Study on Knowledge Management for Small, Medium and Large Companies Systems

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Abstract – Narrative confirmation recommends that the extensive management of Enterprise System (ES) related knowledge is basic for ES wellbeing and life span. At once where numerous ES-merchants now offering solutions to Small and Medium size organizations, this paper investigates the capacity of Small and Medium size organizations to keep up a broad knowledge management procedure. The paper investigates the asserted contrasts in the knowledge management rehearses crosswise over 27 small, medium and large organizations that had executed a market-driving ES. Results suggest that: (1) in spite of comparable knowledge creation endeavors in every one of the three organizational sizes, small organizations struggle with holding, exchanging and applying the knowledge. The review additionally uncovers that, (2) the general decency of the knowledge management process in bigger organizations remains higher than their small and medium partners.

Keywords: Organization Size, Knowledge Management, Enterprise System

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INTRODUCTION

Enterprise Systems (ES) have developed as perhaps the most important and challenging development in the corporate utilization of information technology. Organizations have put intensely in these expansive, coordinated application programming suites expecting enhancements in - business processes, management of consumption, client administration, and all the more by and large, aggressiveness (Jelavic & Oglivie, 2010). Forrester survey data (Pugna & Albescu, 2012) reliably demonstrates that investment in ES and undertaking applications in general remains the top IT spending need. The ES market, currently evaluated at $38 billion, proceeds to grow at an unfaltering rate of 6.9% and is anticipated to reach $50 billion by 2012 [2]. Generous asset necessities in ES usage and lifecycle wide management have customarily limited these applications to huge corporations, prompting a few analysts and experts to claim that ES are most appropriate for large corporations (Laukkanen, Sarpola, et al., 2007). Late changes in ES marketplace, wherein the interest for Enterprise Systems from large organizations has level, have incited ES sellers to center on Small and Medium organizations (normally alluded to as SMEs) with some-what downsized ES (Aurum, *et. al.,* 2008).

In this domain, there are numerous cases of SMEs executing conventional ES, in consortia with other bigger partners. Such cases of conglomerated ES-usage are basic in multi-national organizations and public sector organizations, where the small and medium associations/offices execute ES as a piece of a bigger activity. Our advantage thus is not on the SMEs that have executed a downsized ES that is outlined particularly for the SMEs, rather the SMEs actualizing a customary ES. Notwithstanding the organizational wide ES-executions, it is broadly supposed that vast and SMEs confront diverse sorts of issues and purportedly get distinctive advantages and effects from ES contrasted with their littler partners. In connection to responsibility for Systems, substantial organizations specifically confront an assortment of challenges that drive up their proprietorship costs. It is called attention to that the SMEs are battling with finding an answer that parities usability with the business particular prerequisites expected to adequately run the business (Pan and Chen, 2005). Such dialogs in the marketplace have reestablished the level headed discussion over the appropriateness of expectedly huge bundled Enterprise Systems for SMEs. It is contended that, since the expenses and dangers of these extensive technology investments can more than adversary their potential adjustments, exceptionally cost touchy SMEs would vigorously examine their ES speculations. There

has been an on-going authentic exchange of the ramifications of hierarchical size for Information Systems performance (Pan, Newell, et al. 2007).

INFORMATION SYSTEMS AND ORGANIZATIONAL SIZE:

The number of employees has been utilized as a typical instrument of classify organizations. Be that as it may, the classification guidelines and benchmarks utilized to categorize organizations into "small", "medium "and "large "groupings remain exceptionally setting particular. The quantity of workers for a small organization ranges from 90 in Belgium, 100 in the USA and reaches out to 250 representatives in Germany. As indicated by the European Union rules, organizations with fewer than 50 workers are delegated small, and midsized is frequently alluded to as organizations with under 500 employees. In the setting of ES, the characterizations of "large", "medium" and 'small is correspondingly vague. Nonetheless, given that some ES sellers now giving SME answers for organizations below 200, provides an certain guideline for the specific circumstance.

Prior research on organizational size has talked about the unmistakable and one of a kind need of organizations in view of its size (Pan and Chen, 2005). (Pan, Newell, et al. 2007) Were among the main analysts to call attention to the importance of organizational factors in dealing with an Information System. In their initial work, proposed a system in the wake of contemplating Management Information System (MIS) in which they recognized organization size as a basic variable. They observed that the organization estimate had extraordinary importance because of its impact on asset accessibility, prerequisites essential for incorporation of expert units inside an organization, degree of formalization of organizational systems, and lead time for arranging and execution. Moreover, recognized organization measure as a wild factor and expressing that [CB] IS tasks are less inclined to prevail in littler associations contrasted with bigger partners. So also, (Ringle, *et. al.,* 2005) concentrated nineteen insurance agencies and presumed that firm size was specifically identified with execution of IS. Besides, scientists (Pan and Chen, 2005) have affirmed that smallto mid-sized organizations have a tendency to have a pioneering, everyday concentration in connection to Information Systems management and benefits and from time to time get ready for long haul benefits. (Pan, Newell, et al. 2007) Investigated different variables influencing small businesses in utilizing data frameworks and found that small businesses are inclined to: (1) software, (2) hardware and (3) execution issues in Information Systems Similarly, (Ringle, *et. al.,* 2005) concentrated the relationship between the sizes of assembling firms and are

utilization. He presumed that firm size is: (1) straightforwardly identified with the age of the association's computer operations, (2) contrarily identified with the measure of external programming that are being utilized, (3) specifically identified with the part of incomes designated to Electronic Data Processing (EDP), and (4) conversely identified with the rate of EDP costs that are utilized for obtaining computer hardware. Tending to specialized needs for organizations, (Bishop, *et. al.,* 2008) revealed that small to moderate sized companies lack satisfactory technical staff for IS attempts. Some researchers have investigated the relationship between advisor engagement in information systems and authoritative size (Holsapple and Wu, 2008) propose that the asset requirements confronted by SMEs may upset their capacity to maintain technology state-of-the-art, while in the meantime driving them to consider their IT ventures long haul (Ringle, et. al., 2005) imply the significance of looking for master help from experts in computerization achievement in small businesses. They saw better framework use in small businesses where specialists were employed.

KNOWLEDGE MANAGEMENT:

The objective of this area of the literature review is to determine the attributes of the knowledge management procedure pertinent for the Enterprise System Lifecycle. Knowledge management (KM) is frequently imagined as a precise procedure comprising of multiple phases. The KM lifecycle phases will then be utilized for the review instrument to evaluate the indicated contrasts between different organizational sizes. (Holsapple and Wu, 2008) Defines the knowledge management process as an on-going arrangement of exercises inserted in the social and physical structure of the organization with knowledge as their last product. Table 1 combines perceptions from the writing on knowledge management processes. It is perceived that the level of detail offered by each creator shifts much. Though table 1 portrays assorted, on occasion perhaps clashing viewpoints on knowledge management exercises, some clear accord on the underlying period of knowledge management is watched. Also, however the granularity of the systems differs and the quantity of stages reaches from three to seven, four basic stages spreading over the knowledge management lifecycle can be inexactly superimposed: (1) acquisition / creation / generation, (2) retention / storage / capture, (3) share / transfer / disseminate and (4) application / utilization / use; or more succinctly, Creation→Retention→Transfer→Application.

Table 1: Knowledge Management Lifecycle Phases

Knowledge Management Phases						
Creation		Storage		Transfer		Application
Collect	Identify	Create	Share	Apply	Organize	Adapt
Share		Generate		Evaluate		Combine
Abstraction and Generalization		Embodiment		Dissémination		Application
Determine Requirements		Capture		Distribute		Use
Mapping	Acquire Capture	Package		Store	Apply Share	Reuse Innovate
Acquire	Distribute	Interpret		Making Meaning	Org: memory	Retrieve
Create		Capture		Transfer		Access
Acquisition		Distribution		Interpretation		Org: Memory
Acquisition		Sharing		Utilization		
Acquisition		Retention		Maintenance		Retrieval
Initiation		Implementation		Ramp-up		Integration
Acquisition		Storage		Retrieval		
Creation		Capture		Transfer		Use

The creation stage (knowledge creation) includes growing new substance and supplanting existing substance inside the organization's implicit and explicit knowledgebase (Holsapple and Wu, 2008) and relates essentially with the arranging and execution phases of the ES lifecycle. While it is perceived that knowledge creation keeps on happening past ES execution, amid usage (or significant redesigns) there is a sudden crest in new knowledge requirements and related knowledge creation. This pinnacle includes every one of the three key players – specialist, seller and customer, where the outside players bring new knowledge on the product and on "best-hone" business processes to impart to the client organization and the client organization offers organizational business process knowledge with the outer gatherings (Albescu & Pugna, 2007. Albescu, *et. al.,* 2008. Albescu, *et. al.,* 2009). In early ES executions, numerous organizations focused on purportedly slightest cost, fast ES usage or an "innovation swap", in which situation they are frequently hesitant to unequivocally draw in (i.e. to submit extra resources) advisors and programming merchants for knowledge management exercises amid or resulting to execution, along these lines conceivably trading off the effectiveness of the ES-knowledgebase (Albescu, *et. al.,* 2007. Birkinshaw, *et. al.,* 2011. Fink, 2007).

DEVELOPING THE SURVEY INSTRUMENT:

The objective of this research is to assess the impact of organizational size on broad KM activities. Using the four phases identified through the literature, 10 survey items (see table 2) were designed for knowledge creation, retention, transfer and application. All items were scored on a seven-point Likert scale with the end values (1) 'Strongly disagree' and (7) 'Strongly Agree', and the middle

value (4) 'Neutral'. In addition to the items of table 2, the questionnaire included two criterion items: (11) 'Users have sufficient 3 knowledge' and (12) 'Overall, system related knowledge has been managed satisfactorily'. The first criterion items gauges the whether the respondent has adequate knowledge and the second item gauges the respondent's perception of overall KM-process.

Table 2: The Knowledge Management Measures of the study

Knowledge Creation	
1	Overall, <name of the application> knowledge possessed by the vendor has been appropriate
2	Overall, <name of the application> knowledge possessed by the consultants has been appropriate
3	Overall, <name of the application> knowledge possessed by the agency has been appropriate
4	Overall, knowledge of the agency, possessed by the vendor has been appropriate
5	Overall, knowledge of the agency, possessed by the consultants has been appropriate
6	Overall, the Agency knowledge of itself (e.g. Business processes, information requirements, internal policies, etc.) has been appropriate
Knowledge Retention	
7	Overall, <name of the application> staff and knowledge retention strategies have been effective
8	The Agency has retained the knowledge necessary to adapt the SAP system when required
Knowledge Transfer (formal)	
9	Training in <name of the application> has been appropriate
Knowledge Application	
10	Overall, <name of the application> knowledge has been re-used effectively and efficiently by the agency
Criterion Item	
11	Users have sufficient <name of the application> knowledge
12	Overall, <name of the application> system related knowledge has been managed satisfactorily

RESULTS AND ANALYSIS:

A total of three hundred and nineteen (319) responses from twenty-seven (27) organizations were accumulated utilizing a web-review instrument. Nine responses were expelled from the investigation because of missing qualities and saw unimportance. Dialogs with the strategic management in organization managing the ES for other organization revealed that they utilize the quantity of client licenses to helpfully classify organizations, where the quantity of client licenses beneath 200 is viewed as "Little", 200 – 999 are viewed as "Medium" or more 1000 are viewed as "Expansive". Utilizing those rules, the 310 respondents were grouped yielding, 66 respondents from Large organizations (21%), 196 from Medium (63%) and 48 speaking to Small organizations (16%). The dissemination of organizations is illustrative of the organizations in terms of the Enterprise System Application in the sample organizations. The examination beneath explores whether the respondents of the three organizational sizes demonstrate differences in connection to the Knowledge Management (KM) exercises determined through the writing. At long last, a way display is developed to survey conceivable contrasts in the relationship between the forerunner (KM results) and the

ES impact.

The analysis below has the goal of surveying whether the organizational size impacts the apparent incentive in the in four KM stages. Figure 1 portrays the mean scores of the integrity of knowledge management process items.

Observing figure 1 below, the following inferences are made:

1. **Knowledge Creation –** according to the description above, the six items of knowledge creation endeavored to gage the knowledge brought-to-hold up under by the customer, advisor and the product merchant. Observing figure 1, it is obvious that the contrasts between the three organizational sizes in connection to the knowledge creation things stay insignificant. In any case, considering the knowledge within the customer organization at the season of the execution, it was apparent that the large organizations (mean estimation of 4.3) had more internal knowledge than that of small organizations (mean of 4.0). This is steady with the writing on software implementations, where the small organizations need inside IT aptitude. Since a similar outside experts and the software vendors were utilized in each of the 27 associations, there were no substantial differences between the three organizational cohorts.

2. **Knowledge Retention –** From figure 1 (Highlight An) it is apparent that there are substantial differences between the three organizational sizes for knowledge retention exercises, with the mean scores slip with the declining organizational sizes (i.e. large organizations with the biggest mean score and the small organizations with the smallest mean score). The watched contrasts are then measurably tried utilizing the matched t-test, where the perceptions are affirmed at significance level .01. This gives the underlying confirmation of the powerlessness of the small organizations to hold ES related knowledge created amid the Implementation. This is in arrangement with the discoveries of watched "staff poaching" and "knowledge drain" because of the ES aptitudes deficiency amid the last 50% of the 1990's, we accentuation the absence of arranging and assets in small organizations to hold important information for the far reaching ES-achievement.

3. **Knowledge Transfer –** (Figure 1 – Highlight B) Formal knowledge transfer methods are particularly effective and important with the introduction and operation of large and complex systems like ES. Investigating the appropriateness of formal knowledge transfer mechanisms, we observe substantial differences between the three organizational sizes where the mean scores descend with the declining organizational sizes. The observed differences are then statistically tested using the paired t-test, where the observations are confirmed at significance level .01.

4. **Knowledge Re-use –** The differences between the three organizational sizes tend to minimize in relation to Knowledge Application. However, it is noted that, given the issues pertaining to knowledge retention and transfer, the ES-knowledgebase in small organizations remain relatively infertile.
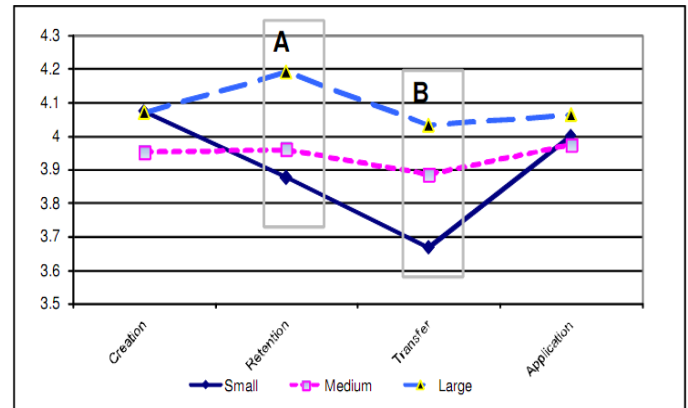

Figure 1: Descriptive Statistics of the KM process

Summarizing the key observations, it is clear that despite the 'equal' knowledge creation at the time of the implementation (perhaps as a result of all organizations being part of a large Enterprise System implementation project where the software vendor and the consultants remained the same across all organizations), small organizations tend to face issues in relation to retaining, transferring and using knowledge throughout the ES-lifecycle. Consequently, small organizations demonstrate lower satisfaction in their knowledge management activities (see figure 2).
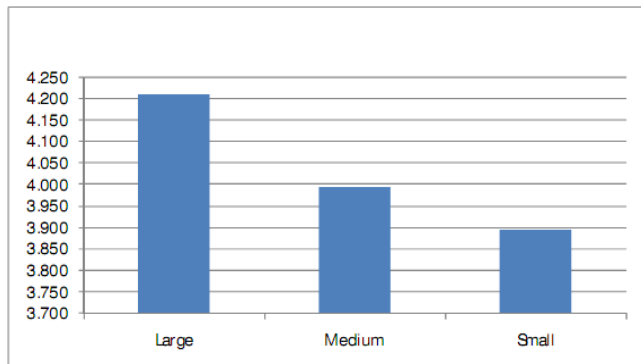
Figure 2: Satisfaction levels of the three organizations

The aforementioned discoveries impact the research path model testing below. Through distinct measurements, it is watched that managing knowledge at the two main stages of the ES lifecycle – pre and post ES implementation stages – could be fairly extraordinary in the three organizational sizes. Despite the fact that our underlying aim was to test a research show for Small, Medium and Large organizations for their general Knowledge Management activities, we were hated to recognize the KM activities of the PRE and POST implementation stages.

The path model (in figure 3) has been developed and tried utilizing the Partial Least Squares (PLS) methodology. The Smart PLS software has been utilized to test the indicated contrasts over the three organizations in connection to the execution and post-usage phases of the ES lifecycle. Alongside the observations from figures 1 and 2, thus we contend that, having passed around 10 years since the underlying ES implementations and have achieved a develop phase of the lifecycle, organizations require a lifecycle wide knowledge management strategy for ES. The three PLS models below investigate the relationship between KM at usage (knowledge creation), post execution KM exercises and their association with the overall goodness of the KM process.
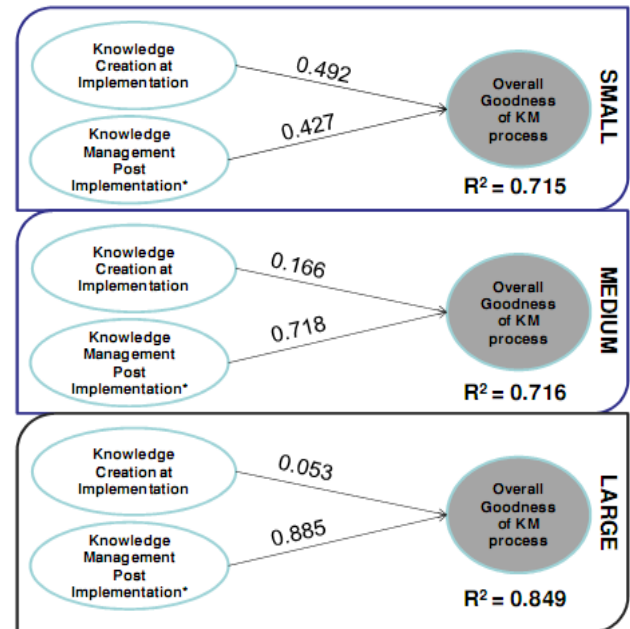
Figure 3: Path model of knowledge management (* post implementation activities include: knowledge retention, knowledge transfer and knowledge application and measured as per table 1; all values are significant at .005)

Results observe the quality of the ways between KM activities during and post ES-usage (independent variables) and the overall goodness of the KM process (the reliant variable). It is clear that the r-square of the overall goodness of KM process, decrease with the declining organizational sizes, crediting to the overall goodness of KM activities in large organizations. All the more critically, watching the way coefficients of the amid and post execution ways, unmistakably larger organizations have a tendency to clarify the overall goodness utilizing the KM exercises post implementation, contrasted with the small organizations where the overall goodness is as yet depending on the knowledge creation that had taken place.

CONCLUSIONS:

This research investigated the mainstream conviction that Enterprise Systems are appropriate for large organizations than little and medium organizations. Instead of researching the above marvel utilizing the "system success" perspective, this review concentrated on an essential "forerunner" of Enterprise Systems. Gathering information from 310 respondents, this think about explored the knowledge management process of 27 small, medium and large organizations. The primary relational word of the review was that all organizations require a

lifecycle wide knowledge management strategy to procure benefits from Enterprise Systems. In light of this preface, the review explored the integrity KM process (at the ES implementation, knowledge creation by consultant, vendor and the client organization, post usage exercises, for example, knowledge retention, transfer and re-use) in the three organizational cohorts. The homogeneity of the review setting – where all the sampled organization having actualized a similar Enterprise System, comparative modules and are at a similar period of the lifecycle – gave an unmistakable quality to the review, where the outcomes are less helpless against incidental variables. The review results demonstrated that, even with comparable knowledge creation results (particularly given the same consultants implemented a similar ES in comparable settings), small and medium sized organizations demonstrated bring down mean scores in connection to lifecycle wide knowledge management activities (i.e. exchange, knowledge retention and knowledge application). It was likewise watched that respondents from small and medium organizations detailed lower levels of fulfillment towards the general decency of the knowledge management in their organizations. All the more strikingly, a way model developed to survey the decency of KM process found that contrasted with large organizations, small organizations still evaluate the integrity of knowledge management process in light of the knowledge created at the season of the usage. This appraisal is very extraordinary in vast and medium organizations, where the evaluation of the decency of KM process is to a great extent in view of the post-execution KM exercises. These discoveries highlight the abilities (or absence of) of small organizations to keep up a lifecycle wide ES knowledge management technique, even with similar levels of knowledge creation at the season of the ES execution. Triangulating these discoveries with the discoveries of earlier reviews detailed in the writing audit, it is conceivable to relate these insufficiencies in small organizations to: (1) absence of satisfactory assets, (2) high dependence on outside ability in system implementation, (3) absence of IT refinement and (4) absence of knowledge retention techniques to minimize knowledge deplete. At once where the Enterprise System merchants are moving forcefully towards downsized frameworks particularly focusing at small organizations, the review comes about give some alert over long haul maintainability of ES for small organizations.

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