

# Facilitating Work-based Learning Projects: A Business Process-oriented Knowledge Management Approach

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# OVERVIEW

- Work-based Learning
- A Scenario
- A BPOKM approach to Support the WBL Project
- Process Modelling Language
- Knowledge Management Services
- Conclusions and Future Work



# Work-based Learning

## Definition of Work-based Learning

a class of university programmes that bring together universities and work organizations to create new learning opportunities in workplaces (Boud and Solomon, 2001).

## Characteristics of Work-based Learning:

- a partnership between a high educational institution and an external organization is established.
- the learners involved are employees.
- the learning programme followed derives from the needs of the workplace and the learner (individually adapted).
- learning is taking place as integrated part of projects/tasks in the workplace
- the learning outcomes are assessed by the educational institution



# Work-based Learning

WBL projects form the core development factor of all WBL programmes

- A WBL project differs from a **dissertation** as it demonstrates a range of practical capabilities in the work place and focuses on activities within the workplace leading to a **product**.
- **Collaborative work** is a characteristic of real WBL projects. This may include team working, multi-functional or trans-disciplinary work groups.
- WBL projects reflect a **project cycle** of activity: project planning and development, implementation and delivery, monitoring and evaluation.



# A Scenario

Real estate development is a highly creative business process and a team effort. It encompasses a range of skills and knowledge derived from a number of disciplines.

- **architects, landscape architects, and site planners** to address project design;
- **market consultants** to determine demand and a project's economics;
- **attorneys** to handle agreements and government approvals;
- **environmental consultants and soils engineers** to analyze a site's physical limitations and environmental impacts;
- **surveyors** to provide legal descriptions of a property; and
- **lenders** to provide financing.



# A Scenario

Real estate development consists of series of steps that are required to take the idea of a development and turn it into a completed project.

## Primary Steps

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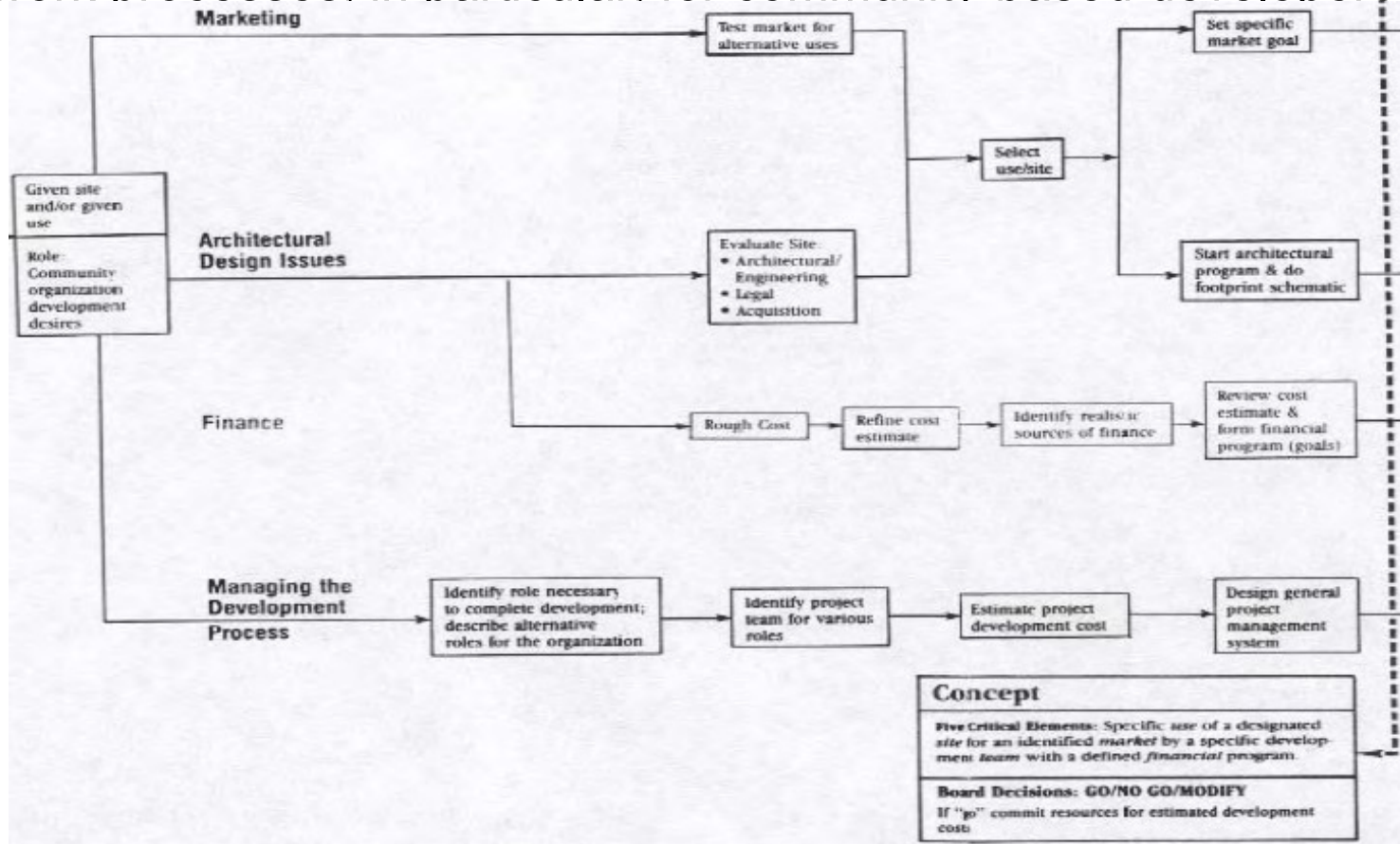


There is a major “artifact” at the end of each primary step



# A Scenario

A development team can be formed differently and take different work processes. in particular. for community-based developers



# A BPOKM Approach to Support the WBL Project

## Business Process Model

A Business Process Model (BPM) is a description of the functionality and structure of a work process (sub-processes, activities and operations), the sequence of activities and their relationships, the cost and resource usage, etc.

## Knowledge Management

Knowledge Management involves systematic approaches to find, understand, transferring and use knowledge and in turn contributes to re-generate knowledge.

## Business Process Oriented Knowledge Management

The BPOKM approach focuses on learning aids for knowledge workers in effectively building up the knowledge and abilities that they need to fulfill tasks in their business processes





# A BPOKM Approach to Support the WBL Project

Working knowledge is usually tacit. Business process modeling is an approach that allows the transformation of tacit knowledge into codified knowledge. The business process model can also be used as the entry point to manage detailed knowledge resources. Two kinds of knowledge:

- Knowledge about Business Processes

In order to carry out business processes effectively and efficiently, learners must acquire some knowledge about process functionality, required process inputs and delivered outputs, work organization, etc.

- Knowledge within Business Processes

In order to perform activities within a business process successfully, learners may need some knowledge to create high-quality ideas or products.



# A BPOKM approach to Support the WBL Project

How to facilitate teachers, employees, workplace supervisors, and representative of the organization to produce and share the knowledge about and within business processes

- **Process Modeling Languages** can help to represent, communicate, share knowledge about and within business processes as process models
- **Knowledge Management Services** can help to store, retrieve, and execute process models and to provide personalized and context-sensitive access to knowledge resources (human and documents)



# Process Modelling Language

Important standards and languages for modeling business processes and enterprise architectures

- BPMN (Business Process Modeling Notation) and BPML (Business Process Modeling Language)
- RM-ODP (Reference Model for Open Distributed Processing)
- ARIS (Architecture of Integrated Information Systems)
- ArchiMate

Why are they not suitable for WBL projects?

- These languages are developed for professional business process analysts and design teams.
- They have not emphasized the aspect of learning
- It is not realistic to install and access enterprise system for WBL



# Process Modelling Language

## Important standard and languages for modeling educational processes

Languages meant for learning (representing the executable design)

- IMS Learning Design
- E2ML (Educational Environment Modeling Language)
- PoEML (Perspective-oriented Educational Modeling Language)
- LDL (Learning Design Language)

Languages meant for teaching (representing the inspirational design).

- LDVS (Learning Design Visual Sequence)
- LDLite
- 8LEM (eight Learning Event Model)
- LAMS (Learning Activity Management System) - executable



# Process Modelling Language

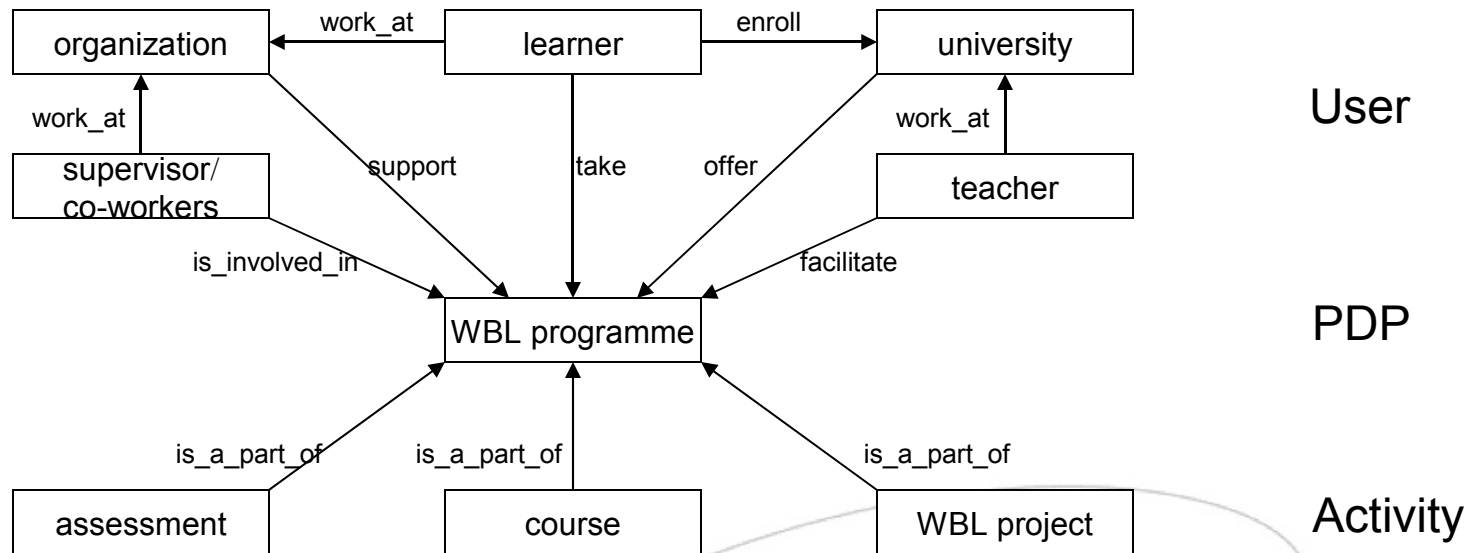
There are two conflicting requirements to design a language for modeling a WBL project:

- sufficient expressiveness for modeling an integrated learning and business process.
- as easy as possible for ordinary teachers, employers, employees, and other practitioners to understand and use.

It is needed to explore the trade-off between expressivity and usability.



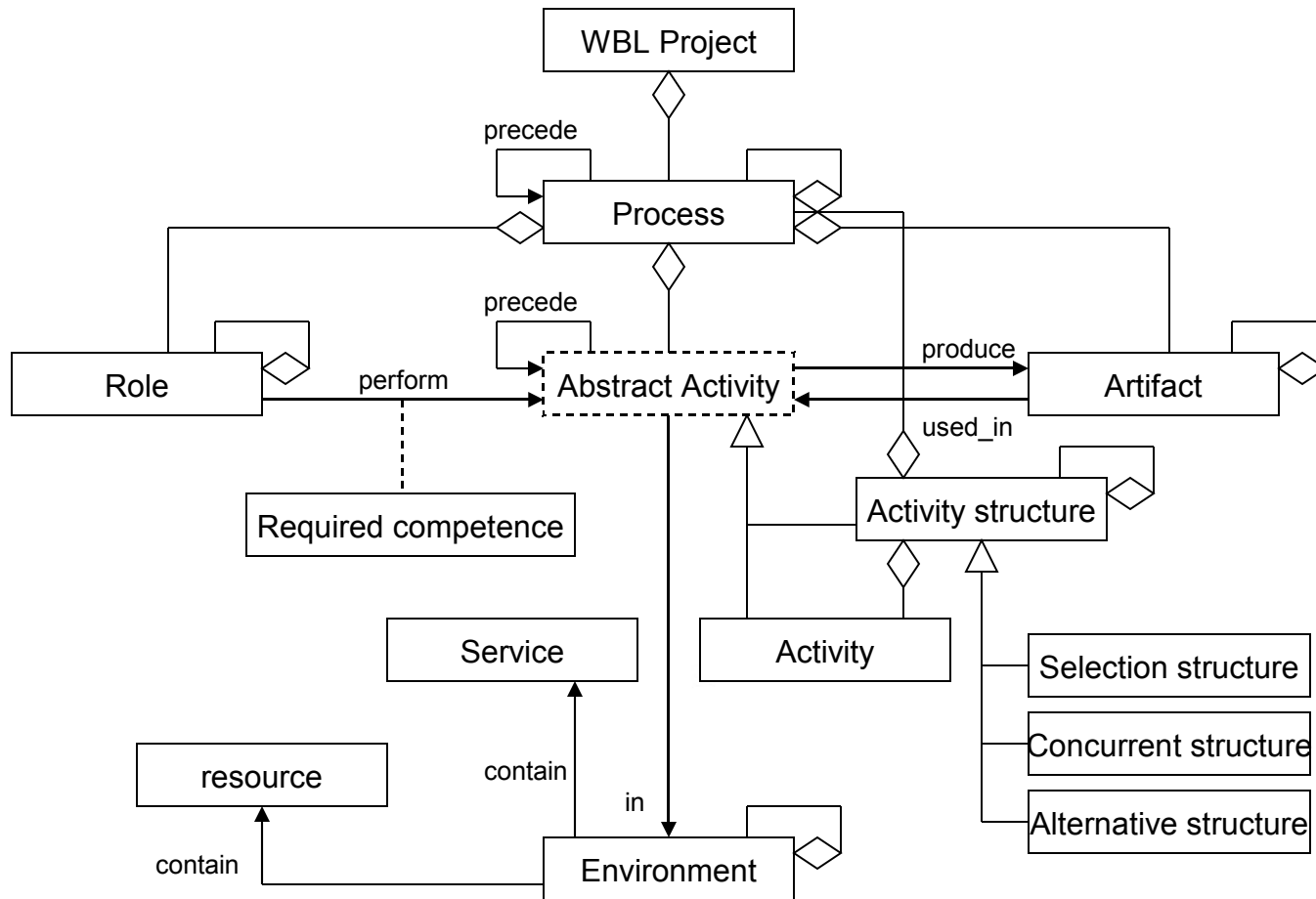
# Process Modelling Language



The WBL Programme Model and the Use of TENC Project Infrastructure



# Process Modelling Language



WBL Project Meta-model

# Knowledge Management Services

Process modeling tool and the repository of process models

Project planning tool

Project execution environment

Access to the process models, project plans, and execution data

Assessment tools

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# Conclusions and Future Work

## Conclusions

- Teachers, employees, employers, and local supervisors will benefit from the use of process models as it allows them to create, transfer, find, and use knowledge about and within business processes more easily.
- It is a trade-off between expressivity and usability of the process modeling language to develop, communicate, reuse, customize, execute, and monitor the execution of a WBL project plan
- A proposal of a WBL project modeling language and knowledge management services

## Future Work

- Design and development of the knowledge management system
- Evaluation of the system with WBL practitioners



Thanks for your attention!

Questions?

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