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

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
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>Attribute</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

SDLC

<table>
<thead>
<tr>
<th>Ph.1 - Project Definition</th>
<th>Ph.1 - Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.2 - Requirements</td>
<td>Activity Definition</td>
</tr>
<tr>
<td>Ph.3 - Logical Design</td>
<td>Work practice study</td>
</tr>
<tr>
<td>Ph.4 - Physical Design</td>
<td>Ph.2 - Development</td>
</tr>
<tr>
<td>Ph.5 - Testing</td>
<td>Architecture, Team</td>
</tr>
<tr>
<td>Ph.6 - Implementation</td>
<td>Ph.3 - Deployment</td>
</tr>
<tr>
<td>Ph.7 - Operation</td>
<td>Manage change and</td>
</tr>
<tr>
<td></td>
<td>rewards structures</td>
</tr>
<tr>
<td></td>
<td>Ph.4 - Evaluation</td>
</tr>
<tr>
<td></td>
<td>Value proposition</td>
</tr>
<tr>
<td></td>
<td>Enhancement</td>
</tr>
</tbody>
</table>

KMSDLC

Software for Knowledge Management

- OLAP
- Intra-/Internet-Standards
- User Modelling
- Content Management
- Text Mining
- Case Based Reasoning
- Search Engines

H. Shauer, 2002
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

Prototyping

The usual approach for KMS development
- elicit 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

Plan next phases
Evaluate alternatives, identify, resolve risks
Determine objectives, alternatives, constraints

Boehm, 1998

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

(Rehm, 1993)

References

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