The KMS Road Map

The first phase: evaluation of the infrastructure and aligning KM and business strategy.

The second phase: KM system analysis, design, and development.
- Knowledge audit and analysis
- Designing the KM team
- Creating the KM system blueprint
- Selecting KM technology
- Developing the KM system

The third phase: KMS deployment

The final phase: measuring ROI and performance evaluation

Amrit Tiwana, 2002
Nature of the KMS

- KMS is a socio-technical system defined in the interaction between the technology and the use of that technology
  - it is not a piece of software, it is a way of working
  - work is not where you go, it is what you do
- KMS is not a synonym for any ONE technology but requires an effective architecture and ICT infrastructure to acquire, create and deliver organisational knowledge to all constituencies
- Traditional IS, when concerned with the meaning not just information content, play a significant role in KM initiative
- KMS are designed and developed to give the users the knowledge they need to perform their tasks
  - KM tools are not necessarily computer-based but, when broadly defined, should enable knowledge generation, codification and transfer

(Gallupe, 2001)

Aims of KMS Development

- Leverage components already in place
- Integrate various systems by linking the outputs from one as inputs of the others
- Bring together work content and its context
  - support knowledge work
- Facilitate learning
- Ensure consistency in processes
- Adopt a user-centred approach to design
  - right knowledge to the right people in the right time
- Incorporate facilities for security and personalisation
  - authorisation (who wants it)
  - personalisation (what I need)
  - customisation (how I like it)
User Versus Knowledge Workers

<table>
<thead>
<tr>
<th>Attributes</th>
<th>User</th>
<th>Knowledge worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence on the system</td>
<td>High</td>
<td>Low to nil</td>
</tr>
<tr>
<td>Cooperation</td>
<td>Usually cooperative</td>
<td>Cooperation not required</td>
</tr>
<tr>
<td>Tolerance for ambiguity</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Knowledge of problem</td>
<td>Average/low</td>
<td>High</td>
</tr>
<tr>
<td>Contribution to system</td>
<td>Information</td>
<td>Knowledge/expertise</td>
</tr>
<tr>
<td>System user</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Availability for system builder</td>
<td>Readily available</td>
<td>Not readily available</td>
</tr>
</tbody>
</table>

Element of KMS Implementation

- Start with ‘high-value’ activity
- Focus on knowledge work
  - dynamic activity with high degree of discretionary judgement and expertise and potential for learning
- Scalability
  - start "quick and small" and progress to a full implementation by evolving the functionality and propagating the application
- Address culture, technology, organisational and work structure “simultaneously”
- Find a “champion” and an enthusiastic ‘guinea pig’
The Development Process

- Select the activity
- Acquire the knowledge
- Represent the knowledge in computable form
- Validate the knowledge base
- Refine the knowledge base
- Use the knowledge base
- Maintain the knowledge base
Life cycle for IS and KMS

Ph.1 - Project Definition
Ph.2 - Requirements Definition
Ph.3 - Logical Design
Ph.4 - Physical Design
Ph.5 - Testing
Ph.6 - Implementation
Ph.7 - Operation

SDLC

Ph.1 - Strategy
  Activity Definition
  Work practice study

Ph.2 - Development
  Audit, Architecture, Team

Ph.3 - Deployment
  Manage change and rewards structures

Ph.4 - Evaluation
  Value proposition
  Enhancement

KMDLC

Implementation

- Conceptualisation
- Formalization
  - Objects
  - Relationships
- Implementation
  - Integrating
  - Specialising
- Testing
  - Reasoning
  - Advice
  - Explanations
  - Interaction/Interface
Pilot Project

Characteristics of the pilot:

- Non trivial
- Stay away from the organisation’s lifeblood
- Aim at high visibility and noticeable impact
  - tangible outcomes according to clear measures set up in advance
  - process-intensive project is more likely to have a high impact and measurable outcome
- Start with an easy and suitable technology
- Project must last long enough for building a team and the synergy within the team

Tiwana, 2002

Prototyping

The usual approach for KMS development

- eliciting compiled knowledge requires an iterative development process
- a prototype is useful for testing ideas about representing the knowledge
- prototyping helps build up the knowledge engineer’s experience
- prototyping helps determine the scope of the final system
- a prototype is useful to gain management and user confidence and support
The information packaging methodology

- IPM implements incremental, spiral, evolutionary development model
- Comprises four inter-related steps:
  - Architecture planning
  - Design and analysis
  - Technology implementation (including pilot)
  - Deployment and metrics testing (includes user acceptance training and assessment)
- A new spiral starts with assessment of the level of strategic alignment of the system with current organizational directions
Methodological Caution

- An over reliance on methodology is bad.
- Methods are useful and can encourage a disciplined approach. They are not neutral since they embody some of the assumptions of their originator. This means that a particular methodology may have a limited use.
- Furthermore, the selection of a suitable project together with the consideration of human, organisational and social issues, can be critically important ... No methodology can give an insight into the salient features of a problem or a 'feel' for the environment.

A Spiral Model of System Development

(Boehm, 1988)
KMS Deployment

- What does this mean?
- How do you know it is working or not working?
- What factors to consider?
- What processes to introduce/change?
- How to take charge of change and not let the change take charge of you?
  - A road map: "current state – transition state - future state";
  - Pilot the transition state;
  - Identify supporters/opposition

(Ramizen, 2002)

KMS Deployment: What does it mean

- Implementing
  - Organisational (re)structure
  - Socio-cultural change
  - Technological tools and techniques
  - Revised work practices
  - Recalibrated reward systems

*KMS deployment is about change management*
The change management process: Unlearning & Relearning

- The change management process (Kurt Lewin & Edgar Schein)
  - Un-freezing
    - Establishing a need for change for those affected by the change.
    - Removing the threat/ perception of risk in the change.
    - Introducing a climate conducive to change.
  - Moving or Implementing
    - Training/ 'skilling' those affected by the change.
    - Fostering positive attitudes towards the change.
  - Re-freezing
    - Reinforcing and institutionalising the change
    - Re-establishing stability
    - Integrated the change into the organisation’s overall operations.
    - Diffusing the change throughout the organisation’s social system.

The Value Proposition of Deployment

- Gaining “competitive advantage”
- Need to consider:
  - Innovation
    - Core competencies
    - Absorptive capacity
    - Core capabilities (and rigidities)
  - Diffusion of Innovation
Innovation

- Innovation is how organisations generate new ideas and exploit them to develop marketable products or services. Innovation is:
  - an idea, practice or object perceived as new (Rogers 2003, p. 36).
  - the ability to build on previous knowledge and generate new knowledge
  - a willingness to try something totally new
  - a vital ingredient in organisational renewal and the creation of sustainable success Roos et al. (1997, p. 40)

- Innovation involves
  - understanding an existing body of knowledge
  - extending that knowledge through insight or fundamental rethinking of a given situation

Innovations that give companies a competitive edge occur bottom-up rather than top-down

Core Competence

- Core competencies involve sets of skills and technologies within an organisation that can be successfully mobilised for a rapid response to a perceived market need or opportunity.
- Core competencies are
  - the collective learning in the organization
  - a key factor in competitive advantage
  - closely linked to knowledge creation
  - Necessary for successful innovation (Prahalad and Hamel, 1990)

Organisations with defined core competence are able to mobilise resources rapidly to create knowledge and innovate
Absorptive Capacity

- Absorptive capacity is critical to an organisation’s innovative capabilities. It is an ability
  - to recognize the value of new knowledge
  - assimilate this knowledge
  - apply this knowledge to commercial ends
  
- Absorptive capacity is largely a function of the organisation’s prior level of knowledge
  - Organisations with existing knowledge and skill are in a better position to identify relevant new knowledge and to integrate it with current knowledge for innovations
  - Most innovations are derived from borrowing ideas rather than from fundamentally new interventions

Core Capabilities and Core Rigidities

- Core capability
  - focused on new product/process development
  - facilitate innovation
  - differentiates an organisation strategically through its superior technical and management systems and skills base
  - emphasises values and embedded social factors

- Rigidity is the tendency to stabilise. Core rigidity is
  - a strong forces against innovation
  - protecting the status quo
  - formalising processes and tasks and developing systems
  - privileging those processes and systems

- The dichotomy between capability and rigidity is analogous to the contradictions inherent in a learning culture: culture stabilises while learning is innovation
Diffusion of Innovations

- Diffusion pertains to 'a special type of communication concerned with the spread of messages that are perceived as new ideas.'
  
  (Rogers 2003, p.35).

Elements of Diffusion

- The “Innovation”
- Communication channels
- Time
- A social system

References

- Shauer, H. (2002) personal communication (SIMS seminar presentation)