

Series on general management functions and activities, and their relevance to the management of projects¹

Article 7 of 7

Some “Technical” Management Functions and Activities; Summary of Series

By Alan Stretton

BACKGROUND TO THIS SERIES

General management provides the foundation for building project management skills and is often essential for the project manager. On any given project, skill in any number of general management areas may be required. General management literature documents these skills, and their application is fundamentally the same on a project. (PMI 2004:15)

This is the final in a series of seven articles which have been primarily concerned with the part played by general management skills in effective project management. Some aspects of general management are reasonably well covered in the project management literature, but others not so well. This series has presented a broad coverage of traditional/ classical materials on general management, with the primary intention of trying to help project managers fill in gaps in their knowledge of relevant general management issues, either directly, or by guidance to sources.

Another aim of this series has been to look at various ways in which the functions and component activities of general management are relevant to the management of projects. I have tended to focus on materials in general management and project management that I have found to be most relevant and/or useful.

The first article of the series (Stretton 2015g) presented a general management knowledge framework, whose main functions are represented in the diagram on the right. The next five articles (Stretton 2015h, i, j, k, l) developed the classical/ traditional functions of management planning, organizing, leading, staffing, and implementing/ controlling, and their component activities.

This seventh article will first look at “technical” management functions, and briefly discuss their relevance to projects. The main component of this final article will then be a summary of the entire series on general management and project management.

“BASIC” MGT. FUNCTIONS

- PLANNING
- ORGANIZING
- LEADING
- STAFFING
- IMPLEMENTING/
CONTROLLING

“TECHNICAL” MGT. FUNCTIONS

¹ This series of articles on the relevance of general management activities and functions to project management is by Alan Stretton, PhD (Hon), Life Fellow of AIPM (Australia). Alan is a pioneer in the field of professional project management and one of the most widely recognized voices in the practice of program and project management. Long retired, Alan is still accepting some of the most challenging research and writing assignments; he is a frequent contributor to the *PM World Journal*. See his author profile at end of this article.

“TECHNICAL” MANAGEMENT FUNCTIONS AND ACTIVITIES

Allen 1974 recognised that, in addition to the “basic” management functions and activities discussed in the previous articles of this series, there are also specific features of each individual management situation and context that the manager must also be aware of and take into account.

He called these “technical” management functions, which cover such topics as engineering, production/ manufacturing, marketing, finance, personnel, purchasing, legal, and MIS, as indicated in Figure 7-1.

“TECHNICAL” MANAGEMENT FUNCTIONS	“TECHNICAL” MANAGEMENT ACTIVITIES
ENGINEERING Design, modify, adapt products, tools, facilities	
PRODUCTION/ MANUFACTURING Provide product or service	
MARKETING Satisfy customer needs and wants	Market research; sales; advertising; services
FINANCE Advice & service in effective use of financial resources	Controller; Treasurer; Internal auditor
PERSONNEL Advice & service in effective utilization of human resources	Medical; Labour relations; Personnel development; Selection, Compensation
PURCHASING Advice & service in procurement of goods & services	
LEGAL Advice & service in law and litigation	
MANAGEMENT INFORMATION SERVICES Advice & service in storage and retrieval	
OTHER TECHNICAL SERVICES Vary widely by type of enterprise	

Figure 7-1: “Technical” management functions and activities

PMI 2004:15 had a very similar list of what it called “supporting disciplines” to general management. With the exception of the *Engineering* function, its list included all the other “technical” functions listed by Allen, plus four additional disciplines which would qualify for Allen’s *Other technical services*. These were *Health and safety, Organizational structures and behaviour, Logistics and supply chain, and Strategic, tactical, and operations planning*.

“Technical” management functions typically take the form of individuals or departments that either undertake these technical functions, or provide relevant advice and service.

These “technical” management functions, and their component activities, can vary widely between application areas, as opposed to the universal applicability of the “basic” management functions and activities.

The relevance of the “technical” management functions and activities to the management of projects

It is clear that most of these “technical” management functions will have some relevance to the management of projects, but to varying degrees, depending on the type of project.

To take an example, purchasing is an absolutely critical component of many projects, yet there are some types of projects in which no purchasing is undertaken. A similar situation appears to apply to engineering, production/manufacturing, marketing, legal, and other technical services.

On the other hand, finance, human resources and management information services would appear to be relevant to most types of projects, most of the time.

The “technical” management functions, which can vary so much from project to project, represent some of the attributes that make the management of each project unique. As such, they are critically important for effective project management, and deserve much more prominence in the project management literature than they currently enjoy. However, they are also somewhat specialist areas, and beyond the scope of this series of articles. This series has focused on the five basic “basic” general management functions, and the component activities of these functions, as will now be summarized.

SUMMARIES OF SERIES

Broadly speaking, there have been three main components of this series of articles.

- Presentation of a representative traditional/classical general management framework, comprising five “basic” management functions and nineteen component activities, and a group of “technical” management functions.
- Discussions of each of these “basic” management functions and component activities in turn, including their relevance to the management of projects. Some of these discussions were more detailed developments of the general management functions and activities where these appeared to be useful. Other discussions focused more on the relevance aspect, where several different types of relevancies were found.
- There were also discussions which focused more on the corresponding activities in the project context, which drew substantially on issues I found most relevant or useful in a long career in general and project management.

The following summaries will discuss each of the five “basic” management functions in turn, but will focus mainly on the relevance of their component activities to project management, rather than on the broader issues discussed in some detail in the earlier articles.

MANAGEMENT PLANNING FUNCTION

Figure 7-2 briefly summarizes the relevance of the seven activities of the function of management planning to their corresponding processes in project management. We will elaborate on these a little in the following discussions.

“BASIC” GENERAL MGT. (GM) ACTIVITIES	RELEVANCE OF “BASIC” GENERAL MANAGEMENT (GM) PROCESSES TO CORRESPONDING PROCESSES IN PROJECT MANAGEMENT (PM)
Forecasting Establishing Objectives	Operational relationship: There is a direct operational relationship between the client organization’s strategic planning (incl. forecasting and objectives) and the corresponding processes in the initiation of individual projects.
Programming Scheduling	Equivalent processes, but more dynamic in the project environment. Some advanced techniques – e.g. CPM, PDM – originated in project management, and were later adopted in general management.
Budgeting	Equivalent processes, but project budgets are also have a partially dependent relationship with the client organization’s budget
Establishing Procedures Establishing Policies	Equivalent processes, but project procedures and policies also have dependent relationships with the procedures and policies in place in the parent organization.

Figure 7-2: “Basic” management planning activities and their relevance to project management

Forecasting and objectives

In Stretton 2015h we first looked at general management forecasting and objectives in the context of organizational mission statements and environmental analysis. This led to the development of a basic strategic formulation, objectives and planning flow-sheet, which included the development of a strategic portfolio of projects. The latter was then directly connected with the three initiation phases of individual projects. Therefore general management forecasting and objectives have a strong *operational relationship* with their corresponding project management activities, as indicated in Figure 7-2

Programming scheduling and budgeting

Management programming and scheduling in the project context are essentially *equivalent processes* to those defined in general management. However, the much more dynamic project environment, including time constraints and pressures for change, have resulted in some of these planning activities being more extensively developed in project management – and later adopted in general management. Project budgeting similarly has *equivalent processes* to general management, but project budgets also have a partially *dependent relationship* with the client’s budget.

Establishing procedures and policies

Here again we have *equivalent processes*, but project procedures and policies have a *dependent relationship* with those of the parent organization, for obvious reasons.

MANAGEMENT ORGANIZING FUNCTION

In the following summary from Stretton 2015i we have distinguished between the relevance of “basic” general management processes to projects undertaken in project-based organizations, and those in production-based organizations.

Production-based organizations derive most (if not all) of their revenue and/or benefits from producing and selling products and services. They are typically (although not always) configured as matrix organizations when they undertake projects, which are normally internal. Project-based organizations derive most, if not all, of their revenue and/or other benefits from creating and delivering projects.

“BASIC” GENERAL MGT. (GM) ACTIVITIES	RELEVANCE OF “BASIC” GM PROCESSES TO PROJECT MGT. (PM)	
	In project-based organizations	In production-based organizations
Developing organization structure	<i>Different issues</i> need attention in structuring temp. project org.	Also <i>different issues</i> , but complicated by complexity of matrix organization
Delegating	<i>Equivalent processes</i> to general management context	Some equivalent processes, but two GM principles do not apply in matrix org.
Establishing relationships	<i>Equivalent processes</i> apply. In the dynamic project environment, formal responsibility charts often used. Informal relationships often more important.	

Figure 7-3: “Basic” management organizing activities & their relevance to project management

Developing organizational structure

General management approaches do not appear to be particularly relevant to organizing individual projects. Temporary project organizations have many *different issues* that are not shared with permanent organizations. Project organization structuring is particularly complicated in matrix organizations.

Delegating

Two fundamental principles of delegation from general management do not apply in relation to projects undertaken in matrix contexts in production-based organizations. These are the principle of parity of authority and responsibility, and the principle of single reporting relationships. However, for projects undertaken by project-based organizations, these principles of delegation do apply, and delegation involves *equivalent processes* to general management.

Establishing relationships

Equivalent processes do apply to establishing relationships in the project context. Both formal and informal relationships need to be established in similar ways in both general management and project management contexts. However, it has been argued that informal relationships are more important on projects. Responsibility charts to formalize relationships were evidently developed specifically for projects, particularly in the matrix context, and still appear to be widely used.

MANAGEMENT LEADING AND STAFFING FUNCTIONS

These two “basic” management functions were discussed in separate articles in this series (Stretton 2015k, l). However, the materials for both are generally very relevant for their equivalents in project management, so I am amalgamating them for this summary, which focuses on relevance, as indicated in Figure 7-4.

“BASIC” GENERAL MGT. (GM) ACTIVITIES		RELEVANCE OF “BASIC” GENERAL MANAGEMENT (GM) PROCESSES TO CORRESPONDING PROCESSES IN PROJECT MANAGEMENT (PM)
LEADING	Decision making	<i>Equivalent processes</i> apply, with some relatively minor variations to accommodate the generally more dynamic project environment
	Communicating	
	Motivating	
STAFFING	Selecting people	<i>Equivalent processes</i> apply. However, in people selection, very often the project manager does not have the opportunity to select his/her project team, particularly in matrix organizations. In developing people, responsibilities between parent organization and project need to be clearly defined.
	Developing people	

Figure 7-4: “Basic” management leading and staffing activities & their relevance to project mgt.

Leading

Decision making: Broadly *equivalent processes* to GM also apply in project management. However, time constraints mean that the “real problem” is often impossible to isolate. A “quick and dirty” solution is sometimes the only practicable approach. On fast-moving projects, “Does it feel right?” is often the best indicator.

Communicating: Again we have *equivalent processes*. Virtually all management communications materials in the classical/ traditional literature appear to be equally relevant to projects, with only relatively minor adaptations for particular projects.

Motivating: *Equivalent processes* again. Overall, management motivating materials from general management appear to be equally relevant to project management. The ways in which they are applied will depend on various factors, including whether we are considering projects in production-based, or project-based, organizations.

Staffing

Selecting people: We have *equivalent processes* in selecting people in both the GM and PM environments. However, all too often, selection of people for projects is done by general managers, rather than the project manager. When this happens, project managers may need to negotiate hard with GM to get the right people.

Developing people: Again, we have *equivalent processes* in developing people. However, in some cases such as matrix organizations, responsibilities for developing people between parent organization and project may need to be clearly defined.

MANAGEMENT EXECUTING/CONTROLLING FUNCTION

Figure 7-5 summarizes the four activities of management controlling, and their relevance to corresponding processes in project management. This relevance is quite high in general terms, but project management has developed several project-specific tools to help management control in dynamic project environments.

“BASIC” GENERAL MGT. (GM) ACTIVITIES	RELEVANCE OF “BASIC” GENERAL MANAGEMENT (GM) PROCESSES TO CORRESPONDING PROCESSES IN PROJECT MANAGEMENT (PM)
Developing performance standards	<i>Operational relationships</i> exist with project planning (from which control standards derive) and thence with the client organization’s strategic planning
Measuring performance	<i>Equivalent processes</i> apply in a general context. However the pace of most projects demand, and have received, some project-specific processes to help maintain control in rapidly changing project situations.
Evaluating performance	
Correcting performance	

Figure 7-5: “Basic” mgt. executing/controlling activities and their relevance to project mgt.

Establishing performance standards

Performance standards are developed from project plans. These, in turn, derive from general management’s organizational strategic plans (Stretton 2015h). This then establishes an *operational relationship* between general management and project controlling.

Performance measurement

We have *equivalent processes* between general management and project management in general terms, notably with the circular depiction of the four activities of controlling. However project management has had to develop its own project-specific processes to help maintain control in rapidly changing project situations. In performance measuring we therefore focused on the “percentage complete” problem, and recommendations about commitment costing.

Performance evaluation

There are *equivalent processes* here too, but the focus in the project context was on forecasting final positions, and earned value approaches, which were developed specifically to facilitate project control.

Performance correcting

Equivalent processes still apply here, where the main discussion was on operating action and management action, and re-planning, which is particularly important in the project context.

SUMMARIZING THE SUMMARIES

“BASIC” GENERAL MGT. (GM) ACTIVITIES	RELEVANCE OF “BASIC” GM PROCESSES TO PROJECT MGT. (PM)		GM
	In project-based organizations	In production-based organizations	
Forecasting Establishing Objectives	Operational relationship: There is a direct operational relationship between the client organization’s strategic planning (incl. forecasting and objectives) and the corresponding processes in the initiation of individual projects.		PLANNING
Programming Scheduling	Equivalent processes , but more dynamic in the project environment. Some advanced techniques – e.g. CPM, PDM – originated in project management, and were later adopted in general management.		
Budgeting	Equivalent processes , but project budgets are also have a partially dependent relationship with the client organization’s budget		
Establishing Procedures Establishing Policies	Equivalent processes , but project procedures and policies also have dependent relationships with the procedures and policies in place in the parent organization.		
Developing organization structure	Different issues need attention in structuring temp. project org.	Also different issues , but complicated by complexity of matrix organization	ORGANIZING
Delegating	Equivalent processes to general management context	Some equivalent processes, but two GM principles do not apply in matrix org.	
Establishing relationships	Equivalent processes apply. In the dynamic project environment, formal responsibility charts often used. Informal relationships often more important		
Decision making Communicating Motivating	Equivalent processes apply, with some relatively minor variations to accommodate the generally more dynamic project environment		LEADING
Selecting people Developing people	Equivalent processes apply. However, in people selection, very often the project manager does not have the opportunity to select his/her project team, particularly in matrix organizations. In developing people, responsibilities between parent organization and project need to be clearly defined.		STAFFING
Developing performance standards	Operational relationships exist with project planning (from which control standards derive) and thence with the client organization’s strategic planning		CONTROLLING
Measuring performance Evaluating performance Correcting performance	Equivalent processes apply in a general context. However the pace of most projects demand, and have received, more project-specific processes to help maintain control in rapidly changing project situations.		

Figure 7-6: Amalgamating Figure 7-2 through 7-5

Hopefully this amalgamated figure will help some readers to get an overall picture of one important aspect of what this series has been trying to achieve – i.e. showing the relevance of general management processes to their equivalents on projects.

It can be seen that most “basic” general management activities have *equivalent processes* in project management. However, in some cases project management

has needed to develop additional project-specific processes to help project managers cope with the more dynamic environment that is characteristic of projects.

There are a few operational relationships between general management and project management, particularly in the early planning and control stages, and a couple of cases where the project activities are strongly dependent on their counterparts in the parent organization.

There are also a couple of issues in the organizing function where some general management processes are not particularly relevant to projects.

Finally, although they were not discussed in any detail, we listed typical “technical” management functions, such as engineering, production/ manufacturing, marketing, finance, personnel, purchasing, legal, and MIS. The mix of relevant “technical” management functions will vary from project to project, but, whatever the mix, their effective management is equally as important as the “basic” management functions.

CONCLUSION

It will be for others to judge whether this series on “basic” general management functions and activities, and their relevance to the management of projects, has contributed anything significant to our mutual interest in advancing the effective management of projects.

As I have said in earlier articles before this series – e.g. in Stretton 2010h, 2010g – for people like me who have spent most of their time in project-based organizations, it appears to us that the project management literature tends to over-emphasise differences between general management and project management contexts, and to devalue the similarities. This is contrary to the experience of many of us who have managed to move between the two arenas without undue discomfort.

As the lead quotation to all seven article of this series says, in very plain terms, knowledge of, and skills in, general management are fundamental to the effective management of projects. Yet this still tends to be given little more than token recognition in the more detailed literature on project management.

It is widely acknowledged that integration is a central task of project management. However, we do not appear to have integrated general management principles and practices into our project management principles and practices nearly as thoroughly as I would like to see. I hope this series of articles may contribute something towards helping achieve this.

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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.

Alan has degrees in Civil Engineering (BE, Tasmania) and Mathematics (MA, Oxford), and an honorary PhD in strategy, programme and project management (ESC, Lille, France). He 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 160 professional articles and papers. Alan can be contacted at alanailene@bigpond.com.au.

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