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CURRENT STATE OF KNOWLEDGE MANAGEMENT, POTENTIAL AND TRENDS: IMPLICATIONS FOR THE CONSTRUCTION INDUSTRY

^{1,2}Tayyab Maqsood, Derek H. T. Walker³ and Andrew D. Finegan⁴

¹Cooperative Research Centre for Construction Innovation, RMIT University, Melbourne, Australia
²School of Business Information Technology, RMIT University, Melbourne, Australia
³Professor of Project Management, RMIT University, Melbourne, Australia
⁴Senior Lecturer, School of Information Technology, Charles Darwin University, Darwin, Australia




Background

Cooperative Research Centre (CRC) in Construction Innovation:

Project 2001-004 (2B)—Delivering Improved Knowledge Management and Innovation Diffusion (Completed)

Project Leader: Professor Derek H. T. Walker

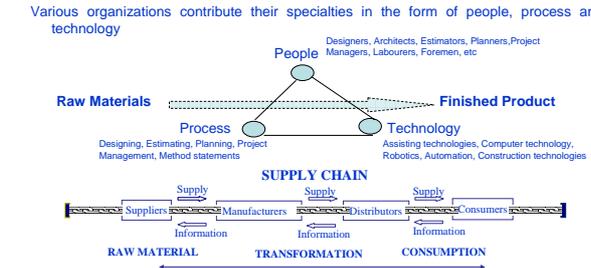
PhD Research:

An investigation into the role of knowledge management in supporting innovation for effective planning and delivery of construction projects (In Progress)




Construction Process

Various organizations contribute their specialties in the form of people, process and technology



People: Designers, Architects, Estimators, Planners, Project Managers, Labourers, Foremen, etc

Process: Designing, Estimating, Planning, Project Management, Method statements

Technology: Assisting technologies, Computer technology, Robotics, Automation, Construction technologies

SUPPLY CHAIN: Suppliers → Manufacturers → Distributors → Consumers

Information Flow: Information flows between all stages of the supply chain.

RAW MATERIAL → TRANSFORMATION → CONSUMPTION

Basic thing, in action, behind the above transformation is 'knowledge'




Knowledge and Knowledge Management

- ◆ Tacit knowledge of individuals
 - unarticulated and intuitive
 - Intellectual Capital, hidden and Intangible
 - Well Spring of Innovation
- ◆ Explicit knowledge
 - Procedural
 - Codified and easily transmitted
 - Made part of the machines (computers/robotics)

Knowledge management is about the processes by which knowledge is created, stored, captured, shared, transferred, implemented, exploited and measured to meet the needs of an organization

Knowledge Management is, therefore, being recognised as a vehicle through which innovation and improved business performance is possible




Knowledge related Initiatives in the Past

- ◆ In Mid 80's development of Expert systems
- ◆ Mid 90s till now, development of Internet, Intranet, ICT.

The basic assumption was that knowledge could be readily obtained from an expert, easily codified and promptly put into use by others.




Causes of Unsuccessful Initiatives

- ◆ The high technological dependence of these initiatives
- ◆ An inability to properly understand the complexity of knowledge and its esoteric nature
- ◆ The neglect of human related factors associated with change
- ◆ A lack of recognition of the need for appropriate leadership, vision, strategy and culture
- ◆ Ignoring individual value systems and the notion of trust
- ◆ An insufficient reward system and a lack of motivation




Shift in Focus of Knowledge Management Research

- ◆ Understanding cultural aspects and soft Issues
- ◆ Considering technology only as an enabler
- ◆ Recognizing that knowledge is esoteric and contextual
- ◆ Developing communities of practice and social networks

Perceived Benefits of Knowledge Management

- Installs a learning and knowledge-sharing culture and environment
- Provides vision and effective leadership to overcome learning barriers
- Helps transform an organisation into a learning organisation
- Increases the absorptive capacity of the organisation
- Reduces project time and 're-works', produces innovation, delivers improved quality and customer satisfaction

Therefore, successful knowledge management initiatives in the construction industry will make organisations open and fertile for new innovative ideas

Directions in KM Research: Trends and Potentials

- ◆ **Innovation Enabler**
 - ◆ tacit knowledge of individuals is a 'wellspring of innovation'.
 - ◆ ability of KM to convert people's tacit knowledge into explicit knowledge is an essential part of innovation
- ◆ **Learning Processor**
 - ◆ having learnt lessons avoids 'reinventing the wheel' and 'making the same mistakes again'
 - ◆ project histories and databases as repositories to keep such knowledge of the lessons learnt

Directions in KM Research: Trends and Potentials-contd

- ◆ **Encompassing Innovation adoption and Diffusion Issues**
 - ◆ new innovation that is adopted and diffused becomes a knowledge transfer activity
- ◆ **Knowledge sharing facilitator in supply chains**
 - ◆ unit of competition from organisation vs. organisation is being changed to chain vs. chain.
 - ◆ knowledge not information alone would flow from one extreme end of supply chain to other
 - ◆ improves workmanship, enhances quality, reduces number of defective items

Directions in KM Research: Trends and Potentials-contd

- ◆ **An Interface with Academia and External Innovation Sources**
 - ◆ most valuable academic research with significant potential for providing benefits goes unnoticed
 - ◆ important for construction organisations is to have an interface with the external world and to be able to browse through available innovations and cutting edge research

Directions in KM Research: Trends and Potentials-contd

- ◆ **R&D Facilitator and Innovation Diffuser**
 - ◆ settling R&D under the theme of KM would give a new vigour and vitality to the concept of R&D
- ◆ **Complimenting the Human Resource Function**
 - ◆ considers human resource as a knowledge asset
 - ◆ develops reward systems to more effectively facilitate knowledge exchange and embedding knowledge and competence within organisations

Conclusions

- KM research has seen a paradigm shift in focus from more technology dependent to less technology dependent and is being considered more human oriented activity
- KM is actually associated with the handling of any type of knowledge which makes it possible to merge various streams of research (knowledge) e.g. Innovation, organisational learning, learning organisations
- The identification of various potential and trend makes ground for legitimate existence of KM function or department in a certain organisation and roles and responsibilities that can specifically be undertaken by it.