

## Notes on the relevance of contexts for program/project management

*By Alan Stretton*

### **ABSTRACT**

There has been substantial criticism in more recent times that some sections of the program/project management literature do not recognise the consequences of the more dynamic/complex contexts in which programs/projects are now being undertaken. In many cases such criticism is evidently reasonable. However, in spite of increased dynamics and complexities of modern environments, there are still many programs and projects which are undertaken in relatively stable/predictable contexts. This paper identifies and discusses some groupings of programs/projects in the latter category. Finally, a chart is offered which summarises some of the main consequences of each of these two types of contexts for both the practice of program/project management, and for relevant research.

### **INTRODUCTION**

In a paper in *PM World Today* (Stretton 2011e) I discussed some consequences for both general management and program/project management in the broad movement from relatively stable, predictable environments in the past towards more dynamic, complex environments in more recent times.

There is some criticism in the literature of writers who allegedly assume that current environments are relatively static and predictable. For example, Pellegrinelli 2008:11, discussing programs, criticises PMI's *Standard for Program Management* (PMI 2006a):

It shies away from recognising and addressing the management challenges associated with the complex, shifting and politically charged contexts in which many programme managers find themselves.

In like manner, Morris 2004, in discussing inadequacies of (then) existing models of project management, including PMI's *PMBOK Guide* (PMI 2000), said,

What has changed however is the socio-economic business context in which projects are managed; the technical environment; and the commercial conditions. Project management, like all management, is contextual, and it is managing projects in their changing, modern contexts that is the real challenge.

In effect, these and other commentators are saying that certain bodies of knowledge and similar program/project management standards implicitly assume that the environments in which programs/projects are undertaken are relatively stable/predictable, but that those of the real world are dynamic/complex – and that therefore such standards are inadequate.

This may well be so to some degree. However, it should not be assumed that all programs and projects are undertaken in dynamic complex contexts. Indeed, there are still many instances where programs/projects are undertaken in relatively stable and predictable contexts. We now discuss some of these instances, as they appear in the literature.

### SOME STABLE/PREDICABLE CONTEXTS

#### Amongst ‘Standalone’ projects and programs

There appear to be many cases where ‘standalone’ projects and programs would be undertaken in a substantially stable/predictable context. Some examples include:

#### **Type 1 projects (Turner & Cochrane 1993)**

Turner & Cochrane 1993 proposed a four-type goals-and-methods matrix as shown below. The parameters are the extent to which the goals are well defined, and the methods well defined, at the outset of the project.

For Type 1 projects, both the goals and the methods of achieving them are well defined at the outset. This implies that Type 1 projects are undertaken in a relatively stable/predictable context.

<b>Methods Well Defined</b>	<b>No</b>	<b>Type 2 Project</b> e.g. Product Development	<b>Type 4 Project</b> e.g. Research; Organisational Change	<b>Type 2:</b> Methods for achieving project goals are initially uncertain <b>Type 4:</b> Both methods and goals initially uncertain
	<b>Yes</b>	<b>Type 1 Project</b> e.g. Engineering	<b>Type 3 Project</b> e.g. Applications Software Development	<b>Type 1:</b> Both goals and methods initially known <b>Type 3:</b> Goals of the project are initially uncertain
		<b>Yes</b>	<b>No</b>	
		<b>Goals Well Defined</b>		

**Figure 1: Adapted from Turner & Cochrane’s Figure 1. Goals-and-methods matrix**

For the other three project types, there are varying degree of uncertainty, which evidently implies that they are undertaken in more dynamic/complex contexts.

### Low-Tech Assembly projects (Shenhar 1995)

Shenhar and his colleagues have developed substantial models which classify projects in various ways, in the context of what they describe as different project 'dimensions'. Following is one of Shenhar's earlier models which is concerned with two such dimensions, namely technological uncertainty, and system scope.

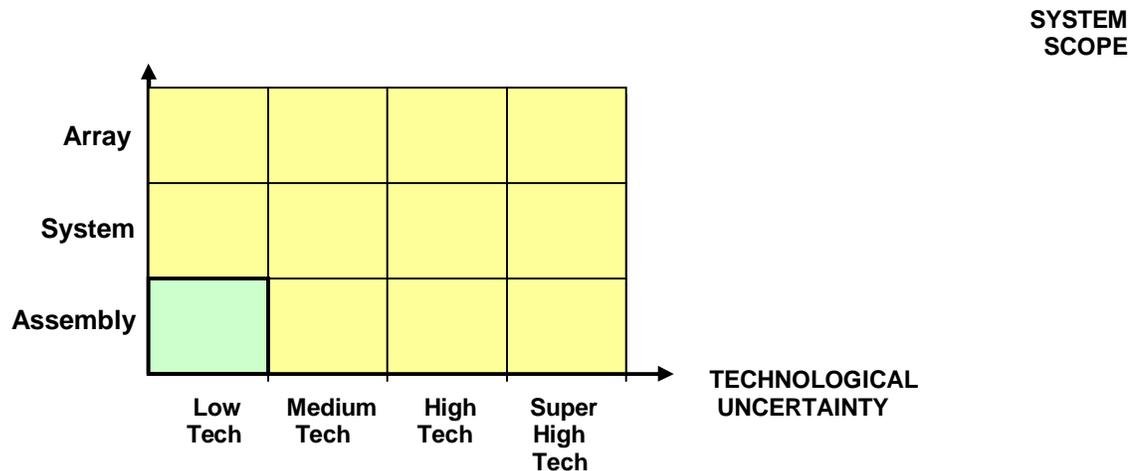


Figure 2: Shenhar 1995, Figure1. A two-dimensional taxonomy of engineering projects and systems

Shenhar's **Low-Tech** projects rely on existing and well-established technologies - e.g. rebuilding an existing product. In this regard their context is relatively stable/predictable.

The degree of technological uncertainty increases along the x-axis. Medium-Tech projects mainly use existing or base technology, but also incorporate some new technology or a new feature that did not exist in previous products. High-Tech and Super High-Tech projects incorporate largely new technologies. These increasing degrees of technological uncertainty imply more dynamic/complex project contexts.

Shenhar's **Assembly** projects involve creating a collection of elements, components, and modules combined into a single unit or entity that is performing a single function. Assembly projects are relatively simple, and their context basically stable/predictable.

Proceeding up the y-axis, System-type projects involve a complex collection of interactive elements and subsystems, whilst Array systems are even larger and more complex. These attributes identify both project types with dynamic/complex contexts.

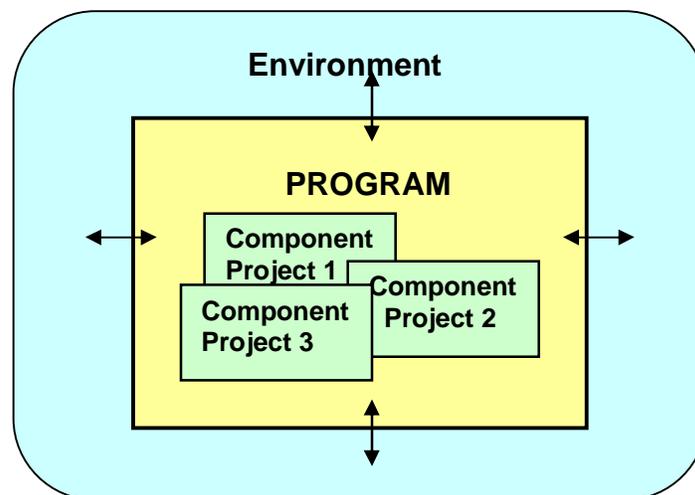
From the above, it is clear that the context of low-tech assembly projects is stable/predictable, whilst all other combinations belong to the dynamic/complex category.

### Operational projects (Shenhar & Dvir 2004)

Shenhar & Dvir 2004 discuss a “strategic goal dimension”, in which they distinguish between what they call strategic projects and operational projects. Strategic projects relate to new business. In contrast, **Operational** projects deal with existing businesses, and involve improvements in products, line extension, and cash cow projects, to gain more revenue from existing businesses. It would appear that many, if not most, operational projects would be undertaken in a relatively stable/predictable environment.

### Amongst ‘component’ projects within a program

One could reasonably expect that the program management team would substantially shield the program’s ‘component’ projects from a good deal of the consequences of a dynamic/ complex environment. The extent to which this could be achieved would vary greatly, but overall it would be in the best interests of the program to generate a relatively stable/predictable environment for ‘component’ projects’, as illustrated below.

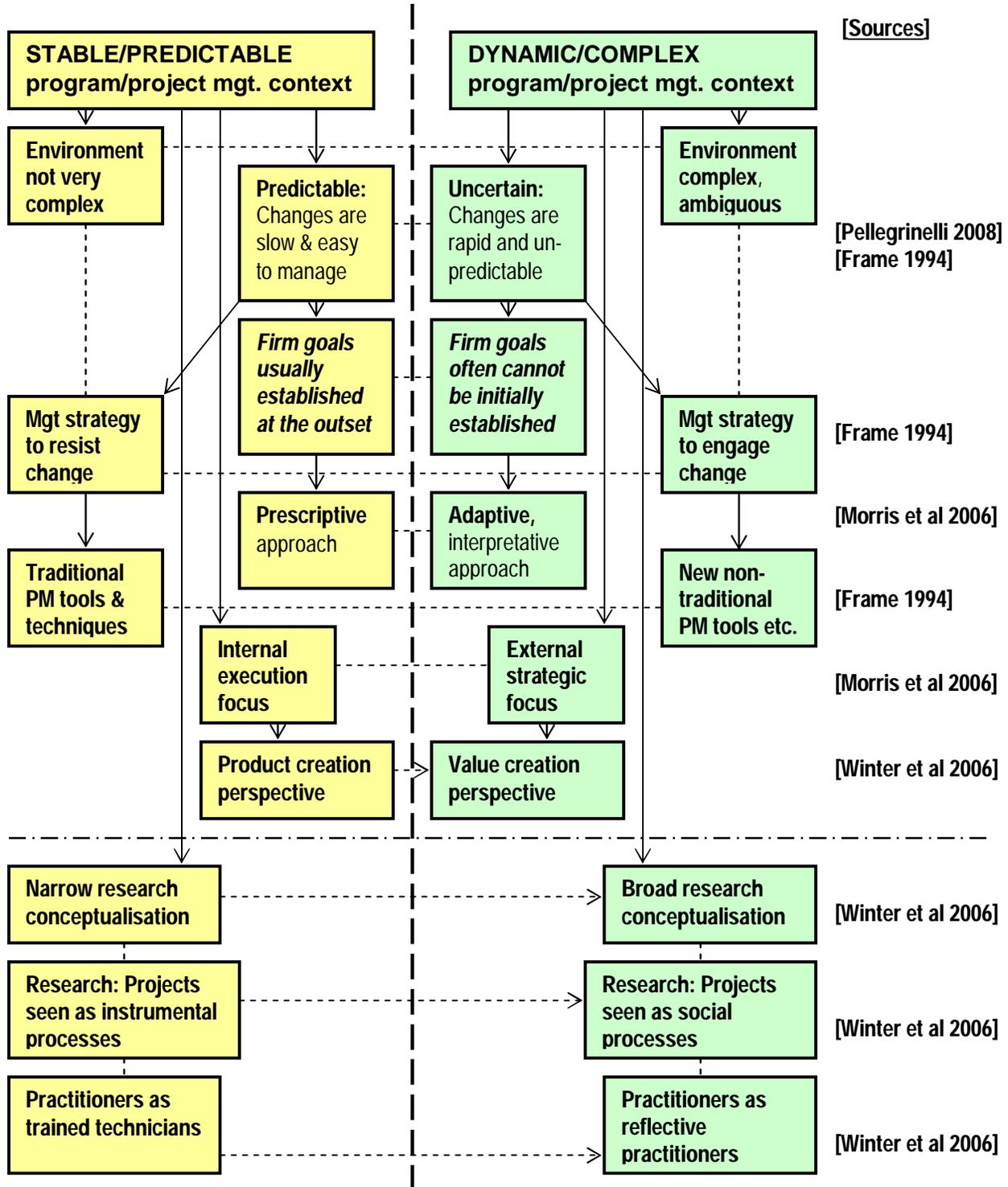


### Summarising “some stable/predictable contexts”

Four different groups of stable/predictable contexts for program/project management have been identified. Undoubtedly there are many more such groups. It follows that many programs/projects are undertaken in relatively stable/predictable contexts. Materials in the literature which focus on these contexts therefore remain very relevant.

However, the above also indicates that very many programs/projects are undertaken in dynamic/complex contexts. Substantial materials covering project management in these contexts have been developed (e.g. by Turner & Cochrane, and Shenhar & colleagues, amongst others). However, these do not yet appear to have been consolidated into a widely accepted standard (i.e. as an equivalent to the *PMBOK Guide*, for example).

**SOME DIFFERENCES BETWEEN STABLE/PREDICTABLE AND DYNAMIC/COMPLEX CONTEXTS FOR PROGRAM/PROJECT MANAGEMENT**



The above table shows some implications for program/project management under each of these two major contexts, derived from sources in the literature, as indicated on the right.

The lowest four pairs of entries by Winter et al 2006 are some of the findings from a UK Government-funded research network on recommended directions for future research on project management, in a “from-towards” context (indicated by the dashed arrows).

There are few surprises here, and, of course, many omissions. However, I thought a basic visual presentation might be useful in helping compare a few of the project management attributes considered to be appropriate for relatively stable, predictable contexts on the one hand, with those considered appropriate for more dynamic and less predictable contexts on the other.

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**Alan Stretton** is one of the pioneers of modern project management. He is currently a member of the Faculty Corps for the University of Management & Technology (UMT), USA. In 2006 he retired from a position as Adjunct Professor of Project Management in the Faculty of Design, Architecture and Building at the University of Technology, Sydney (UTS), Australia, which he joined in 1988 to develop and deliver a Master of Project Management program. Prior to joining UTS, Mr. Stretton worked in the building and construction industries in Australia, New Zealand and the USA for some 38 years, which included the project management of construction, R&D, introduction of information and control systems, internal management education programs and organizational change projects. He has degrees in Civil Engineering (BE, Tasmania) and Mathematics (MA, Oxford), and an honorary PhD in strategy, programme and project management (ESC, Lille, France). Alan was Chairman of the Standards (PMBOK) Committee of the Project Management Institute (PMI®) from late 1989 to early 1992. He held a similar position with the Australian Institute of Project Management (AIPM), and was elected a Life Fellow of AIPM in 1996. He was a member of the Core Working Group in the development of the Australian National Competency Standards for Project Management. He has published over 100 professional articles. Alan can be contacted at [alanilene@bigpond.com.au](mailto:alanilene@bigpond.com.au).