

Capturing and Transferring Knowledge: basic concepts

School of Nuclear Knowledge Management
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andy.jackson@amec.com

tel. UK +44 1565 684 835

Introduction



- Skills Challenge
 - Learning from Experience
 - Replacing the Experienced
 - Knowledge an Asset
 - Retention
 - Replacing
 - Transfer
 - Examples
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Why are We Here?



Significant challenges facing the Industry, such as:

- Ageing workforce
- Extended lifetime of plants
- Workforce retention in a growing market
- Managing and transferring limited experienced expertise
- New NPP Build on the horizon
- Attrition as retirees stop wanting to work – world tours!

All these require Knowledge Management

So What is the Challenge



- Help bridge the gap between current ways and the future ways of working
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Solutions **Make or Buy** ?



- Recruit from existing pool of capability
 - Potentially increasing levels of pay
 - Sellers market

 - Produce your own capability through investment

 - Outsource skills
 - Strengthen the informed customer role
 - Need to exercise skills to maintain knowledge
 - Regulator approach key
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Re-direct Existing Capability



- Adopt multi-skilling, and reduce number of roles, this has clear commercial benefits, and can provide:
 - greater flexibility to match workload to the resource available with the necessary skills
 - an increased pool of specialised experience available
 - ability to multi-skill has become more important as too often the same 'expert' is used to the exclusion of others
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K Transfer through Training



- Experience identifies that most effective training takes place on the job, under the supervision of a suitably experienced mentor:
 - ability of staff to absorb knowledge is often underestimated
 - especially younger staff who have been doing just that recently at University
 - recipient should be keen to learn new skills
 - sufficient budget is required to fund the learning curve
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Transfer Caution



- Effective mentoring does not come naturally to all, and training in mentoring may be required
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SQEP definition

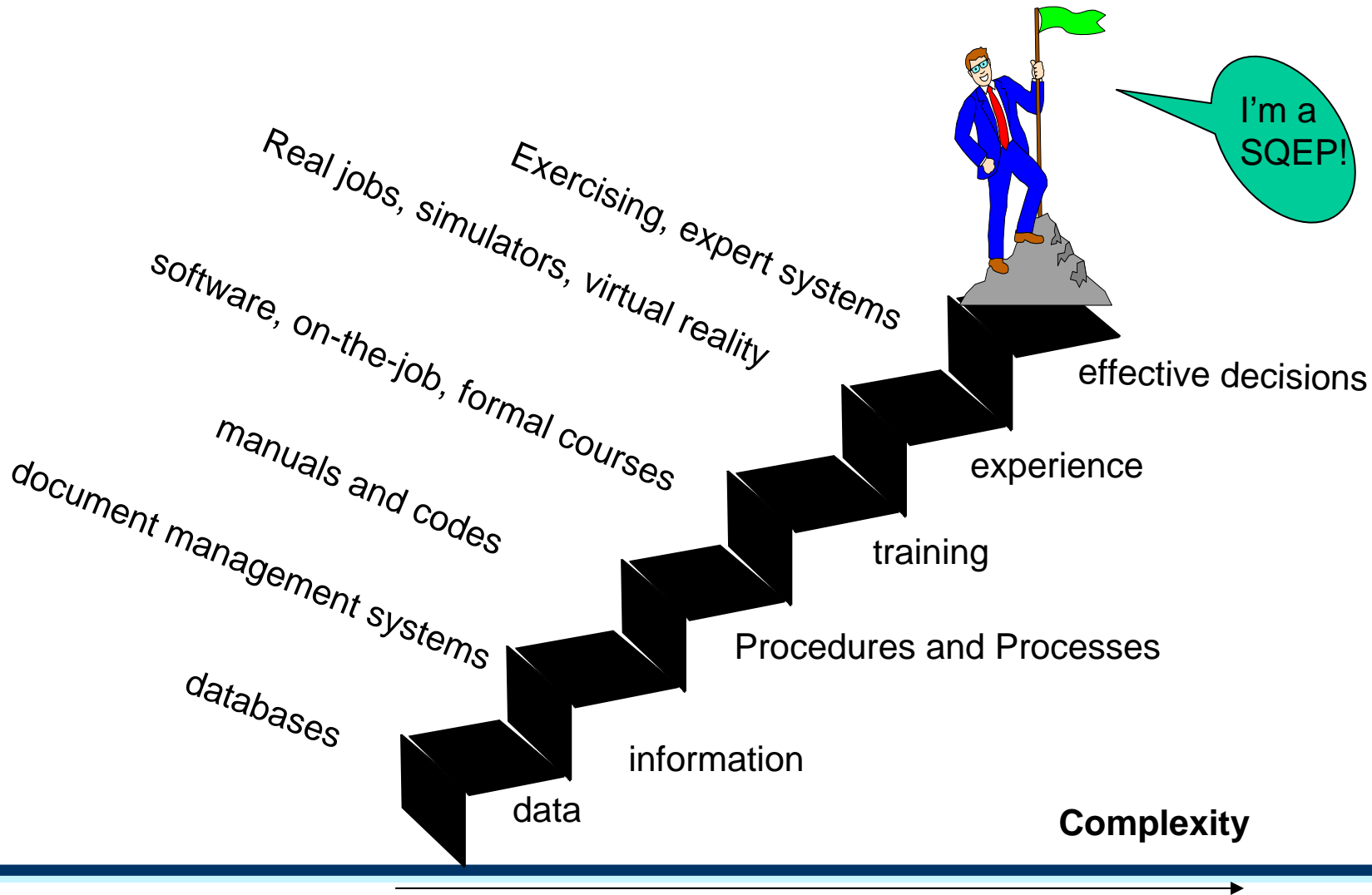


- AMEC Nuclear UK define a Suitably Qualified and Experienced Person (SQEP), as:

A person who has sufficient qualifications and experience in a defined skill area, to be able to implement that skill:

- 1) Supervised
 - 2) Unsupervised
 - 3) Advising and guiding others
 - 4) Company “expert”
 - 5) Externally recognised “expert”
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What makes a SQEP ?



The SQEP as an expert

An expert has sufficient confidence, knowledge and understanding to be capable of inventing new and appropriate responses as new demands occur



Explicit Knowledge - Pitfalls ?



- Lessons-learned databases and other technical tools can be the only means of keeping information at hand for future use
 - **Caution:**
 - experience shows us that databases, portals and other electronic repositories are often ignored by workers who would rather get information from colleagues
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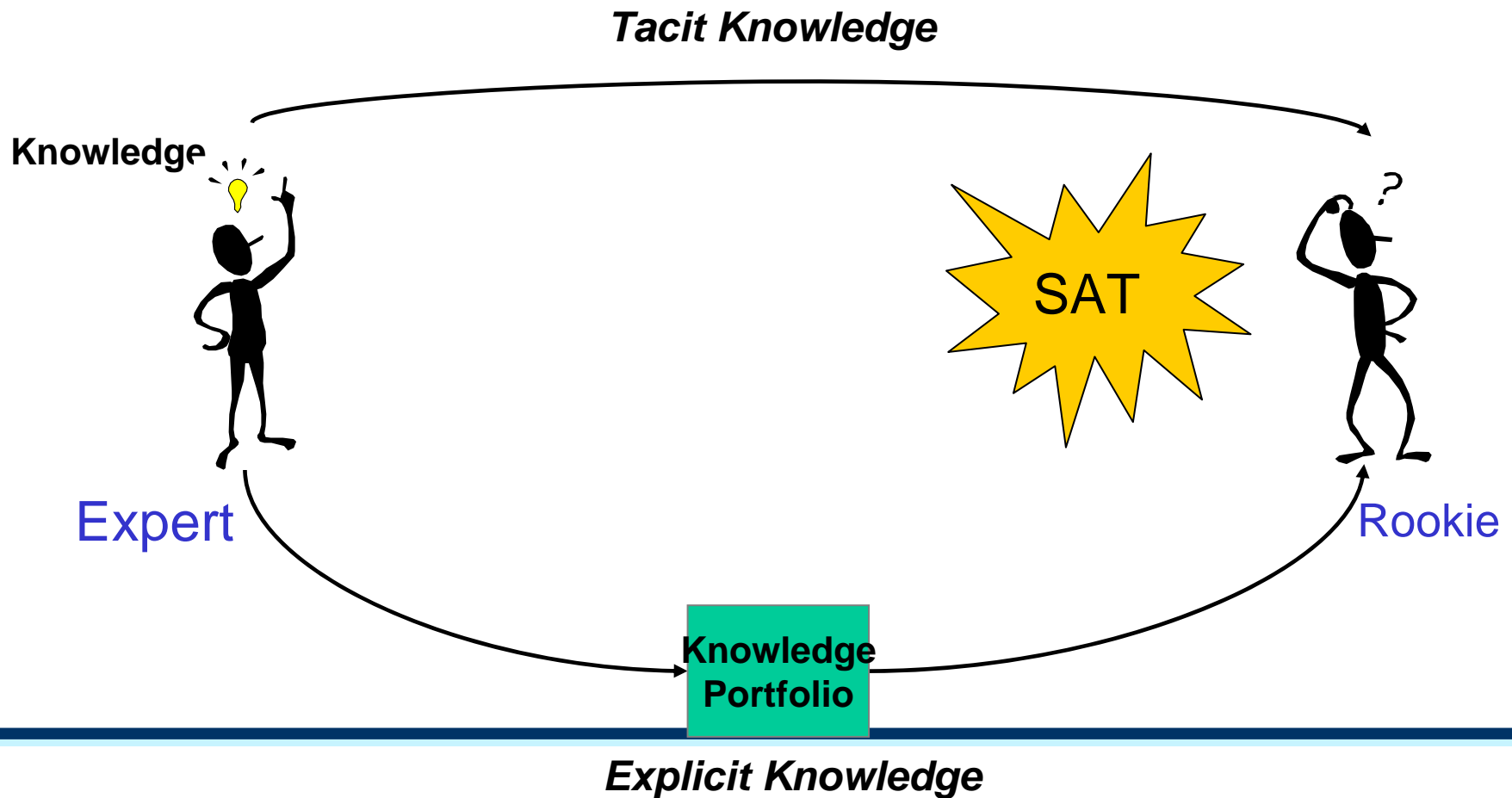
Tacit Knowledge



- Harder to capture and pass on because it includes SQEP knowledge, such as stories, impressions and judgemental solutions
 - Harder to get from people because it accumulates over years of experience, and a scientist or engineer may not know how to describe it
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Knowledge Transfer ?

OJT, dialogue, debate, coaching, mentoring



As part of a systematic Integrated approach, develop:

- A clear taxonomy for helping to navigate knowledge topics
 - Ready access to the gathered knowledge
 - Good capability to search across bases of information
 - Expertise captured and mapped for teaching and mentoring (SQEPS)
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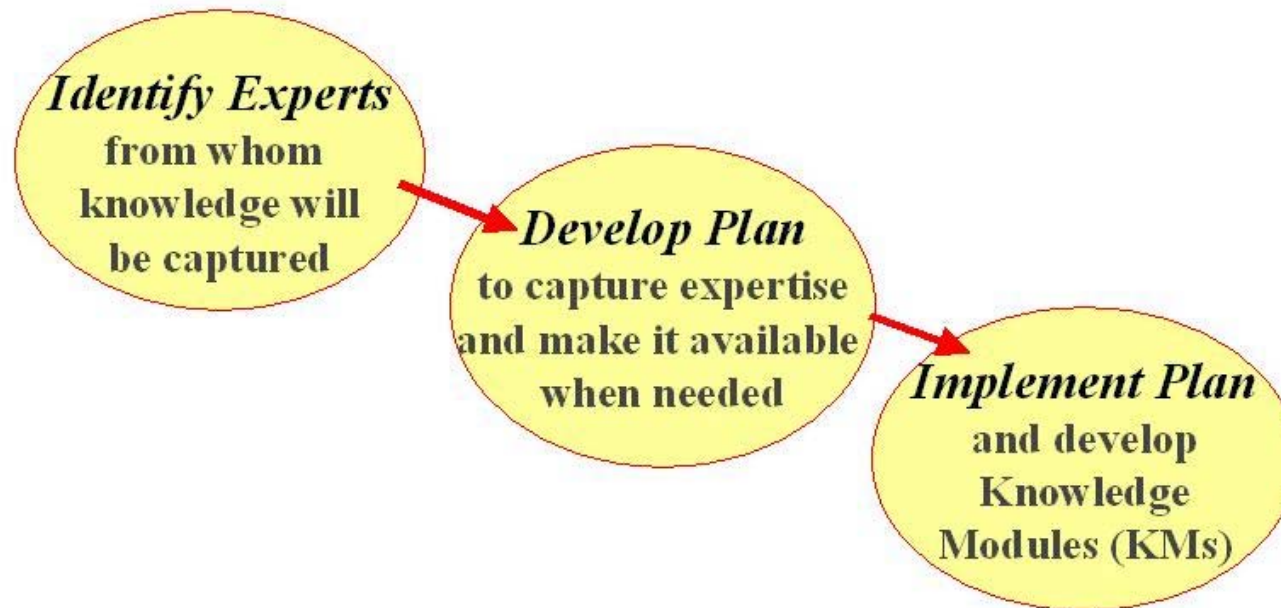
- Gather and record Individuals tacit knowledge critical to the Organisation:
 - Individuals networks and interfaces
 - Specific utility knowledge
 - Safety based knowledge (additional)
 - Decision rationale
 - Historic knowledge
 - Caution: some of these will not be well defined topics areas
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Capture Scope



- Adopt a staged approach
 - map out the individuals high level know-how
 - highlight topic areas which would be at risk of being lost
 - key to only capture the critical subset of knowledge rather than the individuals full breadth
 - Structure interviews to these needs
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EPRI Method - IAEA-TECDOC



Example Tacit Capture Project



- Scope definition
 - kick-off review for *Employee*
 - pre-interview define what structure the deliverable will take
 - plan series of interviews with *Employee* to populate the deliverable
 - interviews with Peers, end users and customers
 - interview transcription review and validation
 - review points
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- Some benefits difficult to quantify:
 - risk reduction: maintain safety and commercial focus without loss during change
 - enhance effectiveness and efficiency of the new users of information
 - reduce chance of repeating work
 - provide access to decision rationale, including why some decisions were not taken
 - formalise individuals “array” of information
 - supports succession planning
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- Design output to satisfy the needs and expectations of the users
 - Decide on your ideal medium to share knowledge and deliver the most benefit, examples such are:
 - intranet site for communication / navigation
 - include models of skills and knowledge
 - keyword searchable
 - contain decision rationale trees of engineering judgment
 - records historical specific issues
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- Continue to test and validate with users, does it meet their needs ?
 - highlight existence of information in the organisation, and monitor access
 - ensure there is ownership / maintenance responsibility for the information
 - clear understanding of the shelf-life information ?
 - storage of recordings and appropriate software as a record for QA purposes
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Knowledge Road Blocks



- Effectiveness of the knowledge transfer is very dependent upon the attitudes of the individuals involved
 - Cultural attitudes can also be an impediment, such as the role of an Individual Contributor, can stifle the spread of knowledge and opportunities
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- Mistaken belief by some that retaining knowledge by an individual makes that individual of more value to the organisation
 - Successfully accomplishing knowledge transfer should be recognised by the company to the same extent as individual contributions by experts currently are
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Thank you



ANY QUESTIONS?



IAEA
International Atomic Energy Agency

