A FRAMEWORK TO SUPPORT KNOWLEDGE TRANSFER IN THE SERVICE SECTOR

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Abstract: This paper introduces a framework for analysing and supporting knowledge transfer in healthcare services. It argues that the individual is at the centre of the transfer process and, as such, needs to be catered-to within both teams and organisations. Within the healthcare sector, safety is critical, and the effective and efficient transfer of knowledge between healthcare professionals and patients can help to reduce the risks in the system. Furthermore, the authors hope that a clear understanding and accurate identification of the factors that impact the knowledge transfer process for individuals can have an impact on the knowledge transfer process in teams and organisations. The development of a suitable approach to support knowledge transfer for improved transfer of knowledge among these groups in the healthcare services is achieved using technology where appropriate, through the knowledge transfer framework which is presented.

1 INTRODUCTION

The service sector has grown faster over the past few years than any other sector in the global economy. It now contributes a sizable percentage to the gross domestic product of most countries (CREST R&D in services Working Group, 2009, Eurostat, 2010). The service sector of the economy is focused on people interacting with people. The products of the service sector are intangible, experience-based, and the product is provided through personal interaction (Straub and Karahanna, 1998, Davis, 2002). Healthcare is part of the service sector, it is entirely based on the interactions between individuals and groups of professionals, be they clinicians, nurses, patients or administrative staff.

The healthcare services are one of the most knowledge-intensive sectors of the economy. It is based on the generation, representation, accessibility and transfer of knowledge between individuals, teams and organisations. Effective and efficient transfer of knowledge can assist healthcare services in the control of cost, time and improving the quality of the services provided. Knowledge transfer is seen as crucial to the management of knowledge in an organisation (Argote and Ingram, 2000, Lahti and Beyerlein, 2000). During the past number of years researchers have carried out numerous studies on the effects of knowledge transfer, both internally and externally to the organisation (Gilbert and Cordey-Hayes, 1996, Moreland and Mayaskovsky, 2000). In these studies, efficient and effective knowledge transfer has been recognised as being one of the critical success factors to successful knowledge management (Lahti and Beyerlein, 2000).

The main objective of this research is to improve the effectiveness of the knowledge transfer process in the healthcare sector. Firstly by providing a holistic understanding of the knowledge transfer processes in relation to the factors that have an impact on the process. Secondly by facilitating the effective and efficient transfer of knowledge between both the sender and receiver in the process to identify and analyse the needs and requirements, and adaptations necessary to meet them. In particular the research will provide guidance and support to individuals in the transfer process with regard to the needs and requirements of the sender and recipient. From our study the following needs have been identified (a) an individual-centred approach to knowledge transfer; (b) informed decision-making; (c) effective use of information and knowledge; (d) effective mechanism for knowledge transfer and (e) effective use of technology to support knowledge transfer. Through

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the knowledge transfer framework support is provided to both the sender and recipient in the knowledge transfer process.

2 KNOWLEDGE TRANSFER

Knowledge transfer is of particular importance due to the knowledge growth potential that occurs during the transfer of knowledge from one individual to another, and also from one organisation to another (Argote and Ingram, 2000, Sveiby, 2001). Gilbert and Cordey-Hayes (1996) propose a four stage process towards achieving knowledge growth potential during knowledge transfer; acquisition (the gathering of knowledge from various sources), communication (the distributing of this knowledge), application (the applying of knowledge so that it is retained) and assimilation (the result of applying the knowledge). Knowledge transfer is not an easy process to achieve; it is hindered at each stage in the process as problems that occur during the stages are not identified until the next stage begins (Argote and Ingram, 2000, Levine and Moreland, 2000). To date research in the area has focused on developing individual tools to support specific area of knowledge transfer in healthcare services. This research seeks to develop a unified approach to knowledge transfer in healthcare services.

3 RESEARCH METHOD

A research approach developed by Cormican and O'Sullivan (2003) was followed.

Phase 1: Foundation. A review of literature relating to knowledge transfer was carried out. The scope of the review was literature in relation to knowledge transfer definitions, concepts, scenarios and applications. The objective of the knowledge transfer framework is to assist the sender and receiver in the knowledge transfer process. This is accomplished through the framework supporting analysis, design, development and implementation in the process.

Phase 2: Induction. After an evaluation of the various definitions, concepts, scenarios and applications on knowledge transfer, a refinement of the initial ideas from the foundation phase were made. The refinement focused on knowledge transfer features, characteristics and technologies. Initial solutions were formulated in relation to the case studies.

Phase 3: Iteration. Foundation and induction phases were repeated a number of times to refine and develop the initial framework. The ideas generated were analysed and refined until the components of the framework that are illustrated in section 4 were developed.

Phase 4: Presentation. A summary of the knowledge transfer framework is presented, explained and discussed in section 4. These initial tools will be presented to the case studies and will be used to provide a systematic approach to analysing the knowledge transfer process.

Phase 5: Verification. As is highlighted previously the framework will be evaluated and verified within a healthcare services case study. This will be completed through empirical testing of the framework tools during the acquisition, communication, application and assimilation stages of the knowledge transfer in the case study.

4 KNOWLEDGE TRANSFER FRAMEWORK

Following the review of various knowledge transfer methods and techniques along with classification systems, a framework for supporting the transfer process is presented. The framework is designed to be used by healthcare professionals in transferring knowledge more effectively and efficiently to other healthcare professionals and patients. This framework is called the Knowledge Transfer (KT) Framework. The KT framework applies a systems approach to analysing, designing, developing and implementing knowledge transfer in processes. The framework is made up of both theoretical structures and practical techniques to enable more effective and efficient knowledge transfer (see Figure 1). These tools are:

- Best practice

The best practice element of the tool set incorporates findings from numerous areas of research. These include cognitive psychology, organisational strategy, and organisational behaviour and technology innovation in the area of user-centred development. The knowledge transfer process is cyclical and is constantly occurring. The findings from the literature are incorporated to create a best practice document that provides guidelines for effective and efficient knowledge transfer. The best practice document is examined with regard to the following areas: acquisition, communication, application and assimilation.

- Typologies and taxonomies

Typologies are groupings of models, which describe different aspects of the same characteristics. The models create a visual representation of the key areas that need to be considered in the process and also represent the level of interaction and overlap between them. The typologies and taxonomies examine three areas: individual knowledge management; technology innovation for supporting knowledge transfer; and knowledge transfer for individuals, teams and organisation.

- Scorecard

There are numerous factors that can affect the success of the knowledge transfer process. Understanding the sender and recipient in the process assists in evaluating the quality and effectiveness of the knowledge that has been transferred. An understanding of the acquisition, communication, application and assimilation during the knowledge transfer process must also be realised. The human, process, and technical environment, need to be considered with regard to a successful knowledge transfer process. A set of four indicators are suggested by the author to assist in a successful knowledge transfer process. They can also be used to assess the absorptive capacity of the individual, and to identify the areas where the knowledge transfer process was deficient. The four key stages include acquisition, communication, application and assimilation. Each of these stages is further evaluated under need, habit, emotion, context awareness, individual centred, sensitive and responsive, and intuitive and adaptive.

- Key performance indicators

The key performance indicators can be used to quantify knowledge transfer performance in assessing the effectiveness and efficiency of the process. In developing the performance indicators, a combined structural and procedural framework is applied. This combined approach incorporates the various elements of the best practice, typologies and taxonomies, as well as the scorecard. In developing the performance indicators Thorndike and Hagen (1977) three steps for test measurement have been followed, (a) identify and define the quality or attribute to be measured; (b) determine a set of operations by which the attribute may be made manifest and perceivable and (c) establish a set of procedures or definitions for translating observations into quantitative statements of degree or amount.
In adhering to these three principles it is hoped that this will protect the validity of the measurement process, particularly when attempting to measure some aspect of human behaviour in areas where "there is no single universally accepted test" (Thorndike and Hagen, 1977).

- System support architecture

System support architecture is needed to provide a systematic approach to knowledge transfer for individuals, teams and organisations. The architecture needs to be designed to incorporate best practice, typology and taxonomy, check sheet and scorecard, and the key performance indicators. The ARIS house is used to incorporate these tools. The ARIS house (Scheer, 1998) incorporates five elements, organisation, data, control, function and output.

- Implementation methodology

The methodology incorporates the tools outlined above in a unified approach that can be applied in the services sector of the economy in a structured approach.
The tools that make up the framework are not definitive and will change through further development and application in the case study. The aim of this research is to add to the knowledge base in the areas outlined, provide guidance with regard to knowledge transfer in the service sector and to encourage further research in the area.

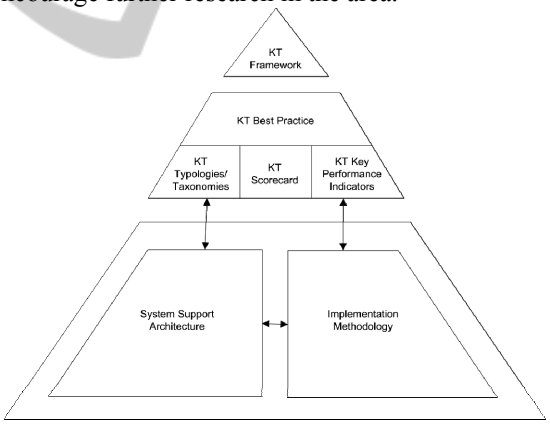

Figure 1: Knowledge transfer framework.

5 CASE STUDY

Healthcare is a particularly important area of the public sector that has to adapt to meet the changing needs of society. Therefore knowledge transfer within healthcare services is safety critical during transitions of care. Transitions of care in healthcare refer to the "specific interactions, communications and planning required for patient to safely move from one service or setting to another" (Society of

Hospital Medicine, 2006). The transitions occur during the transfer of patients from inpatients to outpatients. It can also be seen in acute care transfers. These can take place between acute care and/or sub-acute and/or non-acute care facilities. The aim of the healthcare professionals is to "provide leadership to promote efficient, safe transitions of care to ensure patient safety, reduce loss of information, and maintain the continuum of care" (Society of Hospital Medicine, 2006). If there is a breakdown during the transition of care, this can result in patient dissatisfaction and poor healthcare outcomes due to fragmented care. The aim is to provide continuity of care (Harrison, 2004). If transitions of care are not made efficiently and effectively between care providers, it can have a detrimental effect on the patient (Beach *et al.*, 2003). Transitions of care cannot be achieved without collaboration between the various healthcare providers (Thornhill *et al.*, 2008) during knowledge transfer. The research hopes to reduce the risks that occur during transitions of care due to problems arising in the transfer of knowledge between stakeholders.

6 IMPLICATIONS AND NEXT STEP

Knowledge is viewed by organisations as a significant resource that can be utilised to achieve a competitive advantage in the market place. To achieve this requires the effective and efficient management of knowledge. This can be achieved through: (a) improved economic management; (b) improved visibility of customer requirements; (c) improved visibility of future trends; (d) improved traceability and learning through previous experience; (e) improved communication across geographically distributed offices and the supply chain; (f) improved absorption of tacit knowledge and (g) improved informal culture of knowledge transfer. The benefits of knowledge management are achieved through the efficient and effective management of the knowledge process. These potential benefits can be facilitated through improved support prior to, during, and after knowledge transfer. The framework that has been described in this paper needs to be applied and validated in a case study. Then the potential benefits need to be evaluated against achieved gains.

7 CONCLUSIONS

Knowledge transfer is the process of transferring knowledge from one individual to another. The process is not always analysed, designed, developed or implemented. Knowledge transfer has two main issues that need to be considered. First the processes involved in knowledge transfer and the factors that impact on it. Secondly the factors and issues that impact on the transfer of knowledge being effective and efficient for both the sender and the receiver. The development of a suitable approach to support improved transfer of knowledge among these groups in healthcare services is achieved through the knowledge transfer framework. The framework includes a suite of tools that assist in supporting the knowledge transfer process at an individual level. This allows for an evaluation of the process at various stages, which provides for more effective adaption to changes as they occur.

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REFERENCES

Argote, L. & Ingram, P., 2000. Knowledge Transfer: A Basis for Competitive Advantage in Firms *Organizational Behaviour and Human Decision Processes,* 82**,** 150-169.

Beach, C., Croskerry, P. & Shapiro, M., 2003. Profiles in Patient Safety: Emergency Care Transitions. *Academic Emergency Medicine,* 10**,** 364-367.

Cormican, K. & O'sullivan, D., 2003. A scorecard for supporting enterprise knowledge management. *Journal of Information and Knowledge Management,* 2**,** 191-201.

Crest R&D in Services Working Group, 2009. *Promoting the Role of R&D in Services: A report of the CREST OMC 3% Working Group "R&D in Services".* Luxembourg.

Davis, G.B., 2002. Anytime/Anyplace Computing and the Future of Knowledge Work. *Communications of the ACM,* 45**,** 67-73.

Eurostat, 2010. *Quarterly Panorama of European business statistics (1-2010).* Luxembourg: E. Commission.

Gilbert, M. & Cordey-Hayes, M., 1996. Understanding the process of knowledge transfer to achieve successful technological innovation. *Technovation,* 16**,** 301-312.

Harrison, M.B., 2004. Guest Editorial: Transitions, Continuity, and Nursing Practice. *Canadian Journal of Nursing Reserch,* 36.

Lahti, R.K. & Beyerlein, M.M., 2000. Knowledge Transfer and Management Consulting: A look at "The Firm". *Business Horizons,* 43**,** 65-74.

Levine, J.M. & Moreland, R.L., 2000. Knowledge Transfer in Organisations: Learning from the Experience of Others. *Organizational Behaviour and Human Decision Processes,* 82**,** 1-8.

Moreland, R.L. & Mayaskovsky, L., 2000. Exploring the Performance Benefits of Group Training: Transactive Memory or Improved Communication? . *Organizational Behaviour and Human Decision Processes,* 82**,** 117-133.

Scheer, A.W., 1998. *ARIS - Business Process Framework,* Second ed. Berlin: Springer-Verlag.

Society of Hospital Medicine, 2006. The core competencies in hospital medicine: A framework for cirriculum development (Supplement). *Journal of Hospital Medicine,* 1**,** 2-95.

Straub, D. & Karahanna, E., 1998. Knowledge Worker Communications and Recipient Availability: Toward a Task Closure Explanation of Media Choice. *Organization Science,* 9**,** 160-175.

Sveiby, K.-E., 2001. A knowledge-based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital,* 2**,** 344-358.

Thorndike, R.L. & Hagen, E.P., 1977. *Measurement and evaluation in psychology and education,* 4th ed. New York: Wiley.

Thornhill, J., Dault, M. & Clements, D., 2008. Ready, Set ...Collaborate? The Evidence Says "Go", So What's Slowing Adoption of Inter-professional Collaboration in Primary Healthcare *Healthcare Quarterly,* 11**,** 14-16.