Complexity Solutions
Transforming Complexity into Opportunity

Complexity and Project Management

We have worked out over the last few decades how to manage complicated projects, and IT has been a powerful enabler. But what about *complex* projects, and what is the difference?

The word *complex* is used in different ways and to many people is exchangeable with *complicated*, but there is a vital distinction emerging from the scientific study of complexity across multiple domains, from physics to the social sciences. In this context an Airbus A380 is *complicated*, but a conversation between two people is *complex,* with unpredictable outcomes. It follows that any project which is highly dependent on *people* needs to be considered as potentially complex. Many projects will be both complicated and complex, but because those properties are so different, we need different methods and tools to deal with them.

Mainstream management, including project management, is rooted in the Newtonian mechanical paradigm, and this happens to deal very well with 'complicatedness' (note that I managed to avoid using the word 'complexity', an unfortunate temptation of the English language). Realising and accepting that this paradigm has limitations, and indeed does not fit the reality of much of our everyday experience, is itself a big step forward. Some of us have taken that step, other have not. And people working from different paradigms tend not to understand each other ('they just don't get it!')

And for those who do embrace the complexity paradigm, since it is a relatively new way of thinking (at least in this context) there is tension and scope for confusion as the underlying physical science is extended into broader metaphor for application in other realms. There is not (yet) a clear 'instruction manual' on how to apply these concepts to managing projects.

Stakeholder engagement falls firmly into the complex domain. Imagine a situation where everyone with a stake in the project sees the current situation and the desired outcome in the same way; imagine then that they can communicate in an unambiguous way with everyone else involved; and that their opinions and requirements are not shaped by what they see and hear as the project develops: then, perhaps the tools and techniques we are currently using would work dependably.

Wicked problems and Messes

Complex issues have been recognised for quite a while, sometimes using different terminology. Russ Ackoff defined a 'mess' as a system of problems, in which each problem interacts with others.

'Wicked problems' are characterised by the lack of an agreement on what the problem is; incomplete, contradictory, and changing requirements; and complex interdependencies. The effort to solve one aspect of a wicked problem may reveal or create other problems.

In this increasingly complex world we need help, and we need to consider a wider range of approaches and tools. The good news is that many of these are already well established in fields currently regarded as beyond the domain of 'project management'. For example, Soft Systems Methodology was developed to deal with the 'multiple worldview' issue. For an introduction to a range of techniques see 'Tools for Complex Projects' by Remington and Pollack. The Synplex process also works in this domain.

A number of practitioners and authors have started to address this area, including Terry Cooke-Davies, with the notably titled "We're not in Kansas anymore Toto". Various bodies and consortia, including ICCPM and SULEiS are forming to share information on what works and to develop a new body of knowledge.

So, whether your project is simply 'complex', dangerously wicked, or just a mess, you are not alone. But you may need to look beyond your current toolbox.

Peter Miles, 9 Sep 2010