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Approaches Towards Effective Knowledge Management for Small and Medium Enterprises in Developing Countries - Uganda

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Abstract: In developing countries, many Small and Medium Enterprises (SMEs) collapse due to complex factors. Knowledge shortage and fragmented information are their key challenges as a result of obsolete technology and exposure. However, the Government of Uganda plans to establish nationwide knowledge service centres in its Vision 2035 [9]. Viable solutions are at stake for developing countries. However, to enable them leap frog into the future, ICT is the remedy for knowledge sharing. SME survival is determined by the amount of knowledge **they have and** how they manage it in decision making. This paper promotes the studio based approach as a practical solution to SMEs asymmetric knowledge sharing. The studio will provide decision enhanced services to SME stakeholders and supplement techno-centric, social-cultural-centric and access-centric approaches. This paper aims at providing a theoretical backup for studio usage as a feasible solution for SMEs in developing countries.

Keywords: Knowledge Management, SMEs, Studio

1. Introduction

The recent decades, have shown keen interest in Knowledge Management (KM), since it represents a real challenge to the global business [21][33][40][53][17][6][18]. Techno-centric mechanisms are increasingly being used for knowledge sharing [4][56][33][37][5][52]. Knowledge has become one of the critical driving forces for business success. As a result it is treated as a tangible resource, business currency and a key to power shift in organizations [45][59][10][50][37]. Stiglitz emphasizes the need for indigenous techno-centric KM solutions that best suite the community's culture [50].

Nonaka and Takeuchi first conceptualized KM in large manufacturing Japanese firms as the reason for their dynamic innovation [37]. KM used to be an issue for large, multinational, international companies that could afford positions like Chief Knowledge Office (CKO) [59][56]. However, the KM inferno slowly caught up with SMEs as they

could not afford to be left in the "sea of backwardness". SMEs realize the need to maintain KM repositories which are on the increase in the recent few years [56][18][51]. This is vital for SMEs survival and maintenance of a higher competitive advantage to remain relevant in the current business circles [26]. KM is significant for SMEs since these firms are relatively dynamic, agile and more ready to learn so as to ensure competitiveness in the new business environment than larger organizations [19] [40][38][26].

SME development is a key component of Uganda's economic development agenda in Vision 2035 – a national plan for the long term economic development of Uganda which accords SME development a high priority [9]. The SME sector is required to not only contribute significantly to the national economy but also to become the primary foundation of the country's industrialization and poverty alleviation programmes [13][9][48][49][33][22][16][31]. SME techno-centric KM approaches have received global UN support to all African countries, this is in line with Uganda's Millennium Development Goals (MDG's) and Poverty Eradication Action Plan (PEAP) goals 2015 "eradicating extreme poverty and hunger" [34][44][33][48][49][22][16][31]. Annan persuades African leaders to take advantage and participate in the information society as the only way for Africa to leap frog into the future [1].

It is Uganda's aspiration in Vision 2035 [9] to achieve the following:

- 4 million operational SMEs,
- SMEs to contribute 40% towards GDP,
- SMEs provide employment to 5 million people,
- SMEs contribute 40% to the export earnings,
- 40% of the SMEs involved in manufacturing activities,
- 50% of SMEs are owned by women,
- 5% of SMEs are involved in agriculture and related services and survival rate of SMEs is at least five years.

The governments plan is to establish nationwide "Knowledge Service Centres" to serve as 'One-Stop-Resource Shops' for complete information sharing which include: project profiles, project reports, market surveys, sales promotions, trade-fairs, inter-regional trade promotions, selection of technology, plant and machinery details, joint ventures, and bids for public contracts. Therefore, there is a great need to establish nationwide knowledge service centers for information and knowledge sharing.

In this paper, the researcher used the following definitions of KM, SMEs and studio. KM is the process of creating, collecting, organizing, refining, disseminating, and maintaining knowledge so that it is utilized by the stakeholders within the organization [2][17]. A Small Enterprise employs maximum 50 people; annual sales/revenue turnover of maximum 360 million Uganda Shillings (UGX) (approximately United States dollars (USD) 215,000, or Euro (€) 137,000) and total assets of maximum 360 million UGX. A Medium Enterprise employs more than 50 people with a maximum of 500 people; annual sales/revenue turnover of more than 360 million UGX (approximately USD 215,000, or €137,000) and total assets of more than 360 million UGX [55][20][9][54][42][43][22]. A studio is an interactive environment in which suites are deployed and often implemented as a web portal with a clear purpose of decision enhancement [23]. It combines stakeholders, lead announcer, chairperson, teacher/coach, facilitator and content expert guides to coordinate production [23].

2. Objectives

The aim of this paper was to provide a KM approach for the establishment and design of the knowledge service centers for information and knowledge sharing in Uganda. The specific objectives of this paper are:
1. To explain the various KM approaches in literature.
2. To establish the studio based approach as a suitable method for knowledge sharing.

3. Methodology

The researcher used an exploratory research approach to identify the key KM contributions from literature. Various approaches were identified and analysed based on their strengths, weaknesses and opportunities. This was carried out with an aim of identifying a viable solution for developing countries like Uganda. The literature review was carried out over a period of six months revealing three major KM approaches from its inception as illustrated in the results section below.

4. Technology Description

A studio is a modern approach used in developing countries with various ICT constraints for particular contextual problems [35][36]. It combines stakeholders, lead announcer, chairperson, teacher/coach, facilitator and content expert guides to coordinate the production [23]. A studio also combines KM services that enhance tacit knowledge sharing as a means of transfer of knowledge from the experts to other stakeholders and allow open discussion as will be displayed on their screens in group support system for trust and openness of discussion [60].

The diagram below summarizes decision enhancement starting from the lens that focuses on stakeholders in decision arenas and their decisions that matter [23]. In addition, it continues with its invitations to bring stakeholders, domain experts and suite designers into its studios since decision enhancement starts and ends with the stakeholders.

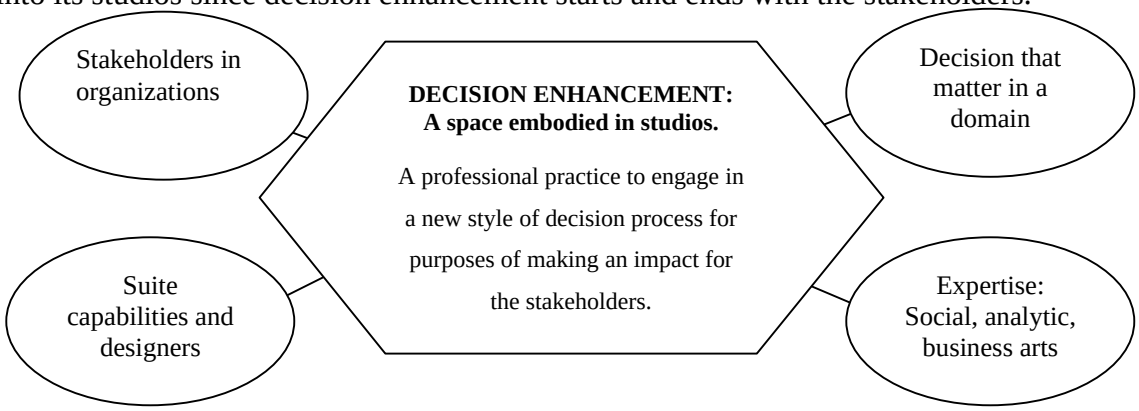

Figure 1: Decision Enhancement *Adapted from [23].*

A studio is the base for recipes and suites brings decision enhanced services into action for contextual problem solving. It uses proven off-shelf software, like group support systems, simulations and gaming [23]. The studio combines an interaction of actors or stakeholders, that network with the suites to create knowledge and share what is known to enhance decision making. This KM approach will place ICT in Uganda at its fore place as an enabler to KM asymmetric problems.

5. Developments

The studio based approach in a term formulated by [23] as a suitable means of handling complex, wicked, ill-structured, and conflicting issues in society [23]. This approach has been used in solving complex problems as explained below.

5.1 A Learning Studio for Coordinating Distributed Work [28][23]

This studio was built as a simulation game to enable teams of the Amsterdam police coordinate distributed work. It enabled the police to evolve their decision principles for a new mode of tackling the conflict of division of functions, and expertise in an integrated way. The learning studio was successful and the police were able to achieve effective coordinated activities.

5.2 ICT Logistic Studio in Transition Countries [36]

[36] was able to handle a complex situation of transport scheduling in a rural transition country that is South Africa - Karoo. His aim was to get a solution to conflicting interests of transportation parties using ICT services available.

5.3 Implementing Inter-Organizational Service Systems [35]

[35], was able to come up with a studio that supported inter organizational service systems in volatile contexts. The study was in Uganda handling collaboration within three universities: Makerere University, Kyambogo University and Uganda Martyrs University Nkozi. The studio was used to enhance decision making within the inter-organizational service systems, among independent actors with divers technical infrastructure and scarce resources.

5.4 Business Engineering and Mobile Services [57]

[57] developed a simulation studio that supported the effectiveness of business engineering and mobile services in organizations. The aim was to visualize how order generation, scheduling or dispatching, service execution, service reporting and the billing procedure would be accessed using mobile services to enhance decision making. The studio was able to enable the stakeholders simulate and see into the future when such business could utilize mobile technologies to support business functions.

6. Results

From the exploration of literature various KM approaches were identified as in the table below. There are three major KM approach theories namely: techno-centric/information era, learning-centric (social-cultural centric), and access centric [8][33][14][46][47].

Techno-centric KM approach was the first generation of KM that focussed on delivering information to support specific tasks. It handled knowledge and individual performance but was not concerned with knowledge creation or organizational learning. The terms tacit and explicit knowledge [37] and codified and diffused knowledge [3] were generated during this era. This techno-centric generation was paralleled by the first

generation of business technology enterprises [5] which focused on storing, categorizing, and delivering information.

The second generation was social-cultural-centric. This era regarded knowledge as a new source of competitive advantage. It focused on knowledge as an asset intellectual capital and was concerned with understanding how knowledge was created, shared, and diffused [29][11]. KM success during this era relied on social and cultural change over time and inherently linked knowledge within the social and learning processes of organizations [25][32][33]. This era mainly considered two approaches that is the system-oriented and peoples centric criteria [58]. Technology was considered as an enabler and business technology progressed into e-business and e-commerce [25][32][33][5].

Table 1: Knowledge Management Approaches

Knowledge Management Approaches	**Contributors**	**Knowledge Management Issues**
1.Techno-centric	[8][33][14][47][14][46][37][3] [5]	Technology centered and focused on delivering information to support a task.
2.Socialcultural centric	[29][11][32][25][33][58][5]	Knowledge as a new source of competitive advantage. KM success during this era relied on social and cultural change over time and inherently linked
3.Access-centric	[52][15][56][41] [14][5][30][8]	Total knowledge visibility across the supply chain and within the organization. - Social computing and wisdom of crowds, multiple generations and social networking

The current generation of KM is access-centric which focuses on total knowledge visibility across the supply chain and within the organization [52][15][56][41][14]. In this emerging generation, technology will progress into knowledge driven enterprise networks (knowledge engineering) that is concerned with packing of content, and knowledge reuse. The capacity of organizations to find the right information and get it to the right person at the right time are improved [5][15][56]. This era spans all four phases of KM in organizations: construction, dissemination, use, and embodiment of knowledge [32][52][41]. The theme of this emerging era is access to the right knowledge at the right time and the recognition of the crucial role that social capital – the shared commitment to others that makes collective action possible – plays in the modern organization [30][15][41]. Within many companies collaboration is generating distinct types of communities of purpose like: teams, task forces, or groups with a focused mission and set of deliverables [8].

We are in a new era of KM where three forces are at work: Social computing and wisdom of crowds, multiple generations and social networking [41]. The locus of control is moving from institutions to individuals, communities and self-organized networks. Users pick and use the tools of choice to invite, collaborate with whom they want [41]. 1/5 of the worlds internet users have profiles on social networking sites, registered world wide: my space~100 million, facebook~69 million, linkedin~20 million, twitter~1 million, many wikis, blogs, mashups, folksonomies and mobile computing [41][56]. This research will seek to support and forward the techno-centric, social-cultural-centric and access-

centric KM approaches by combining them in a holistic studio based approach desired to provide support to the knowledge service centre for SME stakeholders in Uganda.

7. Business Benefits

The studio environment enhances decision agility. It creates opportunities for speedy, adaptive, coordinated, collaboration, and innovation among its participants. The studio based approach will allow customization of information and knowledge in the knowledge service centres to be established in Uganda for enhanced decision making and collaboration among SME stakeholders

8. Conclusions

This paper presented an overview of the studio based approach as an appropriate, holistic, and preferable approach of KM in the setup of knowledge service centres in Uganda. Despite SMEs facing financial constraints, the studio based approach remains a suitable, viable solution that will enhance collaboration between stakeholders. It will further boost knowledge exchange, creation, collection, organization, retrieval, dissemination and knowledge reuse. The major aim of this paper was to seek viable KM solutions for developing countries like Uganda. However, to establish knowledge service centers in Uganda, there is a need to establish requirements from SME stakeholders on what and how they can participate in its content as key users. This will enhance the studios effective usage and adoption for knowledge collection, sharing, dissemination and retrieval.

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