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Analyzing The Knowledge Management (KM) Practices in Select Small and Medium-Sized Enterprises (SMES)

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Abstract

Small and medium-sized businesses (SMEs) can range greatly in size and scope, and there is a lot of room for interpretation when assessing their potential and viability in relation to broader socioeconomic factors. Economic progress necessitates an understanding of knowledge management inside SMEs, especially in cases when goals and practices inherited from large organizations prove to be ineffective or unwanted. To hasten the digital transformation of SMEs in manufacturing, this research examines the main obstacles faced by these companies while implementing KM and finds the crucial strategies for overcoming them. From multinational conglomerates to mom-and-pop shops, many businesses place a premium on knowledge management (KM) and the effective deployment of KMS. It has already been mentioned that SMEs are susceptible to knowledge loss. Use of KM methods in SMEs has been linked to several outcomes, such as knowledge development stage, organizational performance, and innovativeness. A deluge of information resources, organized and unorganized, are produced by this practice. Information that is structured comes from procedures like product life-cycle management (PLM), financial operations, monitoring, and testing throughout manufacturing.

Keywords: KM, SMES, Organizations, Manufacturing and Customer

Introduction

Organizations and people alike greatly benefit from knowledge. It is an essential tool for businesses to ensure they remain competitive and to encourage innovation. In order to ensure that an organization's knowledge and information are captured, developed, shared, and used effectively, knowledge management (KM) is a systematic technique. Learning, archiving, disseminating, implementing, assessing, and maturing as a culture are all under its purview. Knowledge management (KM) has come a long way from its 1980s beginnings, expanding its role in businesses beyond basic data storage and document management to include digitization and intelligence. Adopting KM is becoming more crucial for firms aiming to stay competitive and encourage innovation in today's fast-paced and unpredictable business climate, say Soumyaja and Sowmya. When it comes to maximizing organizational and individual knowledge assets, KM is very essential,

particularly in the face of ever-changing competitive dynamics. Small and medium-sized businesses (SMEs) can improve their performance and competitiveness by adopting KM 294, which can encourage innovation. KM is greatly affected by management thought patterns and actions, suggesting that the amount of KM in an organization is mostly dictated by its behavioral cognition. An essential step in fostering digitalization and attaining internal networking in manufacturing SMEs, this research addresses how to establish and progress KM in these businesses. In the manufacturing sector, it paves the way for new possibilities in research management.

Companies of all sizes, from multinational conglomerates to mom-and-pop shops, are keenly interested in knowledge management (KM) and the effective deployment of KMS. Consider the possibility that big organizations have a different mentality than small and medium-sized businesses. Just like big companies, small and medium-sized enterprises

(SMEs) also perform a wide variety of business responsibilities, all of which contribute significantly to the overall performance and achievement of the company's objectives. Moreover, a number of additional factors impact the effectiveness of SMEs. These include ownership, business strategy, organizational culture and structure, decision-making process, and IT infrastructure. Thus, it is imperative that all these important factors be considered and studied in depth to find out how they aid in the KM implementation process and how to guarantee the initiative's success in order to execute knowledge management procedures effectively. This research takes a systems-level approach to studying KM initiatives in SMEs, looking at how each department in a SME affects KM adoption. Companies in today's world confront enormous obstacles in their fight for survival and success in the face of intense competition. Entrepreneurs and managers have had to consider new approaches to creating value for consumers and managing their businesses in light of external factors like weak economies, rising raw material and transportation costs, declining consumer sentiment, and unfavorable market trends. Internal constraints, on the other hand, include resource limitations, leaving expert (LX) status, and liquidity problems.

Creation of goods and services based on information is one strategy to increase market value. True, information has surpassed all other resources as the primary asset of modern economy. Knowledge is the foundation of a company's long-term success since it is priceless, unique, and difficult to replicate. The idea of knowledge management (KM) is growing in significance as the value of tacit and explicit organizational knowledge-collected from employees-becomes an organization's core competence and becomes increasingly important to the performance and competitiveness of the enterprises. Knowledge management is crucial in today's business climate for enhancing a company's competitive position. Regardless of the size of your firm, using effective KM processes and being innovative will help you acquire a strategic edge.

Literature Review

An SME is a company organized by a limited number of personnel. In 2006 report of the Micro, Small and Medium Enterprises Development Act, the Government of India defined SMEs as entities that have an investment of above INR 1 crore (about 15lakh US\$) and below INR 10crores (about 1.5crore US\$) in plant and machinery. According to SME chamber of India (2015) (<http://www.smechamberofindia.com/>), in the context of manufacturing sector, a small enterprise is defined as the entity where investment in plant and machinery ranges approximately between INR 40 lakhs and 8 crores (US\$ 62,500 and 12.5 lakh), whereas a medium enterprise is that entity with investment above INR 8 crores (12.5 lakh US\$) and up to INR 16 crores (25 lakh US\$).

Hence a manufacturing SME is an entity which can invest in plant and machinery in the range of above INR 40 lakhs up to 16 crores (US\$ 62,500 up to 25 lakh). SMEs cultivate innovation in producing products/services and running business and such inclination enables them even compete with large organizations. SMEs are more innovative because of their flexible nature and diverse character, but their

innovative capacity is constrained by financial and human resources (Kaufmann and Todtling, 2002) [2]. Currently, in most of the countries, with the support of government, SMEs are highly contributing to large domestic production with low investment requirements. They are becoming technology-oriented industries, discouraging monopolistic practices of production and marketing by competing in both domestic and international markets. According to the report of Organization for Economic Cooperation and Development (OECD, 2000), SMEs are non- subsidiary and independent firms which employ a smaller number of employees and this number differs from one country to another and small firms are generally those with fewer than 50 employees.

As in the words of the President of SME Chamber of India (Shanbaug, 2015) [3], SME sector in India contributes around 15 to 16% to country's GDP and is expected to touch a figure of 22 percent in the next 3 years and nearly 60% of the SMEs in India fall in the unorganized sector. In addition, out of the total exports in India, 43% are from the SME sector and the figure may go up to at least 47-48% by 2018. When compared with other areas globally, as per the report of Patrice et al. (2014) [4], 99% of the companies of European Union (EU) are classified as SMEs accounting for 66% of employment and 58% of industry value addition. In the case of Australia, SMEs contribute over a third of industry value added in Asia-Pacific Economic Area, they employ over half of the workforce (Asia-Pacific Economic Cooperation, 2014).

Knowledge is helpful to resolve issues and solve problems. Knowledge and creativity go together to produce innovation in the products and services and organizations will be benefited out of this. Sandhawalia and Dalcher (2011) [5] viewed knowledge as a strategically significant resource of a firm and KM as the process of obtaining, sharing, storing and using knowledge for the growth of firm. Knowledge once created cannot be limited or substituted and this makes knowledge a key strategic asset to all businesses (Cabrera and Cabrera, 2002) [1].

Rasula et al. (2012) [6] defines KM as an evolving set of processes that can assist a firm in achieving organizational goals and enhancing its performance through creating, gathering, coordinating and exploiting knowledge. Organizations should have proper resources and facilities to acquire the needful knowledge from various sources and enable the in-house people to share it among them. Just as successful individual performance depends on an individual's ability, motivation and opportunities to perform, successful KM of a firm also depends on firm "overall ability, motivation and opportunities to identify, capture, share, apply and integrate the right knowledge.

Knowledge Management In SMES

Qualities of SMEs' knowledge Small and medium-sized enterprises (SMEs) are likely to encounter unique knowledge challenges due to their identity. For small and medium-sized enterprises (SMEs), knowledge management often takes less obvious forms, as is often the case in situations when they are doing something efficiently but not using the same language or having formal processes. Things like information creation/acquisition, usage, sharing, and leakage/loss can be helpfully considered in this context.

Many different types of encounters and connections can work in bigger organizations, and there are many different pathways via which information can be obtained. There is a natural bias in studies of small and medium-sized enterprises (SMEs) toward examining entrepreneur behavior and less toward studying more comprehensive linkages formed through strategic alliances. Networking is an important thing for entrepreneurs. People who are receptive to new experiences often mention this quality. Numerous people are always on the lookout for new ways to discover and educate themselves. Information practices at small and medium-sized enterprises (SMEs) can be significantly influenced by groups such as clusters, trade associations, chambers of commerce, etc., compared to bigger organizations. In order for owner managers to benefit from strategic partnerships, they must overcome their fear of losing their competitive edge if they transfer their know-how.

Knowledge is always being challenged, mediated, and completed throughout activity systems, and this is especially true among SMEs. Some forms of knowledge exchange may be more naturally occurring inside SMEs. There may be better interpersonal communication, trust, and connections; a heightened sense of belonging to the organizations; a heightened knowledge of each other's roles; and a decreased risk of job security due to others taking on the same position. Knowledge transfer, on the other hand, must work smoothly across functions if it is to produce instant practical advantage, which is the utmost priority in SMEs. This may mean compromising on the depth and complexity of particular specialists in favour of integration. Findings indicate that knowledge management strategies and absorption capability have a significant role in innovation inside SMEs. When a small or medium-sized enterprise (SME) loses expertise due to information leakage or loss, it is crucial that "organizations are aware of the different routes by which knowledge leaks from the origin and hence develop an effective strategic approach to protect knowledge and hence maintain barriers to entry." The entrepreneur's pivotal role in the aforementioned SMEs is a more pressing issue. For small and medium-sized enterprises (SMEs), the issue of ownership succession is significant. A disastrous loss of an owner-manager's social and intellectual capital can occur. Despite some similarities, the basic knowledge challenges that all organizations face are different in the SME environment, which places KM methods in a different light.

Knowledge Management Practices of SMES

When thinking about KM practices in SMEs, it's helpful to first think about SMEs overall. Managing knowledge in SMEs differs in several important ways. As mentioned before, knowledge loss is a risk for SMEs. It is common for them to have a culture where mingling is the most important way for people to learn from one another and the owner. Staff members who are familiar with one another's functions might provide a foundation of shared understanding that can improve interaction. SMEs might make better use of outside expertise. That "knowledge is created, shared, transferred and applied via people-based mechanisms" describes the technological process. Each of these traits is supposedly shared by most SMEs, according to the authors.

Nonetheless, it's conceivable that there are sub-patterns in characteristics and techniques that may be shown by classifying SMEs. In the section that follows, we'll talk about certain distinctions that are particularly important when it comes to SMEs. There is a long list of important elements-management buy-in and assistance, human resource management, culture, infrastructure, resources, etc.-that must be in place for knowledge management systems to be effectively adopted and integrated. Small and medium-sized enterprises (SMEs) have a formidable challenge in acquiring and making use of the critical combination of competencies. When evaluating SME KM practice, researchers take into account SME strategy, organization, systems, especially culture. Similarly to how SMEs may successfully implement IT.

Where information technology must be linked with "their key capabilities, including those concerning response to external environments and internal capabilities" and in sync with "their competitive strategies," strategic fit is essential for efficient knowledge management. An organization's corporate strategy and knowledge management approach can be influenced by the "mix" of possible competitive advantage sources at the firm level, the inter-firm level, and the industry level. According to Massa and Testa (in press), even companies operating in the same industry might prioritize various areas of expertise and the strategic actions that go along with them. By analyzing the methods utilized for knowledge creation, codification/personalization, and transfer, it should be feasible to determine the knowledge management strategy that a small or medium-sized enterprise (SME) is using. Along with practices like mentoring, communities of practice, discussion forums, and spontaneous knowledge transfer, technological systems like decision support systems, groupware, document repositories, knowledge maps, workflow mapping, and shared databases can be used to determine if codification and personalization strategies are being implemented. 'Unengaged,' 'complete KM practice,' 'knowledge-ownership focused,' and 'learning and co-production oriented' were found as the four orientations towards knowledge management development in a profiling tool that assessed knowledge practices in SMEs using hierarchical cluster analysis.

Some have suggested that small and medium-sized enterprises (SMEs) can reap greater benefits from aligning their structures with IT systems since they are more malleable than bigger organizations. 'Textbook' technological solutions are ineffective, and there is a lot of diversity in the use of important information technologies. One school of thought is that small and medium-sized enterprises (SMEs) may "create useful explicit knowledge from the integrated e-business systems" by gradually integrating ERP, CRM, and supply chain management systems. Knowledge management techniques in SMEs can be influenced by their company culture. Although owner-managers often set the tone, there is a noticeable difference between SME cultures that are open and inventive and those that are tight and inflexible. identifies a significant cultural hurdle to knowledge management in SMEs as an absence of information exchange. The social norms and values present in the company's social connections are the foundation upon which a company's capabilities are mostly built.

"Knowledge is rooted in practice, action and social relationships" and "exists through the interplay between the individual and collective level" are becoming more widely recognized, but little is known about the relational processes that occur within SMEs.

Knowledge management accounts of small and medium-sized enterprise (SME) strategy, structure, systems, and culture are becoming increasingly popular, but there is a growing demand for more integrated investigations of dynamic capacities. Strategic and organizational activities that convert resources into new competences or refresh old ones are known as dynamic capabilities. There is mounting evidence that these skills are critical for organizations to thrive, especially in unpredictable settings. investigate five small accounting businesses that diversified their offerings and found that "routines, systems, and processes that promote the heterogeneity and continuous development of human capital and external alliances" were important. dynamic capabilities, which emphasize their function in obtaining customer capital, Cegarra-Navarro, and mediating the relationship between KM investment and company success. A important result from research on knowledge management in small and medium-sized enterprises (SMEs) compared to bigger organizations is that SMEs focus on customization and strategic management of knowledge and competence rather than operational improvement and codification. To gain and keep a competitive edge, small and medium-sized enterprises (SMEs) rely heavily on their human resources. In a small business setting, functions are built on top of capabilities, which are intricately connected to specific knowledge and talents. To plan for the future and determine "which 'functionalities' will be offered to customers what new core competencies will be needed to create those benefits," one must engage in strategic knowledge management. Due of their limited internal knowledge resources, SMEs focus a lot of their knowledge strategy on learning and absorption, fostering an entrepreneurial mindset, or forming partnerships, alliances, or clusters.

Knowledge Management and Performance

Technical performance includes things like innovation, product quality, growth in core competence, productivity, efficiency, and flexibility. Human performance includes things like creativity, entrepreneurial growth, staff performance, and staff satisfaction. Organizational performance includes things like external partners and relationships, organizational agility, work relationships, learning curve, and flexibility in the use of resources. Economic and financial performance includes things like profit, sales growth, revenue growth, cost reduction, financial performance, profitability, return to investment, and market performance. It's clear from four contributions that KM has a favorable impact on four different kinds of performance, and KM backs all five of them. KM has a beneficial effect on three performances, according to three publications; indicate just one performance, and one highlights two. This appears to prove that KM helps SMEs grow as a whole by improving their performance in several areas at once. While most would agree that KM improves technical and financial performance, opinions differ on how it affects human and organizational performance. It is clear

that further data may back up this claim and prove that KM has a massive influence on SME performance, impacting many metrics at once.

Impact of Km Practices Within SMES

Knowledge development stage, organizational performance, and innovativeness are just a few of the results that have been linked to KM approaches used by SMEs. knowledge management in a sample of firms (including medium sized businesses) serves to advance their knowledge stages, according to a framework of knowledge that begins with complete ignorance and progresses through loose awareness in a largely tacit manner, measurement, control, process capability, and finally deeper "know-why" in a scientific sense. An amalgam measure of organizational performance including cost reduction, market share, quality improvements, new technologies, employee motivation, reputation and prestige, and new systems was found to have a significant impact on various levels of groupware utilization among SMEs, as measured by SD, SD + repositories (R), and SD + R + discussion forums, in terms of 'hard' systems development.

From a balanced scorecard point of view, knowledge management techniques mediate the relationship between structural capital, customer capital, organizational culture, strategy and leadership, information technology, and staff capabilities and their effects on learning and growth, organizational capital, and structural capital. discovered statistically significant correlations between 108 SMEs' KM practices and their yearly sales growth rate, indicating that "knowledge management awareness and activities and faster growth often appear in the same companies." For a small or medium-sized enterprise (SME) to be able to take creative, risky, and proactive measures as part of its strategy, it appears to need dynamic capabilities like opportunity exploration and adjustment, which may lead to an entrepreneurial attitude. Results showed that "KM acquisition or input strategies may be the most important aspect of the innovation process influencing the performance of small firms." This was based on statistical regression models created with 421 SMEs. In a nutshell, research suggests that small and medium-sized enterprises (SMEs) might benefit from an increase in their ability to learn and absorb new information.

Challenges in Adopting Km in SMES

In comparison to other types of businesses, SMEs in the manufacturing industry are only starting to dabble with KM. issues in harmonizing data versions, information overload, varied forms of knowledge, insufficient alignment between knowledge and business operations, difficulty in mining and using tacit knowledge, and difficulties in acquiring new knowledge are among the key issues.

Learning new things is challenging Small and medium-sized manufacturing enterprises (SMEs) frequently use an imperfect management system, conventional methods, and a flat, family style of management. With each passing year, these companies gain invaluable expertise in a wide range of business functions, such as advertising, R&D, manufacturing, project management, and customer service after the sale. A deluge of information resources, organized and unorganized, are produced by this process. Product

Life-Cycle Management (PLM) tasks, financial operations, monitoring procedures, and production testing are the sources of structured knowledge. Unstructured knowledge, on the other hand, includes things like drawings, technical specs, industry standards, and patent it usually sits in individual company systems or personal files. The practice of corporate segmentation typically results in the dispersion of these knowledge sources among various staff. People working on a project often fail to see the big picture because they are too preoccupied with their own duties. Due to a lack of understanding of their new duties, even seasoned workers may find it difficult to swiftly adjust to new jobs as a result of this compartmentalization.

The company's capacity to adapt quickly to new circumstances is severely compromised, and overall work efficiency takes a major hit. In addition, a complex knowledge landscape is created by the accumulation of vast experience and information throughout different stages of a company's lifecycle. It is challenging for SMEs to make good use of these resources without a standardized and integrated system for managing knowledge. A more adaptable and quick strategy for managing information is needed to keep up with the ever-increasing speed of both technology and consumer demand. In order for SMEs to stay competitive in a rapidly changing market, it is essential to address these difficulties and improve their operational efficiency and innovation potential.

There are two types of information that might be problematic for organizations when it comes to mining and using tacit knowledge: explicit knowledge and tacit knowledge. The ability to express one's knowledge via the use of concrete examples, such as written language, diagrams, or mathematical formulae, is known as explicit knowledge. When compared to the aforementioned categories of knowledge, tacit knowledge includes things like practical experience, abilities, concepts, and creativity that are hard to put into words. An organization's ability to innovate and maintain a competitive edge depends on its tacit knowledge, which is derived from years of experience but isn't always easy to put into words. It is internal to each person, molded by their own set of circumstances and abilities. Tacit information is important, but it's hard to acquire and convey since it's context- and person-specific. Leadership and company culture are two of the most important factors in creating an environment where tacit knowledge management may thrive. The foundation of creativity and problem-solving is, essentially, tacit knowledge. Recognizing the importance of knowledge and developing thorough strategies for managing it may help organizations reach their full potential. The development of a strong management system depends on the pursuit of specialized personnel. Transferring tacit knowledge in practical work is dependent on seasoned workers communicating and preserving it. Having said that, there aren't always efficient ways for manufacturing SMEs to gain, retain, and accumulate knowledge. Converting information that has been verbally shared orally into tangible assets is a big challenge for small and medium-sized manufacturing businesses when it comes to knowledge management.

Discordance between company operations and knowledge

When it comes to manufacturing SMEs, the current "learning in order to practice" procedure can be time-consuming and wasteful. When workers study and gain understanding outside of their normal work responsibilities, that is when knowledge use happens. Because of the current system, it is difficult for employees to make good use of information resources when they are on the clock. Most workers don't realize they need knowledge resources until they're in a unique circumstance at work, therefore these tools are usually only accessible to new hires or a few of really driven learners. A major hurdle is the retention of knowledge data from business operations inside corporate knowledge management systems. Integrating these information resources into day-to-day company activities is where the issue resides. Therefore, there aren't many situations where proactive provision of accurate information push services within the context of company operations is feasible. As a result of not having constant access to pertinent information, employees take a reactive approach to knowledge consumption, seeking out knowledge resources only when urgent needs come up.

The organization's capacity for innovation and continual development is severely limited by this reactive strategy, which also hinders the effectiveness of information transmission. Developing more effective techniques to incorporate knowledge management into regular business activities is vital for addressing these difficulties. Part of this is fostering a culture that rewards people for constantly learning and sharing what they know with one another, and another part is making sure that important information is easily accessible in real-time. Small and medium-sized enterprises (SMEs) may greatly improve their operational efficiency and cultivate a staff that is more adaptable and competent by doing this. There are difficulties in standardizing data versions across different types of knowledge in the manufacturing sector. Small and medium-sized enterprises (SMEs) often operate in very niche markets and have a diverse array of knowledge resources from different fields, including craft, technical, management, market, and knowledge of regulations and standards. Nevertheless, these businesses frequently encounter major obstacles including data duplication, varied data formats, version control issues, and departmental data silos because their management systems are immature.

These problems are made worse by the lack of standardized data, which makes it hard to harmonize the many versions of vast information resources. The difficulties in sharing, connecting, and using knowledge are further exacerbated by this fragmentation. Data silos impede the free flow of vital information by preventing departments from communicating and working together effectively. The trustworthiness of information resources is diminished due to discrepancies and inaccurate outcomes caused by version control issues. Disparate data formats make integration more difficult, and redundant and inefficient data is the result of data duplication. Even if the company has important information on hand, it can't be used to its maximum potential due to the absence of standardized data. As a result, small and medium-sized enterprises (SMEs) struggle to innovate and run efficiently because their staff lack access to up-to-date, relevant information.

Systems supporting knowledge management in SMES

The term "knowledge management practices" refers to a wide range of strategies aimed at improving the ways in which organizations generate, store, share, and apply new information. Tools for knowledge management, or the particular information technology systems that back KM practices and procedures. different approaches to knowledge management (e.g., discovery, capturing, storing, mapping, distribution, and creation) and the many forms of knowledge (e.g., tacit and explicit). Knowledge in SMEs is mostly anchored in human resources, and socialization dominates the SECI cycle, according to all research. So, it should come as no surprise that the majority of the approaches revolve around tacit knowledge management. Focus groups, formal meetings, virtual communities, informal networks, project teams, interactions with clients, suppliers, and partners, job rotation, training, and communities of practices are some of the people-centered practices suggested by authors.

Additionally, some authors stress the significance of informal processes (such as informal mapping, knowledge maps, balance scorecards, and formal manuals) for managing knowledge, while others advocate for the importance of more formal approaches (such as chief knowledge officer or project team formation). When it comes to the second subtopic, KM-Tools, the possibilities presented by wikis, intranets, and webpages as knowledge management systems to bolster organizational learning are important to consider. examine the methods of teamwork and dialogue. Similarly, please include examples of social media, email, and content management systems as well as databases, document management software, and project management software, as well as other management tools. Enterprise resource planning (ERP), customer relationship management (CRM), data mining, data warehousing, and a document management system formed the backbone of a knowledge-based applications architecture. examine a model Improve knowledge production and sharing using a KM-Tool. In the end, you should come up with two distinct SME knowledge management system models.

Conclusion

In the manufacturing industry, KM is vital for SMEs. Companies may improve their operational skills, establish and refine KM systems, and broaden application scenarios by methodically identifying and resolving KM difficulties. The three main areas where knowledge management (KM) for small and medium-sized manufacturing enterprises (SMEs) may be improved in the future are practitioner competencies, KM system standardization, and adaptability to varied business circumstances. These days, small and medium-sized enterprises (SMEs) may easily implement innovative knowledge management systems without spending a fortune or sacrificing human resources. Because of this, the obstacles that were preventing SMEs from adopting knowledge management approaches have been diminished. In today's business climate, knowledge management is crucial for enhancing the company's competitive position. To develop economically, it is essential to comprehend how SMEs handle knowledge management, especially if goals and methods brought in from big companies aren't ideal or perhaps harmful.

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