

whitbybird

■ Knowledge Audit

Founded in 1984 as a specialist structural design consultancy, whitbybird has grown and diversified over the years into a highly-regarded multi-disciplinary engineering practice of 300 people. In 2004 alone they won 30 awards from the RIBA (including London Building of the Year), the RICS, the Royal Fine Arts Commission, the Civic Trust, the British Council for Offices, and others.

Over the years the practice has evolved a variety of procedures and IT tools to promote learning from experience and knowledge sharing. In 2003, when whitbybird became involved in the Spreading the Word project, end of project reviews were well established and widely valued; the IT tools included a Knowledge Bank, staff skills and Who's Who databases, and an email-based 'Team Briefing' system through which anyone at team leader level or above could broadcast new information to colleagues. Despite some failures — the Knowledge Bank, for example, "fell apart" because it was too difficult to use — management regarded knowledge sharing as generally effective, with good buy-in from staff.

But director Charles McBeath, who is responsible for co-ordinating the practice's IT systems, was keen to improve

further. He could still see wheels being re-invented, and he wanted to bring the engineering, management and administrative aspects of the practice's work closer together.

It was not obvious how to achieve this, so as a first step whitbybird decided to carry out a simple **knowledge audit** modelled on the process described in the Knowledge Sharing Manual to identify some of the strengths and weaknesses of the existing systems and provide some starting points for improving them.

The audit was based on a questionnaire survey of 100 of the younger engineers and focused on their perceptions of the four knowledge systems judged by the board and the Operational Process Management team to be the most important:

- company communication strategy
- Task Groups (whitbybird's name for Communities of Practice)
- the Who's Who database
- the online feedback system.

The response rate was good — 77% — and the results have usefully clarified understanding of these systems and pointed the way to worthwhile improvements.



“The use of knowledge defines a company's culture — the management of knowledge defines its success”

Charles McBeath, Director

Practice Profile

Staff: 300

Offices: 6 UK, 1 Dubai

Services: Structural, building services, fire, facade, geotechnical and infra-structural & urban engineering, bridge design, special projects, community energy, sustainability & renewables

Contact:

Isao Matsumoto
whitbybird
60 Newman Street
London W1T 3DA
e-mail isao.matsumoto@whitbybird.com

Web: www.whitbybird.com

Knowledge Audit

Whitbybird's audit involved 7 main steps:

- 1 identifying the systems and assets which contribute to knowledge management
- 2 selecting a subset for audit
- 3 choosing audit methods
- 4 designing the questionnaire
- 5 testing and refining the questionnaire
- 6 conducting the survey
- 7 analysing the results.

1: Identifying knowledge systems and assets

Between them, the board and the OPM team identified 11 principal knowledge systems:

- company communication strategy
- design critiques and technical reviews
- online quality management system
- Task Groups
- online feedback system
- Technical Highlights
- Training/CPD/PDR
- Who's Who
- staff induction and mentoring
- Job Management System
- companies and contacts database

and 5 knowledge assets:

- staff
- processes
- IT network
- databases
- library.

2: Selecting a subset for audit

Investigating 16 systems and assets would have required more effort than whitbybird wanted to commit to the audit, so they decided to concentrate on the most important systems. Subjective assessments of the 11 candidates'

importance to the company and potential for improvement led to four being selected: the company communication strategy, Task Groups, the Who's Who and the online feedback system.

The communication strategy was deemed to be a key system because it is the main influence on how well staff understand whitbybird's ethos, organisational structure and knowledge systems, and how well corporate information and management decisions are communicated to staff.

The Task Groups — broadly equivalent to Communities of Practice — are the practice's chief mechanism for responding to feedback, recommending changes in operational and technical procedures, and highlighting issues which need further attention.

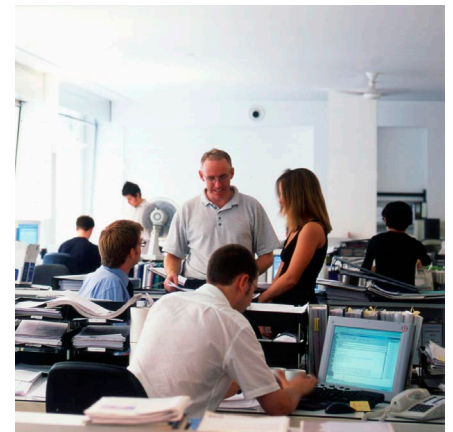
The Who's Who (essentially, yellow pages) system plays a key role in the sharing of tacit knowledge by helping staff to discover who knows what, and how to get in touch with them.

Finally, the online feedback system is an important mechanism for bringing personal lessons learned on business processes into the knowledge system. Contributions are monitored by a feedback review group, who decide what action should follow.

3: Choosing audit methods

When knowledge systems disappoint it is usually because their design fails to take account of the realities of the corporate culture and of people's working patterns and motivations. It is often useful to look at objective measures such as who uses systems and how often (by analysis of server logs, for example), but a survey of people's awareness and perceptions can be more immediately revealing. whitbybird chose to use the limited time they had available on a survey.

Surveys can be based on interviews, questionnaires or both. whitbybird



chose to use their existing online questionnaire system, which allowed a substantial proportion of their staff to be surveyed in a short time, and calculated results automatically. They ruled out interviews because relatively few could have been carried out and analysed with the time available.

Recognising that a survey can itself help raise awareness of the issues it covers, they decided to concentrate on the younger engineers and send the questionnaire to 100 of them, evenly sampled from the different engineering teams.

4: Designing the questionnaire

Questionnaire design has to balance richness and detail of enquiry (which requires many questions) against response rate (which suffers if there are too many). Whitbybird decided to favour response rate, aiming to make the questionnaire short enough to be completed in 5 minutes.

To collect as much information as possible with this very tight constraint, they used a mixture of 'closed' questions (questions which require respondents to select from a list of pre-defined answers) and 'open'

questions (which invite respondents to write in whatever they like).

Closed questions are a good way to get a broad-brush view of respondents' perceptions of knowledge systems — they are quick and easy for respondents to answer, and the responses are easy to analyse — but they have disadvantages too. Designing effective questions requires considerable skill; poor design can easily produce meaningless results. It can be difficult to go into specific detail without making the questionnaire forbiddingly long, and the responses can only give insight into issues the designers are already aware of — in a very real sense, the survey outcome is pre-determined by the questions. Respondents can also find closed questions frustrating if the answer options available make it impossible for them to express what they really want to.

Open ended questions, by contrast, are relatively easy to design and the responses can be richly detailed and revealing (and raise issues the designers were unaware of). On the other hand, the results are relatively difficult

whitbybird Knowledge Management Audit

Fundamental to the success of our business is ensuring technical, business and social knowledge is efficiently transferred across the organisation. To facilitate this transfer a number of operational and intranet driven systems have been established over the last 6 years. wb is currently reviewing a number of these systems and would like to get your opinion on how effective these systems are.
(* denotes mandatory question)

Section 1: wb company structure & communication strategy

In large multidisciplinary organisations the necessity to communicate and share ideas is paramount. The wb company, meeting and task group structure diagrams (see email) set out how information and decisions are communicated across the organisation.

*Q1 Have these diagrams been explained to you (are you at least aware of them)? (see email for link to diagrams)

*Q2 How effective is communication going up and down management levels? (1 poor going up and down, 2 better going up than down, 3 ok going up and down, 4 better down than up, 5 excellent going up and down) 1 2 3 4 5

*Q3 How effective is communication between different teams and disciplines? 1 poor 2 could be improved 3 ok 4 good 5 excellent

Q4 How do you think communication effectiveness at wb could be improved?

whitbybird's online audit survey

This screen is the section on the company's communications strategy. The questions are:

Q1 Have the [company, meeting and Task Group structure] diagrams been explained to you (are you at least aware of them)?

Yes/No

Q2 How effective is communication going up and down management levels?

Poor up & down/Better up than down/OK up and down/
Better down than up/Excellent up and down

Q3 How effective is communication between different teams and disciplines?

Poor/Could be improved/OK/Excellent

Q4 How do you think communication effectiveness could be improved?

and time-consuming to analyse, and with different respondents inevitably choosing to comment on different issues a large sample is usually needed for statistical significance. For many purposes, a mixture of closed and open questions is the best option.

Too often, questions are designed without enough thought about how the responses can be analysed and used. This is vital, and whitbybird made it their starting point.

They decided to focus on three issues: how much each of the four selected systems was used, how effective it was perceived to be, and how it could be improved.

They asked between 3 and 5 closed questions about each system to probe use and effectiveness, and a single open question inviting suggestions for improvement. Most of the closed questions had 4 or 5 response options based on logical alternatives (such 'none', '1', '2', '3' and 'more than 4' for 'How many Task Groups are you currently a member of?') or on subjective scales (such as 'difficult', 'could be improved', 'ok' and 'very easy' for 'How easy is it to find relevant feedback items?')

To help respondents understand the questions (and at the same time educate them about the knowledge systems) each group was preceded by a short description of the system and its purpose.

The whole questionnaire was implemented as a series of online forms feeding responses into a database, ready for analysis¹.

5: Testing and refining the questionnaire

Even with skilled design, questions can still fail to elicit useful responses; it is easy, for example, to miss an ambiguity which causes some (or all) respondents to answer quite a different question from that intended. Pilot testing is invaluable for weeding out problems

like this, and it can also provide a useful check on completion times and the mechanics of survey forms and data handling code. Accordingly, whitbybird sent the questionnaire first to ten respondents variously selected for their known eye for detail, diverse opinions, and just at random to gauge uninformed reaction. Some questions were modified in the light of the returns.

6: Conducting the survey

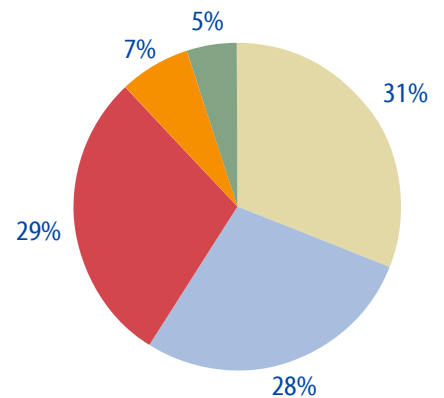
The final survey was sent to 100 young engineers with a two-week deadline to respond. Nearly 80% did so.

7: Analysing the results

The responses to the closed questions were analysed by proportion and plotted as pie charts, and the free text responses were reviewed by the OPM team and recurring themes and comments identified.

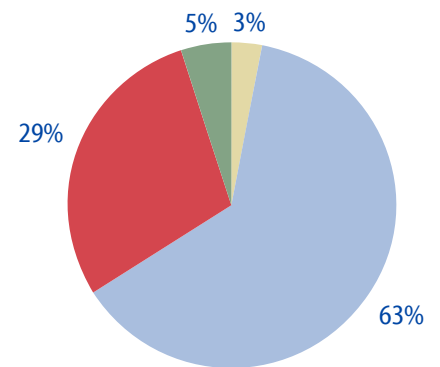
The results were broadly consistent with the team's expectations, showing that all four systems were well used and generally effective, but that there was clear scope to improve them. The survey as a whole gave valuable support for the case for further development, and the responses to the open questions gave useful pointers to specific problems and ideas for specific improvements.

Overall, the value of the results more than justified the audit, and the experience gave whitbybird an insight into how an audit could be used to help improve other aspects of their knowledge management in future. ■



What do you most use the Who's Who for?

- 31% phone numbers
- 28% staff photos
- 29% role & responsibility
- 7% skills
- 5% other



How effective do you think Task Groups are at gathering knowledge and driving continuous improvement?

- 3% extremely
- 63% OK
- 29% could be improved
- 5% not very

¹ Whitbybird used software that they developed internally, but for occasional users, the easiest and cheapest option is to use one of the several low-cost web-based services, such as SurveyShack (www.surveystack.com). These typically cost £10-20 per 1000 responses, offer a basic form/question template which users can customise, provide secure web pages to run the survey, and return responses in tabular and simple graphical form.