How to Conduct and Leverage an Expertise Audit

By Patrick Lambe

Expertise audits are most useful when:

- Your organization is dependent on specialised expertise and/or experience
- · That expertise or experience is in short supply or difficult to acquire
- You run a risk of losing key expertise/experience eg through retirement, staff turnover, or job rotation

In small organizations or within individual workgroups, it is fairly easy to identify where your expertise and experience lies, and also to identify any risks of loss you might be vulnerable to. However, large organizations are probably using expertise and experience in many different pockets of activity, and if you want to put in place a managed programme for protecting or developing experience and expertise, you will need to conduct a systematic audit so that you can:

- a. Prioritise your interventions according to the importance of the expertise and the risk of loss
- b. Keep track of your expertise and experience base over time
- c. Keep track of your expertise and experience needs over time.

This guide is in three parts:

- 1. **Understanding Expertise** where we look at what constitutes expertise and experience and why they are worth managing carefully
- 2. **Conducting an Expertise Audit** where we look at techniques and information sources for locating and prioritising critical expertise in your organisation
- 3. **Leveraging an Expertise Audit** where we look at different strategies for protecting or growing critical expertise.

1. Understanding Expertise

Expertise can be made up of any combination of four primary ingredients:

Technical knowledge which is hard to acquire and requires extensive experience to gain a good understanding of. To some extent it can be written down and can be acquired through study, but experts will usually require practice and experience over time to really master the technical knowledge. Once mastered, they may have the capacity to communicate, teach, write and even create new technical knowledge in their domain. The technical knowledge part of expertise does therefore have a strong explicit element combined with tacit elements, and documentation can help to transfer a part of it, so long as the opportunity to build experience over time is also provided.

Skills which are hard to acquire and require extensive practice over time to perfect. Many skills can be trained, but the skills of experts cannot be acquired just through training. Like technical knowledge, the skills of experts are developed and deepened through a combination of training and practice. Unlike

technical knowledge, very often the skills cannot be made explicit, but need to be communicated through a mixture of training, demonstration, coaching and practice. Documentation has very little value in transferring the skills part of expertise.

Experience which is continued practice over time, building up a series of patterns of different ways in which work can be done. This "pattern" base is constantly referred to in the mind of the expert, helping the expert recognize previous experiences that may be relevant to the present situation. The mark of experience is that the expert can immediately recognize the salient and important features of a new situation, where a novice will try to focus on everything and will miss signals that may be critical.

The expert can "see" the important aspects of a situation very quickly, and using their extensive memory patterns can run mental simulations about what is likely or not likely to result from different courses of action. In other words, their experience gives them a repertoire of mental models about how the world works, and by running these mental simulations, experts can form accurate expectations about what might occur and improvise appropriate responses.

Experience underpins all the other elements of expertise, including skills and technical knowledge. The expert's repertoire of patterns incorporates new technical knowledge and allows them to apply their skills in greater depth and with greater effect.

Experience is largely tacit, and is very difficult to transfer through documentation, because it is built up through lived experiences and practice. However certain forms of knowledge transfer can accelerate the acquisition of experience. For example, the "seeing" aspects of expertise can be transferred by observation and coaching, where an expert can point out to a novice what needs to be considered in a given situation, and help them see the salient features. This is a technique used in military training and in simulations. Storytelling is another possible strategy, because stories are descriptions of lived experience where the context, the observations and the way events unfolded can all be communicated without the listener having to live through the experience themselves.

Routines which have been learned and improvised as heuristics or "tricks of the trade" over time. Experts can use their ability to "read" situations and to run mental simulations to develop short cuts or heuristics which they can use again and again in similar situations. This enables them to react very quickly to challenging situations without having to think through a response every time. These routines are developed by leveraging their tacit knowledge, but once they have been developed they can quite often be documented as recipes, methods or templates, and transferred in explicit form to less experienced staff. Usually the main difficulty with routines is that experts are often only semi-aware of the heuristics and routines they have developed, and so they may not be visible to colleagues either.

Notice that all expertise is by its nature difficult to gain, and takes time and experience to mature.

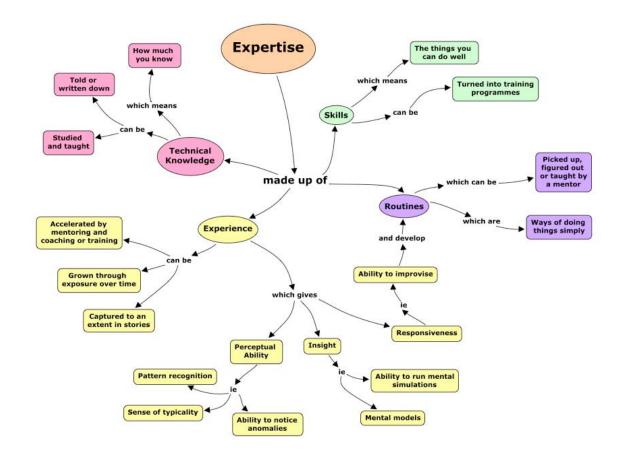
While it's often relatively easy to pinpoint who your experts are, the ingredients of their expertise (and hence the transferability of that expertise) might not be very obvious. Not all the aspects of somebody's expertise might be visible. It may not be possible to document or even describe all the elements of an expert's knowledge, because their expertise may only become visible when it's needed (eg when he/she improvises an appropriate response in a difficult or challenging

situation). This is why in expertise audits and in expertise transfer exercises, it is more useful to focus on challenging or problematic incidents rather than on routine operations. Routine operations are less likely to reveal (or need) deep expertise.

This is a key difference between an expertise audit (which often focuses on abnormal situations where expertise is likely to be needed and revealed) and a typical knowledge or information audit where you will usually be looking at the knowledge uses and knowledge needs in the "normal" operations and activities of a business.

As we've seen, some aspects of the expert's knowledge are easier to document than others, eg technical knowledge or routines. Some aspects require support from structured training. Some aspects (eg experience) are better picked up by observation – either direct observation through shadowing, or indirect observations via stories, examples, and case studies recounted by the expert. Other aspects of experience can only be learned for oneself by being exposed to learning environments and building up one's own learning patterns, developing appropriate mental models, and becoming skilled at mental simulation and improvisation.

Hence it's essential in approaching an expertise audit to recognize that the knowledge that is embedded in experience cannot be completely documented or completely transferred. However, its *transfer can be assisted and the growth of experience can be accelerated* using knowledge management techniques.



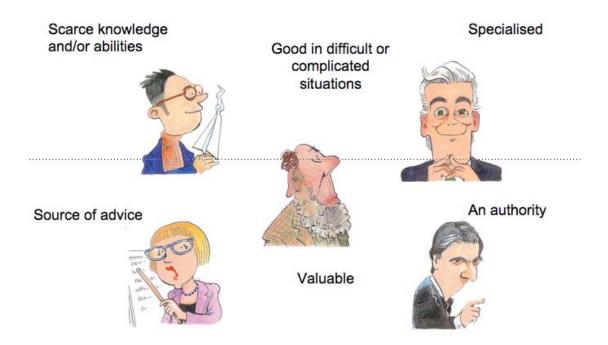
2. Conducting an Expertise Audit

(a) How to identify experts

In principle, it should not be too difficult to figure out where your expertise is. Expertise and its most important ingredient experience are both embodied in people. Expertise does not lie in databases or document repositories (although the products of expertise might). So when you're trying to locate expertise in your organization, you're looking for people. And usually colleagues are aware of the experts in their midst.

These people might be visible in a number of ways. They may be people who are very effective in challenging or complicated situations. They may be specialists who are recognized and consulted for advice or judgment in specific domains. They may have scarce knowledge or abilities. They may be recognised as valuable and important employees who would be difficult to replace. They may be considered as an authority in their subject domain and deferred to even if they do not have matching organisational status. All of these attributes are possible indicators of expertise, and these attributes can all be used as questions designed to point out expertise in your organisation (eg "Who in your department is regularly turned to for specialised advice in difficult or challenging situations?").

Notice however that some of these attributes may also be assigned automatically by staff to managers – and the attribution of advice, authority and deference may be more a function of their status than of their experience, knowledge or skill. If your audit looks like it is automatically including all managers as experts, your expertise audit may not be probing deeply enough and you may be confusing expertise with status, and missing important pockets of expertise. So if you use questions like the one above, you may need a follow up question such as "Do you have any such people who are not in management positions?".



By far the best way to find your experts is to go and ask the key operational people in each workgroup. By operational people I mean managers and supervisors who are close to the operation, plus people whom they nominate as

knowing a lot about the workgroup and its operations. Between them they will almost always know who holds the important expertise and experience available. Some more sample questions to ask on these visits are given in the table below.

In a very large organization where you don't have the time or resources to visit every workgroup, or where you have lots of different types of expertise and experience and want to identify the most valuable or accessible experts, then you might want to use a more formal technique called social network analysis. This generally works via a survey to all staff, asking the expertise-locating questions we have already discussed (or ones taken from the table below). The names that are cited more frequently will indicate the people who are most recognized and/or turned to, and therefore potentially most important for your audit.

For very large populations, you might want to use social network mapping software to process your results and produce network maps that will show quickly which experts are the most connected or referenced, which ones sit at the centre of self-contained groups, which ones are over-connected resulting in bottle-necks, which ones span group boundaries and act as brokers and connectors, and which ones are isolated and perhaps under-utilised. Each of these different types of expert will have different characteristics and will affect the strategies and interventions you might want to deploy in leveraging your expertise audit later on.

Select the most appropriate questions from the list below to help locate important expertise and experience in your organization:

- 1. List the areas of technical knowledge that are critical for your department's work. Who are the specialists in these areas?
- 2. What are the specialised skills required for your department's work? Who in your department possesses these skills?
- 3. Which are the areas of work in your department that require extensive experience to be done effectively? How long does it take to build this experience (how many years)? What kind of experience is it? Who in your department possesses this experience?
- 4. Who in your department would you find it very difficult to replace or get along without? What is it they can do that nobody else/ few others can?
- 5. Who in your department has a track record of responding effectively in difficult or challenging situations important to the department's work? What is it they can do that nobody else/ few others can?
- 6. Who in your department (apart from the manager) is frequently consulted for advice in tricky situations or to solve difficult problems related to your department's work?
- 7. Does your department have any informally recognized experts or very experienced staff apart from formally designated managers or specialists? Who are they and what special expertise or experience do they have?
- 8. Which areas or expertise or experience are necessary and important for your department's work? Who are the people who hold this expertise or experience?

- 9. Are there any areas of work in your department where you currently don't have someone to provide the necessary expertise and experience? What is the expertise or experience you need and why the gap?
- 10. Are there any emerging areas of expertise or experience that you anticipate will become important for the work of your department in the near future? What is the expertise and experience you need and where do you think it can be found or how can it be acquired?

(b). Doing your homework in advance

It is a good idea to do your research in advance and filter out the questions that are irrelevant so that you can cover more ground much faster. You may not need to visit every department and ask every manager every question, and should avoid that if you can. A preliminary analysis may tell you your most important expertise is really located in just a few areas of the organization, and may suggest the most likely places to focus your attention. You don't want to have to ask busy people too many questions that may not be relevant. The more you can form an understanding of your target workgroups in advance of a visit or a survey, the better will be the quality of your data, and your understanding of its significance (note that several of the questions above have context-setting follow-up questions to help you interpret the data later on).

If you are fortunate, you may already have pre-work that will help you zoom in quickly on likely areas of expertise. The following activities can give you a preliminary orientation to give you starting data for an expertise audit, although you will still need to go into the field to ask detailed questions, because they may have missed expertise areas that turn out to be important to you. An expertise audit should always include field investigations, no matter how thorough the preliminary research.

Input from	Limitations		
Knowledge Audit			
A knowledge audit can give you very valuable input to prepare for an expertise audit, if it has consciously documented the tacit knowledge as well as the explicit knowledge required for your organization's critical activities. The areas of knowledge you would look for in a knowledge map would be anything that refers to advanced skills, "tricks of the trade", technical knowledge, experience or expertise.	Knowledge maps resulting from a knowledge audit most frequently document the knowledge assets required for the normal operational performance of different workgroups. They do not often capture the deeper knowledge, skills and experience required to deal with unusual or difficult situations, which is where availability of expertise is more important, and where deeper expertise is revealed.		
Competency Framework			
A competency mapping exercise across an organization may also provide valuable input because like a knowledge audit it usually provides a systematic survey of jobs and the	Competency frameworks or maps can be implemented with great variability in different organizations and may not capture all the aspects involved in expertise (especially the aspect of		

skills, technical knowledge and competencies required to perform well in those jobs.

experience). They are often less sensitive to technical knowledge than knowledge maps are, and they are frequently conducted from a top-down analysis of the functions within an organization, which means that they may not discover emergent skills, experience and technical knowledge that grow naturally out of any given work context, but that may not be anticipated from a formal analysis of the business top down. Competency and knowledge maps are more likely to discover such emergent knowledge assets, if they are conducted "bottom up" through workshops with the operational staff. Like a knowledge map, competency maps may also focus on steady state needs, and may not capture the special expertise that is available or needed in unusual but challenging circumstances.

Corporate Taxonomy

A corporate taxonomy or business classification scheme may provide a formal breakdown of the subject domains and activity areas that are critical to your organisation's business. They can provide you with important domain areas to get you started. You would follow up by identifying the departments and workgroups where you might find the expertise and experience related to those subject domains.

Very much like the competency framework the corporate taxonomy is frequently derived from a formal analysis of the organization's business, so provides a top-down view that may not fully reflect the full range of skills, technical knowledge and expertise that is required on the ground, especially for unusual but important situations. Corporate taxonomies tend to focus on obvious operational domains within the organization's core business and their topic focus can be insensitive to "backroom" or non-subject focused skills and technical knowledge that may nevertheless be critical to the organization's effectiveness (eg financial modeling, risk awareness, emotional intelligence, ability to size people up accurately). Competency frameworks tend to be better than taxonomies at picking up such backroom knowledge needs. Taxonomies are usually designed to manage explicit knowledge assets such as information resources and so they also tend to be insensitive to more tacit areas of knowledge such as experience. Taxonomies tend to reflect past and current knowledge asset collections and are not generally future-oriented.

Expertise Directory

You may be fortunate enough to have an existing expertise directory or a staff directory that encourages staff to list their areas of interest, skills and experience. These can provide important data especially if they have already been formally designated as experts and/or are using a standardized vocabulary such as a corporate taxonomy to describe their expertise.

Expertise directories and staff directories are difficult to maintain and are therefore often irregular in their reliability and currency. If staff have been formally designated by managers as "experts" in the absence if a systematic expertise audit this may not fully reflect the reality on the ground (ie who is actually consulted or who actually has the experience). For example, individuals' designation as "experts" may simply mean that these are the staff to be consulted as reference points for particular topics, and may not fully represent the full range or depth of experience and expertise truly available within a workgroup. If you have a self-reporting staff directory, expertise indicators can be misleading if staff have inconsistent understandings of what constitutes important expertise and skills, if they use inconsistent vocabulary to describe what they know, if they under-report their expertise in order to avoid being distracted from their duties by enquiries, or if they over-report so as to enhance their career profile.

Communities of Practice

Active communities that meet and interact regularly are useful ways of surfacing important expertise and experience within your organization. Over time, the members of the community become aware of who the informal experts and "wise" members of the community are, which members hold more authority than others, and whose judgment is most reliable. They are particularly useful for identifying expertise and experience that is not gathered together into particular functional work units but are scattered across an organization - eg procurement or marketing specialists. The community effectively becomes a mechanism for creating a clearer awareness of the tacit knowledge resources available across a group of scattered specialists.

Strong communities sometimes form very narrow and limited views of what they think "true" expertise is, and this may restrict your field of view, missing out other important areas of expertise and experience. They may form a strong sense of orthodoxy, and fail to anticipate emerging needs or gaps. Communities also tend to exist to bridge cross-organisational scatter of knowledge and experience, and so may not be sensitive to the experience and expertise resident in functional departments. They should be used as a complement to looking at functionally organized workgroups, not as an alternative.

Online Expertise Finders

If specialists and experts use online discussion forums or weblogs to interact and share in your organisation, then they can also be useful places you can go to get a sense of who posts valuable materials, and who is deferred to or treated with greater respect by their peers. There are also automated tools that can crawl document repositories, list serves, bulletin boards, and even email servers, to identify highly visible and active contributors, and associate them with particular topic areas.

The caution with online expertise finders is that visibility and activity (which is what the automated tools track) do not necessarily map to experience and expertise. This is easier to tell from manual analysis than with automated tools. Contributions and posting activity can be gamed to give higher visibility, and intensity of discussions could indicate argumentativeness and inexperience as much as expertise. The identification of expertise domains is also dependent on the natural language that contributors use to describe their topics so if that varies, then the expertise domains may not be identified consistently (unless a standard taxonomy is being used to tag contributions). As with self reporting staff directories, "true" experts may not be highly visible in the public or online domain, and the tools assume that the application of expertise is going to be frequent and visible. It often isn't.

The resources listed above can all provide a useful orientation to prepare for an expertise audit, and between them they should help you figure where you should go looking first, and who you should talk to. Being aware of their limitations will help you focus your own efforts on answering the questions that they do not address. For example, if you have a competency framework and are confident that it has been validated on the ground with operationally aware managers and staff, you may not need to look in any depth for skills-based expertise, but should probably build questions designed to surface experience and expertise areas not already captured in the competency framework.

Because expertise is highly subjective and resides mainly as a tacit (and therefore only partially visible) resource, the golden rule in an expertise audit is not to trust any single information source – but to use multiple channels to build a composite picture of the expertise and experience available and needed in your organization.

(c). Prioritising your expertise transfer efforts

Your preliminary homework will give you a rough map of the important areas of expertise and experience that you need to go find out more about. Your visits or survey questions or social network analysis will help you flesh out the missing parts, ensure that your expertise audit actually reflects the ground situation and emerging or future needs, and they will help you put names to each expertise domain.

You will also need to collect information that will help you judge the criticality of the expertise and experience you uncover – ie the degree to which you should

prioritise effort in acquiring, transferring or growing this expertise. Four factors are important signals of critical expertise areas:

- The **usefulness** of the expertise as applied to the organization's business
- The **need** to spread this expertise more widely
- The **nature** of the expertise and relative difficulty/slowness of transferring or replacing it
- The **risk** of losing the expertise in the near future eg through staff movement, retirement, job turnover

A table something like the one below can help you identify the areas where you need to focus your efforts and protect or acquire vulnerable or missing expertise. You can use it to do a first cut prioritization of your expertise areas, but do not use it mechanically just adding up scores. The scores simply give you a first draft that should be sense checked against your observations in your visits and interviews. For each numerical assessment you should be recording narrative reasons to justify the score. You may want to involve a small core team to complete the first draft of your assessment – between them the members should be familiar with all the main areas of the business, and should have been involved in the conduct of some aspect of the expertise audit so far.

Your first draft of the prioritized list now needs to be checked with your key management stakeholders in the exercise (ie the ones you have consulted) and your final prioritization exercise should preferably be conducted in a workshop where the stakeholders can form a common view together of where the top priorities lie. Finally, you will need to get your senior management team's input on the key priorities (i) so that they can give input on strategic imperatives facing the organization, and (ii) because some of the follow-up strategies may require new resources or policies that require their consent and support.

Expertise/ Experience Area	How important for the business? Eg score 1 (minor) to 5 (major)	How important to spread it? Eg score 1 (just a few people ok) to 5 (a lot more people need to have it)	How difficult or time consuming is it going to be to transfer? Eg score 1 (easy) to 5 (very hard)	What is the risk of losing it? Eg score 1 (low, eg 4-5 years) to 5 (high, within the next year)	Urgency of Expertise Transfer Need (High Med or Low Priority based on scores)

3. Leveraging the Expertise Audit

By this stage you should have a short list of priority or "critical" expertise areas that you want to work on protecting or building or transferring. Now you'll need to consider how you develop appropriate strategies. There are four main strategies for dealing with expertise gaps or needs, the first two focused on acquiring "ready-made" expertise and the second two focused on growing that expertise organically:

- (a) Engage consultants
- (b) Recruit experts or experienced individuals to join your staff
- (c) Provide relevant training and education opportunities
- (d) Deliberately build the experience of your staff through exposure and knowledge transfer

In practice, you may need to deploy a combination of these strategies.

(a). Engage consultants

You may want to engage consultants where you have a critical expertise requirement that is not expected to be a long term need, and requires fairly limited interventions. The advantages are that the costs of expertise can be contained, the expertise can be made available to you very rapidly, you can shop around for the most appropriate combination of experience and expertise for your needs, external consultants can bring different and new perspectives, and can expose you to knowledge needs and opportunities that you had not previously anticipated.

However if you are likely to continue to need elements of this experience and expertise after the consultants' intervention, you may be letting yourself in for disappointment. Because a great deal of expertise relies on a tacit experience base built over time consulting engagements present great difficulties in supporting deep expertise transfer or experience building. They can be successful where the required expertise is expressed through well-defined technical knowledge, clearly understood skills, or routines that can be captured in simple methodologies or templates, but the more that their application relies on deep experience, the less satisfactory the expertise transfer – and therefore the long term gains from the engagement – will be. It is always worth a serious assessment whether your organization will continue to require specialised expertise and experience in order to fully benefit from the consultants' intervention after they have left. If so, then perhaps one of the slower and longer-term expertise strategies might be more suitable.

(b). Recruit experts

If you are clear that you have a longer term need for an area of expertise and either don't have enough of it or can't build it organically fast enough to meet your needs, then you might consider recruiting new talent. The advantages are that it is still relatively fast to acquire "pre-grown" expertise through recruitment compared to trying to grow it internally, and again (depending on availability) you can shop around for the best mix to suit your needs. Like consultants, newly recruited experts can bring valuable new perspectives to your organization.

Although recruited experts can be brought on board relatively quickly, they may not get up to speed quite so quickly, as it may take them some time to tune themselves into your organization and its needs. If this is a new or very poorly represented area of expertise in your organization, there will be very little

infrastructure to help them perform at their true level of capability, and they will likely be performing at sub-optimal levels until they and the organization can build the necessary infrastructure to support them and tune into each others' strengths and needs.

If it is an already well-established area of expertise and experience then it is important to monitor for "soft" human factors such as competitive behaviours, trust, respect, sense of authority, and collegiality. This is especially true for highly technical or experiential areas of expertise where personal judgment is a very strong factor, where differences of opinion and strongly held opinions are common, and in contexts such as succession planning where incumbents may see a threat or challenge in the new recruit. In such situations it is usually valuable if the incumbent experts are also involved in the selection of the new candidate.

(c). Provide training and education

This strategy works best for expertise based primarily on the ingredients of technical knowledge and skills. No expertise can be completely divorced from experience-building, however, so this strategy needs to be combined with job-placement and career planning strategies, where the candidates are deliberately exposed to responsibilities roles and projects that are designed to build their expertise in the critical areas, and also designed to provide a context where they can apply the technical knowledge and/or skills they are developing through formal training/ education. Such strategies also make a strong positive statement about the organisation's commitment to its staff and their future, and they have the advantage that the expertise is being grown in staff who are familiar with the culture, context and needs of their organization, and so in principle should be able to use their growing expertise with great precision and facility.

This is obviously a much slower expertise growing strategy than the previous two. It assumes the ability to plan and manage careers in the long term despite changes in strategy, policy and market conditions, and so is likely to work best in very stable organizations, in rapidly growing organizations, or in very large organizations where opportunities for career progression are more frequently available and also foreseeable. It may not work quite so well in competitive job markets where the expertise-growth you are investing in today could easily walk away of a competitor decides to grow its expertise by recruitment. Growing expertise from within may also constrain your experts' awareness of new and emerging knowledge needs, unless they are deliberately exposed to experience and perspectives from outside the organization eg by participation in industry groups, professional associations, university-based education, external job attachments, etc.

(d). Experience-building and Knowledge Transfer

The Experience-building strategy has many of the advantages and disadvantages of the Training and Education strategy above, the major difference being that it is slower and less well-defined. Technical knowledge and skills can be specified more clearly in a way that "experience" in a particular domain cannot. Hence career planning and job placement is less easy to specify, and expectations and sense of progress are less easy to define and monitor. They remain very much an issue of judgment and skill in the organization's leadership.

However, this strategy can be enhanced and accelerated by combining deliberate exposure to experience eg through the use of succession planning, with the use of knowledge transfer strategies. While experiential knowledge cannot be

replaced by codified knowledge or even knowledge sharing activity, the acquisition of useful experience can be accelerated by the use of such strategies.

Some example knowledge transfer strategies that can accelerate experience-building include:

- Communities of practice or other forms of facilitated group sessions where experts can discuss the things they pay attention to, their learning experiences, their routines and tricks of the trade and how they have dealt with challenges, observed or questioned by novices
- Storytelling sessions or interviews where experts describe challenging situations, how they interpreted them, how they responded, and what they learned
- Mentoring, shadowing and coaching where experts guide less experienced staff in what to pay attention to, how to anticipate unfolding events, and how to respond appropriately
- Training simulations and decision games, where novices are taken through scenarios that require experience to navigate effectively, thus gathering experience by proxy and getting feedback on their performance
- Structured interviews designed to elicit the key components of what experts pay attention to, their sense of typicality, how they detect anomalies, how they form judgments and make decisions in challenging situations
- Platforms for asking and answering questions such as bulletin boards, FAQ databases or expertise directories with email or instant messaging links

In considering the knowledge sharing strategies to deploy it is worth considering a number of key questions that may affect the quality of the expert's participation:

- Does the expert have sufficient time allocated for the knowledge transfer activities?
- Do the working patters of the expert make it easy or difficult to participate in the intended transfer activities?
- Are you, the expert and the learner sufficiently clear about the specific knowledge to be transferred and why?
- Does the expert consider this time productive and well spent?
- Is the knowledge gap between expert and learner too large?
- Will the expert feel threatened in any way by the knowledge transfer activity?
- Is the expert temperamentally tuned to the style of sharing activity (eg group sharing, writing answers to questions, telling stories?
- Does the expert have a stake in the success of the knowledge transfer activity?
- Is the expert interested in the knowledge to be transferred?
- What motivates the expert, and is this motivation aligned with the knowledge transfer need?
- Are the continuing learning and experience building needs of the expert also being met?

Your answers to these questions may influence the choice of transfer strategies, as well as other policy or process measures you might need to put in place for the transfer activities to proceed as desired.

Patrick Lambe, 28 October 2007