

Beyond the Gantt Chart: Project Management Moving on

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Large-scale engineering projects have traditionally dominated the subject of project management. Today, however, project management has become a core business process for most organisations. This paper argues that the academic subject and many of the practices have lagged behind this change. Particular problems are identified with the role of strategy and planning, the units of assessment, the planning process itself and the body of knowledge of the subject. An alternative view of project management is proposed based on an integrative model and areas for further development are identified.
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Introduction

During a recent study of new product development practices in a wide range of firms, one of the issues addressed was 'Tell me how you manage projects.' Many responses were to the effect of 'If you mean, "do we have a Gantt Chart for every project?" The answer is no.' It wasn't what was meant, but the fact that so many, both during this study and during the many executive development courses I have taught, viewed the Gantt Chart as representing 'project management' is indicative of a very limited approach to the subject. The Gantt Chart alone is a blunt instrument. In this paper, the traditional view of projects will be compared with a new view — termed the *Beyond the Gantt Chart* approach. This is a hybrid approach, which combines best practices from practitioners with leading-edge management theory, with the objective of defining a way forward for the subject and the practice of project management.

Specifically, this paper reviews the current state and potential future directions of project management

and associated research activities. Projects are economically important, both as direct value-earners and as means of carrying out organisational change. Indeed, a shift in value-adding activity from repetitive to project-based organisations has been noted (Kerzner, 1998; Peters, 1999). In addition, the skill-set of the project manager is very much in demand (*Fortune*, 10/7/95, pp. 121–122).

It will be demonstrated that this economic importance has not been reflected in the level of importance given to the subject area, both in academe and in business. Currently, performance in business projects is generally perceived to be poor (Atkinson, 1999). At the same time, the subject appears to have failed to capture the imagination of academics in the way that knowledge management, for instance, has done. This lack of wide-scale attention has resulted in the situation today where there is considerable potential for the subject area to be developed, from both an academic and a practitioner perspective. This paper will identify the areas where this potential exists and suggests specific issues that could move the subject forward. Such change has successfully taken place in repetitive operations (both in theory and practice) over the past twenty years; a key question is whether this development can also occur in the project arena. It will certainly require a fundamental re-think of the nature of projects and the role of management in the project environment, and how this differs from the approach that has been used since the 1950s.

We conclude that many relevant issues are given very limited treatment under the traditional approach to project management and that this does not fit with the context in which project managers (regardless of whether they have that title) operate today in many industries, not least those of the 'new economy.' In particular, the need to make the subject area a more inclusive discipline is argued. This paper closes with a set of recommendations for exploration to develop their application within this approach.

Is There a Problem?

Whether there is a need for a new approach depends on establishing that there is indeed a problem with the existing approach. The existing or traditional approach is based on the computational planning and control models originating in large projects from the 1950s onwards, and used extensively by many traditional project industries, predominantly contractors to the aerospace, defence and large construction (Kerzner, 1998). The models are highly deterministic and based on techniques — notably PERT. Whilst these models have been refined significantly over the years, they are not considered useful by a large number of world-class organisations. For example, consider the approach taken by the Japanese automotive firms in their new product development projects and these methods and approaches are nowhere to be seen (e.g. Clark and Fujimoto, 1991). Whilst wholesale adoption of Japanese working practices is not being advocated here, the methods of Toyota (Sobek *et al.*, 1998) in developing new vehicles in half the time of their western counterparts, are surely worthy of study, particularly when they are so different from more traditional project management. Given that many of the current business needs more closely resemble those of Toyota, operating in saturated, hyper-competitive fast-moving global markets rather than that of the cost-plus defence contractors of yore, it is only appropriate that project management be re-considered. Firms such as Hewlett Packard and Motorola have done so with their practices making the traditional approach look anachronistic. Clearly, practice has moved ahead of the body of knowledge in many respects.

In addition to the project context having radically changed, there is even some doubt as to whether the traditional methods are effective in many sectors. Collins and Bicknell (1997) showed that problems with IT projects were perennial. In the construction sector, various reports have highlighted systemic problems with the methods of management in the industry (Egan, 1998). Indeed, one interviewee during this work commented that, 'The only way we hit targets is if we continuously "adjust" the baseline.' Shoot first and whatever you hit, call it the target. Given that project managers usually have an input to the original baselines, how these were constructed is surely a topic for investigation.

There are clearly problems with the traditional approach. The next question is whether other areas may provide ideas for improvement.

Are Other Areas Doing Better?

Many repetitive operations have improved their performance significantly over the past 20 years. In parts of the automotive supply, electronics and retail sectors, it is now common for deliveries to be demanded

within a very limited time period, at a cost that decreases year by year, and with a level of quality that is expressed in Parts Per Million (PPM). Twenty years ago, deliveries were infrequent and often late, cost escalation was normal and quality levels were expressed in terms of % defective (or Acceptable Quality Levels — AQL). This change in operations practices and performance has been reflected in the literature. Starr's operations text (Starr, 1972) ignores strategy, in favour of Operations Research (OR) with manpower management covered in reference to work study alone, and a heavy reliance on numerical methods. In modern texts, operations strategy is a key driver of the text and the role of OR has been significantly reduced.

On the other hand, the chapters on project management have changed little over this 20-year period. Unlike operations' rapid improvement, the problems of projects seem to be repetitive. 'War stories' of projects that have run over time, over budget or both are commonplace in the press. This apparent lag behind operations as a whole is considered further in the next section.

The Key Issues

Role of Strategy

Buttrick's (Buttrick, 2000) analysis of project failure shows that the lack of a clear strategy is a root cause of failure. I would go further and say that more than 80 per cent of all problems at the project level are caused by failures at a board level in firms to provide clear policy and priorities. This is consistent with Deming's observation about product defects — that the vast majority are caused by 'the system' rather than by individual failure. The result of this at the project level is conflict and confusion and ongoing tension over resources — particularly where they have to be shared with other projects. The traditional approach to project management provides little help in this respect, putting the project manager in a firmly reactive position, with the causes of project failure already built into the project because of these conflicts.

Many firms believe that it is vital to provide *focus* to the project resources through the prioritisation of project resources and an *aggregate project plan* (Wheelwright and Clark, 1992; Maylor, 1999). It would appear that as Wickham Skinner showed in manufacturing (Skinner, 1969), an organisation which attempts a limited number of projects at any one time is more likely to be successful than one that attempts many (due to the effects of queuing and bad multi-tasking — Goldratt, 1997). As with the development of manufacturing strategy (production management re-invented as a strategic competence), the same potential exists in project management. Cru-

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