

# MANG6143 Project Risk Management

## Performance Uncertainty Management Processes - Overview and Appraisal

*Thomas J. Smith*

MEng Electronic Engineering with Power Systems  
University of Southampton

March 27, 2014

### 1 Approaches to Uncertainty and Underlying Complexity Management - 1200

The phrasing “uncertainty and underlying complexity management” has been specifically selected as the title of this section to contrast with the risk management title of the the course as a whole. Traditional views of risk management offer a very limited scope and an incomplete picture. Often the focus is on event uncertainty reflecting the standard dictionary definition of risk: *a hazard, chance of bad consequences, exposure to mischance* (Stevenson and Waite, 2011). This approach does not adequately address the whole of the uncertainty effecting the project, and in the worst case can lead to severe mismanagement and failed delivery of project objectives. The Performance Uncertainty Management Process (PUMP) framework encourages departure from the project-centric approach advocated by best practice, to consider all corporate, operational and planning sources of uncertainty. This expanded field of view allows the capture of ambiguity uncertainty, inherent variability, systematic uncertainty, as well as event uncertainty. Using the PUMP framework shifts the focus of risk management to the achievement of opportunity efficiency and risk efficiency, through the vehicle of uncertainty management.

Procedures are a common way to ensure consistency and quality is maintained through a range of repeated applications. While a good procedure is often designed to be simple, repeatable and transparent, this cannot be a uniform approach. Some high complexity, high uncertainty projects require sophisticated, tailored procedures. The PUMP framework supports this concept through the idea of PUMP packs, that is a set of PUMPs tailored to specific projects and project lifecycle stages. Particularly, this paper focusses on PUMPs within the context of the E&D strategy shaping stage.

A traditional four stage view of the asset/change lifecycle is a useful starting point to consider the scope of a project. The four stages are conceptualize, planning, execution and delivery (E&D) and

Utilization. As explained, effective uncertainty management requires a macro-view of the entire project to capture the whole of the uncertainty. This leads to an elaboration of the lifecycle to incorporate 12 stages, each emphasizing a different management purpose and outcome. Both views are shown in figure 1.

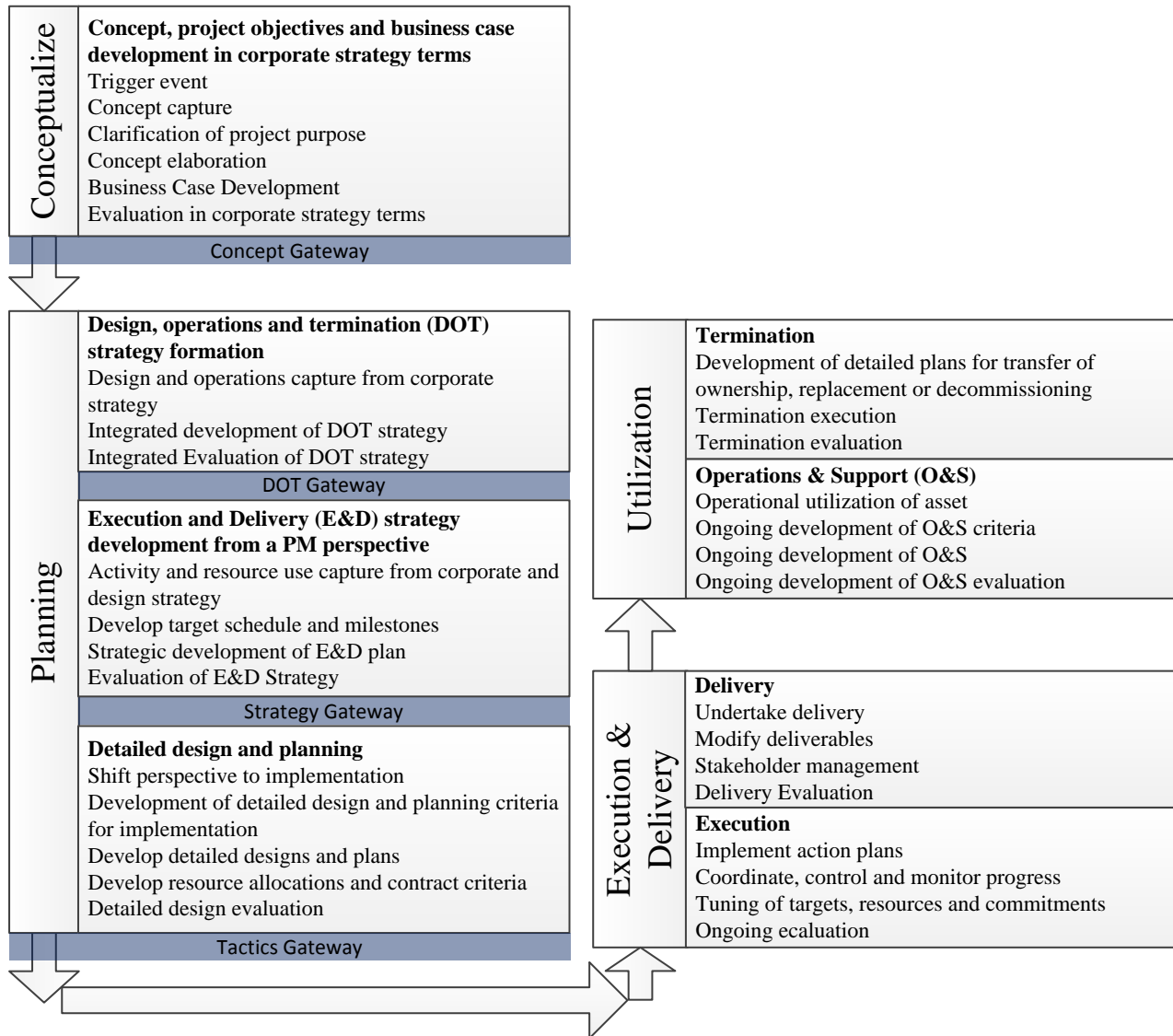


Figure 1: Twelve-stage asset/change lifecycle - adapted from Chapman and Ward (2011)

The planning stage of the traditional lifecycle is expanded to three shaping stages and three governance stages. The design, operations and termination (DOT) stage aims to derive a strategy for DOT from the corporate strategy developed in the conceptualize stage. A basic set of design criteria are built, and the objectives of the project are refined. Integrated evaluation is important to ensure non-viable projects are halted before large expenditure. The execution and delivery (E&D) strategy shaping stage takes a form more familiar in traditional project management. The activity and resource requirements are derived from the corporate strategy and the DOT strategy. This stage considers aspects of the project execution and asks how the asset/change will be delivered? Schedule derivation takes place in the E&D stage, including the reconciliation of corporate expectation and real-world plausibility. Again, integrated evaluation is vital to ensuring only viable projects proceed to later more expensive stages of the lifecycle. This paper is concerned with PUMPs particularly tailored to this lifecycle stage.

## 1.1 The PUMP Process

The PUMP approach was developed through the assimilation and reflection upon industrial experience. SCERT 1976 Acres International and BP.

The generic PUMP process is a seven stage iterative cycle as shown in figure 1. An linear ‘right first time’ approach is not a clarity efficient methodology. The 80:20 rule empirically states that 20% of the issues causes 80% of the problems. The first iteration of the PUMP is a high level sweep to identify the key areas of concern. Subsequent iterations focus on these issues until a sufficient level of clarity is achieved. This allows the achievement of clarity efficiency, by minimising time spent on unnecessary detail while achieving the required level of understanding.

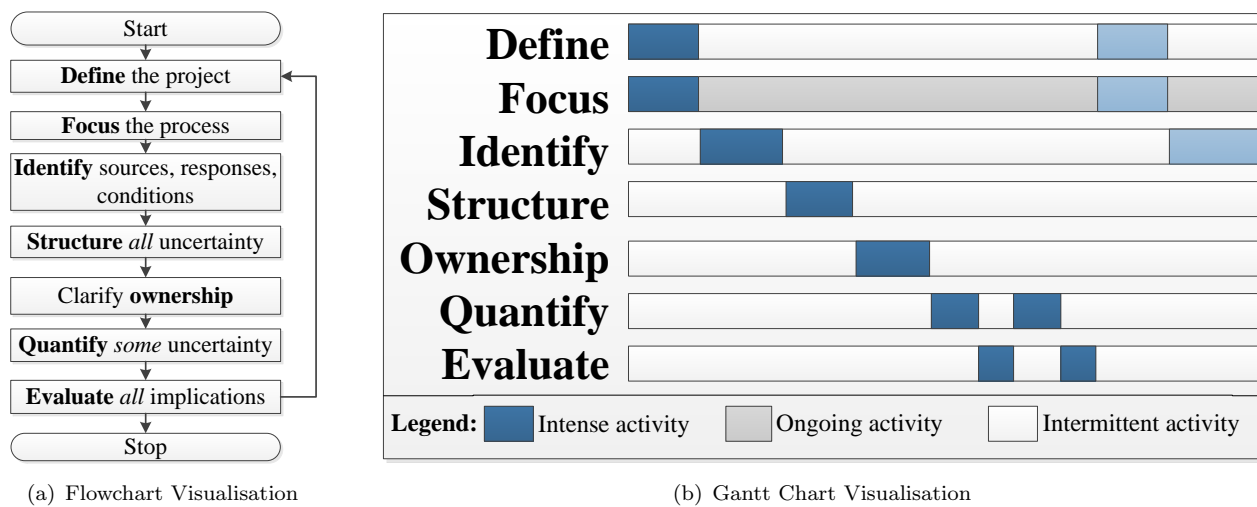


Figure 2: The generic PUMP process - adapted from Chapman and Ward (2011)

The initiating phase of the generic PUMP is the define phase. The define phase defines and develops an understanding of the project in a bid to prepare to ask the right questions in subsequent phases. It features high level context capture and approach development at a strategic level. There are two key activities in this phase:

- *Consolidate* - gather and integrate relevant existing information,
- *Elaborate and Resolve* - fill the gaps in information and resolve conflicting views and inconsistencies.

A useful framework for adequately addressing these issues is the 7W's: where, who, why, what, whichway, wherewithall, when? Using the 7W's to consolidate the existing information, then sub-iterating in order to sufficiently define the project and bridge any gaps is a useful framework to complete this phase. The phase is complete when the project deliverables are fit for purpose.

The focus phase ...

The identify phase ... This phase is further elaborated in section ??.

The structure phase ...

The ownership phase ...

The evaluate phase ... This phase is further elaborated in section ??.

## 1.2 Contrast with Other Risk Management Processes

Contrast with PUMP and PMI PMBOK and others.

## 1.3 The Clarity Efficient Approach

Summarise that PUMPS offer a higher level of clarity for the project as a whole rather than  
1200words.

## 2 Identification of Uncertainty

For the identify phase of the PUMP approach, in the execution and delivery strategy shaping phase of a projects lifecycle, explain concisely in your own words what you believe are the key features of a PUMP approach, comparing these features with the PMI PIMBOK approach or any other form of common practice you are familiar with. Your discussion should demonstrate your ability to understand a particular area of the course material in depth, based on selective reading, critical analysis and the case study exercise. Use examples to illustrate your discussion if you wish, making use of the Samdo case study if you wish, but concentrate on concepts and principles. Build on your Part 1 answer, avoiding repetition of earlier discussion. 900words.

## 3 Evaluating Risk Management Processes

For the evaluate phase of the PUMP approach, in the execution and delivery strategy shaping phase of a projects lifecycle, explain concisely in your own words what you believe are the key features of a PUMP approach, comparing these features with the PMI PIMBOK approach or any other form of common practice you are familiar with. Your discussion should demonstrate your ability to understand a particular area of the course material in depth, based on selective reading, critical analysis and the case study exercise. Use examples to illustrate your discussion if you wish, and make use of the Transcon case study if you wish, but concentrate on concepts and principles. Build on your Parts 1 and 2 answers, avoiding repetition.

900 words.

---

## References

- Chapman, C. and Ward, S. (2011). *How to Manage Project Opportunity and Risk*. John Wiley & Sons Ltd.
- Stevenson, A. and Waite, M. (2011). *Concise Oxford English Dictionary*. Concise Oxford English Dictionary. OUP Oxford.