The supporting role of Knowledge Management in Research Organisations

Madelein van Heerden
Roadmap

- What is knowledge management (KM)?
- The Knowledge Life Cycle (KLC)
- KM tools & techniques to support the KLC
- Where to start?!?
What is Knowledge Management (KM)?

- KM is an organisation's ability to leverage its collective knowledge to meet its strategic objectives.
- KM is about the creation, sharing and flow of knowledge within an organisation through events, knowledge bases (such as wikis, blogs, portals, best practice guides, etc.), communities of practice or shared spaces where groups can exchange information and have conversations.
- KM also entails the ability to learn from, and with, each other to build strategic capabilities and realise strategies.
- A KM strategy is simply a plan that explains how an organisation will use selected KM tools and techniques to better manage knowledge important to the business objectives.
The Knowledge Life Cycle (KLC)

Knowledge Processing Environment

Knowledge Production
- Individual and Group Learning
- Information Acquisition
- Problem Claim Formulation

Knowledge Claim Formulation
- CKC
- Knowledge Claim Evaluation
- Info about SKC

Knowledge Integration
- OK
- Broadcasting
- Searching
- Teaching
- Sharing

*NOTE: Info About SKCs, FKC, and UKCs constitute Metalearnings.

Business Processing Environment

Beliefs and Claims About Business Processing Outcomes
- Match
- Mismatch
- DOKB Problem Detection

Business Processing Behaviors of Interacting Agents (Knowledge Use)

The DOKB and its 'Containers'
- Subjective Knowledge (Agents: e.g., Individuals and Groups)
- Objective Knowledge (Artifacts: e.g., Documents, IT, etc.)

Beliefs and Claims

= Knowledge Processes
= Knowledge Sets
CKC = Codified Knowledge Claim
DOKB = Distributed Organizational Knowledge Base
FKC = Falsified Knowledge Claim
OK = Organizational Knowledge
SKC = Surviving Knowledge Claim
UKC = Undecided Knowledge Claim

Copyright © 2003 by Executive Information Systems, Inc. and Mark W. McElroy
No KM without information management!

http://blog.jackvinson.com/images/amitchell_20DIK_20reality_20map.JPG
Organisational knowledge base

- Objective knowledge
  - Publications, documents, research data sets, intellectual property, IT systems, business processes, etc.

- Requires a shared repository
  - Reusable in a consistent and repeatable manner
  - Discoverable, visible and accessible
Shared repository

- Design considerations
  - Target audience: institutional vs shared repository
  - Hosting, service level agreements and security
  - Structure
    - Metadata fields
    - Different formats
  - Searchability
  - Strategic decision support tools
  - Quality control

- Support and enhance traditional KM tools
  - Expertise databases
  - Lessons learnt

AFCAP/GIZ Knowledge management workshop, 12 May 2015, Bulawayo
CSIR knowledge repositories

- WorkFlow
- Technical Outputs Database
- Institutional repository
- National repository

AFCAP/GIZ Knowledge management workshop, 12 May 2015, Bulawayo
Discussion platforms
Discussion platforms

- Inter/multi disciplinary research projects
- Team work & collaboration across organisational boundaries
- Knowledge transfer is problematic:
  - Organisational & physical distribution
  - Modern information technology & email
- Create opportunities for informal interaction & serendipitous knowledge sharing
- Physical space: CSIR Knowledge Commons facility
Discussion platforms

- How can spatial design be used to:
  - facilitate formal & informal knowledge creation & sharing?
  - increase collaboration across boundaries?

- The use of space for knowledge work (Earl; Ward & Holtham; Doyle & Nathan; Gladwell)
  - **Personal space:** Individual time for concentration, reflection & learning
  - **Team space:** Collaborative learning & strategising (space & set-up varies according to team needs)
  - **Social space:** Casual interaction in a non-threatening environment

More than 70% of what we need to know to do our work is learned informally through interactions with co-workers
Casual conversations provide an opportunity for tacit knowledge transfer as they have the advantage of opening the door to serendipity. They are opportunities for spontaneous meetings of the mind that have the potential to generate new ideas and solve old problems in unexpected ways. (Davenport & Prusak)
CSIR Knowledge Commons

AFCAP/GIZ Knowledge management workshop, 12 May 2015, Bulawayo
Knowledge Commons events programme

Knowledge Management role: to foster a collaborative environment and culture through the provision of discussion platforms.
Establishing a virtual Knowledge Commons

- AV / VC technology
- Event intermediation

**PRE-AMBLE**

- Event promotion (anywhere; anyone)
- Create online presence/pre-event engagement

**DURING EVENT**

- Blending with physical or virtual only
- Synchronous attendance/participation
  - KC --> VC venue
  - KC --> Skype
  - KC --> Desktop
- Broadcasting
- Social reporting (Live blogging/collaborative mind mapping, Twitter, etc.)

**POST EVENT**

- Social Reporting
  - Report backs
  - Sharing photos
- Publish recordings and other material
- Continue event in asynchronous mode

Right time participation & extended dialogue
Virtual discussion platforms

- In most organisations the formal knowledge base/shared repository does not make provision for the management of day-to-day information/knowledge required/created by project teams:
  - Project managers require the above for decision making; problem identification and solving; writing progress reports
  - Collaboration and knowledge sharing by team members

- Collaboration, communication & file sharing platforms

- Content analysis on the data generated from these platforms provide valuable information for project leaders, coordinators and funders
  - How did the conversations change & evolved over time?
  - What did we learn at what point?

- Agree on platform(s) to be used and make use mandatory
  - Provide adequate training & hand holding
ICT4RED Research adventures part 2: How to build the nation - teachers’ narratives in a changing context

Last weekend Phase Three of the ICT4RED project came to an end with a joyful celebration (see previous blog). Facilitators, Phase Three teachers, ICT4RED staff, and government representatives came together in Cofimvaba to celebrate the project as much as themselves. Alas, I had to leave the country just before the graduation; but the live tweets from the event spread the pride and joy of all participants even to a cold grey London morning. That’s right, from a town hall in a small settlement deep in the rural areas of the Eastern Cape detailed live tweets updated the rest of the world in real time. ICT4RED clearly revolutionized teachers’ use of social networks but reflecting back now four weeks after my research, I sense this might just be the tip of the iceberg.
## (Mobile centred) Virtual discussion platforms

| Social network, e.g. Twitter | Project hashtag for interaction with project target community  
Community participation, gathering input from target community  
Citizen science (data collection)  
Content analysis (emotional evaluation, topic spotting) |
|-----------------------------|--------------------------------------------------------------------------------------------------|
| Information sharing platform, e.g. WhatsApp | Closed WhatsApp groups (for each aspect of the project)  
Sharing platform for project execution (text, photos, videos)  
Management & coordination tool (high speed & reduced effort)  
Content analysis and curation |
| File sharing, e.g. Dropbox, Google-Drive | Working documents  
User create single folder on computer, synchronise with Dropbox |
| Content management system, e.g. OpenCMS, Vibe, WordPress (Blog), Wiki | Shared organisational knowledge base  
Include progress & final project reports  
Project evaluation and lessons learnt |
Project monitoring & evaluation

- Internal and external review processes
  - Did the design of the intervention meet the desired outcomes?

- Results of content analyses of the discussion platforms
  - What did we learn at what point?
  - Learning brief (lessons learnt)

- Outcomes of reflection workshops
  - What worked / didn’t worked?
  - What should be done differently?
<table>
<thead>
<tr>
<th>Project Name</th>
<th>Submitted by</th>
</tr>
</thead>
</table>

| Date | What was the learning?  
Please describe the learning that occurred: |

<table>
<thead>
<tr>
<th>Learning brief type</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Learning from failure during implementation</td>
</tr>
<tr>
<td>* Learning from implementation success</td>
</tr>
<tr>
<td>* Learning from review of previous research and practice (i.e. not practically tested yet)</td>
</tr>
</tbody>
</table>

**The Context**

*Say something about the context of the learning / project context, add relevant pictures if they are available*

**Why is this learning important?**

*Please describe why this learning is important*

**Evidence Base**

*Please indicate what the evidence base is for this learning brief, if possible, provide references that may help the reader track down the evidence base.**

**Recommendations for future similar projects:**

*Please provide your recommendations in a list form. If possible add pictures, graphs or diagrams*

**Recommendations that should be taken into account by the current project**

*Please indicate which of the above recommendations should be taken into account for the current project*
Communities of Practice

- Group who share a common interest and a desire to learn from and contribute to the community with their variety of experiences (Lave & Wenger)
- Differs from project teams (driven by deliverables, team membership is defined by task, etc.)
- Naturally forming, self-organising, controlled by individuals
Broadcasting

- Communications Group function
- Inter organisational
- Public & target communities to ensure project / research uptake
  - Community radio
  - Television programmes
  - Science cafés
- Stakeholders & government
  - Raise awareness
  - Communicate benefits
  - Secure funding

AFCAP/GIZ Knowledge management workshop, 12 May 2015, Bulawayo
Where to start?!?

- Technology
- Change management
- Implement
- Evaluate

Diagram showing a cycle involving technology, change management, implement, and evaluate.
Where to start?!?

Technology

- Select appropriate technology
  - project discussion platforms
  - shared repository / knowledge base

Change management

- Develop a toolkit for each application
  - training plan for team members
  - guideline for information harvesting, analysis & curation

Implement

Evaluate
Where to start?!?

Technology

Evaluate

Implement

Change management

• Ensure that project managers and project coordinators become knowledge integrators
• Value added by these platforms for decision making, problem identification & solving, writing progress reports
Where to start?!?

Technology

Evaluate

- Enforce compliance from funder or organisational level
  - All projects have to comply
  - Appoint a team member as the KM facilitator
  - Require proof that lessons learnt are captured / interrogated during the planning phase (future projects)

Community management
- Encourage & acknowledge submissions
- Ensure adequate training

Change management

Implement
Where to start?!?

- Knowledge briefs / Lessons learnt
- Reflection workshops

Technology

Evaluate

Implement

Change management
If you want to go fast, go alone.

If you want to go far, go together.

-african proverb
Bibliography

AFCAP/GIZ Knowledge management workshop, 12 May 2015, Bulawayo