



Total CSR

Strategic CSR Learning and Knowledge Management

Strategic CSR Learning and Knowledge Management is defined as an approach aimed at delivering user oriented CSR learning services utilising organizational knowledge as a learning resource and contributing to the development of the strategic knowledge based capabilities required for attaining optimised corporate sustainability performance.

Total CSR is utilising results from the CSRQuest project www.csrquest.net



Table of contents

1. INTRODUCTION	3
2. STRATEGIC CSR LEARNING AND KNOWLEDGE MANAGEMENT SCOPE	5
3. A LEARNING FRAMEWORK	7
Motivation control	8
Active Learning	8
Knowledge Networking	8
E-Learning tools	9
4 DEVELOPING A KNOWLEDGE ORIENTED CSR STRATEGY	9
5 LEARNING INTEGRATION MODELS	11
5.1 The Integration Reference model	11
5.2 The business model	12
5.3 The knowledge management model	12
5.4 The learning services model	13
6. LKM METAMODEL	14
6.1 Background	14
6.2 A simplified LKM metamodel	15

1. Introduction

The need of modern organisations to manage effectively their knowledge is recognised by the majority of business organisations¹.

Corporate training is also becoming increasingly important in business strategies, sometimes as part of an overall knowledge management strategy, but more often as a separate initiative associated with developing core competencies, continuous professional development and life-long learning schemes.

The new generation of corporate training is likely to be dominated by e-Learning representing the convergence of the web and learning and used in a similar manner both in education and business training. **E-Learning encompasses several methods of learning, which are enhanced or facilitated by technology.** It offers all members of society easier access to information and learning flexibility by **matching learning to their specific needs and circumstances.**

A key challenge concerning corporate e-learning solutions is finding ways to use organisational knowledge as a learning resource to enhance the efficiency of training processes or programmes.

A further challenge relates to the need to combine different types of learning services (content, and delivery methods/media) to suit the specific requirements and preferences of individuals.

Overall integrated e-learning and knowledge management is a key challenge for many learning organisations and an essential part for implementing knowledge based strategies.

In this paper we explore how e-learning and knowledge management can be used to support knowledge based strategies for Corporate Social Responsibility (CSR).

As the CSR business case is becoming clearer it is also becoming evident that implementation of CSR requires time to reach maturity before it becomes part of mainstream business practice. It is widely recognised that the speed of achieving **CSR mainstreaming** is dependant on training, CSR leadership development and organisational capabilities to integrate CSR policies in the core operational processes.

Socially responsible behaviour is extremely multisided and is related to all functions, decisions and processes in a company. The width and complexity of the CSR scope makes training and knowledge management an essential part of the solution.

Today's enterprise IT systems (e.g. resource planning and financial information systems) are geared towards capturing and processing primarily economic (resource) activity. Therefore the other two CSR dimensions (social and environmental) are not addressed by contemporary company IT infrastructures. Information regarding social and environmental activity is either created or stored on the Internet (i.e. in company web sites, online databases, industry portals

¹ "Strategic Knowledge Management Solutions" kBOS SKM 2



and so on). However to utilise such information in a CSR context remains largely a manual and laborious task which creates barriers to CSR mainstreaming.

A strategic CSR learning and knowledge management approach is described in this paper as the way forward to address the challenges outlined above and specifically to provide a solution to the requirements of **CSR mainstreaming**.

In the first part of this paper the scope for Strategic CSR Learning and Knowledge Management is defined. A Learning Framework is then presented highlighting a learning control interface between the instruction environment and the learner environment to provide dynamic management of the conditions that stimulate learning. The instruction environment is described through the different learning modes and different delivery methods.

Knowledge based CSR strategies and Learning Integration models are then outlined. Finally a Learning and Knowledge management metamodel is proposed to facilitate building CSR Learning and Knowledge management applications.

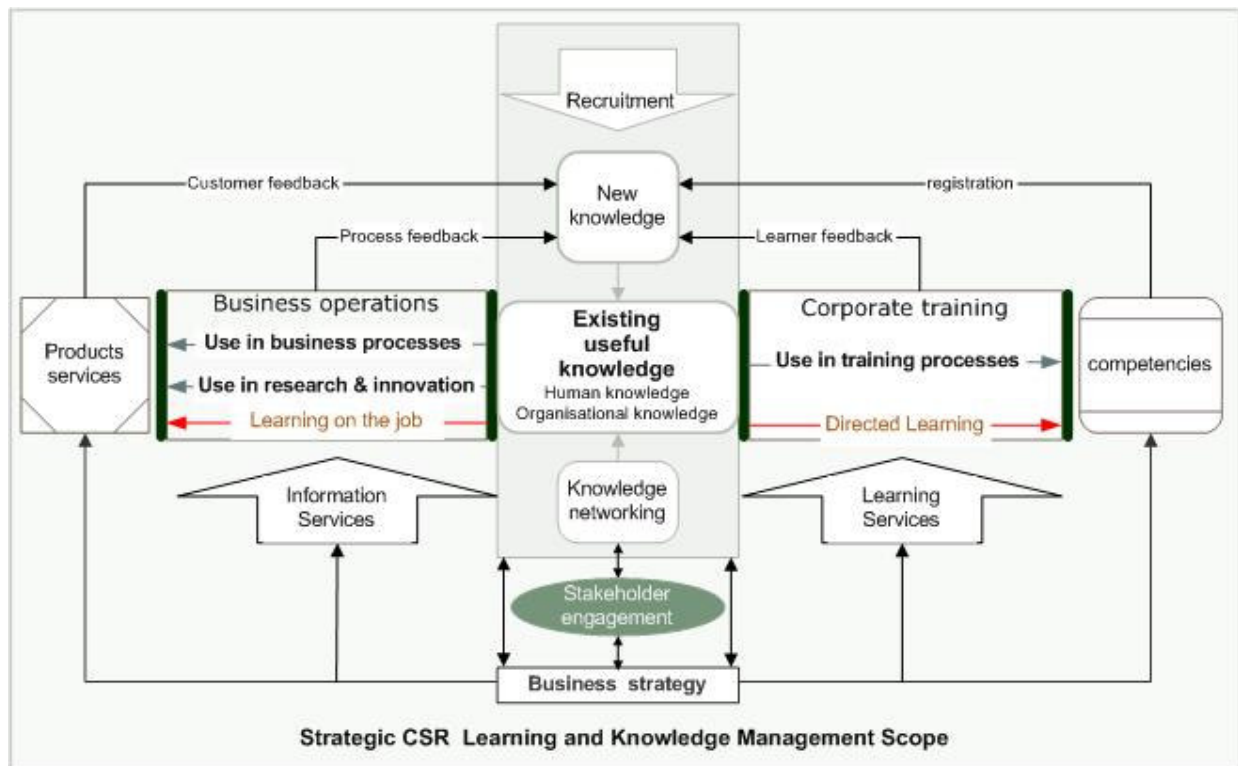
2. Strategic CSR Learning and Knowledge Management Scope

The scope for Strategic CSR Learning and Knowledge Management is described graphically in the following diagram.

Knowledge is depicted as a dynamic 'reservoir' which can be expanded with new knowledge generated internally or acquired through recruitment and knowledge networking. The later is closely linked with the company's stakeholder engagement process which requires efficient knowledge sharing facilities and provides important feedback loops for knowledge development.

Obviously knowledge can also be lost, either because people leave or when knowledge becomes obsolete due to changes in shareholder priorities, technologies and market conditions.

The important asset is therefore the **existing useful knowledge**, which should be protected and developed through continuous development of employee's competencies, including re-training in new strategies, technologies and or products.



With reference to the above diagram, knowledge is used in two distinct areas: business operations and corporate training.

In business operation knowledge is used directly in the implementation of business processes and in specific research and innovation activities. The main output from these activities is the

company's products and services and other value outputs determining collectively the company's performance.

Existing knowledge is also used by employees in learning 'by doing' and as a result they generate new knowledge representing their increased experience. This particular knowledge development loop is very important in improving process efficiency and in creating enhanced capabilities for process and product innovation. In the context of CSR, process feedback on how CSR policies are implemented, suggestions for improvements and experience sharing provides the crucial route to achieving CSR mainstreaming.

Customer feedback represents the second knowledge development loop in the business operation domain. It enhances the company's understanding of customer requirements and their perceptions of the company's products and reputation and is therefore crucial to the bottom line and the success of the company. This becomes part of the stakeholder feedback which shapes strategy refinements and as already mentioned provides the main CSR knowledge development stream.

In corporate training the company's knowledge is used in training processes designed to establish specific competences. The training processes include the planning, development, coordination of learning services and monitoring of the results. The learning services include different modes such as instruction, forums, simulation, role play etc. Existing knowledge can be seen as a resource to be used by these different learning services.

The output from the corporate training is represented by an increase in the company's competencies to the required level enabling an operation that fulfils its policies and strategies.

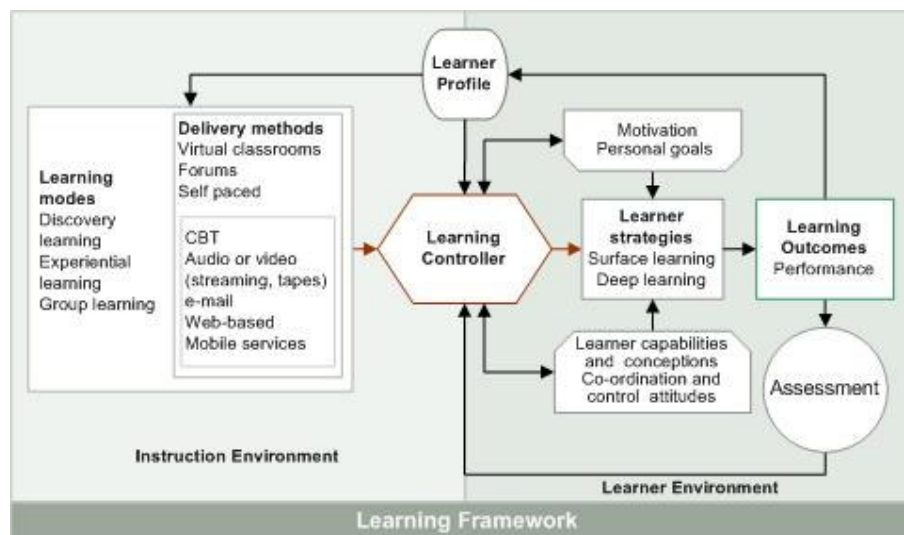
The required competences in terms of subjects are affected by market and technology changes and required competence levels can change due to changes in the competitive environment. The competence level requirements are normally set out in the business strategy and change triggers are then monitored together with the actual situation to determine the applicable settings at any given time.

CSR competence requirements cover a broad spectrum of activities from CSR strategy development to CSR management and CSR implementation in various business processes. Training requirements will also reflect the company characteristics in terms of size, location, industrial sector and importantly the level of CSR maturity. As CSR is fundamentally concerned with delivering stakeholder value, corporate training will need to focus on stakeholder engagement and on clarifying how different stakeholders can participate in performance management and how they can contribute actively to help the company reach increasingly higher levels of CSR maturity.

3. A Learning Framework

People learn in different ways and therefore a learning support system should provide:

- Different delivery modes and delivery methods which would give individuals choice to use what's best for them;
- Guidance to learners to select the most valid, appropriate and relevant resources for their learning.



The learning framework shown above consists of the instruction environment and the learner environment and should facilitate the balancing between guidance and learner control. A Learning Controller is therefore proposed as a key component of the learning system to manage the interface between the instruction and learner environments.

Good learning control should create and maintain the right combination of learning guidance and learner control over the learning content and in some cases over the learning processes.

In a corporate context a suitable set of learning modes and delivery methods would be normally used, selected according to the type of business, financial constraints and the nature of the workforce. E-learning is particularly important for companies as it supports efficient distributed learning which for large multinational organisations is essential both for implementing induction training and for training in collaborative projects. E-learning is however equally important for SMEs as it may represent the most cost effective solution especially if combined with e-work services to support productivity improvements.

Motivation control

An online learning environment can be effective in maintaining high user interest and motivation by providing:

- Learning processes that model each target user;
- Dynamic learning processes providing context based support ;
 - providing prompts and meaningful feedback if the learner deviates from the expected progress;
 - building in rewards and positive reinforcement based on monitoring the learner activities;
 - Providing a responsive help desk;
- Providing group activities to create a sense of social connection and team objectives;
- Guiding the learner to select services aligned to personal goals and learning orientation;
- Promoting practical application of newly acquired knowledge;
- Providing an eclectic approach to learning and life interests.

Active Learning

The terms "active learning", "experiential learning", "learning by doing" and "hands-on learning" are often used interchangeably denoting participative learning as opposed to more passive forms of learning.

Active learning represents a learning environment stimulating learners to think about HOW as well as WHAT they are learning and to increasingly take responsibility for their own personal and professional development.

Active learning supports learners to know how to solve problems or perform tasks by asking the right questions, by initiating appropriate discussion, by explaining and debating in an effective manner.

E-learning systems support active learning by monitoring constantly the learner and creating new connections with learning services, with other learners, forums or tutors. Learning then becomes a multi-channel and multi-direction process for acquiring knowledge and applying it in problem-solving and decision-making strategies.

Knowledge Networking

Evidence suggests that learning is enhanced in networks of people and organisations as different backgrounds stimulate new ideas and innovation. Indeed innovation takes place at the intersection of diverse information flows and knowledge exchanges.

Knowledge networking creates unique opportunities to cross-fertilize knowledge between diverse knowledge communities.

In the CSR movement large companies are playing a leading role by making their CSR expertise and experience available to smaller enterprises. This type of knowledge transfer has been championed by organisations such as CSR Europe, CSR national associations, and Business in the Community UK.

E-Learning tools

Today companies have a wide choice of e-learning tools. Yet, the most commonly used ones are still the simplest – websites for information, email for support, course development work flow and e-libraries.

A Virtual Learning Environment is a collection of integrated tools enabling the management of online learning and providing:

- A variety of delivery mechanisms;
- Learner tracking;
- Assessment of learning outputs;
- Access to resources.

There are specialised tools to create specific types of content or focused applications such as assessments or simulations right through to products that create traditional online courses.

4 Developing a Knowledge oriented CSR Strategy

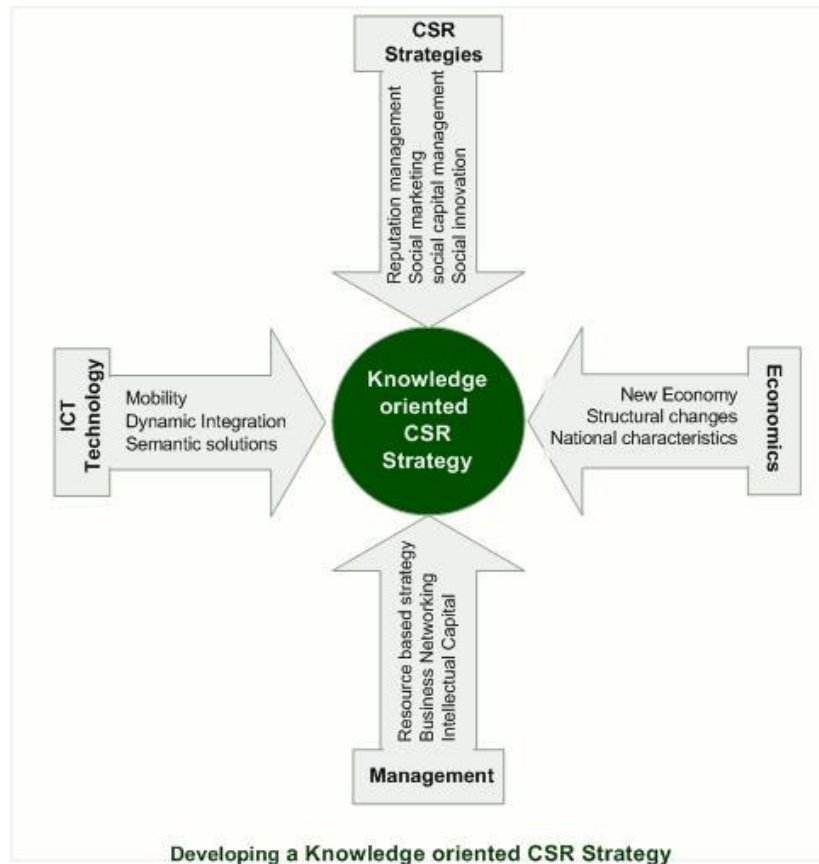
Despite the increased understanding of the importance of dynamic knowledge capabilities in strategy, and advances in knowledge management technologies, one area still seriously underdeveloped is the ability to link Knowledge Management with strategy and competitive advantage.

To establish Knowledge **oriented Strategy** we must understand and articulate the advantage that comes from knowledge as a strategic resource enabling the company to better formulate and execute its strategy. For this, in the context of CSR, a knowledge view of the organisation must be created and used to define its knowledge oriented CSR positioning in the specific sector in which it operates. This CSR knowledge view of a company defines the context that links CSR strategy and Knowledge Management technologies.

Typically CSR strategies² can be classified along four dimensions

- Reputation management (i.e. voluntary codes of conduct, reporting and auditing),
- Social marketing (i.e. ethical brand building, social labelling, fair trade),
- Active social capital management (i.e. with clients, suppliers, NGOs etc.)
- Social innovation.

² <http://www.insead.edu/CMER/research/strategy/csr.htm>



With reference to the previous diagram, developing a **Knowledge oriented CSR Strategy** should first take into account emerging generic CSR strategies such as reputation management and social marketing. The Knowledge oriented CSR Strategy will then seek opportunities in an environment shaped by the broader economic, management and ICT trends / developments.

It should be clarified that intellectual capital is defined as the value, or potential value, of an organisation's intellectual assets (or knowledge assets). Intellectual capital is often described as the combination of three sub-categories: human capital, structural capital and customer capital. Customer capital should be extended to represent **stakeholder capital** or social capital in the context of CSR.

The crucial ICT developments in general and specifically for CSR are increased mobility and semantic solutions. The resultant outcome is an increased range of services delivered 'through everything everywhere'. Personalised services about health, goods, travelling, and education are likely to be accessible through mobiles and television channels, customised to individual profiles.

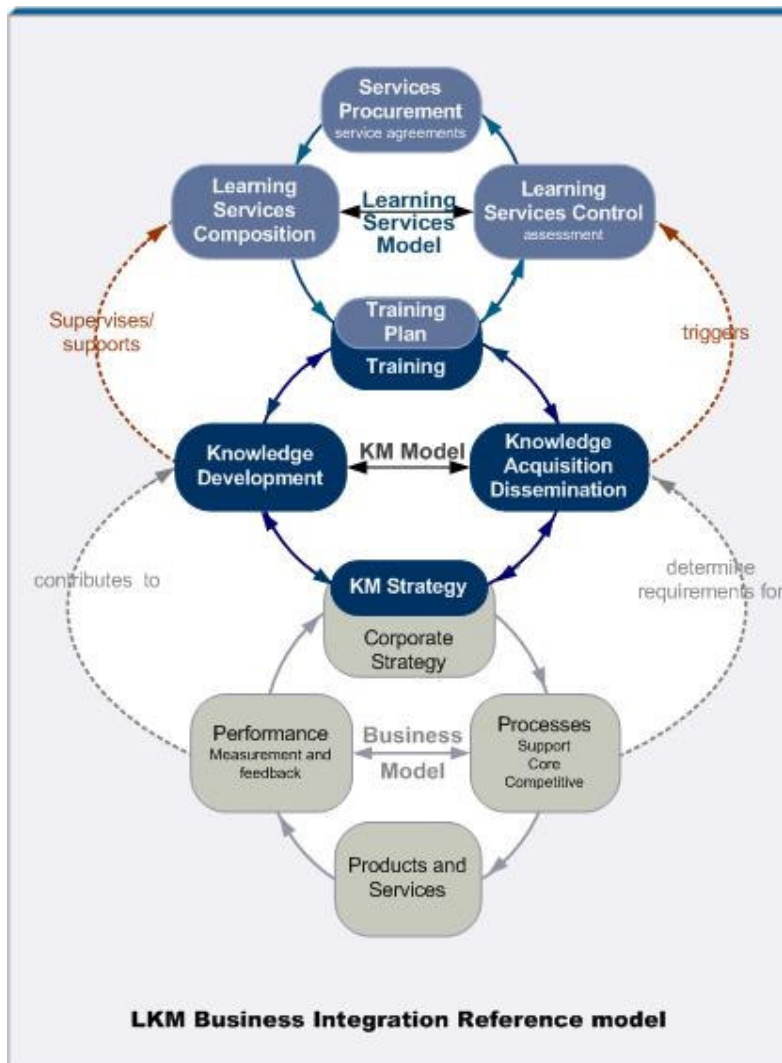
This creates a new horizon for potential social innovation. Ultimately, goods will know where they should be transported to, how to fix problems with their functionality and how to dispose of themselves in an environmentally friendly way. Services will be provided to support the development of social capital and to optimise relations with shareholders, customers and all stakeholders.

5 Learning Integration Models

5.1 The Integration Reference model

The Integration Model shown below highlights the interaction between three different models:

- the Business Model which represents the overall business process consisting of strategy, processes, products and performance control and highlighting the way business drives the LKM process;
- the Knowledge Management process which represents knowledge acquisition/dissemination, training and knowledge development ;
- The Learning Services Model which reflects the processes to manage the provision of the right learning services to support corporate training, from internal and/or external learning service providers.



5.2 The business model

The business model consists of the following four interconnected elements:

- Corporate strategy which encompasses CSR strategy and knowledge management strategy;
- Business processes grouped under support, core and competitive categories;
- Products/services and other value outputs;
- Performance (emphasising both measurement and feedback handling).

Business processes implement corporate strategy to provide products and services. The overall company performance is then analysed based on process and product measurements and any performance deviations from expected targets would guide strategy and process improvements. These improvements are augmented from feedback obtained from process participants who maybe employees, customers, business partners or other stakeholders such as local communities or NGOs.

The corporate strategy includes a CSR strategy and knowledge management strategy. CSR strategy defines corporate policies, strategies indicators and internal controls. Knowledge management defines the primary knowledge acquisition requirements (i.e. recruitment targets, training policy, etc). It also defines the primary knowledge development strategy in terms of R&D and specific knowledge development projects such as participation in knowledge clusters, collaborative projects, etc.

Requirements for knowledge acquisition are also created as a result of 'gaps' identified or generated during the implementation of business processes.

Finally, the performance management process creates a key input for knowledge development in terms of continuous improvement. Process and knowledge management are intrinsically interconnected and indeed it would be possible to rely mainly on business processes as the driving force for knowledge acquisition and development requirements. The point here is that it is probably much more efficient to establish a simple high level knowledge management strategy and rely on an efficient business process management system to refine and eventually optimise the knowledge management process. This is particularly relevant to CSR knowledge requirements which will emerge clearly from process monitoring and process related feedback from the various stakeholders.

5.3 The knowledge management model

The knowledge management process model highlights the following four elements:

- Knowledge Management Strategy;
- Knowledge Acquisition and Dissemination;
- Training;
- Knowledge development.

Knowledge acquisition is aimed at managing the collation of knowledge requirements from strategy and process inputs and at co-ordinating training and knowledge development to fulfil

these requirements. The knowledge acquisition component also provides the input connection to the Learning Services.

The training component is aimed at using the learning services to establish the competence levels required and therefore is essentially linked to the knowledge development component.

The knowledge development component is aimed at maintaining the knowledge resources at the level required for a successful operation. The knowledge development component represents a highly dynamic process which can be compared to a knowledge 'stock control' process as described earlier. It is therefore important to consider carefully the dynamics affecting the company's knowledge development so as to avoid potential deficiencies and to support maximum utilisation of the company's existing knowledge assets. This means that the level of knowledge 'stock' should be constantly monitored and projected development requirements and related actions should be revised accordingly.

In the CSR context knowledge management relates to managing knowledge requirements in strategy formulation, in designing process changes, in undertaking revised processes and managing sustainability performance.

5.4 The learning services model

The learning services model consists of the following four elements:

- Training planning;
- Learning services control;
- Services procurement;
- Learning services composition.

The learning services model represents a process for the composition of learning services that match the user specific company requirements. These requirements are transmitted to the 'learning services controller' by the knowledge acquisition component. The 'learning services controller' then triggers an assessment service to evaluate the current company situation and then co-ordinates the procurement of the required services. Procurement should be based on service agreements with internal or external providers specifying the quality requirements for the learning services.

The main feedback loop for continuous improvement of the learning services is initiated by an evaluation of training outcomes performed by the 'learning services controller'. Ideally user feedback should be also used to directly refine the process and technologies used for the composition of learning services.

Service composition is intrinsically linked to the knowledge development process. Effectively learning services composition is part of the knowledge development process which should provide an appropriate supervisory function.

CSR learning services will address strategic and implementation requirements and are likely to focus on CSR specific topics such as shareholder engagement and CSR reporting.

6. LKM Metamodel

6.1 Background

Arguably an integrated Learning and Knowledge Management solution will include a distributed information system that will have to be developed on top of legacy applications containing much of the knowledge a company uses in its day to day operations. This is particularly true for CSR support systems that will need to be built on top of existing IT infrastructures for financial and process management applications.

Over the last two decades integration of legacy systems has been based on database schema integration and schema mapping which is also the basis for modern day XML based adaptors. Such approaches exploit metamodels, which are models about models and transcend the heterogeneity of the different data models to be integrated.

Schema mapping takes as input database schemas which are models describing the data. Schema elements are defined using *metadata* that describes data, so schema mapping invariably results in mappings between metadata. However schema mappings have been and remain problematic as there are always ambiguities and there not always one-to-one mappings.

The problem of metadata management, which hinders the ability to resolve differences and associate metadata from different schemas, is addressed by domain-specific metamodels which provide a higher level of abstraction to manage heterogeneity at the metadata level³. However, differences at the semantic level can be better addressed if the solution is capable of handling semantics.

Metamodels are therefore often enriched with **domain semantics** to better express metadata, resulting in less ambiguous information schemas. Schema translation and schema mapping tools are then used for semi-automated translation with adherence to the metamodel.

Domain-specific solutions involving domain-specific semantics have definite advantages in limiting ambiguity and facilitating interoperability. There are a number of techniques to achieve domain specific semantics including domain-specific languages, ontologies and various types of taxonomies.

The semantic web represents the current developments in this area. The semantic web brings meaning to unstructured data by managing to add metadata and semantics using languages such as RDF (Resource Description Framework) and OWL (Web Ontology Language). These languages all build on the foundation of URIs. XML and XML related technologies. Ontologies are the

³ J. Sprinkle, A. Ledeczi, G. Karsai, and G. Nordstrom. The new metamodeling generation. In *Proceedings. Eighth Annual IEEE Int. Conf. and Workshop on the Engineering of Computer Based Systems, 2001. ECBS 2001*.

backbone technology for the Semantic Web providing the required vocabulary of terms in a specific domain and the relations among them. As such they provide an important method for semantic enrichment. In a CSR context ontologies can be used to:

- Model and classify information related to CSR;
- Allow users to receive CSR information;
- Define the context and depth of information that a user is interested in;
- Continuously follow-up and update received information;
- Monitor CSR trends and sustainability performance indicators.

Current developments also include Web Services which support process integration and therefore can deliver to users the knowledge and information required to achieve their tasks. In this area an important development is the BPEL4WS specification (from IBM, Microsoft, and BEA) that models the behaviour of Web services in a business process interaction. The specification provides an XML-based grammar for describing the control logic required to coordinate Web services participating in a process flow. In the future CSR learning services are likely to be available as web services.

6.2 A simplified LKM metamodel

To build an integrated Learning and Knowledge Management solution on top of existing legacy applications, it will be advisable to utilise a middleware integration platform supporting application service integration based on SOAP, WSDL, UDDI and BPEL.

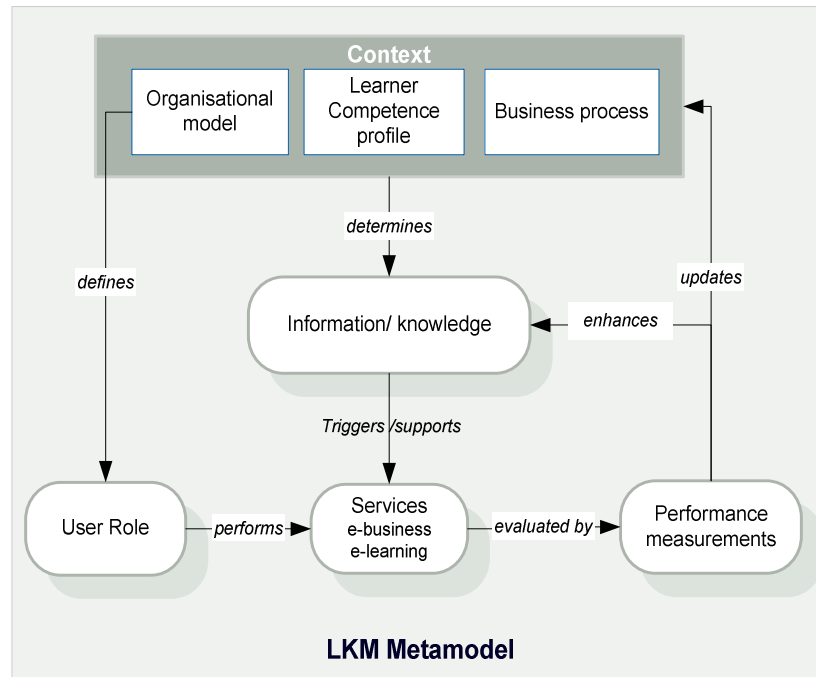
Such middleware integration platform utilising a knowledge oriented metamodel could prove exceptionally valuable, particularly in the context of strategic knowledge management. A knowledge oriented metamodel based approach is an essential element of building dynamic capabilities which are considered essential for sustainable competitive advantage.

A simplified LKM metamodel is shown in the following diagram.

The purpose is to provide a common basis in developing LKM models which will provide the blueprint for integrated Learning and Knowledge Management solutions. The LKM metamodel abstracts to the highest possible level the main concepts in the LKM approach defined in the previous sections.

The LKM metamodel is consistent with the kBOS knowledge definition based on context – information and action⁴. In this sense the LKM metamodel can be seen as representing a composite knowledge model containing many knowledge elements. Each of the knowledge elements can be implemented using different techniques. Some elements are likely to be implemented in the future as ontologies that can be used by any of the LKM services.

⁴ SKM3 Defining Knowledge and Knowledge Networking – www.kbos.net



The LKM services represent the action part of the knowledge and include two main types:

- a. E-business services;
- b. e-learning services

Both these types of LKM services are likely to be implemented in the future as web services to satisfy the integration and extendibility requirements discussed previously.

The LKM services are evaluated using performance measurements and it is important to ensure that appropriate measurement constructs are used as part of the services definition. Performance measurements are used as indicated earlier to identify improvements for organisational structures and processes and therefore provide the driving force for enhancing the company's knowledge assets. Further the performance measurements will include the parameters required to be monitored in order to update the context.

The overall approach relies on context models to ensure that the right information is delivered to the right people at the right time. Organisational context models and associated roles provide a highly flexible approach to model the various stakeholders and their involvement in various processes.