

PORTFOLIO, PROGRAMME & PROJECT MANAGEMENT
MATURITY MODEL (P3M3)

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Version 1.0



Contents

1. INTRODUCTION	3
2. OVERVIEW OF THE MODEL	7
3. THE MATURITY MODEL	10
LEVEL 1	10
LEVEL 2	13
LEVEL 3	36
LEVEL 4	62
LEVEL 5	71

1. Introduction

The Portfolio, Programme & Project Management Maturity Model (P3M3) described in this document is an enhanced version of the Project Management Maturity Model, based on the process maturity framework that evolved into the Software Engineering Institute's (SEI) Capability Maturity Model (CMM). However, since P3M3 was designed SEI has overhauled radically their set of Maturity Models to create CMMI. This important development has not only led to the integration of the many previous CMMs, but also to a different model representation showing both continuous and staged (level model).

The SEI experience between 1986-91 indicated that maturity questionnaires provide a simple tool for identifying areas where an organisation's processes may need improvement, but unfortunately the questionnaire was too often regarded as 'the model' rather than as a vehicle for exploring process maturity issues.

It was concluded that the development of a descriptive reference model would be beneficial in providing organisations with more effective guidance for establishing process improvement programmes. It may also be used as the foundation for systematically building a set of tools, including a maturity questionnaire. The key point is that the model, not a questionnaire is the basis for improving programme and project management processes.

Similar to the SEI-CMM, the Portfolio, Programme & Project Management Maturity Model (P3M3) is described by a five level maturity framework. These levels constitute the structural components that comprise the P3M3.

It is anticipated that the P3M3 may be refined and expanded as better practices in the domain of portfolio, programme and project management evolve. This evolution may lead to new or amended key practices at specific levels of the P3M3.

The descriptive reference model, presented in this report, can be used in several ways. For example:

- to understand the key practices that are part of effective portfolio, programme & project management processes;
- to identify the key practices that need to be fully embedded within the organisation to achieve the next maturity level;
- by organisations wanting to understand and improve their capability to manage programmes and projects more effectively;

- by customers wanting to appreciate the risks acquired through process capability issues associated with a particular service provider, managing their programmes and projects;
- by OGC, User Groups, Consultancies, and Accredited Training Organisations (ATOs) as the basis for developing maturity questionnaires;
- by accredited service providers in preparing teams to perform programme and project management process assessments or capability evaluations.

OGC has for some time considered why projects fail and the impact of the causes of failure on the actual project outcome. The causes of failure can be placed in the following categories:

- *Design and definition failures* where the scope of the programme and / or project(s) are not clearly defined and required outcomes and /or outputs are not described with sufficient clarity.
- *Decision making failures* due to inadequate level of sponsorship and commitment to the programme and / or project(s), i.e. there is no person in authority able to resolve issues.
- *Programme and Project discipline failures*, including weak arrangements for managing risks and inability to manage change in requirements.
- *Supplier management failures*, including lack of understanding of supplier commercial imperatives, poor contractual set-up and management.
- *People failure*, including disconnect between the programme and / or project(s) and stakeholders, lack of ownership, cultural issues.

The P3M3 helps organisations address fundamental aspects of managing portfolios, programmes and projects, improve the likelihood of a quality result and successful outcome and reduce the likelihood of risks impacting projects adversely.

The P3M3 describes the portfolio, programme and project-related activities within key process areas that contribute to achieving a successful project outcome. The P3M3 recognises not only the programme and project management activities being carried out at the individual programme and project level, but also those activities within an organisation that provide focus and help sustain effort to build a programme and project infrastructure of effective programme and project approaches and management practices. In the absence of an organisation-wide programme and project infrastructure, repeatable results depend entirely on the availability of specific individuals with a proven track record and this does not necessarily provide the basis for long-term success and continuous improvement throughout the organisation.

The levels described within the P3M3 indicate how key process areas can be structured hierarchically to provide transition states for an organisation wishing to set realistic and sensible goals for improvement. The levels facilitate organisational transitions from an immature state to become a mature and capable organisation with an objective basis for judging quality and solving programme and project issues.

An organisation that is judged immature in programme and project management terms may deliver individual programmes and projects that produce excellent results occasionally. However, managers are more likely to work in a reactive mode, i.e. focused on solving immediate issues. Programme and project schedules and budgets are likely to be exceeded because of the lack of sound estimating techniques. If deadlines are imposed, programme and project deliverable quality is likely to be compromised to meet the schedule. For example, verification and validation activities, including reviews may be skimped or dropped if the programme and projects fall behind schedule.

A mature organisation has an organisation-wide ability for managing programmes and projects based on standard, defined programme and project management processes. These processes can be tailored to meet the specific organisational needs. The programme and project approaches are communicated to programme and project team members and stakeholders, and activities are carried out in accordance with the plans and the defined processes.

The organisation ensures that the defined processes are updated when necessary, and improvements are developed and implemented in accordance with a sound business case and development plan. Roles and responsibilities for carrying out all programme and project-related activities are defined and are clear throughout the organisation.

In a mature organisation, managers monitor the progress of the programme and /or project(s) against the appropriate plan(s), including the quality of programme and project deliverables and customer satisfaction. There should be an objective, quantitative basis for judging the quality of deliverables and analysing problems with deliverables, programme and / or project approach, or other issues.

The mature organisation should have programme and project information from previous programmes and projects on which to evaluate schedules and budgets, ensure they are realistic and review performance.

Learning from previous programmes and projects, establishing and embedding programme and project management processes, and ensuring that programmes and projects acquire the skills and competencies to undertake the necessary activities are of paramount importance. Such endeavours should enable an organisation to gain confidence in a programme and / or project's ability to deliver the expected outcomes, to cost and schedule and achieve the required quality characteristics.

2. Overview of the model

The Portfolio, Programme & Project Management Maturity Model (P3M3) can be used as the basis for improving portfolio, programme and project management processes. It is structured with five levels of maturity, which are:

- Level 1 - initial process
- Level 2 - repeatable process
- Level 3 - defined process
- Level 4 - managed process
- Level 5 - optimised process

These five levels constitute the structural components that comprise the P3M3 and can be characterised as follows:

Maturity:	Project	Programme	Portfolio
Level 1 - initial process	Does the organisation recognise projects and run them differently from its ongoing business? (Projects may be run informally with no standard process or tracking system.)	Does the organisation recognise programmes and run them differently to projects? (Programmes may be run informally with no standard process or tracking system.)	Does the organisation's Board recognise programmes and projects and run an informal list of its investments in programmes and projects? (There may be no formal tracking and reporting process.)
Level 2 - repeatable process	Does the organisation ensure that each project is run with its own processes and procedures to a minimum specified standard? (There may be limited consistency or co-ordination between projects)	Does the organisation ensure that each programme is run with its own processes and procedures to a minimum specified standard? (There may be limited consistency or co-ordination between programmes)	Does the organisation ensure that each programme and/or project in its portfolio is run with its own processes and procedures to a minimum specified standard? (There may be limited consistency or co-ordination)
Level 3 - defined process	Does the organisation have its own centrally controlled project processes, and can individual projects flex within these processes to suit the particular project?	Does the organisation have its own centrally controlled programme processes and can individual programmes flex within these processes to suit the particular programme?	Does the organisation have its own centrally controlled programme and project processes and can individual programmes and projects flex within these processes to suit particular programmes and/or projects. And does the organisation have its own portfolio management process?

Maturity:	Project	Programme	Portfolio
Level 4 - managed process	Does the organisation obtain and retain specific measurements on its project management performance and run a quality management organisation to better predict future performance?	Does the organisation obtain and retain specific measurements on its programme management performance and run a quality management organisation to better predict future programme outcomes?	Does the organisation obtain and retain specific management metrics on its whole portfolio of programmes and projects as a means of predicting future performance? Does the organisation assess its capacity to manage programmes and projects and prioritise them accordingly?
Level 5 - optimised process	Does the organisation run continuous process improvement with proactive problem and technology management for projects in order to improve its ability to depict performance over time and optimise processes?	Does the organisation run continuous process improvement with proactive problem and technology management for programmes in order to improve its ability to depict performance over time and optimise processes?	Does the organisation run continuous process improvement with proactive problem and technology management for the portfolio in order to improve its ability to depict performance over time and optimise processes?

Within each level of maturity the P3M3 describes the programme and project-related activities within various key process areas. Each process area has a consistent structure, which is both descriptive and focused on outcomes.

These are:

- functional achievement/process goals
- approach
- deployment
- review
- perception
- performance measures.

The key process areas within the maturity model are detailed in the table below.

Level 1	
1.1	Project definition
1.2	Programme management awareness
Level 2	
2.1	Business case development
2.2	Programme organisation
2.3	Programme definition
2.4	Project establishment
2.5	Project planning, monitoring & control
2.6	Stakeholder management & communications
2.7	Requirements management
2.8	Risk management
2.9	Configuration management
2.10	Programme planning & control
2.11	Management of suppliers & external parties
Level 3	
3.1	Benefits management
3.2	Transition management
3.3	Information management
3.4	Organisational focus
3.5	Process definition
3.6	Training, skills & competency development
3.7	Integrated management & reporting
3.8	Lifecycle control
3.9	Inter-group co-ordination & networking
3.10	Quality assurance
3.11	Centre of Excellence (COE) role deployment
3.12	Organisation portfolio establishment
Level 4	
4.1	Management metrics
4.2	Quality management
4.3	Organisational cultural growth
4.4	Capacity management
Level 5	
5.1	Proactive problem management
5.2	Technology management
5.3	Continuous process improvement

3. The Maturity Model



Portfolio, Programme & Project Management Maturity Model Level 1: Initial process

Lifecycle function / Key process area description:

1.1 Project definition

The purpose of project definition is to gain a common and agreed understanding within an organisation that it conducts discrete projects, and that these projects are explicitly recognised. In defining projects the organisation should identify some project objectives.

A project should also be managed i.e. subject to at least some management activities, including activity identification. A project is also likely to have some form of project lifecycle, which may be of benefit in high level planning.

Functional achievement / Process goals

- Recognise and establish the objectives for the project.
- Gather the necessary resources to achieve the project objectives, within a specific timescale and agreed budget.

Approach

- Each project should have *agreed objectives* and be given the necessary resources to achieve those objectives.
- The organisation should *recognise* the *projects* they are undertaking.
- Each project manager should possess the ability to *identify* the *key activities* that must be carried out.

Deployment

- *Outline Project plans* are *drawn up* to distinguish project phases and/or stages.
- Any *changes* in project requirements should be *recognised*.

Review

- The *projects should ideally be reviewed* by senior management on a periodic basis.

Perception

- The *views of stakeholders* should be sought regarding the project progress.

Performance measures

- Projects may have either qualitative or simple measures of their planned and actual performance relating to *budget and/or timescale*.
- *Change* in project objectives or customer requirements should be *identified*.

Portfolio, Programme & Project Management Maturity Model Level 1: Initial process

Lifecycle function / Key process area description:

1.2 Programme management awareness

The purpose of programme management awareness is to gain a common and agreed understanding within an organisation that in delivering the right benefits and outcomes from change, a structured framework to coordinate, communicate, align, manage and control all of the activities is necessary.

Programme management involves the coordination, direction and implementation of a portfolio of projects and activities that together achieve outcomes and realise benefits that are of strategic importance to the organisation.

Functional achievement / Process goals

- Recognise and establish a framework for implementing business strategies, policies and initiatives, or large-scale change, with an overall vision of the desired outcome.
- Recognise that major change can be both complex and risky with many interdependencies to manage and conflicting priorities to resolve.
- Recognise that the breakdown of such initiatives into manageable chunks (tranches) with review points for monitoring progress and assessing performance helps minimise risk and deal with complexity.
- Help the organisation integrate and reconcile competing demands for resources and provide a focus for projects.

Approach

- The need for a *structured framework* should be *acknowledged* and agreed within the organisation.
- Programmes should *focus on outcomes* rather than outputs.

Deployment

- A *structured framework* should be *established* to co-ordinate, communicate, align, manage and control the activities involved.
- Programme *outcomes* are perceived and *described in* terms of a *vision* for the programme.

Review

- Programmes should ideally be *reviewed* by senior management *on a periodic basis*.
- There should be regular reviews of projects within a programme to *verify* continued *alignment* with programme objectives and plans.

Perception

- The *views of stakeholders* should be sought regarding the programme outcomes and their attainment.

Performance measures

- The *attributes* of a successful programme should be *recognised*.
- Programmes should *focus on* the *benefits and threats* to their achievement.

Level 2

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.1 Business case development

The purpose of a business case is to present clearly the rationale, and obtain commitment and approval for investment.

A business case provides a framework to enable a particular investment proposal to be linked with the achievement of an organisational objective. It should provide a succinct appraisal of the various options and describe how a particular investment fits with overall organisational policy, and contributes to the achievement of business objectives.

Functional achievement / Process goals

- Recognise and establish a framework for informed decision-making in planning and management of business change and the subsequent benefits realisation.
- Provide sufficient clarity so that stakeholders understand fully what the proposed investment will mean for the organisation.
- Ensure that there are appropriate owners for each key aspect of a business case, e.g. achievability aspects, commercial aspects etc.
- Ensure that each business case is formally approved and signed-off by an 'Investment Decision Maker'.

Approach

- A Senior Responsible Owner (*SRO*) should be *responsible for each business case*.
- Each business case should *provide information about the benefits* and the *risks* in achieving them, *costs and timescales*.
- Each business case should effectively *describe what the value is* to the sponsoring organisation from the outcomes of a programme, and / or deliverables from projects.
- Each business case should *provide a single point of reference* for *justifying the proposed investment*.

Deployment

- *Programme-level business cases* should provide a summation of project-level business cases and *provide* the programme's *overall balance of benefits and costs against strategic objectives*.
- Business cases should *provide the business justification* and be *maintained throughout the life of programmes and projects*, to ensure that progress remains aligned to strategic objectives.
- The investment *justification* presented in business cases should be *based on* the *requirement for realisation of benefits* to the stakeholders sponsoring the programme and / or project.
- The business case should be *developed by iteration* through the stages of the lifecycle and be an *aggregation of information* developed in other programme and project documentation.
- The *integrity of the information* included in the business case and the related documentation *should be maintained*, providing an audit trail.
- Business cases should *present a range of options* to consider how the programme's outcomes or project outputs could be achieved; there *should be a detailed option appraisal* to compare the likely costs, benefits and risks associated with each option.
- *Programme business cases and blueprints should be developed in parallel* to enable the programme to select the most cost-effective combination of projects and activity work-streams.
- Business cases can be *used as part of a value management* approach for keeping the programme on track to achieve overall objectives.
- *Managing the business case* for each programme *should continue until* the programme is *able to demonstrate delivery* of the Blueprint and realisation of the benefits

Review

- Business cases at both programme and project levels should be *constantly monitored and regularly reviewed* (as a minimum at the end of each tranche).

Perception

- The *views of stakeholders* should be sought regarding *whether business cases continue to present an accurate picture* on the desirability, viability, and achievability of programmes and projects.

Performance measures

- Business case review should provide answers to the following questions – *To what extent are:*
 - Programmes (still) *affordable*
 - Outcomes (still) *achievable*
 - Programmes (still) *demonstrating value for money*
 - *Options comprehensively considered.*

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.2 Programme organisation

The purpose of programme organisation is to establish the optimum organisation for a programme, defining the roles required, the responsibilities of each of these roles, and the management structures and reporting arrangements needed to deliver the programme's desired outcomes.

Functional achievement / Process goals

- Facilitate effective leadership of programmes through informed decision-making and a flexible management structure.
- Provide stability and continuity of the programme organisation structure.
- Ensure commitment to programmes is maintained.

Approach

- The *sponsoring group*, i.e. consisting of senior managers responsible for the investment decision, and defining the direction of the business *should establish suitable organisational frameworks* to achieve the desired business objectives.
- The *sponsoring group should establish* a style of *leadership appropriate* to the organisation and the nature of the *desired change*.

Deployment

- *Senior management* should *demonstrate* their *commitment and direct involvement* in any business transformational change programmes.
- The organisation should place *due emphasis on* team *motivation, empowerment*, and recognition of *appropriate risk taking*.
- An *SRO* should be *accountable for* the *governance arrangements* of each programme, ensuring they are established and managed according to appropriate requirements and quality criteria.
- *SROs* should *ensure* that the organisation and its staff are managed carefully through the process of change, e.g. *Business Change Managers* should be made *aware of their responsibility* for realising the resultant benefits by embedding the delivered capabilities into business operations.
- The *physical programme environment* should be *established* including the technology and tools required to support the programme.
- A *Programme Office* may be established *to provide dedicated support* to a number of programmes.
- A *Programme Office* may *provide* some aspects of *assurance* for programmes *and* act as an *information hub* with respect to progress tracking and reporting, information management, financial accounting, risk and issue tracking, quality control, and change control.
- Programmes requiring *cross-organisational working* should *ensure* that organisational *roles cover all* of the *core* programme *responsibilities and* provide *clear boundaries* of responsibility.

Review

- Programme *assurance reviews with a clear brief* should take place during the course of a programme.
- *Recommendations* concerning problems or issues identified as a result of programme assurance reviews should be *tracked to closure*.

Perception

- The *sponsoring group* for each programme should *ensure* that the *governance arrangements* are *appropriate* and that assurance functions are applied effectively.

Performance measures

- All programmes should have a *formally appointed* Programme Manager.
- Each *role* should have a *clearly defined* set of *responsibilities*.
- The *skills and competencies* required for each role should be *defined*.
- *Skills assessments* for individuals nominated for the roles should be *carried out* and training or mentoring should address any gaps in experience.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.3 Programme definition

The purpose of programme definition is to ascertain the specific needs for a programme and its management. Defining a programme involves the planning and design of all aspects of a programme. It is a crucial process in that it provides the basis for deciding whether to proceed with a programme or not.

Functional achievement / Process goals

- An agreed Programme Definition, defining what the programme is going to do, how it intends to achieve the outcome, and who is involved in making it happen.
- A clear business case for the programme that can be used as a basis for an investment decision to continue with the programme.
- Formal approval of the sponsoring group and the SRO to proceed with the programme.

Approach

- *Terms of reference* for the definition work should be *produced, together with a plan* for the time and resources required.
- A Programme Brief is used as the starting point for *refining the programme's objectives and targets* into the Programme Definition.

Deployment

- SROs appointed *with sufficient* seniority, authority, credibility, *experience and skills to lead and direct* the programme.
- SROs *establish a small team* to define the programme.
- The team should have *appropriate background* in areas relevant to the programme and its management.
- The initial thoughts on the vision, the aims and envisaged benefits described in the Programme Brief should be *refined into a Vision Statement*.
- Each programme should have a *Blueprint describing the transformed organisation* as a result of delivering a programme of change.
- The *new capabilities* as a result of a programme should be *defined*, and *how* they are going to be *delivered*, changes implemented, *and benefits* delivered.
- Vision statements and Programme briefs are used to identify the required benefits from programmes, and *each benefit* is *defined by* means of a *Benefit Profile*.

Review

- A formal review of Programme Briefs should *assess* the *scope, rationale, and objectives* of proposed programmes.
- Reviews should assess the extent to which the organisation(s) involved have the *capacity and capability to deliver* and realise the expected benefits.
- The *risks* identified *and* any critical *assumptions* made should be *challenged*.
- *Realistic assessments* of the cost of realising and measuring *benefits* against the value of having the benefits should be made.

Perception

- The *sponsoring group(s)* should be *confident* that programmes are sufficiently defined in order that they are able to formally commit to the programme.
- The *target business community* has been adequately *involved in* the development of *Blueprints*.

Performance measures

- SROs with the help of a small team are *able to develop Programme Definitions*, the governance

strategies and plans for all programmes.

- All *Vision Statements provide a clear* statement of *direction*.
- The *scope* of change defined in Blueprints remains closely *aligned to* the required *benefits* and there is no evidence of scope creep.

Portfolio, Programme & Project Management Maturity Model

Level 2: Repeatable process

Lifecycle function / Key process area description:

2.4 Project establishment

The purpose of project establishment is to ascertain the specific requirement for a project team and the needs of its management. It involves understanding the requirements in sufficient detail to facilitate the profiling of project skills and competency levels necessary to perform the required project activities. Project profiles should be used to identify individuals able to fulfil specific roles.

The resource needs of the project may be fulfilled from existing available resources within the organisation, e.g. from a resource pool. Alternatively, the resource profiles may be used to acquire suitable resources from external sources.

Functional achievement / Process goals

- Select appropriate individuals for management roles and the principal project activities based on the project outline or high level brief.
- Select project team members with the necessary skills and competencies to fulfil the task requirements of the project as described in the project plan.
- Monitor the actual performance of projects against the agreed targets and/or objectives.

Approach

- Projects should *recognise organisational policy* for recruitment, appointment, resource allocation and *management of resources*.
- The project intent, outline plans, and the *stage and activity decomposition* details should form the basis for ascertaining the specific *resource needs* of the project.
- Agreed changes in business requirements may lead to *changes in* project objectives and project *plans*; this *may lead to changes in* the *resource requirements* of the project which should be reflected in the plans and schedules.
- *Project team* members and those individuals whom interface with the team and its management should be at least be aware and preferably *trained in* the *standards, methods and procedures* adopted by the organisation.
- Project *team members responsible for* conducting *specific* project *roles* or activities *should have relevant* process *knowledge and experience*.
- The project manager should *ascertain* the *resource requirements in terms of skill-sets*, levels of *competency* necessary *and* also the *quantity* of resource required for each stage of the project.
- Adequate consideration should be given to the *supporting roles*, and those engaged with the management and delivery of the project.

Deployment

- Project plans are drawn up to distinguish project phases and stages. Detailed plans should be prepared for each phase and the *activities to be undertaken at each stage determined*.
- The *resource requirements* in terms of resource profiles necessary *to accomplish* the *project* roles should be *determined*.
- *Potential issues* arising from the resource requirements should be *identified*, e.g. availability of critical resources.
- The resource profile for the project is compared with the profile of available resources and *suitable resources* are *allocated* to the project.
- The project *profile* may also be *used to evaluate* the *suitability of* external *resources*.
- *Risks* associated with resources should be *identified* at the outset *and considered at each stage* of the project, and should be managed accordingly.
- The work necessary to satisfy the requirements should be assessed and a *resource strategy developed*, which considers the partitioning and allocation of requirements amongst various teams / groups / parties.
- Resources not under the direct control of the project manager should be identified. The *necessary commitment* to meet project requirements should be *ascertained, negotiated and*

agreed with the various parties, such that the overall project plan is not compromised.

- Any *changes* to the project plans, e.g. caused by changes in business requirements, project objectives etc., are *assessed* by project management *for impact* on existing and planned activities and the resource skills and competency levels required to fulfil those activities.

Review

- The selection process for project managers *should be periodically reviewed* by senior management against organisational resource policies and standards.
- Project management should *undertake periodic reviews of all resources assigned* to their projects to assure that the matching and selection of resources is appropriate for project needs.
- Project *resources should be assessed* periodically and as part of the post-project review *to update skill records and competency* findings.

Perception

- *Views of* customers and other *stakeholders* on the quality of project resources should be *ascertained* and any shortcomings, e.g. levels of business domain knowledge, communication skills, should be addressed.
- The implications of business change plans and time-scales should be assessed and the *business made aware of* any existing *constraints*, e.g. in terms of project resource profiles and skill-sets.

Performance measures

- Projects should *measure* their *planned and actual resource* profiles, and skill-sets *throughout the project lifecycle*.
- *Change in* project *resource requirements should be identified and monitored*, for example in terms of the amount of resource required, the skills and competency levels, resource capacity and availability etc.
- The *performance of* all *resources should be monitored* in terms of their expected and actual performance levels.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.5 Project planning, monitoring and control

The purpose of project planning is to establish credible plans for undertaking the required project and to underpin other project management activities, including the dissemination of planning information to stakeholders and other interested parties.

To produce credible plans, estimates for the work necessary to meet the project objectives need to be developed. Furthermore, for the plans to be realistic, the project manager needs to establish the resource commitments in order to undertake the project.

Project monitoring and control should provide adequate visibility into actual project progress so that management can take effective actions if the project's performance deviates significantly from the project plans. It involves tracking and reviewing project accomplishments against the documented estimates, commitments and plans, and revising or adjusting plans based on actual accomplishments and results.

Functional achievement / Process goals

- Project phase / stage estimates are documented and are used as the basis for developing project plans, and subsequently monitoring the project.
- The project activities and commitments necessary to achieve the project objectives are planned and documented.
- Participating groups and individuals agree to their commitments in relation to the project plan, and subsequent changes are agreed by all those affected.
- Actual results and project performance are monitored against the stated estimates and plans; significant deviations may result in corrective actions being taken, which should be managed to closure.

Approach

- A *project manager* is designated to be *responsible for* developing *the project plan*, negotiating the necessary commitments with participants, for the project activities and results.
- *Projects follow* organisational *policies and standards* for project planning activities.
- Affected *groups and individuals* should be *consulted* by the project manager *in relation to* effort / cost *estimation and scheduling*.
- Project *plans* should be *under version control* and necessary changes incorporated in a controlled manner, i.e. change control.
- The scope of the project, the organisational goals, project *objectives*, cost and schedule *constraints*, inter-dependencies, and the *identification of* key *stakeholders* should be *documented* and approved.
- The project manager should *assign responsibilities* for specific project activities and deliverables, where appropriate.
- If responsibility is assigned for particular deliverables or project activities, then *those assigned* should be *accountable* for effort, cost and schedule achievements.
- The organisation should ensure that there are *adequate* levels of *resource and funding for* project *planning* activities and that the necessary experienced individuals are available to participate / contribute to planning activities.
- The organisation should assure that *suitable tools* are available to support planning activities.
- *Individuals involved* in project planning should be suitably *trained in estimating and planning* procedures.
- The project manager should *keep stakeholders informed* of the project status and outstanding issues.
- Any *changes* in project commitments should be made *with* the involvement and agreement of those affected.

- Project managers should ensure that there are *adequate resources and funding* for project monitoring activities.
- Project *managers should be trained* in managing both project activities and personnel aspects of the project.
- Project *team members* should *undertake* the *necessary induction or orientation* in order to participate effectively on the project.

Deployment

- Project managers should *discuss* the proposed *project with* their *teams* and in particular the project's goals and objectives, the applicable standards and procedures, and the resource schedule.
- Project managers should ensure that *plans* are *formulated* during the early stages of the project lifecycle *and* that they are *reviewed with* the key *stakeholders and participants*.
- Project *commitments with external parties* should be *reviewed* by senior management.
- Project managers should ensure that a *project lifecycle* with pre-defined phases and / or stages is clearly *identified*.
- Project plans should be developed according to a documented procedure. The *plan* should *cover* the project *scope*, organisational *goals* and project *objectives*; the *deliverables* should be identified and project *milestones and review points*; project risks should be identified and assessed.
- *Detailed* project *plans* should be produced *for each stage* of the project by the end of the preceding stage.
- Other project management *deliverables* that are *needed to establish and maintain control* of the project should be *identified*.
- All estimates of project effort and costs should be derived in accordance with a documented procedure; any significant changes in *estimates* that *affect project commitments* should be *negotiated* with the affected parties and documented.
- The project *schedule* should be derived in accordance with a documented procedure and *should accommodate any imposed milestone dates, critical dependencies, and other constraints*.
- *Risks* associated with cost, resource, schedule and detailed aspects of the project should be *identified*, assessed, documented and monitored.
- All identified *risks* should be *analysed and* their potential impact on the project be *considered*; where appropriate suitable contingency plans should be drawn up.
- The *priorities* of the risks and the contingency measures should be *adjusted* as additional information becomes available.
- *High risks* should be *reviewed* by project management *on a regular basis*.
- The project manager should *consider* the necessary *support environment* for the project and this should be included in the project plans.
- Project *planning data* should be *held*, such that the project plans and estimates can be *reviewed* at a later date *and lessons* can be *learned*.
- A documented project *plan* should form the *basis of* project *monitoring and control* and for communicating project status.
- Project *plans* are *updated as work progresses* to reflect accomplishments, particularly when milestones are completed.
- Project *plans* should be revised, according to a documented procedure, as appropriate, to incorporate refinements and more significant changes, and should be *reviewed after each revision*.
- *Authorised changes* that affect the project are *communicated to* the appropriate team members and other *affected parties*.
- The *size of* the project *stages* should be *reviewed* and actual effort monitored and compared with the planning estimates.
- The *projected size* of the project should be *refined, monitored and adjusted* on a regular basis.
- *Actual expenditure* in terms of effort and costs over time and against work completed should be *compared to estimates* given in the project plan to identify potential overruns.
- *Actual resource levels* should be *compared to* the *estimates* given in the project plan.

- *Changes in* staffing and other *cost attributes* that affect the project commitments should be *negotiated* with the affected parties.
- *Critical resources* that are necessary for the project should be *monitored*, and any corrective actions identified and reviewed.
- The project *schedule should be monitored* and corrective actions taken as necessary.
- The effects of *late and early completion of* project *activities*, and the achievement of milestones should be *evaluated for impact* on future activities and milestones.
- *Problems identified* with any deliverable should be reported *and* documented; problems being *tracked to resolution*.

Review

- Project *planning, monitoring and control activities* should be *reviewed* by senior management periodically.
- *Senior managers* should *review* any project *commitments* being given to individuals or groups *external to the organisation*.
- Project *capabilities*, cost, resource *and* schedule *performance* should be *reviewed by* key *stakeholders*.
- *Senior management* should *ensure* that project *risks* are being *addressed adequately*.
- Project *costs, staffing, and* schedule *performance* should be *periodically reviewed* and issues addressed.
- *Project risks* should be reviewed and *escalated, if necessary*.
- Problems and project *issues* should be reviewed and *addressed, appropriately*.

Perception

- The extent to which stakeholders are content with the *quality of project planning* should be *ascertained*.
- The extent to which stakeholders feel that project action items and *issues* are *addressed* should be ascertained.
- The extent to which stakeholders feel that they are given *adequate visibility* of progress should be ascertained.
- The extent to which stakeholders feel that *action is taken to address* any significant project *deviations from plan* should be ascertained.

Performance measures

- Projects should be measured throughout their lifecycle; typical measures include: the *actual achievement* of milestones *in comparison with planned* achievement, work completed, *effort and costs expended* at each stage of the project *in comparison with* project *plans*.
- Indicative measurements of project progress should facilitate tracking and review of accomplishments, for example, actual effort against estimate.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.6 Stakeholder management and communications

The purpose of stakeholder management and communications is to understand stakeholders' interest in programmes and projects, and the impact a programme and/or project(s) will have on them, and in so doing, implement a strategy to address their issues and needs.

Clear communications are seen as a conduit in keeping awareness and commitment high, and in ensuring that stakeholder expectations do not drift out of line with what is likely to be delivered.

Functional achievement / Process goals

- Recognition of the role of key stakeholders throughout the programme and/or projects.
- Analysis and understanding of stakeholder requirements and their interests in, and impact on programmes and projects, and how their interests, issues and needs can be addressed.
- Implementation of a stakeholder management strategy that addresses the scale of change, management of expectations, the need for business ownership and involvement, and the requirement for clarity and consistency of messages and benefits.

Approach

- *Programme and project managers* are *responsible for the* development and implementation of their respective *stakeholder management strategies and Communication Plans*.
- Programme *vision statements and blueprints* are used as the *basis for identifying* key *stakeholders* and the perceived outcomes.
- Programme and project messages to stakeholders should be derived from the relevant programme and project objectives, to *provide a communications framework* that is consistently applied throughout the lifecycle.
- Programme and project *support offices* are *responsible for maintaining* the *information* relating to stakeholders and facilitating the activities defined in the Communication Plans.

Deployment

- *Categorisation* is used *to differentiate stakeholder groupings* and these should be reflected in Stakeholder Maps showing their interests in the programme and/or project activities, and outcomes.
- *Stakeholder management strategies* are *devised*, describing who the stakeholders are and what their interests and influences are likely to be, and how they will be engaged.
- *Stakeholder analysis* is used routinely to ascertain the power and influence of particular stakeholders or groups, and *to prioritise* stakeholder *communications* that will contribute the most towards a successful outcome.
- *Communications plans* should be *designed around* the information obtained from *stakeholder analysis*.
- *Stakeholder maps* may be extended *to list* the specific *communication activities* for each stakeholder group.

Review

- Stakeholder management *strategies* should be *reviewed* by senior management *on a periodic basis*.
- There should be *regular reviews* of the effectiveness *of ongoing communications* between programmes and projects and their stakeholders.

Perception

- The *views of stakeholders* should be sought *regarding* the *information flows* described in the stakeholder management strategy.

Performance measures

- Programme and project *communications* with stakeholders is perceived to be *relevant and clear*.
- *Feedback* from stakeholders is *obtained* and the effectiveness of the communication processes is assessed.

Portfolio, Programme & Project Management Maturity Model

Level 2: Repeatable process

Lifecycle function / Key process area description:

2.7 Requirements management

The purpose of requirements management is to establish a common understanding between the development team and the stakeholders and /or customer(s) concerning the business needs to be addressed by the programme and / or project(s).

The aim is to establish and maintain an ‘agreement’ with the stakeholders and / or customers on all the business requirements. This agreement forms the basis for estimating, planning, performing, monitoring and reviewing programme and / or project activities throughout the lifecycle.

Functional achievement / Process goals

- The business needs are elicited in terms of requirements and are documented and controlled to establish a baseline for programme and project activities.
- Plans, development activities, and deliverables are kept consistent with the specified requirements.

Approach

- Programmes and projects should *recognise* organisational *policy for managing requirements*, e.g. covering the need to document and review requirements.
- Authorised and agreed changes in business requirements may lead to changes in programme and project objectives. *Plans*, activities and deliverables should be kept consistent and *reflect* any *agreed changes* in requirements.
- Changes to *requirements should be traceable* within deliverables.
- *Responsibility* within project teams *for analysing requirements* and ensuring they are satisfied within deliverables should be *established*.
- *Individuals* or groups *responsible for requirements management* activities should be *trained* in the standards, methods and procedures used within the organisation.
- *Individuals* or groups *responsible* for requirements management activities should *have relevant business domain knowledge*.
- Programmes and projects should recognise and *allocate responsibility for managing all requirements*, including: expected outcome, functional requirements, performance requirements, design constraints, agreements, contractual terms and conditions that affect and determine programme and project activities.
- Programmes and projects should elicit the *acceptance criteria* that will be *used to* validate the outcome and other deliverables and *demonstrate* that the business *requirements* and programme / project objectives have been *satisfied*.
- Projects should *ascertain* the *resources required* for managing the requirements throughout the project lifecycle *and ensure* that the project receives *adequate funding* in order to manage the requirements.
- Programmes and projects should *consider* the *support needs* including tools (for

configuration management, traceability, verification etc.) necessary to manage requirements.

Deployment

- Requirements are reviewed and *incomplete or inconsistent requirements* are *identified* and discussed with the relevant stakeholders.
- Project teams should *ascertain whether* the specified *requirements are verifiable*.
- Potential problems / *issues* arising from the specified requirements should be *resolved*, e.g. inconsistencies and ambiguity should be removed.
- *Risks* associated with requirements, e.g. in terms of their statement or feasibility are *identified and discussed with the relevant stakeholders*.
- All requirements are assessed and a *strategy for dealing with* these *requirements* is *determined*, including their partitioning and allocation amongst various teams / groups / parties.
- Any *commitments* in meeting/satisfying the allocated requirements are negotiated and *agreed with all parties*.
- The business *requirements and objectives* form the *basis of* the programme and project *plans*, deliverable definitions, and activities.
- Programme and project deliverables are managed and controlled in terms of at least, version control and change control, with *suitable tracking of* the respective *requirements*.
- All *requirements should be verifiable* in the respective project and project management deliverables, e.g. project plans and success criteria.
- If *changes* to requirements are requested, they should be *reviewed, and assessed for impact* on existing commitments and negotiated where appropriate, prior to incorporation into programme and project baselines.
- Any *changes* necessitated to plans, deliverables, and existing activities should be identified, evaluated, *assessed for risk*, documented, planned, communicated to affected parties and stakeholders, *and* should be *monitored to completion*.

Review

- *Requirements management* should be periodically *reviewed* by senior management *against* organisational policies and documentation *standards*.
- Programme and project managers should *plan and hold requirements reviews* with their teams or parties with allocated responsibilities for managing requirements.

Perception

- Quality reviews should be planned and undertaken to *assure requirements are managed* effectively. For example, to assure that:
 - the organisation has adequate processes by which *problems* with requirements are *resolved* prior to project commitment;
 - *requirements* are being *monitored* throughout the lifecycle;
 - *plans*, actual activities and deliverables are *revised to reflect* any *changes* in business requirements;
 - *change in commitments* are negotiated and *agreed* with the affected parties.

Performance measures

- Projects take measurements to *determine* the *quantity, type and status of requirements* during the project lifecycle.
- *Change in requirements are monitored*, for example in terms of the total number of requirement items affected by change, the number of: new, amended and deleted requirement items; the date at which the proposed changes are approved and incorporated into the requirements baseline.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.8 Risk management

The purpose of risk management is to identify, analyse and avoid, minimise or control the possible adverse effects associated with risks that materialise prior to, or during the conduct of programmes and/or projects.

The risks may affect not only programmes and/or projects but also the business generally, and may be beyond the reach of the programme and/or project to manage effectively. In such cases, the risks should be escalated to the appropriate business managers or stakeholders for mitigation.

Functional achievement / Process goals

- Business, programme or project level risks are identified, documented and managed effectively to reduce the possible adverse consequences on the business and programme and/or project delivery.
- Inherent risks to programmes and/or projects are minimised at programme/project initiation and planning stages, whilst acquired risks are identified throughout the programme and/or project lifecycles and are either eliminated or mitigated through contingency measures.

Approach

- Programmes and projects should *recognise* organisational *policy for the management of risks*, e.g. covering the need to analyse and manage risks throughout the lifecycle.
- *Responsibility* for identifying and analysing risks and *for managing risks* should be made *explicit*.
- *Those responsible* for risk analysis and management activities should *have relevant* business domain and technical *knowledge*.
- Programmes and projects should *ascertain* the *resource and budgetary implications of risks* throughout the lifecycle and ensure that all contingency measures are cost effective.
- The business and other *stakeholders* should be made *aware of risk management* activities.
- Programmes and projects should *consider* the internal and external *support requirements*, including tools necessary to manage identified risks efficiently and effectively throughout the lifecycle.

Deployment

- Programme and project related *risks* associated with cost, resource, schedule and activities should be *identified, documented and assessed in accordance with* recognised *procedures*.
- All identified risks should be analysed and their *potential impact on programmes and projects* should be *evaluated* and where appropriate, contingency plans should be drawn up.
- Programme and project managers should ensure that *risk management plans* are drawn up which identify programme and project risks and are *used* to manage risks throughout the lifecycle.
- *Risks* are tracked and *re-evaluated at* selected *milestones or designated risk checkpoints*, and during the planning of significant changes that affect programmes and /or projects.
- *Contingency planning* is based on defined processes and is *performed throughout the lifecycle* as new risks emerge or are mitigated.

Review

- *Risk management activities* undertaken by programme and project teams should be periodically *reviewed* by senior management against organisational policies and documented standards.
- Programme and project managers should *review identified risks* with their teams and other parties that have allocated responsibilities for managing risks.

- Senior management should *ensure* that programme and project *risks are being addressed adequately* and should evaluate the implications from the business perspective.

Perception

- The extent to which Business managers and other stakeholders feel that programmes and projects are *identifying and addressing risks associated with business change and delivery* should be surveyed periodically.
- The extent to which *stakeholders* are *cognisant of the level of* programme and/or project *risk* should be surveyed.
- The level of *involvement and the commitment of stakeholders* in the identification of programme and project risks should be surveyed regularly.

Performance measures

- Programmes and projects take measurements to *determine* the *quantity, type and status of risks* during the lifecycle.
- Measurements are taken to *determine* the *effectiveness of risk management* activities, e.g. for each identified programme and/or project risk the realised adverse impact, and the number and magnitude of unanticipated impacts on the programme and/or project.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.9 Configuration management

The purpose of configuration management is to establish and maintain the integrity of programme and project documentation, and other deliverables throughout the lifecycle.

Configuration management involves identifying key documentation and specific products (configuration items) and their relationships, such that the impact of any changes to a configuration item can be assessed easily and accurately.

Programme and/or project libraries should be established containing the base-line documentation as it is developed. Changes to the baseline and the release of programme and/or project documents should be systematically controlled to help maintain integrity and traceability throughout the lifecycle.

Functional achievement / Process goals

- Configuration management activities are planned and managed.
- Selected programme and project deliverables are identified, and made available under configuration control.
- Changes to programme and project deliverables are identified and are controlled.
- Affected groups and individuals are informed of the status and content of the programme and/or project baselines.

Approach

- Programmes and/or projects *follow* organisational *policies and standards for implementing* configuration management.
- The business should ensure that *responsibility* for configuration management activities within programmes and projects is explicitly *assigned*.
- The business should assure that *configuration definition and control* is *maintained throughout* the programme and /or project's *lifecycle*.
- Programme and project managers should ensure that they have a *suitable repository* for storing *documentation and deliverables* and the associated configuration information.
- Programme and project managers should ensure that access to the repository and *changes to its content* are *managed and controlled*.
- The business should *approve* programme and project *baselines and the* identification *schema* used by programmes and/or projects.
- The business should *review and authorise changes* to programme and project baselines.
- The configuration management *role* should be *defined* with responsibility for co-ordinating and implementing configuration definition and control for programmes and projects.
- *Adequate resources and funding* should be provided for configuration management activities.
- Configuration management should be *suitably trained* and have appropriate support tools.
- Programme and project *teams* should have suitable *awareness training* in configuration management.

Deployment

- A *configuration management plan* should be prepared for each programme and/or project according to a documented procedure.
- The configuration management plan should be developed within the early stages of the programme and/or project and *in conjunction with overall planning* activities.
- The configuration management *plan* should be *reviewed by affected groups* or individuals and should be under version and change control.
- Configuration definition and control *activities* should be *performed in accordance with* the configuration management *plan*, i.e. the plan should describe the activities to be performed, assigned responsibilities, and the resources required, including support tools.

- A programme and/or project *libraries* should be established *as a repository* for programme and/or project baselines and should facilitate: multiple control levels, sharing and transfer of configuration items, storage and recovery of versions of configuration items throughout the project lifecycle.
- Programme and project *deliverables* to be placed under configuration management should be *identified in accordance with* the configuration management *plan*.
- The *impact of change* requests on configuration items should be *assessed*.
- *Changes* to baselines should be *managed and controlled*; reviews should be conducted to ensure that changes have not caused side effects on the integrity of the baseline.
- Project products should be created from the deliverables within the project library and their *release should be controlled* in accordance with a documented procedure.
- The status of configuration items/units should be recorded so that the *current status and history* (i.e. changes and other actions) *is maintained*.
- *Standard reports* documenting the contents of the programme and project libraries *should be developed* and made available to interested parties; e.g. change request summary and status, summary of changes made to baselines, revision history, results of project audits.

Review

- The *configuration management* activities are *reviewed* by senior management on a periodic basis.
- Programme and project managers should *review configuration definition and control* arrangements on both a periodic and event-driven basis.
- Programme and project managers should ensure that *deliverable baselines* are *reviewed* and that configuration definition and control activities are audited on a periodic basis.

Perception

- The *understanding* by stakeholders of the *importance of configuration management* to the success of programme and/or project activities should be ascertained.

Performance measures

- The *status* of configuration definition and control activities should be *evaluated*.

Portfolio, Programme & Project Management Maturity Model Level 2: Repeatable process

Lifecycle function / Key process area description:

2.10 Programme planning and control

The purpose of programme planning and control is to combine various planning and monitoring considerations within a defined approach documented in the Programme Plan.

Programme planning is a continual activity throughout a programme, focusing on the interdependencies between projects and dependencies on external factors outside of programme control.

Functional achievement / Process goals

- Programme planning and control should be effectively integrated with risk management.
- Programme plans should effectively integrate the timetable for project delivery and transition with the Benefits Realisation Plan.
- Determining what needs to be done and when, how long things should take, who will do them, how things will be monitored, who needs to be involved, and what risks may affect progress.
- Enabling programme management to monitor the dynamics of the inter-relationships between projects, and to act, when one project might jeopardise others.

Approach

- The *Vision Statement* is *used* in programme planning *to consider the outcome(s)* that the programme is aiming to achieve.
- The total set of benefits profiles, together with the *Benefits realisation Plan*, should be *integrated with* the *development of the Programme Plan* to ensure the dependencies on project delivery are considered.
- *Shared resources* should be *planned and managed* at the programme level.
- Programme plans should contain *key management information* about the programme.
- Programme planning and control should *address* both *monitoring of progress and measuring performance*.

Deployment

- Programme Managers are *responsible for* designing and implementing Programme *Plans, Resource Management Strategies*, and the required *monitoring and control* activities.
- The *Programme Office* is *responsible for supporting* programme management in the development and implementation of planning and control activities.
- The *Project Portfolio* should be *formulated and designed* as part of the planning process.
- Programme plans should *identify* those *resources* that need to be shared between projects.
- A *Resource Management Strategy* should *identify* the *resources required*, how they will be acquired, how they will be managed, and how resource sharing will be handled.
- A *dependency network model* may be used *to depict the inputs and outputs of projects* and how they contribute to, or depend on others.
- A *schedule for project delivery*, according to their dependencies, should be *constructed* that demonstrates realisation of benefits aligned with strategic objectives.
- Programme schedules should *depict tranches* that reflect step changes in capability and benefit realisation.
- *SROs* are *responsible for approving Programme Plans* and leading the monitoring activities, including the reviews at the end of each tranche.
- Programme plans should be *used in* the process of *building and sustaining relationships* with stakeholders, e.g. to facilitate two-way communications about a programme and its progress.
- *Prioritisation* should *focus on* the *critical* programme *activities*.
- During implementation of Programme Plans, programme management should establish continual monitoring of progress, and *anticipate emerging risks* to the Programme Plans.

- Programme *plans* and related information should be *reviewed and updated* periodically as the programme progresses.
- *Progress* against the programme plan should be *monitored* to ensure the programme remains on track to deliver the desired outcome(s).
- *Earned value* can be *applied to some programmes* where the actual work completed can be represented in terms of financial worth and as a proportion of the total value of the programme.
- Programme management should *address* any *problems and issues* that arise to prevent the programme drifting off target.

Review

- The end of a programme tranche should represent a *key review point* (or milestone) *at which a formal assessment* of progress and benefits realisation can be made.
- *Formal reviews should be planned* in accordance with the type of programme and its governance requirements.

Perception

- *Tensions* between project- and programme-level planning and control processes should be *recognised and* project objectives and accountability *reconciled* with overall programme goals and controls.
- The extent to which *information flows* between the programme and its projects should be *ascertained*.
- The amount of *time and effort* required *to monitor progress* should be *balanced* with that applied to the measurement of achievement of the desired outcomes and benefits realised.

Performance measures

- The extent of *reuse of information* that is part of the management standards across the project portfolio, e.g. common project level reporting standards across the project portfolio to minimise rework for the programme level.
- *Measurement of programme trajectory towards* its *target outcome* in terms of programme elements that significantly affects process efficiency, effectiveness, quality, timeliness, productivity, or safety.
- *Critical projects and activities should have specific performance measures* and targets that will indicate whether progress is on track or not.

Portfolio, Programme & Project Management Maturity Model

Level 2: Repeatable process

Lifecycle function / Key process area description:

2.11 Management of suppliers and external parties

The purpose of supplier management and that of other external parties, is to ensure they are selected and managed effectively. Partnerships also need careful management to ensure that there are common objectives and shared aims.

In all cases, management involves selection, the establishment of mutual commitments, monitoring of both performance and results. Suppliers, partners and other parties may be selected based on strategic business alliances, as well as programme and project considerations.

Functional achievement / Process goals

- The organisation selects appropriate suppliers and parties that are able to contribute to, or meet specific needs and requirements.
- The organisation, partners, suppliers and other parties agree their commitments to each other.
- The organisation maintains a good relationship and ongoing communications with partners', suppliers and other parties with the intent of mutual co-operation.
- The organisation monitors partners, suppliers and other parties' actual performance and results against their commitments.

Approach

- Organisational *policies and standards* for partnerships and managing suppliers and other parties are *followed*.
- There is *designated responsibility* for establishing and *managing* any *contracts* or other agreements necessary for delivering the programme and/or projects.
- A project manager is usually responsible for *co-ordinating* the *scope* of any work packages and the terms and conditions that apply.
- The appropriate business functions *establish and monitor the terms and conditions* of any contracts set up with suppliers or other parties.
- The organisation should ensure that there are *adequate resources and funding* for selecting suppliers, other parties and managing the necessary contracts and agreements.
- Project *managers* should be *trained in preparing and planning* for subcontracting or joint working, evaluating suppliers/bidder's capability, evaluating suppliers/bidder's estimates and plans, selecting suppliers and other parties, and managing the necessary contracts and agreements.
- Project team members who may be involved in managing suppliers and other parties should *receive* the *necessary orientation* in the detailed aspects of any agreements or contracts.

Deployment

- Programme or project *work* that is to be conducted by other parties *is defined and planned* according to a documented procedure.
- Programme or project activities and deliverables to be supplied by other parties are selected on the basis of a *balanced assessment* of the programme or project characteristics, i.e. based on a systematic analysis and appropriate partitioning of requirements, and selection to match the skills and capabilities of potential parties.
- The *specification* of all *work* and the *standards and procedures to be followed* are derived from the programme and/or project brief, business requirements, objectives, and plans.
- A statement of work is prepared, *reviewed and agreed, by appropriate stakeholders* for all work to be conducted by other parties, e.g. subcontractors.
- Statements of work, e.g. *Terms of Reference* should be *managed and controlled*, and revised when necessary.
- Any *contractual agreement* between the organisation, partners, and other parties is used as

the *basis for managing* the contract.

- The *contractual agreement may include*: terms and conditions, the statement of work, requirements, dependencies, deliverables definition, acceptance procedures and criteria, and the *performance measures*.
- The *plans* of partners, suppliers and other parties should be *reviewed and approved* by the organisation, and should directly reference the appropriate items in the overall project plan.
- A documented and *approved plan* is *used for monitoring* the activities of partners and other parties and for communicating status.
- Periodic *status and co-ordination reviews* are conducted between the organisation, partners, suppliers and other parties.
- Programme and/or project activities, cost, staffing and *schedule performance* are *reviewed* against the appropriate plans.

Review

- The *activities for managing* partner, supplier and other parties are *reviewed* by senior management periodically.
- The programme and /or project managers should *review arrangements with suppliers* and other parties on both a periodic and event-driven basis.
- There should be planned reviews with participants, particularly to *establish the completion of* key programme and/or project *milestones or stages*.
- *Critical dependencies and commitments* between the various parties are *reviewed* periodically.
- Programme and/or project reviews and *interchanges* are *held* with partners and other parties.
- Formal reviews to address *accomplishments and results* are conducted at selected milestones according to a documented procedure.
- The organisation conducts suitable *validation of* project *deliverables* according to a documented procedure.

Perception

- The extent to which *stakeholders* are *content* with project deliverables, irrespective of the source should be ascertained.

Performance measures

- The *performance of all parties is evaluated* on a periodic basis, and the results are discussed with those affected.

Level 3

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.1 Benefits management

The purpose of benefits management is to identify, plan, model and track potential benefits, and to assign responsibilities for their actual realisation as a result of investing in business change.

Benefits management complements and to some extent overlaps with investment appraisal in the business case. Benefits management also interfaces with performance management, which provides a means of measurement and management for monitoring and reporting on the achievement of outcomes.

Functional achievement / Process goals

- Business areas commit to the benefits or their delivery.
- Unrealistic benefit claims in terms of scope and value are identified and resolved.
- Anticipated benefits being defined and quantified such that they can be systematically monitored and controlled, and the expected results from business change are moreover achieved.
- Programmes and projects delivering the benefits on which investment was originally justified.
- Proactive harvesting of benefits by the business.

Approach

- *Raise awareness and understanding* within the business that users and their managers are ultimately responsible for the actual benefits delivery.
- Senior Responsible Owners (SROs) should be *responsible for ensuring the management of the process and realisation of benefits*; they may be supported by business change managers who are responsible for enabling the organisation to realise the benefits.
- *Develop a Benefits Management Strategy* for establishing the structures and functions required.
- Ensure *benefits management* is *integral to programme*, project and business *management activities*.
- Establish a clear definition and *acceptance of accountability* and the wider organisational governance aspects.
- *Create* a benefits management *structure and organisation*.
- Define and *implement an effective process* and/or methodology and techniques for benefits planning, management and harvesting.

Deployment

- *Identify* expected *benefits*, contributions to the achievement of business objectives and the needs of stakeholders.
- *Establish* a *benefits management structure* defining functions, relationships, communications, roles and responsibilities.
- *Recognise* the different *types of benefits accruing* to the organisation from its investments in business change.
- *Develop models of benefits*, including intermediate and final outcomes.
- Define and *quantify the benefits*, including the attributes and measures, owners and risks.
- *Understand how benefits are interrelated* and assess value and organisational *impact, dependencies and risks*
- *Develop a benefits realisation plan*, including a schedule for delivery, assessment and review points.
- *Establish* accountability and the *means of tracking and measuring benefits* realisation.
- *Ensure* benefits realisation is tracked and recorded, and ensure *achievements* are properly identified and *recognised*.
- Provide *alignment* and clear links between programmes, their vision and desired outcomes,

and the strategic objectives of the organisation(s).

Review

- The *profile* for the delivery and realisation of benefits should be *reviewed in relation to the business case* for each investment.
- Using appropriate measures, *determine whether targets* were *reached and recommend actions* to achieve or maximise the realisation of benefits.

Perception

- The extent to which stakeholders perceive that there are relevant *practical measures*, and a performance measurement and management *system to track benefits and act* on their results.
- The extent to which *staff* are *trained* in benefits identification, analysis and review techniques.
- Existing *measurements used to determine* what *actions* need to be taken.
- The extent to which *lessons* are *being learnt from comparisons* of anticipated benefits and what actually happened when project deliverables were brought into operational use.

Performance measures

- Assessment of benefits management by means of a *comparison of actual and planned results* as set out in the business case.
- The extent to which lessons learned are fed back as *modifications* to the benefits management process.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.2 Transition management

The purpose of transition management is to ensure that the relevant business operations are prepared for implementation of project outputs. Transition plans are produced to reflect the activities that need to be undertaken to ensure that the business environment is ready to exploit the new capability and that there is adequate consideration of continued business operations during the transition period.

Functional achievement / Process goals

- Achieve and manage change whilst maintaining enough stability to ensure the quality and continuing delivery of existing services.
- Capacity and capability evaluated for the organisation to assure that the organisation can manage the change.
- Readiness of the organisation for change established.

Approach

- *Assure* that there is sufficient *leadership*, influence, *management and direction* for the transition, including the handling of cultural change.
- *Plan* the necessary *changes*, make suitable *preparations for their implementation, and support* the embedding of change within the organisation. (Transition planning involves the determination of 'mid-points' or reachable states, i.e. a series of incremental and modular changes, providing a lower risk route map for implementation).
- Transition *plans* are *reviewed and updated* to reflect the activities of the transition.
- Undertake the necessary *stakeholder management and communications* to inform stakeholders of the plans and rationale, and discuss and agree their role and contribution.
- Ensure that *personnel* concerns are *taken into account* in relation to the business change, liaising with HR functions and stakeholders to gain the necessary assistance for implementation of change.
- *Assure* that there is adequate programme support and that the *Business Change Managers* have adequate support during the embedding of new capabilities to facilitate benefits realisation.
- *Review* the *Benefits Profiles* to ensure that there are appropriate measures and that measurement activities are adequately supported.

Deployment

- *Determine how to organise*, implement and embed the change(s) within the organisation with due regard to organisational entropy, leadership style, working practices and procedures, effective use of technology, stakeholder and customer expectations, and organisational culture.
- *Draw up* suitable *transition plans* that recognise capacity and capability constraints, and risk, and represent clear and reachable states (descriptions not objectives).
- *Undertake* an *analysis* of the work required to move organisation through each transition state and *ascertain* the likelihood of *interconnected issues*.
- Determine *who will be required* to support specific changes and the readiness of functional groupings, including capability for change.
- Develop *strategies for securing commitment* to change, for example, by means of commitment plans, responsibility charts, and readiness-capability matrices.
- *Establish priorities* and draw up environmental maps showing specific activities of key individuals: "we want you to..."
- *Evaluate organisational response* to demands and achieve consensus, as the basis of an agreed response plan.
- *Forecast* future *demands and assess consequence* in relation to capacity and capability constraints.
- *Identify desired future state* and *undertake action planning* with appropriate evaluation of

options (option appraisal).

Review

- The *transition plans* should be *reviewed* with respect to the business perspective to assure that the organisation has sufficient flexibility, capacity and capability to manage the achievement of each transition state as described in the plans.
- Review whether the existing reward and other *motivational systems reflect the priorities, values and norms* of the organisation with respect to the new or changed business.

Perception

- The *views of stakeholders concerning* how any *change* of responsibility regimes was *managed*, and the determination of priorities in relation to organisational goals should be ascertained.
- The extent to which stakeholders *views* are *considered* adequately *at* discrete *checkpoints* (transition stages).

Performance measures

- The extent to which the organisation can *continue delivering* services of the appropriate *quality* levels during periods of business change.
- The extent to which there are *adequate descriptions of* what is to *change* in terms of the organisational vision, shape, processes and management, and culture.
- The extent to which the *right people* are *involved* in, *and committed* to the required change.
- The extent to which *emerging risks* are *identified and managed* effectively.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.3 Information management

The purpose of information management is to maximise the efficiency by which an organisation seeks to plan, collect, organise, utilise, control, disseminate, and dispose of information. Information management should ensure that the potential value of information is identified and exploited to its fullest extent, both in support of internal business operations and in adding value to its service delivery functions.

Functional achievement / Process goals

- Recognise that although information management is a distributed process throughout the business, it is underpinned by sound organisational policy.
- Recognise the extent to which information is exploited in various business activities and in the achievement of organisational goals.

Approach

- The organisation should *develop* an *information strategy* covering how the necessary information will be gathered and harvested to formulate business policy and strategic plans, tactical planning, operational function and for tracking and controlling achievements.
- The strategy should also *consider* the *options* for abstracting information to form the basis of management information for planning and control purposes.
- The information strategy should *outline how* programme and project management documentation will be captured, collated and maintained.
- Key *information assets*, for example, programme and project management documentation should be *under configuration management and change control*.

Deployment

- Undertake some form of *business analysis to elicit* information *requirements* in relation to the needs across the business, including content quality and timeliness.
- *Determine* the most appropriate *sources of information* and delivery mechanisms.
- Construct an information inventory and *identify information* holding *deficiencies* and surpluses.
- Consider the *management of data availability, security and confidentiality*, and rationalise data sources wherever possible.
- Maintain a catalogue or index of information content and *measure the cost and value of* the *information* being stored.
- *Assure the viability of the business model* for data collection, manipulation and storage, with respect to the business benefits associated with the delivery of information in support of business processes.
- Recognise the need for, and *assign specialist skills* to exploit the information potential.

Review

- The COE should *review* the *extent* to which programme and project management *information* is *shared* between organisations, and better practices are disseminated.
- The extent to which the organisation has adequate mechanisms and controls to ensure that the *quality of* the organisation's *information assets* is maintained should be *reviewed*.

Perception

- The *views of stakeholders* should be sought *regarding* the *extent* to which *information assets are exploited* within the organisation and throughout the delivery chain.

Performance measures

- The *extent* to which *information* used in the business *is accurate, reliable, up-to-date, complete and consistent.*

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.4 Organisational focus

The purpose of organisational focus is to establish the leadership and necessary responsibility for programme and project management activities with the aim of improving the organisation's overall programme and project management capability.

Organisational focus is necessary to ensure that programme and project management activities become standardised and integrated into the business processes. The organisation should be committed in the long term to co-ordinate and develop programme and project management activities within the business.

Functional achievement / Process goals

- Programme and project management process development and improvement activities are planned and co-ordinated across the organisation.
- The strengths and weaknesses of existing programme and project management processes are identified in relation to organisation goals and existing reference frameworks and standards.

Approach

- The organisation has an explicit *policy* for *co-ordinating* programme and project management *development and improvement activities* across the organisation.
- Organisation-level *responsibility* for programme and project management activity *co-ordination and liaison* with individual programmes and projects is explicitly assigned.
- The management *processes* used on programmes and projects *are assessed periodically* to determine their strengths and weaknesses.
- *Standard* programme and project management *processes may be tailored* to meet specific needs.
- Improvements to, and other useful *information on* programme and project management *processes, tools and methods* are *made available* across the organisation.
- *Senior management sponsors* the organisation's process *development and improvement* activities.
- *Senior management demonstrate* their *commitment* through long-term plans, budget and other resources.
- *Senior management oversee* programme and project management process *improvements*, ensuring that business goals and strategies are supported, and advise on business priorities and issues.
- An individual or *group* within the organisation is *made responsible for* programme and project management *process development / improvement* and receives the necessary training for this role.
- *Adequate resources and funding* are provided for programme and project management development activities.
- *Appropriate support tools* and individuals experienced in programme and/or project management are made available.
- Programme and project *teams across* the *organisation* are made *aware* of process development and improvement initiatives.

Deployment

- Programme and project *management are assessed periodically* and action plans are developed to address the assessment findings.
- The *action plan* should identify which assessment findings will be addressed, the priorities, guidelines for implementing changes and the groups or individuals responsible for implementing the changes.
- The organisation should develop and *maintain a plan for* its programme and project management *process development and improvement activities*. The plan should take into

account the action plans from process assessments and other organisational improvement initiatives.

- The *activities* for developing and improving programme and project management should be *co-ordinated* at the organisation level.
- The organisation should develop and maintain *standard process specifications* for programme and project management at the organisational level.
- The organisation should *establish a* programme and/or project *repository for* collecting *information on* programme and/or project management *processes* and deliverables and outcomes.
- *Training* in the organisation's programme and/or project management approaches and processes should be *co-ordinated* i.e. through a training programme *across* the *organisation*.
- *Individuals involved* in implementing programme and/or project management processes are *kept informed* of improvement activities throughout the organisation.

Review

- The process *development and improvement activities* should be *reviewed* by senior management on a periodic basis.
- Managers should ensure that *action plans* are *monitored* and action items are assigned, reviewed and tracked to closure.
- *Issues* raised at the project level that cannot be resolved by the project manager should be *escalated* to the programme or organisational level for review.

Perception

- The *findings of* programme and project management *assessments* should be *considered* in relation to the organisational goals and business objectives.
- The organisation should *assure* that programme and project management have *adequate processes* by which risks are minimised and a quality outcome is more likely.
- Process development and *improvement plans* should be *cognisant of* the *business needs and priorities*.

Performance measures

- Measurements are taken to *determine* the *status of* the organisation's programme and project management process *development and improvement activities*. For example, in terms of the resources expended on process assessment, programme and project management development and improvement, compared to the plans for these activities.
- The *results of* programme and project management *assessments* should be *compared to* the *results and recommendations from previous assessments*.

Portfolio, Programme & Project Management Maturity Model

Level 3: Defined process

Lifecycle function / Key process area description:

3.5 Process definition

The purpose of process definition is to develop and maintain a set of programme and/or project management process assets that can be used by all programmes and/or projects within the organisation to improve performance and provide the basis for cumulative benefits to the organisation. Such assets include the definition of the organisation's standard programme and/or project management processes, and related management assets such as frameworks, life-cycle descriptions, templates, process tailoring guidelines and criteria, the organisation's portfolio, and documentation libraries.

Functional achievement / Process goals

- Standard programme and/or project management approaches for use by the organisation are developed and maintained.
- Information related to the use of the standard programme and/or project management processes is collected, reviewed and made available.

Approach

- The organisation has an explicit policy for the *development and maintenance of standard programme and/or project management approaches* and related process assets.
- *Process assets* for use by programme and/or project teams *are developed* to include: guidelines and criteria for tailoring standard processes, descriptions of life-cycles approved for use by the teams, a library of programme and/or project management related documentation templates previously developed and available for re-use.
- The organisation should *ensure* that the programme and/or project management *process assets are maintained* to reflect the organisation's policy and standards.
- Programme and/or project management *information* should be *collected and analysed* in order to improve the organisation's standard processes. This information may include process and product measurements, lessons learned, and other process related documentation.
- *Adequate resources and funding* are provided *for developing and maintaining* the organisation's standard programme and/or project management *processes* and related assets.
- The *development and maintenance* of the organisation's standard programme and/or project management processes and related assets is performed and *co-ordinated* by nominated individuals or specific group with allocated responsibility.
- *Tools to support process development* and maintenance are made *available* to the nominated individuals or group responsible.
- The individuals or *group responsible* for process development and maintenance *receive* the required *training to perform* these *activities*, e.g. project management methods, process modelling and documentation.

Deployment

- The organisation's *standard* management *approaches* are *developed and maintained* according to a documented procedure.
- The *procedure* should typically *specify* that the standard approach should be cognisant of the organisation's policies and standards and those commonly imposed by customers, as appropriate.
- The standard approaches should *take into account the tools and methods recommended* by the organisation, as appropriate.
- The *process interfaces* between programme and project management, the organisation, and customers should be *described*.
- *Changes* to the organisation's standard approaches should be documented, *reviewed and approved by the process owner or group responsible*, before they are incorporated.
- *Plans for introducing process changes* to ongoing programmes and/or projects should be

defined, as appropriate.

- The standard management *approaches* should be *decomposed into* constituent *process elements* to the level of granularity necessary to understand and describe the process. (Each process element covers a well-defined, bounded, closely related set of activities).
- The *relationship* of the process elements should be *described* including: sequencing, interfaces and interdependencies.
- The *approved* programme and/or project management *lifecycles* should be *documented* and maintained. These should be compatible with the organisation's standard management approaches.
- *Guidelines and criteria to enable projects' to tailor* the organisations standard project management processes should be developed and maintained.
- The *organisation's* programme and project management *process database* should be established and *maintained*.
- The organisation should collect and *make available data on* programme and/or project *management processes* and the resulting *deliverables and outcomes*.
- The data contained within the database should be reviewed to *ensure the integrity of* the programme and/or project *database*.
- A *library of* programme and/or project management *process-related documentation* should be established and maintained

Review

- *Quality management* should *review* and/or audit the organisation's activities and deliverables relating to the development and maintenance of the organisation's standard programme and/or project management processes and related management assets.
- The results or *findings of* such *reviews* and/or audits should be *presented to* the organisation's *senior management*.

Perception

- The *findings of* process definition *reviews* should be *considered* in relation to the organisational goals and business objectives.
- The organisation should *assure* that programme and project *management have defined processes* by which project risks are minimised and a quality outcome is more likely.
- The findings of process reviews should be *compared with* the *perception of customers and other stakeholders*.
- Programme and project management *processes* should be cognisant of the business *needs and priorities*.

Performance measures

- Measurements are taken to *determine* the *status* of the organisation's management process definition activities. For example, in terms of the status of the scheduled milestones for process development and maintenance.

Portfolio, Programme & Project Management Maturity Model

Level 3: Defined process

Lifecycle function / Key process area description:

3.6 Training, skills and competency development

The purpose of training programmes is to develop the skills and knowledge of programme and /or project managers, their teams and other personnel engaged with programmes and /or projects so they can perform their roles more effectively.

The training programmes takes into account the needs of the organisation, programmes, projects and individuals. Suitable training modules may be developed or procured to meet the identified needs.

Functional achievement / Process goals

- Training activities are planned.
- Training for developing the skills and knowledge needed to perform programme and/or project management and other team roles is provided.
- Individuals assigned to programme or project teams, or support roles receive the training necessary to perform their work activities.

Approach

- The organisation has an explicit *policy for* meeting its *training* needs.
- The organisation's policy should *specify* the *skills and knowledge requirements for* programme and/or project management, team and support *roles*.
- *Training* vehicles for imparting skills and knowledge should be *identified and approved*, including mentoring programmes.
- Training should be provided to *build* the *skills base of the organisation*, to fill specific programme and/or project needs and to develop the skills of individuals.
- *Training* is *developed* within the organisation *or obtained* from external sources when appropriate.
- Nominated individuals or a *group* should be *responsible* for fulfilling the training needs of the organisation.
- There should be *adequate resources and funding* provided *to implement* the *training programme*.
- There should be *suitable tools and facilities* to support the training programme.
- The individuals or *group responsible* for the training programme should *have* the *necessary skills and knowledge* to perform their training activities.
- Programme *managers*, project managers and personnel engaged in direction, delivery and supporting roles should be *aware or receive orientation* on the organisation's training programme.

Deployment

- *Each programme and/or project* should develop and *maintain a training plan* that specifies its training needs.
- *Programmes and/or projects* should *identify the set of skills needed* and when those skills are needed, the skills for which training is required and the skills that will be obtained via other vehicles.
- Programmes and/or projects should *identify* the *training* that is *required* and for whom, and when it is required, and how that training can be provided.
- The *organisation's plan is based on* the programme and/or projects' *needs identified* in their training plans; it identifies the specific training to be provided based on the skills needed by the organisation.
- The *organisation's plan* should be *readily available* to affected programme and/or project teams, groups and individuals.
- *Training* for the organisation is performed *in accordance with* the organisation's training *plan*.
- The organisation's training *plan covers* the *specific types of training needed* and when it is

needed, the source of the training, the funding and resource requirements, standards for instructional material, and the schedule for developing or revising training material, as appropriate.

- Training *courses* prepared at the organisation level are *developed and maintained*.
- *Individuals* should be *assessed* to determine whether they possess the necessary skills and knowledge required to perform designated roles.
- *Training records* should be *maintained* for all individuals and should be made available for future allocation to new assignments.

Review

- *Training programmes* should be *reviewed* with Senior Management on a periodic basis.
- The training programme should be *evaluated to ascertain* the level of consistency with, and *relevance to*, the *organisation's needs*.
- The training programme and deliverables should be reviewed and/or audited to *verify* the *processes* for developing and revising the organisation's training plan, and the courses being followed. The review should also *assure* that training *records* are properly maintained.

Perception

- The *findings* of training programme reviews should be *considered* in relation to the organisational goals and business objectives.
- The organisation should *assure* that *individuals* are *receiving* the *necessary training* in a timely manner for them to carry out their work activities effectively.

Performance measures

- Measurements are taken to *determine* the *status of* the *training programme* activities. For example, actual attendance at training courses compared to projected attendance, progress in providing training courses compared to the organisation's, programmes and projects' training plans.
- Measurements are defined and used to *determine* the *quality of* the *training programme*, e.g. results of post-training tests, course reviews, feedback from project managers.

Portfolio, Programme & Project Management Maturity Model

Level 3: Defined process

Lifecycle function / Key process area description:

3.7 Integrated management and reporting

The purpose is to assure that all programme and project activities, including managerial and administrative aspects form a coherent set tailored from the organisation's standard approach and related process assets.

Integrated management necessitates the development of programme and/or project plans that addresses the specific outcomes or projects characteristics being sought by the business. The plans should be based on defined processes and describe how the activities will be implemented and managed, taking into account the programme and/or project's size, effort, cost, schedule, staffing. The emphasis of integrated management is to anticipate problems and other issues and to act to prevent or minimise the effects of these problems.

Functional achievement / Process goals

- The processes undertaken by the programme and/or project teams are tailored from the organisation's standard approaches and process elements.
- Programmes and/or projects are planned and managed according to their defined processes and these should be cognisant of the overall objectives and have stakeholder approval.

Approach

- The organisation should have an explicit policy requiring *programmes and/or projects* to be planned and *managed using* the organisation's *standard processes* and related process assets.
- Each programme and/or project should *document their defined process and approach* by tailoring the organisation's standard processes.
- *Deviations from* the organisational *standards* should be *documented and approved*.
- Programmes and/or projects should *undertake* their *activities in accordance* with their defined processes.
- Programmes and/or projects should *collect and store appropriate measures* in the organisation's programme and/or project management database.
- *Adequate resources and funding* should be provided for managing programmes and/or projects using the defined management processes
- The *individuals responsible for tailoring* the processes should *receive appropriate training* in the use of the organisation's standard processes and management assets.
- *Programme and/or project managers* should be *trained* in managing team work, administrative and personnel aspects.

Deployment

- A *lifecycle* is selected from those approved by the organisation, to *satisfy the contractual and operational constraints*.
- The lifecycle and *management processes may be* modified or *tailored* in accordance with organisational guidelines and criteria and should be documented. Any tailoring should be reviewed by those responsible for co-ordinating the organisation's programme and/or project management activities and approved by senior management.
- *Estimating, planning and monitoring* activities should be *tied to* the *key tasks* and the *milestones and deliverables* defined for the programme and/or project.
- *Readiness and completion criteria* should be *established and used* to authorise initiation and determine completion of key tasks.
- There should be documented *criteria to indicate when* it is necessary *to re-plan* activities.
- *Lessons learned* should be *documented* and stored in the organisation's programme and/or project library.
- A *resource plan* should *address* the programme and/or project's *needs* for individuals with specific skills or domain knowledge.

- *Training needs* should be *identified* and documented to meet the specific needs of programmes and/or projects.
- The *plans and processes* followed in interacting with other groups may need to be *adjusted* to account for disparities or other potential problems.
- The organisation's programme and/or project management *database* should be used *for planning and estimating* purposes.
- Planning data should be approved, and *actual measurements stored* in the programme and/or project management database.
- *Critical dependencies and critical paths* on programme and/or projects schedules should be *recognised and managed* according to a documented procedure.
- Programme and/or project *risks* are identified, assessed, *documented, and managed* according to a documented procedure.
- A *risk management plan* is produced and used to identify and manage risks.
- *Contingency planning* is based on the defined processes and is performed throughout the lifecycle.
- *Risks are tracked and re-evaluated* at selected milestones or designated risk checkpoints, and during the planning of significant changes that affect programmes and/or projects.

Review

- The programme and/or project *management activities* should be *reviewed* with Senior Management on a periodic basis.
- *Quality assurance* should *review* and/or audit programme and/or project management activities and report the results.
- Reviews are periodically performed to *determine* the *actions necessary* to bring performance in line with the current and projected needs of the business, customer, as appropriate.

Perception

- The *findings* of programme and/or project management reviews should be *considered* in relation to the organisational goals and business objectives.
- The *findings* of programme and/or project management reviews should be *compared* with the perception of customers and other stakeholders.

Performance measures

- Measurements are taken to *determine* the *effectiveness* of integrated management activities. For example,
 - effort expended over time in managing projects, compared to plan;
 - frequency, causes and magnitude of re-planning effort;
 - for each identified risk the realised adverse impact, and the number and magnitude of unanticipated impacts.
- There should be *suitable provisions made to* gather, *analyse and report measurements* needed to manage programmes and/or projects.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.8 Lifecycle control

The purpose of lifecycle control is to consistently perform the programme and/or project activities in terms of a well-defined process and to produce consistent products and other results effectively and efficiently.

Lifecycle control ensures that the necessary activities to design, build and maintain the desired outputs are accomplished using the appropriate tools and methods, and that the process of transformation is conducted economically, and value can be demonstrated.

Functional achievement / Process goals

- Programme and/or project activities are defined, integrated, and consistently performed to produce the desired outputs and outcomes.
- Deliverables produced at various stages of the lifecycle are kept consistent with each other.

Approach

- Programmes and /or projects should follow a *written policy* for performing their respective activities.
- Programme and/or project activities should be performed in accordance with *defined processes* and *using appropriate methods and tools*.
- The plans, tasks and products should be *traceable* in terms of the vision, blueprints, agreed requirements and objectives.
- *Adequate resources and funding* should be provided for performing programme and/or project activities.
- Programme and/or project *activities* should be *undertaken by skilled individuals* utilising the prescribed tool sets.
- Programme and/or project *managers* should also *have* training or *experience of* both the *wider business* and customer *domains*.
- Project *management* should *undertake* some *orientation in the working practice aspects* of the project, including methods and tools.

Deployment

- The support *tools* should be placed *under configuration* management *control*.
- The project *requirements* are systematically *analysed* and developed in accordance with the defined engineering process.
- *Issues affecting* the design, development and build of any *deliverables* are *identified and resolved*.
- *Effective methods of requirements analysis* are used and the results of the analysis and the rationale for the selected alternative are documented.
- Programmes should ensure that it is *feasible to deliver* an outcome that satisfies the programme vision.
- Projects should ensure that it is feasible to deliver a *solution* that *satisfies* the *requirements*.
- The group or individuals responsible for verifying or validating deliverables should *review* the documented *requirements to ensure they can be verified*.
- The *methods to be employed* for verifying and validating that the requirement has been satisfied are *identified and documented*.
- The *requirements documentation undergoes peer review* before it is considered to be complete.
- Requirements and design *documentation* is *under configuration* management *control*.
- *Requirements* can be *tracked* throughout the project lifecycle *and remain traceable* through the various stages: analysis, design, development, incorporation etc.
- *Design criteria are developed and reviewed*, where appropriate.

- Individuals involved in design review the requirements to ensure that all *issues affecting design are identified and resolved*.
- Appropriate *standards* are *applied* and effective design methods are used.
- The *design* is suitably *documented* in terms of the design item components, internal and external interfaces, and undergoes peer review before it is considered complete.
- The *sequence* in which design units or components are developed is *based on a plan* that accounts for factors such as criticality, difficulty, integration and verification issues, and the needs of customers and users, as appropriate.
- Verification and/or validation of deliverables are performed in accordance with the defined process; for example, *verification criteria are developed and reviewed* with the customer and users, as appropriate.
- The *adequacy* of verification and validation activities is *determined* based on the level of verification performed, the strategy selected, and the amount of verification and/or validation achieved.
- For each level of product verification, the *readiness criteria* for verification activities are *established and used*; plans and procedures for verification, and appropriate cases undergo peer review prior to use.
- *Verification plans*, procedures and verification data *are managed and controlled* and are appropriately changed whenever there are changes in requirements, product design, or build constructs.
- *Resources* for product *verification and validation are assigned early* enough within the project lifecycle to enable adequate preparation for deliverable verification.
- Verification procedures and suitable checks should be planned and prepared by a *verification group* that is *independent of the development team*.
- Verification activities are performed against base-lined products, and *problems identified* during verification are *documented and tracked* to closure.
- The *results of verification* activities are *documented and used* as the basis for determining whether deliverables satisfy the customer / user requirements.
- The *documentation* that will be used *to ensure a smooth hand-over* of deliverables into operational service and throughout the operational service life is developed and maintained according to the defined process.
- *Documentation specialists* actively *participate* in planning, developing and maintaining operational service documentation.
- *Preliminary versions* of the documentation are developed and *made available early* in the lifecycle for the customer / user and other stakeholders to review and provide feedback.
- *Final versions* of documentation are *reviewed and approved*, as appropriate.
- *Data on defects* identified in review and verification activities are *collected and analysed*.

Review

- The *lifecycle control activities* should be *reviewed* with Senior Management on a periodic basis.
- The lifecycle control activities should also be reviewed by project management on a periodic and event-driven basis.
- *Quality Management periodically undertake reviews* and/or audits deliverables and lifecycle control activities and report the results.

Perception

- The *findings* of lifecycle reviews should be *considered* in relation to project goals and objectives.
- The findings of lifecycle reviews should *assure customers* that requirements are complete, consistent, feasible, and verifiable, that readiness and completion criteria are satisfied and that the necessary verification is completed satisfactorily. Stakeholder perception should be compared and contrasted with the findings of such reviews.

Performance measures

- Measurements are taken to *determine the functionality and quality* of the deliverables.
- Project *requirements are summarised by category* (e.g. security configuration

performance, reliability), and are traced through the specifications and appropriate verification processes.

- There should be suitable measurements to *determine* the *status* of the lifecycle control activities, e.g. problem reports by severity and elapsed time to resolution and closure, change activity, including effort to analyse proposed changes, size and cost to implement, verify and validate incorporated changes.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.9 Inter-group co-ordination and networking

The purpose of inter-team co-ordination is to establish the means for teams to communicate and actively engage with other teams in order to more adequately satisfy the business and customer needs in an efficient and effective manner.

Functional achievement / Process goals

- The customer's requirements are agreed to by all affected groups.
- Commitments between teams are negotiated and agreed by all parties.
- Senior management identify, track and resolve inter-group issues.

Approach

- The organisation recognises the *need for* establishing *interdisciplinary teams*, e.g. for conducting verification activities, quality assurance, configuration management, contract management, documentation support.
- Programme and/or project *plans and objectives are reviewed* by all affected groups.
- Senior management ensure that there is *adequate co-ordination of plans and activities* by establishing and maintaining a suitable environment to facilitate interaction, co-ordination, support and teamwork.
- *Adequate resources and funding* are provided for co-ordinating activities between groups.
- The *support tools* used by different teams and groups are made *compatible* to enable effective communication and co-ordination.
- All managers in the organisation receive *training in teamwork*.
- Group members receive *orientation in* the *processes, methods and standards* used within other teams and groups, where applicable.

Deployment

- The project team and related groups participate with the customer and users, as appropriate to *elicit requirements*.
- Any critical characteristics of the requirements, *critical dependencies are defined* by the project team and the acceptance criteria for the project deliverables are documented.
- Senior organisational management ensure that all *issues affecting* more than one programme, project, or inter-team co-ordination activities *are managed and controlled*.
- Senior organisational management assess, develop recommendations, and *manage risks* affecting a number of teams or interdisciplinary groups.
- A documented plan is used to *communicate inter-team commitments* and to co-ordinate group activities and to monitor the work performed.
- *Critical dependencies* between teams or groups are identified, *negotiated, and monitored* according to a documented procedure.
- Project deliverables that are produced as input to other teams or groups are reviewed by group representatives to *ensure* that the *deliverables meet* their *specified needs*.
- Inter-team *issues* that are not resolvable by the groups or parties concerned are *escalated* to Senior Management for resolution.
- Senior Management participate in periodic reviews and *interchanges to provide visibility* of the customer perspective, and to ensure that the team(s) interpret and implement their requirements correctly.
- Senior Management *review* the *various commitments* of interdisciplinary groups to determine whether they are being met.
- Senior Management *review risks* throughout the programme and/or project lifecycle to ascertain the affect on the business.

Review

- Inter-team co-ordination *activities should be reviewed* with Senior Management on a periodic basis.
- Inter-team co-ordination activities are reviewed by programme and/or project management on both a periodic and event-driven basis.
- *Quality management review* and/or audit inter-team co-ordination *and report the results* to Senior Management.

Perception

- The *findings* of programme and/or project management reviews should be *considered* in relation to the organisational goals and business objectives.
- The *findings* of programme and/or project management reviews should be *compared with the perception of customers* and other stakeholders.

Performance measures

- The organisation may *determine the status* of inter-team co-ordination activities by measuring, for example:
 - actual effort expended by other groups in support of a project team;
 - actual completion of specific tasks and milestones by other groups to support the activities of the project team.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.10 Quality Assurance

The purpose of quality assurance is to provide organisational assurance that the programmes and/or projects have suitable quality plans and measures to ensure that their processes are suitably controlled and are likely to result in deliverables that meet explicit quality criteria.

Quality assurance augments quality control in ensuring that quality is planned into programmes and/or projects, rather than relying on inspection and removal of defects in deliverables during the respective lifecycles.

Functional achievement / Process goals

- Formal review activities should be planned throughout the lifecycles and involve stakeholders where appropriate.
- A Quality Plan should show how the quality criteria for the programme and/or project are to be achieved by their respective processes.
- The standards and procedures recommended for use by programmes and/or projects should be periodically assessed to assure that they are fit for purpose.

Approach

- Programmes and/or projects should follow a written policy for performing formal reviews; the policy should *identify* a standard set of *deliverables* that are *subject to formal reviews*.
- Any peer *reviews* conducted for programmes and/or projects are *led by trained review leaders*.
- *Peer reviews should focus on the deliverables* and not the processes, people or technology.
- *Adequate resources and funding* should be provided for performing peer reviews.
- *Quality assurance reviews should assure* the programme and/or project management *approach and methods used*, and be conducted by independent (of the team) reviewers.
- *Quality assurance should make recommendations* to the programme and/or project team *to improve the Quality Plan*, and to improve the likelihood of quality deliverables and reduce the level of risk.
- Quality reviews should be planned and undertaken to *assure* that the *skills and competencies required* for existing and forthcoming programmes and/or projects *are recognised and categorised adequately*.
- *Quality reviews should be planned* and undertaken to assure that the risks are managed effectively.
- Quality reviews should *assure* that the *contingency measures and plans* are both feasible and economic.
- The organisation should consider the development of *organisational standards for quality control activities* to be adopted by all programmes and/or projects.

Deployment

- *Formal reviews are planned and documented*; the plan identifies the programme and/or project deliverables to be reviewed and the review schedule.
- Peer reviews are performed according to a *documented procedure*.
- The *review materials* should *include* the relevant inputs to the development of the deliverables under review, e.g. applicable standards, relevant requirements etc.
- Review materials should be *distributed in advance* so that reviewers can prepare adequately.
- Reviewers should have *assigned roles*.
- *Readiness and completion criteria* for reviews should be *specified and enforced*; any issues are reported to the appropriate manager.
- *Checklists* can be usefully used *to identify criteria for the review*, the checklists being tailored for specific types of deliverable.

- *Actions* identified through reviews are *monitored through to completion / resolution*.
- *Data* on the conduct and results of formal reviews are *recorded*.

Review

- *Quality assurance* review programme and/or project reports and audit programme and/or project activities and *report the results* to Senior Management.

Perception

- The *findings* of quality assurance reviews should be *considered* in relation to the organisational goals and business objectives.
- The *findings* of quality assurance reviews should be *compared with* the *perception* of customers and other stakeholders.

Performance measures

- Measurements are taken to *determine* the *status of peer review activities*. For example,
 - the number of formal reviews performed compared to the plan,
 - overall effort expended on peer reviews compared to the plan,
 - number of deliverables reviewed compared to the plan.

Portfolio, Programme & Project Management Maturity Model Level 3: Defined process

Lifecycle function / Key process area description:

3.11 Centre of Excellence (COE) role deployment

The purpose of a COE for programme and project management is to establish a co-ordinating function providing strategic oversight, scrutiny and challenge across an organisation's portfolio of programmes and projects.

Functional achievement / Process goals

- Development of a COE that is a focal point for supporting individual programmes and projects across the organisation.
- Enhanced programme and project delivery through the implementation of improvements to increase organisational capability and capacity.
- Upward reporting to provide assurance, support prioritisation and enable effective decision-making.
- Established relationships with other organisations to enable lesson learning and sharing of best practice.
- Provision of expertise on demand in support of programmes and projects within the organisation.

Approach

- *Recognise and differentiate* the *functions* of a *COE* from those typically provided by programme and project support offices.
- Gain *senior management support* for the *changes* necessary to establish and embed the COE functions within the organisation.
- Establish a COE with *responsibility* for providing *strategic oversight, scrutiny* and *challenge* of the organisation's portfolio.
- Identify and *acquire* the *appropriate skills and competencies* to fulfil the COE functional role.
- Work with senior management and other organisational functions to *effect the changes required* to processes and procedures.

Deployment

- Gain an *awareness* of the organisation's *business, structures, processes* and *practices*.
- Recognise and *establish* the *organisational portfolio* of programmes and projects to facilitate prioritisation and other decision-making, and enable constructive challenge on the content of the current portfolio.
- Gain *awareness* of all of the *stakeholders* with an *interest* in the organisation's delivery programme, and identify gaps, overlaps and potential conflicts of interest.
- *Ensure* that *HR practices and procedures* are *aligned* with the successful operation of Programme and Project Management in the organisation.
- *Understand* the *issues of governance* relevant to the COE role and operations.
- Utilise *core competencies in programme and project management* to identify and provide individual programmes and projects with the necessary guidance and support.
- *Plan* the necessary *information collection and reporting activities* in relation to programmes and projects.
- *Ascertain and fulfil upward reporting needs* to provide assurance, support prioritisation and enable effective decision-making.
- *Develop relationships* with other organisations, including delivery partners, and sustain networks to *share lessons* learning and experience.
- *Assure* the necessary formal *structures and procedures* are established *to facilitate collaborative working* across organisational boundaries.
- Plan and *implement process capability improvements* to systematically address areas of weakness.

Review

- The *Management Board* should *monitor and review* the totality of the organisation's *programme and project landscape*.
- There should be regular *reviews of reporting arrangements*
- The COE should *coordinate* its *review activities* with other review teams, e.g. Gateway teams.

Perception

- The *extent and impact of the COE* on the *delivery capability* of the organisation.

Performance measures

- Design and/or start to implement measurement processes to *assess* the *value to the organisation* from the services provided by the COE.

Portfolio, Programme & Project Management Maturity Model

Level 3: Defined process

Lifecycle function / Key process area description:

3.12 Organisation portfolio establishment

The purpose of organisation portfolio establishment is to enable the Management Board to make key decisions concerning the “scale of challenge”, by building a single comprehensive picture of the programmes and projects in the portfolio, and reporting on it.

Functional achievement / Process goals

- Assurance to the Management Board by the COE scrutinising and challenging programmes and projects within the portfolio.
- Objective prioritisation and assessment of the portfolio content, enabling Management Board decisions on rationalising the portfolio, increasing capacity, or reducing commitments.
- Portfolio management should inform decisions about choice of programmes and/or projects, assignment of priorities, resource allocation, programme and/or project interdependencies, staffing and skills requirements, risks and benefits, and gaps and overlaps in the portfolio.

Approach

- Portfolio management is the *responsibility of the Management Board*, and involves prioritising programmes and projects based on their business case, managing the impact of changing priorities, tracking progress against key outcomes, and taking prompt corrective action.
- The *COE* should *agree* the *scope* of the organisation’s *portfolio* with the Management Board, and assure that once established it will help the organisation to meet its business objectives.
- The COE should *establish* an acceptable *framework for assessing and comparing* programmes and projects.
- The COE should routinely *undertake analysis and investigation* to provide an aggregate assessment across the portfolio and not simply provide a collection of individual programme and/or project management reports.
- *Pertinent information* about the programmes and projects should be *collected and related* to the business requirements and capabilities of the organisation.

Deployment

- The COE should *establish good communications* and *strong relationships and reporting mechanisms* in order to receive regular, accurate reports from programmes and projects.
- Portfolio management *information* supplied by the COE *should be an aggregation* of the information supplied by programme and project managers, and other sources.
- The COE should develop a *framework for* the *categorisation* of programmes and projects to facilitate selection and prioritisation.
- The COE should *advise senior management* on the selection of programmes and projects which are candidates for implementation, and assess the value of programmes and projects within the portfolio.
- The COE should be able to *identify* the *business requirements* of the organisation and relate the portfolio to business strategies and objectives.
- *Benefits planning and realisation should be assessed* across the organisation’s portfolio, to identify gaps, overlaps and conflicts in the benefits plan of individual programmes and projects.
- The COE should be instrumental in achieving a *balanced portfolio* by working with the Management Board to *set priorities and allocate resources* to those programmes and projects that provide maximum value for the business.
- The COE should *assess independently the risks* associated with individual programmes and projects, and evaluate critically the risk assessments made by programme and project management.
- The COE should *assess resource requirements* across the complete portfolio, in order to identify and report on resource constraints, conflicts and dependencies, and to recommend

remedial action where appropriate.

Review

- The *overall risks and benefits* attached the portfolio should be *reviewed* by senior management *on a periodic basis*.
- The *priorities* assigned to various programmes and projects should be *reviewed* by the Management Board.
- The COE should review the portfolio to *ensure* that the programmes and projects are *oriented towards the achievement of strategic objectives*, ensuring that the business objectives are covered by the current or planned programmes and projects.
- The COE should *identify programmes and projects that are not contributing* to the achievement of business objectives and cannot be justified.
- The COE should *identify common risks arising* across the whole portfolio, and which are perhaps not visible to individual programmes and projects.
- The COE should *review critically the plans and resource requirements* of individual programmes and projects, as reported by their managers.

Perception

- The views of stakeholders should be sought regarding the *scope and purpose* of the portfolio.
- The views of stakeholders should be sought regarding the *effective use of the portfolio* to track progress against key business outcomes, objectives, and targets.
- The Management Board should have oversight of the organisation's portfolio and *understand and actively engage* in portfolio management.

Performance measures

- The *extent* to which portfolio management is *enabling* the organisation to meet its business objectives.
- *Measurement of the achievability* of portfolio items in terms of whether they are adequately resourced and managed.
- The extent to which the COE has established a set of *quantitative measures* on which *to monitor and control* programme and project performance.
- The extent to which the COE has established *quantitative measures* on which *to monitor and control* programme and project risks.

Level 4

Portfolio, Programme & Project Management Maturity Model Level 4: Managed process

Lifecycle function / Key process area description:

4.1 Management metrics

The purpose of programme and project management metrics is to monitor and control performance in quantitative terms, i.e. to predict and compare the likely outcome from following the specified and defined processes.

Quantitative process management involves establishing goals, taking measurements of performance, analysing these measurements and making adjustments to processes to maintain performance.

Functional achievement / Process goals

- The organisation collects process performance data from programmes and projects and uses this data to characterise the process capability.
- Process capability is used to describe the likely outcome anticipated from the specified programme and project approaches.

Approach

- Programmes and/or projects should be *under quantitative control* in terms of their expected and actual performance
- *Sensitive data* relating to individuals' performance *is protected* and access to this data is controlled.
- The organisation follows a written *policy for analysing* programme and/or project management *capability* in relation to their defined processes.
- The *process capability baseline* for the organisation's standard programme and/or project management approaches are used by individual programmes and/or projects in establishing their process performance goals.
- The organisation ensures that an individual or *group* is *responsible for co-ordinating quantitative performance data* concerning programme and/or project management activities.
- *Adequate resources and funding* are made available for data collection and analysis.
- An *organisation-wide measurement programme* is established which includes the definition of the organisational measurement goals, metrics, and the collection and analysis of measurement data.
- The *individuals* implementing or supporting programme and/or project metric activities *receive* the *training* necessary to perform this role.
- Those taking part in the metrics programme receive *orientation on the goals and value* of quantitative control and performance measurement.

Deployment

- Programme and/or project plans should explicitly *state* what *quantitative process measurements* are being taken in accordance with the organisation's strategic goals for product quality, productivity, and life-cycle duration.
- Measurement activities are undertaken in accordance with the *plan*, stating which activities will be measured and analysed.
- The *strategy for measuring activities and for data collection*, and the quantitative analyses to be performed are based on defined processes. Consideration is given to activities and their relationships, the deliverables and their relationships, and process control points and data collection techniques.
- The measurement data used to control processes are collected according to a documented procedure that typically specifies *how the measurements support* both the organisation's, programme and/or project measurement *goals and objectives*; the precise definition of the metrics and intended use.
- *Measurements* should be chosen *from the entire lifecycle*, covering the properties of the key process areas and major deliverables.

- *Measurements* that relate to the organisation's standard management approaches are *uniformly collected across the organisation*.
- The *validity of the measurement data* should be independently *assessed* and collected data stored in the organisation's programme and/or project management database, as appropriate.
- The defined *processes are analysed and brought under quantitative control* according to a documented procedure, e.g. the specific data analysis techniques are predefined.
- Expected values are specified for each measurement, as appropriate, and a programme and/or project *performance base-line is established*.
- *Actual* measurement *values* are *compared with expected values* and process adjustments are made to bring the performance back in line with acceptable limits, as appropriate.
- The process *performance baseline* for programmes and/or projects *is managed and controlled*.
- *Reports documenting* the *results* of process management activities are prepared.
- The *findings* are *reviewed* by the respective management teams and organisation management.
- The process capability *baseline for the organisation is established and monitored* and programme and/or project capability is evaluated against the baseline.

Review

- Senior management *review programme and project metrics* and the quantitative process management measures and report findings on a periodic basis.
- Programme and project managers *analyse* the *trends* from the findings of process management reports on both a periodic and event-driven basis.

Perception

- Quality Management review and/or audit the process management reports and activities and *analyse the results* in terms of the achievement of organisation, programme and/or project goals
- The *trends indicated* by the process management reports are *compared and contrasted with the views of customers and other stakeholders*.

Performance measures

- Measurements are used to *determine the status of programmes and projects*, and process management activities. For example,
 - the achievement of metrics programme milestones,
 - the establishment of programme and project measures,
 - determining the efficacy of data collection and analysis.

Portfolio, Programme & Project Management Maturity Model Level 4: Managed process

Lifecycle function / Key process area description:

4.2 Quality management

The purpose of organisational quality management is to develop a quantitative understanding of the quality of programme and project deliverables, and the achievement specific organisational quality goals.

Quality management ensures that programmes and projects define quality goals for their deliverables and establish suitable plans to achieve these goals. The goals should recognise the needs and desires of customers and stakeholders in terms of the desired outcome and intent.

Functional achievement / Process goals

- Programme and project quality assurance activities should be planned.
- Measurable goals for deliverable quality should be defined.
- Programme and project priorities in relation to quality attributes should be explicit.
- Actual progress in achieving the quality intent of the organisation should be quantified and measured.

Approach

- Programmes and projects should follow a written policy for *managing quality* that typically specifies how their quality activities support the organisation's commitment to quality.
- Programmes and projects *define and collect* the *measurements* used for quality management based on the specified processes.
- Programmes and projects *define* their *quality goals and monitor progress* in achieving them.
- *Responsibilities* for quality management are *assigned*, and criteria established on which to determine the success in achieving quality goals.
- *Adequate resources and funding* are provided for managing quality, including the provision of specialists to advise on, for example, safety and reliability issues.
- Consideration is given to the *necessary tools to support* quality management activities.
- The *individuals* involved in quality management are *suitably trained* to perform their activities.

Deployment

- The *quality plans* for programmes and projects are developed and *maintained* according to a documented procedure.
- *Quality* is *directly related to the needs and priorities of the business and its customers*. For example, customer requirements should be traceable in project goals and deliverables.
- The *capability of defined processes to satisfy quality goals* should be *assessed* and documented, e.g. in terms of the chosen lifecycle, management approach and methods.
- Programme and project *quality plans* should be *aligned* to the organisation's quality plans.
- Programme and project *quality plans* should be maintained throughout the lifecycle and should be *updated at milestones or whenever the requirements change*.
- The *quality plan* is the *basis for the quality management activities* undertaken by programme and project teams.
- *Quality plans should identify* the points in programmes and projects *where deliverable quality is measured*, the actions that will be implemented to address quality issues and the measurement techniques used throughout the lifecycle, e.g. peer reviews, prototyping, simulation, and verification activities.
- The quantitative *quality characteristics*, e.g. functionality, reliability, maintainability etc. to be achieved by deliverables *should be defined*, monitored, and revised throughout the lifecycle.
- The *measurements used* to quantify the quality characteristics of deliverables *should be*

- *identified* and numeric values selected as quality goals, e.g. reliability in terms of MTBF.
- *Quality goals should be documented* in the programme and project's quality plans.
- *Quality goals* should be defined and documented for each stage of the lifecycle, and *may be revised as the understanding of* the products, outcome, and the organisation's and customer's *needs evolve*.
- The *quality* of deliverables is measured, analysed and *compared to the stated quality goals*.
- Programme and project *activities* are planned and *performed to address quality goals* explicitly.
- *Conflicting quality goals are analysed* and considered in terms of the business strategy and customer priorities.
- Senior management and customers *participate in* quality *tradeoffs* as appropriate.

Review

- Programme and project *quality management activities are reviewed* with Senior Management on a periodic basis, and by programme and project management on both a periodic and event-driven basis.
- The organisation's *quality function reviews and/or audits* the deliverables and activities of programme and project quality assurance.

Perception

- The *findings of the quality function* should be *considered* in relation to the organisational goals and business objectives.
- The *findings* of the quality function should be *compared with the perception of customers and other stakeholders*.

Performance measures

- Measurements are taken to *determine* the *status of quality management activities*. For example, measurements may include:
 - the cost of poor quality in terms of customer dissatisfaction and rework
 - the costs for achieving quality goals.

Portfolio, Programme & Project Management Maturity Model Level 4: Managed process

Lifecycle function / Key process area description:

4.3 Organisational cultural growth

The purpose of organisational cultural growth is to recognise and address the perceived barriers to successful change in the organisation, by recognising the existing traits and organisational characteristics and norms that are compromising or limiting the realisation of benefits from existing change programmes.

Organisational cultural growth is achieved by means of a strategic approach to ascertain the current organisational culture and determine the climate required to improve the effectiveness of change efforts.

Functional achievement / Process goals

- Personnel development opportunities and/or the goals of the organisation are promoted.
- Organisation flexibility in relation to the business environment and/or management control and effective governance.

Approach

- The organisational *level of support* for programmes and projects is *evaluated*.
- The extent to which the organisation *promotes values* associated with co-operation, tolerance, support, and maximises individual commitment is determined.
- The extent to which the organisation *encourages* innovation, change, adaptation, individual initiative and responsibility is appraised.
- The organisation *structure, the level of standardisation and formalisation* should be *reviewed* in the light of changing business needs and environmental demands.
- The *purposefulness of existing information flows*, in terms of support for planning and decision making, productivity, efficiency and effectiveness should be ascertained.

Deployment

- Determine how *business objectives* are *communicated and disseminated* within the organisation and to external parties involved in the delivery chain.
- Review planning activities and how *staff* are *assigned/engaged and motivated*.
- Evaluate whether existing *resources* are being *utilised optimally*.
- *Review information flows* in terms of the quality, including reliability of information.
- Determine the *effectiveness of organisational response* mechanisms to the need to diversify, stimulate initiatives and innovation, manage growth, manage risk.
- Review *organisational policies and guidelines* to ensure that they reflect existing organisation needs and the business vision and goals.
- *Ensure* that the organisation *structure does not inhibit change*, team working, and re-training to undertake new roles and responsibilities.
- *Evaluate* the *level of resistance to change* and derive suitable strategies to overcome resistance.
- Ensure performance targets are realistic and reflect organisational intent.
- *Assess* current organisational *communication plans* and ensure the adequacy and effectiveness of business communications.
- *Evaluate existing processes* and determine in what areas the organisation should be 'best-of-class'.
- Senior management should ensure there is *sufficient support* for new ventures in terms of funding, resources etc.
- *Customer needs and satisfaction targets* should be disseminated effectively within the organisation.

Review

- The extent of *proactive improvement*, asset development, and technology exploitation in order to innovate and improve existing services should be ascertained by senior management.
- *Customer feedback* should be actively *sought and reviewed*; recommended actions should form the basis of an action plan for improvement.
- Long term working *partnerships should be reviewed* to ensure the optimised sharing of risks and rewards and the mutually beneficial nature of programmes and /or projects.
- The *extent* to which infrastructure, information and standards are *shared, and common* design is accepted by partners and collaborators.

Perception

- The extent to which the organisation actually *aspires towards quality and performing* services should be ascertained by senior management.
- The levels of *customer confidence* should be determined.

Performance measures

- Obtain an *objective opinion of the work* done by the organisation, and the extent to which the organisation co-operates and works with other organisations.
- Measure the extent of *employee and customer satisfaction* with the organisation.
- Undertake *process benchmarking* focussing on service provision.
- *Establishment* of a COE and portfolio management organisation

Portfolio, Programme & Project Management Maturity Model Level 4: Managed process

Lifecycle function / Key process area description:

4.4 Capacity management

The purpose of capacity management is to ensure that the organisation has the necessary resources to meet the demands of the business, in a cost effective and timely manner.

Capacity management requires a two-way relationship with the business strategy and planning processes, leading to a good understanding of the strategic intent and the likely capabilities necessary to meet business demands.

Functional achievement / Process goals

- Capacity management needs to understand the business needs and the means by which these needs will be fulfilled.
- Capacity management needs to monitor current capacity and forecast future capacity based on requirements, and ensure that the necessary capacity is available with satisfactory performance to meet business requirements in a cost-effective manner.

Approach

- *Monitor* existing *performance* of resources and *profile availability* against business needs.
- *Manage existing capacity* to make the most efficient use of existing resources.
- *Understand* the *business demand* for resources and produce forecasts of future resource requirements.
- *Influence* the *demand for resources* in conjunction with cost management and prioritisation processes.
- *Develop an appropriate 'refresh' policy* to ensure that the available capacity has the necessary capability to meet the business demands.

Deployment

- *Ensure* the *entire organisation's capacity requirements* for programme and project management *are catered* for.
- *Planned upgrades* in capacity, should be *denoted in forecasts and capacity plans* and the planning information made available for budgetary purposes.
- *Senior managers*, including sponsoring groups and business change managers should be made *aware of capacity constraints*.
- *Contingency plans* should be *cognisant of capacity constraints*.
- The *performance of existing resources* should be *monitored* routinely and information made available for comparative analysis.
- A *capacity management database* should be *created* to facilitate management decisions, e.g. determining whether the organisation has sufficient capacity service its existing programme and project commitments.
- The information within the capacity management database forms the basis for *performance and capacity reports* to senior management.
- Capacity management should *profile existing resource utilisation* and forecast future resource requirements.
- Capacity management should *assure* the *optimum usage of existing resources* by programmes and projects.
- Capacity management should *baseline* the *resource profiles* for different types of programme and project and establish resource thresholds based on analysis of previous programmes and projects.
- Demand management is used to *understand* which programmes and projects are utilising *critical resources* and to what level.

Review

- Capacity plans should ideally be *reviewed* by senior management *on a periodic basis*.
- There should be regular *reviews* programme and project capacity requirements *to verify* that they continue to *utilise resources in a cost-effective manner*.
- The *performance* of existing resources should be reviewed and *correlated with* the *capability requirements* of programmes and projects.

Perception

- The extent to which capacity management can *forecast business impacts* should be ascertained.
- The extent to which capacity management is able to *influence* the *demand* for resources *and* the *utilisation* of existing resources.

Performance measures

- The *available capacity* is *matched to* the current and future identified *needs* of the business.
- The *available capacity* is both *planned and cost justified*.
- The *utilisation of* programme and project *resources* is being *recorded* in the capacity management database.
- All recommendations for fine-tuning of programme and project resources are accompanied with *predictions of* their likely *effect and* the *results* are *documented*.

Level 5

Portfolio, Programme & Project Management Maturity Model Level 5: Optimised process

Lifecycle function / Key process area description:

5.1 Proactive problem management

The purpose of proactive problem management is to identify potential problems in the programme and project context and to prevent them occurring.

The underlying cause of existing programme and project issues should be identified and changes put forward to minimise the likelihood of such issues disrupting this or other programmes and / or projects in future. Based on the lifecycle and defined processes, the root cause of problems should be established and proposals made to prevent re-occurrence where practical.

Functional achievement / Process goals

- Proactive problem management activities should be planned.
- Common causes of programme and project issues and problems are sought and identified.
- Common causes of programme and project problems are prioritised and systematically addressed.

Approach

- The organisation has a written *policy for proactive problem management* that specifies the long-term plans and commitments.
- Proactive problem management activities are implemented across the organisation to *improve* the organisation's *performance*.
- Proactive problem management activities are *reviewed to ensure their effectiveness*.
- Management and other *actions* identified as a result of proactive issue management are *addressed*.
- The proactive management *activities* within programmes and projects are carried out *in accordance* with the overall organisational policy framework.
- The *organisation ensures that the necessary co-ordination* is achieved between the proactive problem management activities of the various programme and project teams.
- *Adequate resources and funding* are provided for proactive problem management activities at the project, programme, and organisation levels.
- *Management participation* in problem management and resolution activities *is planned*.
- *Each programme and project is represented* on the overall co-ordination of proactive problem management for the organisation, as appropriate.
- Programme and project team members receive the *necessary training* to perform problem resolution and prevention activities, e.g. in quality assurance, configuration management, documentation support etc.

Deployment

- Programmes and projects develop and maintain *plans* for issue and problem resolution activities, *covering the assigned responsibilities and schedule*.
- Kick-off meetings are held to initiate tasks, *familiarise the team* with the defined processes, and recent changes if applicable.
- The *quality goals* for deliverables *are discussed* and reviewed by the individuals responsible for delivery.
- Following peer reviews of deliverables, a *causal analysis* should be conducted in accordance with a documented procedure to identify the root cause of any significant defects with the products.
- Identified defects should be *assigned to categories* of root cause, e.g. inadequate training, failure in group or team communications, inadequate analysis or understanding, human error etc.
- *Actions to prevent* the re-occurrence of such defects in deliverables should be developed and documented, e.g. modification to the process, training, methods etc.

- The *results* of problem meetings and root causal analysis are *recorded* for use by the organisation and other programmes and projects.
- At the organisational level, a nominated individual or team should *review the output from causal analysis meetings*, set priorities and co-ordinate prevention activities across programmes and projects.
- At the organisational level, the *status of action proposals* and action items should be *monitored* through to completion.
- Process improvement *proposals* to the organisations standard programme and project management approaches should be *documented* and tried perhaps on a limited number of projects, before incorporation into organisational standards for adoption across all programmes and projects.
- Proposal documentation should include details of the individuals or groups affected, a description of the proposal and implementation actions, review points, the *rationale for key decisions*, time and cost estimates, and the estimated cost of not addressing the problem.
- *Co-ordinators* and team members should *receive feedback* on the status and results of the organisation's and programme and project proactive problem management activities on a periodic basis.

Review

- The organisational level activities are *reviewed with Senior Management* on a periodic basis, covering the major problem categories.
- The *actual cost of defect prevention* activities is reviewed against the planned cost.
- *Activities for defect prevention are reviewed* by programme and project managers on a periodic and event-driven basis.

Perception

- A *summary of the effectiveness* of, and savings attributable to proactive problem management is compiled and compared and contrasted with customer perceptions.
- The *findings* of quality assurance should be *compared with the perception* of customers and other stakeholders.
- Quality assurance reviews and/or audits the reports and activities of problem management and *assures* that the process for action proposals and implementing action items is followed at organisational, programme and project levels.

Performance measures

- Measurements are taken to *determine the status* of proactive problem management activities. For example, measurements may include:
 - the cost of causal analysis and implementation action meetings,
 - the time and cost for identifying defects in project deliverables and correcting them,
 - profiles of the number of preventive action items proposed, open, and completed.

Portfolio, Programme & Project Management Maturity Model Level 5: Optimised process

Lifecycle function / Key process area description:

5.2 Technology management

The purpose of technology management within the programme and project context is to identify new technologies (tools, methods, techniques) and manage their implementation into the organisation.

Technology management involves identifying, selecting and evaluating technologies that are pertinent to programme and project management and incorporate effective technologies into the organisation with the primary objectives of improving quality, increasing productivity, and decreasing the lifecycle times for product/solution development.

Functional achievement / Process goals

- Incorporation of technology changes should be planned.
- New technologies are evaluated to determine their effect on quality and productivity.
- Appropriate technologies are released to the organisation for embedding into the standard programme and project processes across the organisation.

Approach

- The organisation follows a written policy for *improving its technology capability*.
- The organisation *states explicitly the objectives* for technology capability improvement and documents a plan to achieve these objectives.
- *Senior management sponsors* the organisation's activities for technology improvement.
- Senior management should help *define a strategy that addresses the organisation's goals* for programme and project quality, productivity, and development cycle-times.
- Senior management should ensure that business strategies address customer needs, as appropriate, and co-ordinate the necessary planning within the organisation to ensure that organisation goals are explicit and the right approaches are defined for accomplishing the organisation's strategy.
- Senior management should make a *commitment to technology management* that is visible throughout the organisation.
- Senior management should *oversee technology improvements* and help relate the improvements to organisational strategies and objectives.
- Senior management *co-ordinates the organisational requirements* and issues for technology management.
- The organisation should establish a *group* or nominate individuals *responsible* for technology management across the organisation.
- The technology management *group explores the potential* for applying new technologies, selects and plans for new technologies, acquires, installs and customises new technologies and communicates with suppliers, programmes and project teams relating to technology issues.
- *Appropriate data* on programme and project processes and outputs are made available *to support analyses* performed to evaluate and select technologies.

Deployment

- The organisation develops and maintains a *plan for technology change management*, defining the long-term strategy for improving programme and project management processes and enhancing the organisation's project-based services.
- The organisational plan should *ensure that the specific needs of the organisation are addressed*, e.g. process areas that are potential areas for technology change should be identified.
- Where appropriate, the *lifespan of particular technologies should be estimated* from introduction to replacement.
- The group or individuals responsible for technology management should *work with*

programme and project teams to identify the needs for technology improvement.

- Programme and project managers and *team members should be kept informed* of new technologies and the possible impact on programme and project management, and defined processes.
- The group or individuals responsible for technology management should *systematically analyse the organisation's standard processes to identify areas that need or could benefit* from new technology.
- The group or individuals responsible for technology management should *determine the economics of technology changes* and define the outcomes of technology change from both a qualitative and quantitative perspective, as appropriate.
- The group or individuals responsible for technology management should *determine the priorities* and the need for piloting new technology, and document the results of their analyses.
- All requests for the acquisition of new technologies should be documented and *management approval sought* following a preliminary cost-benefit analysis.
- Predefined *selection criteria are used* to identify technologies providing the highest potential benefits to the organisation.
- *Requirements* and plans for technology changes should be *defined* and documented.
- *Pilot studies* should be planned and undertaken *to determine the feasibility and benefits* of new technologies; the results of pilot studies should be documented and analysed before a decision is taken to proceed with broad-scale implementation.
- Appropriate new technologies are incorporated into the organisational baseline and then *rolled-out* to programmes and projects *in accordance with their needs*.

Review

- *Technology management activities are reviewed* with Senior Management on a periodic basis.
- The organisation's *quality assurance function reviews* and/or audits the deliverables and activities of technology management.

Perception

- The *findings of quality assurance* should be *considered* in relation to the organisational goals and business objectives.

Performance measures

- Measurements are taken to *determine the status of technology management activities*. For example, measurements may include:
 - the overall technology change activity,
 - the effects of implementing technology changes at programme and project levels in relation to organisational goals.

Portfolio, Programme & Project Management Maturity Model Level 5: Optimised process

Lifecycle function / Key process area description:

5.3 Continuous process improvement

The purpose of continuous process improvement is to continually improve the processes used in the organisation with the intent of improving programme and project quality, increasing productivity, and decreasing the development cycle-times.

Continuous process improvement involves defining the improvement goals, and with senior management sponsorship, proactively and systematically identifying, evaluating and implementing improvements to the organisation's defined processes.

Functional achievement / Process goals

- Continuous process improvement is planned.
- Participation in programme and project process improvement initiatives is organisation wide.
- The organisation's standard programme and project approaches and the defined processes are improved continuously.

Approach

- The organisation has *quantitative measurable goals for process improvement* and tracks performance against these goals.
- The organisation's programme and project improvement *activities are directed toward improving* quality, increasing productivity, and decreasing the lead-time for product / solution development.
- *All* of the organisation's staff and managers *are expected to participate* in process improvement.
- Senior management *sponsor and demonstrate their commitment* to the organisational initiatives for process improvement, by establishing the long-term goals and plans for process improvement and allocating resources for process improvement activities.
- Senior management maintain a *consistent priority focus* and monitor process improvement performance against organisational goals.
- *Adequate resources and funding* are provided for improvement activities, including the provision of experienced individuals with process definition and analysis expertise.
- *Tools* to support process improvement initiatives are *made available*.
- Managers receive the *necessary training* in process improvement, including the management of change, team building and teamwork skills.
- Senior managers receive the *necessary awareness* training in process improvement, including benchmarking and comparative evaluation, setting and monitoring goal achievement, motivation and team building.

Deployment

- A *process improvement programme is established* which empowers individuals within the organisation to improve the business processes.
- A group or *nominated individuals* should be *responsible for co-ordinating* the organisational process improvement activities, including programme and project level improvements.
- The group should *review the organisational goals and measurement plans* with senior management and participate in the effort to define the organisation's training needs.
- The group should *review* project and other process *improvement proposals and co-ordinate the necessary actions*.
- The organisation develops and *maintains a plan for process improvement* according to a documented procedure, typically specifying that process improvements are based on the organisation's business and strategic plans and customer satisfaction indicators.
- Process improvement *activities are initiated and performed in accordance with the plan*.
- The plan should *address the short and long term performance goals*, the designated

priority areas and the necessary administrative support.

- *Improvement proposals are encouraged* throughout the organisation and should be evaluated in terms of the expected benefits; the priority of proposals selected for implementation should be determined.
- Process improvement actions that require substantial effort should be *assigned to a programme and /or project team responsible for implementation*.
- The organisation should *monitor the status* of all improvement proposals and completed actions should be reviewed, and validated before they are closed.
- Where appropriate, process improvements are *implemented on a pilot basis to determine their benefits and effectiveness* before they are introduced into normal organisational practice.
- The *strategy to collect and analyse data to monitor process improvement changes and their effect* on organisational performance should be documented, reviewed and agreed in advance.
- *Staff training* should be continually *updated to reflect changes* in processes.
- *Appropriate consultation and support* should be provided before installing process changes into the standard of defined working practices.
- *Records of process improvements should be maintained* and managers should provide feedback on the status and results of their improvement initiatives.

Review

- *Process improvement activities are reviewed* with Senior Management on a periodic basis, to assess process performance, resolve issues and approve changes to the process improvement plan.
- The organisation's *quality assurance function reviews* and/or audits the deliverables and process improvement activities.

Perception

- The *findings of quality assurance* should be *considered* in relation to the organisational goals and business objectives.
- The findings of quality assurance should be *compared with the perception* of customers and other stakeholders.

Performance measures

- Measurements are taken to *determine the status* of process improvement activities. For example,
 - the number of process improvement proposals submitted and implemented in specific areas;
 - the effect of implementing each process improvement compared to its defined goals;
 - overall productivity and quality trends for programmes and projects;
 - overall performance of the organisation's, programme and project processes compared to their defined goals;
 - process measurements that relate to customer satisfaction indicators.