

# **BERKELEY – STANFORD CE&M WORKSHOP: DEFINING A RESEARCH AGENDA FOR AEC PROCESS/PRODUCT DEVELOPMENT IN 2000 AND BEYOND**

## **KNOWLEDGE MANAGEMENT**

**P. S. Scuderi**

Information Industries Branch, Queensland Government, Australia

**K. D. Hampson**

Queensland University of Technology, Brisbane, Australia

### **Abstract**

This paper describes the background and methodology developed and employed in undertaking research developing a Knowledge Management Strategy for a key construction focused government agency. This paper reviews this methodology and examines a likely Knowledge Management Strategy.

Two central objectives structure this Case Study:

1. Identify categories of important information generated by the Building Division, Queensland Department of Public Works in its service delivery to internal and external stake-holders, and
2. Formulate an appropriate and targeted Knowledge Management Strategy to provide an enhanced client-focussed service delivery to government, the Queensland building industry, and the community. In doing so, the strategy will meet the needs of the Queensland Building Capital Works program.

The structure of this paper includes:

- Description of the Queensland construction industry setting
- Review the relevant literature
- Design an appropriate research methodology
- Analyse results
- Formulate conclusions, contributions and implications of the targeted strategy.

**Peter Scuderi** has almost 20 years as an architect before joining Queensland Government to assist firms improve business efficiencies and expand markets. His current role is promoting IT to improve business processes.

**Keith Hampson** is Associate Professor and Team Leader of the Construction Research Alliance centred in the School of Construction Management and Property at QUT. His research focuses on innovation and technology management in construction.

## **BACKGROUND**

This Case Study seeks to prove that a strategic approach to Knowledge Management will facilitate improved information sharing between the Queensland Department of Public Works - Building Division, and its Stakeholders. The high level strategy for a Knowledge Management Strategy will be developed by following a rigorous process. The path taken includes undertaking a literature research locally and internationally, undertaking primary research with Building Division's stakeholders, analysing the results and developing a targeted strategy. The developed strategy will enhance the Building Division's abilities to manage important information and provide an enhanced client-focussed service delivery to government, the Queensland building industry, and the community. It will also improve business processes across the Division. The basic research methodology and structure of this paper includes:

- Describe the industry setting
  - Review the literature
  - Design research methodology
  - Analyse the results
  - Formulate conclusions, contributions and implications of the targeted strategy
- The following is a list of the

## **INDUSTRY SETTING**

In order to understand the importance of Building Division's role in the Queensland Building and Construction industry, the authors consulted with its key stakeholders, reviewed corporate documents and reviewed existing industry studies to position the organisation in a context.

Historically, the Department of Public Works was the Central Agency for Capital Works Procurement throughout Queensland. This role changed in the early 1990s through Government action to improve client Department accountability. The impact of that decision has the Building Division developing new directions of focus to add value to the Queensland building and construction industry. The research described in this paper seeks to develop a strategy to allow the Building Division to harness and share its knowledge and expertise through an integrated Knowledge Management Strategy (KMS).

The building and construction industry in Queensland is a major driver for the State's economy (Board of Construction Queensland, 1999). It has a direct relationship with the level of employment, infrastructure provided and general standard of living for the community. The Queensland Department of Public Works also plays an important role in establishing and regulating industry policy. As a major client to the construction industry and as a regulator, it is important for Government to act as a change agent. It has a community obligation to undertake research and development, promote best practice and act as an informed client role model.

It is the management of information generated through research and development, expert service delivery and policy formulation that is the essence of this case study. In order to meet its goals and objectives, the Building Division, gathers, creates and administers large quantities of information. This Case Study seeks to categorise the information by users needs, and manage its storage and dissemination by suggesting a number of improvement strategies.

## Knowledge Management

Research analysts for the *GartnerGroup*<sup>1</sup> predict that organisations in information control-oriented mode would either significantly reduce staff or cease to exist by the year 2002 if they do not evolve into information service-oriented organisations. While this appears to be an extreme view, it is an issue that must be considered by organisations like the Building Division. The Building Division's goals include being a client focussed, service-oriented organisation by the provision of important information. There is a difference between Information Management and Knowledge Management. Information Management uses technology for information collection, storage and control. Knowledge Management is a discipline that uses technology to share and leverage information for innovation. (*GartnerGroup, Information Management is not Knowledge Management, 1997*)

The GartnerGroup claims Knowledge Management emphasises human interactions as the focal point surrounding the collection, distribution and reuse of information. In the past, organisations such as the Building Division have been insular in sharing internal information on the basis that it formed a component of their competitive advantage. Information is stored behind layers of bureaucracy. The challenge would be to move from a vertically integrated self-contained organisation to a virtual agency that interacts and reacts to its stakeholders in sharing and leveraging information. This would be a cultural shift to introduce a more collaborative approach to partner with stakeholders.

The aim of this research is to develop a strategy and make recommendations to create fundamental and beneficial changes in the way the Building Division manages and shares information. In an effort to change its focus from internal to external, the Building Division must review its supply chains by sharing knowledge about its business objectives and processes.

## LITERATURE REVIEW

In developing this research, the authors reviewed available literature on Information Management, Knowledge Management and strategy development to instigate change in an organisation like the Building Division. Literature was reviewed from a variety of sources, particularly from Australia, the UK and US.

To place the Queensland Building Division into a broader Australian industry context, an initial review of various industry studies on the Queensland and Australian Building and Construction industry was carried out. The objective was to determine the role the Building Division could play in the Queensland construction setting. This primary research stage provided the authors with leads to consult with several stakeholder groups like government agencies private companies and industry associations. As the Division has had difficulty articulating its role, the aim is to place the organisation into a context as a service provider of "important information".

Defining Knowledge Management, characterised by the gathering, storage and dissemination of information, followed this. Defining knowledge requires the identification of what is "important information" to the stakeholders of Building Division.

---

<sup>1</sup> As one of the world's leading authorities on Information Technology (IT), the **GartnerGroup** is a recognised authority on global communications and information industry trends and developments. Its primary business consists of research and analysis of significant IT industry developments and trends.

In parallel with this, a literature review was undertaken on the development of high level strategy and identification of essential elements to consider when contemplating the introducing of a Knowledge Management System. This review process provided an analysis of the change process.

With this background research, the primary research process of briefings, focus groups and face to face structured and unstructured interviews could be planned.

## RESEARCH METHODOLOGY

To develop a methodology for the Primary Research stage, the first priority was to get organisational commitment to the process. The methodology allowed the collection of qualitative and quantitative primary data from stakeholders by delivering briefing sessions, facilitating focus groups and undertaking face-to-face detailed interviews.

## RESULTS

Analysis of primary data was based on three steps (Ostreich and Wassenaar, 1980) - editing, coding and tabulating the responses. As the samples for each questionnaire were small, the process of analysing was quite simple.

## CONCLUSIONS

Strategy development involves managing the interface between an organisation and its external environment. The outcomes of the primary research provided a clear indication of the business objectives of the Building Division, the knowledge base within the organisation and how it could be utilised both by internal staff, government agencies, and the general community.

This research for formulating the Knowledge Management Strategy is not yet completed. The following are potential strategy directions:

*Knowledge Classification:* Assess the importance of information gathering based on Stakeholders' needs. Then adopt a common standard for the classification of knowledge and encourage other areas of Department of Public Works and other Government Agencies to implement the same standards.

*Knowledge Exchange:* The effectiveness of sharing knowledge across internal and external stakeholders is the key driver to provision of *Important Information*. It is necessary to understand information flows across the Division and its stakeholders during the course of service provision. Effective data and information exchange is closely linked to the issue of stakeholder satisfaction. It is necessary to identify and document information flows for agreed priority areas linked to the Building Division's Business Plan.

*Information Privacy:* Information privacy is key to engaging support from internal and external stakeholders. Issues of concern here are collection and protection of information and the exchange of knowledge. A key element of the Knowledge Management Strategy is to identify priority areas of interaction between stakeholders and develop protocols over information privacy in relation to these knowledge flows.

*Stakeholder Needs Identification:* Sharing information within privacy guidelines would enable the Building Division to provide its stakeholders with information they have mutually agreed are important. Benefits would be gained at the individual stakeholder level by facilitating knowledge exchange to support service provision. To provide more effective services, the Building Division will need to identify areas where improved standards, policies or guidelines would assist stakeholders in their own service delivery.

*Infrastructure:* Infrastructure that supports service delivery can include information technology and business processes. This is where information technology needs to support the business objectives of the organisation, not conversely. It entails effective communication within the Building Division and between its stakeholders. Increasingly knowledge sharing is done electronically via the Internet, Intranets, and Extranets. Examples could be the creation of an Extranet database for the storage of policies, guidelines and standards from the Building Division, other areas of the Department and external stakeholders. For example, the Building Division could become the gateway portal to the building industry for expert information on capital works procurement and building industry reform.

This strategy identifies the potential appropriateness of Intranet and Extranet technologies for sharing knowledge on the needs of building construction stakeholders. The concept of sharing policy and procedures via stakeholders' Intranet sites still requires exploring. Identifying specific technologies and technology issues for greater and more confident use of information storage and retrieval is also required.

The Meta Group (Kutnick, 1999) believes one way organisations will be judged in the future—as far as the kind of partner they are and the value-adding they can produce—is by their ability to externalise, their ability to enable other organisations to communicate with them, and their ability to partner. A strategic approach to the Queensland Building Division's Knowledge Management System could assist the organisation achieve its goal of being recognised for its excellence in providing impartial policy and best practice advice on matters related to strategic asset management of property and built assets.

## REFERENCES

- Board of Construction Queensland, *Construction Queensland: The Direction*, 1997.
- GartnerGroup, *Information Management is not Knowledge Management*, Research Note 18 December 1997.
- GartnerGroup, *Enterprise Information Architectures*, Strategic Analysis Report, 13 February 1998.
- Kutnick, Dale, "Customer Relationship Management, Today and Beyond", *Meta Trends* Meta Group Inc., January 1999.
- Meta Group Inc., *Knowledge ManageNETS: From Concepts to Reality*, Paper delivered by Jeffrey Mann, March 1999.
- Ostreich, Herbert and Wassenaar, Dirk, *Questionnaire Construction*, The Lansford Publishing Co., Inc, San Jose, 1980.