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Knowledge management in the public sector: an online presence as a tool for capture and sharing

Lize Denner
Tricia Diaz

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Contents

Abstract	5
Introduction	7
I. Knowledge management in the public sector	9
A. Knowledge and knowledge management.....	9
B. Role of knowledge management in the public sector.....	10
1. Barriers to knowledge management.....	11
2. Importance of knowledge management for the Caribbean public sector	11
II. Knowledge capture and retention	13
A. An overview of knowledge capture and retention.....	13
1. Knowledge management processes.....	14
2. Defining knowledge capture and retention	14
B. Strategies for knowledge capture and retention	15
1. Methodological approaches	16
C. Benefits of knowledge capture and retention activities.....	19
III. Knowledge sharing	21
A. An overview of knowledge sharing	21
B. Methods of knowledge sharing	22
1. Knowledge sharing culture	22
2. Cross-organizational knowledge sharing	22
3. Resource centres	22
C. Methods of knowledge sharing	23
1. Intranet	23
2. Extranet.....	23
3. Social media.....	24
IV. Creating an online presence as a knowledge management tool	27
A. Knowledge management tools	27
B. Online presence and knowledge management	27
1. Defining an online presence.....	28
2. Knowledge management tool for public sector.....	28

V.	Evaluation of online presence as a knowledge management tool	31
A.	Research design and methodology.....	31
1.	Selection of development agencies.....	31
2.	Instrument used for evaluation.....	31
B.	Analysis.....	32
1.	Types of knowledge present.....	32
2.	Systems used for knowledge capture.....	33
3.	Systems and technologies employed specifically for sharing knowledge.....	35
C.	Overall impression.....	37
VI.	Conclusions	39
VII.	Recommendations	41
	Bibliography	43
	Annex	45
Annex 1	Evaluation checklist for online presence analysis.....	46
	Studies and Perspectives series, The Caribbean: issues published	49
Tables		
TABLE 1	KNOWLEDGE MANAGEMENT PROCESSES.....	15
TABLE 2	FACTORS IN SELECTING A KNOWLEDGE MANAGEMENT STRATEGY.....	16
TABLE 3	METHODOLOGIES, TECHNIQUES AND TOOLS IN KNOWLEDGE CAPTURE AND RETENTION.....	17
TABLE 4	SELECTED ONLINE REPOSITORIES IN THE CARIBBEAN.....	19
TABLE 5	SUMMARY OF THE INTERNAL KNOWLEDGE EVALUATION.....	32
TABLE 6	SUMMARY OF THE EXTERNAL KNOWLEDGE EVALUATION.....	33
TABLE 7	SUMMARY OF THE EVALUATION OF TACIT KNOWLEDGE CAPTURING.....	34
TABLE 8	SUMMARY OF THE EVALUATION OF KNOWLEDGE CODIFICATION.....	35
TABLE 9	SUMMARY OF THE EVALUATION OF ONLINE KNOWLEDGE CAPTURE SYSTEMS.....	35
TABLE 10	SUMMARY OF EVALUATION OF ELECTRONIC DOCUMENTS.....	36
TABLE 11	SUMMARY OF BROADCASTING MEDIA EVALUATION.....	37
TABLE 12	SUMMARY OF SOCIAL MEDIA EVALUATION.....	37

Abstract

This study examines two knowledge management processes, namely knowledge capture and retention and knowledge sharing, in the context of the Caribbean. It provides theoretical backgrounds of the processes and specifically looks at the advantages for and barriers to knowledge management in the public sector. The study suggests that by using existing information and communication technologies (ICTs) to create an online presence, the Caribbean public sector can already move towards achieving some knowledge capture and retention and knowledge sharing goals. The study concludes by evaluating through use of a checklist of the online presence of development agencies present in the Caribbean.

Introduction

The current era is commonly referred to as the knowledge-era, where success depends on the leveraging of intangible assets¹, specifically knowledge to achieve a competitive advantage. It is commonly associated with the private sector, but holds just as many benefits for the public sector. Equally, just as public sectors of developed countries can benefit, so can those of developing countries, such as those within the Caribbean.

This is an exploratory study through which, it is hoped, that awareness is created regarding the benefits of knowledge management for the public sector. The purpose of this study is therefore to:

- Explore knowledge management in the public sector and benefits and barriers experienced
- Explore the possible implications of knowledge management for the Caribbean public sector
- Evaluate two specific knowledge management processes, namely knowledge capture and knowledge sharing
- Examine the concept of an online presence and the way in which information and communication technologies (ICTs) can enable knowledge management.

In order to fully explore the concept of Internet technologies as enablers for knowledge management, the online presence of regional development agencies were analysed. These agencies offer a good basis for comparison with the public sector as they share some similarity in structure and focus. Firstly, the public sector can be described as distributed organisations with offices across the Caribbean in more than one country. This is similar to the public sector, although their offices are located within national borders

Secondly, regional development agencies' focus is on driving sustainable development through economic, social and environmental projects and other developments. This is also the overall goal of the

¹ Apart from knowledge, intangible assets include brands, trademarks, patents and customer relations. These are collectively also known as intellectual capital and can be used to determine the value of an organization as well as potential future growth.

public sector, achieving goals towards better sustainable development that not only enhance the country as a whole, but the lives of each individual citizen.

The study comes to the conclusion that knowledge management in the public sector is not just plausible but necessary for the effective function of the sector. The effective functioning of this sector is necessary in order to achieve sustainable development goals. The conclusion is also drawn that, should knowledge management initiatives actively incorporate all possible role players from within and external to the public sector, then Caribbean tailored solutions can be found. Lastly, the investigation of the online presence of development agencies affirms that the application of ICTs that are readily available to the public sector could prove useful in enabling knowledge management for sustainable development.

I. Knowledge management and the public sector

A. Knowledge and knowledge management

Knowledge is widely accepted as a driver of economic growth and competitiveness and is essential for development (World Bank, ©2007). However, in order to utilise knowledge it is important to understand the concept.

Sveiby (1997) defines knowledge as an intangible resource that exists within the mind of the individual. Brooking (1999) stated that knowledge was “information in context with understanding to applying that knowledge”. It is therefore clear that knowledge is directly related to understanding and is acquired by interpreting information.

It is generally divided into two (2) categories, namely tacit and explicit. All knowledge starts as tacit, residing within an individual, within teams and even processes. It is intangible and connected to personal perspectives, intuition, emotions, beliefs, know-how, experiences, values, expertise and skills. It cannot easily be shared or transferred. This type of knowledge could be shared in the form of good practices, narrations, discussions and other personal interactions (Bechina and Bommen, 2006; Hurley and Green, 2005; Johnson, 2009).

In some cases, knowledge is externalised and codified by presenting it in widely accepted systems such as books, journals, manuals, reports, and plans making it easy to transfer (Hurley and Green, 2005; Johnson, 2009). This is known as explicit knowledge.

The new focus on knowledge has led to the advancement of the knowledge management discipline. There is no one definition for knowledge management and it is mainly defined from the point of view of the organisation that is implementing initiatives (Abdullah and Date, 2009; Sinclair, ©2006). For the purpose of this study, knowledge management is defined as distinct but interdependent processes and activities of creation, capture, storage and retrieval, transfer and application (ECLAC, 2010b).

The processes and activities can broadly be divided into those that bring about the creation of knowledge and those that bring about the sharing of knowledge. In its most basic form, knowledge management is circular. Creation processes ensure that new knowledge is available and sharing

processes makes it transferable. This leads to the creation of further knowledge and so the process continues (Abdullah and Date, 2009).

If knowledge management is to be successful, leadership is necessary to provide the vision and drive the activities. This however is not all that is required. It requires, firstly, that the existence of both tacit and explicit knowledge is understood and accepted. Secondly, people (individuals) are essential as they are the carriers of knowledge and the drivers of all processes and activities. Thirdly, “knowledge-friendly” structures must be put into place. This means that the structures should encourage creation and sharing processes and individuals should understand their role and importance in the whole. Fourthly, technology is necessary to serve as the enabler of knowledge management. The use of technology enables easy capture, storage, retrieval and sharing of knowledge across organisations, between organisations and national boundaries. Finally it is important to make knowledge management activities part of the goals, plans and strategies of the organisation (Abdullah and Date, 2009; Johnson, 2009).

If the conditions for knowledge management are met, the overall purpose of leveraging knowledge for innovation, development and ultimately economic success by enhancing decision-making can be achieved.

B. Role of knowledge management in the public sector

Knowledge management is commonly associated with furthering the competitive advantage of organisations, specifically in the private sector. This does not, however, mean that there is no place for knowledge management in all sectors, including the public sector.

The impact of knowledge on every aspect of individuals’ lives and the changes in the way they communicate with one another has made it necessary for governments to also manage their knowledge and leverage it to foster innovation and creativity geared towards development.

In the public sector, knowledge management focuses on the use of knowledge to improve products and services delivered to citizens in order to improve their quality of life and wellness. In short, it is about delivering public services for better development of the country as a whole.

Citizens are no longer blindly following the policies, guidelines and procedures employed by the government. Through technology and an ever smaller growing world they have access to vast amounts of information and knowledge that changes the way they perceive government. Citizens expect the public sector to share and use both institutional and employee knowledge to improve services (Sinclair, ©2006).

In order for the public sector to be effective, it is necessary not only to capture knowledge but also to disseminate it. This is, however, not the only need for the management of this resource in the sector. The sector is essentially a distributed organisation with representatives across the whole of the country, all with similar needs regarding knowledge (Abdullah and Date, 2009). It is, therefore, also essential for this sector to be able to learn from other sectors as well as its citizens. Receiving feedback on policies and programmes results in an understanding of what citizens need and allows for the government to be more responsive. (Yuen, 2007). Knowledge management is not a one-way activity, but depends on the interactive collaboration and learning of all parties. In the context of the public sector it is as much about the sector creating and sharing knowledge with other sectors and citizens as it is about it acquiring knowledge from these same role players. Most governments have created online portals that not only disseminate information and knowledge, but also provide discussion forums that allow for feedback, such as the Abu Dhabi Government Forum² or the forums provided by the Department for Communities and Local Government in the United Kingdom as part of their “have your say” pages³. These forums act

² Abu Dhabi Government, (©2011), “Abu Dhabi Government” [online], <<http://gsec-direct.abudhabi.ae/forum/forumdisplay.php?f=12>> [22 November 2011].

³ Department for Communities and Local Government (©2010), “Communities and Local Government discussion forums” [online], <<http://haveyoursay.communities.gov.uk/forums/>> [22 November 2011]

as public consultation mechanisms where citizens and other stakeholders can provide ideas, views and concerns, thus providing opportunities to develop and implement policies and programmes tailored to the needs of citizens and increases government transparency (Yuen, 2007).

The public sector is not just in a position to improve their own practices through knowledge management; rather they have the ability to improve the possibility of participating in knowledge activities for development agencies and citizens. Policies, strategies and actions can ensure that learning environments are created and knowledge is accessible to all. By making information and communication technologies (ICT) accessible to all citizens, it builds their abilities to not only access and create knowledge but to share and learn (Abdullah and Date, 2009).

Telecentres, also known as ICT Access Points, are the examples most familiar when referring to opportunities available to citizens to make use of ICTs. These centres form hubs in communities, mainly disadvantaged communities where people can not necessarily afford or easily gain access to technologies and the services that they provide. They are open to the general public and provide users with the possibility to search for information as well as share knowledge. These centres offer opportunities to gain knowledge that can be used by people in their daily activities to improve themselves as well as their businesses.

Employing knowledge management throughout the public sector and ensuring that citizens, and other stakeholders, such as development agencies, have access and can share knowledge, builds networks of knowledgeable and capable employees, citizens and other stakeholders (Abdullah and Date, 2009). Collaborating with these networks can lead to better policies, plans and programmes; creating opportunities for development and helping to achieve goals of sustainable development.

1. Barriers to knowledge management

The very basic construct and culture of the public sector, namely that it is bureaucratic and hierarchical where different departments and units seem to operate in silos with little or no cross-sharing of information or knowledge, is a barrier to knowledge management in the public sector (Sinclair, ©2006). For knowledge management to be effective, fluidity of information and knowledge across these departments and units should not only be possible but encouraged.

The work of the public sector is tied to policies, guidelines, procedures and rules. This can potentially prevent the interaction between workers, citizens and possible external sources necessary for knowledge management (Abdullah and Date, 2009).

Government changes and also high turnover of staff make it difficult to obtain buy-in for knowledge management initiatives and even, should it be obtained, to sustain. Apart from obtaining buy-in to knowledge management the possibility of “brain-drain” is very real, where knowledge is lost when staff move between units, departments and offices or leave the public sector for other sectors. As this is normal within every government, the best solution is to find ways to employ initiatives around this barrier (Abdullah and Date, 2009; Sinclair, ©2006).

The public sector is also relatively slow to adapt new technologies that could enable better knowledge management practices. This could be due to lack of resources and other policies that make this difficult as well as the necessities tied to the implementation of new technologies such as training and buy-in from workers (Sinclair, ©2006).

Regardless of the barriers to knowledge management in the public sector, it is a must for successful development in the knowledge era as the benefits for the Caribbean can be far reaching.

2. Importance of knowledge management for the Caribbean public sector

The recognition of the advantages of knowledge management for Small Island Developing States (SIDS), such as the Caribbean States, let it to be included in the “Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island

Developing States” under the heading “Knowledge management and information for decision-making” (United Nations, 2005).

SIDS faces certain challenges that can negatively impact on sustainable development. These challenges relate firstly to their small populations and limited resources. Secondly, these countries have a dependency on international trade and vulnerability to external shocks due to limited diversity in production and exports. Lastly, they are very susceptible to natural disasters, such as hurricanes, tropical storms, floods and earthquakes (ECLAC, 2010a).

The development and implementation of knowledge management cannot completely eliminate these challenges, however the Mauritius Strategy did recognise that it provides certain opportunities to overcome some elements of the challenges and so enhance sustainable development in SIDS. It further identifies a variety of areas in knowledge management to be developed including the collection, codification, accessibility and sharing of information (United Nations, 2005). In the terms of the knowledge management processes these aspects can be described as the capture, storage, retrieval and sharing/transfer of information and knowledge.

Through the implementation of knowledge management in the Caribbean public sector they can become knowledge-intensive organisations with educated and qualified employees who are utilised as sources for innovation in development (Hurley and Green, 2005).

The challenges faced by Caribbean SIDS can be mitigated through the implementation of knowledge management strategies. An example of such a strategy currently employed is the good practices provided on the website of the Caribbean Tourism Organization (CTO). The site offers examples and ideas for the tourism industry in countries that could be developed and implemented to further enhance their tourism, thus creating opportunities to diversify tourism and boost economic development (CTO, ©2011).

It is therefore clear that through the implementation of effective knowledge management initiatives organisations can build knowledge societies that can be mobilised – through the use of information and communication technologies, regardless of geography and time – to provide solutions, develop ideas and innovations for sustainable development (Mohamed, Stankosky & Mohamed, 2009). The Caribbean SIDS share similar challenges in development, this similarity inadvertently creates opportunities for regional collaboration, through formal and informal networks, to overcome them and ensure sustainability. The implementation of knowledge management initiatives, at local and regional levels, could thus provide the vehicles necessary to reach sustainable development goals in the region.

II. Knowledge capture and retention

A. An overview of knowledge capture and retention

Several studies have shown that the main purpose of a knowledge capture and retention programme is to identify, select, organise, store and reuse institutional knowledge, which is widely referred to as “organisational memory” (Mendes, Gomes and Batiz-Lazo, 2004; Davenport, DeLong and Beers, 1998; Hansen, Nohria and Tierney, 1998). Owen (2008) classifies organisational memory into knowledge stores of individuals, culture, transformations, structures, ecology and external archives. Such knowledge includes tacit knowledge by individuals and people networks, as well as structured information (Lu and Tsai, 2005). Furthermore, DeLong (2004) differentiated that knowledge retention augments organisational memory and helps to prevent knowledge loss, and so the two terms should not be confused.

Knowledge capture and retention programmes may also exist as “knowledge sharing” ones. The terminologies may be interchangeable as programme names, but they both exist as different processes in the practice of knowledge management. It is noteworthy that the aforementioned sequence of activities resembles those of a library acquisitions programme, which in essence is to obtain books and other information resources (external knowledge), for use and reuse by its clients. Thus librarians and information professionals can be significant partners in the development of KM programmes, given their experience in identifying, organising, circulating and even preserving knowledge resources. Indeed, it has been acknowledged that the librarian's role is “critical to knowledge sharing in the public sector” (ECLAC, 2007).

Jackson (2010) noted that expert knowledge capture will expand an organization’s “capability to make effective decisions, solve problems”, compete, innovate and adapt and that ongoing knowledge capture is important since “best practice changes over time – knowledge of experts must be continually updated and enhanced.” His research further indicates that knowledge loss, which may be due to retirement and employee turnover, will affect industries such as healthcare, oil and gas to a greater extent than that of technology and manufacturing. DeLong (2004) also noted, that knowledge retention would be a critical concern for similar industries, and also included government, education and aerospace.

Davenport, DeLong and Beers (1998) have identified four general objectives of knowledge management projects; namely, to create knowledge repositories, to improve knowledge access, to enhance the knowledge environment and to manage knowledge as an asset. Since the focus of this chapter is knowledge capture and retention, the first objective will be explored further. Some factors in knowledge capture include, what to capture, context, who to involve, how to capture and the capability to share (Herwig, 2003).

1. Knowledge management processes

Knowledge capture and retention within a knowledge management framework may be identified through different stages or phases, as shown in Table 1. Before defining knowledge capture and retention, it is important to establish that synonyms for both terms appear in knowledge management literature discussing the theory and practice of such processes. A look at the table below gives a clear indication that knowledge capture is at times synonymous with knowledge creation and acquisition

With regard to knowledge retention, similar terminology include knowledge storage, integration and, even transfer. However, the shared context is not the same in each case, as can be seen with the research of Schwartz, Divitini and Brasethvik (2000) who have placed knowledge capture and identification as the first stage in the knowledge management process and knowledge creation as the last. The cyclical nature of this knowledge management process, nonetheless, keeps them close knit. This chapter will use the three-stage process of knowledge capture or creation, followed by knowledge transfer and finally knowledge use, which was put forward by DeLong (1997), Skyrme and Amidon (1998) and Spender (1998).

2. Defining knowledge capture and retention

a) Knowledge capture

Desouza (2008) offers a technology perspective on knowledge capture in stating that “knowledge gathered must be codified in a machine-readable format”; from explicit, paper-based knowledge to explicit electronic documents. DeLong (2004) suggests that knowledge capture is a phase in knowledge retention that involves “collecting and organizing critical documentation” enabled by information technology. Both perspectives recognize the importance of information technology, with the former placing it at the centre of the knowledge management project, while the latter gives it a supportive role. However, Kostas (2008) defines knowledge identification and capture as “identifying the critical competencies, types of knowledge, and the right individuals who have the necessary expertise that should be captured”. This definition offers the people-centred approach. Another definition by Mendes, Gomes and Batiz-Lazo (2004) seems to combine both in describing “knowledge creation and capture” as identifying “sources of information and ideas.”

b) Knowledge retention

Mendes, Gomes and Batiz-Lazo (2004) refer to knowledge retention as “knowledge storage and retrieval” where individual and organisational knowledge repositories are identified, organised, structured and maintained. While De Long (2004) states that knowledge retention is concerned with moving knowledge “into a state where it is kept available for future use”. He further describes storage entities as including individuals, groups, culture, work processes, routines and systems.

Knowledge retention may also be described within the context of organizational learning, where the organization retains knowledge from employees before they retire or find another employer (Liebowitz, 2011; DeLong, 2004). Liebowitz (2011) promotes the use of knowledge retention through four processes: namely, bi-directional knowledge flow, convenient mechanisms of codification and personalization, a recognition and reward structure for knowledge sharing and “the golden gem”, where retirees can make a contribution through projects and knowledge retention activities. DeLong (2004) states that knowledge retention is comprised of knowledge acquisition, storage and retrieval for reducing knowledge loss in organizations. Areas of knowledge he addresses are human knowledge, social knowledge, cultural knowledge and structured knowledge, which interact “at all times.”

TABLE 1
KNOWLEDGE MANAGEMENT PROCESSES

	Author(s)	Year	Key Stages	Research source
1	Alavi and Leidner	2001	1. Creation 2. Storage 3. Transfer 4. Application	Jafari, Akhavan and Mortezaei (2009) p. 2
2	DeLong	1997	1. Capture 2. Transfer 3. Use	Jafari, Akhavan and Mortezaei (2009) p. 2
3	Jackson	2010	1. Structure 2. Capture 3. Share 4. Update	Jackson, p. 911
4	Leonard-Barton	1995	1. Acquire 2. Collaborate 3. Integrate 4. Experiment	Jafari, Akhavan and Mortezaei (2009) p. 2
5	Schwartz Divitini and Brasethvik	2000	1. Knowledge Identification and Capture 2. Knowledge Sharing 3. Knowledge Application 4. Knowledge Creation	Metaxiotis (2008) p. 1875
6	Skyrme and Amidon	1998	1. Create 2. Transfer 3. Use	Jafari, Akhavan and Mortezaei (2009) p. 2
7	Spender Teece	1996 1998	1. Create 2. Transfer 3. Assemble 4. Integrate 5. Exploit	Jafari, Akhavan and Mortezaei (2009) p. 2

Source: Economic Commission for Latin American and the Caribbean (ECLAC), based on research analysis.

B. Strategies for knowledge capture and retention

Codification and personalization are the two widespread strategies for knowledge capture and storage (Hansen, Nohria and Tierney 1998; Lu and Tsai, 2005; Desouza, 2008). According to Desouza (2008), codification involves the processes of acquiring knowledge from a person, coding, storing then reusing it later on as needed. In this way, the knowledge is available to many persons simultaneously, such as records in a database. Desouza views personalization as a social approach where communication between persons occurs and becomes more effective through networks or communities, such as a discussion forum.

Davenport and Prusak (1998) agree with this approach since they state that “the codification process for the richest tacit knowledge in organisations is generally limited to locating someone with the knowledge, pointing the seeker to it, and encouraging them to interact”. They describe codification as converting “knowledge into accessible and applicable formats. Knowledge managers and users can categorize knowledge, describe it, map and model it, simulate it and embed it in rules and recipes.”

Hansen, Nohria and Tierney (1998), in reviewing knowledge management strategies of consulting companies, have devised a way for businesses and organizations in general, to select a strategy that would meet their needs. Factors include defining the type of products and deciding on what is the most suitable type of knowledge to solve problems or answer queries. Once this is done, the next step would be to select either codification or personalization as the main strategy for knowledge management, as shown in the Table 2.

TABLE 2
FACTORS IN SELECTING A KNOWLEDGE MANAGEMENT STRATEGY

Organizational Knowledge	Codification “people-to- documents”	Personalization “person-to-person”
Product type	Standardized	Customized
	Mature	Innovative
Knowledge type for problem solving	Explicit	Tacit

Source: Table based on research by Hansen, Morten T., Mitin Noria, and Thomas Tierney (1999), “What’s Your Strategy for Managing Knowledge?”, *Harvard Business Review*, March.

Research shows that these two strategies were common in various organisations and that both employ the computer as a tool: in codification, it is used as a major storage tool for knowledge bases, which saves time, thereby improving efficiency; whereas in personalization, it is a key communication tool facilitating knowledge sharing and fostering innovation in services and production. Even so, practice has revealed the need for both strategies, where the major one is supported by the minor one in an 80/20 ratio (Hansen, Nohria and Tierney; 1998). Additionally, Sammons (2005) states that internal research and development, hiring experts, acquiring knowledge-rich firms, engaging in joint ventures, knowledge purchasing and knowledge scanning are other strategies for knowledge acquisition or capture.

1. Methodological approaches

Several methodologies have been developed from the codification and personalisation strategies. Jackson (2010) and Mimmagh (2002) have developed social software approaches to capturing tacit knowledge. The former identified four steps which include strategizing, preparing and conducting interviews, followed by processing and storing the expert knowledge captured. The tools used here include Web 2.0, digital information technologies, such as wikis, cameras and audio recordings. Techniques implored were uploading video and text on a wiki, with enhancement capabilities, such as tagging. The latter (Mimmagh) captured informal internal knowledge with the use of an intranet containing a skills and learning repository, topical groups and collections of documents. The tools and resulting knowledge products included directories, communities of practice and lessons learned repositories.

Desouza (2008) used a technical approach to capture both tacit and explicit healthcare knowledge. In the first instance, he surmised processes of acquisition, codification, storage and reuse for capturing clinical knowledge, in which standard terminology and classification systems were used to structure the knowledge within databases and directories. This resulted in knowledge repositories accessible throughout the organization. In the second case, there was a need to convert printed patient knowledge into an electronic medical records system. This resulted in efficient knowledge retrieval, no duplication and cost savings.

The use of a competitive intelligence system was found to be a solution for external knowledge capture in one of the thirty-one companies reviewed by Davenport, De Long and Beers, (1998). The system filtered, synthesized and added context to “information from the external environment” for the automobile manufacturer. It also allowed for the selective dissemination of information and knowledge. Through this technical approach, the company enjoyed better access to a knowledge repository and increased awareness of the market environment, including its competition. Indeed, knowledge repositories can be generated from external knowledge (e.g. competitive intelligence), structured internal knowledge and informal internal knowledge. Examples of the latter two, which may exist throughout the organisation, are research reports and discussion databases respectively (Davenport, De Long and Beers, 1998).

Other methods outlined by Liebowitz (2011), which address the human resource approach, include the creation of an organizational knowledge map, continuity books (inclusive of business processes and contacts), desk side reviews with tips and templates, and mentoring programs such as brown-bag lunch sessions, knowledge fairs, job rotation and expertise locator systems. Table 3 details several methodologies for knowledge capture and retention by various researchers.

TABLE 3
METHODOLOGIES, TECHNIQUES AND TOOLS IN KNOWLEDGE CAPTURE AND RETENTION

	Methodologies	Researcher	Type of knowledge	Techniques	Tools	Results & Benefits
1.	<p>Practical, social software approach based on following key notions:</p> <p>Tacit to explicit knowledge lifecycle identified</p> <p>Knowledge processes: capture, share and update knowledge</p> <p>Nature of knowledge: open-ended, contextual and complex</p> <p>Steps: Develop overall KC strategy Prepare KC interview Conduct interview Process and load the KC</p>	Jackson (2010)	<p>Expert knowledge (from soon-to-retire staff)</p> <p>Inter-generational knowledge</p>	<p>Interviews captured in video and text and placed on wiki (eg. Exit interviews, significant events, project completion).</p> <p>User driven knowledge capture (crowdsourcing)</p> <p>Modification and enhancement through wiki editing and tagging</p>	<p>Web 2.0, Digital information technologies: freeware wiki, cameras, audio recording, editors</p>	<p>Dynamic knowledge repository/base addressing knowledge loss and under-utilization</p> <p>Cost savings using cheap and familiar technologies</p> <p>Wiki – low barriers, easy access to working knowledge, multimedia and knowledge discovery capabilities</p>
2.	<p>Social software approach for tacit knowledge capture of informal internal knowledge</p> <p>Built on existing culture of community</p>	Mimnagh (2002)	Healthcare	<p>Intranet design with: skills and learning repository (user content control)</p> <p>Topical groups sharing work and experiences</p> <p>Collection of documents from individuals or depts.</p>	<p>Intranet: Directories (login access)</p> <p>Communities of practice</p> <p>Lessons learned</p>	<p>Knowledge repositories</p> <p>Knowledge networks</p>
3.	Capture external knowledge (explicit knowledge) using competitive intelligence system (CIS)	Davenport, DeLong and Beers	Competitive intelligence	CIS will “filter, synthesize, and add context to information from the external environment”. Disseminate knowledge selectively	CIS - GrapeVINE	Better access to knowledge repository and awareness: analysts’ reports, market research
4.	Capture structured internal knowledge – document-based knowledge and information	Davenport, DeLong and Beers	Sales documents	Added value through categorizations and pruning		Enhanced access to knowledge repository from field: research reports, marketing materials, techniques, sales presentations and tactics

Table 3 (concluded)

	Methodologies	Researcher	Type of knowledge	Techniques	Tools	Results & Benefits
5.	Capture informal internal knowledge (tacit knowledge) using discussion databases	Davenport, DeLong and Beers	Software development experts	"Community-based electronic discussion" database with "know-how	Lotus Notes database	Efficient access to knowledge repository with lessons learned (tips, tricks, insights and experiences)
6.	Technical approach - codification strategy for KC and storage: Processes of acquiring tacit knowledge, coding, storing and reusing it. Processes of converting printed explicit knowledge into electronic form	Desouza	Clinical knowledge Patient knowledge	Standard terminology and classification systems Categories: patient history, family history, risk factors, vital signs and test results	Databases and directories Electronic Medical Records systems	Knowledge repository with organization-wide access Easy dissemination Advantages include: Efficient knowledge retrieval No duplication Cost savings
7.	Social approach - personalization strategy for knowledge capture and storage: Processes of sharing, discussion and validation Communication between persons occurs and becomes more effective through networks or communities.	Desouza	Technical knowledge	Face-to-face	Email Phones Videoconferencing	Knowledge repository of electronic documents such as reports and meeting minutes

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of research analysis.

C. Benefits of knowledge capture and retention activities

Since the basic aim of knowledge management is to improve organisational performance, through efficiency and effectiveness, then it is natural for a competitive advantage to arise. Davenport and Prusak (1998) have noted that “the knowledge advantage is sustainable because it generates increasing returns and continuing advantage.” This is true for both non-profit and profit-making organisations. After all, each organisation has a mission to achieve something, which is usually articulated through several goals and objectives; and these are developed within programmes and projects to be implemented and realized. The resulting benefits can then become the organisation’s advantage. As such, the methods and tools used in knowledge capture and retention will depend largely on the knowledge management strategy chosen by the company or institution. And, it is best for the organisation’s overall competitive strategy to determine the type of approach to knowledge capture and retention (Hansen, Nohria and Tierney 1998).

A similar approach can be promoted in the Caribbean for improving the work of local and regional development organisations, which will, by extension, also benefit the subregion. For instance, if an institution can increase its expert knowledge capture, then it is likely that better decision-making would improve its performance and lead to its increased impact externally. Countries and institutions in the subregion, have also recognized that effective knowledge management projects and activities can contribute to Caribbean development in several ways, such as the protection and preservation of resources, capacity building, unlimited access to regional knowledge resources, e-learning, regional networking and knowledge sharing. Table 4 below, presents a few examples of repositories in the Caribbean, which illustrate how various knowledge products can benefit the subregion.

TABLE 4
SELECTED ONLINE REPOSITORIES IN THE CARIBBEAN

	Repository	Type of knowledge	Knowledge Products	Benefits to subregion
1	Caribbean Knowledge Management Portal (http://ckmportal.eclacpos.org) (ECLAC Subregional Headquarters for the Caribbean)	Economic and Social Development	Digital Library Integrated Country Development Profiles Expert knowledge/skills directory Communities of practice	Knowledge sharing Preservation of regional memory Regional networking Regional capacity building Unlimited access to regional resources
2	NALIS Digital Library (http://library2.nalis.gov.tt/greenstone/cgi-bin/library.cgi) (National Library and Information System Authority, Trinidad and Tobago)	Cultural Historical	Subject Guide Digital Library with 8 collections of local and regional knowledge featuring local personalities, government documents, journals, newspaper clippings and bibliographies including: "Port of Spain from then to now" Dr. Eric Williams Bibliography Caribbean Journal Index	Preservation of local knowledge Developmental goal of access to information and knowledge Building a knowledge society Increased, unlimited access to library's collections Resources for e-learning
3	SIDSnet: Small Island Developing States Network (http://www.sidsnet.org) (UN-DESA)	Sustainable Development Knowledge Management	International meetings and inter-governmental processes related to SIDS National data and statistical information Vulnerability-resilience country profiles	Capacity building Increased access to sustainable development resources Knowledge management platform and community for all stakeholders Unlimited access to regional resources

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of research analysis.

III. Knowledge sharing

Knowledge sharing is critical for organizations that wish to use knowledge as a means of achieving sustainable development, especially in the realms of environmental, social and economic development. Knowledge sharing is an unclear concept that is important for harnessing knowledge (Peteresen, 2002; Little, 2002). An environment in which knowledge sharing is encouraged leads to the creation of new knowledge, and, if shared equally in a society, can foster sustainable growth.

The goal of knowledge sharing is to create new knowledge by combining existing knowledge or to become better at exploiting existing knowledge.

This chapter will explain what knowledge sharing is and then give examples of tools, methods and techniques that can be applied in development agencies and governments in the Caribbean.

A. An overview of knowledge sharing

In order for knowledge to create value it must be shared. Knowledge sharing implies the giving and receiving of information encompassed within a context by the knowledge of the source. In turn, what the receiver gets is information framed by the knowledge of the recipient (Sharratt and Usoro, 2003). Simply put it is the transfer of information from one person to another. It occurs between and among individuals, within and among teams, among organizational units, among organizations and within the public sector. If organizations desire to attain competitive advantage, the process of knowledge sharing would be critical to make it possible. (Knowledge Management, 2008).

There are, however, some problems that impede the sharing of knowledge in an organization. An example is tacit knowledge which requires more time and energy to mobilize. This type of knowledge is locked within individuals making it necessary to employ specialised methods to extract it. One method normally employed is exit interviews when people leave an organization. Another problem is the common identity groups; these are groups of individuals that normally share a certain specialty. They tend to understand each other better and share more within the group. It is difficult for such groups to share knowledge with outsiders, but they are very useful in the creation processes and should therefore be cultivated. They should, however, be encouraged to share with others. This could be achieved by enlarging the groups by including related specialities and by creating links with other groups.

Personal and organizational networks play an important role in accessing knowledge. The sharing of this resource can be aided through personal or virtual networks. Without networks, the sharing of knowledge becomes difficult. A lack of willingness to share knowledge does also occur, especially in organizations where the environment suggests that knowledge is power, thus making individuals believe that the one who possesses it can exert power over the other. This perception can seriously obstruct the sharing of knowledge in any organization and is especially true of the public sector.

Lastly, situations regularly occur in organizations, such as the public sector, where it is not known who is in possession of or the location of needed knowledge. This is a result of overall poor management, but also people harbouring and not sharing knowledge (Christensen, 2007).

B. Methods of knowledge sharing

1. Knowledge sharing culture

A knowledge sharing culture is important for the advancement of knowledge management. This simply means that the sharing of knowledge should be the norm in any organization. Only effective collaboration and communication throughout the whole organization can foster proper knowledge management. Organizational culture can be seen as a tacit infrastructure of ideas that shapes the thinking of the individual as well as the behaviour and perception of the organizational environment. It sets guidelines as to how individuals in an organization should work and how the organization should be structured (Gurteen, 1999). Knowledge sharing is therefore an essential part of the organizational culture.

Creating a knowledge sharing culture entails sharing of knowledge and information, not just the sharing of information alone. The purpose of knowledge sharing is to aid the organization in achieving its objectives (Gurteen, 1999). The organization should be careful when rewarding knowledge sharing, because the reward might have a different effect than intended. Rewards might demotivate some individuals if their contributions are not recognized or it may affect the quality of the knowledge that is being shared. The real challenge is to let individuals in the organization see knowledge as a public good and make knowledge sharing something that is done by default.

2. Cross-organizational knowledge sharing

Across the globe, thousands of development agencies, non-governmental organizations and consultants are reinventing the wheel; this is making and providing similar mistakes and solutions that have already been identified by other individuals and organizations. That is why cross-organizational encounters like conferences, meetings, workshops and courses are important for the sharing of knowledge. Cross-organizational knowledge sharing is a good place to access information and know-how, and to expand knowledge networks. It also serves as a staging area for new ideas and innovations.

There are some challenges to achieving cross-organizational knowledge including difficulties in raising funds and different organizational agendas, goals and objectives. In addition, sometimes organizations are competing for the same business which can make them reluctant to share their knowledge. Pressures to deliver short term or immediate results and outcomes can prove challenging as cross-organizational knowledge sharing is a long term process.

3. Resource centres

Resource centres have an important role to play in improving the access to information. A resource centre collects and organizes materials that are important to a group, such as development agencies. Materials can vary from videos, manuals, handbooks, games, and directories to name a few.

A resource centre, however, is more than a collection of materials. A resource centre actively seeks to share information and the personnel encourage people to use the information and knowledge gained. A resource centre should aim to:

- create a pleasant environment for learning

- contain a relevant and accessible collection of resource materials (based on the actual needs of users)
- provide a range of information services
- encourage people to use the information in the resource centre
- help users gain access to information from other sources.

C. Methods of knowledge sharing

In today's world, technology and knowledge management go hand in hand. Although information technologies are not mandatory, it is however a tool that can exponentially boost the process. To be competitive as an organization and to perform at the speed that the present society demands, an organization needs to use technology as a tool to enable participation and collaboration.

While new technology brings a lot of advantages, it also brings potential risks that should be evaluated and mitigated as part of any change management strategy. With implementation of new tools, large initial and ongoing software, hardware and maintenance costs can arise. Another risk is that the potential user audience can become reluctant to use the new system, because they are used to the old system and are resistant to change. While cost of system implementation might be high, organizations must value initial and ongoing training and support mechanisms to realise optimal potential. Notwithstanding the risks listed above, information technology implementations are necessary to meet business solutions and appropriate knowledge sharing, making it a key pillar for knowledge management.

1. Intranet

An intranet is a computer network that uses Internet Protocol technology to securely share any part of an organization's information or network operating system within that organization. Over the years, intranets has become more advanced having features such as collaboration tools, people search, document repositories, applications, communication channels and project management tools.

Intranets keep employees informed and help them make better and informed decisions, which helps increase knowledge. Other advantages are cost reduction, better time management, increased productivity and effectiveness. Most of the modern intranets have a built in content management system (CMS). A CMS is a collection of procedures used to manage workflow in a collaborative environment. It makes the sharing of knowledge easier because it is user-friendly and allows a great number of people to collaborate and contribute to the content. It also improves communication within the organization and among individual users.

An example of an intranet is the Public Sector Intranet developed by the Government of Saint Vincent and the Grenadines. This intranet has been in operation since 2004 and is only accessible to those in the public service. The purpose of this intranet is to allow for better communication between ministries thereby improving public services and availability of information. The overall goal is to enhance economic growth and so achieve greater sustainable development (Government News, 2011).

2. Extranet

An extranet is similar to an intranet with an additional layer of security that facilitates secure access to an organisation's partners and clients including government counterparts, NGOs, and consultants. Extranets provide specialised access to some business information for very specific collaborators and partners.

The Caribbean Development Bank (CDB) created an extranet that is accessible only to employees of the Bank and partners⁴. The CDB Extranet provides access to a number of specialised areas. One such area is the Basic Needs Trust Fund (BNTF) Extranet⁵. This extranet provide access to documents on the BNTF Regional Programme⁶ of the CDB and also provides a discussion forum. In order to access the CDB Extranet a username and password are necessary.

3. Social media

Web 2.0 is the term given to describe a second generation of the World Wide Web that is focused on the ability for people to collaborate and share information online. Social media can be described as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content (Kaplan and Haenlein, 2010). In other words social media are types of communication media that enable interaction among groups of people that are either all in one place or geographically dispersed (Chandler and Munday, ©2012).

Web 2.0 gave rise to many social media services like YouTube (<http://www.youtube.com>), Facebook (<http://www.facebook.com>), Twitter (<http://www.twitter.com>) and Blogger (<http://www.blogger.com>), amongst many others. Businesses, governments and development agencies are increasingly utilising social media services to share knowledge among agencies, and from agencies to the public. The speed and effectiveness of social media to share knowledge has clearly been demonstrated in recent global events such as the “Arab Spring” and London riots of 2011 as participants connected and collaborated with each other through social media.

There are several distinctions between traditional media (newspaper, television and film) and social media. Both traditional media and social media have a big reach, but social media is more targeted. This means that an agency can target its content to a select group in an area while also measuring the performance and the return on investment. Whereas traditional media is owned by governments or private entities, traditional media is usually open for the public. That makes social media services more accessible, because it is less expensive or does not cost anything. Another important distinction is the timeliness; content posted on social media services can be shared instantly to everyone across the globe and it can be re-shared creating chain reactions through the digital and real world.

Development agencies can utilize social media to engage more with the public and other stakeholders. The abundance of knowledge that development agencies produce can be shared easily through social media services. The interesting part is that development agencies can measure the engagement of their stakeholders, e.g., how many times a particular article has been shared or the reaction to certain content by the public. Through the social media platform, development agencies can also create more awareness about the agency’s goals and inform the public about current projects.

The impact of social media for the Caribbean public sector can be far reaching. As sharing of information is instantaneous it is possible to receive feedback on policies and programmes quickly. It can also be used to broadcast important information such as voting locations, shelter locations, emergency information and news updates. The development of mobile technologies further increases the reach of social media, making it possible for citizens away from a computer to have immediate access to important information.

⁴ In order to visit the access page of the CDB Extranet go to <http://www.caribank.org/titanweb/cdb/webcms.nsf/AllDoc/B6DD642E21C09AB8042573A1005FBF2E?OpenDocument>

⁵ In order to visit the access page of the BTNF Extranet go to <http://www.caribank.org/titanweb/cdb/webcms.nsf/AllDoc/581788FB2DC9FF57042574510073493D?OpenDocument>

⁶ The BTNF Regional Programme is a poverty reduction programme of the CDB supporting sustainable asset building and livelihood strategies of communities. Activities include disaster risk reduction, gender equality and project management (CBD (Caribbean Development Bank (©2007), "Basic Needs Trust Fund: background" [online], < <http://www.caribank.org/titanweb/cdb/webcms.nsf/AllDoc/266C09B5B3B9532A872572D500548049?OpenDocument>> [22 November 2011].

The Caribbean Tourism Organization (CTO)⁷ and the Caribbean Examinations Council⁸ have a well developed presence on Facebook. Their sites provide background information on the organizations as well as contact information and website addresses. CTO also provides access to videos on Youtube via Facebook. The pages are kept up-to-date and through creating “likes” the organizations link to related pages on Facebook. Both these organizations keep the public informed of new developments and allow for comments on posts.

Given the speed of dissemination of knowledge over social media, the task of development agencies is to develop social media guidelines for their employees which do not hinder employees but also protect the organisation. An employee who would like to create blogs, contribute to wiki’s answer questions in forums etc, should be encouraged with direction and guidelines. Sharing policies and guidelines need to be established but if these are too strict or do not encourage sharing, the organization may be limiting the chances of having a larger reach and sharing more information to a more online and global social audience. A balanced approach is therefore required.

A good example of a social media policy is that of the Food and Agriculture Organization of the United Nations. The policy specifically details when a usage of social media is personal and when it is considered as part of the communication of the organization. It provides guidelines on the handling of copyrighted information and the FAO logo. It further provides very clear guidelines for the participation of staff in specific social media, such as YouTube, Facebook, Flickr, Twitter, Wikipedia and Slideshare. Most importantly, however, is that the Organization encourages staff to participate in these social media as FAO staff members as the goal is to strengthen its role as a knowledge management organization (FAO, ©2011).

⁷ To visit the Facebook page of the Caribbean Tourism Organization go to <http://www.facebook.com/CaribbeanTourismOrganization?sk=wall#!/CaribbeanTourismOrganization?sk=info>

⁸ To visit the Facebook page of the Caribbean Examinations Council go to <http://www.facebook.com/pages/Caribbean-Examinations-Council/141505388149?sk=info#!/pages/Caribbean-Examinations-Council/141505388149?sk=wall>

IV. Creating an online presence as a knowledge management tool

A. Knowledge management tools

A variety of knowledge management processes can use various tools in order to be effective. The way an organisation deals with knowledge could also influence the type of knowledge management tool chosen. It is therefore clear that technology should be chosen to support the knowledge processes and not the other way around (Abdullah and Date, 2009).

A vast amount of technologies are available. Some focus on knowledge storage, such as knowledge repositories and knowledge bases. Others focus on learning, collaboration and sharing (Abdullah and Date, 2009). In the public sector, the implementation of knowledge management technologies is usually done to enhance e-governance. This enables them to deliver services directly to citizens, and focus mainly on making available those services that would make life easier for citizens by avoiding long lines at offices, such as registration of births, requesting death certificates, applying for licences and electronic voting. Apart from feedback on these services, geared towards their quality, effectiveness and any difficulties experienced, no further opportunities are provided to learn from citizens.

This feedback is, however, not necessarily without merit. The feedback on the services provides the possibilities to improve these services and even expand them. A very basic knowledge management technique can be effective provided that the feedback is analysed and implemented. This has far reaching implications for citizens in that, when their suggestions are taken into consideration, provides them with a sense that their opinion matters to the government and that they can affect change to better their lives.

B. Online presence and knowledge management

Most public organisations have a website. These are used, apart from delivery of e-governance services, to distribute information, mainly containing explicit knowledge such as plans, strategies, rules,

procedures and laws. They also tend to share new developments, news articles and general information on government structure. In this sense, the Internet is mainly used as a tool for disseminating information.

The Internet, however, can be used for more than just information management processes. It can be employed as a knowledge management tool, supporting processes such as knowledge creation, capture and knowledge sharing. The advancement of Internet technologies, such as social media, also makes it easier to use this technology as such a tool.

In utilising Internet technologies, the focus should not be on just providing a website, but geared more towards creating an “online presence” that incorporates different Internet technologies, providing for various ways of knowledge creation, capture and sharing. It is, however, important to remember that utilising these technologies for knowledge management must relate to the goals and mission of the public sector and might only be useful for certain types of knowledge.

1. Defining an online presence

An online presence can be defined as any instance of an organisation or individual on the Internet, it is also sometimes referred to as a “web presence”.

A website is only one of the components of an online presence. The advancement of social media, such as Facebook, Twitter and Linked-in, has provided the alternative means to create, capture and share knowledge. Other, more traditional Internet technologies can also be utilised such as forums, blogs, digital libraries, knowledge repositories, Communities of Practice and even chat facilities.

Together, these elements represent the online presence of an organisation. It is, however, not necessary for an organisation to have all of these elements present, the choice on which ones to use is that of the organisation and should be dependent on their goals, mission, structure, method of work, the knowledge and the people that will make use of it.

2. Knowledge management tool for public sector

An online presence is normally associated with the marketing and branding of an organisation, specifically in the private sector. This ensures that the organization can be easily found and provides potential customers with various methods for interacting with the organization and vice versa.

There is, however, more to an online presence than a mere marketing tool or information management tool. It has the potential to be an easily accessible knowledge management tool for all stakeholders of the public sector.

As a knowledge management tool, an online presence that incorporates more than just a website but also some very basic social media, has the potential to create the environment necessary to enable knowledge management processes - more specifically knowledge creation, capture and sharing. Websites are already known for their use in the capture of explicit knowledge such as research reports, publications, plans, strategies and project information. While uncommon, in some cases they are also used to capture tacit knowledge through the use of storytelling and presentation of good practices. Some also have the ability to share information through forums or feedback systems.

Developments such as Facebook, Twitter and Linked-in provide additional features, not necessarily found on traditional websites. They provide possibilities to share knowledge through discussion and keeping clients up-to-date to the second. They also allow for the building of broader knowledge networks of people. Organisations are therefore able to have contact with more expertise than before at the same time. Active discussions not only enhance the knowledge transfer process, but also the creation of knowledge. Discussion over broad networks can bring together diverse views on subjects making it possible for the discussants to form links between various strands of knowledge.

Most of these types of Internet technologies allow for the upload of some explicit knowledge, albeit not to the full extent as that of a website or other knowledge capture and storage tools. Their

biggest advantage, however, is that of bringing tacit knowledge, the most difficult type of knowledge to work with, into “view” without placing emphasis on it or forcing it to fit a specific format.

In the public sector, just as in any other sector, an online presence can greatly enhance the knowledge management initiatives being implemented and ensure that knowledge reaches citizens and other stakeholders.

V. Evaluation of online presence as a knowledge management tool

A. Research design and methodology

In order to determine the extent to which “online presence” has been developed as a knowledge management tool for knowledge capture and knowledge sharing in the Caribbean, an analysis was conducted of current presences maintained by development agencies operating in the Caribbean.

1. Selection of development agencies

Development agencies were chosen for the evaluation as they have, due to the nature of their work, become relatively dependent on utilising the Internet to reach individuals and governments alike in order to drive projects towards sustainable development. Although their work is guided by certain rules, procedures and regulations they can navigate with more ease internal bureaucratic and hierarchical issues, thus offering springboards into investigating online presence as a knowledge management tool as well as potentially provide some interesting lessons for the public sector.

Fifteen development agencies were selected, at random, for the evaluation. The only selection criteria used was 1) their area of work must focus on economic, social and/or environmental development; 2) they must have at least a website and 3) they must have offices in more than one Caribbean country.

2. Instrument used for evaluation

The purpose of this evaluation was to determine whether the online presence of development agencies have evolved to knowledge management tools. More specifically it determined how the knowledge management processes of knowledge capture and knowledge sharing are managed through the online presences of these agencies.

The first goal was to determine what knowledge was represented and the focus fell on internal and external knowledge. The second goal was to determine what types of systems are employed to

capture knowledge and the third and final goal was to determine what systems are employed to enhance the sharing of knowledge.

A checklist was developed to conduct the evaluations (see Annex). The checklist was divided into three sections, each representing the three goals stated above. Each section was divided into categories and each category was divided into sub-categories. Eight categories and 25 sub-categories were identified.

In order to evaluate each sub-category, simple yes/no questions were compiled. This allowed for evaluating each sub-category. In the end, 73 questions were identified across all sub-categories. This type of analysis allowed for determining whether an element was present in the online presence of a development agency. This simple evaluation was augmented by observations on the effectiveness and quality of the elements present.

B. Analysis

1. Types of knowledge present

The purpose of the first section of the checklist was to determine which types of knowledge are present on the online presence. Most of the knowledge is explicit and codified knowledge, very little tacit knowledge is presented. Only one of the agencies provides access to good practices.

a) Internal knowledge

The first category evaluated the presence of internal knowledge (see Table 5), this means knowledge created by the agency. This was further divided into knowledge about the purpose, operation and activities of the agency. The evaluation shows that of the 15 agencies evaluated, 12 provided information about their mandates or mission, all 15 provided information on the goals and objectives and 13 provided information on their history. Only one of the agencies provided some information on their specific expertise.

TABLE 5
SUMMARY OF THE INTERNAL KNOWLEDGE EVALUATION

Evaluation questions	Yes	No
Is a mission or mandate statement given?	12	3
Are the goals and objectives stated?	15	0
Is the background or the history reflected on the website?	13	2
Are the areas of expertise stated on the website?	1	13
Is the organisation structure (such as an organogram) given on the website?	11	4
Are operational guidelines and procedures that guide their work available on the website?	7	8
Is a general contact provided?	15	0
Are contacts for specific staff provided?	6	9
Are research completed by the organisation presented on the site?	11	2
Are information on meetings, conferences and other events given on the site?	14	1
Is information on projects provided?	14	1
Is information on services that they deliver or provide?	11	4

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation.

Information regarding the operation of the agencies is also provided. Although all 15 provided general contact information for the headquarters and country offices, only six provided contact for specific staff members. Most of these six agencies only provide contact information for heads of departments or units. Eleven provided information about the structure of the agency, such as

organograms, and seven provided information on the rules and procedures guiding their operations. Many of these procedures are strategic plans for the next five to ten years of operation.

The last form of internal knowledge evaluated was the activities of the organization. Eleven agencies provided information on research being done by them. Two of the agencies do not conduct research and thus they were not included in this evaluation. Fourteen agencies provided information on events such as conferences and meetings and six provided information on workshops and trainings. Few provided detailed information, such as summaries, agendas and programmes. Of the 15 agencies, 14 provided information on their projects and 11 provided information on the specific services that they deliver.

Many of the agencies, specifically with regard to their operation and activities, provide only an overview of their internal knowledge. The internal knowledge presented, even though it might be brief, is current and detailed. The good representation of internal knowledge on the Internet was expected, as the traditional role of a website is to provide information on “who we are”.

b) External knowledge

The external knowledge presented on the web presence was evaluated based on the links and information provided to other related institutions and their work and documents (see Table 6). It was found that this knowledge is not well represented on the online presence of development agencies.

TABLE 6
SUMMARY OF THE EXTERNAL KNOWLEDGE EVALUATION

Evaluation questions	Yes	No
Is information provided on trainings and workshops provide?	14	1
Are links provided to other agencies or organizations that work in the same or related fields?	9	5
Are information provided about the work the related organization does?	3	12
Are links provided to specific areas of work of the related organization and their work?	0	15
Is access provided to research or work of related organizations?	1	14
Is access provided to projects or programmes of related organizations?	0	15
Are links provided to Government departments or units that work in the same field?	5	10
Are links provided to guidelines, procedures and rules that have an impact on the work of the agency?	0	15
Are links provided to government projects, initiatives and programmes in the area of work of the agency?	0	15
Are links provided universities and research institutions and departments that work on the same fields as the agency?	3	12
Are links provided to documents and publications of research institutions related to areas of work or specific projects of agencies?	0	15
Are links provided to private sector institutions that delivers services in related sectors?	2	13
Are links provided to international organisations working in these areas?	5	10
Are links provided to foreign organizations, outside of the Caribbean, working in the area of the agency?	3	12
Are links provided to documents and publications and databases of external organizations?	0	15

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation.

Nine provided links to related agencies, five provided links to related government sites, three provided links to universities and other research institutions and only two provided links to related organizations in the private sector. Five agencies provided links to international agencies, such as United Nations Agencies and three provided links to organisations, related to their area of work, but located outside of the Caribbean.

None provided links to documents or publications of these organisations that relates to their specific areas of work. None made reference to projects and initiatives of governments or other agencies that relates to their area of work.

Most of the links are exactly that, URL links (Internet addresses), only three provided information on the work conducted by related agencies. These were all in the format of paragraphs summarising the focus of the agencies.

2. Systems used for knowledge capture

This section of the evaluation focussed on firstly determining how tacit knowledge is captured as part of the online presence, secondly, how knowledge is codified and thirdly, what online systems are used to capture and retain knowledge.

a) Tacit knowledge

The capturing of tacit knowledge was evaluated by looking at storytelling (or narration), interviews, camera and audio recordings and good practices (see Table 7). All agencies made use of a type of storytelling by capturing current events through news articles. This, however, does not fully capture tacit knowledge held by employees and clients through experiences that are gained when projects are implemented.

TABLE 7
SUMMARY OF THE EVALUATION OF TACIT KNOWLEDGE CAPTURING

Evaluation questions	Yes	No
Are stories of work or projects being done by the agency presented?	15	0
Are individuals, such as citizens, given an opportunity to tell their stories about experiences with the agency?	0	15
Are stories from individuals or other organisations on their own work or projects presented?	0	15
Are interviews held with employees of the agency to talk about the experiences in executing their duties?	0	15
Are interviews held with employees about ideas and viewpoints on their area of work?	0	15
Are interviews held with individuals and communities that benefited from the work of the agency?	1	14
Are interviews held with individuals and communities to talk about their ideas and viewpoints on development	0	15
Are video's present about the work done by the agency?	2	13
Are video's made about the agency itself?	0	14
Are photo's presented of the work of the agency?	5	10
Are audio recording present about the work of the agency?	1	14
Are good practices about the way of work presented?	1	14

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

Interviews with staff and individuals are also useful to discover tacit knowledge, but only one of the agencies had a few interviews with individuals from the communities where they implemented projects.

Five of the agencies captured their work through photographs in galleries. Two used videos to capture their work and one used audio recordings. Although this is an effective way to capture tacit knowledge, it was not being fully explored by agencies.

Lastly, only one agency provided access to good practices. Capturing these practices are effective in creating standards and enhancing efficiency and effectiveness.

It is clear that tacit knowledge is difficult to capture and to make it a component of the online presence of an organization. It is however, essential to capture this knowledge, as they carry valuable concepts, ideas and expertise that are not easily codified.

b) Codification of knowledge

The evaluation of the codification of knowledge was based on use of databases, standard indexing systems and directories (see Table 8).

Only two agencies provided access to statistical databases, none of these provided the possibility for individuals or organisations, external to the agency, to contribute data to the databases. Some of the other agencies provide statistics, but these are mainly publications and not raw data.

TABLE 8
SUMMARY OF THE EVALUATION OF KNOWLEDGE CODIFICATION

Evaluation questions	Yes	No	Not applicable
Is access to statistical databases provided?	2	13	0
Can other individuals or organisations contribute data to statistical databases?	0	2	13
Are systematic classification schemes, such as Dewey Decimal or Library of Congress, used to codify knowledge?	1	14	0
Are taxonomies used to codify knowledge in a hierarchical structure?	0	15	0
Are thesauri used to codify knowledge in a known order, such as alphabetical according to subject?	5	10	0
Are yellow pages (lists of experts) used to codify knowledge?	2	13	0

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

Two agencies made use of standard indexing systems to codify knowledge, although this was part of the information contained in the document centres of the agencies. Five however, made use of thesauri, thus codifying knowledge by using subject terms and presenting them in an alphabetical list.

Directories, such as yellow pages, are used to list experts and possible consultants. Individuals external to the organisation hold knowledge that can be shared with employees and others to enhance the work of the agency. Only two agencies provided these types of lists which normally include contact details of consultants that can be employed on a project basis.

c) Online systems for knowledge capture

Online systems used for knowledge capture come in many formats. The most common are digital libraries, online catalogues, portals and knowledge portals.

These systems are however not commonly used by development agencies in the Caribbean (see Table 9). Only one agency made use of digital libraries, an online catalogue and portal to capture knowledge. No agencies have created knowledge portals where individuals and organizations, external to the agency, can upload information to.

TABLE 9
SUMMARY OF THE EVALUATION OF ONLINE KNOWLEDGE CAPTURE SYSTEMS

Evaluation question	Yes	No
Are knowledge repositories used to capture knowledge?	0	15
Can other individuals and organisations contribute knowledge to the repository?	0	15
Is access given to catalogues containing knowledge produced by the agency?	1	14
Is access given to digital libraries containing knowledge on the subject area the agency works on?	1	14
Is access given to portals, providing access to numerous types of knowledge?	1	14

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

The agency that made use of a digital library, online catalogue and a web portal had a resource centre, documentation centre or library that was responsible for using these systems to capture both internal and external knowledge.

The use of the Internet to active and purposely capture knowledge is not yet far advanced. Much more needs to be done to ensure that knowledge is captured and retained and thus accessible to all who need it.

3. Systems and technologies employed specifically for sharing knowledge

Using the Internet to share knowledge can also be seen as a traditional purpose for creating a website. Traditional usage was an agency just uploading ready-created knowledge on to the website to market their skills and to inform. The focus has always been on explicit knowledge in the form of documents. The advent, however, of new Internet technologies and advanced databases, made it possible to change knowledge sharing to a collaborative process and not merely the dissemination of information.

In the last section, evaluation of the use of electronic documents, broadcasting media and social media was made to determine the overall effectiveness of the agencies' online presence for knowledge sharing.

a) Electronic documents

Documents, any document, are accepted as being externalised tacit knowledge, codified to become explicit knowledge. Electronic documents can be research and project documents, brochures, factsheets, briefs and publications such as books and reports (see Table 10).

TABLE 10
SUMMARY OF EVALUATION OF ELECTRONIC DOCUMENTS

Evaluation questions	Yes	No	Not applicable
Are research documents made accessible online?	10	4	1
Are reports of meetings, workshops and other events accessible?	6	8	0
Is free access provided to books published by the agency?	2	12	1
Is free access given to journals and magazines published by the agency?	6	8	1
Is access provided to brochures and posters to showcase the work of the agency?	1	14	0
Is access provided to fact sheets on issues the agency works on?	2	13	0
Is access provided to newsletters sharing knowledge on new developments and projects?	4	11	0

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

Ten of the agencies shared full-text research reports but only six provided access to meeting reports. Two provided free access to electronic books and six to journals or magazines. Four shared knowledge on current projects and outcomes via newsletters. Only two provided fact sheets to share facts about issues and situations in their area of work.

Although many documents are published in order to share knowledge, not many are made available in electronic form and even if they are made available in electronic form, the document has to be bought. A lot of knowledge, albeit codified as information is locked in publications not yet available online, making it difficult to access, learn and collaborate on what they contain in order to produce new knowledge.

b) Broadcasting media

The Internet brought with it the possibility to make use of broadcasting media online, potentially reaching more individuals and organisations that need knowledge. Internet radio, television, blogs, podcasts and the more traditional discussion forums are available to share knowledge.

It is, however, clear from the evaluation that these methods for knowledge sharing are still not widely used in the Caribbean. Only one agency made use of a blog, two provided online forums for discussion, one made use of Internet radio to discuss issues and one made use of Internet television to showcase their work (see Table 11).

TABLE 11
SUMMARY OF BROADCASTING MEDIA EVALUATION

Evaluation questions	Yes	No
Is a blog used to share information?	1	14
Does the organization make use of wiki's?	0	15
Can individuals or organisations participate in forums?	2	13
Can individuals join a Community of Practice?	0	15
Does the organization have chat facilities available for real-time discussions?	0	15
Does the organization make use Internet radio to broadcast information?	1	14
Does the organization make use of Internet television to broadcast stories about their work and issues?	1	14

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

c) Social media

Social media is the “new” buzz word of the knowledge era, freely available Internet technology that allows for immediate updates and communication. Facebook, Twitter and YouTube are familiar to nearly all online individuals. The technologies are still mainly used for personal use rather than by organizations (see Table 12).

TABLE 12
SUMMARY OF SOCIAL MEDIA EVALUATION

Evaluation questions	Yes	No	Not applicable
Does the organization make use of Facebook?	3	12	0
Does the organization use Facebook to discuss development issues?	0	4	11
Does the organization make use of Facebook to share information on upcoming and past events?	1	4	10
Does the organization make use of Twitter?	2	13	0
Does the organization regularly broadcast information via Twitter?	1	2	12
Does the organization make use of YouTube?	2	13	0
Does the organization share videos about issues via YouTube?	0	3	12
Does the organization share videos about their work on YouTube?	2	1	12
Does the organization share videos with guidelines and instructions on YouTube?	0	3	12

Source: Economic Commission of Latin America and the Caribbean (ECLAC), on the basis of evaluation

Facebook is only utilised by three agencies and of the three only one regularly updates their information. They utilise Facebook mainly to inform of events and not for active sharing and collaboration.

Twitter is utilised by two agencies but only one of them regularly use it to provide updates on the work and events of the organization. YouTube is also used by two agencies, but mainly to broadcast speeches from events.

Broadcasting and Social media offers various opportunities for knowledge sharing in the Caribbean, specifically due to the geographic landscape. These types of media provide the opportunity

to involve individuals and organizations in knowledge sharing activities from across the sub-region without having to meet. It provides cost effective alternatives to otherwise expensive endeavours.

C. Overall impression

Many agencies have realised the value of the Internet in developing an online presence that could enhance their knowledge capture, retention and sharing abilities. Consequently they have adopted some tools to capture and share knowledge, such as social media and broadcasting media.

It is, however, clear that much more still will have to be done to fully develop an online presence as a knowledge management tool.

Knowledge capture, specifically as it pertains to tacit knowledge, is not fully developed. Even the presentation of explicit knowledge is limited to summaries and a few research reports. Much explicit knowledge is still captured in printed format and is not digitised.

Even when sharing technologies and capture techniques are employed they are used half-heartedly; the full integration of these methods to create a knowledge management tool necessitates the development of a strategy to guide their integration.

Maintaining these methods is time-consuming. This should be considered when choosing methods to capture and share knowledge via the Internet. The agency needs to have to correct resources, specifically human, to ensure that they are developed and maintained. When all instances of an online presence are not maintained it can damage the image of an organisation. It is also important to remember to choose those methods that relate to the needs of the agency. Just because a method or technology is available does not make it a must have. It can only be effective if it is right for an organization.

Overall, it seems that the traditional use of websites, to market and disseminate information, is still adhered to. The utilisation of these methods to enable collaboration is not yet fully realised, resulting in organizational websites with only some additional features.

VI. Conclusions

It is clear that knowledge management not only belongs to the realm of the private sector, but also to that of the public and civil society sectors. Every avenue of development and “business” can reap the benefits of knowledge management.

Implementing knowledge management in the public sector is not as easy as in other sectors as the goals of this sector are geared toward achieving social, economic and environmental development to benefit the greater good, it is not about increasing the profits of one specific organization or an individual.

This, in itself, makes knowledge management difficult to implement and necessitates a change in the thoughts about knowledge management, it requires a paradigm shift in how knowledge management is perceived. The public sector is large, dispersed, and based on rules and hierarchy. This also makes it difficult for knowledge management to grow in this sector.

The public sector has many stakeholders, namely its own employees, its citizens as well as development agencies. In order for the sector to harness the advantages of implementing knowledge processes, it must adopt policies, strategies and actions that make it possible for them to benefit from the knowledge held by all of these role players and make it possible for the role players to benefit from theirs.

Many technologies are available that act as knowledge management tools and are used to enable the processes of knowledge management. It is, however, sometimes difficult for the public sector to employ new technologies and, in some cases, not necessary. Already existing technologies, mostly free of charge, are commonly available and could assist in knowledge management.

Internet technologies are of specific interest. These are already existing technologies, used by most in the public sector as well as its stakeholders and therefore requires little to no buy-in, provided that it is easy to use.

The public sector should make the necessary effort to employ knowledge management to improve their service delivery and assistance to citizens and others. A lot of funding is not always necessary and a lot can be accomplished by better utilising that which is already available, such as the creation of an online presence that stretches beyond the traditional website and e-government.

Developing knowledge management within the internal structure of the public sector is essential to ensure optimal functioning of the sector, however, for its work to be more effective it must always consider the knowledge held outside of its offices. This can be found in citizens and other entities such as development agencies. Enhancing and encouraging the acquisition of knowledge from outside of the public sector could increase the effectiveness of programmes.

It is clear that for the public sector to be successful and reap the benefits brought by the new knowledge era to achieve greater sustainable development, it must implement knowledge management initiatives that are not only beneficial to the state as a whole, but also to each individual.

VII. Recommendations

Based on the literature review and the analyses of the online presence of development agencies and governments, the following recommendations are made regarding 1) knowledge management and specifically the processes of knowledge capture and knowledge sharing and 2) the use of an online presence to enable these processes within the realm of the public sector:

a) The implementation of knowledge management practices should be actively pursued by the public sector. Some headway has been made in the delivery of services through e-governance in order to readily meet the requirements set out in the Mauritius Strategy and to fully reap the benefits brought about by knowledge management.

b) In order to affect this change, policies and strategies will have to put in place that enhance the processes of knowledge creation, capture and sharing. Changes in government are not easy to achieve, especially when traditional hierarchical systems are persistent. It is necessary to employ strategies that can work within these constraints. It is therefore necessary to find solutions for knowledge management constraints in the context of the public sector and not try to implement solutions based on their success in private firms.

c) Obtain leadership for knowledge management initiatives in the public sector. At a management level it is necessary to employ staff that can provide a vision for knowledge management in the public sector.

d) Public sector employees should be encouraged to share knowledge with others. It is also necessary to allow their networks to extend beyond the boundary of their own unit and department to other units and departments within the public sector as well as to other sectors, such as the civil society sector.

e) The unbalanced system of adulation for success and blame for failure should be improved. Employees should feel free to share their ideas and lessons learned with others in the organisation and understand that their input is important – whether plausible or not, without severe repercussions. Benefits for staff, when they actively participate in knowledge processes should be considered.

f) As funding and bureaucratic principles make it difficult to implement new technologies to enable the knowledge management processes in the knowledge era, it is important to investigate

technologies already available in the sector and see how they can be utilised better in order to enable knowledge management processes. The newest fad in tools is not always necessary, especially as they might not be adaptable to the public sector environment.

g) Re-examine websites and other uses of Internet technologies and actively work towards the building of an extensive online presence that serves the knowledge needs of both public sector and its stakeholders.

h) Knowledge is deeply imbedded in the culture and context in which it is created and shared. It is therefore necessary to implement knowledge management initiatives that are applicable for the Caribbean.

i) The activities of knowledge management processes must become an integral part of daily activities. Success depends on how seamlessly it can interact with the day-to-day activities of employees. This is not always possible, but should be integrated as far as can be allowed.

j) Public sector should seek to become knowledge organisations, creating and applying knowledge to not only better their own service delivery, but also the abilities of its citizens. It should actively seek to learn from other sectors, such as development agencies, with which they share some common ground. Shared knowledge can bring about plans and actions, tailored to the needs of the Caribbean that can be implemented to achieve the goals of sustainable development across the region.

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Annex

Annex 1

Evaluation checklist for “online presence” analysis

#	Category	Sub-Category	Questions
Knowledge Capture: What is captured? = Types Knowledge on Websites			
1	Internal knowledge <i>Evaluates what internal knowledge is available on the site</i>	Purpose of the Organization	1. Is a mission or mandate statement given?
			2. Are the goals and objectives stated?
			3. Is the background or the history reflected on the website?
			4. Are the areas of expertise stated on the website?
		Operation of the Organization	5. Is the organisation structure (such as an organogram) given on the website?
			6. Are operational guidelines and procedures that guide their work available on the website?
			7. Is a general contact provided?
			8. Are contacts for specific staff provided?
		Activities of the Organization	9. Are research completed by the organisation presented on the site?
			10. Are information on meetings, conferences and other events given on the site?
			11. Is information on projects provided?
			12. Is information on services that they deliver or provide?
			13. Is information provided on trainings and workshops provide?
2	External knowledge <i>Evaluates what external knowledge is available on the site. This can be any sector outside of the public and civil society sectors, both national and international.</i>	Related Organizations	14. Are links provided to other agencies or organizations that work in the same or related fields?
			15. Are information provided about the work the related organization does?
			16. Are links provided to specific areas of work of the related organization and their work?
			17. Is access provided to research or work of related organizations?
			18. Is access provided to projects or programmes of related organizations?
		Related Government Departments and Websites.	19. Are links provided to Government departments or units that work in the same field?
			20. Are links provided to guidelines, procedures and rules that have an impact on the work of the agency?
			21. Are links provided to government projects, initiatives and programmes in the area of work of the agency?
		Organizations, Institutions and Sectors other than Governments and Development Agencies	22. Are links provided universities and research institutions and departments that work on the same fields as the agency?
			23. Are links provided to documents and publications of research institutions related to areas of work or specific projects of agencies?
			24. Are links provided to private sector institutions that delivers services in related sectors?
			25. Are links provided to international organisations working in these areas?
			26. Are links provided to foreign organizations, outside of the Caribbean, working in the area of the agency?
			27. Are links provided to documents and publications and databases of external organizations?

Table (continues)

Knowledge Capture: How is it captured? = Systems used to present knowledge				
3	Methods for capturing tacit knowledge <i>Evaluates the methods used to capture intangible knowledge assets</i>	Storytelling or Narration	28.	Are stories of work or projects being done by the agency presented?
			29.	Are individuals, such as citizens, given an opportunity to tell their stories about experiences with the agency?
			30.	Are stories from individuals or other organisations on their own work or projects presented?
		Interviews	31.	Are interviews held with employees of the agency to talk about the experiences in executing their duties?
			32.	Are interviews held with employees about ideas and viewpoints on their area of work?
			33.	Are interviews held with individuals and communities that benefited from the work of the agency?
			34.	Are interviews held with individuals and communities to talk about their ideas and viewpoints on development?
		Cameras and audio recordings	35.	Are videos present about the work done by the agency?
			36.	Are videos made about the agency itself?
			37.	Are photos presented of the work of the agency?
			38.	Are audio recordings present about the work of the agency?
		Good practices	39.	Are good practices about the way of work presented?
4	Codification of knowledge <i>Evaluates systems that allows for the codification of knowledge</i>	Databases	40.	Is access to statistical databases provided?
			41.	Can other individuals or organisations contribute data to statistical databases?
		Standard indexing system	42.	Are systematic classification schemes, such as Dewey Decimal or Library of Congress, used to codify knowledge?
			43.	Are taxonomies used to codify knowledge in a hierarchical structure?
			44.	Are thesauri used to codify knowledge in a known order, such as alphabetical according to subject?
		Directories	45.	Are yellow pages (lists of experts) used to codify knowledge?
5	Online systems for knowledge capture <i>Evaluates the availability of larger standard online systems used for knowledge capture</i>	Knowledge repositories	46.	Are knowledge repositories used to capture knowledge?
			47.	Can other individuals and organisations contribute knowledge to the repository?
		Catalogues	48.	Is access given to catalogues containing knowledge produced by the agency?
		Libraries and Portals	49.	Is access given to digital libraries containing knowledge on the subject area the agency works on?
			50.	Is access given to portals, providing access to numerous types of knowledge?

Table (concluded)

Knowledge Sharing: How is knowledge shared via Internet technologies? = Systems and technologies employed specifically for sharing knowledge			
6	Electronic documents <i>Evaluates the use of electronic documents as methods for knowledge sharing</i>	Documents, such as reports	51. Are research documents made accessible online?
			52. Are reports of meetings, workshops and other events accessible?
		Publications	53. Is free access provided to books published by the agency?
			54. Is free access given to journals and magazines published by the agency?
		Ephemeral documents	55. Is access provided to brochures and posters to showcase the work of the agency?
			56. Is access provided to fact sheets on issues the agency works on?
			57. Is access provided to newsletters sharing knowledge on new developments and projects?
7	Broadcasting media <i>Evaluates the use of broadcasting media, such as television, radio, and videoconferencing, for knowledge sharing</i>	Blogs and Wiki's	58. Is a blog used to share information?
			59. Does the organization make use of wiki's?
		Discussions	60. Can individuals or organisations participate in forums?
			61. Can individuals join a Community of Practice?
			62. Does the organization have chat facilities available for real-time discussions?
		Audio-visual	63. Does the organization make use Internet radio to broadcast information?
			64. Does the organization make use of Internet television to broadcast stories about their work and issues?
8	Social media <i>Evaluates the use of social media for the sharing of knowledge</i>	Facebook	65. Does the organization make use of Facebook?
			66. Does the organization use Facebook to discuss development issues?
			67. Does the organization make use of Facebook to share information on upcoming and past events?
		Twitter	68. Does the organization make use of Twitter?
			69. Does the organization regularly broadcast information via Twitter?
		YouTube	70. Does the organization make use of YouTube?
			71. Does the organization share videos about issues via YouTube?
72. Does the organization share videos about their work on YouTube?			
			73. Does the organization share videos with guidelines and instructions on YouTube?



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