

Series on Project Contexts

6. Contexts of external influencers, and of project application areas¹

By Alan Stretton

INTRODUCTION

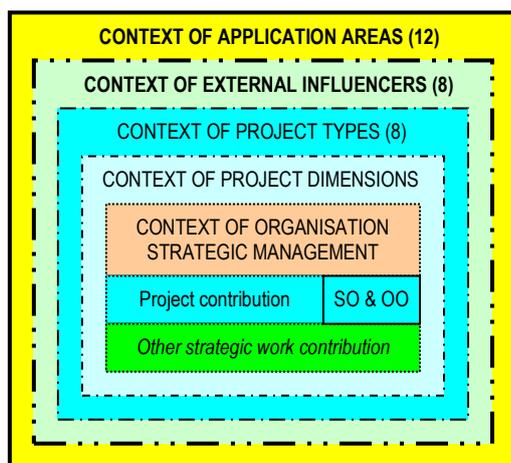


Figure 1: Outline project context model

This is the sixth of a series of seven articles which identify and discuss a variety of key contexts which impact on the management of projects. The basic reason for developing this series is that there is far too little attention given to the contexts of projects in the relevant literature – particularly when you consider that, in practice, effective management of projects' contexts is usually quite critical to achieving overall project management (PM) success.

The first article of this series (Stretton 2019e) identified six key types of project contexts. These were summarised pictorially into a combined model, depicted in skeleton format in Figure 1 to the left.

The second article of this series (Stretton 2019f) was concerned with the context of organisational strategic management, and the third (Stretton 2019g) with the contexts of projects being undertaken by supplier organisations (SOs), and by owner organisations (OOs). The fourth article (Stretton 2019h) discussed the contexts of what Shenar & Dvir 2007 describe as project dimensions, and the fifth (Stretton 2019i) the more general context of types of projects.

This sixth article is concerned with two external contexts, namely those of external influencers, and of application areas in which projects are undertaken. Their places in Figure 1 are illustrated by bolder typefaces, and heavier external borders.

CONTEXT OF EXTERNAL INFLUENCERS

Recapping discussions of the context of external influencers in the first article

I discussed aspects of this particular context in Stretton 2019e, under the following headings, as now summarised.

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Types of external influencers

The following table lists potential external stakeholders, derived from Stretton 2018j.

EXTERNAL INFLUENCERS			
<p>Political/Regulatory Actors</p> <ul style="list-style-type: none"> • Governments • Politicians • Lobbyists • NGOs • Regulatory bodies • International institutions • External auditors <p>Industry Insiders/Outsiders</p> <ul style="list-style-type: none"> • Competitors • Complementors 	<p>Technological Actors</p> <ul style="list-style-type: none"> • Patent offices • Universities • Research institutes • Standardisation bodies <p>Socio-Cultural Actors</p> <ul style="list-style-type: none"> • Media • Communities • Opinion leaders • Religious organisations • Environmentalists 	<p>Economic Actors</p> <ul style="list-style-type: none"> • Tax authorities • Central banks • Employers federations • Unions • Stock exchanges <p>Parasitic Participants</p> <ul style="list-style-type: none"> • Opportunists • Activists • Causes • Intervenor groups 	<p>External champions</p> <ul style="list-style-type: none"> • Entrepreneurs • Developers • Visionaries • Investors <ul style="list-style-type: none"> ○ Funders ○ Sponsors ○ Shareholders <p>Purchasers</p> <ul style="list-style-type: none"> • Owners/users • Customers

Figure 2: A listing of potential external influencers

In Stretton 2018j I discussed a group of project stakeholders that Pirrozi 2017 described as influencers. In Figure 2 I have expanded on these to include other external stakeholders who can also influence the project. The above listing is rather a generalised one, and does not take account of particular influences which apply to only a few projects of a particular type – e.g. adverse geophysical conditions.

Adding the context of external influencers to the previous contexts

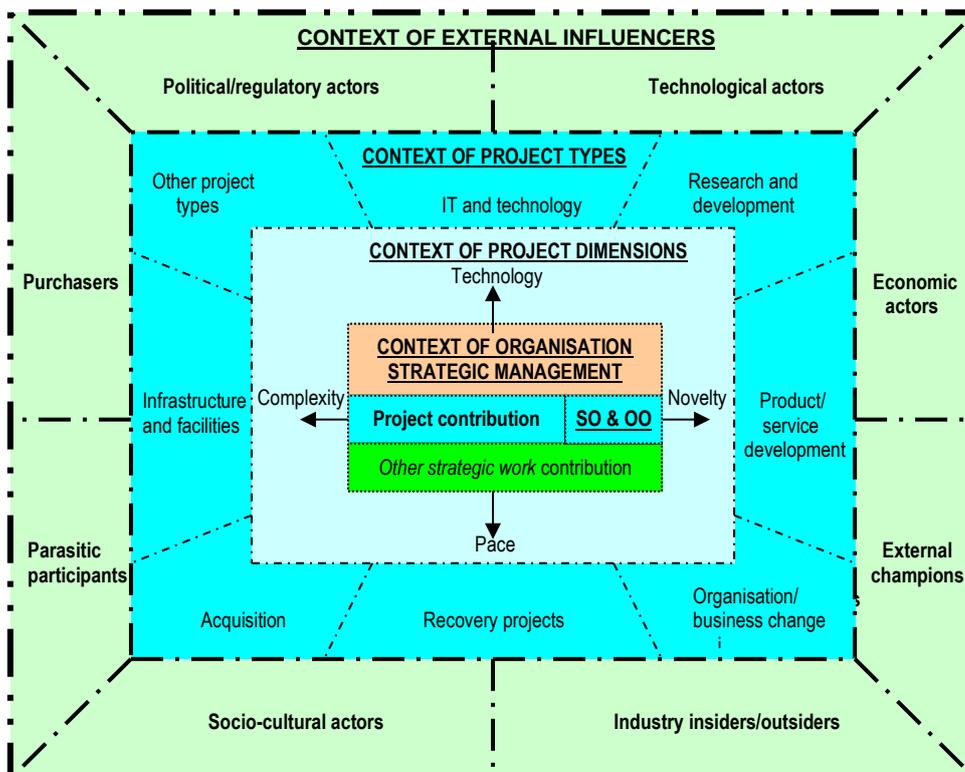


Figure 3: Adding the context of external influencers to previous contexts

The key importance of recognising and accommodating external influencers

There have been multitudinous cases where failure to identify and/or deal with potential and/or actual adversarial external influencers have adversely affected, and in some cases killed, a project. This is an absolutely key context in which the project manager and team must be fully cognisant of the importance of recognising and accommodating all external influencers. Fortunately the importance of stakeholders, including the latter type, is being increasingly discussed in the project management literature, so that there is every reason to believe that this situation should be improving.

In this article I will confine my discussion to just one overarching aspect of external influencers, namely the broader VUCA environment which is becoming so pervasive.

The broader external VUCA influence

The new norm is a business environment where the challenges caused by the Volatility, Uncertainty, Complexity, and Ambiguity (VUCA) are accelerating. (Hubbard & Rogers 2019)

The message of this lead quotation from Hubbard & Rogers 2019 has been increasingly reflected in the general management and project management literature at large for many years. The VUCA acronym is widely used, but often not defined. These authors have given the following descriptions of general characteristics of the VUCA components (adapted from their Figure 2).

Volatility

- Situations/events/changes are unexpected, may be relatively unstable, and/or may be of unknown duration.
- Changes are frequent and may be unpredictable.
- Situations/events may be understandable with what relevant information is then available.
- Number of possible actions/decisions are constantly changing in relationship to the stability and/or duration of situations/events.

Uncertainty

- Situations/events underlying causes and probable effects are generally known – or are unknowns that can become known.
- Basic lack of relevant information related to the situations/events causing a lack of clarity.
- Nature or volume of any information may be inadequate to successfully process.
- Unknown whether situations/events will drive changes or produce ramifications

Complexity

- Situations/events are composed of multiple, and possibly some interconnected, parts, and variables.
- Limited relevant information is available, but some can be assumed/ predicted.
- Overall volume of information available may be over-whelming, and/or the nature of it may be too intricate and/or compound, to adequately process or analyse.

Ambiguity

- Situations/events present as unknown-unknowns – no precedents exist for making predictions.
- Unclear cause and effect relationships with, or among, situations/ events.
- Available information does not clarify situations/ events and represents a lack of knowledge.
- Former ways of conducting operations no longer apply.

Managing projects in the VUCA context

Hubbard & Rogers have developed what they describe as “General approaches in managing” each of the VUCA components, which are set down in their Figure 2.

As we have already seen in Stretton 2019h in this series, Shenhar & Dvir 2007 have very substantial guidelines on managing various levels of their two Uncertainty dimensions in their NTCP model – namely Novelty (Goals Uncertainty) and Technology (Task/methods Uncertainty) – and of their Complexity dimension. There are undoubtedly many other similarly management guidelines for various VUCA components elsewhere in the literature.

However, taking a longer-term overview of the emergence of the VUCA environment, and its relevance for project management, there have been many publications in the relevant literature which have been concerned about differences between managing projects in the relatively stable predictable environments which are often associated with the latter half of the last century, and the VUCA environment of this earlier part of the current century. Hubbard & Rogers (amongst others) describe the latter as a 4th Industrial Revolution era.

Pace 2019 evidently distinguishes between the former and the latter when he says,

There are two main categories of project management methodologies: plan driven and change driven (Table 1).

Plan driven methods	Change driven methods
Waterfall	Scrum
Critical path method	XP (extreme programming)
Critical chain method	Lean
PRINCE2	Kanban
SPIRAL	Six Sigma

Figure 4: Plan and change driven PM methods – adapted from Pace 2019, Table 1

It appears that change driven methods are still evolving in the context of managing projects in the VUCA environment, and I doubt that anyone can predict even the shorter-term consequences with any degree of confidence, let alone the longer term.

Concluding this short section on the VUCA environment in the broader context of external influencers on projects, I can only observe that managing projects effectively in this environment is one of the most significant mainstream challenges being faced by project management, and is still very much a work in progress.

We now move on to the second major contextual area to be discussed in this article.

CONTEXT OF TYPES OF PROJECT APPLICATION AREAS

Recapping discussions of types of project application areas in the first article

The types of application areas shown in the first article were derived mainly from Japan's P2M (PMAJ 2008), with the additional of a *Disaster* application area, plus an *Other application areas* component. I have made one change to the application areas shown in the first article, substituting *Aerospace/Defence* for *Administrative initiatives* (now consigned to *Other application areas*), simply because of its size and importance, particularly in the USA.

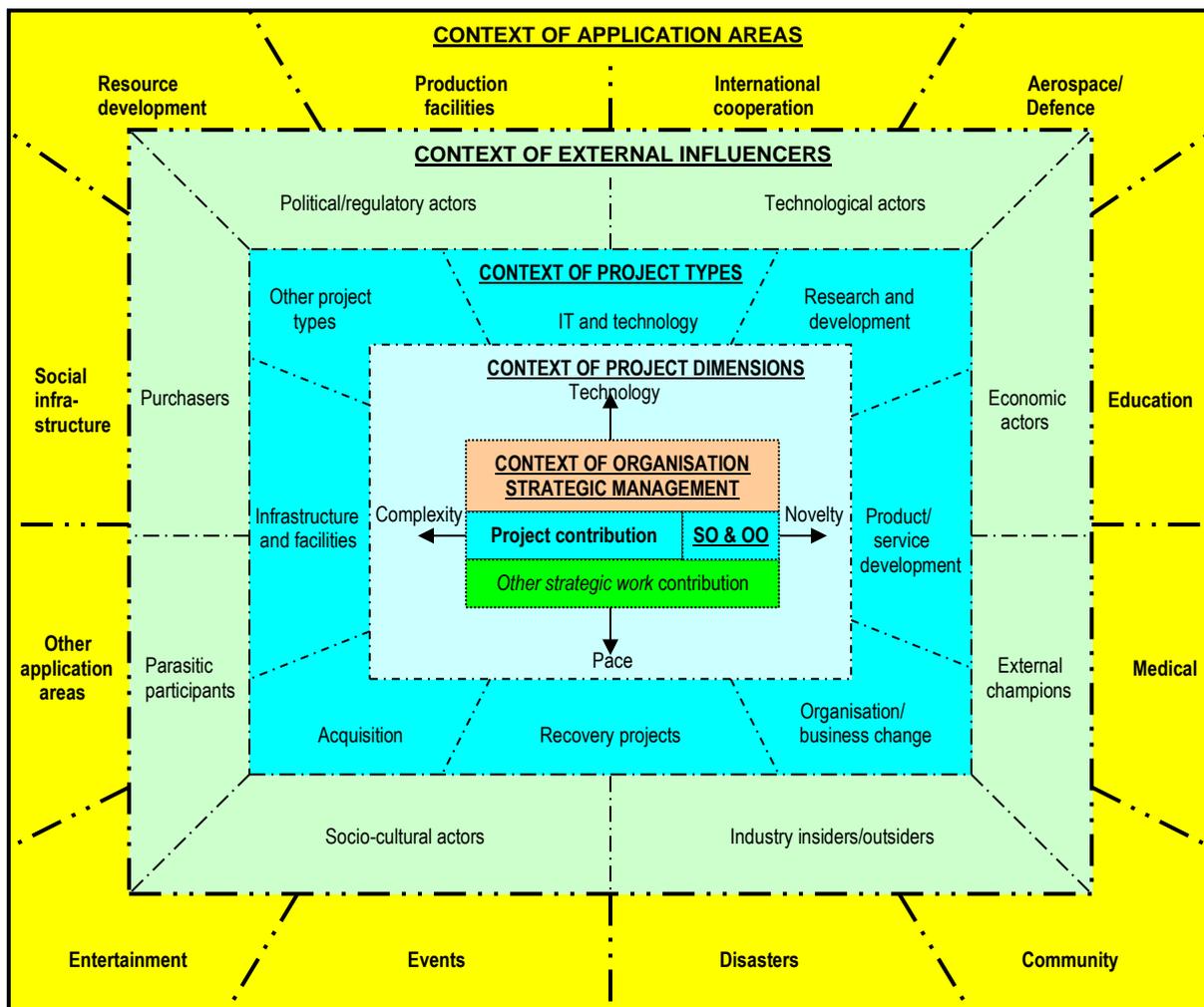


Figure 5: Adding the context of application areas to previous contexts

I did not make any substantive comments about the context of application areas in the first article of the series, but will develop one particular theme in some detail later, after some more general commentaries.

The importance of knowing how things are done in your application area

In Stretton 2019i I discussed the importance of having a very good knowledge about the nature of the work to be done within each project type. I noted that, in addition to appropriate skills in project management per se, the project manager and project team members need to bring specific nature-of-work related knowledge, skills and experience to bear on their project to ensure that the totality of the work is effectively prosecuted.

Equally important to project success is having a very good knowledge of how things are done in the application areas in which you are undertaking your project, no matter what type of project it is. Shenhar & Dvir 2007:198 discussed this topic in the context of the industry in which the project is being undertaken as follows.

One of the major contextual factors affecting project management is the specific industry in which the project is being run. It is no secret that different industries have different ways of managing projects. Although you can find specific books and studies on project management in particular industries, the differences in project management among industries have rarely been identified, studied, collected, or reported. The differences can be found in, among other things, processes, tools, techniques, standards, applications, and, of course, the technical differences and the specific technologies.

Evidently, there is more information available about some types of industries or application areas than others. There are a couple of problems here.

First, of course, it is virtually impossible to list all application areas/ industries in which projects are undertaken. Those appearing in Figure 5 are, at best, only partly representative – the “other application areas” could be very voluminous indeed.

Second, as Shenhar & Dvir imply, it would be similarly impossible to detail differences for projects in all application areas/ industries, even if the latter could be identified. So, Shenhar & Dvir tackled this situation by choosing five major industries as a representative sample of the spectrum of industries at large, and identifying differences between them in relation to seven characteristics of projects, as now briefly discussed.

An outline of major differences among projects in five common industries

Figure 6 below shows the format of Table 10-2 from Shenhar & Dvir 2007. The nature of each of the five industries is broadly indicated in the “Typical products” row. The seven characteristics described for each are listed down the left-hand side, with example details shown for the first characteristic, *Focus*.

CHARACTERISTICS OF PROJECTS IN VARIOUS INDUSTRIES					
Characteristic	Construction	Equipment and devices	Pharmaceutical and health care	Software	Process
<i>Typical products</i>	<i>Buildings, roads, etc</i>	<i>Combination of hardware and software; Tangible products</i>	<i>Drugs, medical devices</i>	<i>Applications and services</i>	<i>Process to produce materials: oil, chemical substances</i>
Focus	Functional and architectural aesthetics	Cost, product performance, and product features	Impact on public health, longevity, and quality of life	Functionality, cost, upgrade capability	Volume, cost, continuity, efficiency
Product definition					
Regulations, standards, approval					
Processes					
Preparation for production					
Risk issues					
Product support					

Figure 6: Showing format of Table 10-2, Shenhar & Dvir 2007 – Characteristics of projects in various industries – with example of how Focus varies between industries

Shenhar & Dvir have chosen what they describe as “some of the most common industries” (p.203), but of course recognise that other industries could also be discussed. However, in their words, this grouping of major industries “may be a good starting point to further focus on projects in a specific industrial environment” (p.198).

Another approach to making some sense of the context of project application areas would be to find some common attributes that are reasonably widely shared by a variety of those application areas/ industries. We have previously discussed long-term asset-based organisations in two previous articles in this series. These types of organisations appear to operate in many different application areas, and therefore to be worthy of more detailed examination in the latter context.

Application areas in which asset-based organisations are very prominent

In the third article of this series (Stretton 2019g) I introduced the topic of Owner Organisations that focus on long-term assets management, exemplifying particularly those in the oil and gas industry, and in the commercial buildings domain.

If we look at the application areas in Figure 5 above, we can see that, in three of these, we can expect to find a large number of organisations which are dominantly asset-based, as represented below in Figure 7, which is extracted from Figure 16 in the first article of this series (Stretton 2019e).

<p>SOCIAL INFRASTRUCTURE National traffic & transportation systems; Lifeline (electricity, water, gas, info, telecommunications) systems; National security and defence facilities; Urban development; Regional development; Private sector buildings; Environmental preservation systems</p> <p>RESOURCE DEVELOPMENT Development of petroleum, natural gas & power resources; Oil refining, petrochemical, chemical, metal refining; Energy conservation; Power plants and storage and delivery systems.</p> <p>PRODUCTION FACILITIES Various production plants and facilities; Logistics systems; O&M; Innovation of production systems (automation, AI, virtual factories).</p>

Figure 7: Application areas with large numbers of asset-based organisations

We could also extend this list to include elements from several of the other application areas in Figure 5, including educational and medical facilities, defence military bases and capabilities, certain types of international cooperation activities, community facilities, and undoubtedly many more. Indeed, in Stretton 2019g we very specifically noted the prevalence of entities and enterprises that are heavily involved in assets management and performance, and quoted from Pells 2019, who observed

Good examples are in the O&G and mining industries. But even better examples are cities, towns, states, government bodies and agencies (including militaries) that own, operate, maintain, replace such assets as buildings, roads, utilities, fire stations, police forces, military bases, capabilities, etc.
....these organizations and types of organizational contexts not only represent a huge portion of the global economy but have largely been overlooked in the PM models and bodies of knowledge.

We now move on to look a bit further at the role of projects and project management in the context of such asset-based organisations.

NOTES ON PROJECTS IN THE CONTEXT OF ASSET-BASED ORGANISATIONS

....an organisation must maintain and operate the assets that its projects produce. Organisations, whether they are corporations or government departments, will usually seek to exist for a long time. Projects must fit within asset management and operational environments,
(McGrath 2007)

Recapping earlier discussions on asset-based organisations

Stretton 2019f briefly discussed project management involvement in the context of strategic management of long-term asset-based organisations, based mainly on Giammalvo 2019, whose concerns were with “creating, acquiring, expanding, upgrading, maintaining, and eventually disposing of organizational assets”, notably in the oil and gas industries. There was further discussion of management of these types of organisation in Stretton 2019g, and we noted Giammalvo’s observation that the project management role is purely tactical, whereas responsibilities for strategic decisions, and the business case, lie with assets and operations management.

I observed that, in many ways, this paralleled our experience in Lend Lease, whose own office building developments, for example, were usually reckoned to have a life span of some fifty years. We had different names for the starring actors in this quite different environment – e.g. our equivalent for “asset managers” was essentially *development managers* from the Lend Lease Development company; whilst our *investment managers* from the Lend Lease Investments company were the equivalent of Giammalvo’s “operations managers”. However, the basic approach was similar, with the focus on the longer term, and with the place of the project seen in much the same way as represented by Giammalvo.

Since writing that earlier article I have come across a paper by McGrath 2007, which gives a viewpoint on assets creation and management from the perspective of the its Roads Business Group within the Queensland Department of Main Roads. Here again, the main actors have slightly different names from those discussed by Giammalvo, but are also discussed in considerably more detail.

Models of asset life-spans/ownership cycles, and a strategic mgt framework

Importantly for the purposes of this article, both Giammalvo and McGrath have discussed and illustrated what the former calls an Asset Life Span, and the latter an Asset Ownership Cycle, together with substantial additional materials that relate to these. In this article we are primarily concerned with the role of projects and their management in the context of asset-based organisations.

In the second article of this series (Stretton 2019f) we discussed the role of project management in the context of organisational strategic management. The latter of course is a component of the broader context of management of asset-based organisations. I therefore had the idea of trying to see how the asset life span/ ownership cycles of Giammalvo and McGrath compared with each other, and where they stand in relation to my organisational strategic management framework. We start with representing these separately (in reverse order).

Stretton 2019f: An organisational strategic management framework

The following representation of an organisational strategic management framework was first presented in the first article of this series, and subsequently reproduced.

1. Establish strategic objectives	2. Develop strategic options, evaluate, choose the best	3. Augment/consolidate strategic initiative(s)	4. Execute strategic initiatives	5. Achieve strategic objectives.
Establish/ re-establish the desired deliberate/ emergent strategic outcomes and benefits	Develop alternative strategic initiatives to achieve strategic outcomes / benefits. Evaluate alternatives. Choose best option(s)	Augment and elaborate chosen strategic option(s). Confirm feasibilities. Prioritise and consolidate into strategic portfolio(s).	Execute projects/ programs and other strategic work to facilitate achievement of strategic objectives	Achieve strategic outcomes and realise benefits

Figure 8: An organisational strategic management framework (from Stretton 2019f)

McGrath 2007: An asset ownership cycle

The following diagram is based on a rather more elegantly presented asset ownership cycle model in McGrath 2007, showing the basic components of an asset ownership life cycle.

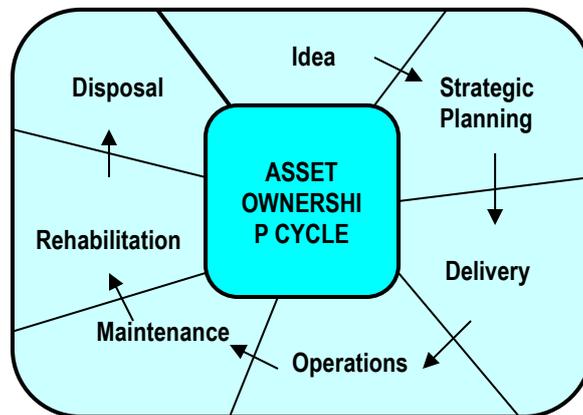


Figure 9: An asset ownership cycle (adapted from McGrath 2007)

Giammalvo 2019: Asset life span

The following phases of an asset life span are extracted from Giammalvo’s Figure 1, which is a very substantial model concerned with integrated asset, portfolio, program (operations) and project life spans.

Explore several concepts	Narrow to a few options	Select the best option	Initiate & plan the proposed project	Create the product of the project	Exploit the product of the project	Dispose of the product of the project
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Figure 10: Phases of an asset life span, sourced from Giammalvo 2019, Figure 1

Aligning the above three models

In the following assemblage, we have used only the stage headings of Figure 8, and presented Figure 9 in linear format, but with the *operations* component overlapping the post-delivery activities of *maintenance* and *rehabilitation*.

Organisation Strategic Framework	1. Establish strategic objectives		2. Develop strategic options, evaluate, choose the best		3. Augment/consolidate strategic initiative(s)		4. Execute strategic initiatives		5. Achieve strategic objectives.	
Asset Ownership Cycle (McGrath)	Idea	Strategic planning				Delivery	Operations		Disposal	
						Maintenance	Rehabilitation			
Asset Life Span Phases (Giammalvo)	Explore several concepts	Narrow to a few options	Select best option	Initiate & plan the proposed project	Create the product of the project	Exploit the product of the project		Dispose of the product of the project		

Figure 11: Aligning Figures 8, 9 and 10

The basic components of these three models appear to align quite well, in spite of differences in the levels of detailing of various components of each. The emphasis above appears to be more on the strategic planning side, partly because it was a primary concern for me in an earlier article in discussing projects in the context of the organisational strategic framework.

Time-span considerations

However, in terms of the relative durations of the above phases/stages, *operations* can occupy some fifty years with office building assets for example, and substantial, and sometimes even longer durations for other types of assets.

Figure 12 below depicts a summarised form of Figure 11 on a proportionate time scale, using the 50-year office building operational period, and a 5-year planning and delivery period.



Figure 12: A summarised form of Figure 9 on a proportionate time-scale

It can be seen that, in this example, all the pre-operations activities occupy only about one tenth of the total operational time for this office building asset. This helps illustrate one of the reasons why the operation of a long-term productive asset is normally the dominant business concern of the organisation that “creates, acquires, expands, develops, maintains, repairs and eventually disposes of” that asset (to use Giammalvo’s descriptor of asset management).

We now turn to look broadly at overall governance and management issues at various stages of the business overall, the asset life span, and the place of projects and their management within that context.

Governance and management of various aspects of asset-based organisations

In looking a little further at the governance and management of various aspects of asset-based organisations, I will be discussing the contributions by Giammalvo 2019, McGrath 2007, and our own experiences many years ago in Lend Lease. The types of organisational arrangements in each case, and the nature of the assets involved, are very different, so that the challenge will be to find common threads in their governance and management arrangements, and of the place of projects within the contexts of such arrangements.

Organisational/corporate management

McGrath encapsulates key features of the organisational/corporate management role as follows.

Corporate management is accountable to its shareholders/minister for delivering the products/services it was established to provide. Corporate management is therefore responsible for determining the structuring of its business/portfolios, and for setting the strategic direction for the whole organisation, through developing the organisational strategic plan.

McGrath goes on to point out that corporate management occurs on a longer time horizon than its business or portfolios that achieve its corporate objectives. Lend Lease Corporation is a good example of this. It has many businesses run by various operating companies. Some of these businesses have come and gone, but the corporate entity continues to thrive.

In discussing asset-based organisations, we are really talking about the business units of those organisations that are asset-based, and the contribution that those assets make to the achievement of the corporate objectives. We therefore move on to look at the management of such asset-based business units.

Management of asset-based businesses

Essentially, managers of businesses that develop and operate long-term productive assets have the overall responsibility for all aspects of those businesses, and for ensuring that they make their planned contributions to the achievement of the corporate objectives. As McGrath puts it,

Realisation of business objectives is therefore the responsibility of business (portfolio) management, ...

We will now look at the management of asset-based businesses in a little more detail, starting with identifying three primary stages to these processes.

Primary stages of asset-based business management

I start by reproducing Figure 11, and appending three primary stages of asset-based business management as they best appear to correspond with the mixture of more detailed activities in the three frameworks in Figure 11.

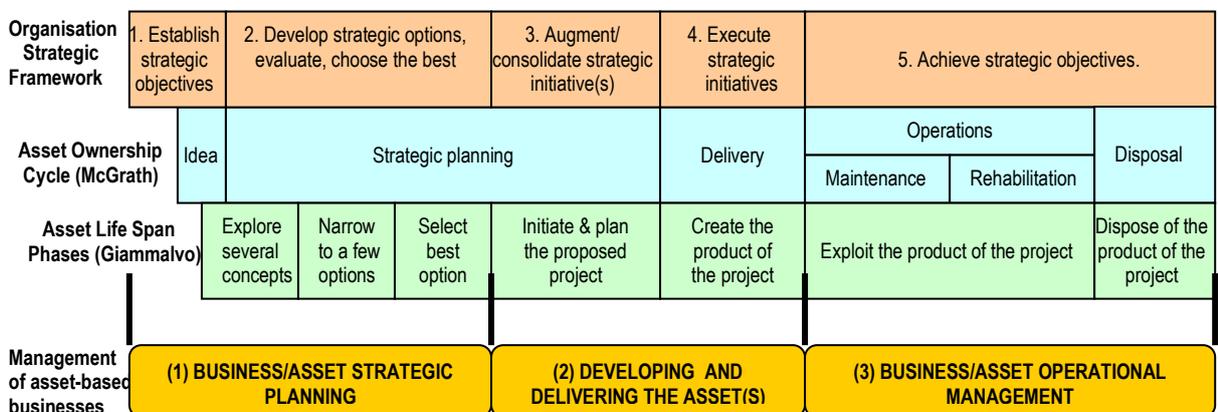


Figure 13: Adding three primary stages of asset-based business management to Figure 11

These three primary stages correspond closely with both the *Organisational Strategic Framework* and Giammalvo's *Asset Life Span*. Although the strategic section of McGrath's *Asset Ownership Cycle* is more generalised, his later figure entitled *Business Management Process Flow* is as closely corresponding as the other two.

The titles of these three primary stages are my own. We now look at each in turn.

(1) Business/asset strategic planning

Strategic planning becomes a much more encompassing and detailed set of processes in the business/asset context than it does with shorter-term strategic initiatives. As McGrath observes,

Corporate strategic plans for large organisations typically do not go to the level of detail needed to determine strategy for their individual businesses ...

This was certainly the case in Lend Lease, in which I was involved for many years in strategic planning at both the corporate level, and for one of its operating companies, Civil & Civic. Where our own office buildings and other commercial developments were concerned, the business/asset strategic planning was undertaken by the operating company specifically responsible for these, namely Lend Lease Development.

McGrath describes this set of processes as *Business/Portfolio/Strategic Planning*, and nominates the following basic steps.



Figure 14: Typical processes for business/asset strategic planning, derived from McGrath 2007

It can be seen that these processes are very much in the spirit of those of the corresponding sections of Giammalvo *Asset life span* and my earlier *Organisational strategic framework*, but with a substantial whole-of-business overlay.

(2) Developing and delivering the asset(s)

This is the stage in which the assets are developed and delivered by projects. The place of the latter in the broader context of business/asset management at large is expressed by McGrath as follows.

....an organisation must maintain and operate the assets that its projects produce. Organisations, whether they are corporations or government departments, will usually seek to exist for a long time. Projects must fit within asset management and operational environments,

This is also the stage in which we find a substantial difference between the way McGrath depicts this stage, and how it is depicted in the other two models. We start with the latter. The relationship between projects and the Organisational strategic framework was discussed in the first two article of this series, and is broadly summarised in the upper section of Figure 15 below. It can be seen that it closely resembles the depiction of this stage by Giammalvo in his *Asset Life Span* phases.

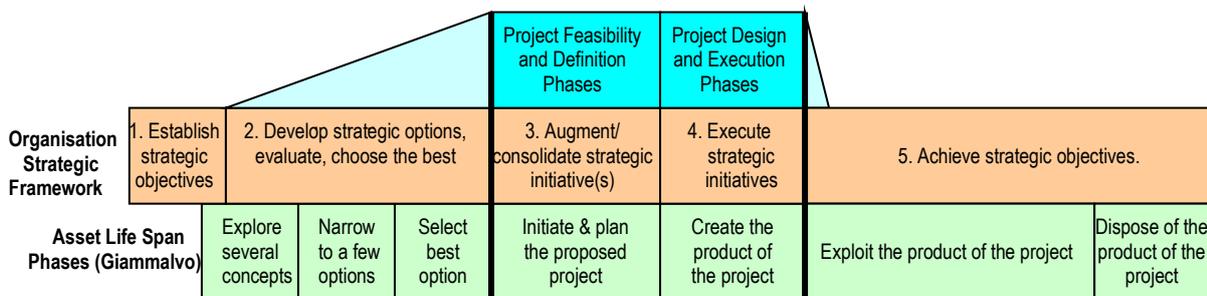


Figure 15: Depictions of developing and delivering the assets in the Organisational Strategic Framework and in Giammalvo 2019

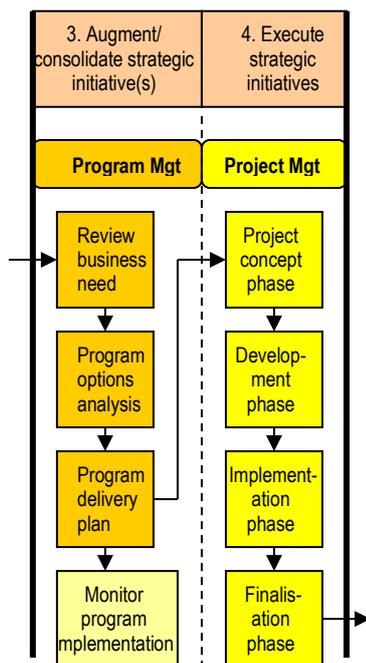


Fig. 16: Depicting McGrath's steps for primary stage (2)

Now, the above depictions of developing and delivering the assets are based on projects, and are relatively straightforward. However, McGrath's representation of what appear to cover the same primary stage in his diagram on *Business Management Process Flow* is much more complex. This has been adapted as shown in Figure 16 to the left, and it can be seen that program management is depicted as having a prominent role to play prior to the traditional project management phases.

If I am interpreting him correctly, McGrath's approach to developing and delivering the assets reflects a situation in a much more complex organisational environment than the other two models, and with a multitude of assets to be developed and managed over very long time frames. Certainly, in the text of his paper, McGrath's approach to business/assets management gives a much more prominent role to program management than I have seen in most other discussions on this and related topics.

For example, McGrath discusses their role as follows.

A program manager can manage any collection of projects, selected by any means, as a program. Responsibility for developing criteria and recommending a selection of projects and maintenance activities for the program may also rest with a program manager. However, accountability for allocating specific projects or directing project selection methods or accepting or rejecting the program manager's recommendations rests with the program sponsor or program customer or business outcome owner, whose collective responsibility it is to tailor and package programs...

These types of broader responsibilities are not inconsistent with my use of the descriptor *strategic initiatives*, rather than *projects*, in the organisational strategic framework's stages 3 and 4. This more inclusive descriptor was used to include *other strategic work* which normally needs to be undertaken along with projects. Many writers regard program management as covering both, as evidently McGrath also does. However, other writers have different perceptions of the nature of program management, which is one reason I did not adopt this descriptor.

It is also good to see program management being involved early in the strategic process, as indicated in the second sentence of the above quotation. This implies a high level of organisational maturity, which one would like to see in more companies.

Finally, it is evident that ways in which program/project management contributes to the development and delivery of assets can vary widely, from the quite complex processes discussed by McGrath, to the rather simple process we used in Lend Lease, where Lend Lease Development simply engaged Civil & Civic to do this work on an individual project by project basis.

(3) Business/asset operational management

This is the pay-off period for the organisation's investment in the asset. In the case of Lend Lease, Civil & Civic delivered the commercial building to the Lend Lease Investments company, which was responsible for operating this asset and achieving the long-term business objectives. This is also the stage which can occupy very long life-spans – in the case of LL Investments, of the order of fifty years for managing a commercial building asset, as illustrated earlier in Figure 10.

Giammalvo describes the responsible people for this primary stage simply as Operation Managers, whilst McGrath depicts this responsibility as a key part of the Business Management processes – although particular responsibilities under the Business Management umbrella are quite varied. Neither writer discusses issues related to changes of personnel over long operational periods.

As regards projects, in addition to their part in creating assets in the first place, projects have a part to play in most operational situations with long-term assets. In the course of operations, these assets need to be maintained, and often enhanced or rehabilitated as well, as indicated in the Asset Ownership Cycle in Figure 9 and noted by McGrath as follows.

Projects produce the assets to be managed, and enhancement and some maintenance work are also projects.

In Stretton 2019g we also mentioned project management participation in assets expansion, and in replacing assets. In all the above types of cases involving the use of projects in the operational stages, Business Management (or its equivalent) retains overall accountability for associated projects, of whatever type.

In relation to assets disposal, in Lend Lease we usually undertook disposal of assets such as office buildings and shopping malls as projects. I suspect many other types of organisations may do likewise, even if they don't consciously recognise them as project activities. It is also noted that, in most cases, decisions about disposing of assets can only be made at very high levels, typically involving boards or the like.

Project management in the context of asset-based organisational management

Summarising this major section on projects in the context of project application areas, we have focused on the context of asset-based organisations, because these tend to be dominant in at least three of the twelve applications areas identified in Figure 5, and are significant components of several of the other application areas.

We have found that, whilst projects have an important role to play in the broader context of managing asset-based organisation, they are not the most important contributors to achieving the organisation's objectives. Whilst projects in any context are only part of the means of achieving broader ends, the extended operational life spans of asset-based organisations tend to make this point even more evident.

I propose to discuss some ramifications of this in more detail in the next, and final, article of this series.

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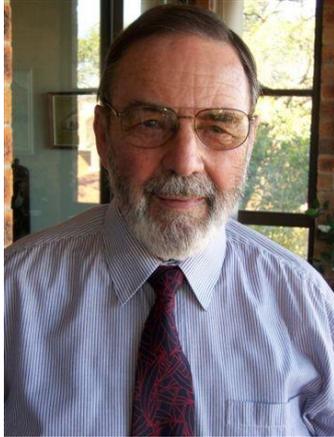
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Alan Stretton is one of the pioneers of modern project management. He is currently a member of the Faculty Corps for the University of Management & Technology (UMT), USA. In 2006 he retired from a position as Adjunct Professor of Project Management 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 200 professional articles and papers. Alan can be contacted at alanailene@bigpond.com.au.

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