Learning from experience

How can other people's successes and failures help us to do our job better?
In this article, the penultimate of the present series, Terry Cooke-Davies reviews what prevents project managers from learning from each others' experience, and what can be done to improve the situation.

At the end of the 1980s one of the UK's largest and most successful companies pulled together and published a beautifully prepared little booklet containing all the most important lessons that had emerged from post-project reviews about the causes of problems on projects.

Written clearly and concisely, and gathered into sensible groupings for easy reference, each lesson contained clear guidance about what could be done to avoid similar problems from recurring on future projects.

It was a classic example of good practice in recording and publicizing 'lessons learned'.

Five years or so passed, and the company had clearly emerged from the recession. Times were good, but the project management community had committed itself to some pretty challenging objectives. It needed all the help it could muster to 'raise its game', so it decided to repeat the exercise and see what was now causing difficulties. Once more the internal audit department gathered together all the records of post-project reviews, and set about the task of preparing the new booklet.

Only they discovered a snag. A large number of the lessons that had cropped up in post-project reviews during the past five years were the same as those described so clearly in the previous booklet. It appeared that even though the lessons had been well described, and broadly published, they hadn't been learned – at least not by the people who most needed to learn from them.

Why don't intelligent, well-motivated project managers learn from the mistakes made by their hapless colleagues?

There must be something going on that discourages us from learning in this way. And not just those people who find themselves managing a project as a kind of 'spare time activity' alongside their normal job – the so-called 'accidental project managers'. Whatever it is that is going on affects experienced, professional project managers as well as their less experienced 'accidental' colleagues. And it is something that is costing organizations today a great deal of money.

So the question that this article will seek to answer is, what is going on that makes it so difficult for us to learn from other people's experience? What are the factors that cost shareholders and clients alike so much money?

There seem to be three different sets of factors at work, connected respectively with the nature of projects and project management, the nature of learning, the nature of organizations.

The nature of projects and project management

Since this is a project management magazine, I suppose that there is a fair chance that if you are reading this you are involved in some way with projects or project management, which makes this topic a logical place to start.

All the evidence from survey after survey suggests that post project reviews are not carried out as a matter of course, regardless of what practices are recommended either by an organization, or by the project management profession. Figure 1, which incorporates the results of Human Systems' most recent analysis, indicates that only one in ten organizations are happy with their conduct of post-project reviews, even though nearly a half of them have procedures that would be satisfactory were they applied. It appears that we don't take the opportunity to review the lessons while they are fresh in our minds.
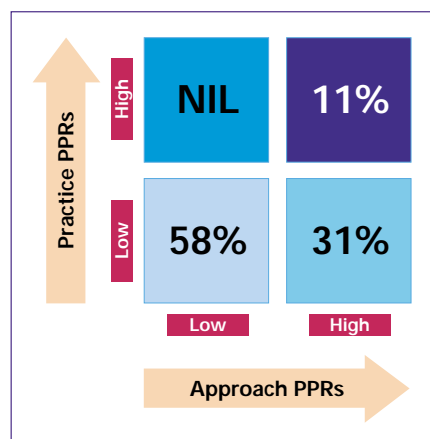

Figure 1: The Theory and Practice of Post Project Reviews (PPRs)

In a way, this is understandable. Not only do closeout activities cost money, and appear to offer little in return, but also effective project managers tend to be very task-oriented people with a strong commitment to the project, and a desire to deliver results. They tend to prefer to organize tasks for action rather than sitting in meetings reflecting on events that they can no longer influence. Preferring practice to theory, they tend to know what they have concluded from the last project and have now moved on, in

their thinking, to their next challenge.

Project managers tend to support only those activities that they can see add real value, either to their project or to the organization as a whole. And the problem with post-project reviews is that even when they are held, little use is made of the data that they produce. This is clearly illustrated by the anecdote with which this article opened and it does little to encourage project managers to devote energy to this time consuming chore.

As Figure 2 shows, however, there is a definite payoff if, at the start of a project, lessons that have been learned on similar previous projects can be fed into the startup process. The I-shaped bars show the limits within which one can be confident of a particular schedule performance against plan (95% Confidence Interval or CI), with the little square in the middle of the 'I' being the most likely result. As the chart shows, those projects that have a fully adequate review of relevant lessons as a part of their startup project are likely to achieve an on-time outcome, whereas those with only a partially adequate or worse, are most likely to end up with a 15% or so delay.[i]

A further barrier to learning from experience is the fact that every project is to some extent different from every other one. This difficulty is exacerbated by the fact that there is no accepted typology for projects, although there are some strong candidates including the 2x2 matrix of clarity often used by Eddie Obeng (Painting by numbers, quests, making movies, and walking in fog) and the distinctions drawn by the CITI organisation.

Recent books such as 'Sorting Things Out'[ii] and 'Infosense'[iii] have shown just how the lack of widely accepted categories prevents the general spread of information in a form that leads to
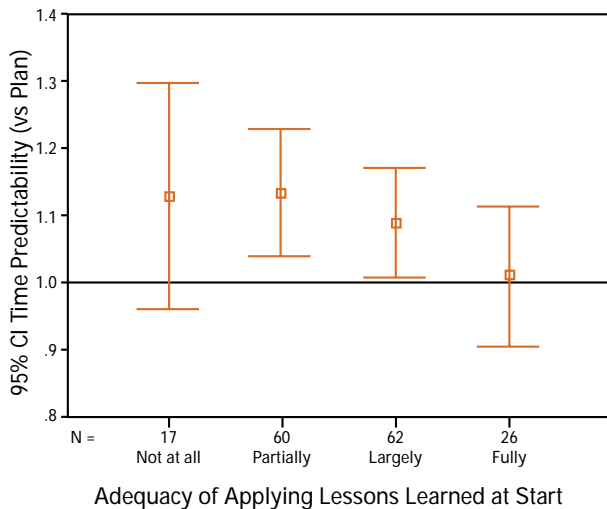
Figure 2: Improvement of Time Predictability when Lessons Learned are Applied at Startup.

knowledge. They demonstrate that how we 'sort things out' in our own mind is a key factor in our ability both to acquire expertise, and to make sense of the world. So if we wish to encourage people to learn from their experience on projects, a way of 'sorting out' different kinds of projects is an important prerequisite.

The final two factors that stem from the nature of projects and project management are each concerned with the focus of the project management profession and its practitioners.

Firstly, the fact that three times as much has been published on the 'technical' dimension of projects than it has on the 'human' dimension[iv], suggests that such a really 'soft' topic as how people learn from experience is hardly likely to be at the top of the professional agenda.

And secondly, the fact that the profession has not yet embraced the concept of 'continuous improvement' as it applies to project management processes, means that there is no process framework to encourage learning from experience.

The nature of learning
When project managers talk about 'lessons learned' they normally envisage a textual summary of conclusions drawn from a review of what went well and what went badly. This is probably a useful thing to do, especially if the reviews are available when they are most needed (at the start of a project). But 'learning from experience' only happens when we recognise that a particular situation facing us calls for us to do something now that we wouldn't have done were it not for the prior experience of someone else.

That accounts for the obvious value of 'lessons learned' shown by Figure 2 when they are digested at the outset of a project.

I made reference above to the book 'Infosense' by Keith Devlin. This book contains a very readable account of a theory that is very important to our understanding of how information is converted into knowledge. Known as 'situation theory' and developed in the early 1980s, after twenty years of theoretical development and practical research it is beginning to shed a very helpful light on many issues about information and communication. Its relevance to learning in a project management sense is illustrated in Figure 3 which depicts, using the notation of situation theory, the steps by which a project manager determines how to respond to the absence of a project sponsor from an important meeting of the project review board.

The significant elements of learning that are illustrated in the diagram are:
● the recognition that situation s (absent sponsor) is appropriately classified as belonging to type S (stakeholder problems)
● the knowledge by the project manager of the appropriate 'constraint' - which is a technical term within situation theory for the rules or laws or calculations that enable (in his case) a project manager to recognise that a problem of type S calls for a response of type R (stakeholder management).
● The selection of response r (talk to the sponsor) as an appropriate instance of the type of response R that is called for.

Even this simple illustration shows how important knowledge, experience and judgment are in the day-to-day world of the project manager. And we really earn our money when we are faced with far more complex situations than this.

That's perhaps why the most appropriate environment for 'learning from experience' is 'situated learning', and this calls for a very different environment than is usually provided on a project. This second factor about the nature of learning itself underlies the very important work championed by Etienne Wenger about 'communities of practice'. There is only so much about project management that can be learned in the classroom, and 'book learning' is very different from 'situated learning'. The challenge is how to create opportunities for project managers to share these real experiences of their colleagues.

The third aspect of learning that I want to touch on is the way that the nature of the language we use creates the context in which we 'make sense' of the world. The language of project management is a 'control language' and not a 'learning language'. That is perhaps not surprising, since project management's origins lie in control theory and the main task of the project manager is often defined as delivering the project on time, within budget, and to the right quality standards (including both scope and product performance). However, the language of control is very different from the language of learning, and two very different streams of work come to mind here. Janice Thomas and her colleagues in Calgary are doing excellent work to explore how the language used by project managers influences not only learning[v], but also the dialogue between project management and senior management[vi].

The second stream of work is on 'How the way we talk can change the way we work'. This is the title of an excellent book written in 2001 by Robert Kegan and Lisa Laskow Lahey. In my view, it is a 'must read' book for anyone who is serious about learning from experience, since it demonstrates most compellingly how seven languages such as the language of blame or of 'New Year's Resolutions' hinder learning. Kegan and Lahey don't leave it there, however. They go on to show how each of these seven languages can be substituted for more constructive ones that *do* lead to learning from experience.

The nature of organizations.
The third set of factors that seems to inhibit our ability to learn from experience are those that relate to the nature of the organizations within which projects are being carried out.

I first became aware of the impact of organizational culture on how people learn when I read an article by Chris Argyris called 'Teaching Smart People How to Learn'[vii]. In it he shows very convincingly the kind of organizational 'games' that are played, and that in turn prevent knowledge from leading to action.
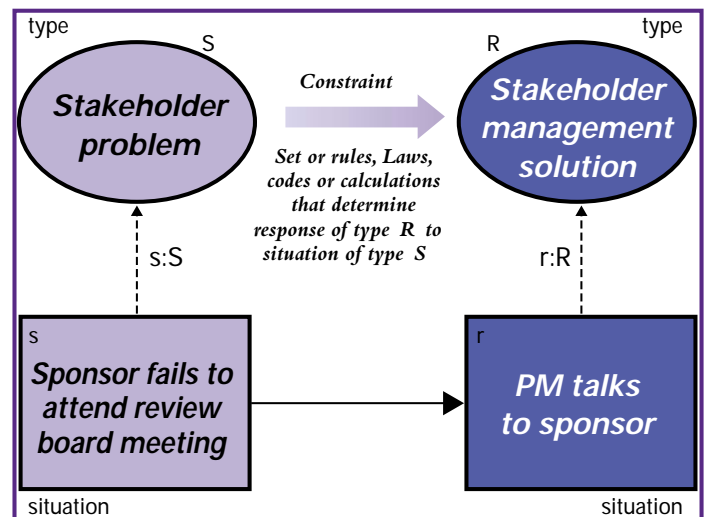

Figure 3: Situation Theory as Applied to a Project Management Situation.

More recently, a broader analysis of the different kinds of toxic management environments has been coupled with research into the extent to which people fail to put into practice what they know they should do - the so-called 'Knowing-Doing Gap'. In their book of the same name[viii], Pfeffer and Sutton review unhealthy environments in which talk substitutes for action, memory substitutes for thinking, fear prevents acting on knowledge, measurement obstructs good judgement and internal competition turns friends into enemies. They go on to derive eight principles by which the knowing-doing gap can be reduced or removed. It is another book that I strongly recommend.

So what's to be done?

Given this overwhelming evidence that 'learning from experience' is so difficult, what can we do to make any headway? Are there any simple remedies? Well yes - and no. I'm sorry to use a cliché, but while the remedies are indeed simple, but they're far from easy. Here are a handful of suggestions that are well worth considering, and that cover all three of the groups of factors covered in this article.

1. Regardless of whether or not your organization has a good track record on post project reviews, institute a programme of intermediate project reviews (IPRs) led by trained and skilled facilitators with the explicit purpose of helping the attendees to learn from each other's experience.

2. Find an effective way of incorporating into project startup practices a review of relevant lessons that have been learned from similar projects in the past. Ideally this is done in such a way that the 'facts behind the facts' emerge, and the causes of the mistakes are reflected in the plans for the current project.

3. Encourage project management communities of practice to form, and to take up the formal challenge of creating a true 'learning organization'.

4. Develop ways of introducing the learning agenda into project management, alongside the control agenda. One really effective means of this, pioneered by Ed Hoffman at NASA, is to develop project managers' skills in writing narrative 'stories' in such a way that the true lessons are conveyed in a way that makes it easy to learn from them and remember them.

5. Finally, review the whole suite of metrics that are used by all departments and job-types to report on project performance, and institute an organization-wide dialogue on how to use these to identify opportunities for learning and improvement, rather than to identify problems.

Whichever of these you take on board, or indeed any of the other possibilities implicit in the discussions initiated by this article, you will find that there is a huge untapped potential value lying asleep in your organization - your collective experience and wisdom.

Terry is the Managing Director of Human Systems International Limited, a company with operations in UK, USA and Australia, that supports a global network of organisations that are committed to working together to improve their own organisation's results through projects. People representing member organizations work together in workshops, in working parties and in targeted benchmarking study teams. Terry can be contacted at cooke-daviest@humansystems.co.uk.

i Unpublished analysis of 201 projects. Human Systems International Limited. 2002.
ii Geoffrey C. Bowker and Susan Leigh Star, (1999), 'Sorting Things Out - Classification and Its Consequences', The MIT Press, Cambridge, Mass.
iii Keith Devlin, (1999), 'Infosense - Turning Information into Knowledge', Freeman, New York, NY.
iv See Terry Cooke-Davies, (2002), 'It's People That Get Things Done', Project Manager Today, January 2002.
v Janice Thomas and Jimmy Tjäder, (2000), 'On learning and control - competing paradigms or co-existing requirements for managing projects in ambiguous situations?', IRNOP IV, Sydney.
vi Dr. Janice Thomas et. al., (2001), 'Selling PM to Executives - Phase II', PMI Symposium, Nashville, Tennessee.
vii Chris Argyris, (1991), 'Teaching Smart People How to Learn', Harvard Business Review, May-June 1991.
viii Jeffrey Pfeffer and Robert I. Sutton, (2000), 'The Knowing-Doing Gap', Harvard Business School Press.