INTEGRATING PROJECT, PROGRAM, PORTFOLIO, ASSET AND CORPORATE MANAGEMENT

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ABSTRACT

The paper proposes an integrated framework for portfolio, program, project and asset management within a corporate management context. It analyses these management types and develops a guiding set of integrating principles. It then proposes the relationships between these five management types, and defines governance roles within them. These roles and relationships are then illustrated with reference to the Queensland Department of Main Roads internal restructuring of its Roads Business Group. This restructuring was undertaken to assist with delivery of its Roads Implementation Program that has now increased to $2B per annum.

INTRODUCTION

The project management profession over recent years has observed the deficiencies in organisational management that frequently have an adverse impact on the management of projects, and has attempted to overcome these by applying project management principles to higher organisational levels. Dinsmore (1999) and the PMI (2003) OPM3 are significant examples of this.

While this approach has the potential to resolve project governance difficulties, this potential has not been realised due to practical difficulties in application as well as organisational management resistance. Stumbling blocks have been the complexity of some proposed solutions, lack of clarity regarding the circumstances that each of the management types apply to, overlap between the concepts, and the inherent presumption that the totality of organisational management can be seen in project management terms.

This paper contends that overcoming these difficulties requires integration of the various management types through revisiting first principles to distil their essence, and their governance arrangements. An integrated framework is then developed by considering two additional concepts that have a close relationship with projects, namely:

- asset management, and
- operations as defined in the PMI (2004) PMBOK.

The rationale for this is that 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. So their businesses/ portfolios and programs align more closely with operations than with projects. Projects must fit within asset management and operational environments, and so consideration of these concepts is essential in developing a workable framework.

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METHODOLOGY

Each of the following five management types is explored from a governance perspective, identifying relevant roles and responsibilities:

- asset;
- project;
- program ;
- portfolio/business (including operations);
- organisational/ corporate.

A set of integrating principles is then developed and generic roles and functions defined. These are then applied to produce an integrated organisational framework.

Application of this theory is demonstrated with reference to the Queensland Transport and Main Roads OnQ Project Management Framework and internet website (2007), and to the current Queensland Department of Main Roads restructure.

ASSET MANAGEMENT

Management of individual assets

The Queensland Government Asset Management System GAMS (2007) identifies four organisational roles for asset management. These are owner, operator, asset manager and service provider. These roles align well with practice in Queensland Rail, another part of the Transport portfolio. They also align well with the commercialisation model of the early 1990's, as shown below:

Organisational roles under various models

GAMS	Commercialisation Theory	Commercialisation as implemented
Owner	Owner	Purchaser/owner
Asset Manager	Purchaser	
Operator	Provider	
Service Provider	Doer	Provider/doer

Problems with the more simplistic implementation of the commercialisation model in the 1990s as shown in the table above occurred when:

- the need to separate the four roles was not recognised,
- the asset manager role was misunderstood and/or overlooked, and
- internal service providers were forced to seek work elsewhere, consequently becoming less available to the parent organisation, whose performance subsequently suffered.

In commenting on what effectively is the governance arrangement for these four roles, GAMS emphasises the need to separate them as follows:

"Where the responsibility for asset management is shared (generally between owner, asset manager and/or user) the roles should be clearly delineated 'arms length' relationships to

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avoid situations where those involved become confused about the objectives of each party and to minimise potential conflicts of interest."

Although GAMS grew out of the Government Land Register (GLR) and deals with buildings rather than with civil assets, the roles it provides are generic and equally applicable to other asset types. This division of roles has found applicability within both Queensland Transport and Main Roads.

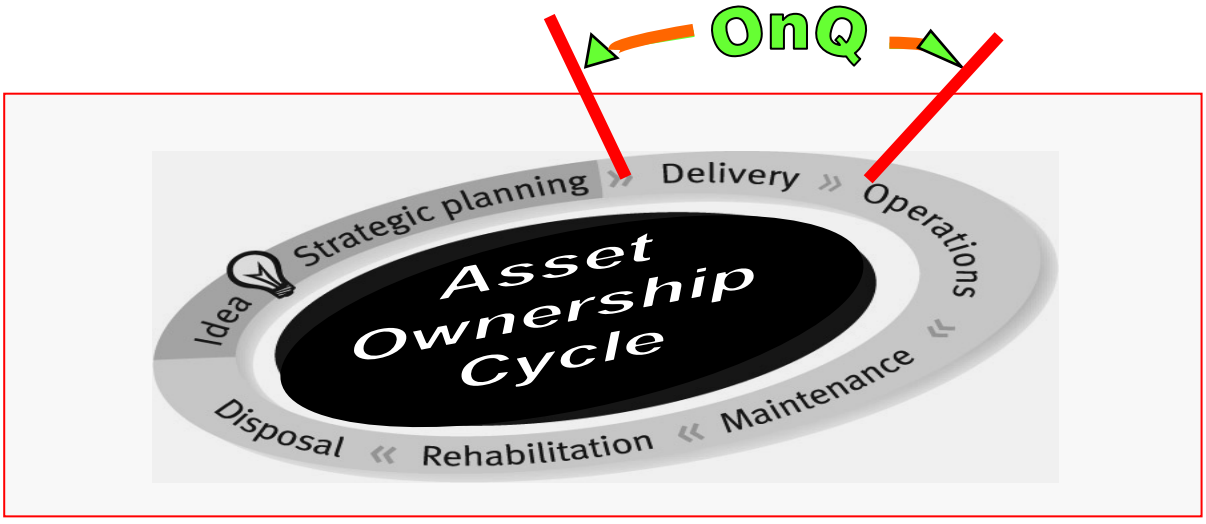
Management of the objectives that the assets achieve

This paper extends the ideas presented in McGrath (2005) and contends that an Asset Management approach can be applied at the business objectives level, by applying the same governance roles to business objectives as is typically applied to its assets. The key is dissociating ownership of the asset from the ownership of the business objectives to which the assets contribute. This can be done by controlling program structure and by setting parameters for the individual investments. This was further enumerated in McGrath (2007).

The Queensland Department of Main Roads has over the last couple of years transitioned its Regional Directors from a command and control of districts basis, to General Managers with portfolio management responsibilities for asset management, operations and service delivery. They now exercise control through strategy in the annual budget cycle, rather than through direct control of the assets or the resources producing the assets. The Deputy Director-General has been nominated as the owner of the outcomes produced by the portfolios he controls, which include State Wide Planning (asset management), Corridor Management and Operations (operations) and Program Development and Delivery (service delivery). This follows the four level asset management model for individual assets, applied at the portfolio level. Other portfolios provide corporate and support/enabling services, and report separately to the Director-General.

PROJECT MANAGEMENT

The management of assets is interwoven with the management of projects. Projects produce the assets to be managed, and enhancement and some maintenance works are also projects. The relationship between project and asset management is depicted in the following diagram showing the asset ownership cycle, as well as the place of the Queensland Transport and Main Roads OnQ Project Management Framework and website (2007) within it.

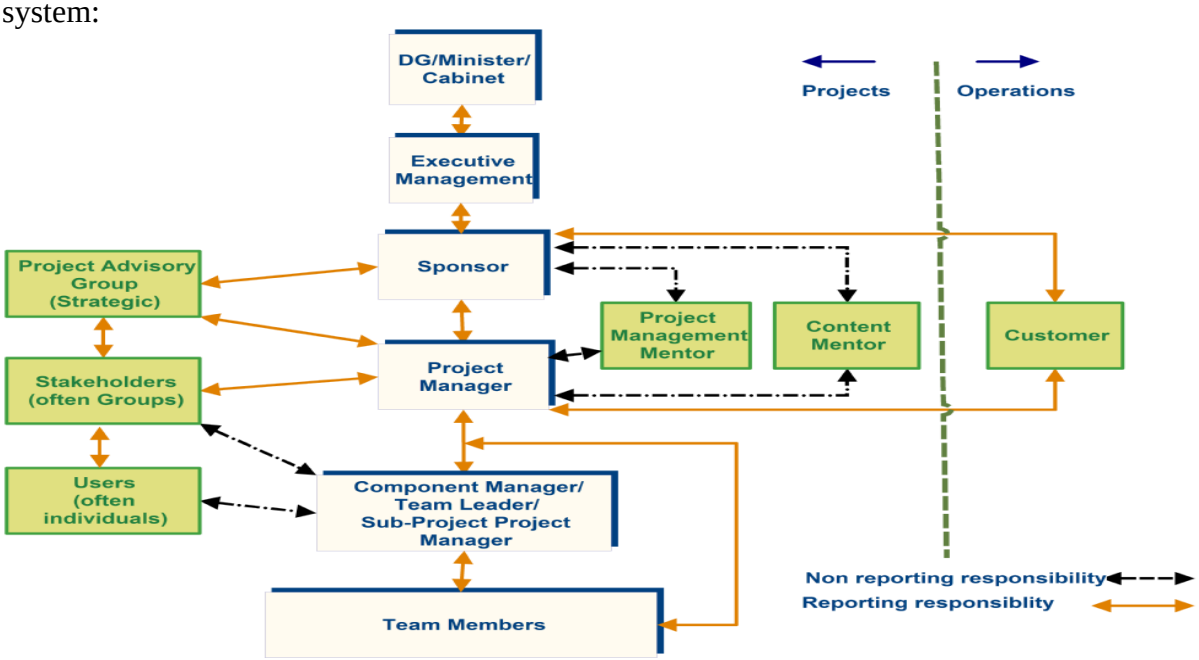


The OnQ project management framework developed by the portfolio provides the project model used in the Main Roads realignment. This model was further described in McGrath (2003) and (2006) and has an internal customer service focus. The OnQ roles given in the diagram below distinguish between the project customer and sponsor and also between the customer and the end user. This latter distinction is necessary from a governance perspective for both public and private enterprise. The end users are the customers of the business or the government Minister. However corporation or department staff have their own customer who is internal and both pays their salary and governs what they do. An organisation's staff need to please the end users of the organisation's products and services, and these end users are the customers of their higher levels of management. To the staff of the corporation or department, end users are very important stakeholders, and while consultation with them is vital, the end users do not control. It is the company board or Minister who controls, that is, makes the decisions, and accept responsibility for the consequences.

The OnQ governance model and its associated roles and responsibilities are outlined below.

Project governance model

The following diagram shows the project governance model in the OnQ project management system:



Note that the Customer and Sponsor are not the same role/person. The customer initiates the project and specifies what is required, while the sponsor ensures delivery occurs. Once the project is completed, the customer becomes responsible for the operation and maintenance.

Also note that there is no steering committee in the model, as steering committees tend to usurp the authority of the project manager and dilute accountability for the end result. However the model does have a strategic level advisory group, and its role is clearly designated as advising, not steering.

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PROGRAM MANAGEMENT

Projects are collected together into programs to achieve benefits such as:

- administrative convenience/efficiency
- economies of scale in delivery
- sequencing of delivery
- efficiency of resourcing
- coordination of related projects
- consistency of purpose
- minimisation of adverse impacts.

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 recommendation rests with the program sponsor or program customer or business outcome owner, whose collective responsibility it is to tailor and package programs to best achieve the objectives of the business as well as to best realise the benefits desired from the programs.

It follows that the program sponsor or program customer or business outcome owner must clearly nominate the benefits required. If these benefits are specified in only broad outcome terms, the program sponsor/ manager must translate them to a level that is sufficient to provide direction and guidance to project managers. In this case, the program sponsor and manager have an important role to play in benefits realisation, as they represent or act as the customer for all the projects in the program. They oversee projects through all their phases, and may also be responsibile for maintenance, requiring interaction with ongoing operations. In this case, the program manager effectively takes on the role of asset manager.

There are many methods for selecting/prioritising projects for inclusion in a program. However, such methods are considered to be tools/techniques and are listed, but not enumerated on the OnQ site. The site covers the method of program management shown diagrammatically in the figure below titled “Business management process flow”. This process uses a Program Delivery Plan with a format similar to the Queensland Government’s Integrated Transport Planning Framework (ITPF) (2003) Organisational Delivery Plan (see the OnQ site) or the OnQ project business case template, to determine how the program will be managed. A practical example of its application to an infrastructure program, and its relationship to return on investment was documented in McGrath (2006).

This approach to program management is much simpler than the much more complex method proposed in the PMI (2003) OPM3. However PMI does acknowledge the possibility of improvement in this publication, and describes its approach is a “first iteration”.

Benefits realisation

All projects and programs, without exception, need to provide benefits that contribute to achieving business objectives. This applies whether they are infrastructure or business development projects/ programs. Corporate management is ultimately responsible for the corporate outcomes and so must ensure that business/ portfolio objectives are set that provide direction to the program customer. (Note that the program customer does not have to be the

ultimate asset owner, if the required outcomes can be achieved through funding or other means of regulation.)

Realisation of business objectives is therefore the responsibility of business (portfolio) management, and program management must play a role in producing the benefits that contribute to these objectives. Specifying the business objectives of the program cannot be delegated to program managers, and specifying the detailed benefits required by the program of the individual projects in that program cannot be delegated to project managers. The desired benefits must be clearly specified to project managers, so that they can make decisions in line with these and identify issues to bring to program and possibly to business (portfolio) management for decision. It is the program manager's responsibility to be responsive to the objectives of the business and it is the project manager's responsibility to be responsive to changes the program manager may require to improve program benefits realisation.

Project managers cannot be held responsible for actually realising the benefits from a project, as the delivery team will generally move on when the project is finished. Only the organisation that had the new asset delivered and/or the organisation that subsequently operates it can realise the benefit.

Both the organisation that will own and operate the asset that the project produces, and the organisation that will derive program benefits from funding provision of the asset enabling achievement of its business (portfolio) objectives, must have a business purpose for every project delivered, including infrastructure projects. Whether the project was the right one, and whether the delivered asset actually realises the desired benefits and achieves the desired objectives is another matter. That is the province of management levels above project, namely program, portfolio and corporate. Projects are not just delivered for the sake of it. Somebody, somewhere at a higher level of management has to have ownership of that, and have a whole of life view or strategic vision that produced the project in the first place. If that strategy, vision or process was elementary, flawed or wrong, that is not the responsibility of project management. That can be a Key Performance Indicator (KPI) for higher management levels.

It is the project customer/operator and the end user that derive benefits from the existence of the new asset that the project delivers, and this is quite different to the benefits a construction business gets from delivering the project, namely making a profit and staying in business.

Program packaging/ project selection

It is the responsibility of the business (portfolio) management to package projects and maintenance, into groups for program (asset) managers to manage. The business may also allocate funding for a purpose to a program manager, and may also indicate selection methods for the program manager to use. The program manager then needs to develop this to a point where the business (program customer or outcome owner) is satisfied that the selection best meets the business need, will contribute to achieving portfolio management objectives, and will optimise delivery benefits for it. The program customer then needs to approve this. Program managers will be able to provide assistance and recommendation on tools, techniques and considerations for doing this, but cannot be held responsible for how well this fits with business (portfolio) objectives. Only the business is in a position to have all the information relevant to making a complete decision on this.

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BUSINESS/ PORTFOLIO MANAGEMENT

The guiding principle in developing the business/ portfolio management part of the Transport Portfolio's OnQ internet site has been to manage government business on private enterprise principles. This means substituting the profit outcome driver with a business outcome driver, producing cost efficiency (to either the government business or to others) as a consequence. The word 'business' has therefore been used, rather than 'government' or 'department'.

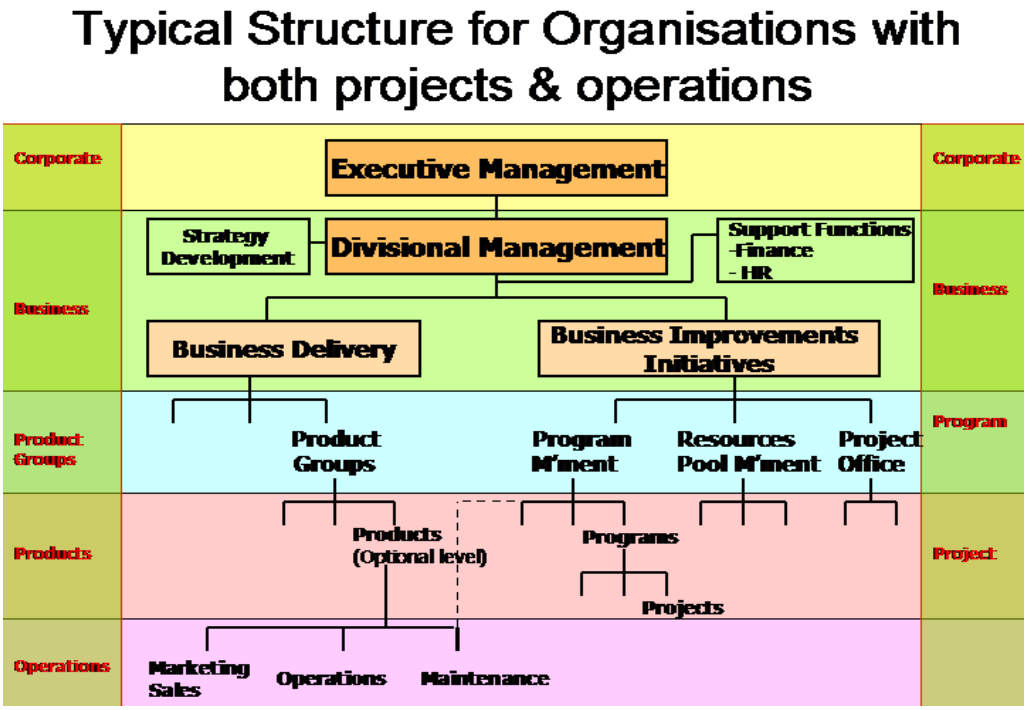
Business/portfolio management is concerned with setting the parameters for its programs. These parameters may include:

- total funding;
- objectives for programs to achieve;
- types of projects to be included;
- types of projects to be excluded.

Both private and government businesses exist to benefit their owners through providing products or services to a market/electorate. Both types of business need to acquire/develop/improve the necessary products or services (through project management) and ensure their continued existence (through ongoing management of their operations).

Any progressive business, whether it is public or private enterprise, will have two parts; one providing whatever products/services it offers to its customers, and the other developing business improvements. This is shown in the following diagram, which also shows the hierarchical relationship between products, projects, programs and the business.

Generic business structure

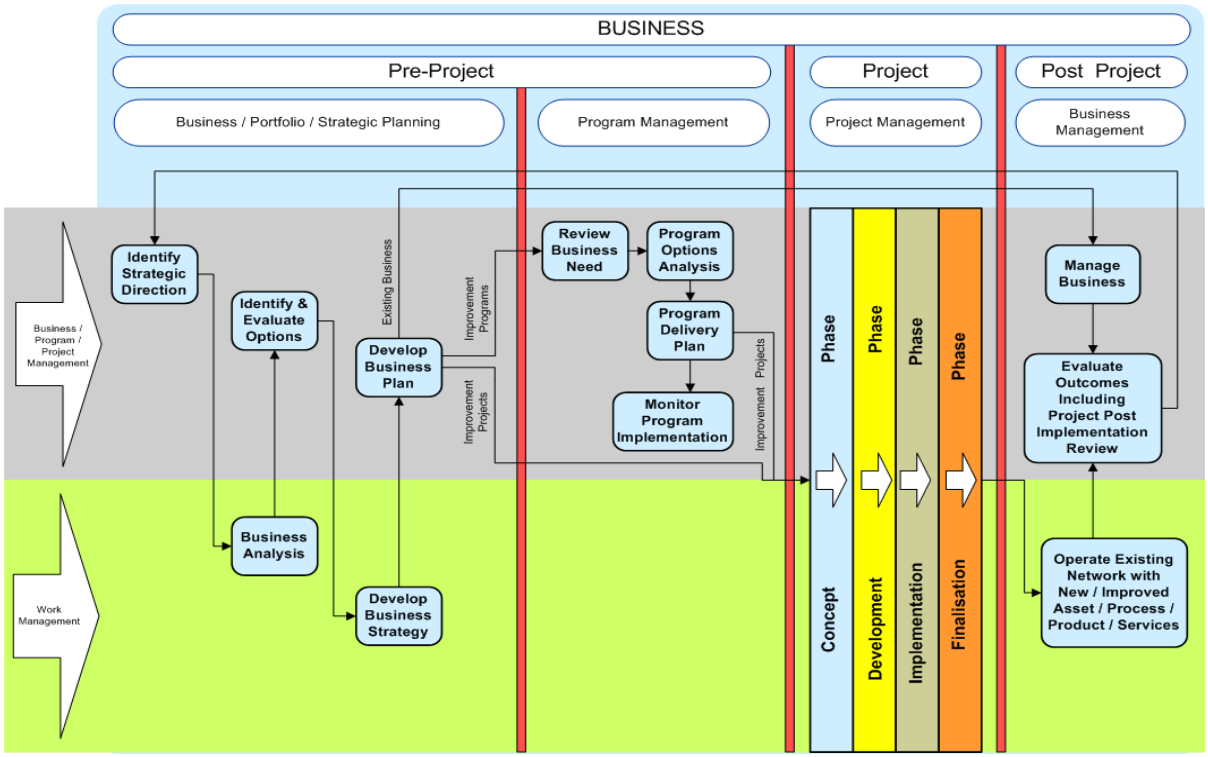


In project management or business improvement terms, portfolio management sits at the business level. The two terms are interchangeable.

Business management

The following diagram gives the process flow for the business activities (pre-, during and post- project) that are necessary for the business to establish optimum project management arrangements. This is based on the business continuing to exist over a much longer timeframe than the projects it undertakes. The business is therefore more aligned to the PMI (2004) PMBOK definition of operations, than it is to its definition of projects.

Business Management Process Flow



The pre-project stage covers both development of business strategy (itself a project activity) and development and management of programs. Corporate strategic plans for large organisations typically do not go to the level of detail needed to determine strategy for their individual businesses or portfolios. This level needs its own strategy, which provides an effective project prioritisation tool. For large organisations, it is often impractical for corporate strategy to give the level of detail necessary to decide between/ prioritise projects.

ORGANISATIONAL/ CORPORATE MANAGEMENT

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 structure of its businesses/portfolios, and for setting the strategic direction for the whole organisation, through developing the organisational strategic plan. It is also responsible for developing the management structure to ensure good governance of the organisation, through ensuring the generic levels of organisational management, as outlined above, are provided for. It must also ensure that the organisation both provides its products and services, and has an integrated means of improving them. Corporate management occurs on a longer time horizon than its businesses or portfolios that achieve its corporate objectives.

INTEGRATION INTO A SINGLE ORGANISATIONAL MANAGEMENT FRAMEWORK

To enable integration of all five management types (the 5Ms), a set of integration principles was developed.

Integration principles

1. **Responsibility is delegated as low as it can reasonably go.** This means that if two or more people in the hierarchy could be nominated for a particular role, the lowest in the hierarchy should be nominated. The higher ones will have some accountability anyway. This was also a workout objective.
2. **A customer service focus applies.** This means that for example, an SES3 in Major Projects may serve the needs of an SES2 or SO District Director. A customer service focus is inherent in the OnQ project governance model which requires identification of an internal customer.
3. **No person or position should exercise more than one governance role within the one management level.** This means that different people should fill the customer, sponsor and manager roles within each of the project, program and portfolio management levels.
4. **Ownership of the business objective does not require ownership of the business resources, organisations or assets that produce business outputs.** Some control over resources, organisations and assets is required but this can be exercised by regulation rather than by ownership. This means that:
    - Districts don't have to 'own' the MPO resources that may be delivering some of their projects
    - General Managers don't have to 'own' the districts or have them reporting to them. They can 'regulate' them by setting statewide targets and directions, and controlling through allocation of funds to achieve these.
    - District Directors can 'own' the road assets in their road network. The General Managers don't need to.
5. **The framework needs to be consistent with project management, program management, portfolio management, asset management and organisational management models and terminology.**

The above principles differ considerably from previous and some current practices. The lack of an internal customer service focus at project, program and portfolio level has led to the cultural view that an outcome cannot be achieved unless a position has the resources under its direct control to do it. This has also had classification and salary implications for individuals, and has led to silo thinking. The change to an internal customer service focus is perhaps the most significant cultural change to be made.

Generic role and function definitions

Of the project roles shown in the project governance diagram, the main governance roles are project manager, customer and sponsor. These three roles were then applied to the higher two management levels, and, together with other terms, are defined in the following table:

Generic Roles and Functions

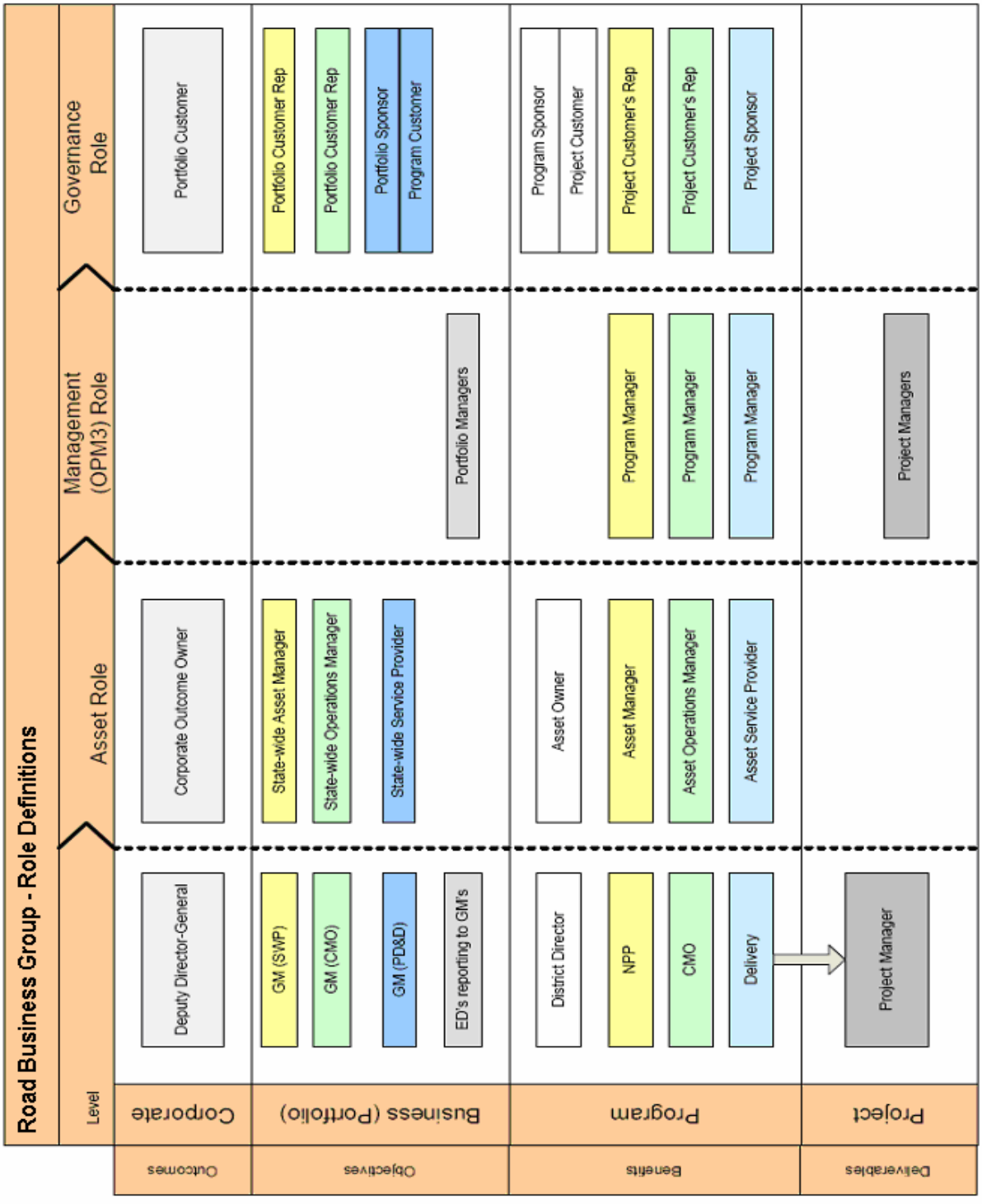
	Title	Definition	Source
Roles	**Project Customer**	The person who will "own" the asset the project produces	1
	Project Sponsor	The head of the entity that delivers the project	1
	Project Manager	The individual responsible for managing a project (2000) , The person assigned by the performing organisation to achieve the project objectives (2004))	3
	Sub-Project Manager	The person responsible for managing a sub-project	1
	Program Customer	The person(s) who will "own" the benefits the program(s) produce(s)	1
	Program Sponsor	The head of the organisation that delivers the program	1
	Program Manager	The individual responsible for managing a program. A program manager may have sub-program managers as well as project managers reporting	1
	Sub-Program Manager	The individual responsible for managing a sub-program	
	Portfolio Customer	The person who will "own" the outcomes the portfolio produces	1
	Portfolio Sponsor	The head of the organisation that is responsible for achieving portfolio delivery objectives	1
	Portfolio Manager	The individual responsible for managing a portfolio. A portfolio manager may have sub-portfolio managers reporting	1
	Sub-Portfolio Manager	The individual responsible for managing a sub-portfolio	
Management Level	**Portfolio**	A collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives. The projects or programs of the portfolio may not necessarily be interdependent or directly related	2
	Sub-Portfolio	A collection of components which includes programs, projects, portfolios and other work grouped together within a larger portfolio	2
	Program	A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements of related work outside the scope of the discrete projects in the program	2
	Sub-Program	A group of projects from a program	1
	Project	A temporary endeavour undertaken to create a unique product, service or result	2
	Sub-Project	A smaller portion of the overall project created when a project is subdivided	3
Management Type	**Portfolio Management**	The centralised management of one or more portfolios, which includes identifying, prioritising, authorising, managing and controlling projects, programs and other related work to achieve specific strategic business objectives	2
	Program Management	The centralised coordinated management of a program to achieve the program's strategic objectives and benefits	2
	Project Management	The application of knowledge, skills, tools and techniques to project activities to meet the project requirements	2

Source: 1. Currently proposed - consistent with OnQ
2. PMI, The Standard for Portfolio Management (2006)
3. PMI, Project Management Body of Knowledge (2000) & (2004)

Generic Organisational Framework

The four generic levels within organisations (corporate, portfolio, program and project) were then lined up with the OPM3 management types (portfolio, program and project) as well as the asset management roles of asset manager, operator and service provider at both asset and outcome levels.

The following diagram is a result of this alignment, and shows the generic framework aligned with Main Roads organisational positions:



DEFINITION/ BOUNDARY ISSUES

In developing this framework, there were several definition and boundary issues that had to be resolved. These are outlined below.

Governance

This paper adopts the Australian National Audit Office, (2003) definition of governance, namely the way an organisation is directed, controlled and held to account. The practical application of governance is in clearly defining who is responsible for what at all levels of an organisation, and this paper has focused on that in developing an integrated framework.

Portfolio management position in the management hierarchy

The English Office of Government Commerce's Managing Successful Programmes (MSP) (2007) uses the word 'portfolio' as a group of projects under a program, i.e. a sub-program. The American Project Management Institute (PMI) in its Organisational Project Maturity Model OPM3 (2003), sets out the hierarchy of portfolio above program above project, in line with Westminster terminology. This paper adopts this convention, along with the definitions in the PMI Standards for Portfolio (2006) and Program Management (2006.

Program and portfolio management processes

PMI in OPM3 defines a program management process that is quite complex. This complexity results from the initial presumption that the complete project process needs to be replicated at the program level. The OPM3 portfolio process presumes the same again at the next level up, and then copies the program process with the word ‘program’ changed to ‘portfolio’.

One problem with this approach is that, while programs and portfolios may have a start and end, these are generally on a completely different timescale to project start and end. Portfolio management starts and ends when a business commences and ceases trading; when a government ministerial portfolio is created or abolished; or when internal departmental portfolios are restructured. Programs start and end when the political or organisational will/need to fund them either starts or goes away. Programs and portfolios tend to exist for a long time, and so align more closely with the definition of operations than they do with the definition of project.

This leads to a second problem that only some of the lower level processes are relevant at the next level up. Furthermore, at each level other concepts need to be introduced, namely asset management concepts at the program level, and business management concepts at the portfolio level.

The approach taken in earlier sections of this paper address both these issues.

Boundary between programs with projects and projects with sub-projects

Reiss (2007) says that organisations like NASA use programme management to refer to one huge project. The Skylab, Moon Lander and Hubble initiatives were all known as programs, and these initiatives were made up of many projects.

This paper contends that multiple projects provide program benefits that contribute to

achieving portfolio objective(s). Using the OnQ terminology, if a large project is split into multiple related projects, the effort does not become a program. Rather, the multiple projects become sub-projects.

Boundary between program and portfolio levels

This boundary is affected by whether a bottom-up or top-down approach is used. If one starts from a project base and extrapolates upwards, programs are collections of projects and maintenance, and portfolios are bigger collections of projects, maintenance and operations. Starting from this perspective, it is possible to argue interminably as to where the transition is between program and portfolio, and there appears to be no compelling case for competing arguments.

However, if one steps back from a project view, and takes a top-down management view, it is generally not very difficult to determine who is at the corporate level, and who is at the project level. Even the program level is not so difficult to determine. This then leaves only one level left - the business or portfolio level. So, whoever is left in between must be doing that.

People working at the portfolio level will generally consider their work to be 'program management', because they work on big programs across multiple branches/districts of the organisation. However, these people are unlikely to object to the suggestion that they perform a 'higher' level of management, and would generally acknowledge that branch/district offices carry out some part of the program management process.

It is also possible for people at the program level to consider their work is 'portfolio management', as they may have responsibility to operate, maintain and enhance the organisation's network of assets in their geographic area. However, these people would generally acknowledge that central offices also perform a portfolio management function.

There can also be a need in both types of offices (central and branch/district) to have more than one level of the one management type, creating the need to have sub-programs and sub-portfolios. To avoid conflicting terminology, it was decided in Main Roads that whatever functions head office branches perform would be called 'portfolio management', with a sub-portfolio terminology also used if necessary within head office branches, and that the program and sub-program management terminology would be applied to what the Main Roads districts do. The distinction for Main Roads is that portfolio management is state-wide and the districts carry out program management of their district program. The District Director has a program role as program sponsor, with managers reporting who actually carry out the program management function. These program managers may have sub-program managers reporting to them who each manage smaller collections of programs.

Note that the District program is determined by road elements, funded and reported on by funding source and managed by packages that are generally determined at the geographical (district) level. These packages are likely to cut across element categories and funding sources to achieve delivery efficiencies. The Roads Implementation Program (RIP) (2006) has the word 'program' in it and is certainly a program in any definition of the word. However, it is also a collection of all the department's programs. To match the program and sub-program terminology, the RIP could be called an 'uber program' or, in other words, a portfolio of programs. So, development of the RIP is an exercise in portfolio management that requires determination of program structure and total funding as well as resolution of any conflicts between competing district requirements.

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CONCLUSION

This paper has described the development of asset, project, program, portfolio/business and corporate management types (the 5 Ms) into a cohesive, generic, integrated organisational management framework. It has addressed some definitional issues around current terminology, and described how this has been applied within Queensland Main Roads. The paper builds upon previous waves of organisational change theory, from excellence in the 1970s, through quality, commercialisation and managing by projects. It adds missing concepts to produce a functional, integrated framework.

REFERENCES

Australian National Audit Office, (2003) *Public Sector Governance, Volume 1, Better Practice Guide: Framework, Processes and Practices*, ANAO, Canberra, p 6.

Dinsmore, P., (1999) *Winning in Business with Enterprise Project Management,* American Management Association, New York.

McGrath, S.K., (2003) *Changing Culture in a Government Department*, World Project management Week, Surfers Paradise.

McGrath, S.K., (2005) *OnQ – A journey through Project, Program and Portfolio Methodology*, PMOz Conference, Surfers Paradise.

McGrath, S.K., (2006) *Maximising ROI through project governance clarity within a strategic management context***,** Complex Project Management Conference, Brisbane.

McGrath, S.K., (2006) *Lifecycle Project Management*, M2 Asia, Project Management Strategies for Team Leaders and Managers in the Public Sector Conference, Kuala Lumpur.

McGrath, S.K., (2007) *Using Strategic Asset Management as an Infrastructure Strategy Tool*, IIR, Public Infrastructure and Asset Management Conference, Sydney.

Office of Government Commerce, (2007) *Managing Successful programmes (MSP).*

Project Management Institute, (2000) *A Guide to the Project Management Body of Knowledge Third Edition (PMBOK Guide) 2000 Edition*, Project Management Institute, Inc, Pennsylvania, pp205-208.

Project Management Institute, (2004) *A Guide to the Project Management Body of Knowledge Third Edition (PMBOK Guide)*, Project Management Institute, Inc, Pennsylvania.

Project Management Institute, (2003) *Organisational Project management Maturity Model (OPM3) Knowledge Foundation*, Project Management Institute, Inc, Pennsylvania.

Project Management Institute, (2006) *The Standard for Portfolio Management*, Project Management Institute, Inc, Pennsylvania.

Project Management Institute, (2006) *The Standard for Program Management*, Project Management Institute, Inc, Pennsylvania.

Queensland Government - Department of Main Roads, (2006) *Roads Implementation Program 2006-07 to 2010-11*.

Queensland Government - Queensland Transport, Department of Main Roads, Department of Local Government and Planning and Local Government Association of Queensland, (2003) *Integrated Transport Planning Framework for Queensland – A Guide for Transport Planning*.

Queensland Government – Queensland Transport and Main Roads, (2007) *OnQ Project Management Framework*, www.transport.qld.gov.au/onq

Queensland Government – Queensland Treasury, (2007) *Government Asset Management System*, www.treasury.qld.gov.au/office/knowledge/websites/gams

Reiss, G., (2007) The Universal Disagreement to Programme Management around the World, Program Management Newsletter, London.

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