and other staff in the front-line are the people who benefit most from education and training activities (Towers 1994), in both business and IT-related skills and expertise. In addition, any lack of understanding BPR and its requirements may well arise from inadequate training and education (Grover et al., 1995; Davenport, 1993). Training is also considered as the means to face resistance by those affected by BPR (Davenport 1993, Grover et al. 1995, Hall et al. 1993).

In conclusion, the literature reveals that BPR is a form of radical organizational change that favours the process of external knowledge transfer. The BPR literature limits the role of knowledge to training and educational programs, whilst the issue of organizational knowledge creation appears to be relatively neglected. In addition, evidence from BPR methodologies show that they de-emphasize the value of the social system in favour of the technical system and competitive advantage, thereby underestimating the foundations of the knowledge creation process.

### ***Investigative focus***

The concepts of knowledge, knowledge processes, knowledge creation and transfer, and knowledge assets as issues of concern to organizations are indicative of the value of deeper

investigative work that embraces these themes in a more holistic manner. A review of the literature reveals that our understanding of **‘how knowledge assets are created and utilized within a knowledge creation process’** appears rather underdeveloped and under-explored. This translates to the following research questions:

- a) How does a project-based organization create knowledge, according to Nonaka’s unified model of organizational knowledge creation?
- b) What are the knowledge assets of this knowledge creation process?
- c) What kind of factors influence these knowledge assets?
- d) How do BPR and external knowledge transfer influences this knowledge creation process?

Gaining a deeper understanding of knowledge assets creation and utilization is a primary aim of this research. The main objective is to identify the process of knowledge creation within the case study organization. This will be achieved by a thorough analysis of organizational, social and contextual conditions that influence knowledge creation and especially the knowledge assets of this process in the case study organization. An additional objective is to understand the phenomenon of knowledge creation in organizations during BPR projects. The research does not aim at providing particular suggestions about the nature of BPR, but at understanding the influence of radical innovation and the introduction of business processes on knowledge creation and knowledge assets. In so doing, the research aspires to contribute to the accumulation of rich insights (Orlikowski, 1991) in the field of knowledge creation, knowledge assets and the management of knowledge creation processes. As such, this empirical research adopts a process perspective on knowledge creation.

The exploratory study introduced in this paper attempts to cover a gap in the literature, which has as yet provided only a few examples of knowledge creation processes and even fewer, if any, examples concerning knowledge assets. In addition, despite the fact that many authors argue about the importance of the organizational knowledge creation processes (Grover and Davenport 2001, Zack 1999), very little is known about the influence of radical intervention programs, such as BPR on these processes. As indicated, a review of the literature concerning IT-enabled innovation in its most radical form, namely BPR, reveals that the issue of knowledge creation is either neglected or confused with the issue of organizational learning, with very few exceptions.

### ***Philosophical and methodological assumptions***

This section argues that an approach to inquiry, which is exploratory, case-based and interpretative, is an appropriate investigative approach when examining ‘the creation and utilization of knowledge assets within a knowledge management system’.

The research adopts an interpretative stance (Chua 1986). This is dictated by two main reasons. First, the use of the unified model of organizational knowledge creation (Nonaka et al. 2001) as the lens through which collected data are interpreted (Walsham 1993, 1995) means the adoption of the process framework of knowledge management (Grover and Davenport 2001). Then, the adoption of a definition of knowledge as “Justified True Belief” categorizes the abovementioned model to the interpretative sociological paradigm that is concerned with the social construction of reality (Burrell and Morgan 1980). Second, the role of the researcher, who entered the case organization as a member of a consulting firm, and

therefore cannot assume a neutral stance, has to be considered. Researchers' assumptions, beliefs, values and interests always intervene to shape their investigations as they are always implicated in the phenomena under study (Orlikowski and Baroudi 1991). Therefore, the proposed research could not but adopt the interpretative stance.

The research also selects a case research strategy (Benbasat et al., 1987) due to the context-specific nature of the knowledge creation phenomenon that suggests a method that will capture the natural setting, and the opportunity to provide a different cultural perspective (that of a southern European developing country - Greece), and an under-researched industry setting (the Maintenance Division of a Greek Petrochemical Company, which is ranked amongst the most competitive companies in Europe in its sector)

### ***The investigative approach***

This section presents the investigative approach of the research. More specifically, the unit of analysis, data collection and analysis, the sampling strategies, the research validity, the case organization and the role of theory in the research are the concerns of this section.

The unit of analysis for the research is the formal and informal Maintenance Work Request/Work Order System of the Maintenance Division of Petrochem and a BPR program that aimed at its improvement. The unit of analysis is related to the way the research questions have been defined (Yin, 1984). The research at the petrochemical company aims at describing knowledge creation by monitoring the generation and use of knowledge assets in the Maintenance Division before and after a BPR project, which aimed at the revamping of this system. The knowledge assets, which are created and are used in the Maintenance Work Request/Work Order System of the company, create organizational knowledge on how to plan, schedule and perform, a particular maintenance work.

As indicated, the research adopts an interpretative and inductive analytical approach. Induction is commonly a statement whose truth or falsity is made more probable by the accumulation of confirming evidence, referring to instances of reasoning in which statements are made about a phenomenon based on observations of instances of that phenomenon (Hart, 1998). The research uses the Unified Model of Organizational Knowledge Creation (Nonaka et al. 2001) as the theoretical lens through which collected data will be examined (and interpreted). The statement made by this model is that knowledge assets are inputs and outputs of the knowledge creation process. The research will examine how knowledge assets are created and utilized within the knowledge creation process and offer insights by accumulating evidence.

A key question for researchers in any tradition, regardless of (their selected) philosophical stance, concerns the role of theory in their research. The present study uses theory as an initial guide to design and data collection (Walsham 1993). This is one rather common use of theory in the context of organizational research (Eisenhardt 1989). The research will interpret the collected data through the theoretical lens of Nonaka's Unified Model of organizational knowledge creation (Nonaka et al. 2001). In doing so, the Maintenance Work Order system, which is the primary knowledge management system in the maintenance organization of the case company will be examined through a knowledge creation perspective, whilst the Maintenance Work Orders will be viewed (respectively) as the knowledge assets of the process.



The research also uses quantitative data. In case research studies multiple data collection methods are employed with the goal to obtain a rich set of data surrounding the specific research issue, as well as capturing contextual complexity (Benbasat et al. 1987). The research collected data belong to the following categories: Documentation, Archival Records, Direct Observation and Participant Observation (Yin 1984). Interviews are also a primary data source. In interpretative case studies interviews are the method by which the researcher can best access the interpretations of the participants (Walsham 1995). The empirical research covers a 20 month-period at the case organization and commenced in January 2000. The collected data provide rich information concerning the company's background and its operating environment, which is significantly different from the environments described in case studies of other European, American and Asian companies. The life story of a Maintenance Work Order through formal and informal channels is narrated with specific emphasis on organizational and contextual characteristics that influence its creation and utilization. In addition, emphasis is given on the aspects of autonomy, commitment, experimentation, creative chaos and requisite variety that influence knowledge creation. In similar vein, the story of a BPR initiative aiming at the revamping of the Work Order System is also narrated and sheds light on important aspects of the life of a Maintenance Work Order.

The sampling strategies used in the research relate both to collected data and the research question. A stratified purposefully sampling strategy has been adopted in the selection of people that participated in the interviews, as it illustrates subgroups and facilitates comparisons. Participants who belong to a variety of subgroups such as top management, department heads, engineers, supervisors and consultants have been selected. The sampling strategy is also opportunistic and allows taking advantage of the unexpected. An intensive sampling strategy has been adopted especially in the collection of documents and archival records in an attempt to provide an information rich case that manifests the phenomenon intensely, but not extremely. (Miles and Huberman 1994).

At this point the issue of validity should be addressed. There are at least four relevant tests for case studies that help in judging the quality of the research: construct validity, internal validity, external validity and reliability (Yin 1984). Construct validity is ensured in the present research with the use of multiple data sources. Moreover, single revelatory case studies such as the one presented here do not allow for automatic generalization of the findings; this is an issue of external validity. The research has a variety of limitations associated with the nature of the phenomenon under investigation, the case organisation, the role of the researcher and the model used for the data analysis.

The case organization is the Maintenance Division of the largest refinery of Petrochem with 312 employees in 6 Departments. Petrochem is a public group of companies headquartered in mainland Greece. Petrochem Group is the largest industrial and commercial enterprise in Greece in the petrochemicals industry and has significant activities in Eastern Europe, in the eastern region of the Mediterranean and in Middle East. Petrochem is one of the Top 500 European companies and one of the Top 10 petrochemical companies in EU, with 3187 million Euros in revenues and more than 3,300 employees in Greece and approximately 1,200 elsewhere in the world. Petrochem is a fully integrated, downstream oil enterprise concerned with refining crude oil and trading in petroleum products, in the production of chemicals, the exploration and exploitation of hydrocarbons, the provision of engineering

services (such as the construction and operation of pipelines), and the production and trading of all other types of energy.

Finally, the researcher negotiated access to the case organization with a consultancy, which ensured the collection and use of data for research purposes.

### ***Preliminary Findings***

Despite the fact that research is still in progress at the time of the submission of the present paper, this section aims at providing the reader with some indicative results of the study.

The case organization is barely familiar with the concepts of knowledge management and knowledge processes. However, knowledge creation occurs along with the everyday work flow of the Maintenance Division. The fact that there is not a deliberate management of this knowledge creation process in many cases produces knowledge assets of poor quality and of limited value for the organization. In addition, the final stage of the SECI process, namely the internalization stage, appears extremely weak depriving the organization from the realization of the incremental changes that according to Nonaka (1994) lead to the acquisition of a competitive advantage. Moreover, the maintenance shop floor is the place in which knowledge creation occurs (“Ba”), people with limited access to this place, the planning department in our case, face difficulties in both understanding and managing the created knowledge assets. The enabling conditions that influence knowledge creation, according to the Unified Model of Organizational Knowledge Creation, intention to act, autonomy and environmental “fluctuation”, sometimes promote whilst some other times inhibit the creation of knowledge assets. Information ownership appears to be another significant factor in the process of knowledge creation. Knowledge brought to the organization with the BPR project in the form of “Best Practices” and benchmark reports needs to become justified in order to be incorporated to the knowledge creation process, otherwise it is rejected. Finally, the study identifies middle management as a key actor in the process of knowledge creation and this finding verifies Nonaka’s argument about the importance of Middle-Up-Bottom management model in knowledge creation. In addition, middle management is the level that feels the impact of BPR programs maybe more than any other organizational level.

### ***In Conclusion***

This paper has identified knowledge assets as an important issue in knowledge creation processes. Reflecting on the enduring nature of these themes, a thorough investigative approach is posited. This paper presents work-in-progress in the field of knowledge management processes and particularly knowledge creation and knowledge assets. The objective of the research is to understand how a project-based organization creates knowledge and to identify the emerging issues connected to the organizational knowledge creation process during BPR, which has as a fundamental principle - the obliteration of existing processes. This is to be achieved by examining the knowledge assets of the Work Request/Work Order system of a maintenance organization. The exploratory research adopts a case strategy, and an interpretative stance. The research uses qualitative data that are analysed through the lens of Nonaka’s Unified Model of Organizational Knowledge Creation. The research aspires to contribute to the accumulation of rich insights (Orlikowski, 1991) in the field of knowledge creation, knowledge assets and the management of knowledge

creation processes. As such then this empirical research adopts a process perspective on knowledge creation.

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