Knowledge Management Systems That Influence Sustainable Competitive Advantage amongst Humanitarian Agencies in Kenya- Case of Information Technology Systems as an Enabler of Knowledge Management

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Abstract
This study investigated the influence of Knowledge Management (KM) systems on Sustainable Competitive Advantage (SCA) amongst Humanitarian Agencies-HAs through the use of IT systems as an enabler of knowledge management. The objective of study was to examine how information technology systems affect sustainable competitive advantage in humanitarian agencies- HAs- in Kenya. The study population was 42 HAs with 10,487 employees in Kenya. Both the primary and secondary data were collected using questionnaires, interviews, and observation checklists. The questionnaires were administered by a drop and collect method to ensure high response rates. Employees were stratified into management and junior staff. Purposive sampling was then used to sample management staff in the agencies surveyed and simple random sampling techniques were used to sample employees at the junior level. Statistical tools such as cross-tabulation and frequency tables were used to analyze the data. This study adopted a descriptive research design. The study used resource-based theory of knowledge management for competitive advantage as its theoretical basis. The resource-based view and theory of the firm defines a strategic asset as one that is rare, valuable, imperfectly imitable and non-substitutable. Knowledge is seen as one such strategic asset with the potential to be a source of competitive advantage for an organization. By adopting a resource-based theory of the firm with an extension of a knowledge-based perspective, this study aimed at developing and validating a conceptual model of the relationships between knowledge management enabler- it Systems and their influence on competitive advantage amongst humanitarian agencies in Kenya. From the study, there is substantial evidence to show that knowledge management has a strong positive influence on sustainable competitive advantage. The results from the 42 agencies surveyed reconfirmed a general agreement found in the literature that technological systems are ideal to bring significant positive correlations in improving organizational competitive advantage. Finally, recommendations were offered from practical ideas, drawn from experience, and intended for practitioners working with HAs but are also based on the theory behind the knowledge management concept and are just as relevant for consideration by knowledge management and development theorists alike.
Key Words: Knowledge Management, Competitive Advantage, Humanitarian agencies, Civic, IT, Strategy, Organization, Enablers

1. INTRODUCTION
This study adopted Salleh and Goh's (2002) definition of knowledge management where it is a process of leveraging knowledge as means of achieving innovation in process and products/services, effective decision-making, and organizational adaptation to the market for creating business/programme value and generating a competitive advantage to organizations. If the above statement is true, then it is extremely important that an efficient knowledge-intensive process must be established to meet the demands of improved organizational performance (Quinn et al., 1996). It is this area that provided the setting for the study to investigate the various critical KM enablers to sustainable competitive advantage.

2. STATEMENT OF THE PROBLEM
The study investigated the influence of knowledge management systems on sustainable competitive advantage amongst humanitarian agencies in Kenya. The study noted that a multitude of knowledge flows through humanitarian agencies in Kenya every day. However, nobody seems to account for the knowledge that the agencies require for present and future needs, how to acquire that knowledge, the kind of knowledge that individual employees in the agencies possess and how to share such knowledge with others. Given that knowledge is now considered an important source of competitive advantage in the knowledge society, the researcher contend that there is an urgent need to consider the use of IT systems to enable sustainable competitive advantage. The researcher also notes that while the primary users of knowledge management reside

in the corporate community, humanitarian agencies can also benefit greatly from the practice. In fact, knowledge management in humanitarian agencies could constitute a very relevant civic tool that would give back development to citizens, grass roots organizations and local communities without losing the training and specialization which are required in professionalized development work if implemented. The information age and the changes created by it have shifted humanitarian agencies away from being myopically concerned with the exploitation of tangible assets toward a steadfast and holistic interest in leveraging intangible assets as well. The management of knowledge as a key to grasping and retaining competitive advantage has recently evolved into the more strategically focused management of knowledge. In order to deal with more donors (at the top) and more beneficiaries (at the bottom), humanitarian agencies increasingly need systems to manage the creation, accessing and deployment of information. Put simply, humanitarian agencies are organizations that need an effective knowledge management system to tackle the problems that arise from both their local-global nature and from the difficulties of effective communication between and within humanitarian agencies and civil society (Vasconcelos et al, 2005). It is this area that provided the setting for the study to investigate how information technology systems, as a knowledge management enabler, can enhance competitive advantage amongst humanitarian agencies in Kenya.

3. OBJECTIVE OF THE STUDY

To examine how information technology systems affect sustainable competitive advantage in humanitarian agencies in Kenya

4. LITERATURE REVIEW

Literature review indicated sufficient use of information technology systems in humanitarian agencies in Kenya. IT systems is used in the agencies to deliver services, create products, coordinate activities along the value chain and form the foundation of strategic alliances subsequently building a competitive advantage for the agencies. But despite its key role as ubiquitous enabler, there is still a virulent lack of frameworks to both explain the profit impact of IT systems and to guide the agencies in exploiting the IT resources as a source of sustainable competitive advantage (SCA).

While many studies have found evidence of an effective use of IT systems resulting in superior performance, there are also cases where high investment in IT systems is not or negatively correlated with performance. These inconsistent findings are partly rooted in the incomplete understanding of IT resources and their impact on organizational performance. Of the many studies trying to relate IT investment and performance, most analyze single IT components linking them to organizational performance.

Porter acknowledges technology's role as one of the principal drivers of competition claiming that it plays a major role in both the structural changes in existing industries as well as in the creation of new industries. He states that Information Technology and Information Systems are particularly important as every activity creates and uses information. He points out that modern information system technology plays a particularly crucial role in scheduling, controlling, optimizing, measuring and otherwise co-coordinating all manner of activities in organizations. Similarly, he notes that office or administrative technologies, although often neglected or subsumed beneath the umbrella term of information systems, also have an important role to play.

Sadaat in his study on knowledge management for Business Performance Improvement in the United Kingdom concludes that competitive organizations must be able to locate, capture, store, share and leverage not only data and information but also the knowledge of the organization. However, if the majority of information needed for decision-making exists in the minds of employees, a system is needed to capture and codify this knowledge. Information Technology can aid the transformation process of knowledge (Sadaat, 2005). Sadaat further predicate that the emergence of new technologies has increased the ability of organizations to share knowledge, not just internally, but also with external stakeholders.

From the literature, the study agrees with the positions taken by Porter and Sadaat. This is because technological change is such an important influence on competitive advantage both because it creates new opportunities for competition and because it plays a central part in the existing competitive strategy through its ubiquitous presence in the value chain.

A further review of existing literature also revealed that e-knowledge networks allow their participants to create, share and utilize strategic knowledge to improve operational and strategic efficiency and effectiveness. The study concludes that this could be based on the fact that e-knowledge networks use technology systems to enable inter-organizational knowledge sharing which is useful for humanitarian agencies. In addition, the implications of inter-organizational knowledge sharing on the supply chain are considered for programme process improvement.

The study also found out from the review of available literature on the role of IT systems on sustainable competitive advantage that majority of humanitarian agencies believe in the powers of computers and communication technologies that lead to knowledge management implementation success in organizations. According to a survey by Covin et al. (1997), top executives of both Canadian Financial Post 300 firms and US Fortune 500 firms view information technology as one of the most critical success factors for knowledge management success which further attracts an organization's unique competencies. Further, a survey conducted by InformationWeek reveals that respondents consider knowledge management strategic to their business and the most popular information technology tools for managing knowledge are relational databases, text and document search engines, groupware, data warehouses and data sharing tools (Davis & Riggs, 1999).

Savary (1999) insists that an effective information systems infrastructure is necessary for the organization to implement the knowledge management process and build its competitive advantage. Information technology systems can provide an edge in harvesting knowledge (Bhatt, 2001). According to Bontis et al. (2000), structural capital includes the databases, organizational charts, process manuals, strategies and routines and anything whose value to the organization is higher than its material value. As a matter of fact, Davenport et al. (1998) point out two most critical factors for the successful knowledge management project, one is the establishment of a broad information systems infrastructure based on desktop computing and communications. The second one being the utilization of the network technology infrastructure such as the internet, lotus notes and global communications systems for effective transfer of knowledge. These assertions point to the role of technology in driving the agenda of knowledge management and supporting the competitive strategy of agencies through process improvement and programme delivery.

Despres and Chauvel (1999) report that knowledge bases and intranets are the most popular ways of implementing knowledge management. Ghilardi and Mellor (1997) also argue that the two critical components in a successful knowledge management system are the process and information systems.
Boudreau & Couillard in 1999 in a study on knowledge management concluded that information systems have provided knowledge management with capabilities that were not possible before (Boudreau & Couillard, 1999). It has helped an organization to manage and leverage its knowledge systematically and actively (Storck & Hill, 2000). The study agrees with this position especially with the fact that without information technology and computers, knowledge cannot be stored. The researcher further noted that storage forms an important part of knowledge management activities, and hence any inefficiency of this part will disable knowledge management. The researcher is therefore convinced to conclude that an I.T system is critical to successful knowledge management implementation with a subsequent result in competitive advantage. Increasingly, organizations are creating specific initiatives or programs with a knowledge focus. Knowledge teams and knowledge leaders are emerging, but very few organizations are applying knowledge management throughout their organizations (Skyrme, 1999, p. 109).

The study further reviewed knowledge management models that could serve as best practices and those which are a creation of IT systems. The study found out that in the knowledge management World and Intranets Conference in 2003, a brilliant knowledge management Reality Award obtained by the National Center for Missing and Exploited Children (NCMEC) has given a proof, a multilingual database of images and information on missing children has formed the network. NCMEC is able to transmit images and information instantly to law enforcement throughout the United States and to other countries around the world in each other's native language, also technological advancements, training workshops, programme development, research and evaluation help to explore the method of using experienced-based database to find missing children. (KM World & Intranets 2003 review, 2004). This successful case reveals that taxonomy has a great responsibility to contribute linking the desired content; it is sort of textual analysis to manage the knowledge to a conceptual framework for acquisition and sharing.

Besides database, intranet is a common tool used to share knowledge inside the organizations surveyed. In California, 14 non-profit libraries which are part of the community foundation, volunteer center and management support organization and formed the California Management Assistance Partnership (C-MAP). From the literature on C-MAP, the study learnt that specialists in the platform share the best practices and lessons learned through meeting, conference calls and the C-MAP intranet. The review further noted that with an upgraded knowledge management system, the non-profit information services group could share its collective knowledge with other non-profit centers throughout the region. The system could then be implemented to coordinate the work of nonprofit information providers across the nation (Larson et al., 2005).
Liz, in her study on knowledge management in 2005 pointed out that non-profit organizations also needed to

leverage nonprofit intelligence which is called as business intelligence in commercial world. She documented that nonprofit intelligence supports sophisticated analysis and insights for the non-professionals to make decisions and demonstrate the value of services to the stakeholders (Liz, 2005). The intelligence could also include such software tools that offer extensive data mining services, solution houses, and multiple data marts among others. The study noted that these nonprofit intelligence could be embedded with personalized knowledge development to create a greater sense of familiarity and comfort with the system, and facilitate the advanced learning opportunity from portal which can transform traditional learning to collaborative learning.

A review of available literature on information and technology systems as an enabler of knowledge management with subsequent pointer to sustainable competitive advantage in Kenya showed that governments in the developed countries have optimized information and communication technologies (ICT's) as knowledge management enablers. Okemwa however notes that Kenya lags far behind such developed countries in as far as the application of ICT's are concerned, and this has impacted on the practice of knowledge management and the benefits such practices may have on service delivery (Ondari-Okemwa, 2006).

The study concludes that humanitarian agencies must keep track with the market trends through IT systems as an enabler. IT systems are therefore a critical enabler of knowledge management which in turn enhances sustainable competitive advantage.

5. DATA FINDINGS, ANALYSIS AND INTERPRETATION
5.1 Respondents Features
A total of 375 employees from 42 humanitarian agencies were targeted for this study. 84 managers were in the sample which was purposively sampled and 82 managers successfully completed and returned the questionnaires, resulting in a response rate of 97.6%. A sample of 291 junior staff was targeted from the population. An average of 280 questionnaires were completed and returned, resulting in a response rate of 96.0%. The respondents surveyed consisted of 48.8%, 183 males and 51.2%, 192 females. Amongst the respondents interviewed, majority, 57%, 104, of the males were aged between 25-35 years, 27.0%, 49, aged between 18-24, 12.0%, 21, between 36-46 years and only 4.0%, 8, were above 46 years. In the female category, 61.0%, 116, represented the age between 25-35 years forming majority of the respondents, 30.0%, 58, between 36-46 years, 7.0%, 14, between 18-24 years whereas those above 46 years were the least at 4.0% constituting only 4 of the respondents surveyed.

5.2 Education Level of the Respondents Interviewed
The respondents interviewed indicated that 49.6%, 186, had their highest level of education as undergraduates. While 25.6%, 96, of the respondents had masters degree, 19.7%, 74, responded to their highest level of education as diplomas. PhDs were only 1.0%, only 4 employees, of the respondents surveyed while 4.0%, 15, of the respondents did not disclose their highest educational qualification. The highest numbers of respondents were graduates. This can be attributed to the minimum qualifications of employment in the industry based on the nature of tasks and assignments. The high number of employees with masters degrees is attributed to the competitive nature of employees in the industry and further to industry dynamics which keeps changing and continuously require increasing skill set. With the increasing schooling opportunities, most staff were able to exploit on opportunities for schooling and had registered for either their masters, post graduate diploma or PhD programmes.

Table 4: Education level of the respondents interviewed
Source: Author (2014)

	Frequency	Percent
Diploma	74	19.7
Undergraduate	186	49.6
Masters	96	25.6
PhD	4	1.1
Total	360	96.0
No response	15	4.0
Total	375	100.0

5.3 Competition With Other Humanitarian Agencies

Table 2: Competition with other humanitarian agencies
Source: Author (2014)

	Frequency	Percent
Yes	230	61.3
No	137	36.5
No response	8	2.1
Total	375	100.0

Table 3: Rating competitive advantage of humanitarian agencies to that of other NGOs
Source: Author (2014)

		Frequency	Valid Percent
	Very poor	6	1.6
	Poor	70	19.0
	Good	172	46.6
	Very good	97	26.3
	Excellent	24	6.5
	Total	369	100.0

Amongst the respondents interviewed, both junior and management staff respondents, 61.0%, 230 employees, had a strong opinion that their agencies face competition whereas 36.5%, 137 employees, felt that their agencies face no competition and about 70.0%, 220 respondents, felt that their agencies are well placed to face the competition while 30.0%, 125, of the respondents felt that their agencies are not well positioned in the competition. This is attributed to the fact that humanitarian agencies have been recently faced with intense funding challenges in which donors only target agencies with proven competitive advantages in the areas of jurisdiction. They also face competition in regard to partnerships where huge agencies only partner with agencies they feel have distinctive competencies and which can manage their resources well. Humanitarian agencies surveyed obviously face competition in their operations in several fronts and have continually recognized that they need to have distinctive features to thrive through the competition and to keep sustainable competitive advantage.

Out of the respondents interviewed, 46.6%, 172, rated the competitive advantage of their agencies at Good, 26.3%, 97, rated the level of competitive advantage of their agencies at Very Good whilst only 6.5%, 24, rated the level of competitive advantage of their agencies against other humanitarian agencies at excellent.

The perspectives of competition identified by respondents included funding (35.0%, 122), project procurement (20.0%, 70), programmes and projects competition (30.0%, 105), remuneration and rewards (15.0%, 53). Whilst 71.0% admitted that their agencies face competition, 29.0% admitted otherwise.

The respondents indicated that for example in project procurement, an agency was not well placed as it lost some projects to competitor agencies in a refugee camp. Some agencies were noted to be paying lower salaries than others. The employees then keep moving from agency to agency based on offers given in the said agencies. This leads to loss of skill set and knowledge base already created by these employees against other organizations by continuous increase in staff turnover.

Fundraising represents a potential source of inefficiency (Aldashev and Verdier 2010: 48). An open question is whether efficiency enhancing effects are restricted to competition by peers from the same home country (like here in Kenya) or whether the nationality of competing NGOs does not matter in this regard. In any case, the link between competition and knowledge management may have important implications for the ongoing debate on donor fragmentation and aid proliferation. Proliferation and fragmentation are widely feared to impair the effectiveness of aid by imposing high transaction costs on the recipient organizations.

The study noted that agencies under fierce pressure to attract donations may engage in excessive fundraising and shift an increasing amount of time and effort from finding solutions and helping needy recipients to pleasing their donors and winning television coverage (The Economist, January 27, 2000).
Development sector agencies must acknowledge the enormous size of their sector and start creating new models of working to compete in it. No matter how small an agency is or how unique its offering the global economy has arrived on its doorstep. Unless it develops new models of working, such as a growth through knowledge

management model as outlined in this study, it will find itself ill-prepared to compete in the global development sector.

The study therefore, in light of the findings, concludes that the agencies surveyed are well positioned for the industry competition. Although they will need to leverage on IT systems as a knowledge management enabler to maximize their potential impact and competitive ability and avoid such scenarios of losing projects to competitors as in the case mentioned by some respondents during this study.

6. Specific Findings on How Information Technology Systems Affect Competitiveness Amongst Humanitarian Agencies in Kenya

The study found out that humanitarian agencies are facing urgent need for technological innovation and competitive advantage improvement through the use of modern information, communications and technology systems; many do not have the capability to adopt new technologies due to inadequate labour force, inadequate capital and managerial skills. Most of their technologies and systems are based on traditional technologies operated under manual or semi-automatic control or transferred from programme to another. The study will now delve into various elements of information technology systems and discuss how they affect sustainable competitive advantage.

6.1 Use of Information Technology Systems

94.6%, 78, of the management staff interviewed overwhelmingly responded that humanitarian agencies are better using information technology in its operation systems and only 5.4%, 4 responded otherwise. In comparing before and after implementation of IT systems in the humanitarian agencies, 16.2%, 13, of the management staff respondents felt that use of IT has enhanced performance to a very large extent, 45.9%, 38, large extent and 27.0%, 22, to a moderate extent. This is attributed to the fact that IT is an enhancer of organizational functions. IT shortens decisional span, supports automation of services and increases operational efficiencies. This is in tandem with Porter's assertion that modern information system technology plays a particularly crucial role in scheduling, controlling, optimizing, measuring and otherwise co-coordinating all manner of activities in organizations. Similarly, he notes that office or administrative technologies, although often neglected or subsumed beneath the umbrella term of information systems, also have an important role to play as: He further notes that change in the way office functions can be performed is one of the most important types of technological trends occurring today for many firms, though few are devoting substantial resources to it (Porter, 1985). This is also backed by Skyrme who posited that I.T systems are critical to successful knowledge management implementation and subsequent competitive advantage. Increasingly, organizations are creating specific initiatives or programs with knowledge focus (Skyrme, 1999).

6.2 Importance of Technologies in Achieving Organizational Objectives

The study determined the importance of various technologies in achieving organizational objectives. This was rated from very important to unimportant. The results found were as follows;

Table 4: Technologies for Achieving Organizational Objectives
Source: Author (2014)

Technology	Very Important	Important	Moderately important	Somewhat important	Unimportant
Non Profit Intelligence/Business intelligence/Knowledge	32, 39.0%	33, 40.2%	15, 18.3%	1, 1.2%	1, 1.29%
New customer relationship management (CRM) applications	23, 28.4%	34, 42.0%	15, 18.5%	3, 3.7%	6, 7.4%
Security applications management solutions	31, 39.2 %	31, 39.2 %	15, 19.0%	1, 1.3%	1, 1.3%
Mobile/wireless technology	48, 58.5%	24, 29.3%	8, 9.8%	2, 2.4%	0, 0.0%

6.3 Non Profit Intelligence/ Business Intelligence

Looking at the importance of the listed technologies in achieving organizational objectives, 39.0%, 32, of the management respondents felt that Non Profit Intelligence/Business intelligence/Knowledge shall be very

important in achieving organizational objectives in the next five years. 40.2%, 33, felt that it was important for business intelligence while 18.3%, 15, felt it was moderately important. Only 1.2%, only 1 management staff respondent, felt otherwise that non for profit intelligence is not important to achieving organizational goals in the next five years.

6.4 New Customer Relationship Management Applications

As regards to the focus on new customer relationship management applications for achieving organizational objectives in the next five years, 28.4%, 23, of the management staff respondents felt that it would be very important, 42.0%, 34, saw the application important in achieving the objectives within the next five years and 18.5%, 15, felt that the technology was only moderately important in achieving organizational objectives in the next five years while 7.4%, 6, felt it was unimportant at all.

6.5 The Focus on Security Applications in Achieving Organizational Objectives

The study established whether the agencies targeted would focus on security applications to achieve their operational objectives. 39.2%, 31, of the management respondents indicated that their focus would be on security applications management solutions since they are very important in achieving organizational objectives in the next five years. An equal number of management respondents responded in the affirmative on importance of the technology in achieving organizational objectives. 19.0%, 15 of the management staff said it was moderately important while only 1.3%, only 1 management respondent rated the focus on security applications as moderately important and unimportant respectively.

6.6 Use of Mobile/ Wireless Technology Solutions

The study investigated how the agencies will prioritize the use of wireless/ mobile technology solutions. About 59.0%, 48, of the managers surveyed gave priority to mobile/ wireless technology to help with achievement of organizational objectives. 29.0%, 24, also rated this technology as important to their operational activities while about 10.0%, 8, listed this as moderately important, that they could only consider it but not as a priority. 2.4%, only 2 managers said mobile/ wireless technology was slightly important.

Other IT investments may also need to be reconsidered in the light of these findings. Delivering information to mobile users has been a key IT issue in recent times, and this will continue to be a major goal for humanitarian agencies. For most managers in the study, however, having information that offers them solutions to insecurity is less important than having access to information on the move. This may explain why knowledge management and business intelligence solutions assume less importance than mobile/wireless technologies in the study. New customer relationship would assume a considerable amount of focus due to the importance of managing beneficiary relationship for the sake of donor demands and programmes'/ projects' acceptance and ownership.

This is line with a study by Boudreau & Couillard in 1999 which concluded that information systems have provided knowledge management with capabilities that were not possible before (Boudreau & Couillard, 1999). It has helped organizations to manage and leverage its knowledge systematically and actively which in turn enhance performance of these organizations (Storck & Hill, 2000).

This is further backed by a study by Liz, in her study on KM in 2005, which pointed out that non-profit organization also needed to leverage nonprofit intelligence which is called as business intelligence in commercial world since it supports sophisticated analysis and insights for the non-professionals to make decisions and demonstrate the value of services to the stakeholders (Liz, 2005). There is no shortage of technologies for knowledge management and non for profit/ business intelligence.

The desire to build deeper customer/ beneficiary relationships has consistently emerged as a top priority for most of the agencies surveyed in the research. The agencies believe that the ability to understand their customers' needs, and to predict changes in their behavior, could give them a decisive advantage over their competitors. And yet this is an area where their knowledge-management capabilities are often weakest. Despite the heavy investments most humanitarian agencies surveyed had made in CRM systems in recent times, only 26.0% of executives in the survey say they are effective in capturing and exploiting information on customer preferences and behavior.

The agencies are only too aware that their situation must change if they are to compete effectively in an increasingly customer-driven programme/ project environment. A good percentage of the management respondents in the study cited knowledge of customer preferences and behavior as the area where they will need to make the greatest efforts to improve the quality of organizational information over the next three years. To be

successful in this endeavor, organizations need to do a lot more than merely capture mountains of information about customers/ beneficiary. They must learn how to analyze this information to identify what drives customer/ beneficiary behavior. The use of customer/ beneficiary analytics not only allows humanitarian agencies to keep beneficiaries satisfied, but also enables them to grow customer/ beneficiary relationship. Before they can put these strategies into effect, however, the agencies need solutions to some of the problems that have hampered knowledge management in the past.

Tools include data warehouses and other knowledge repositories, online communities, e-learning applications, intranets and numerous electronic directories and search technologies. Most of them can be useful if applied correctly. Ironically, though, many of the IT systems firms bought to create better information flows are also part of the problem: by generating more data than users can digest, they make it harder for people to find information of real relevance or importance. As with any form of IT, the key to success with knowledge-management tools is to define clearly your information requirements, and only then pick the technology that will best support these needs. In practice, many knowledge initiatives have gone awry because managers have put the cart before the horse.

6.7 Investment in Communication Technologies
The study sought to establish whether the humanitarian agencies would invest in communication technologies. The following findings were recorded;

Table 5: Investment in communication technologies
Source: Author (2014)

Device	N	Yes	No	Not sure
voice over IP comm. Technology	76	60, 78.9%	13, 17.1%	3, 3.9%
3G phones investment	77	58, 75.3%	10, 13.0%	9, 11.7%
Wireless LAN/Wi-fi	79	72, 91.1%	1, 1.3%	6, 7.6%
Bluetooth enabled devices	78	58, 74.4%	12, 15.4%	8, 10.3%
PDAs	77	40, 51.9%	24, 31.2%	13, 16.9%

Amongst the communication technologies that the agencies surveyed would invest in, 91.0%, 72, of the management staff interviewed were in agreement that wireless connection is dominantly used at in their agencies and that they would invest in it.

Only 1.0%, 1 manager said they would not invest in wireless connection while close to 8.0% constituting 6 managers were not sure as to whether they would invest in wireless communications technologies. 78.9%, 60 of the managers surveyed reported that they would invest in voice over the internet protocol while 17.9%, 13, said they would not invest in the technology and a few 3.9%, only 3 management staff respondents were not sure as to whether they would invest in voice over internet protocol as a communication technology.

As regards 3G phones 75.3%, 58 management staff respondents, said they would invest in the technology to improve their communications activities. 13.0%, 10 managers, said they would not invest in 3G phones while 11.7%, 9 management staff respondents, indicated they were not sure of their investment in 3G phones.

For blue tooth 74.4%, 58, of the management staff surveyed from across all agencies said they would invest in bluetooth devices for communications. 15.4%, 12, said they would not invest in the technology while 10.3%, 8, indicated they were not sure whether they would invest in blue tooth technology or not.
Half of the management staff surveyed, 51.9%, 40, scored an investment in PDAs. 31.2%, 24, said they would not prioritize investment in PDAs while only 16.9%, 13, said they were not sure whether they would invest in this technology.

Examining the extent to which these devices have enhanced communication in the organization, 49.0% of the respondents reported that 3G phones have impacted communication to a large extent, 62.0% of the management

staff respondents reported LAN wireless to have enhanced communications to a very large extent, 16.2% reported that Bluetooth impacted communication to a moderate extent and 24.3% reported that PDAs have impacted communication in their agencies to a very large extent. This is attributed to the fact that intranet is a common tool used to share knowledge inside organization. Internet, too has received fully adopted in all organizations for sharing knowledge.

Organizations have moved from the use of LAN to the use of wireless LAN through fibre optic cables. This affirms the fact that in California, 14 non-profit libraries which are parts of a community foundation, volunteer center and management support organization formed a California Management Assistance Partnership (C-MAP). The specialists share the best practices and lessons learned through meeting, conference calls and the C-MAP intranet. With an upgraded knowledge management system, the non-profit information services group could share its collective knowledge with other non-profit centers throughout the stated (Larson et al., 2005).

6.8 Importance of IT Systems in Humanitarian Agencies

The study investigated the importance of IT systems in various agencies in regard to support to projects, improving decision making, automating processes and improving operational data and sharing across departments.

Table 6: Importance of IT systems in HAs

Source: Author (2014)

Role of I.T Systems	Frequency	Percent
Supporting and improving the way that projects/programmes/services are delivered, thereby increasing the organization's competitive advantage	73	54.1%
Improving decision-making by accelerating the flow of high-quality information to managers and other staff	63	46.7%
Automating Processes and Improving Operating Efficiency	61	45.2%
Improving operational data and sharing it across departments, functions and programme units, thus improving internal coordination	81	60.0%

On the role of IT systems in HAs, 54.1%, 73, of the management respondents interviewed said that IT played an important role in supporting and improving the way that projects/programmes/services are delivered, thereby increasing the organization's competitive advantage, while another 46.7%, 63, reported IT systems as important in improving decision-making by accelerating the flow of high-quality information to managers and other staff. 45.2%, 61, of the respondents rated as important the role of IT in Automating Processes and Improving Operating Efficiency whereas over half of the respondents, 60.0%, 81 of the management staff respondents, reported IT systems as important in improving operational data and sharing it across departments, functions and programme units, thus improving internal coordination. IT systems have proved useful in influencing management of programmes as nearly every aspect of the programmes/ projects call for the use of computers or any other form of IT.

The study hence offers a competency-based view of how information technology systems can be used to achieve competitive advantage. Building on the resource-based research that links distinctive organizational competencies to sustainable competitive advantage, the study argues that the potential contributions of Information Technology Systems to competitive advantage can be understood in terms of their impact on the development and utilization of distinctive organizational competencies. To explore the potential IT Systems linkage to organizational competencies, the study examined whether and to what extent IT systems can be used to foster and facilitate the development and utilization of three types of organizational competencies at the operational level: input-based competencies, transformation-based competencies and output-based competencies. An analysis shows that IT Systems play an important role in enabling organizations to develop and leverage these organizational competencies. This is corroborated by a study by Tseng which discusses that with respect to technology, Tseng (2008), the value of IT to sustainable competitive advantage is in enabling the expansion and universalization of the scope of knowledge and in increasing the speed of transferability. Tseng (2008) also suggests that advancements in IT and the internet have greatly enhanced the value of knowledge assets.

This is further emphasized by Lin and Huang (2008) who highlight the importance of ensuring that the users of such technology perceive it to be useful, and suggest that the effectiveness of a knowledge management technology is dependent on the extent to which a knowledge sharing culture already exists. Further to this, they state that the users need to feel that utilizing the technology is beneficial to them on a personal level.

 In terms of the specific technologies used, several respondents identified the need for it to serve different purposes such as authoring, indexing, classifying, storing, automating processes and improving operating efficiency, contextualizing and retrieving information, as well as for collaboration and the application of both tacit and explicit knowledge. Sadaat predicate that the emergence of new technologies has increased the ability of organizations to share knowledge, not just internally, but with external stakeholders (Sadaat, 2005). This has a greater paradigm in determining the competitive advantage of such organizations.

6.9 What IT Will Improve in the Next Three Years in the Agencies Surveyed
Regarding what IT will improve in the next three years, the findings were as follows;
Table 7: Focus on IT in the short term
Source: Author (2014)

Role of I.T Systems in the next three years	Freq	Yes	No
Make it easier to analyze and drill down into information	78	71, 91.0%	7, 09.0%
Get instant alerts on things going wrong	80	67, 83.8%	13, 16.2%
Deliver information to managers faster	79	70, 88.6%	09, 11.4%
Improve the quality of data	80	69, 86.2%	11, 13.8%
Ensure access to information anywhere	80	68, 85.0%	12, 15%

When asked about what IT will most likely improve in the agencies in the next three years, in the short term, 91.0%, 71, of the management staff responded that they wanted IT systems that will make it easier to analyze and drill down into information in their agencies. Only 9.0%, 7, responded otherwise in this regard.
About 84.0%, 67, of the management staff respondents said IT will be used in the next three years to get instant alerts on things going wrong in their agencies. A few 16.0%, 13, were not in affirmative of this focus in the next three years.

89.0%, 70, of the management staff respondents were hopeful that IT will in the next three years be used to deliver information to managers faster whilst 11.0%, 9, were not hopeful in this regard. In regard to improving the quality of data, majority of the management staff surveyed, 86.2%, 69, believed IT would most improve this aspect of programming in their organizations while only 13.8%, 11, believed IT would not be used to improve this aspect of programming in their agencies in the next three years. 85.0% , 68, of the agencies' management staff surveyed believed IT would in the next three years help ensure access to information anywhere to support their programmes while a little 15.0%, 12, said they do not see IT helping much in this regard in the next three years.

The data on the focus of IT and expected areas of improvement point clearly to the role of IT as an enabler of knowledge management. This is affirmed by Power, D. J, 2002 where he asserts that executive information systems (EIS) are a type of management information systems that facilitate and support senior executive information and decision-making needs. It provides easy access to internal and external information relevant to organizational goals. It is commonly considered a specialized form of decision support system (DSS). EIS emphasizes graphical displays and easy-to-use user interfaces. They offer strong reporting and drill-down capabilities. In general, EIS are enterprise-wide DSS that help top-level executives analyze, compare, and highlight trends in important variables so that they can monitor performance and identify opportunities and problems. This is also attributed to the fact that IT is used to deliver services, create products, coordinate activities along the value chain and form the foundation of strategic alliances for the humanitarian agencies. This makes IT a critical decisive enabler.

Managers would want IT systems that make it easier to analyze and drill down information and one that would guarantee access of information anywhere in order to facilitate organizational success and operational efficiencies. Systems that can deliver instant information would enhance speedy processing and outputs of information hence a priority. Quality of data is key to donor and beneficiary satisfaction hence a good reason for improving IT in humanitarian agencies. This is in tandem with Barney's assertion that IT is a ubiquitous enabler. He asserts that IT has a profit impact to organizations in being a source of sustainable competitive advantage (SCA) (Barney et al. 2001).

6.10 The Important Roles of IT Systems in Specific Areas in Humanitarian Agencies

The research looked at the roles of IT in various areas of operations in the agencies surveyed. The findings point that IT Systems is critical to various aspects of organizational operations.

Table 8: The Important Roles of IT Systems

Source: Author (2014)

Role of IT Systems	Very Important	Important	Moderately Important	Slight Important	Unimportant
Supporting and improving the way that projects/programmes/services are delivered, thereby increasing the organization's competitive advantage	137 (47.9%)	109 (38.1%)	30 (10.5%)	4 (1.4%)	6 (2.1%)
Automating processes and improving operating efficiency	102 (36.2%)	108 (38.3%)	58 (20.6%)	6 (2.1%)	8 (2.8%)
Improving operational data and sharing it across departments, functions and programme units, thus improving internal coordination	128 (45.1%)	96 (33.8%)	46 (16.2%)	14 (4.9%)	0 (0.0%)
Improving decision-making by accelerating the flow of high-quality information to managers and other staff	89 (31.6%)	118 (41.8%)	59 20.9%	14 (5.0%)	2 (7.0%)

On the role of IT systems in the agencies surveyed, 86.0%, 246, of the junior staff respondents said that IT played an important role in supporting and improving the way that projects/programmes/services are delivered, thereby increasing the organization's competitive advantage, while another 73.4%, 207, of the junior staff respondents reported IT systems as important in improving decision-making by accelerating the flow of high-quality information to managers and other staff. 74.5%, 210, of the junior staff respondents rated as important the role of IT in Automating Processes and Improving Operating Efficiency whereas a large number of the respondents, 78.9%, 224, of the junior staff respondents reported IT systems as important in improving operational data and sharing it across departments, functions and programme units, thus improving internal coordination. IT systems have proved useful in influencing management of programmes as nearly every aspect of the programmes/ projects call for the use of computers or any other form of IT. In all areas of operation, less than 25.0% of the respondents felt otherwise in the importance of the role of IT systems. This is corroborated by the position by Sadaat that IT is an enabler of knowledge management. It does not only accelerate processes but also streamlines processes in an organization with clear implementation agenda.

6.11 How Humanitarian Agencies Rely on Non Profit intelligence solutions/ NGO systems

The study also sought to establish how humanitarian agencies rely on nonprofit intelligence solutions/ NGO systems. The study found out that the agencies use varied non for profits intelligence.

Table 9: Reliance of HAs on NPI Solutions
Source: Author (2014)

Area Of Reliance On Non Profit Intelligence Solutions	Heavy Reliance on NPI	Good Reliance on NPI	Reliance on NPI	Slight Reliance on NPI	No Reliance on NPI
Employee information	43 (16.3%)	107 (40.5%)	78 (29.5%)	28 (10.6%)	8 (3.0%)
Competitor intelligence(knowledge concerning competitors)	34 (11.6%)	101 (39.1%)	71 (27.5%)	29 (11.2%)	23 (8.9%)
Reporting and data analysis	69 (26.7%)	103 (39.9%)	50 (19.4%)	24 (9.3%)	12 (4.7%)
Beneficiary intelligence (knowledge concerning beneficiaries	56 (21.5%)	104 (40.0%)	51 19.6%	34 (13.1%)	15 (5.8%)
Environmental intelligence	42 (16.5%)	91 35.8%	81 (31.9%)	22 (8.7%)	18 (7.1%)
Financial information	76 (29.0%)	86 (32.8%)	52 (19.8%)	27 (10.3%)	21 (8.0%)

From the table, 61.8%, 162, of the junior staff respondents, cited financial information as the area of reliance on non profit intelligence solutions in an inclination of heavy and good reliance rating at 29.0%, 76, and 32.8%, 86, respectively. While 35.8%, 91, of the junior staff respondents felt they have good reliance on NPI for environmental intelligence, 39.1%, 101, junior staff respondents felt equally for competitor intelligence. Another 40.0%, 107, junior staff respondents indicated that they have good reliance on NPI for capturing employee information.

Negligible percentages felt they have no reliance of NPI in tracking employee information and on competitor intelligence. Yet still, some ten percentages of the junior staff respondents felt their agencies do not rely on NPI for financial information, environmental intelligence and beneficiary intelligence. The use of NPI on financial information and organizational performance emerged amongst the top priorities from the respondents in the study. Finances are mainly got through donor funding which drives a greater need for accountability to stakeholders, donors and beneficiaries. The agencies therefore rely on use of NPIs which captures financial information to keep pace with donor demands and continuously win their trust (61.8%, 162 junior staff respondents affirmed this).

The agencies also believe that the ability to understand their beneficiaries' needs, and to predict changes in their behavior, could give them a decisive advantage over their competitors. And yet this is an area where the agencies' knowledge-management capabilities are weakest. Most respondents in the study cited knowledge of competitors as the area where they will need to make the greatest efforts to improve the quality of corporate information over the next three years. To be successful in these endeavor humanitarian agencies need to do a lot more than merely capture mountains of information about competitors. They must learn how to analyze this information to identify what drives competitors' behaviors.

The study suggests that most humanitarian agencies surveyed are relatively effective when it comes to capturing and exploiting financial information. They have tightened their processes for financial reporting in the wake of regulations from donors and almost half of the study participants are confident of their agencies' capabilities in this respect.

Knowledge management is much less effective in other important areas, however. Most respondents believe their agencies are good at exploiting the knowledge of their employees. In fairness these have always been difficult types of knowledge to capture on a systematic basis, but even the quality of basic information needed to run an organization gives cause for concern. Some knowledge black spots seriously undermine their ability to measure organizational performance, or to identify risks and opportunities.

7. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Consistent with general agreement in the literature that technological systems are ideal for sustainable competitive advantage, it is contended that there are significant positive correlations with sustainable competitive advantage. In addition to consider a combination of technical and social knowledge management resources, practicing managers should investigate and take full advantages of IT in relation to other key organizational factors to overcome cultural barriers and strengthen their contribution to long-term performance.

There is substantial evidence to show that knowledge management has a strong positive correlation with sustainable competitive advantage. The variable of knowledge management under study exhibited a strong intuition towards supporting the competitive position of an organization.

7.1 Recommendations Emanating From the Study

Technological Audit- Humanitarian agencies need to perform technological audits regularly to ensure the validity of technology used within their agencies. Technology should be improved to provide user-friendly knowledge management platforms for the staff in these agencies.

Investigate technology functionality and use- Humanitarian agencies should take advantage of the array of technologies that are constantly emerging to enhance knowledge management processes. They should implement critical assessment strategies to evaluate new technologies to establish whether they are suitable and able to facilitate knowledge management activities or whether they require adaptation to suit local requirements.

7.2 Conclusions

From the findings of this study, it is clear that knowledge management has the potential for sustainable competitive advantage in humanitarian agencies. It is however further evident that knowledge management has not as yet been adequately integrated into the humanitarian sector in Kenya and that the benefits thereof cannot be sufficiently harnessed and fully realized until such time as sufficient integration has taken place. We are now moving steadily from information age to knowledge age where knowledge has been recognized as the most important aspect in human life. Humanitarian agencies are starting to understand and appreciate knowledge as the most valuable asset in a competitive environment. In an article in Harvard Business Review, Nonaka (1998, p21) began with the simple introductory words, "In an economy, where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge."

Bailey & Clarke (2000, p235) claim that leveraging knowledge, particularly tacit knowledge, is the key to sustained competitive advantage in the future. Knowledge is an attribute of people or communities or societies. Knowledge comes as a person uses information and combines it with their personal experiences. A critical issue in adoption of knowledge management initiatives is the preliminary preparation of the agencies to accept, adopt, and utilize new knowledge management processes. Preparing an organization for knowledge management initiatives means having knowledge management friendly information technology systems that facilitates knowledge management thereby enhancing sustainable competitive advantage.

From the study, it was evident that the development of any knowledge management supporting technology needs careful consideration as there is no one size fits all solution. Prior to the implementation of knowledge management -supporting technology, the organization needs to establish a knowledge management strategy and action plan to ensure a clear understanding of knowledge management amongst humanitarian agencies. Knowledge management technologies will require careful selection and a level of tailoring to ensure that they fit with the knowledge management requirements of all humanitarian agencies, its individuals and the way in which it operates on a day-to-day basis.

The researcher also confers that early involvement of end users in the design and development of the knowledge management systems is essential in ensuring it is best suited for their needs and in providing ownership. The study further agrees that empowering employees to take ownership of knowledge management supporting technology is an important step, not only in gaining sustained buy in from staff, but also in ensuring the validity of the data, information and knowledge captured. The study noted that this decentralized approach encourages experts within the organization to collaborate with like-minded colleagues and drive knowledge sharing within their specialist areas.

The study strongly recommends that by adopting a more rigorous and standardized knowledge management frameworks, humanitarian agencies would be empowered to implement better knowledge management practices and be equipped to participate as knowledge-intensive members of the global economy with enhanced competitiveness. They could operate more efficiently and incrementally enhance service provision and competitive advantages if they are given the tools to more effectively leverage knowledge (both at an individual and organizational level). The ultimate objective of knowledge management in humanitarian agencies is to provide quality services and enhance competitive advantage with other humanitarian agencies rather than profit making.

7.3 Suggestions for Further Research

A longitudinal study of knowledge-sharing platforms amongst the humanitarian agencies would be an excellent addition to this body of literature specifically amongst humanitarian agencies.

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