



Management By Projects

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OVERVIEW: This document provides an outline of the technique of using Management By Projects to manage IT Business.

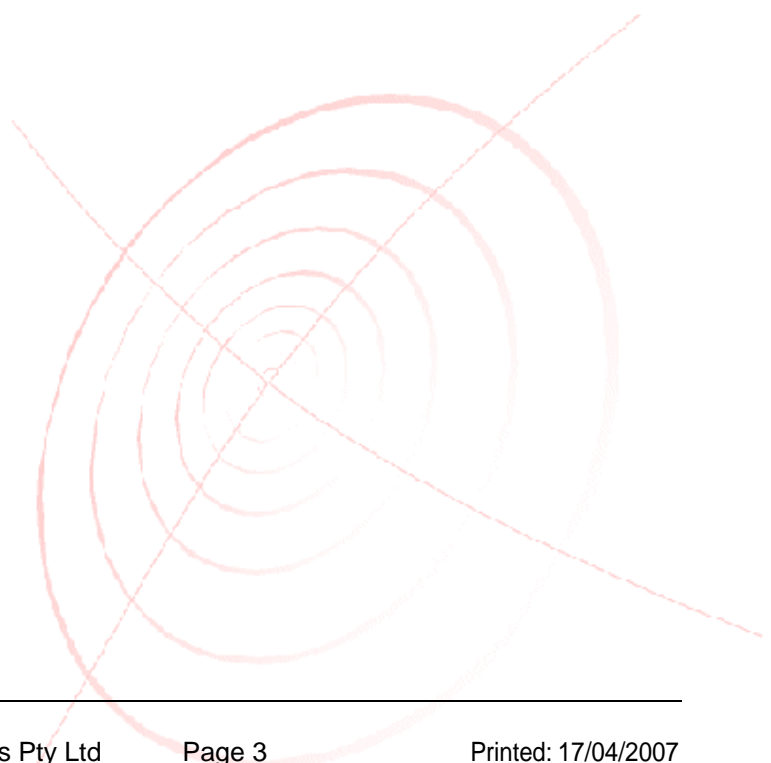
APPLICABILITY: This document is applicable to organisations that deliver IT products and or services.

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1. Project Managers Wish

Three people: a project manager, a software engineer, and a hardware engineer are in Brisbane for a two-week period helping out on a project.

About midweek they decide to walk up and down the beach during their lunch hour. Halfway up the beach, they stumbled upon a lamp. As they rub the lamp a genie appears and says "Normally I would grant you 3 wishes, but since there are 3 of you, I will grant you each one wish."

The hardware engineer went first. "I would like to spend the rest of my life living in a huge house in Surfers, with a BMW in the garage, no money worries and lots of friends." The genie granted him his wish and sent him off to Surfers.

The software engineer went next. "I would like to spend the rest of my life living on a huge yacht cruising the Pacific with no ties and no money worries." The genie granted the engineer her wish and sent her off to the Pacific.

Last, but not least, it was the project manager's turn. "And what would your wish be?" asked the genie.

"I want them both back after lunch" replied the project manager.

2. IT Project Management – the basics

2.1 What is Project Management ?

A project is defined as *"a temporary endeavour undertaken to create a unique product or service."*

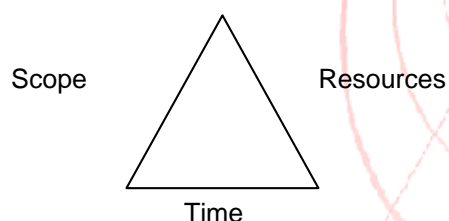
Temporary means that every project has a definite beginning and a definite end with the end being reached when the projects objectives have been achieved or when it becomes clear that the objectives cannot be met and the project is terminated.

It is the application of knowledge, skills, tools and techniques to project activities in order to meet stakeholder expectations from a project.

This involves balancing competing demands among:

- Scope, Time, Cost and Quality
- Stakeholders with differing needs and expectations
- Identified requirements (needs) and unidentified requirements (expectations)

The 'trade off' triangle demonstrates the fundamental problem presented to IT companies.



As the diagram depicts any change in one side will have an impact in one or more of the other sides. A change in scope will have an impact on resources and / or time etc.

The main use of Project Management by IT organisations is to balance these variables and tends to be approached as :

- Define the scope (tasks)
- Forecast the work effort (work)
- Allocate resources (usually people)
- Determine availability of the resources (calendars)
- Define the resource tasks over a time line (scheduling – Gant, Pert charts etc)

Project management is generally approached with a single focus. Projects are concerned only with the requirements for the project at hand. If resources were not shared and there were no other projects or activities in the organisation then this approach would be simple and effective.

The issue, as we are all aware, is managing multiple simultaneous projects and shared resources.

2.2 Elements of Project Management

The Project Management Institute defines the Project Management knowledge areas as:-

2.2.1 Project Integration Management

Co-ordination of the project elements – consist of project plan development, project plan execution and overall change control

2.2.2 Project Scope Management

Ensure that all and only the work required to complete the project successfully is considered – consists of initiation, scope planning, scope definition, scope verification, scope change control.

2.2.3 Project Time Management

Ensure timely completion of the project – consists of activity definition, activity sequencing, activity duration, estimating, schedule development and schedule control.

2.2.4 Project Cost Management

Ensure the project is completed within the approved budget – consists of resource planning, cost estimating, cost budgeting and cost control.

2.2.5 Project Quality Management

Ensure the project will satisfy the needs for which it was undertaken - consists of quality planning, quality assurance and quality control.

2.2.6 Project Human Resource Management

Ensure the most effective use of the people involved – consists of organisational planning, staff acquisition and team development.

2.2.7 Project Communications Management

Ensure timely and appropriate generation, collection, dissemination, storage of information – consists of communications planning, information distribution, performance reporting and administrative closure.

2.2.8 Project Risk Management

Concerned with identifying, analysing and responding to project risk – consists of risk identification, risk quantification, risk response development and risk response control.

2.2.9 Project Procurement Management

Acquiring goods and services from outside the organisation – consists of procurement planning, solicitation planning, source selection, contract administration and contract close out.

If we were to rank the above in order of 'attention given' by most organisations it would have to be as follows:-

Most attention:-

1. Project Scope Management
2. Project Human Resource Management
3. Project Time Management
4. Project Cost Management
5. Project Integration Management

Least attention:

6. Project Quality Management
7. Project Communications Management
8. Project Risk Management
9. Project Procurement Management

This is not to say that the second group are not important to organisations, it is more the case that defining and implementing controls over these is much more difficult.

Most Project Management tools are designed to manage the above for single projects or groups of projects that are sometimes referred to as Programs. They do not however cope well where all business activities in the organisation are managed by projects. Also most tools cater well for the first group however lack simple, easy to use facilities for effectively managing the second.

2.3 How do projects help you manage IT business?

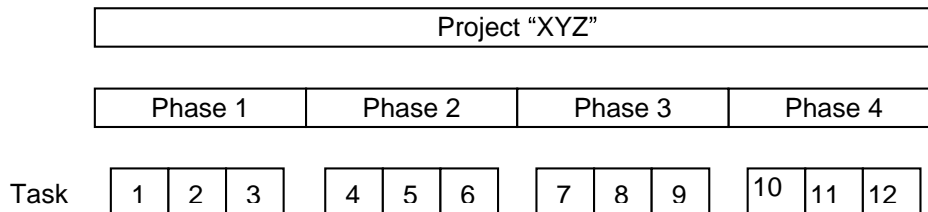
One of the main advantages of Projects to IT organisations is that they provide order and control over separate activities performed by individuals.

Projects act like a filing cabinet within which we can collect requirements, develop plans and monitor progress. Information that is obtained during the project is collected, associated with the project plan and used to make decisions that will affect the outcome of the project.

Methods such as hierarchies, dependencies, milestones, resource levelling etc are methods that are used against this information to assist with the management of the projects.

One method used to get some sort of order over these activities is to apply Hierarchical relationships to the activities. This is useful in being able to visualise the project at various levels such as the project

in total or by phase. For example Hierarchies allow us to see where individual tasks fit in the overall time scale and what the potential impact of changing a task will have on the project.



Some of the benefits to IT organisations of using Projects include:-

- Understanding of resource demand
- Clear definition of scope / objectives
- Timing (what tasks are to be finished when?)
- Managing variations to scope
- Issue tracking
- Collection and management of relevant and related information
- Charging AND costing control
- Conveying objectives to staff

Projects help us to understand – What, When and How.

3. Management By Projects – not just consolidated projects

3.1 Managing Work

Work that organisations perform can be categorised into two types: operations and projects.

They are the same in that they are both:-

- Performed by people
- Constrained by limited resources
- Planned, executed and controlled

They are different in that:-

- Operations are ongoing
- Projects are temporary and unique

The Management By Projects technique allows us to manage both types of work as projects.

Management by projects recognises that projects cannot be considered in isolation from other work. All work needs to be considered in aggregate so that the right projects are being worked on by the right people at the right time.

This may involve operational activities as well as project type activities. Is an ongoing support service less important than a particular development project? We should be able to view resource plans and actual time spent across all activities and not just projects where a project plan has been defined.

The Project Management Institute recognises this approach as follows:-

*“The term project management is sometimes used to describe an organisational approach to the management of ongoing operations. This approach, more properly called **management by projects**, treats many aspects of ongoing operations as projects in order to apply project management to them.”*

3.2 An Approach To Business

Management by projects is therefore an **approach** to conducting business. It is not more of the same project management.

Rudolph Boznak (PM Network, January 1996) puts it succinctly:

"Project management versus Management by Projects is not merely a twist on words ... there is a significant difference in concepts, scopes and capabilities. Success in a Management by Projects environment requires a far different approach than merely applying more of the same project management systems and methods."

The table below summarises this:

Project Management is:	Management by Projects is:
The direction and management of a project	The integration, prioritization, communication and continuous control of multiple projects
A discipline	An operating environment
Project-wide	Enterprise-wide
A tactical issue	A strategic issue

3.3 Program Management

Management By Projects is sometimes referred to as Program Management. This is where large Projects are broken down into smaller more manageable projects which then consolidate into a single Program. In this case there is usually a single Program Manager and multiple Project Managers.

This is not broad enough to classify as Management By Projects. Based on the above definition we would need to have a single Program for the entire organisation if Program Management was to qualify as Management By Projects. This is because Management By Projects is organisation wide.

Program Management usually results in Project Plans being rolled up into a single consolidated project, the Program. It would not be advisable to roll up all projects for an entire organisation nor would it make sense to do so.

We would however want to be able to review a range of projects, perhaps all projects for a particular business unit or customer. This would allow us to manage priorities, resources, etc for the selected projects.

Also we would want to be able to review resource schedules across all projects. We need to be able to manage the effective use of those resources and so expect to be able to see all projects that resources are working on.

3.4 Drivers

Project Management is “goal focussed”. It is concerned with meeting the project goals and expectations. Management By Projects is more concerned with “operational effectiveness”. What is the best that we can achieve given all of the demands being made of our available resources?

Management by projects therefore provides the means by which we can balance the conflicting goals of project management and resource management.

Project management is generally implemented in a “snapshot” like manner. It is only as good as the last updated plan. Management By Projects however is supposed to be more dynamic providing real time information on activities and events.

4. Why - the benefits of Management By Projects

There must be significant benefits to warrant implementing the Management By Projects approach.

Following are some of these:

4.1 Information Availability

Few would dispute the benefits of Project Management. Especially when it comes to IT Projects. Most IT organisations practise Project Management for the larger software development projects or service projects. The tools used are not particularly cost effective for small projects and therefore tend to be used on projects of an importance level of ‘we better get this one right’ or above.

Management By Projects systems are somewhat different to Project Management tools in that they allow all activities to be cost effectively managed as projects. They are a central knowledge base for the organisation, being fed continuously from a number of sources compared to Project Management tools that are periodically updated by one or two individuals.

This data collection results in more extensive and accurate information being available on demand for decision making. The central knowledge base is accessible by all stakeholders and is the window on the businesses heartbeat. It is the aggregate of all projects that represents the business in its entirety. The health of the business can be measured by the accumulated health of all projects.

4.2 Customer Management

Customers will be made aware that all services and products provided by the service provider are controlled as projects. This is a demonstrable level of professionalism and will differentiate the service provider from others as providing greater value.

Customers will also become aware that the level of professionalism that they use in dealing with the service provider will become much more visible. The customer will be inclined to ensure that their procedures are appropriate and are operating effectively. This will produce better results for both business as they both strive for improvement.

Sales opportunities are captured by Management By Projects as it provides the business a mechanism to manage requests and potential projects. Estimates and quotes may be managed by project.

4.3 Time Management

- Manage Ad Hoc (unplanned) usage of time as well as planned usage of time
- Effective prioritisation of work
- Include all operational activities including support tasks
- Available, planned and actual time maintained in single knowledge base
- Reduce administration tasks such as collating information for reporting, manual report preparation etc

4.4 Human Resource Management

- Capacity management – manage resource pool across various views such as across skills, business units etc
- Real time capacity view and management
- Resources have visibility of their assignments and priorities and are able to take responsibility for managing them
- Visibility over the entire organisations activities (both past and future)
- Include internal and external resources in plans
- Increased utilisation of resources
- Visibility of resource utilisation – utilisation KPI's
- What skills are required in what areas for the organisation (not just within a project)

4.5 Cost Management

- Manage charging and cost information – apply a business focus and not just project management focus
- Analyse all business activities costs including direct revenue generating and non revenue generating activities
- Planned / forecast charge outs for the organisation can be managed
- View current progress (estimates to complete) directly with total budget and cost to date
- Manage internal and external costs (contractors)
- Defined, repeatable and efficient processes may be implemented and fine tuned, ultimately providing greater value for service dollar.

4.6 Communications Management

Management by projects creates awareness across the organisation of the different activities and priorities. For example how does re-prioritisation of people affect other projects?

Having a full understanding of capacity and project priorities before committing to client projects is essential if quality work is to be delivered on time and on budget. It is also important in understanding the pressures being applied to staff.

Interaction between business units is achieved with Management By Projects as “Process Owners” have a window on all ‘Specialist Departments’ and common data is shared and updated between departments. (ie Request to Project to Works Order to Test to Delivery to Billing)

Accessibility of information by all stakeholders is also key to improvements. Input from all stakeholders, which is crucial to the success of the projects, can only be obtained if those stakeholders are properly informed.

The various product and service delivery processes must be effective and clearly understood internally and externally by customers and applied across all projects if success is to be achieved. Management by projects is instrumental in implementing these processes.

4.7 Project Scope Management

Project scope, that is the requirements or deliverables of the project are usually not static. They tend to be varied during the life of the project. This comes about as discoveries are made during the project, additional information becomes available, peoples understanding of the actual requirements and proposed solutions improves etc.

This requires the ability for the service provider to effectively interact with the customer and other key stakeholders of the project and to be pro active in recording, responding etc to these changing requirements.

Management by projects requires request / change management systems to be tightly integrated with the project management function. A system that also manages the requirements, correspondence, priorities, chronological history of change in scope etc will greatly assist in ensuring that the project objectives are met.

The benefits of this are:

- Informed decisions and quicker response when facing changes in plans (overall impact is known)
- Understand how each change impacts the project work and schedule
- Better management of the project costing
- More effective cost management
- Visibility of actual deliverables against individual requests / requirements
- History of change in scope during the life of the project
- A consistent, standard and repeatable way of planning and controlling projects.

5. How - it is implemented

Implementing a system is not the answer.

Projectising your business and implementing a system in support of this IS the answer.

In fact most IT businesses today are projectised to some degree. Already they are practicing project management for specific projects. Making the decision to go that one step further to implement Management By Projects in the organisation is not that difficult because most staff already understand the reasons why and the need.

Implementing it requires a number of steps to be taken.

5.1 Business Structure

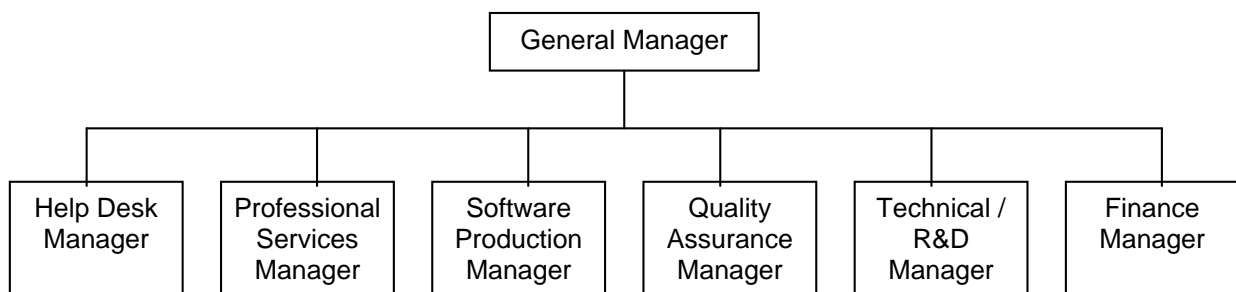
Most IT organisations are based on departmental structure and responsibilities. These are referred to as Hierarchical or Matrix type structures. In a Hierarchical structure Senior Management drive the organisation. They essentially require Senior Management to run the organisation via a chain of reporting down the line to the workers.

In a Matrix organisation responsibility is given to departmental managers and the hope is that there will be more management input from more management personnel. The department managers are typically responsible for the training, availability, hiring/firing etc. of their staff. They provide an expert-level service for work to be accomplished. The project managers use those services by requesting personnel for particular projects.

In a purely project based organisation all responsibility lies with the Project Managers. There is the benefit of single mindedness but also the down-side of staff not sensing belonging.

There are upsides and down sides of each of these types of management structures. For organisations that are primarily involved in IT business the best structure is most likely a mixture of all of these.

Matrix Structure

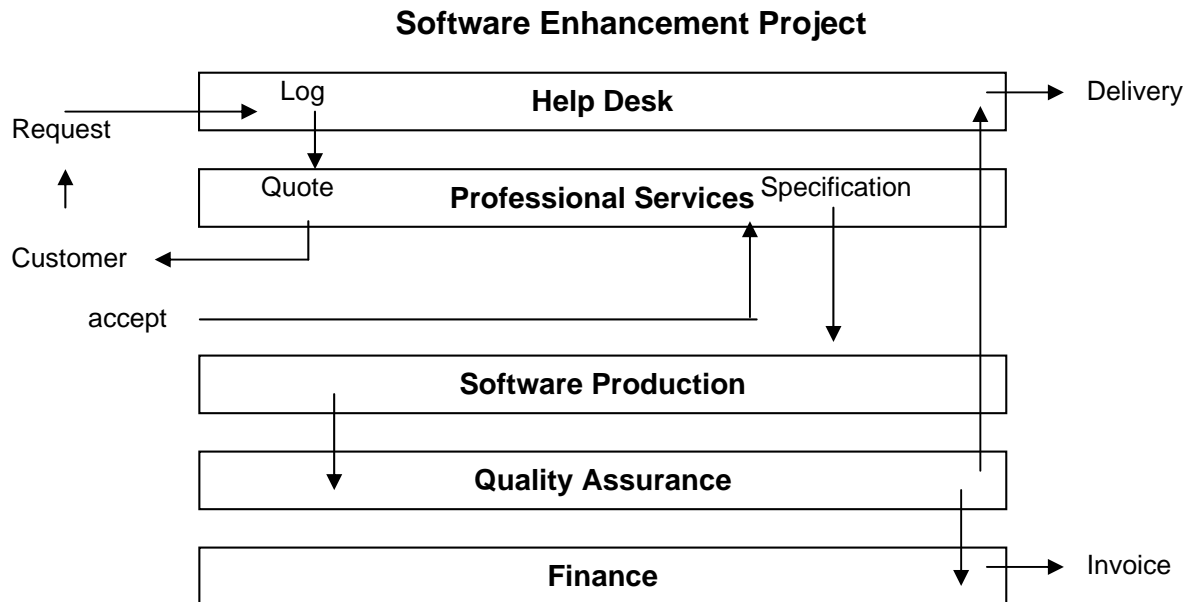


If we view the above Matrix structure we can see that each of these managers has their own area of specialisation. Their performance is probably measured on different criteria and they have their own tools to ensure that they do their 'job' as best they can. The business is viewed this way from financial budgets through to management reporting.

One of the main problems with the above is that it does not address the fact that customers and management are more concerned with the efficiency of lines of business activities namely processes. This information is much more strategic than reviewing a departments performance.

Projects are like this in that we can measure if the project was successful against a number of criteria. ie time, cost, quality, etc The customer and the business is very concerned with these measures of success.

If we were to take a Software Enhancement project then this could lead to the following process being performed:-



Each department is concerned with their own 'roles' in delivery of the product or service to the customer. The business however is concerned with the efficiency of the entire project and that it met the customers expectation in all respects such as quality, cost, time etc.

The project success becomes more important than individual department performances. A project is concerned with the tasks required to achieve the desired outcomes. If we take the above Software Enhancement Project we are concerned with the outcome of getting the correct software to the customer at the correct time at the correct cost. In this case the responsibility is with the Project Manager and not with the Department Managers.

More organisations today are trending towards giving more authority to the project management aspect of their business. There is the desire to at least be able to track the organisation by project if not manage all personnel that way. This requires a steady move from a Hierarchy or Matrix business structure to a mix of Hierarchy and Project or better still a mix of Matrix and Project.

Management By Projects requires all aspects of the business to be treated as projects. This requires definition of the business activities, determination of the projects required to support these and then assigning roles and responsibilities to various individuals. What types of projects will be created, who will manage these etc. The above Software Enhancement project may be requested by the Help Desk team but who will be the Project Manager? Perhaps the Professional Services manager is the best choice.

When you start to implement structure changes, go slow. Start with one aspect of the total structure. Wholesale changes all done at once are almost always destructive. Make a small change in one area and see how it affects the rest of the organisation. You can continue to implement area by area following this kind of plan until you've reached a level which is comfortable for the entire organisation.

5.2 Processes V's Projects

Previously we have talked about projects. But what is the relationship between projects and processes?

Projects have a number of tasks that must be undertaken to complete them. So too do processes. A project could be described as a document that details the process required to achieve the desired outcomes.

In Management By Projects we use projects not only to manage the unique fixed duration projects but also the ongoing activities including for example customer support.

The process of providing on going support services could be covered under a project where the process for this has been defined. The project defines and controls the process of undertaking different types of business activities.

These on going activities can be managed as projects as long as the system used is capable of handling the repeat use of the project. This requires ongoing planning of resources, repeat billings, period by period based reporting and more.

Also Unplanned activities or Ad Hoc service activities need to be able to be handled as projects. Managing these is just as important as effectively managing the planned activities. The customers expectations of you as a service provider is that you are responsive to all requests and not just those that have been made known in structured pre planned way.

5.3 ALL Business Activities

Management By Projects requires all business activities to be managed using this method. It is an approach to business and therefore covers all activities of the organisation.

This will not occur from day one and as has been previously recommended it should be approached progressively.

The following table details a number of business activities that an IT organisation may undertake.

It does not include if they are provided in a planned way or on an ad hoc basis.

Examples Of Business Activities

Services		
	Fixed Duration	On Going
External	Network installation	Facilities management
	Product support (Pre paid or Post invoice)	Product support (Pre paid or Post invoice)
	Project management	Web hosting / maintenance
	Systems integration	Distributor support
	Web development	Consulting
	Custom systems development	Technical support
	Consulting	Software maintenance
	Training	
	Technical support	
	System modifications / customisation	
Internal	New product R & D	Administration
	Existing product R & D	Team meetings

	Targeted sales efforts	General sales efforts
		A/C's receivable and payable management
		Management reporting
		Marketing
		Team Training
		Holidays / Sick Leave

As can be seen from the above table Management By Projects covers all business activities. Management By Projects serves a purpose in that it requires an organisation to formally define what it's business activities are and how these are performed.

6. What - changes are required

To implement Management By Projects requires changes in a number of areas:

6.1 Management Techniques

The organisation needs to start thinking about and applying the management techniques that Management By Projects provides.

Reviews of the organisations performance will be based on performance indicators for particular categories of projects and individual projects rather than departmental performance.

An example of a performance indicator available from Management By Projects could be:-

Billable Ratio (billable time as a % of total time)

Management will have a different expectation of the Billable ratio for Professional Service projects compared to R&D projects.

6.2 Definition Of Primary Business Activities

The organisation needs to define and manage each type of business activity separately.

Most organisations know what the main business activities are however have not formally defined them or manage and report by them. Defining and managing each type of business activity is required for the greatest result.

Example of these include:

- Marketing
- Product Distribution
- Funded Development Projects
- Business Consulting Fees
- Application Consulting Fees
- Research and Development Projects
- Sales

- Software Maintenance Services

An analogy of this is a department store managing the hardware department quite separately to the ladies fashion department. The promotion, margins, staff etc all have quite different management requirements and expectations.

Some of an IT organisations business will also be covered under contractual requirements such as service level agreements for software maintenance. These obviously require a different approach and level of attention to other activities.

6.3 Management Responsibilities

The organisation needs to assign responsibility for business activities to individuals. How this is done needs to be considered

It is most likely that individuals will not only be responsible for particular project categories (business activities) but also for particular groups of customers, locations, products, services within these activities.

This is akin to the assignment of Process Owners within the organisation. For larger organisations this could be the Program or Project Office staff. In smaller organisations it will most likely be staff that currently have management responsibility for professional services, customer support, product delivery etc

These people will be responsible for managing the projects within their project categories, customer groups etc. They will also take an interest in the overall performance of the organisation in these areas. These people will be the 'usual' Project Managers however this could vary on a project by project basis.

6.4 Resource Management

People are the businesses most valuable resource. Appropriate attention should be given to resource planning and management to ensure that they are effectively utilised.

Resources should be scheduled across the whole organisation and not just against individual projects.

The task of scheduling resources within projects is difficult enough. When it comes to scheduling resources across multiple projects the job becomes even harder. Most organisation have no way of scheduling staff across projects that are of varying size, complexity, levels of urgency, varying skill requirements etc.

Scheduling resources across the organisation is however what is ultimately required. People are the primary resource and for the business to be efficient the people must be effectively utilised.

6.5 Performance Measures / Metrics

Management should review and adopt the metrics that Management By Projects provides organisations.

Because data is collected by project and rolled up to summary levels the information available is more than organisations would have previously had available. Performance measures normally available by individual projects will be available for the organisation in total.

Metrics such as billable ratio, billable rate, contribution rate, service levels and such will be available from the project level right up to the organisation in total.

6.6 Staff Training – Project Management / Management By Projects

All personnel should become involved in the implementation and usage of Management By Projects if it is to be successful.

While the day to day activities do not change the information around and required for those activities is entered into and used from a Management By Projects system.

Some of the types of information required to implement management by projects includes:-

- Recording time against projects
- Recording planned usage of time
- Entering project based information including:-
 - Quotes
 - Project Requests
 - Updating project related notes / communication
 - Recording work items against projects
 - Managing project correspondence

Staff should be trained in the principles and techniques being applied as well as in use of the system supporting Management By Projects.

7. Systems - what a good “Management By Projects” system should provide

Management By Projects is an organisation wide approach to business. Because of this broad scope of activities, the requirements should be broken down into the common requirements and the function specific requirements.

The common requirements are those that will be used across all activities of the organisation while the function specific requirements are those that cover a particular activity.

The common requirements include:

- It should be simple to use
- Accessible by all stakeholders at all times
- Provide organisation wide visibility of project and resource data
- Implement structure to the business activities ie group all Software Maintenance projects
- Provide resource planning across the organisation
- Synchronise individuals resource schedules with project resource schedules
- Provide Performance Metrics both for forecasts and actual's
- Integrate with function or department type systems such as Help Desk
- Provide powerful project costing facilities and automated billing generation
- Provide Earned Value facilities to be able to report revenues, costs and margins on a period by period basis
- Manage internal and external resources (scheduling and costing)
- Cater for ad hoc as well as planned work

One of the best known but least considered issues is the number of differing activities and projects that staff are involved with every day. These cover planned to unplanned, operational to support, business administration tasks, marketing, pre sale, post sale etc

A Management By Projects system must be capable of supporting all activities across the organisation. This also means that it must be accessible to all people within the organisation and even extend to stakeholders external to the organisation.



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