

Knowledge Management Standards at TELUS Information Technology Infrastructure

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1 ABSTRACT

Based on practical experience, this paper explores both the challenges and learnings in developing an integrated framework for Quality Management and Knowledge Management initiatives within the Technology Support Services of the IT Infrastructure Division of a Canadian national telecom corporation. The Technology Support Services has the dual responsibility for providing IT service delivery as an internal support department for the corporation as well as being an external facing business unit competing in a competitive market of IT outsourcing services. Establishing consistently high quality service delivery through the creation of organisational standards of operations was considered the key to success. A quality framework was to be the integrating mechanism in working with both internal and external expertise engaged in multiple complementary projects.

As a result of multiple mergers and reorganizations, a need for standardization of KM systems across the technology support services created dialogue and debate about approaches towards improving service delivery and achieving desired performance results. Formal KM systems included knowledge repositories, business practices, expertise locators and communities of practices as containers of corporate knowledge assets. Applying a quality management lens to existing knowledge management systems and practices highlighted the differences in approaches to enhancing performance quality. How to leverage the creative tension that resulted from the fundamental differences in underlying philosophies was the presenting challenge for developing an integrated framework for providing recognized quality Technology Support Services.

Traditional approaches to organisational design have tended to focus on the need for implementing structure and control to manage increasing size and scope. Quality management programs have generally developed in response to inconsistencies in performance and poor quality outputs due to lack of integrating mechanisms, feedback and reporting measures resulting in reduced ability to compete in an open marketplace.



The fundamental approach of creating quality through standardization assumes a repeatable and predictable process within clearly defined boundaries. Although it may be complicated, factors should be controllable. Standards create a powerful communication tool across boundaries and borders as we increasingly operate in a global environment. International Standards, such as ISO provide a shared and common understanding of expectations and certifying capabilities of products and services. ITIL provides an industry standard for technology infrastructure. The organisation recognized and was launching initiatives to achieve both ISO and ITIL standards to be able to compete in the marketplace.

Standardization is a critical factor to enable relevant and comparable measures of quality outcomes. Once standards in processes and measures to ensure compliance have been developed, the shift to integrating knowledge management strategies tends to focus on process improvement to adapt to changes in the environment. Process improvement is incremental and tends to be a slow moving process. It is restricted in its ability to capture and leverage innovation.

KM systems do require standards in content and process to enable knowledge to be articulated and shared. A starting point for applying quality principles to KM as part of this project was to create KM standards portfolios. A discussion of the KM tools used and approaches will reflect both the importance of this foundational piece, but also the limitations of a focus on KM as a system of controlled standards.

Early ventures in the field of KM focused on the technology tools to capture existing information in consistent formats so that it could be accessed and shared to improve process efficiencies and reduce duplications of efforts at group or organisational levels. An information-based approach to KM fits well with the QM movement. However, the progression of KM to understanding knowledge being fluid and contextual results in a current focus on knowledge processing and flow within an organisation to support quality decisions. It emphasizes collaboration tools to support a dynamic learning environment.

Enterprising knowledge requires both controls through standardization of tools and processes as well openness to innovative thinking in a fast paced world. To be recognized and accepted as quality standards, a rigorous process of requirements must be met. Creativity and innovation is sparked in the absence of standards and in alternative perspectives. It requires complex rather than ordered, sequential thinking.



The application of complexity theory to understand our organizations as complex adaptive systems has been a key framework used for KM in juxtaposition to rational and empirical science theory as the underpinning of our existing management theories and tools including total quality management. Management processes and systems that focus only on controlling processes in an ordered environment are limited in their effectiveness in a complex space where the dynamic nature of the situation diminishes ones ability to control outcomes.

Creating an organisational framework that enables quality business processing and quality knowledge processing requires a multi-disciplinary approach. Learnings from the experience of doing so within a traditionally ordered system, dealing with the chaos of abrupt and radical changes from mergers and acquisitions to emerging new ways of integrating the functions of KM, QM, Service Measurement and Business Process Development will be shared in this paper.



2 BIOGRAPHY

2.1 The Organisation

TELUS Communications Inc (T; NYSE: TU) is one of Canada's leading providers of data, Internet Protocol (IP), voice and wireless communications services. TELUS provides customers with innovative, integrated and customized solutions in e.business, telecommunications and information technology.

Our strategy is to unleash the power of the Internet to deliver the best solutions to Canadians at home, in their workplace, and on the move. TELUS is realizing this intent by leveraging the convergence of data, IP, voice and wireless communications to benefit our customers and shareholders.

2.1.1 TELUS Information Technology Infrastructure

TELUS Information Technology Infrastructure (ITI) has the dual responsibility for providing IT service delivery as an internal IT department for TELUS Communications and being an external facing business unit operating in a competitive marketplace for IT outsourcing services.

As an internal service provider, TELUS ITI enables and enhances the IT operating infrastructure that supports TELUS business systems. Major accountabilities include system availability management, system recovery and provision of operational expertise to evolve TELUS business systems by a relentless focus on customer service to TELUS' 21,000 users. The scope includes all desktops, servers, mainframe and service desk operations across the TELUS family of companies.

As an external service provider, TELUS ITI is a leading provider of information technology outsourcing services. A business unit within the Technology and Operations division of TELUS Communications, TELUS ITI employs over 1,000 people, serves over 60,000 end-users throughout Canada and works with TELUS International to serve customers in the US, Europe, Hong Kong, Korea, the Philippines and Latin America. TELUS ITI clients span industries such as financial services, forestry/resources, healthcare, manufacturing/distribution, public sector/ government, utilities and telecommunications.



The creation of standards of IT operations, knowledge of the customer business and technology environments, and detailed delivery team work instructions and reference documents are critical enablers to ensure consistently high quality service delivery. In addition, current and prospective clients require that ITI demonstrate evidence of Knowledge Management (KM), quality standards (ISO, SAS70, SOX) and evidence of the adoption of IT best practices (ITIL) as baseline entry requirements.



3 INTRODUCTION

Based on practical experience, this paper explores both the challenges and learning in developing an integrated framework for quality management and knowledge management initiatives within the technology support services of the information technology infrastructure division of a Canadian national telecom corporation.



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4.1 Business Drivers - KM at TELUS ITI

In a knowledge-based economy, KM is considered to be the critical element of a business strategy that allows an organisation to accelerate the rate at which it handles new market challenges and opportunities. Leveraging an organisation's most precious of resources, collective know-how, talent and experience. KM is more than a clever use of technology.

The focus of the ITI KM system is to manage and leverage the intellectual capital of the organisation, to allow ITI employees to innovate and collaborate to create profitable solutions for clients.

Knowledge management activities at ITI were designed to leverage this knowledge into better business performance. Critical success indicators include:

- Ability to *win business* with competitive, innovative solutions that can be delivered by operations economically
- Evidence that sales and delivery are engaged in *productive partnerships* during the solutioning and proposal phase
- Assurance that operations have the ability to *implement and deliver* the designed solution flawlessly
- Evidence that customers are *delighted* with solutions that address their business needs and implementations and service delivery on-time, on-spec, and on-"budget"

The initial corporate KM initiative was based on capturing the know-how of providing technology outsourcing services within standardized business practice documents. The business practices were housed in a corporate KM portal along with knowledge maps of expertise locators, linkages to enterprise knowledge repositories and links to communities of practice.

4.2 The Benefits of KM

The introduction of these basic KM components has resulted in significant organisational benefits, including

- greater process ownership
- increased organisational knowledge sharing



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- strengthened core competencies
 - improved standardization of tools and documents used to perform daily activities

By codifying the processes, procedures and related documents of key core-competencies, the external market has placed considerable value on process development as an intellectual capital asset. Through joint venture agreements with international partners in Korea and Hong Kong, TELUS ITI has provided access to the repository, training, shadow management and consulting services. TELUS ITI has realized significant benefits from knowing and sharing the performance-based knowledge of its core capabilities.

Aside from the revenue and joint business opportunities within the international market, the key internal benefits of effective KM for TELUS ITI are not in the creation of a knowledge repository, but in better informed decision processes, improved productivity and performance of core competencies and increased innovation capability. However, to realize these benefits a KM framework was needed that integrated the knowledge processing required within the defined business practices to achieve internal quality and productivity, and external excellence in customer service solutions. Figure 1 below illustrates the ITI KM framework.

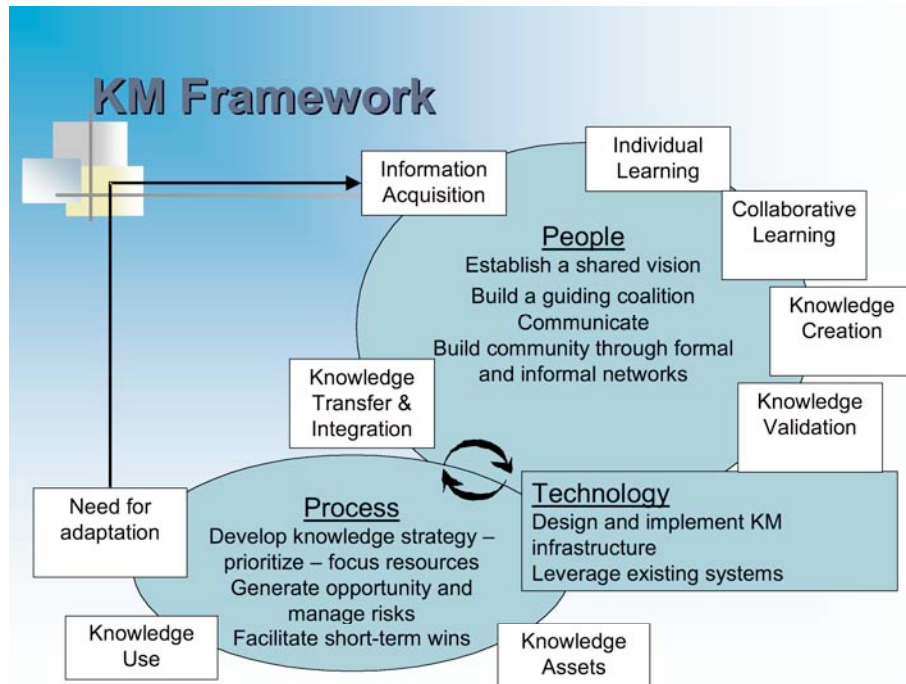


Figure 1 - KM Framework

From knowledge creation, knowledge application and validation to knowledge transfer, the KM framework enables the sharing of knowledge to facilitate individual and organisational learning. Having well defined and validated business processes creates the basis for ensuring quality control within known and anticipated operations. The need for learning arises when unanticipated impacts occur.

Correction, prevention and improvement systems are designed for dealing effectively with incremental change within existing structures and processes, often using retrospective analytical tools such as root cause analysis. Dealing with unanticipated issues and impacts requires critical thinking drawing on the intellectual capital of the organisation to create value-adding behaviours, which positively affect enterprise performance as well as the organisation's cultural capacity to adapt to emerging challenges.

Technology provides important tools to leverage knowledge transfer within controlled business processes and to support new learning to not only refresh, but also to potentially radically rethink existing processes based on changing internal and external needs.



4.3 **KM Opportunities and Challenges at TELUS**

In 2002, TELUS Communications began a major reorganization to enable a focus on establishing a single point of contact for customers across the TELUS enterprise. As part of this restructuring, several disparate delivery groups focused on niche IT solutions for external customers were consolidated to create the current ITI division. In identifying the early KM initiatives as a best practice, the external organisational change management team repositioned the KM team and broadened its mandate to provide leadership for the newly formed Delivery Support Services team (DSS).

The Delivery Support Services Group (DSS) assumed accountability for the development of new service development, process maturity and development, enterprise system tools and management of internal and external quality certifications. With the director of the KM group being given the mandate to lead the newly formed DSS group, stakeholder expectations grew dramatically to include a complete KM framework that charts high level processes and at the same time connects detailed knowledge and workflow instructions to manage all user interactions at the IT multi-level service desk and customer site delivery teams. In addition, external customers have been demanding the same KM tools to manage their complex IT environments.

This should have been good news for the KM advocates within the organisation. The opportunity to lead on an expanded KM mandate supported by increased commitments of resources and technology is hard to resist. However, the paradox is that the KM practitioners find themselves in somewhat of a quandary. Although there is so much opportunity to deploy KM practices and tools, differences in philosophical approaches and perspectives create barriers to success.

In an increasingly complex technological field and competitive market place, the technology operations tend to view KM as a means of achieving disciplined standardization of repeatable process within a traditional quality management framework. The KM team's approach had been of considering a dynamic organisational perspective with a key purpose of leveraging knowledge assets for innovation as a competitive advantage, albeit grounded in a disciplined approach to business process documentation.

What should the KM practitioners focus on? The stakeholders are requesting highly rigid process instructions, templates and rigorous document management processes. To comply would be challenging but the focus would be clear.



The only constant in the IT outsourcing industry is change. Should a responsible KM practitioner be pushing back and asking the organisation to balance the investment in Quality Management (QM) with more collaborative tools that are focused on developing and harnessing the collective talent of the organisation?

4.4 KM Standards Portfolio Project

All could agree in principle about the need to standardize KM systems across the technology support services, but the differing approaches and seemingly differing needs created much dialogue and debate. Building on a quality management approach of developing standards for existing knowledge management systems and practices was an effective means to move forward from debating to creating a common and consistent framework for an effective distributed KM system.

To that end, the KM leadership initiated a KM standards portfolio project, gathering data from multiple perspectives concurrently as a means to reconcile the KM and QM approaches. KM standards portfolios were developed from the perspectives of:

- The customer facing delivery groups (primarily the IT service desk)
- The corporate/departmental intranet
- The Knowledge Management Framework that supported high level business practices, the overall management of corporate intellectual property and the inventory of tacit and explicit organisational knowledge

4.4.1 IT Service Desk

The focus of this paper will be the service desk KM standards portfolio project as it highlights the knowledge flow issues from both an internal and external perspective and the issues and challenges that cut across the standards requirements from a communication and KM support perspective.



The IT Service Desk struggles with the dual pressures of improving service while reducing costs. Individual teams within the multiple levels of service desk operations sought to improve both the quality of information, and the speed in which it was captured and transferred through developing a knowledge repository targeted to meet the needs of their particular roles within the service offering. The result was localized KM systems that lacked a common taxonomy, architecture and standard. These localized solutions resulted in dispersed customer support documentation that lacked proper document management and control systems creating operational issues of:

- Low customer confidence/perception
- Outgrown customer support system
- Emphasis on “fire-fighting”
- Repeated problem resolution rather than elimination
- Uncoordinated and unrecorded documentation
- Unclear staff resource/cost requirements
- Inconsistent quality of call response and response times

Addressing quality concerns through knowledge management standards provided insights into the issues from an integrated system perspective, which helped to highlight the issues of the inability to capitalize on the flow of knowledge across the organisation. Within the service desk operation, each team was focused on capturing knowledge within a repository to improve its response and service levels for its particular interface with customers, rather than considering the entirety of the customer interface with the organisation. Each were focused on customer service, but only within the narrow band of the services they were accountable to provide directly to the clients.

At a first tier level of support, the primary issue was the ability to access information and knowledge about known items or incidents. However, at the second tier level of support, a focus on leveraging existing knowledge to address new problems or concerns required a different approach. Third tier and on site delivery teams also had developed knowledge repositories based on an in depth knowledge of the technical and customer environments.



Based on their particular type of service and performance requirements, each centre had developed a custom knowledge repository to suit their style of operations. With the merging of units to create a consolidated service desk, a process to increase understanding of the interdependencies and a means to work together towards achieving excellence in customer service was needed.

Understanding that enhancing the value proposition for customers required focusing beyond meeting customer needs in terms of time to response and resolution of logged calls, to increasing the customer's ability to achieve their goals, enabled a focus on mutual success factors. A knowledge audit provided a tool that enabled the integration of multiple perspectives:

- From a knowledge management perspective, how knowledge was being identified and captured as an organisational asset
- From a quality management perspective, the integrity of the processes to ensure consistency and quality of the knowledge and how it flows into decision-making processes
- From a customer perspective, continual learning and development to meet changing needs of the customer IT and business environment and enhanced competitiveness through innovation

The knowledge audit questionnaire (refer to Appendix A – Knowledge Audit) was an initial step in the process towards defining knowledge standards. By reviewing factors related to knowledge creation (capture and utilization at organisational, individual and technology levels), principles of quality management could be applied to create efficiency, effectiveness and confidence in the integrity of the results. The questions sought to identify enabling factors as well as current barriers to the flow of knowledge. Answers were sought both through primary and secondary data collection. Personal interviews were conducted with key stakeholders and existing secondary data accessed through the online portal was reviewed.

Asking questions stimulates critical thinking about the use and flow of knowledge within existing processes. It moves beyond knowledge of the specific business process to how the knowledge objects or content needs to flow within and across processes to enhance decision-making.

The purpose of the knowledge audit is to assess the organisational readiness to:

- Ascertain the business impacts of existing gaps and potentially competing standards on productivity and opportunity costs



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- Adopt standards that enable knowledge flow as a critical component of business processes
 - Create common definitions and articulate standards related to people, process and technology standards requirements

A KM standards portfolio was produced using the data collected. Our standards portfolio project reflected an environmental scan of existing standards, potential standards; some of which may become mandated by the organisation and need to move to implementation stages, and potential new standards for consideration.

The KM standards portfolio provided a “what is” picture of standards related to business operations, human factors and technology infrastructure. To be effective, a KM system needs to be an integrated set of tools to support the full life cycle of knowledge processing within an organisation. It needs to accurately capture and codify the valuable knowledge assets of the organisation as well as contribute to how individuals interact with existing knowledge to enhance the knowledge assets of the organisation.

Effective KM and QM systems require feedback mechanisms, as knowledge production and sharing is an ongoing process. The process of creating a standards portfolio demonstrated the critical lack of automated feedback and change management features and processes, and highlighted the need to consider a KM system from a much broader perspective than a document or information management focus. Like QM, KM must be integrated within the overall business systems rather than viewed as distinct and separate applications.

4.5 Results Achieved

4.5.1 Organisational Change – The Creation of Delivery Support Services (DSS)

The results of the knowledge audit clarified the need for the integration of functions related to process development, quality management, knowledge management and enterprise system management. The DSS organisation was formed specifically to provide shared vision and leadership to these functions.

Figure 2 below illustrates the ITI Document Life Cycle Management process.

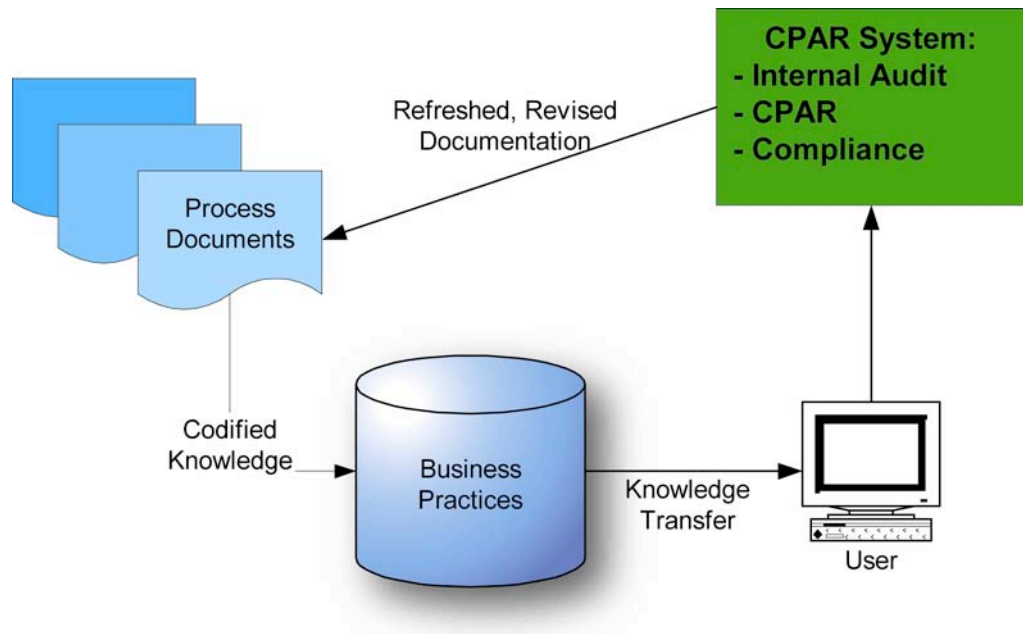


Figure 2 - Document Life Cycle Management: CPAR and Business Practices

4.5.2 Business and Organisational Standards

The addition of the CPAR system reinforced a quality management perspective integrated within the ITI KM business practices. Addressing standards from a KM perspective also enabled the integration of what appeared to be competition between leading with a strategy of meeting the IT best practices through alignment to ITIL and the he quality standards based on ISO versus the KM relentless focus on enabling innovation and organisational knowledge growth. Together the two approaches provide a powerful set of standards to create operational excellence.

Creating CPAR is only a first step in addressing the multiple views that are required to create a fully integrated KM system. It addresses the quality control of business policies and practices to ensure integrity and consistency in service to the customer – responding to customer requests and defined needs. This perspective addresses KM from a content, or knowledge asset perspective.

Figure 3 below illustrates the ITI DSS Service Excellence model.



Service excellence will be achieved by the interaction of the following groups:

1. Process Development:

- *Process creation for client services
- *Analysis for process optimization & re-design for efficiency and utilization of best practices

2. Knowledge/Business Management Systems:

- *Management of organizational body of knowledge
- *Management of workflow applications that support and enable the day-to-day operations of the ITI organization

3. Technical Communications:

- *Ensure Standardization and effectiveness of all ITI explicit knowledge and business communications

4. Quality Management:

- *Provide management of quality certifications (ISO) and ensure adoption of processes are measured via CPAR and quality audits.



Figure 3 - DSS Service Excellence Model

4.5.3 Additional Recommendations

Recommendations from the creation of the KM standards portfolio included:

- Mapping the macro business process to highlight the boundary spanning activities that needed to occur across levels of support and in providing a consolidated service desk function
- Developing standard shared templates for capturing relevant data for creating, revising and deleting from the consolidated service help desk knowledge base to be developed jointly in collaboration with all relevant stakeholders including customers
- Creating controlled vocabularies and taxonomies
- Including document and content management best practices



4.5.4 Technology Standards

Two other perspectives need to be considered – that of the platform and tools. In other words, the containers in which the knowledge resides and through which knowledge flows and the need for innovation to anticipate and adapt to the dynamic environment in which the customer operates must be addressed.

As expected, the technology standards were the most developed within the organisation. However, compliance with technology standards was insufficient to achieve corporate business objectives. All of the knowledge repositories, applications and practices in use met the organisational technology standards, but as they were developed in isolation to serve their own particular business operations. Thus, the issue of flow across independent knowledge repositories was significant.

The existing KM business practices were designed with a focus on procedural knowledge. For example, first level service desk KM repository was designed to capture and reuse declarative knowledge, whereas the second level support KM repository was designed to support creation of causal knowledge.

Each tier of the customer service desk operations had developed their own web pages on the corporate portal through which their respective employees would access their KM repositories. The KM group had invested considerable efforts in creating a unique KM portal to showcase the KM tools developed and considered KM as a unique support group enabling business process improvement.

A key learning of the KM standards portfolio project was the recognition that the corporate intranet is, and needs to be, the knowledge portal for the organisation. The intranet portal provided both the platform for integrating the range of technology tools, but also being a critical enabler in leveraging the use of those tools. It provided a collaboration space and dynamic knowledge transfer through activities such as supporting communities of practice.

Work had begun to share documentation between repositories and enable access across tiers, but the differing service desk operations were each heavily invested in their particular approach to the problem. Standard shared templates for capturing relevant data for creating, revising and deleting information the integrated within the KM systems of the organisation began to address the issue of lack of taxonomy, but it was a slow process.



4.5.5 Human Factor Standards

The differing tiers of the customer service desk operations and their development highlight the issues of multiple perspectives that need to be aligned. Each service desk tier developed differing systems to support the identification and development of competencies of their staff as well as the strategies used to enhance performance and productivity through knowledge sharing.

The first level of support reflected a traditional training and monitoring approach; the second level reflected a development approach gained through mentoring and experience. Drawing on competencies across tiers of the service desk function was extremely limited. Although on paper, the organisation was to provide a consolidated service desk support, the lack of integrating factors across service levels created barriers for effective knowledge flow.

A key result of the standards portfolio project was the ability to support a business case for change to implement a customer centric model. In the initial focus of reconciling the purpose of the business processes as a KM versus a QM system, the lack of integration of the customer perspective emerged. The customer perspective means more than meeting defined service level agreements. It needs to be defined in the achievement of the critical success factors of productive partnerships, flawless implementation and delivery of customer solutions.

To build from the customer view, a new tool, CSI is being piloted. The development of CSI is an iterative process working in partnership with a key client as the initial pilot. The customers' needs and dynamic environment dictate the services provided. Given the long-term nature of customer contracts, needs cannot be fully anticipated at the start, but will emerge and change over time.

The CSI system provides a dynamic web interface for the customer to document their application and infrastructure requirements. The web interface allows the customer to control and view the source documentation that governs the delivery team procedures. The source information feeds the knowledge and workflow systems within TELUS ITI, enabling accurate and timely operations documentation applicable to each customer. The design of the system has incorporated document and content management best practices.



5 CONCLUSION

IT Service Delivery teams are driving to provide breakthrough service improvements to compete more effectively in the highly competitive managed services marketplace. Creation of customer value through enhanced customer relationships, service excellence and customized IT toolsets are key differentiators in the IT services industry.

The nature of the IT outsourcing business requires that delivery work instructions are customized based on the customer's business environment, choice of technologies, the contracted service levels and need for service changes over the 3- 7 year contract period.

To add to the complexity, the ITI organisation was formed as a result of industry acquisitions, internal restructuring and consolidation of portions of TELUS business units. As a result, the knowledge required by the delivery teams was not readily available to those that required it. Absence of this information resulted in poor productivity due to rework and inconsistent service quality.

The delivery teams are made up of highly skilled IT management professionals. Their approaches to delivery currently depend on how and in what organisation they originated. Of course, no one approach is incorrect; co-mingling of different perspectives and positive collaboration can result in superior delivery for the customer

To do so, TELUS ITI is recognizing the need to approach the role of service provider in a seamless and transparent manner in partnership with clients. Customers are part of the delivery team in an outsourced services contract. As the customer's business environment and requirements change, so do their IT requirements.

ITI team members and the customer require joint visibility to a customer service information base to ensure that both the customer and team members have the appropriate support information on an ongoing basis. To this end, a new pilot project has been launched with a key customer to develop a quality knowledge management framework from a customer centric perspective.

The market and the business drivers demand that successful IT service firms manage the adoption, documentation and relentless adherence to repeatable process and industry best practices. This is the inherent challenge of creating processes based on ordered systems for known incidents versus having the capacity to work in a complex, unordered space in which cause and effect will be separated in time and be unpredictable in advance.



The creation and adoption of a KM standards portfolio provides a framework to understand the intricacies and multi-layers of standards that need to be in place to enable appropriate knowledge creation, validation and flow across boundaries to support consistency in quality business operations while leveraging the collective knowledge assets of the organisation.



6 ACKNOWLEDGMENTS

We are grateful to the teams we have worked with at TELUS and our fellow KM learners at Royal Roads University.

In particular we'd like to acknowledge the work of Gordon Smith at TELUS.

Gordon Smith is the Manager of Knowledge Management System for TELUS IT Infrastructure and Operations at TELUS Communications, Inc. His involvement in knowledge management began with the planning and design of the company's Business Practices knowledge repository. Gordon is currently responsible for the strategic planning for knowledge management, the development of the knowledge taxonomy and architecture, and the enhancement of knowledge management systems.

With a commitment to learning, Gordon holds a B.A (Hons) in Political Studies from Queen's University, a Graduate Diploma in Knowledge Management from Royal Roads University and is currently writing his M.A. thesis for Royal Roads University entitled, "Knowledge Management Systems implementation for the IT Service Desk".

In addition we would like to acknowledge our fellow KM learners, Angela Parriss, Bill Brandon and Daniel Phillips for their teamwork in creating the KM framework

APPENDIX A – KNOWLEDGE AUDIT QUESTIONNAIRE

Purpose

The questions contained in this document will be used as a framework to perform a knowledge audit of TELUS' current KM program. Each of the questions can be answered by a variety of personnel. The focus will be on the operational viewpoint with qualification from support staff such as HR, KM and QM.

Business Factors

Define what knowledge is useful and critical to the business?
How does knowledge flow through the organization? How does knowledge flow connect with business process flows?
How are we deriving value from our knowledge processes and systems? If not, why not?
How do we measure and reward the development and use of knowledge?
What industry standards do we benchmark against?



Technology factors

<i>What are the technology enablers that currently exist to achieve the following knowledge objectives?</i>
To create new knowledge?
To validate knowledge?
To share knowledge? Internally? Externally (e.g. Customers)?
To find knowledge to improve decision-making process?
To package knowledge?
To reuse knowledge?
How well do they support leveraging current knowledge sources?
How are the requirements of the technology enablers determined?
What measures are in place to evaluate the cost/benefit of these knowledge systems?
What involvement is there of the user and multiple stakeholders in their ongoing development?



Organizational Factors

How do the processes for collecting, organizing and sharing knowledge integrate with the technology?

How accessible are the knowledge systems to employees - both physically and remotely?
How secure is the corporate knowledge?
How is our stock of knowledge increasing? Decreasing?
What do we do with knowledge accrued from completed tasks or projects?

Human Factors

Do people routinely document their own knowledge for repeated use? Is there an evaluation process of what is a valuable knowledge asset to maintain in a system?

Is there standardization of knowledge documentation in the company?
Are the skill set requirements and performance standards clearly defined for staff? How is this kept current?
When encountering a new problem, can you quickly identify and mobilize the people who can solve it?
What benefits do you think your company could realize if it improved the ways it organized and reuses existing skills and experience?