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# **ASSESSING THE KNOWLEDGE MANAGEMENT CAPABILITY OF THE GHANAIAN PUBLIC SECTOR THROUGH THE “BCPI MATRIX”: A CASE STUDY OF THE VALUE ADDED TAX (VAT) SERVICE**

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## ***Abstract***

*This paper presents the findings of a study which aims to assess the readiness of public sector organisations in Ghana to adopt and practice Knowledge Management (KM) in the face of various exigencies – political, economic and social- that are inherent in such establishments. The study is based on the BCPI Matrix (Kandadi, 2006), a meta-level framework for practicing KM in large and distributed organisations. The readiness for KM is explored across the four key dimensions of the BCPI Matrix: Business Focus, Culture, Process and Infrastructure.*

*The research methodology is based on a case study with the Value Added Tax (VAT) Service – a revenue institution that typifies Ghana’s public sector organisations. Self-administered and semi-structured interview questionnaires were employed in the data collection. The self-administered questionnaires were used to elicit quantifiable responses from the employees of the VAT Service which constituted the sampling frame. In addition, a set of interviews with senior officers of the organisation and a Specialist in charge of the country’s ongoing public sector reform yielded qualitative data that provided insights to the statistics obtained from the quantitative data.*

*The results of this study show that the public sector organisations in Ghana exhibit tendencies that can be receptive towards the implementation of Knowledge Management programmes. Employees in the public sector generally display a positive knowledge culture which, may be improved through enhanced working conditions and infrastructure. Ongoing reforms in the Ghanaian public sector promises government support to public sector organisations in the area of Knowledge Management which can promote KM practice. .*

*Perhaps, the major limitation of this study is the use of a single case organisation, VAT Service, to depict the overall view of KM in the Ghanaian Public Sector organisations. However, the authors intend to use this as a preliminary research and extend it towards a more comprehensive study that will attempt to develop a KM strategy as part of an overall ICT framework for Ghana’s public sector organisations.*

**Word count: 5,300**

## 1.0 INTRODUCTION

Knowledge Management (KM) as a managerial discipline is relatively new compared with other management fields like Finance, Accounting or Marketing. In practice, it has a more established background within various ancient civilizations than with some recent innovations in information technology (Bergeron, 2003). As a discipline of research and practice, Knowledge Management focuses on the utilization of knowledge or intellectual property contained in an organisation's network to leverage business practices to achieve competitive advantage in the volatile business environment. Varied perspectives of the subject are depicted by the myriad of authors in the KM literature who attempt to either churn out a framework for KM or propound theories for the discipline (Burton-Jones, 1999; Croasdell *et al.*, 2002; Kluge *et al.*, 2001; Malhotra, 2004; Wilson, 2002). That said, KM, with knowledge workers at its centre, by and large, is a social process which requires a thorough appreciation of the social, human and technological factors in its implementation (Kandadi, 2006).

KM programmes are motivated on one hand and sustained on the other by a number of organisational factors. These factors may be referred to as KM drivers and KM enablers, respectively. Most of the available literature, implicitly or overtly has sought to understand and explain KM, primarily, within a private-sector context. However, the need to better manage the vast and ever-increasing knowledge resources scattered within the public sector is now attracting attention and intervention from the governments in some countries. In England, for instance, the Knowledge Management National Project has been established to examine if an effective KM system can be designed to serve the wide range of needs of local authorities. In their research, Bate and Robert (2002) explored how the private sector KM concepts and practices might contribute to the further development of public sector quality improvement initiatives in general and to the reform of the National Health Service in particular.

Following from the assertion of the preceding paragraph, which signifies the role of KM in public sector organisations, an investigation is carried out to study the readiness or capability of the public sector of Ghana to manage its knowledge

resources. This study was conducted in the backdrop of wider reforms currently undertaken in Ghana to improve the performance of public sector organisations.

## **1.0 The Ghanaian Public Sector**

Located in the West African sub-region on the Gulf of Guinea, Ghana is divided into ten administrative regions. Ghana is a republic and member of the Commonwealth of Nations. The public sector, under the direct control of the government, is managed by Ministries, Departments and Agencies, usually referred to as MDAs. The Departments and Agencies are affiliated to various Ministries. There are other state bodies that may not be described either as Departments or Agencies but are affiliated to specific Ministries. These Ministries are constituted under the following major divisions: Governance, Finance and Economy, Infrastructure and Social Services (Appendix-1). The government representatives wield the ultimate political power and are at the helm of affairs as far as the public sector organisations are concerned.

The public sector employs the majority of the formal workers in the country. This means that the sector engages substantial number of knowledge workforce. Thus, it is inferable that vast amount of knowledge is generated by the public sector. It is common knowledge that workers in the public sector are less motivated compared with their counterparts in the private sector in terms of remuneration. Consequently, work attitudes in both sectors may not be the same.

The source of the apparent low morale of the public sector worker in Ghana may not be difficult to fathom. The sector appears to be overstaffed resulting in financial burden to the government which is the major employer. This scenario may not be peculiar to Ghana as social welfare and politics are major considerations in public sector employment. Consequently, it is to be expected that attitudes toward organisational information and knowledge as well as development and inculcation of knowledge culture in the public sector may leave much to be desired compared to the private sector. However, there are some indications of positive change in the context of knowledge workers in Ghana. The country is currently reforming the public sector through the creation of a Ministry for Public Sector Reform. It is expected that the

reform process will be profound enough to redeem the sector from the attitudes of indifference and general laxity that have become its inherent characteristics.

## **2.0 The BCPI Matrix**

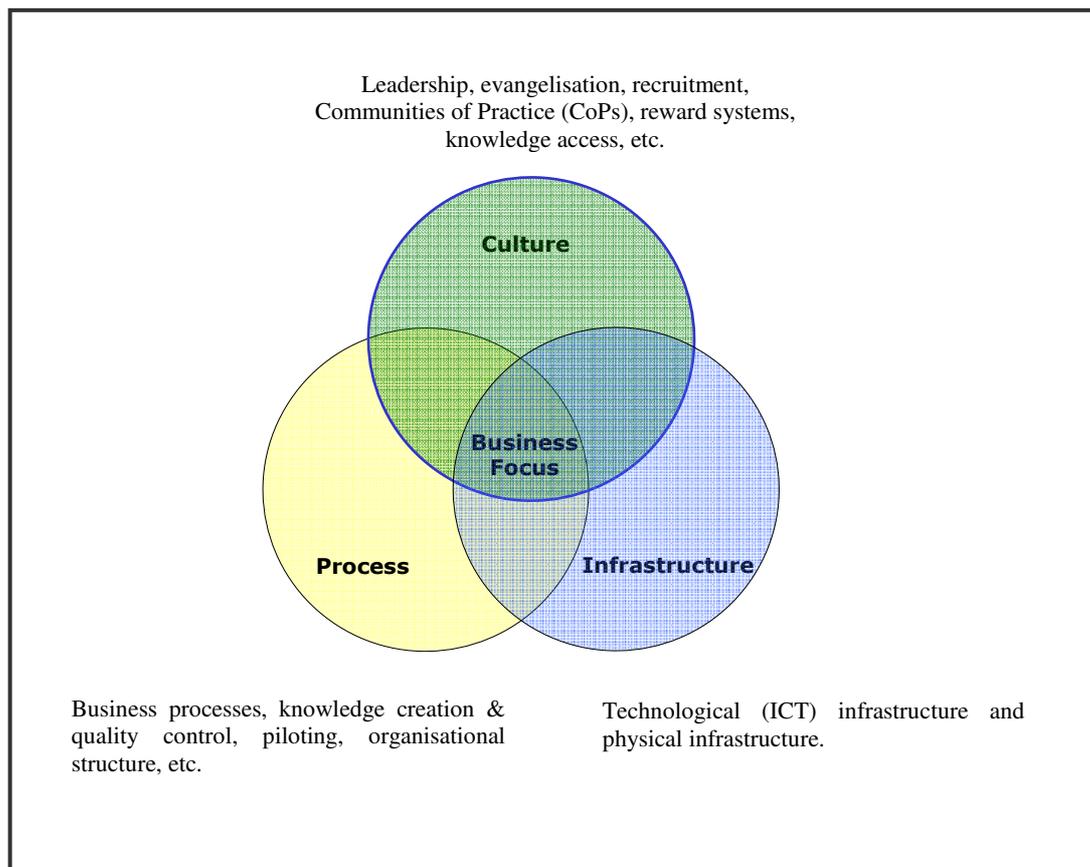
BCPI Matrix, a comprehensive framework for KM is developed to overcome some of the deficiencies in the theory and practice of the discipline (Kandadi, 2006). The BCPI is an acronym for Business Focus, Culture, Process and Infrastructure. These are four core organisational dimensions that are identified as encapsulating elements of the gamut of activities, processes and strategies required for practicing KM in large and distributed organisations. The Business Focus relates to formulation of the business need, value, strategy and objectives for KM. It is the Business Focus that engenders the motivation for the KM programme. The business need or focus of KM may arise from: Knowledge Dispersion, Employee Turnover, Market Environment, Virtual or Remote Working, and Innovation.

The Culture dimension in the matrix is associated with the development of knowledge culture in organisations to enhance the creation, sharing and usage of knowledge. Oliver and Kandadi (2006) defines knowledge culture as “a way of organisational life that enables and motivates people [employees] to create, share and utilise knowledge for the benefit and enduring success of the organisation”. The Culture elements include: Leadership, Knowledge accessibility, Recruitment, Employee Learning, Reward systems, Time allocation, Change Management, Evangelism, Communities of practice, Events.

The Process dimension is connected to the business processes optimisation and the KM implementation process. For this research, only the business processes of the case organisation would be examined. Together, the Process dimension involves: KM strategy and alignment, Organisational structure, Piloting, Knowledge creation and quality control, Content Management, Knowledge sharing and reuse, Business processes.

Infrastructure dimension, like the Culture and Process dimensions, enables the knowledge generation, capture, organisation, and dissemination process. Infrastructure comprises both technological and physical infrastructure such as KM systems for content management and office layout.

*Fig..1 A thematic representation of the BCPI Matrix: Four core organisations dimensions of KM and their interrelationships.(Kandadi, 2006)*



### **3.0 Knowledge Management in the Public Sector**

Certain inherent characteristics including bureaucracy, legacy business processes and blasé employee attitudes and low levels of technology adoption in the public sector may impede the application of KM principles. However, Skyrme (2003) and Wiig (2002) suggest that KM is applicable in decision making, service delivery and administration functions in the public sector organisations. Empirical studies on the effectiveness of KM strategy in the public sector are rare. A study conducted in

Slovenian state organisations (Ministries, Government Offices, Local Governments and Municipal Offices) indicated that KM processes were not widely employed. These studies however found that learning and knowledge culture within the public sector were positively influenced by organisational system of rewards, decentralisation, permanent training, budgetary support, readiness for change and KM networking (Berce, 2004). Bate and Robert (2002) also acknowledge the need to explore the use of KM principles, touted as private sector organisational techniques, in the public sector. They found that knowledge network such as communities of practice can enhance the utilization of the vast knowledge within National Health Service, a public sector organisation in the UK.

Reid and Bardzki (2003) also support the notion of KM as management theory developed for the private sector and that its impact on public sector organisation was at the teething stage. They submitted that the ideas, options and opportunities that successful KM offers can be used to enhance service delivery, improve relations with citizens and rationalise the internal processes of public administration. When tailored to meet the structure and needs of the public sector, KM will have the potential of giving the public sector a more dynamic and knowledge-conscious character. Therefore, the KM principles and practices that are proven effective in private business organisations are relevant to the Ghanaian public sector organisations and provide opportunities to improve their performance.

#### **4.0 Key Questions and Primary Focus of Research**

As noted in the introductory paragraphs, this research study focuses on public sector Knowledge Management (KM). Considering state organisations as the object of investigation, this research is limited to and encompasses assessment of preconditions that are vital in ensuring a successful KM programme. Findings and recommendations of this study will largely be applicable to state organisations. Their application to private businesses, Non Governmental Organisations (NGOs), and other kinds of organisations will require further studies to generalise the findings.

This research exercise is a case study of the Value Added Tax (VAT) Service of Ghana, a revenue institution in the revenue sub-sector of the Ghanaian economy. The extent to which state organisations nurture the intricate executive, managerial and organisational dexterity that motivate and facilitate knowledge creation and sharing is investigated through the BCPI framework. While exploring these details about state organisations in Ghana, this study aims to address two cogent and pressing questions:

- 1) Do the exigencies – political, economic and social – that state organisations have to put up with afford them the conditions necessary for successful KM programmes?
- 2) Are state organisations predisposed to KM?

## **2.0 RESEARCH METHODOLOGY AND DESIGN**

### **1.0 Research strategy**

This study adopts quantitative research methodology, the case study approach and Interpretivist philosophy as the intention is to discover and understand the reality behind the research scenario: KM in the Ghanaian public sector organisations. The defined research questions were addressed through a critical review of the existing KM literature and a case study of the Value Added Tax Service of Ghana.

### **2.0 Study Population**

Employees of the VAT Service constituted the sampling frame for the study. Diverse on the basis of Office Location, Rank/Job Title, Number of Years of Employment and Number of Years at Current Job Title and cultural background, the population typifies the workforce of the Ghanaian public sector. As of September 2007, the VAT Service had staff strength of 1,032 of which 270 (26 percent) were randomly sampled. In all, eight out of the fifteen large Local VAT Offices (LVOs), medium VAT Sub Offices (VSOs) and small VAT Satellite Stations (VSSs) were selected for the study to adequately reflect the regional, cultural and economic diversity within the VAT Service (and by extension, within the public sector).

### **3.0 Data Collection**

For this study, two types of questionnaires were designed; self administered questionnaires and semi-structured interview questionnaire. The design of these data collection instruments is based on a critical review of the extant literature in KM. The self administered questionnaires are the primary instrument used to elicit quantitative responses from the population under study. The semi-structured interview questionnaire was used to gain insights to the statistical data resulting from the study. These interviews with selected professionals (e.g. Head of Personnel) also helped in triangulation. Saunders, et. al (2003) suggest this technique where two or more independent sources of data or data collection methods are used within one study in order to help ensure that the data are telling what the researcher thinks they are telling him or her.

Overall, 270 questionnaires (self-administered) were sent to employees of the VAT Service according to the distribution set out in Appendix-2. Respondents were required to answer the questions freely without rationalizing their answers. A total of 211 questionnaires were completed and returned representing 78 percent response rate.

### **4.0 Research Ethics**

Various protocols and ethical guidelines were observed and followed in the conduct of this study and also in the presentation of the results. Research ethics are defined as the appropriateness of the researcher's behaviour in relation to the rights of those who become the subjects of a research project, or who are affected by it (Saunders, et al. 2003). Research ethics have privacy implications and their strictest observance by the researcher is not negotiable. For this reason, views attributed to specific interviewees in this study have been handled with the express knowledge of the concerned interviewees.

## **5.0 Data Analysis**

Responses from each completed questionnaire were captured and analyzed using the Statistical Package for Social Sciences (SPSS) with the help of a coding frame. Data were largely analysed thematically and according to the order of questions in the questionnaire. The data reflect the responses of the 211 respondents out of 270 contacted to complete the questionnaires. Responses from the interviews supported and provided insights to the implications of the survey statistics.

The details of respondents collected during the study included their department, job title/position/rank, number of years at their current ranks, number of years in the employ of the VAT Service and staff status (either management staff, senior staff or junior staff). Appendix 3 provides these details of the respondents.

## **3.0 FINDINGS, DISCUSSION AND EVALUATION**

This study depicts that without restructuring and re-orientation, the public sector may not be able to implement a workable KM strategy. Bureaucracy, centralised operations, budgetary constraints, resistance to change and political interference stifle knowledge culture in the public sector. Though most KM writers prefer to discuss KM concepts in private sector context, this study shows that there are indications that with some efforts on the part of public administrators, the effective implementation of KM initiative in the public sector would be possible.

The following subsections discuss the findings of the research in terms of the adopted BCPI Matrix (Kandadi, 2006). They explore how the survey results reflect the core dimensions of the matrix which in turn provides a view of the KM capability of the Ghanaian public sector organisations.

### **1.0 Business Focus (Motivation) for KM**

From the research findings, employee turnover is not a problem within the Ghanaian public sector so as to be considered in a KM strategy in an attempt to reduce the incidence of knowledge “walking out of the door”. Three dimensions that are

providing business need and necessitating Knowledge Management in the Ghanaian public are Innovation, Employee Learning, and Knowledge Dispersion. These, therefore, as revealed by the research findings should provide a major motivation for KM in the public sector of Ghana.

Over 90 percent of respondents indicated that their jobs involved being innovative, at least to some extent. Within this context, about 81 percent of the respondents noted that they require encouragement from supervisors to be innovative. However, interviews with the Head of Personnel of the VAT Service and the Project Implementation Specialist in charge of the Public Sector Reform revealed that excessive organisational bureaucracy hinder innovation and, generally, knowledge creation, in the public sector. They believe that a radical sensitisation of leadership of the public sector is required to fully exploit the innovative and creative potential embedded in employees of the sector. But the sector is well on its way to realizing this sensitization and promotion of innovation generally. Recently, the government has instituted the “*President’s Special Award for Innovation in Public Administration and Performance*”. The award, among many other initiatives, has not only engendered innovation within the public sector but also introduced competition among state organisations as they strive to win such a coveted prestige.

The public sector may not be described as apathetic when it comes to promoting employee learning. Organisations in the sector tend to have various schemes that are intended to encourage employees to embark on further studies and continuous learning. Though facilities like well-resourced libraries, relevant publication and internet access may be limited, opportunities abound for employees to enhance their careers with formal studies in educational institutions. A KM programme will have the potential to eliminate any limitation and consolidate employee learning programmes within the public sector of Ghana.

Though over 65 percent of respondents did not think knowledge is dispersed in the VAT Service, a wider look at the public sector revealed the opposite. Described as the use of different standards within a distributed organisation, knowledge dispersion is rife in the Ghanaian public sector as pointed out by the Project Implementation Specialist (PIS) in charge of the Public Sector Reform. The PIS noted that is was

fairly common to observe differences in operations and standards in a Ministry, Department or Agency which have branches across the country. With the potential for remote working and collaboration among employees, KM programmes have the potential of unifying knowledge and standards within the individual MDAs.

## **2.0 Culture**

Oliver and Kandadi (2006) define knowledge culture as “a way of organisational life that enables and motivates people to create, share and utilise knowledge for the benefit and enduring success of the organisation”. As noted earlier, in the KM literature, a wide array of factors and concepts are cited as influencing elements for the creation and development of knowledge culture. They include Leadership, Knowledge Accessibility, Recruitment, Reward Systems, Time Allocation, Change Management and Events. The existence of these factors in forms that promote KM was investigated by this research through the self administered and interview questionnaires.

Leadership at all levels of an organisation’s structure is crucial for the development of knowledge culture. Effective leadership is also needed for the overall success of the KM programmes as it influences a good number of the other factors mentioned in the preceding paragraph. On the whole, respondents of this study indicated the presence of a positive leadership in the case organisation. In each case, over 80 percent of respondents indicated that the organisation encouraged employee learning, supervisors encouraged innovation and were willing to offer explanation/give information related to official tasks. But the wider picture is not that impressive as the interviews revealed. Some amount of flexibility and employee-centeredness are required on the part of leadership in the public sector at large to develop an optimistic knowledge culture where knowledge is easily accessible, time is easily allocated for knowledge-related activities, and changes are smoothly implemented.

The greatest threat to knowledge culture in the Ghanaian public sector is the reward system(s). Despite the job security in the public sector, employees’ complaints over low levels of salaries, bonuses, retirement schemes and other forms of reward is

endemic. This was buttressed by the over 60 percent of respondents who were not satisfied with the reward system at the VAT Service. The public sector reform which is embarked upon by the Government of Ghana will address discrepancies in the reward systems within the sector. The PIS believes that when all is said and done, public sector employees will have less resentment toward the reformed reward system.

However, the question that remains to be answered is whether the new salary structure will be good enough to realise the expectations indicated by the PIS. One activity that may serve as a top-up for employees after the proposed improvements to the reward system could be an enhancement of employee's self image through continuous learning. Access to the internet, well-resourced libraries and recognition of knowledge creation and sharing aptitude will enhance the intangible rewards to employees in the public sector.

When asked whether public sector organisations should emphasize knowledge sharing aptitude in their recruitment process, the answer was absolute "yes" from the Commissioner of the VAT Service, the Head of Personnel of the VAT Service and the PIS of the Ministry of Public Sector Reform. Under the current public sector reform process, communication and knowledge sharing among public sector organisations will be promoted and supported by the appropriate technology.

### **3.0 Process**

The process dimension, as explained earlier, encompasses the core business processes and also the KM implementation process itself. Since the study is about determining the capability to do KM, it is the business processes that come into focus here. It is the knowledge intensive processes (KIPs) that need to be optimised for effective KM. With over 70 percent of employees in the VAT Service being knowledge workers, there is no gainsaying that there exist knowledge intensive processes that could be optimised by and for effective KM.

In fact, knowledge resource abounds in the public sector and the sector will benefit from its effective management. Employing over 60 percent of knowledge workers of

the whole economy, the public sector generates large amount of knowledge compared to the private sector. Therefore, an effective KM programmes in the form of organisation-wide KM strategy supported by top management, is required in each of the relevant public sector organisations.

#### **4.0 Infrastructure**

Both Technological Infrastructure and Physical Infrastructure are two essential factors that promote KM directly and indirectly. Though most of the existing KM literature ignores the physical infrastructure, it can gravely hamper the KM process in an organisation (Mack et al., 2001). Office layout, availability of common rooms, among others, can increase interaction among employees by facilitating easy contact. More than 50 percent of respondents do not think their current office accommodation and layout hinder access to their supervisor nor the effective performance of official work.

Establishment of Knowledge Management systems such an enterprise knowledge portals are an effective KM strategy for nationally-distributed public organisations. Such systems provide access to external sources of information such as news feeds and research as well as internal knowledge resources along with capabilities for e-mail, chat/instant messaging, discussion groups, and videoconferencing. For organisations in the public sector, unlike the private sector, the cost of acquiring these systems is prohibitive in the absence of an explicit national-level resource provision and initiatives. Financed by budgetary allocation and meagre internally generated funds only will make most public sector organisation overrun their budgets in an attempt to procure these enterprise systems.

For revenue institution like the VAT Service, funding for these systems may not be prohibitive as they retain some percentage of revenues collected. According to the Commissioner of the VAT Service in an interview, the organisation was on its way to install an intranet, having already developed its web site about a few years ago. It was therefore a positive action, in financial terms, when the Government of Ghana promulgated ACT 735 which authorised the generation and retention by MDAs of a percentage of the income they realise in the course of the performance of their

functions. In the absence of direct revenue streams for retention, the Government should support the funding of such systems throughout the public sector.

## **5.0 KM Capability of the Ghanaian Public Sector in the Light of the Findings**

The findings based on investigations carried out at the VAT Service mirror, to a large extent, the status quo within the public sector. While some of the findings put the VAT Service in a promising shape for KM strategy because of its peculiar circumstance of being a revenue collecting agency, the greater part of the findings reflect the general conditions and characteristics within the public sector. This section will answer two questions:

1. To what extent does the *VAT Service* reflect and exhibit the four dimensions of the BCPI Matrix which form the basis for a meta-level KM framework so as to be deemed capable of implementing a KM programme?
2. To what extent does the *public sector* reflect and exhibit the four dimensions of the BCPI Matrix which form the basis for a meta-level KM framework so as to be deemed capable of implementing a KM programme?

### **1.0 KM Capability of VAT Service**

From the analysis of the responses from employees of the VAT Service and the insights from the interviews with the Commissioner and the Head of Personnel of the VAT Service, the authors summarises the KM capability through the following statement:

*“The VAT Service is capable of implementing a KM programme. With a KM strategy aligned with the overall strategy for the organisation, the Service will be well on its way to carrying out a successful KM initiative”.*

The VAT Service clearly bears those conditions that form the business need for KM. These KM drivers include: Innovation, Employee Learning, and to some extent,

Knowledge Dispersion. A fourth implicit condition that could serve as a business need for KM in the VAT Service is Value Addition. Being a proactive revenue agency, a KM strategy will help with the achievement of the requirements of the VAT Service's Service Charter and improve the skill set of its workforce. The VAT Service, in compliance with measures to ensure efficiency in service delivery within the public sector, has developed for itself a Service Charter while seeking to render effective and quality service to taxpayers and the general public at large.

This study also shows that the knowledge culture within the VAT Service is encouraging. Improvements to the reward systems, promotion of knowledge collaboration activities and general managerial sponsorship will further enhance the atmosphere necessary for knowledge flow for a success KM initiative. The core business functions within the VAT Service are knowledge-based. Thus, when aligned with the KM programme, it will lead to an effective knowledge creation and usage. This fulfils the business process aspect of the Process dimension of the BCPI Matrix. With a web site in place and an intranet under development, the VAT Service can boast of a moderate technological advancement. These will support any enterprise knowledge portal that the Service may decide to set up for KM activities. On Physical Infrastructure, relevant policies may be put in place to overcome communication restrictions posed by the architecture of the offices of the VAT Service. It can be concluded that the VAT Service largely demonstrates the core organisational dimensions necessary for practicing Knowledge Management as set out by the BCPI Matrix.

## **2.0 KM Capability of Public Sector**

Determining the KM capability of the whole Ghanaian Public Sector from the observations made in the preceding section about the VAT Service may not be a straight forward task. However, the following propositions derived from this study should help in such an exercise:

1. The VAT Service may be in an advantageous position financially, but largely exhibits the general philosophy, characteristics and sentiments of the public sector;

2. The diversity of respondents from the case organisation, in terms of regional location, culture and length of service and rank may be said to adequately reflect the diversity within the public sector;
3. The copious insights provided by the Project Implementation Specialist in charge of the Public Sector Reform and other interviews revealed huge similarities between the VAT Service and the other public sector organisations in general.

On the basis of the above observations, the Ghanaian public sector, at least minimally, is capable of implementing a KM programme. Budgetary constraints, bureaucracy, political exigencies and staggering organisational shortcomings may present a wedge in the wheel of the public sector KM in Ghana. However, the ongoing reform of the sector is expected to address these militating conditions.

## **4.0 CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS**

Aimed at determining the KM capability of the Public Sector of Ghana through a case study of the VAT Service, this study was the outcome of an intensive literature review. The literature review revealed the scanty discussion of public sector KM in general and in the developing economies in particular. This shortfall in the existing KM literature motivated the study.

This study adopted “BCPI Matrix” (Kandadi, 2006), a meta-level framework for practicing KM, as a conceptual basis to assess the KM capability of the VAT Service and ultimately the Ghanaian public sector. The data collection and analysis phases of this research project revolved around this rigorous KM framework. Findings and the determination of the KM capability of the public sector were assessed in the light of the four dimensions of the BCPI Matrix which encapsulate the business need or motivation for KM and the enablers of the KM strategy. The dimensions are Business Focus, Culture, Process and Infrastructure.

The findings revealed that the public sector in general and the VAT Service in particular possess at least the minimum of the requirements for KM practice as explored through the BCPI Matrix. That notwithstanding, substantial efforts need to be committed to improving the KM capability of the public sector. It is expected that factors such as better reward systems, improved leadership and easy access to information and knowledge artefacts will be addressed by the current public sector reform process. Further studies into the Ghanaian public sector and the public sectors of other developing countries in the African and Asian sub-continent are recommended to generalise the findings of this study.

To improve the KM capability in the Ghanaian public sector, the authors suggest a further set of in-depth qualitative studies to determine the existing scenarios and KM requirements. Based on these further studies a comprehensive KM strategy and KM practice framework can be formulated. This can form an integral component of the overall ICT Agenda of the ongoing public sector reform. The development and implementation of a KM strategy for Ghanaian public sector may involve an application of the BCPI Matrix.

The authors are mindful of the following limitations in this time-strapped research study. Various avenues will be explored to address these limitations before conducting future studies proposed in the preceding paragraph:

1. Time constraint: the brevity of time for the project did not allow the authors to conduct as many interviews within the VAT Service as intended. For the same reason, the project was limited to only the VAT Service as a case study against the original intent of a more elaborate study of multiple public sector organisations.
2. Financial Constraint: The travelling costs from the UK to Ghana and other related costs limited the number of additional interviews outside the VAT Service.
3. Literature: The authors had limited access and time frame to explore other research work on public sector KM. This meant grave tasking of the authors' ingenuity, as a result of which originality may supersede conventions.

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## LIST OF ABBREVIATIONS

ARO	-	Assistant Revenue Officer
PRO	-	Principal Revenue Officer
SRO	-	Senior Revenue Officer
RO	-	Revenue Officer
MDA	-	Ministry, Department and Agency
LVO	-	Local VAT Office
VATS	-	VAT Service
VSO	-	VAT Sub-Office
VSS	-	VAT Satellite Station

## Appendix 1: Ministries within Ghana's public sector

(a) Fig 1.1: The Ghanaian Public Sector: Governance Ministries

Governance	
1	Ministry of Defence
2	Ministry of Local Government, Rural Development and Environment
3	Ministry of Foreign Affairs
4	Ministry of Interior
5	Ministry of Information and National Orientation
6	Ministry of Justice and Attorney General's Department
7	Ministry of Parliamentary Affairs
8	National Security (Bureau of National Investigations, the Ghana Police)

(b) Fig 1.2: The Ghanaian Public Sector: Finance and Economy Ministries

Finance and Economy	
1	Ministry of Food and Agriculture
2	Ministry of Finance and Economic Planning
3	Ministry of Trade and Industry
4	Ministry of Fisheries
5	Ministry of Tourism and Diasporan Relations

(c) Fig 1.3: The Ghanaian Public Sector: Infrastructure Ministries

Infrastructure	
1	Ministry of Water Resources, Works and Housing
2	Ministry of Transportation
3	Ministry of Communications
4	Ministry of Energy
5	Ministry of Lands, Forestry and Mines
6	Ministry of Railways and Harbours
7	Ministry of Aviation

(d) Fig 1.4: The Ghanaian Public Sector: Social Services Ministries

Social Services	
1	Ministry of Education, Science and Sports
2	Ministry of Health
3	Ministry of Women and Children's Affairs
4	Ministry of Manpower, Youth and Employment
5	Ministry of Culture and Chieftaincy
6	Ministry of Public Sector Reform

Appendix 2: Number of samples selected from the eight VAT Service offices chosen for the survey

VAT Service Offices	Number of employees selected for the survey
Head Office	50
Ring way Estate LVO	30
Takoradi LVO	30
Kumasi LVO	30
Tema LVO	30
Adabraka LVO	30
KIA LVO	30
Tamale VSO	20
TOTAL	270

**Appendix 3: Cross analysis of respondents' office location and department grouped on the basis of number of years at VAT Service**

No. of Years at VAT Service			Dept/Unit				Total
			Finance/ Administra tion	Operations	Research/ISSU	Other	
< 1yr	Office Location	<b>Head Office</b>	4	0	3	0	7
		<b>Ringway Estate LVO</b>	1	1	0	1	3
		<b>Takoradi LVO</b>	0	1	0	0	1
		<b>Kumasi LVO</b>	0	1	0	0	1
		<b>Tema LVO</b>	0	1	0	0	1
		<b>Adabraka LVO</b>	0	1	0	0	1
		<b>KIA LVO</b>	0	1	0	1	2
		<b>Tamale VSO</b>	1	1	0	0	2
		<b>Total</b>	<b>6</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>18</b>
1<yr<3	Office Location	<b>Head Office</b>	1	1	2	1	5
		<b>Ringway Estate LVO</b>	0	4	0	0	4
		<b>Takoradi LVO</b>	0	3	1	0	4
		<b>Kumasi LVO</b>	1	3	0	0	4
		<b>Tema LVO</b>	0	3	0	1	4
		<b>Adabraka LVO</b>	0	6	0	2	8
		<b>KIA LVO</b>	0	10	0	0	10
		<b>Tamale VSO</b>	1	3	0	0	4
		<b>Total</b>	<b>3</b>	<b>33</b>	<b>3</b>	<b>4</b>	<b>43</b>
>3 yrs	Office Location	<b>Head Office</b>	16	7	8	0	31
		<b>Ringway Estate LVO</b>	2	10	0	1	13
		<b>Takoradi LVO</b>	0	20	2	1	23
		<b>Kumasi LVO</b>	5	15	2	3	25
		<b>Tema LVO</b>	1	16	1	0	18
		<b>Adabraka LVO</b>	1	11	1	2	15
		<b>KIA LVO</b>	1	14	0	1	16
		<b>Tamale VSO</b>	4	5	0	0	9
		<b>Total</b>	<b>30</b>	<b>98</b>	<b>14</b>	<b>8</b>	<b>150</b>