

Expanding the scope of project management services in the construction industry, to add value and reduce costs¹

By Alan Stretton

INTRODUCTION

In a recent issue of this journal (Stretton 2019b) I discussed project success levels in an organisational strategic management context. In the conclusion, I noted that one of the most striking things that emerged from those discussions was the comparatively low level of participation by project management (PM) in activities which establish success at those levels. This applied particularly in project initiation and earlier development stages – and mainly in production-based organisations.

In this article I want to discuss the potential for project management services to be expanded into such earlier activities, to add value and/or reduce costs. The setting is the construction industry, and the perspective that of a project-based organisation providing project management services in this industry. I have chosen these because the range of services actually provided therein very often covers the management of the earlier phases of project development, and frequently goes even further back, to actively support customers' organisational strategic planning. This suggests substantial potential for such expanded PM services in other industries.

We will start with the common Execution-Delivery perception of the scope of project management – whose practice in the construction industry generally takes the form of the “traditional” tender approach. We discuss some of the disadvantages of this approach, particularly the separation of design from construction. We then look at two approaches which were developed in the building and construction industries to help overcome the latter disadvantage – namely “Construction Management” and “Design-and-Construct” project management.

We then move on to look at expanding the PM scope into management of the early development stages of projects, including feasibility and project definition phases. Peter Morris has long used the descriptor “Management of Projects” to include these development stages – which I have also adopted. I go on to discuss how this developed in Civil & Civic, both internally, and as a service to external customers.

Finally, we discuss moving beyond projects per se to helping customers develop their organisational strategic objectives and/or plans to achieve them. We discuss how large EPC firms have been providing extensive strategic planning support services for a very long time, particularly in the context of major complex construction-related mega-projects. We also discuss Civil & Civic's expansion of its services into strategic planning support, at more modest scale and complexity levels. In the light of the substantial scale

¹ How to cite this paper: Stretton, A. (2019). Expanding the scope of project management services in the construction industry, to add value and reduce costs, *PM World Journal*, Volume VIII, Issue III (April).

of these types of services, it seems reasonable to ask if these are being, or could/should be, provided in other industries served by PM.

PROJECT PLANNING AND EXECUTION RELATED TO AN ORGANISATIONAL STRATEGIC MANAGEMENT FRAMEWORK

First, the reason for my relating project planning and execution to an organisational strategic management framework was foreshadowed by Shenhar & Dvir 2007:23:

Most projects are part of the strategic management of their organization,

Therefore, an organisational strategic framework appears to me to provide a context which is relevant to most projects, irrespective of their type, application area, etc.

In Figure 1 below a basic organisational strategic framework is shown in the heavily outlined section near the top. Whilst there is probably no universally agreed strategic framework, I have been developing this over some years in this journal, and the (admittedly rather meagre) feedback I have had indicates that it appears to cover a wide range of perceptions about the basic strategic processes involved.

It will be noted that the focus is on the planning and execution of strategic initiatives, which comprise both projects, as shown below the strategic framework, and *other strategic initiatives*, as briefly summarised above the framework. The latter were discussed in some detail in Stretton 2019a, and will not be further discussed in this article, which is concerned only with the project components of strategic initiatives.

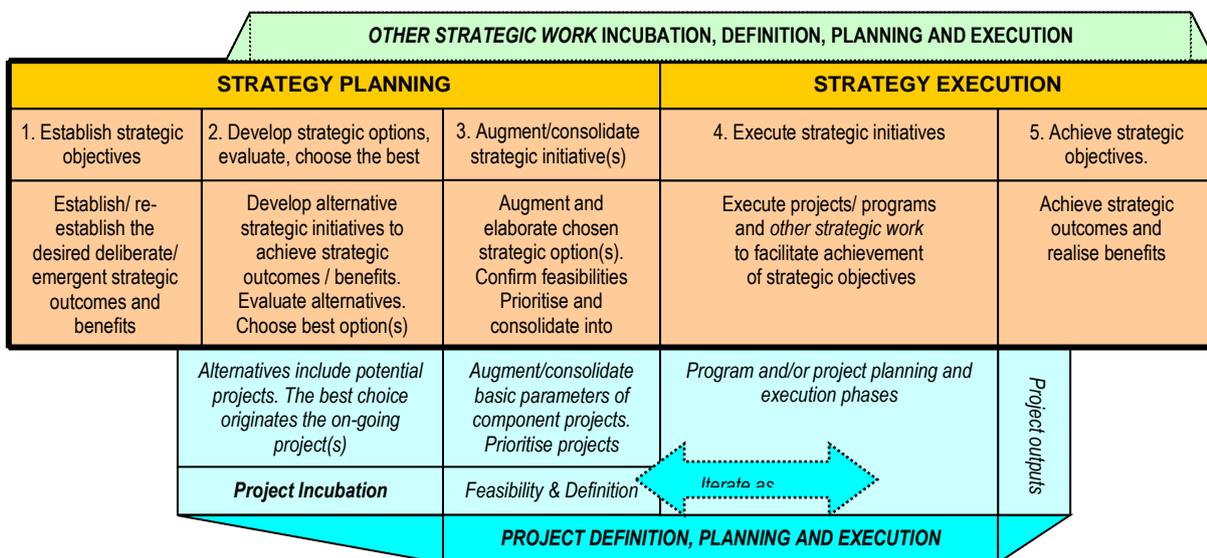


Figure 1: An organisational strategic management framework, with project contributions

In the figures accompanying the following discussions, I will be using just the main headings of the strategic management framework. The corresponding summarised project phases have been amended slightly, and a design phase added to facilitate more detailed discussions on project planning and execution.

The summarised form of representation I will be using is as shown in Figure 2 following.

PROJECT MANAGEMENT SCOPE SEEN AS CONFINED TO PROJECT EXECUTION-DELIVERY – “TRADITIONAL” TENDER APPROACH IN CONST’N

This first perception of the scope of project management, represented by the heavier outlined section in Figure 2, is labelled Execution-Delivery PM, which is one of several labels used in the wider project management literature. In the construction industry, this normally takes the form of the “*Traditional*” tender approach, as also shown in Figure 2.

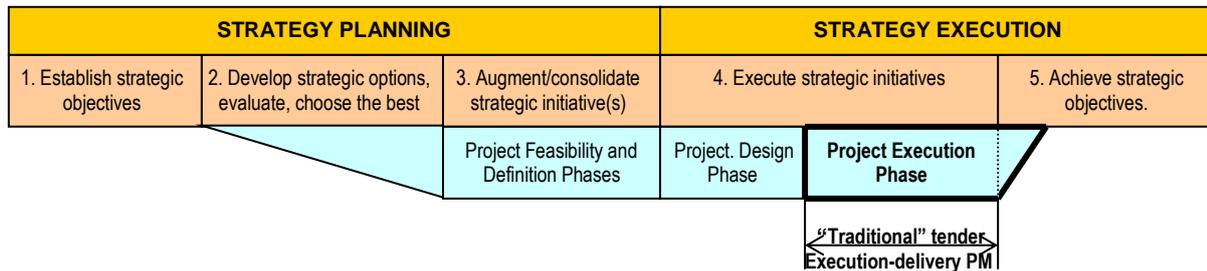


Figure 2: Project management scope seen as confined to project execution-delivery

In the wider project management literature, Morris 2013:236 observes that,

In practice, in many organisations, the term [project management] is used to refer only to the management of project execution (after the requirements have been identified).

Elsewhere, (p.118) he describes this perception of the nature and scope of project management as follows.

This is the Delivery-Execution conception. It is the classic core of project management.

It will be noted that I have followed Morris’ descriptor, but in reverse order, in line with their sequencing. The focus of Execution-Delivery project management is on delivering the product of the project ‘on time, in schedule, to scope’, as Morris, and a myriad of other writers in the project management literature, have described it.

In the building and construction industries, Execution-Delivery PM has commonly taken the form of the “traditional” tender approach, which was also how Civil & Civic got started in Australia in the early 1950s. In relation to the industry at large, Clark 2002:37 says,

In his history of the Australian building industry, ... , Oscar Gimesy observed that ‘the dichotomy between design and construction practices is so pronounced in traditional construction practices that recent trends to integrate the two, which is taken for granted in other arenas of economic production, is considered a radical leap’.

The CEO of Civil & Civic, G. J. Dusseldorp, commented on deficiencies commonly arising from the separation of design and construction in the traditional tender system as long ago as the 1950s, as reported by Clark 2002:10.

Dusseldorp believed that there were two basic problems inherent in this hierarchical mode of project organisation. First, its counterproductive separation of design from construction denied clients the benefit of practical construction advice in the design planning stage. The second major drawback of the tender-based system was its flawed incentive structure, which, Dusseldorp argued, both encouraged architects to design edifices and prompted contractors to cut costs in any way they could – neither of which necessarily served the best interests of the client.

There have occasionally been much more severe consequences of the separation of design from construction. An extreme example was discussed quite recently in this journal by Dalcher 2018d, in relation to the 1981 collapse of Kansas City’s Hyatt Regency Hotel. Without going into the sequence of events than led to this disaster, it is noted that the primary cause was attributed by Dalcher to the separation of “planning” from “doing” in the design/construction context.

For these types of reasons, the traditional tender system has little to commend it, which was a major driver for Civil & Civic to move into project management, initially by adding the management of the design process to its construction role, as will be discussed in more detail in the next section, to which we now turn.

ADDING ADVICE TO, AND/OR MANAGEMENT OF, DESIGN PROCESSES TO THE SCOPE OF PM – “CONSTRUCTION MGT.”; “DESIGN-AND-CONSTRUCT”

Two types of approaches for bridging the traditional gap between the design aspect of ‘planning’ and the ‘doing’ were developed in the construction industry in the 1960s. One was to involve a constructor in the design detailing process – one version of which was the rather oddly-named “*Construction management*” approach, which is how I have labelled this alternative in Figure 3. The other approach was to add the management of the whole design process to the scope of project management, which I have labelled “*Design-and-construct*” project management in Figure 3. We will discuss each of these in turn below.

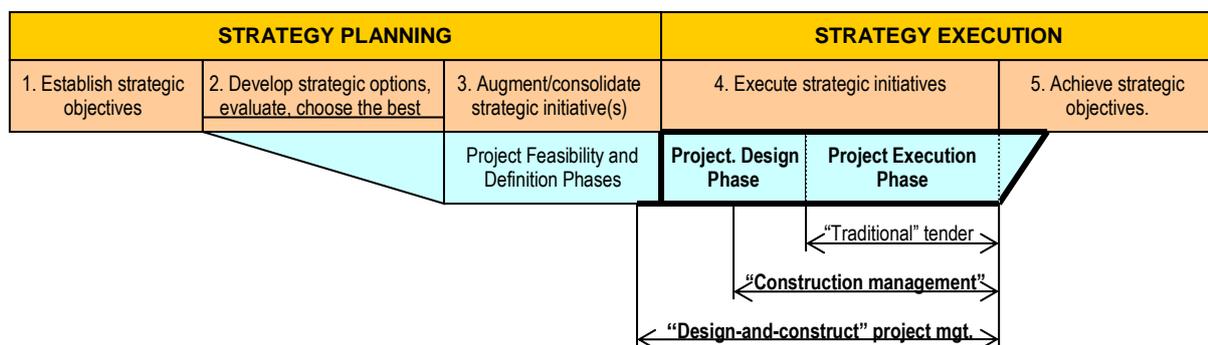


Figure 3: Adding involving constructors in design detailing (“Construction Management”); and adding management of the whole design process (“Design-and-Construct”) to scope of PM.

Involving constructors in design detailing – “Construction Management”

All of us who worked on the construction of building projects from the 1950s under the traditional tender-based system were certainly aware, from direct hands-on experience, that many, if not most, designs did not take adequate account of their constructability, and thus often inadvertently added “built-in” construction costs.

One approach to overcoming this problem in the building and construction industry was the introduction of what was termed the *Construction Management*, initially in North America, which Morris 2013:78 describes as follows.

‘Construction Management’ – the provision of downstream site construction advice in the design stages of a project – was developed in the building industry as an organisational answer to the extant lack of integration between downstream construction and front-end design in the late ‘60s, first in Toronto, then New York,

This was typically a contractual arrangement which allowed the contractor to have some input into the design detailing. Evidently this is still a common arrangement.

Whilst the ‘Construction Management’ approach is certainly better than not having any constructability input at all into design, it is at best only a partial step towards securing better integration between the two processes, and better value for the customer. In particular, it only scratches the surface of the potential for lowering costs and building in value in the design. This appears to have been recognised in some contexts in the USA, where I understand that a 1989 law called *Project Management Oversight: Final Rule*, requires broader PM oversight in certain state and local transit agencies. Be that as it may, the greatest potential opportunities certainly lie in the initial conceptual stages of design, which establish the major parameters of the project, as now discussed.

Adding management of the entire design process to the scope of PM – “Design-and-Construct” project management

Civil & Civic had a very direct in-house experience of the value of hands-on management of the design process in 1954-55, when it had to undertake what became a rescue effort in relation to the design of a major subdivision that the company itself was developing. Based on the original designs of the consultants, the projected capital expenditure would have made the venture a marginal one, at best. CEO Dusseldorp personally took up a role of what was effectively that of a project manager, and (in Civil & Civic 1969) recorded that,

By persistent analysis and investigation of design aspects, a 40% reduction was achieved in site costs and the project converted from a marginal investment to a successful venture.

This, and somewhat similar situations in other self-sponsored developments in the building construction sector, led Dusseldorp to adopt the concept of undivided responsibility for both design and construction. As noted in Murphy 1984:7

He [Dusseldorp] came to realise that the important cost-savings on any building project are to be made on the drawing board, and set out to promote the concept on which the present day organisation has been built: the acceptance of undivided responsibility for any project from start to finish.

From the mid-to-late 1959s, Civil & Civic appointed its own "project engineers" to manage the design phases of all its own development projects, and the quality control of construction. The term "project engineer" continued to be used into the 1970s, although it was recognised that the term was a misnomer, in view of the fact that the function was really a management one – i.e. project management.

It was a natural extension from its own development projects for Civil & Civic to offer design-and-construct services to the market at large. Take-up of these services grew slowly in the late 50s and early 60s, but then started to accelerate, moving from 10% of total turnover in 1960, through 33% in 1966, and 62% in 1975, on very much higher percentage increases in overall turnover (in Civil & Civic 1976). Initially these were often called "package deals", but by 1963 they had come to be formally designated internally as "project management service" (commonly known as PMS).

I have recounted the development of the design-and-construct version of project management in one organisation such a long time ago partly as a matter of historical record, but particularly to show how it emerged rather naturally to help overcome the problems associated with the gap between design and construction in the tendering system.

However, there were also other developments, both generally, and in Civil & Civic which extended project management services further back, as now discussed.

ADDING MANAGEMENT OF FEASIBILITY STUDIES AND DEFINING PROJECT REQUIREMENTS TO PM SERVICES SCOPE – "MANAGEMENT OF PROJECTS"

In the context of project management at large, for some decades Peter Morris has been discussing the inclusion of the management of pre-execution phases of projects, which he calls *Management of Projects*, as described in Morris 2013:235

The Management of Projects is as concerned with managing the front-end as with downstream execution. ('Front-end' is defined as the period prior to definition of the project's, or program's, requirements – or the period prior to 'sanction execution' being given.) The Management of Projects stresses the need for the project's strategy to flow from the sponsor's. It emphasises the creation of value for the sponsor.

[A point of interpretation needs to be made here. I interpret Morris' definition of 'front-end' in the above context as meaning the pre-execution phases of the project. The reason for this lies in the last two sentences above, which (very importantly) link the project with the sponsor's strategy, which I interpret as being a component of his organisation's strategy. As we will see in the next main section, the latter also has a 'front-end'. Hence I prefer to use the terminology 'pre-execution phases' for this more project-specific work.]

Figure 4 adds the “Management of Projects” coverage of the feasibility and definition phases of projects to the previous perceptions of the ranges of project management.

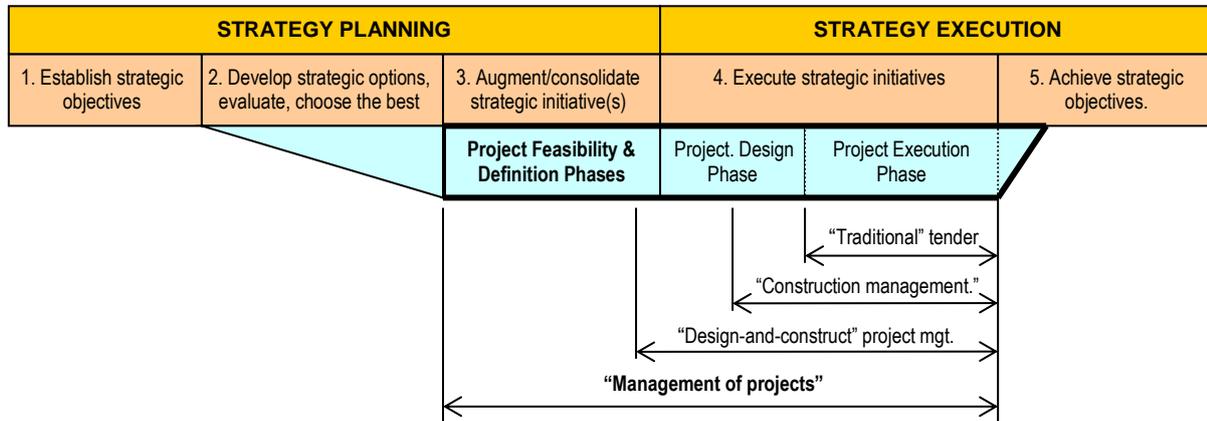


Figure 4: Adding feasibility studies and defining project requirements (“Management of Projects”) to the scope of project management

We turn now to the Civil & Civic (C&C) experience in managing the feasibility and definition phases, first of its own developments, and then in helping clients develop these phases as part of its external project management services (PMS).

Active project management of feasibility and definition phases in C&C

Active project management of the feasibility and definition phases of projects happened automatically in internally sponsored developments by Civil & Civic, and later Lend Lease, simply because virtually all our operational people were, or had been, project managers. There is no technical reason why the project feasibility and definition phases should not be actively managed by project managers – and indeed there are ample technical reasons in favour of this approach, because who else is better qualified than project management to undertake this work? Such involvement also helped ensure effective integration within these phases, and into the following phase.

Project management involvement in helping clients develop these phases

During the early 60s, Civil & Civic became increasingly involved in helping client organisations determine their strategy-related needs. We called this process “Client needs determination”, or “CND” – but this was a bit of a misnomer, because the real task was to help the client organisation more accurately define the requirements of the project(s) which would best contribute to achieving their strategic objectives.

The extent of help clients needed varied widely. Some well-resourced clients only needed help in technical aspects of project definition – i.e. in accurately specifying the requirement of the relevant projects. Others required more detailed help in clarifying their technically-related needs, and/or affirming technical and financial feasibilities, before specifying relevant project requirements.

Clark 2002: 93 records the following contribution on the latter by one of my old Civil & Civic colleagues, David Thorne, which gives a sense of the genesis of an expanded CND.

‘And so instead of just taking the client’s stated requirements for a building at face value, we got into the practice of questioning with them those instructions’.

Working with the client to get to the heart of their needs could sometimes result in quite significant changes to the original brief. ‘The client may say, “We want to build a warehouse here”’, Thorne remembers, ‘but we’d say “Why? You’d be better off to sell that particular block of land, and with the profits from the sale acquire a more suitable piece of land in this other area, and put your warehouse there”’.

Clark 2002 also summarised another example (which I presented in more detail in Stretton 2016m) as follows.

In another case, a commission to design and construct extensions to a factory was turned on its head when the Civil & Civic-led project team assigned to the task came up with an alternative plan. By internally reconfiguring the existing premises, the project team discovered, the client’s needs could be satisfied in a more cost-effective way.

The extent of the demand for helping clients determine their real needs was such that Civil & Civic developed a substantial team of specialists in various sectors to cater for these on-going demands, including the education, industrial, health, office, retail and leisure sectors. Nearly all of these specialists were, or had been, project managers, but had then acquired a range of substantial additional knowledge and skills needed in this extended form of our project management service to meet and satisfy the clients’ needs most effectively. In effect, they were business unit managers for their particular customer groups, but, to the best of my recollection, we did not give them any special separate designation (beyond that of *Project Director* in some cases).

Now, these developments came quite naturally in a project-based organisation which was providing PM services to external clients. I have never worked in a production-based organisation, but evidently general management in such organisations tends to have some difficulty in perceiving that project management has a role to play in *Project Feasibility and Definition Phases*. This is difficult to understand in light of the special skills project management can bring to bear to help do these tasks effectively.

In the words of one of my project management colleagues who has worked for a long time in this environment, all too often the project requirements are virtually “thrown over the wall” from the general/strategic management area to the project area – a classic example of another type of separation of ‘planning’ from ‘doing’ which virtually guarantees sub-standard consequences.

We now move beyond projects per se, to look at what has been done in the construction industry to help customers with their organisational strategic planning.

ADDING ORGANISATIONAL STRATEGIC PLANNING SUPPORT SERVICES

Starting with the project management literature at large, I first quote Thiry 2011, who has the following to say about project management and its contribution to organisational performance.

Both the PMI Standards and the OGC (Office of Government Commerce, UK) Guides lack the vision that would encompass the whole range of project management disciplines and their contribution to overall organizational performance. But organizational performance is a complex area and it is not easy to tackle. Sadly none of the publications, or probably more accurately the associations that sponsor them, seem to be willing to put in the effort required to take a systemic view of the scope of project management. They rather take a project view akin to the WBS [Work Breakdown Structure] approach of adding a number of blocks, hoping it will achieve some kind of whole; this works for a project where the scope is well-defined but it does not work in a complex environment like organizations and organizational performance.

With regard to Thiry's point about the scope of project management, in practice we have two groups of examples of project management organisations which have expanded the scope of their services beyond that of projects per se, into helping clients develop their organisational strategic planning. One relates to the provision of such services for many decades by EPC (Engineering, Procurement, Construction) organisations, such as Fluor, Bechtel, Jacobs, and a host of others, mainly in the context of major complex mega-projects. The other derives from my own experience in Lend Lease/ Civil & Civic with smaller-scale projects. We now look at each group in turn.

EPC organisations' contributions to clients' strategic planning

Large complex projects

There is surprisingly little material on large complex projects in the mainstream project management literature. A notable exception is Bob Prieto of Fluor, who has written extensively about this in many articles in this journal and elsewhere. In Prieto 2015 he draws a broad difference between the management of large complex projects and "traditional" projects as follows:

Large complex projects differ from those that comprise the traditional domain of projects as defined and served by the Project Management Institute and its Project Management Body of Knowledge (PMBOK). Remember its admonishment that PMBOK provides a management framework for **most projects, most of the time**. Large complex project appear to live outside these boundary conditions. (p.23)

Prieto nominates and discusses twelve aspects of these differences – extended time frames, strong outcomes focus, stakeholder role, semi-permeable boundaries, flows across boundaries, influencing flows, requirements, scope, tasks, project organisation, knowledge management, and execution focus.

Perhaps the most relevant aspect for the purposes of this article is the scope of large complex projects, which Prieto describes as follows.

The scope of a large complex project defines the nature of the facility asset, its intended purpose and use, and the business context within which it is intended to operate. In large complex projects scope must go beyond just the project's technical requirements and explicitly include a

- broader set of owner's requirements, including the strategic business outcomes the owner is trying to achieve
- mandatory and quasi-mandatory requirements from external stakeholders

Engagement of EPC firms to support the organisation's strategic planning

Prieto 2008 discusses the situation where project/program management EPC organisations are engaged to help owners plan to achieve their business objectives as follows.

In a programmatic approach to achievement of a set of business objectives, Owners may engage the services of a Program Manager. Under such an approach many of the processes and responsibilities of the traditional Owner organization are transferred to the Program Manager

Prieto 2009 goes further, invoking a concept of partnership between the EPC and owner organisations, as follows.

Most importantly, the owner requires a partner that can help it translate its programmatic vision and broad objectives into a well-defined set of specific business objectives that underpin an actionable and implementable strategic plan for the "giga" program [super-large mega-programs/projects].

I have been fortunate enough to be a participant in a couple of internal Rio Tinto project management forums, where presentations of the relationships between the owner (Rio Tinto) and some of the EPC organisations serving it (including Bechtel) indicated a strong sense of partnership, whilst remaining open and realistic about important differences of viewpoint when they occur, and about approaches to their resolution.

This type of support on mega-projects is often called "Front-End Loading"

"Front-End Loading" is described by Morris 2013:60 in a footnote as follows.

IPA, the oil, gas and minerals project benchmarking company, coined the useful term 'Front-End Loading': "Front-End Loading (Business FEL) is a tool for determining which is the "right" project to meet the demands of business. The FEL tool assesses the level of definition of a number of critical items that are used to determine what, if any, asset should be built to meet a particular business need. The Business FEL index is made up of three components: the business case, the business/engineering interface, and the conceptual engineering and facilities planning factor."

I have not seen this descriptor used in other project domains, so I will retain the descriptor “organisational strategic planning support” to cover both the “front-end loading” descriptor used with major complex projects, and its equivalents in the smaller project domain, (such as Civil & Civic examples, to be discussed in a moment) as shown in Figure 5.

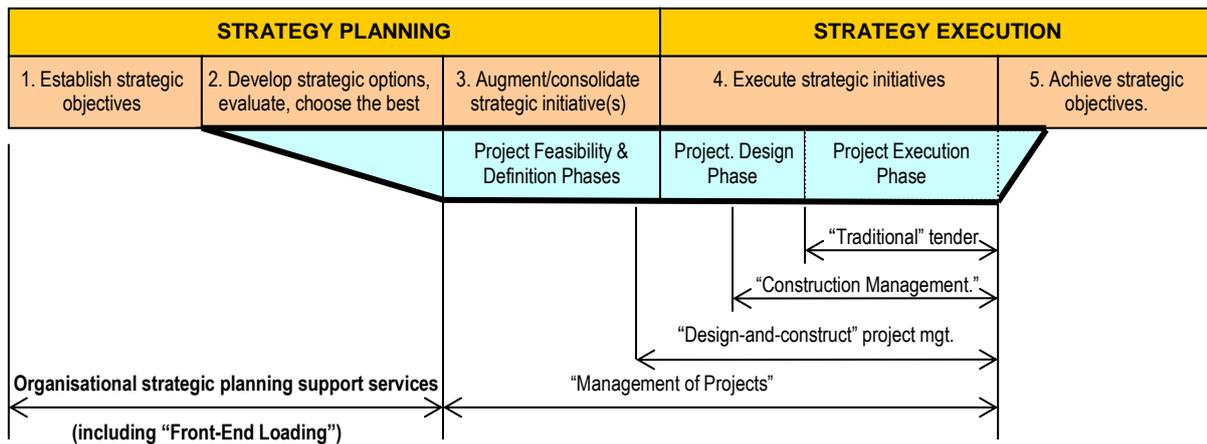


Figure 5: Adding organisational strategic management support to the scope of PM

Civil & Civic’s expansion of its services into strategic planning support

First, if we look at Stage 2 of the strategic management framework, it is summarised as *Develop strategic options, evaluate, choosing the best*. Now, projects are a major component of strategic initiatives (hence the “Project Incubation” triangle in Figure 5) so that the development and evaluation of alternative strategic options is a natural domain for suitably qualified project managers to be involved in.

In expanding its services to help customer organisations do this work, Civil & Civic was simply offering its own very substantial experience in doing this for its own development projects to external customers who needed such help.

Regarding the development of alternative options, from my experiences in Lend Lease/ Civil & Civic in particular, I came to appreciate the paramount importance of developing alternatives in a variety of planning contexts, as I have emphasised in previous articles in this journal. For example, in relation to strategic planning, in Stretton 2017k, I quoted from Murphy 1984:97, who said that “... in Lend Lease all available options must always be considered”.

The Civil & Civic approach to developing alternatives in the project context was described in a little more detail in Clark 2002:40 as follows,

The first job of the project team, therefore, was to consider ‘alternative ways in which the various problems encountered in the design of a building can be overcome’. These alternatives would be mulled over, costed and compared, in conjunction with an assessment of alternative methods of construction, ‘to enable the best solution to be obtained’. The ‘correct’ solution was the best *value* solution for the client.

With the client actively participating in the project team during the initial design planning, they were in a position to reach an *informed* decision as to which alternatives generated the most value for them.

Regarding the evaluation of options, there is very clearly a strong case for involving suitably qualified project managers in such things as cost/benefit analyses of alternative strategic initiatives, because potential projects will inevitably be important components, and evaluating them is no place for the non-project amateur.

On a few occasions Civil & Civic went beyond involvement in Stage 2 to help the client establish/re-establish its organisational strategic objectives. An early example of this comes from Clark 2002:93, who describes Civil & Civic's involvement in helping a client in the educational sector establish its strategic objectives, supported by structured financial and business plans to achieve them, as follows.

....within a year the Sisters at Loreto Convent, Kirribilli, guided by Dusseldorp [Civil & Civic's CEO] and his team, had come up with an integrated business plan for the school's complete rebuilding and expansion – supported by the first structured financial plan in the Catholic education sector –

Of course, at that time (the late 1950s) well-resourced organisations did not need such help. But there were other not so well-resources organisations which did. The situation is undoubtedly different now, with far greater awareness of strategic and business issues. However, there may still be organisations, particularly those in their early development stages, that do need such help.

I do not know the extent to which these types of expanded ranges of services have been deployed elsewhere at these levels of relatively modest project size and/or complexity, but I would not be at all surprised if they were more substantial than is ever indicated in the mainstream project management literature.

There are many PM firms providing organisational strategic planning support in building-and-construction. Are there similar opportunities elsewhere?

A reviewer suggested to me that the experience and capacity to provide these types of organisational strategic planning support only resides in large EPC firms. However, Civil & Civic was a relatively small organisation when we initially provided such services in the 1960s, and was not all that large when it expanded these services into a diverse range of industries, as discussed above. I suspect that this may also be the case with some other organisations providing this type of service.

Overall, it is evident from the above that the provision of organisational strategic planning support by project management organisations is much more widespread than is generally recognised in the literature. The above examples have come from the building-and-construction industries. Once again, I simply do not know the extent to which these types of services are also supplied in other industries, or the potential for so doing.

But it seems reasonable to suggest that there may be other areas of unsatisfied demand which such extended services could satisfy, and that the project management industry could/should be concerned with finding and exploiting such potential opportunities to expand its services into such broader domains. If it does not, then some other avocation may well do so.

SUMMARY AND DISCUSSION

This article has been concerned with the actualities of project management services expanding into the early development stages of projects, and even back further into organisational strategic planning stages. The setting has been the building-and-construction industry, and the perspective that of a project-based organisation providing project management services.

We first established a basic organisational strategic management framework, and showed how a basic project life-cycle related to this broader context. We then looked in a little more detail at the following increasingly expansive perceptions of the scope of actual and potential project management services in this context.

- Project management scope seen as confined to project execution-delivery, which is usually represented by the “traditional” tender approach in construction.
- Adding advice to, and/or management of, design processes to the scope of project management, in which we discussed
 - Involving constructors in design detailing – e.g. “Construction Management”
 - Adding management of the entire design process to the scope of PM – “Design-and-construct” project management, with its potential for designing in greater value, plus better constructability, and reduced costs.
- Adding management of feasibility studies and defining project requirements to the scope of PM services, which is described as “Management of Projects”
 - Active project management of feasibility and definition phases, in which project managers are better qualified than any other avocation to ensure that the project represents the best value, and to properly define its requirements.
 - Project management involvement in helping clients develop these phases – for the same reasons.
- Adding organisational strategic planning support to the scope of project management services.
 - EPC organisations make major contributions to customers’ strategic planning in major complex project environments in the construction sector – often called “Front-End Loading”.
 - The main components of strategic initiatives are projects, and project managers are better qualified than anyone else to help develop and evaluate the project components of strategic initiative options, as was exemplified in Civil & Civic’s services. On occasions, this also extended to helping review and re-establish the client’s organisational strategic objectives.

Overall, this article has focused on setting down the additional contributions that project management has contributed, to varying degrees, in adding value and reducing costs to customers in the building-and-construction industry, by becoming progressively more involved in actively managing the development phases of projects, and even further back, in an organisational strategic context, by providing organisational strategic planning services.

I do not know the extent to which these experiences in the building-and-construction industry are applicable to other project management application areas and/or other types of projects. However, in relating these discussions to a basic organisational strategic management framework, I suspect, and hope, that they may be relevant in many, if not most, other contexts.

Finally, I note that much of the mainstream project management literature continues to focus mainly on project execution-delivery. I do not argue against the importance of the latter, where failure rates remain too high in most people's estimation. However, I do argue that we are failing to capitalise on the potential for increasingly beneficial contributions that project management can deliver if it becomes involved much earlier in the organisational strategic management context, following the types of progressively increased involvement outlined in this article. As Dalcher 2019 says,

To accept a trivialised role as project delivery professionals is to eschew professionalism, reflection and responsibility and ignore the potential impacts and responsibilities of the profession.

I can only endorse this perspective, as this article has tried to illustrate.

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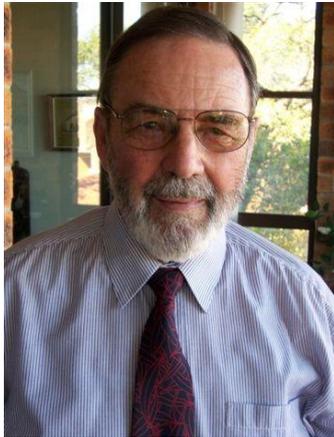
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About the Author



Alan Stretton, PhD

Faculty Corps, University of Management
and Technology, Arlington, VA (USA)

Life Fellow, AIPM (Australia)



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 200 professional articles and papers. Alan can be contacted at alanilene@bigpond.com.au.