

Conceptual Framework for Live Capture and Reuse of Project Knowledge

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Objective

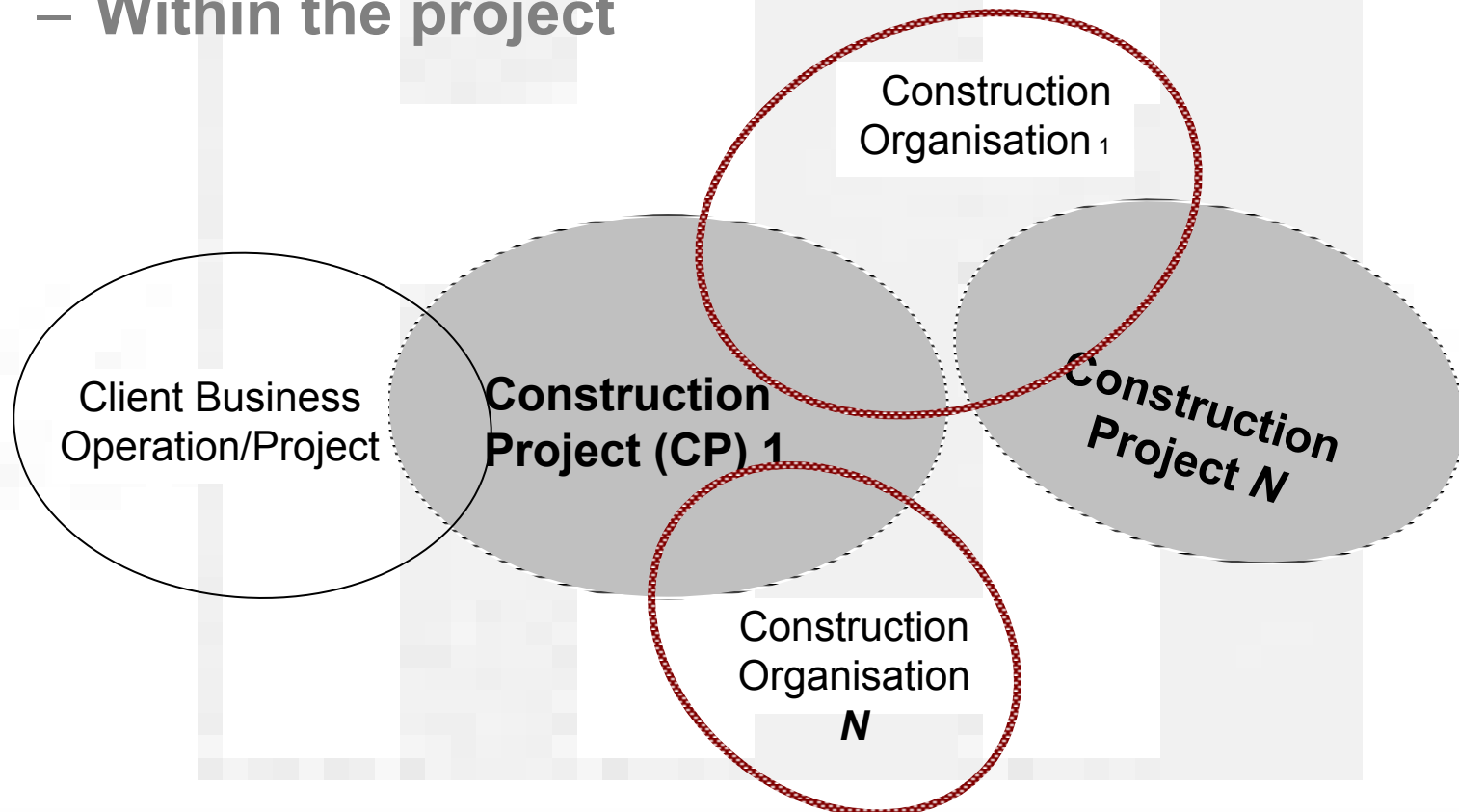
- To present a conceptual framework for the live capture and reuse of knowledge in construction projects
- *This is part of the CAPRIKON project by Newcastle & Loughborough Universities in the UK*

Outline

- Knowledge Management (KM)
- Project Knowledge Capture
 - Current Processes & Challenges
- ‘Live’ Knowledge Capture
 - Concepts & Technologies
 - Conceptual Framework
- Conclusions

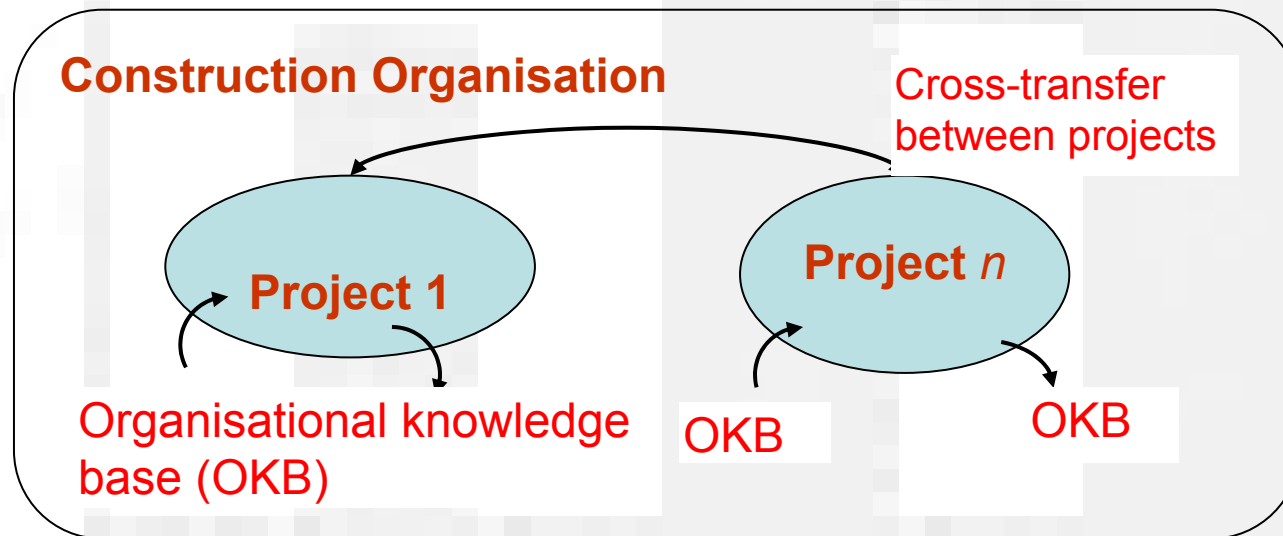
KM in Construction

- 2 levels:
 - Within individual organisations
 - Within the project



Project Knowledge Capture

- **Current Practice...**
 - Within individual construction firms
 - Reliance on people
 - Post Project Evaluation/Review



Project Knowledge Capture 2

- Challenges....
 - **Live** capture of project knowledge
 - Knowledge reuse **during** and **after** project life
 - Reuse of **collective learning** by firms
- Questions...
 - *What project knowledge is reusable?*
 - *How can this knowledge be captured...?*
 - *How can it be made available?*

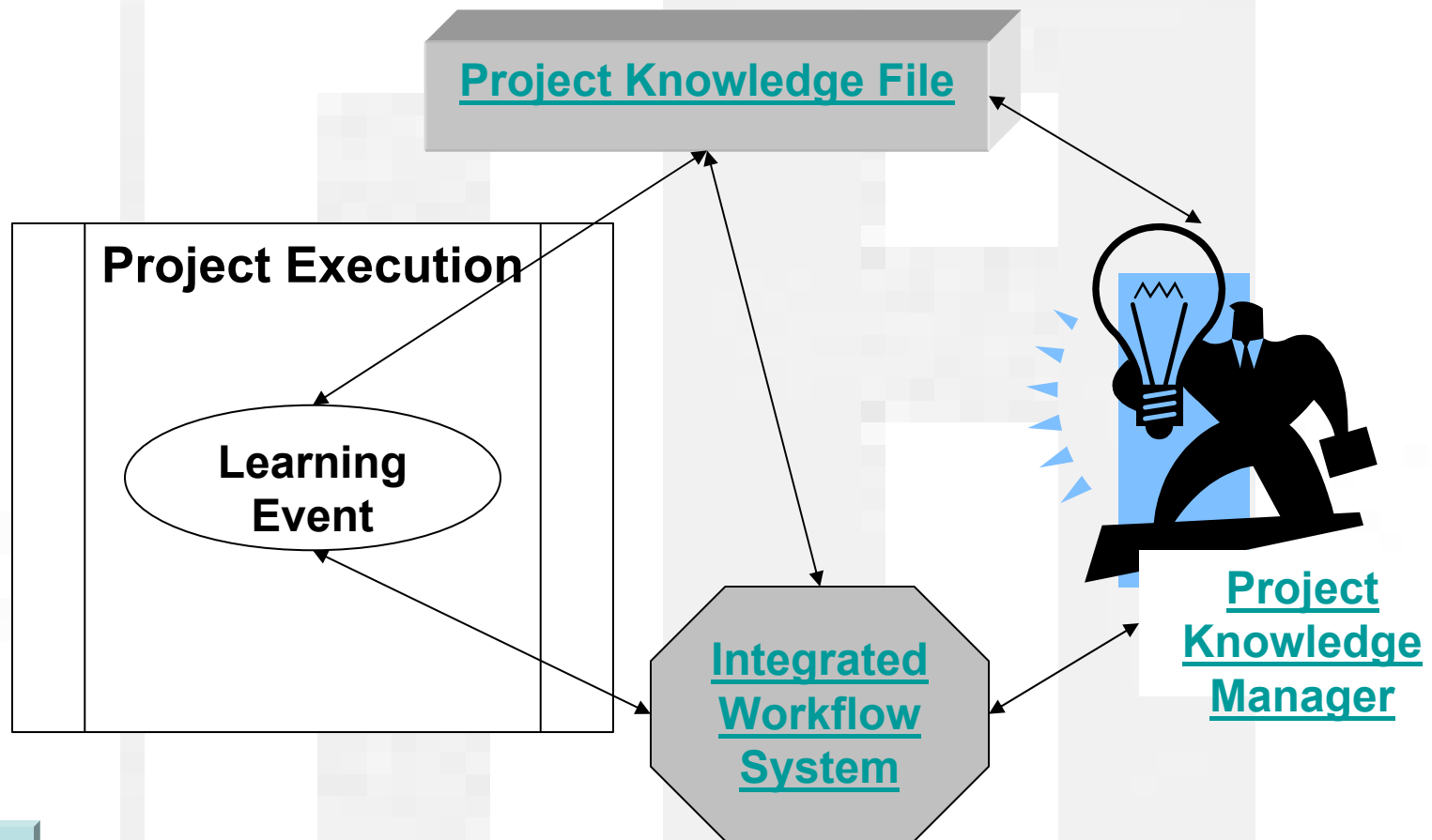
Live Knowledge Capture

- Development of a methodology using both 'soft' and 'hard' concepts and tools
 - *To investigate current practice*
 - *To identify requirements for knowledge reuse by end users of project knowledge*
 - *To explore concepts and techniques for live knowledge capture*
 - *To develop and test methodology*

'Soft' and 'Hard' Concepts/Tools

- **Collaborative learning**
 - *pulling together the collective learning of individual firms for the benefit of the entire project team*
- **Learning history**
 - *Capture of usable knowledge from a team and transferring it to another team that may operate in a different context*
- **Project Extranets**
 - *“dedicated web hosted collaboration and information spaces”*
 - *Growing use within the AEC industry*
- **Workflow Management**
 - *Automated & structured processes reflecting business rules*
- **Other Groupware applications**

Conceptual Framework



To conclusions

Project Knowledge File (PKF)

- Similar to Health & Safety File (HSF) under CDM regulations in the UK
- Managed by Project Knowledge Manager (Planning Supervisor for CDM)
- Information relating to reusable 'project knowledge' during & after execution
- Kind of knowledge, format & contents of PKF to be determined

To conceptual framework



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Integrated Workflow System

- Implementation of PKF in real-time
- Live compilation of learning history for project
- Generic but customisable model
- IWS triggered by a **'learning event'** either **automatically** or manually by **PKM** (or both)
- After a 'trigger', IWS requests relevant project team members to contribute their views
- Use of various technologies (e.g. data mining, server 'push' technologies, etc.)

To conceptual framework



Project Knowledge Manager

- A **role** (not a particular individual)
- Development and management of
 - **project knowledge file**
 - **integrated workflow system**

To conceptual framework



Conclusions

- Conceptual framework
- Addresses a key problem
- Combination of both 'soft' and 'hard' approaches
- Potential benefits include
 - Shared learning for supply chains during a project
 - Other project teams
 - Project staff and students
 - Clients: development and construction of assets
 - Improved supply chain management

Conclusions – Further Work

- **Further research to determine:**
 - Nature and contents of project knowledge file
 - Form of integrated workflow system
 - Development and integration with project extranets

Thank You....