

Knowledge management software

4.1 Knowledge management software (KM software) is a subset of Enterprise content management software, which contains a range of software that specializes in the way information is collected, stored and/or accessed. The concept of knowledge management is based on a range of practices used by an individual, a business, or a large corporation to identify, create, represent and redistribute information for a range of purposes. Software that enables an information practice or range of practices at any part of the processes of information management can be deemed to be called information management software. A subset of information management software that emphasizes an approach to build knowledge out of information that is managed or contained is often called knowledge management software.

KM software in most cases provides a means for individuals, small groups or mid-sized businesses to innovate, build new knowledge in the group, and/or improve customer experience. Knowledge management systems (software) includes a range of about 1,500 or more different approaches to collect and contain information to then build knowledge that can be searched through specialised search tools including concept building tools and or visual search tools that present information in a connected manner not originally conceptualised by those collecting or maintaining the information database.

4.2 Key features of KM software usually include:

- Aggregation of content from both internal and external sources
- Classification of content using taxonomies
- Search
- Expertise location
- Views / Dashboards

As business today is becoming increasingly international, the ability to access information in different languages is now a requirement for some organizations. Reported success factors of a KM system include the capability to integrate well with existing internal systems and the scalability of the system to grow within the organization.

Range

KM software ranges from small software packages for an individual to use, such as brainstorming software, to highly specialized enterprise software suitable for use

by hundreds of employees. Often KM software provides a key resource for employees working in customer service or telephone support industries, or sectors of large corporations.

Knowledge management software, in general, enables the combination of unstructured information sources, such as individual word processed documents and/or .pdf formats, email, graphic illustrations, unstructured notes, website links, invoices, and other information bearing collections, such as a simple thought, through to a combination of millions of interactions from a website, and through that combination enables the seeker to obtain knowledge that otherwise would not have been discovered. As Internet access speeds increased, many on-demand (or software as a service) products have evolved and are now the leading suppliers of KM software.

Visual search

One of the departures from the almost standard keyword search approach are those group of companies developing visual search techniques. Some common visual search approaches include:

- Tree traversal - Where a folder is opened and inside the display of that folder are further sub-folders. The folders are searched in a specific order, exactly once, in a systematic manner. This tree traversal approach relies on the naming of folders to provide a rich enough indication as to what is contained in the next folder or level of folders.
- Taxonomy navigation - A taxonomy (or topic map) is the classification of things or concepts, as well as the principles underlying such classification. In KM software, taxonomies are often used as a way of visually structuring the available information by tagging it with relevant topics and visually represent them as folders and sub-folders inside the taxonomy. Users can then navigate the taxonomy and select the topic, or combination of topics (faceted search), to perform the search on.
- Tag Cloud search - Once text data has been tagged with certain topics it can be visually represented as a Tag Cloud, where the importance of each tag is represented as a font size and/or color. This way you can identify and pick the most prominent topics.
- Matrix/Heat Map search - The classification of information into topics facilitates visualization and analysis of the information flow. A combined

topic search can be presented as values in a Matrix, and a Heat Map is a graphical representation of that data, presented in colors.

4.3 A **knowledge community** is community construct, stemming from the convergence of knowledge management as a field of study and social exchange theory. Formerly known as a discourse community and having evolved from forums and web forums, knowledge communities are now often referred to as a community of practice or virtual community of practice. As with any field of study, there are various points of view on the motivations, organizing principles and subsequent structure of knowledge communities.

Perspectives

As a web or virtual construct, knowledge communities can be said to have evolved from bulletin board systems, web forums and online discourse communities through the 80s and 90s. When framed with the scores of social networking sites coming online at the turn of the millennia, knowledge communities can be described as another form of social media. The biggest difference between social network sites and knowledge communities is, social network sites typically lack moderation or an outcome orientation.

Stemming from social exchange theory, a well-established perspective is to view knowledge communities as a type of exchange. The motivations for participating in the exchange vary. The exchange remains open based on the perceived value (e.g., return on time investment) to knowledge community members.

Knowledge communities can also be viewed as a method by which to do organizational or process innovation. KCs are often founded to introduce change to a system, an organizational or societal by identifying, creating, representing and/or distributing data, information and/or knowledge in and via a community context on the pretext that more significant value will be created via a knowledge value chain.

From an organizational perspective, knowledge communities serve to maintain the strong ties and weak ties of the organization with many diverse publics; they help feed quality back into the organization (via more timely feedback and narrative analysis of discussions), drive organization credibility (via more rich exposure and building public trust by incorporating diverse opinion) and speed knowledge transfer and knowledge utilization, as well as do knowledge mobilization (e.g., by providing a conversation space to bridge gaps between research and practice).

Common across perspectives is, knowledge communities can be employed to identify, create, represent, and/or distribute knowledge within and/or between populations.

Organizational behavior and structure

Knowledge communities nurture and facilitate ongoing relationships and a Knowledge Ecosystem where ideas are exchanged on an ongoing basis. Knowledge value is generated (derived, realized) during the transactional nature of the exchange. Existing knowledge can be synthesized (e.g. research fused with ideas from the field or other research) or new knowledge created via exchanges. KCs use a variety of two-way communication tools (e.g., via discussion board, article commenting, rating, poll, webinar) to foster discussion and the exchange of ideas.

The organizational structure of knowledge communities varies significantly based on sponsorship and purpose. Contribution, moderation and content governance within knowledge communities is typically distributed amongst a core set of community members who become community moderator\facilitators. At a minimum, members of knowledge communities typically include a mix of subject matter experts, moderators, facilitators and the general public or a target population.

While information within a knowledge community is usually promoted to be open and public, persons are able to keep information private as well. Public information within knowledge communities is sometimes covered by Creative Commons Licenses and is given credit to the creators. Knowledge communities are seen as a bridge between traditional publishing models and an open access systems.

Pitfalls

Knowledge communities and communities or practice suffer from the same pitfalls of all communities. To some, the mission driven orientation can be a detractor to creativity. To others, the exchange aspects reek of the over commodification of culture and, by pooling experts or like-minded persons, KCs and CoPs can often be less diverse than traditional communities. Perhaps the societal response has been the emergence of social networks. Again, however, it is important to point out social networks and knowledge communities are related, but not the same.

Knowledge building communities

A **Knowledge Building Community (KBC)** is a community in which the primary goal is knowledge creation rather than the construction of specific products or the completion of tasks. This notion is fundamental in Knowledge building theory. If knowledge is not realized for a community then we do not have knowledge building. Examples of KBCs are

- Classrooms
- Academic research teams
- Modern management companies
- Modern business R&D groups
- Wikipedia (Wikimedia Foundation together with its millions of Wikipedians)

Knowledge building communities in classrooms

The key focus for knowledge building communities has been research on fostering KBCs in classrooms. Transforming a classroom into a KBC requires a significant shift in classroom norms and also in student and teacher identities. In this context, students define themselves through their personal learning goals and collaboratively pursue them. Students are viewed as intentional learners, working at the edge of each competence. Knowledge advances not circumscribed by a teacher's knowledge. Scardamalia, Bereiter and their team at the Center for Applied Cognitive Science at the University of Toronto have developed a networked software system, Knowledge Forum(TM) (formerly CSILE - Computer Supported Intentional Learning Environments). This system supports the individual and group behaviors and practices required for knowledge building are built into the Knowledge Forum software.

Specific to a KBC is the objectification of knowledge artifacts. More precisely, if in a regular class, questions, ideas and discussions are personal and ethereal constructs, in a KBC classroom, they are public artifacts that have a permanent presence in a digital format, usually in the classroom database. For this reason, they can be analyzed, pointed at, talked about, and progressively refined over time. These discussions, comments, knowledge artifacts and knowledge advances are all visible and improvable within Knowledge Forum.

In order to be successful, the members of the Knowledge-building community should accomplish the followings:

- Focus work on making advances to what the community already knows.
- Embrace a general philosophy of inclusion.

- Share openly what they do not understand, "What I need to understand..." or "What I need to know..."
- Respect each other's perspectives and tentative understandings.
- Express disagreement in a constructive fashion.

The **RIBA Knowledge Communities** are web supported interdisciplinary groups. They facilitate the capturing, sharing, and applying of professional knowledge relating to architecture and the built environment.

The RIBA Knowledge Communities initiative is a knowledge community platform developed by the RIBA. It is a non-commercial collaborative resource, open to all built environment professionals and anyone with interrelated knowledge to share. Its purpose is to connect and engage these professionals in the advancement of their specific subjects of interest.

People get very enthusiastic when talking about their subject and the best service the RIBA as an institution can provide is to enable that knowledge transfer through these specialist groups.

Communities

There are currently RIBA Knowledge Communities for the following subject areas:

- **Sustainability**
For built environment professionals to discuss the sustainable production of architecture and to engage with the RIBA Sustainable Futures Group.
- **Integrated Project Working**
To engage an interdisciplinary professional base in the advancement of CAD, BIM and the mutual distribution of technical information between all areas of the built environment.
- **Education Building Design**
Helping to deliver intelligent higher education and further education school design and providing a forum for this discussion.
- **Students of Architecture**
For architecture students to share news, experience and events while keeping in touch with architectural research and progression.

- **Regulations and Standards**
To involve members in the production of building regulations and standards and to support the ongoing work of the joint BRE CIAT RIBA Technical Task Force.
- **Traditional Architecture**
The RIBA Traditional Architecture group's space to disseminate their research and to capture the experience of their members.
- **International**
For the RIBA's International department to build a knowledge bank from around the world.
- **Small Practice**
Providing a platform for architects in small practice to share their experience while having the opportunity to be a part of the consultations for the RIBA Small Practice Group papers.
- **Development and Disaster Relief**
To explore the difference that innovative design and construction can make in the lives of some of the most vulnerable people on earth (facilitated by Article 25).
- **Urban Greening**
To create the pre-conditions necessary for trees to be considered as an integral part of development at the earliest conceptual and design stages of any scheme (facilitated by the Trees and Design Action Group).

Structure

A diagram showing the overall structure of the RIBA Knowledge Communities with links to companion knowledge communities.

The RIBA Knowledge Communities website is supported by the RIBA Research & Development department as an architectural knowledge management initiative. The communities are structured around the pre-existing RIBA committees. These groups are tasked with creating and initiating an agenda for the development of their respective subjects related to the built environment.

- **Champion**
An appointed RIBA Knowledge Champion acts as a focal point for the

governance of their respective RIBA Knowledge Community. They are selected on the basis of their expertise and active involvement in the community's field of knowledge.

- **Expert Peer Group/Committee**

The Peer Group consists of approximately 5-8 individuals. They are selected for their expertise and active involvement in their community's field of knowledge. The group delegates responsibilities in liaison with the community Facilitators and community members for routine tasks and responsibilities as well as one-off activities.

- **Community Facilitators**

Facilitators will support the creation and maintenance of the communities. They are the main administrative focus for the work of the community. They receive support from the RIBA Research & Development department and provide assistance to 'Knowledge Champions' and 'Expert Peer Groups'.

- **Community Members**

Knowledge Communities are organised as collections of architects and other professionals who are committed to collaborations within specialist areas of design, management and construction.^[2]

Applications

The RIBA Knowledge Communities website provides applications designed to engage the members in their subjects of interest, these include:

- Personal blogs
- Community discussion forums
- Community events calendars
- Contacts
- Members directory
- Resources (uploading files to share with other community members)
- Tags

- RSS feeds

The RIBA Knowledge Communities is powered by Elgg (software) which is an open source networking platform. The applications are installed as plugins that can be downloaded from the Elgg community website or created by PHP developers.