

Arup

- Linking CoP activity to business
- Storytelling
- Knowledge sharing workshops



*Arup has been conscious of the importance of knowledge throughout its 60 year history. Founder Ove Arup spoke in the 1940s about how difficult it was even then for engineers to “become familiar with the complete range of modern technical possibilities; and of the need for design practices to develop a “composite mind”, sharing knowledge across the organisation. It has had an active programme of what we would now call ‘knowledge management’ for many years, and it has more experience in the field than any of the other practices involved in the Spreading the Word project. Arup used the opportunity to improve the business focus of their Skills Networks — **Communities of Practice** — and to explore the use of **storytelling** and **workshops** to create, share and codify knowledge. This is Group Knowledge Manager Tony Sheehan’s description of the work they did in the project.*

Arup’s Knowledge Management Strategy and approach has been recognised by several independent studies as one of the most advanced within the construction industry. We were one of the few organisations in Henley Management College’s KM in Construction Project to be regarded as close to ‘knowledge centric’ and were recognised as a leader in the industry.

Our KM tradition can be traced back to the founder of the firm, Ove Arup, who had a very strong belief in the importance of sharing knowledge which can be traced back to the 1940s. As a result of this strong drive from the top, various good KM practices evolved within Arup at an early stage. Lessons learned, for example, have been routinely captured and shared since the 1960s, whilst a culture of sharing and knowledge reuse is a key feature of an increasingly global firm.

Knowledge management practice was reviewed in 2000, and we introduced various new practices including Communities of Practice, a revised intranet and an approach to managing electronic knowledge targeted at reducing information overload.

Starting Points

We recognised that to deliver business in today’s pressured work environment required an investment into world-class knowledge management practices. Clients need to consistently access the best knowledge, receiving the best of Arup rather than the best available. Our knowledge management approaches improve efficiency and make time for creative thinking by building on the successful practices of the past to prepare the firm for the future.

“Arup is ... a benchmark company in the area of knowledge management in the construction industry”

Henley Management College

Practice Profile

Staff: 2979 UK staff (7000 worldwide)

Offices: 19 UK offices (70 worldwide)

Services: Arup is a global firm providing engineering design, planning and project management services in all areas of the built environment

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We link Knowledge Management activities to business impact to ensure that practices are appropriate and that investment can be justified.

Given our goal to achieve innovation and creativity in our projects, our KM approach maintains an element of standardisation, procedure and IT, but focuses on these elements far less than many organisations. Instead, we seek to combine people, process and technology to support a less structured approach, encouraging innovation and flexible working practices across many sectors.

When we began our pilot for the Spreading the Word project in 2004, we had already established a number of good practices in KM, including:

- Arup People, an award winning system to find experts within the firm
- Arup Projects, to capture lessons learned on projects and to access key project data and images
- Arup Networks, Communities of Practice linking people around the world who are working on separate projects but united by a common interest
- an intranet system, using a powerful search engine to cut across organisational boundaries and access appropriate best practices
- an appraisal system to support appropriate behaviours
- processes and procedures to consistently reapply best practice where appropriate.

Nevertheless, we were conscious that there was scope to improve the adoption of our KM tools and techniques.

Projects

As a globally dispersed firm of 7000, we recognised that Communities of

Practice — our skills and business networks — were the key vehicle enabling us to deliver the best of the firm rather the best available, and the pilot projects undertaken as part of Spreading the Word largely targeted this area.

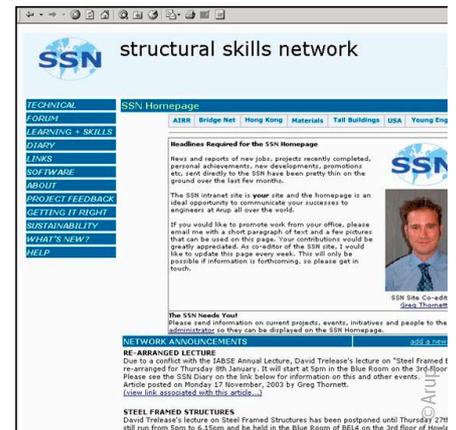
Our ability to deliver the full value of the firm to our clients is enhanced by our skills networks and business sectors working closely together to ensure that the right skills and knowledge are being developed in response to business sector and ultimately client needs. Without these networks, we would offer little more than a firm 10% of our size. Building on our existing approaches, therefore, there was a desire to explore new ways of improving the impact of Arup Networks.

The skills networks are the primary means for provoking and enabling continuous cross-group technical activities to promote and sharpen our competitive advantage. Activities revolve around supporting technical skills through providing training and guidance, nurturing a culture of sharing innovative work and experiences that help to deliver excellent projects, avoid errors and maximise the value of expertise for the benefit of Arup clients.

Within the largest global Skills Network, the structural skills network (SSN), we sought to explore:

- new ways of articulating added value to businesses from network activity
- cultivating best practice guidance through storytelling
- workshop facilitation to initiate network activity.

As a pilot project, the impact of the structural skills network on the Healthcare and Sport businesses was assessed. The process was similar for



both businesses. Initially interviews were carried out with engineers working in these business sectors to identify key technical issues and secondly, encourage an articulation of value added to the businesses through structural skills networking activities. These interviews were followed by a series of facilitated regional workshops, which enabled key technical reports, documents and best practice to be identified.

The knowledge from these documents was disseminated through integration with the Arup project database and creation of a business-focused page within the SSN's intranet. In parallel, the whole process created active communities in each business area, and due to active regional network leaders the business areas are continuing to receive contributions to the present day. Integration with the business is critical to ensure valuable knowledge sharing in the long term.

This activity resulted in numerous benefits for the Healthcare business. It:

- identified key people with project experience in the healthcare sector
- increased efficiency through sharing best practice
- raised awareness of 'added value', improving client focus
- facilitated a global focus on sharing business focused knowledge
- technical issues were addressed with cross business sector relevance, such as laboratories and vibration criteria
- developed of a structural capability statement for healthcare.

In parallel with developing a focus on the business, we explored:

- storytelling as a technique for capturing knowledge, combined with

- workshop facilitation as a technique for seeding interest groups and initiating network activity.

Storytelling is a well established KM technique which has been championed by the likes of Steve Denning at the World Bank and David Snowden when at IBM. At Arup, storytelling was recognised as a key approach to knowledge sharing within communities where multiple project experiences are being discussed. The storytelling activity arose from a recognition by our project engineers that we had to create less formal vehicles for sharing knowledge. It was recognised as particularly valuable in contentious areas where experiences needed to be shared between small groups (contract disputes, for example) and in areas where agreement on best practices had not been well established. In the latter cases, storytelling serves to encourage open exploration of the issues before filtering these issues into reusable guidance.

One area where insufficient knowledge of our global project experience was recognised was visual concrete — an increasingly popular theme amongst clients. It was recognised that there was value to be gained in collating a range of our project experience in this area, both with regards to being able to draw from past technical experience and in communicating specific issues such as architect expectations of finish.

Facilitated workshops were found to be the best technique to encourage participants to share stories of their experience and explore useful methods of knowledge dissemination that would benefit the wider community. Engineers were actively encouraged to share negative experiences in addition to positive ones to raise awareness of 'what could go wrong'. We realised over time that perceived experts were not essential to these sessions - in fact, their presence almost discouraged open discussion and free flowing



stories in some cases. Their role was, however, still critical in helping to filter the outputs of workshops into reusable insights.

The workshop on visual concrete resulted in a distillation of key issues for reuse on future projects. Some of these issues were technical, others contractual, others concerning relationship and expectation management with clients. In some cases, this content has been developed in conjunction with architectural clients, such that common standards can be established and better knowledge sharing achieved.

One of the key outputs from the workshop was a commitment of the participants to provide records of project experience in a variety of formats ranging from images of good and bad finishes to specification clauses and useful technical documents. An intranet page was created within the SSN's site to share many of the outcomes, which has since been used to improve the effectiveness of projects delivered in this area. The workshops, then, act not just as a source of content, but also as a means to galvanise a community and ensure ongoing involvement of the participants.

The process highlighted that storytelling can be encouraged at many levels - from informal, unstructured sessions to pre-planned presentations to seed the discussion. The facilitated workshop format was, however, recognised as a valuable technique to help facilitate other network activities — whether at start up, or as an intervention to reinvigorate declining or stagnant networks.

Future

The Spreading the Word project has helped us to increase the adoption of our existing systems and techniques. We have sought to create a co-ordinated approach to knowledge sharing between the many communication vehicles available in Arup. Face to face, paper and electronic methods need to be

balanced to ensure that knowledge is not just captured, but developed for reuse, so we have established links between communities and general Arup Newsletters in order to ensure that knowledge is sharing is maximised.

Some the improvements recognised as a result of the project include:

- integration of community activities with the knowledge systems to manage people, projects and best practices
- facilitation techniques to encourage community startup and to reinvigorate communities where activity is declining
- improved automation of knowledge exchange from projects.

In the short term, Arup will build on this progress by further exploring how to get the best out of the people using these systems, focussing on both virtual and actual motivation and human-computer interaction.

