



British Airways PLC

Baggage Handling Project Management Manual

Prepared by Vector Management Limited
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Introduction

This manual provides a guide to the key activities and important stages of major baggage handling projects. It is not intended to be prescriptive as many activities will be project specific. Nonetheless, it indicates the process which must be developed and explains the way in which the key relationships between business requirements, service performance and design development activity can be validated and preserved throughout a project. It is vital to bear in mind that the aim of a baggage handling project is to deliver a service, rather than to procure equipment or systems.

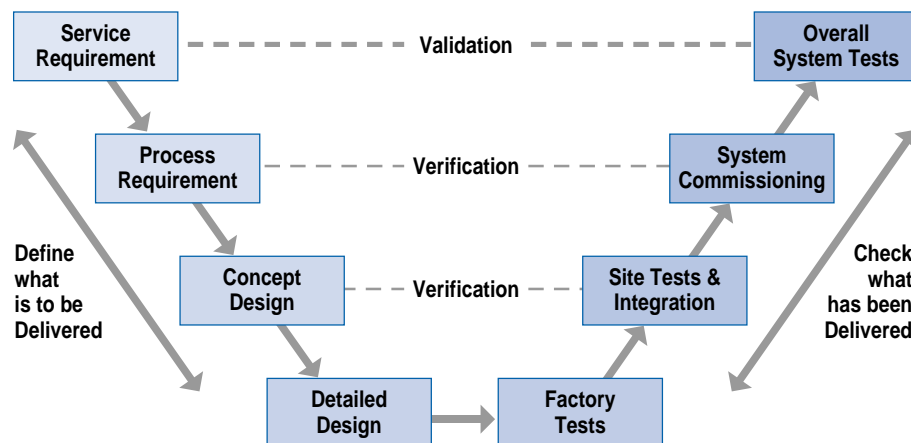
Summary of the Project Process

The process has a similar structure to the systems engineering principles used throughout industry to design, for example: aircraft, complex software packages and new motor vehicles. The factors driving the process are:

- The need to procure the complete service.
- The increasing complexity of baggage handling equipment.
- The vital importance of control and information software in achieving performance levels.
- The predominance of off-the-shelf equipment in suppliers' offerings.
- The need to avoid, for operational reasons, undertaking equipment development as part of procurement.

The staged process, with its defined review points, allows progress to be monitored and a commitment made to the next stage. This provides a series of quality milestones controlling a gradual transformation from an uncertain business objective to a complete product with well defined characteristics.

Information and requirements developed during the early stages both define what must be delivered, and provide the reference framework to verify that it has been delivered.



The Links between Requirement and Delivery.

The diagram on the previous page shows these links as the components of the service are accepted, integrated and verified in stages to form a complete, tested product. The final step is Validation – the end-to-end verification that the Service Requirement is met under operational conditions.

The delivery of a new or updated service is undertaken through a structured process. This process is initiated by British Airways appointing a Project Sponsor, who then builds a team of consultants to carry the process through its stages. In doing this, there are three strands of the service to be brought together to form the whole:

- Operation and manning strategy
- Baggage handling equipment
- IM/IT/control system strategy

The first step is to establish the need, followed by appointment of a Project Manager to take the project through stages which:

- define the service required,
- examine how it can be delivered,
- design the necessary equipment and facilities, and ultimately
- construct, commission, make ready for operation and hand over to the operation team.

At the end of each stage, there are deliverables which form the input to the BA approval process. General overview of the project is maintained by a Steering Group which holds a number of in-stage reviews and makes the formal recommendations needed for the approval process.

Management and Control

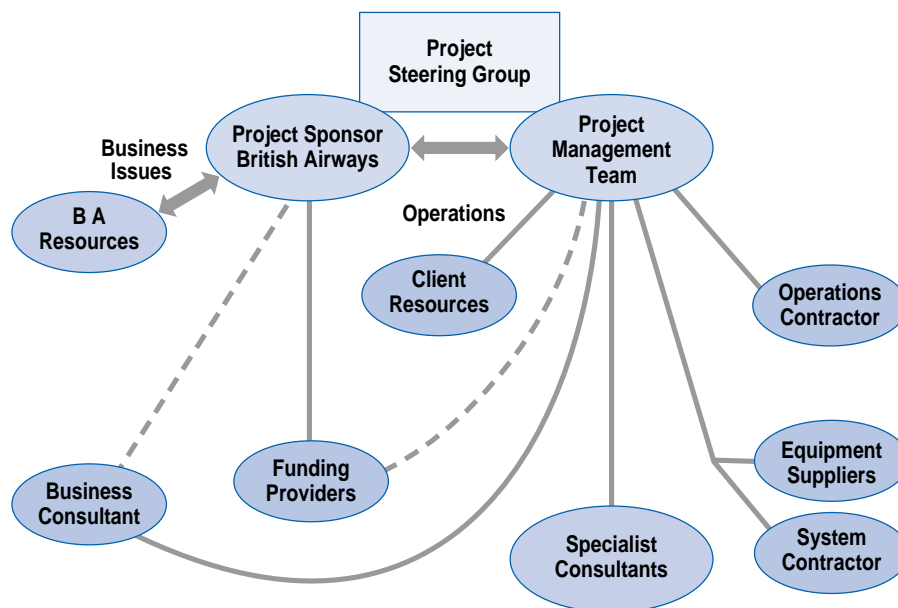
Organisation and Responsibilities

Projects Initiated and Controlled by BA

British Airways baggage handling projects are initiated by a Project Sponsor. This individual is responsible for recognising the apparent need, preparing the ground for the appointment of the Project Manager and obtaining initial approval to proceed with the project. The sponsor controls and manages the resources applied until the Project Manager has been appointed.

Once appointed, the Project Manager is responsible for identifying the external and internal resource needed at each stage according to the procurement strategy adopted, recommending appropriate appointments and managing the effort deployed, so as to achieve the business requirements which the project has been approved to deliver. A number of stage approvals and final sign off will be required along the way. It is the Project Manager who marshals the information and presents the case for approval. At each approval point the Project Sponsor will be required to re-affirm the business requirement and the Project Manager will show how this can and will be delivered.

The organisation of the project team for a baggage project is more complex than for, say, construction activities. Organisational relationships are illustrated below. A balance between business requirements and agreed process activity, and industry-led design solutions must be maintained if the services are to be provided. Introducing and managing the appropriate resources to the team at the right moment is a key task of the Project Manager, but the decision as to the right moment is also influenced heavily by the procurement and funding strategies which British Airways wishes to adopt.



Organisational Relationships.

Projects in Conjunction with BAA

British Airways Project Structure

Periodically it will be necessary to undertake baggage projects where design and delivery are managed by BAA. They have established a Development process that is aimed to perform similar functions to the first 3 stages of the BA process described earlier in this Manual, but from an airport perspective. The Development process aims to combine client (airline) business requirements with the airport's business requirement and achieve a high-level client sign off of a jointly agreed requirement. For projects that are likely to lead to some form of joint arrangement in the delivery phase, the Project Sponsor is to complete the first three stages of the BA baggage project process and feed the resulting requirements into the BAA process at the appropriate points. Once joint requirements have been prepared, the precise arrangements for management and control of these joint projects can be developed on an individual project basis by the Project Sponsor, but in all cases a BA Project Team has to be formed. The Cost and Business Benefit of the proposed project determine the extent of the Project team, on the following basis:

Cost	High	Project unlikely to be viable	Joint Project Team monitors and delivers project
	Low	Small BA Team monitors Project	Full BA Team monitors Project and delivery activity
		Low	High
		Business Benefit	

Cost and Business Benefit

It will therefore be an early task for the Project Sponsor to estimate both the cost and the business benefit and so identify the appropriate management structure for BA.

The BA Project Team is there to:

- Conduct BA's Needs Analysis, Project Definition and Process Analysis activities in accordance with the BA Baggage Project Process.
- Ensure that BAA has a full understanding of BA's requirements and is interpreting them correctly.
- Be involved with BAA's process to ensure that design and delivery activities meet BA's requirements.
- Provide design input and advice so as to ensure compatibility with the service delivery and service management options selected by BA.
- Deliver 'Top level Client sign off' to BAA at the appropriate point.

The BA project team must ensure that the BAA team remain in control of the project and responsible for its delivery. It will be vital to avoid BA being seen as having approved elements of the design or taken control of any aspect of delivery. However the BA project team must ensure that the points above are complied with and flag any problem issues.

Project Team Composition

Examples of the composition of Project teams for each of the three categories of viable Project are set out below:

High cost, High Benefit Projects

These projects warrant the information of a full, joint project team comprising:

- Joint Project Board
(BA represented by steering group chairman and Project Sponsor).
- BA Steering Group. (Standard Composition).
- BA Project Sponsor.
- BA Stakeholder Representatives.
- BA Project Manager.
- BAA Project Manager (Design and Delivery).
- Jointly appointed specialist consultants.
- Delivery Team. (appointments to suit procurement strategy selected)

The Project Steering Group, advised by the Project Sponsor and Project Manager will deliver 'Top level client sign off' to BAA on satisfactory completion of the BA Project Process Analysis stages and the BAA Development process 'Feasibility' stage.

Low cost, High Benefit Projects

The business benefit of these projects justifies the formation of a BA team to take the project from its conception to the point at which an agreed set of joint requirements has been prepared. The BA team then monitors the delivery of the project and ensures that any BA procedural changes which impact the project are identified and implemented in a timely way. The team should comprise:

- BA Project Steering Group.
- Project Sponsor
- Stakeholder Representatives
- Specialist Consultants as appointed by the Project Sponsor

When satisfied that BA's and BAA's early process stages have been completed satisfactorily, the Project Sponsor will obtain BA approvals sign off at Director level from Stakeholder departments and then deliver 'Top level Client sign off' to BAA.

Low Cost, Low Benefit Projects

These are monitored by the Project Sponsor who will seek assistance from stakeholders as necessary. The Project Sponsor delivers 'Top level client sign off' after obtaining General Manager level sign off following satisfactory completion of the appropriate stages of the BA/BAA processes.

Roles and Responsibilities

The roles and responsibilities of the leading elements for either type of project are outlined below:

Project Steering Group

The purpose of the Project Steering Group is to oversee the development of the project, review progress, make appropriate decisions, and ensure a positive outcome for British Airways. In particular it must:

- ensure that appropriate BA resources are identified and made available,
- agree the Business Requirement and services to be provided,
- endorse the Life Cycle cost of the proposed service.

The Steering Group comprises:

- Chairman (A British Airways Senior Manager with Operations experience),
- Project Sponsor,
- Project Manager,
- Representatives from BA:
 - Operations
 - IM
 - Marketing
 - Customer Services,
- Other invited representatives as and when needed (e.g. BAA).

The main formal task of the Steering Group is to review the project at specific points within each stage and at the conclusion of each stage, to progressively approve proceeding to the next step of the process.

Less formally, the members of the Steering Group must be kept informed of the project's progress and issues which develop between formal reviews. This awareness is developed through regular, periodic reports from the Project Sponsor and Project Manager. The Steering Group will meet to discuss these reports. The frequency of reports will be detailed in the Project Execution Plan.

The Steering Group also forms the principal conduit of information between BA and the project landlord (usually the airport company). Where appropriate to the project and stage of activity the Steering Group may invite the landlord to provide additional members. Draft Terms of Reference for the Steering Group are given in [Appendix 1](#).

Project Sponsor

The Project Sponsor is the principal British Airways representative accountable for the delivery of the project management team and is appointed to ensure that the necessary information and resources are provided to the project. He or she will be a senior manager with a good understanding of the British Airways organisation and the ability to lead a team and involve other members of staff.

Critical skills for the Project Sponsor include:

- Business knowledge across the airline environment, sufficient to relate the level of baggage service to the high level business goals of the airline.
- Comprehensive understanding of customer services.
- Leadership of a high calibre.
- The ability to balance the realities of operation against business aspirations.
- The ability to give strategic direction.
- Setting high standards of expectation.
- Challenging current practice and championing change
- Team building.
- Inter-personal skills.
- Communicating the project goals and progress across the team.
- Auditing and corrective action.

Typical Terms of Reference for the Project Sponsor are given in [Appendix 2](#).

Business Consultant

The Business Consultants are the first appointment made by the Project Sponsor. Their purpose is to lead the Need Analysis stage of the project. Their main objective is to develop the Business Needs which the project will deliver. To do this the Business Consultants will need the following skills:

- Understanding and awareness of British Airways organisation and culture.
- Outstanding vision and excellent grasp of the importance of baggage in British Airways customer service to enable them to prepare relevant Business Objectives and refine them into Business Requirements.
- An ability to arrange and facilitate strategic Risk & Value Management activities.
- Good understanding of the BA Baggage Project Process.
- Project Management capability sufficient to plan and conduct the Need Analysis stage in detail and to plan the remainder of the project in outline.
- An understanding of the cost issues attending baggage projects, sufficient to understand outline cost estimates.
- Knowledge of various procurement, service management and funding routes and their relevance to baggage projects.
- An appreciation of the skills and knowledge required of the other team members in developing the baggage service and the underlying system.

An example Scope of Services is provided in [Appendix 3](#).

In appointing the Business Consultant, the Project Sponsor must have regard for the further stages of the project and should consider the appointment of a consultancy capable of managing the whole process. This will avoid the need to arrange a transfer of responsibilities.

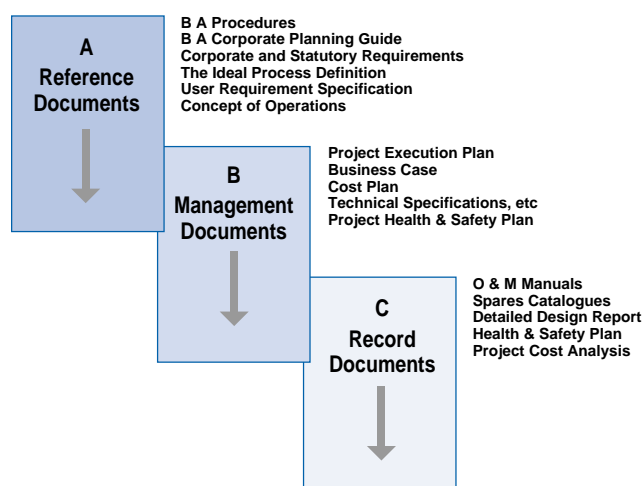
Project Manager

The Project Manager is appointed by the Project Sponsor at the start of Project Definition. Although addressed throughout the process in the singular, the Project Manager is likely to comprise a multi-skilled multi-disciplinary team, covering all the activity strands of the process and capable of taking the project from its initial approval at completion of Need Analysis through to hand over and operation. The principal purpose of the Project Manager is to manage the various resources needed to deliver the project in accordance with the project plan. The scope of services for a Baggage Project Manager is defined in detail at [Appendix 4](#). Key activities are:

- Identifying the resources needed to move the project forward.
- Building the various consultants and suppliers into an integrated team.
- Developing work plans and controlling activity to achieve stage goals.
- Identifying options, focussing the team on Business Needs and reporting the benefits which would be delivered by each option.
- Making available the information needed for the client to take decisions.
- Aligning Project decision making with Business decision making.
- Developing the Service Specification.

Key Project Documents

Documentation has an essential role in communicating Project Information, maintaining an audit trail and providing a reference for the subsequent stages of any project. There are, thus, three groups of key documents:



Three groups of Key Documents.

The Project Manager is responsible for devising and implementing procedures to manage the project's documentation. These procedures themselves are documented as part of the Project Execution Plan.

Key Document Structures

Project Execution Plan

Overview

Each Project Management team is expected to have its own procedures for successfully delivering its commissions, but the aim of preparing a Project Execution Plan (PEP) is to ensure that these procedures are dovetailed into British Airways procedures. The PEP must ensure that the project team and all the stakeholders are aware of the methods to be used to deliver the particular project. In effect, it is a customised set of procedures for a project, and must cover those elements of the Property Manual that are pertinent.

The main elements are dealt with in Volume 8 of the Property Manual and the Baggage Project Manual. An example structure is provided below:

Project Execution Plan

Introduction

- Contents Table
- Revisions and Changes

Project Objectives

- Business Requirements and Constraints
- Time
- Cost

General Description

- Background
- Key Issues
- Strategic Interfaces
- Site Diagram

Execution Plan

- Roles and Responsibilities
- Management Plan and Organisation Structure
- Procurement Strategy
- Funding Strategy
- Health & Safety Plan
- Cost Control Plan
- Quality Plan
- Commissioning Strategy
- IM Strategy
- Risk Control Plan

Management Information

- Introduction
- Stakeholder Directory
- Communication Plan
- Meeting Schedule
- Information Structure Model
- Report Formats

Risk and Value Management

- Risk Management
- Value Management

Programmes

- Major Milestones Programme
- Overall Programme
- Detailed Programme for Current Stage

Appendices

- Service Specification
- Business Case
- Deliverables from Stages
- Risk Register

Service Target and Service Specification

Overview

The Service Target and Service Specification are prepared to define the Project deliverables.

The Service Specification is a refined version of the Service Target, revised to incorporate only achievable performance requirements. These documents enable the verification and validation processes by linking final characteristics to performance requirements and, as part of the Processes section, they contain the early proposals for conducting the activities. Thus, performance requirements which cannot be adequately verified or validated can be excluded.

The other main function of the Service Specification is to act as the source for the Service Level Agreements which will underpin the contract between British Airways and the ultimate service provider. A draft of the Service Level Agreement therefore forms part of the Service Specification.

An example structure for the Service Target and Specification follows.

Service Specification

Introduction

- Objectives
- Background
- Scope and Exact Service Boundaries

Business Requirements

- Time (MCT, MCIT, RECLAIM, TIS, etc.)
- Cost
- Quality (SSB)
- Schedule (Busy Day)
- Service Philosophy

Constraints and Strategic Interfaces

- Physical Constraints
- Service Constraints
- Other Terminals
- Other Airlines
- Other Users
- Other Airport Systems
- Security Constraints

Processes

- Originating Bags
- Terminating Bags
- Transfer Bags
- Security Screening
- Passenger Process

Performance Specifications

- Baggage Types
- Container Types
- Equipment Compatibility
- Acceptance Locations
- Delivery Locations
- Baggage Track/Trace/Identification

Draft Service Level Agreement

- Key Performance Indicators
- Measurement Techniques and Monitoring Regime
- Incentives and Penalties
- Responsible Agencies

Communications, Consents and Reporting

Communications

The number of stakeholders in a major baggage project is inevitably large. As well as the British Airways departments involved, there will be an airport company such as HAL or GAL, existing service providers, those affected by manufacture and commissioning works and possibly other airlines. All will have key inputs at numerous stages of the project and it is therefore important to establish the stakeholders early in the project and to maintain links with them thereafter. It is generally wise to over-involve others rather than run the risk of missing a vital input. Once the stakeholders are identified a communication plan must be prepared and maintained.

Consents

There are a number of external statutory and commercial consents required. Bodies involved include the Airports Authority, the landlord, Government Departments (e.g. DETR, HM Customs, HSE) and possibly Planning Authorities. Internally, British Airways financial and corporate approvals will also be required. These are covered as part of the Project Process. The project manager ensures that the approval plan is part of the Project Execution Plan and maintains the necessary oversight and corrective action to verify the planned activities are completed in a timely way.

Reporting

The Project Manager provides various progress reports against time cost and quality criteria to the Project Steering Group and the British Airways corporate departments. Precise reporting requirements are defined in the Project Execution Plan.

Performance Monitoring and Audits

Performance monitoring is undertaken at a number of levels:

Project Management Performance Review

- Carried out by the Project Sponsor.
- Conducted at regular, agreed intervals during the project.
- Reviews are followed-up to monitor improvements.

Consultant/Contractor Performance Review

- Carried out by the Project Manager.
- Supported by British Airways departments.
- Follow the Property Procedures Manual.

Project Audits

The project must be audited periodically to ensure that there is no divergence from the business requirements, or appropriate process.

Audits are undertaken by the project sponsor and project manager as follows:

Project Sponsor

- *Stage Audits*
Prior to each approval to continue, which evaluate the proposal being presented and confirm that the business requirements which the project will meet remain valid.
- *Post Project Evaluation*
Carried out after acceptance of the project, this examines the performance of the project team over the duration of the project. The evaluation identifies strengths and weaknesses to provide feedback and ultimately improve project delivery.

Project Manager

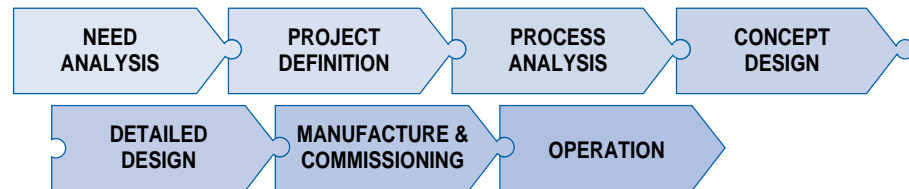
- *Process Audit*
Periodic, planned audits which evaluate reported progress and underlying activities to ensure that the project is being delivered within the programme and cost criteria and to the required quality. They should examine processes employed in analysis, design, construction to ensure that any deviations from the project execution plan are appropriate and necessary. The audit plan forms part of the PEP.
- *Design Audit*
Conducted on completion of concept design this reviews the elements of the design to ensure that the design inputs have been satisfied by the design outputs and confirms that value management and value engineering exercises have been completed. It must confirm that the design is feasible, cost effective and responds to the business requirements of British Airways.

The project manager and project sponsor may agree to combine stage audits and process audits.

The Project Process

Process Overview

The project proceeds through a series of stages:



The series of Process Stages.

The principal purpose of each stage is set out below:

Need Analysis

This stage confirms that the business objectives of British Airways can best be met by a baggage handling project and sets the key criteria by which success will be judged.

Project Definition

The activities in this stage provide a target performance requirement for the final service and identify the constraints within which the project, and the final service, must be delivered.

Process Analysis

This stage examines the process by which the baggage service can be delivered. The modelling work here is tested to show the sensitivity of the service to disturbances and to obtain an insight into the value levers - for example the impact on service of changing minimum check in time.

Concept Design

Here the project is beginning to consider the elements of possible solutions and to develop detailed requirements for the remainder of the design process. During this stage, any need for prototype equipment will become clear. At the end of this stage cost estimates should have been reduced to (acceptable level - say $\pm 15\%$) and the operating resource requirement will become clear.

Detailed Design

This is the stage where performance specifications and designs for the system components are prepared, the operating and upkeep requirements are identified and the overall performance and processes are checked. Prototype development and of-site tests will inform the design process.

Manufacture and Commissioning

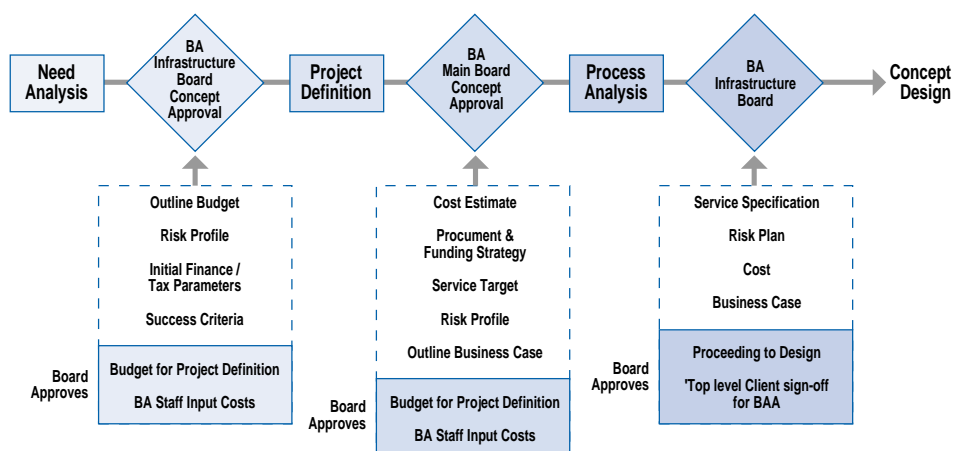
These activities manufacture, build, install, test and demonstrate the performance of the system so as to confirm that the required level of service will be delivered. This stage culminates in a formal acceptance activity which proves the integration of the three principal strands of activity.

Operation

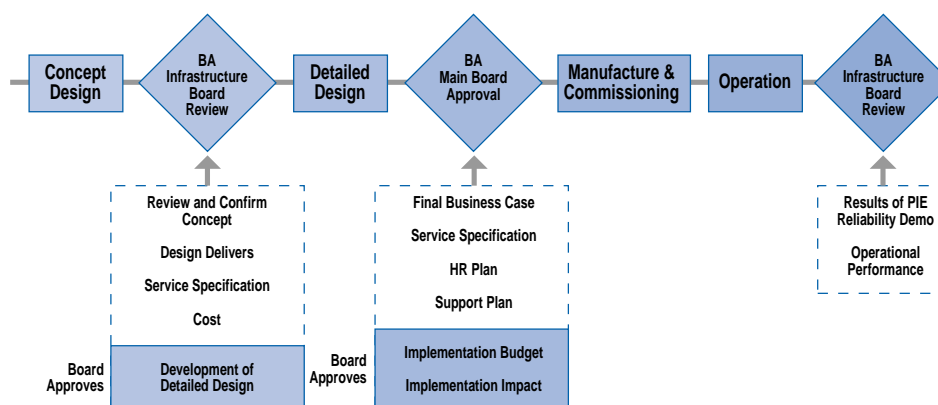
Once the service capability has been demonstrated, the operation stage contains activities to demonstrate the continuing reliability and maintainability of the equipment and undertakes the key post-project evaluation activity. This not only cross references all the various stages of the project but identifies lessons learned for future projects.

Project Approval Process

The Project Steering Group monitors and reviews progress during each stage of the project. To proceed from any stage to the subsequent stage requires an additional approval from the BA Board or the BA Main Board. These approvals are set out in the diagrams below. The Project Sponsor is responsible for collating and presenting the necessary decision support material to each approval Board, and for conveying the Board decision to the project team and stakeholders.



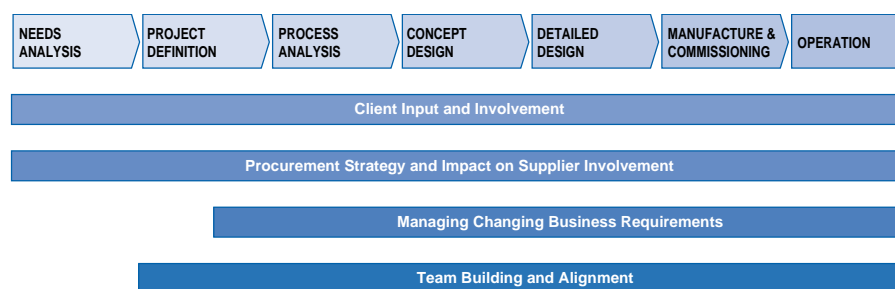
Proposed Approval Process (1)



Proposed Approval Process (2)

Through Process Issues

There are a number of issues which run throughout the project or must be addressed at a number of stages. The diagram links these key activities to the stages they affect.



Key Process Issues.

Client Resources

British Airways has a vital interest in the success of its baggage handling projects. To achieve this requires rather more input than a traditional property project. It is vital that the operational/running strategy and IM/IT/control system interfaces are fed into the design only after careful examination by the BA client team.

Much of the work involves supplying the project team with information on, for example, British Airways processes for handling our customers and their baggage. Historically, the resources devoted to this important activity were not adequately identified and correspondingly were provided on an ad-hoc basis. The outcome was not always desirable. An important activity therefore, at the start of every stage, is for the Project Sponsor and the project management team to jointly identify the resources which will be needed from British Airways' own staff. It is then the responsibility of the Project Sponsor to arrange the resource and the Project Manager to notify of any shortfall. It is not likely, except on the very largest of projects, that a permanent, full-time client team will be required but the effort needed to support a baggage project must be identified in job descriptions and acknowledged in departmental resourcing.

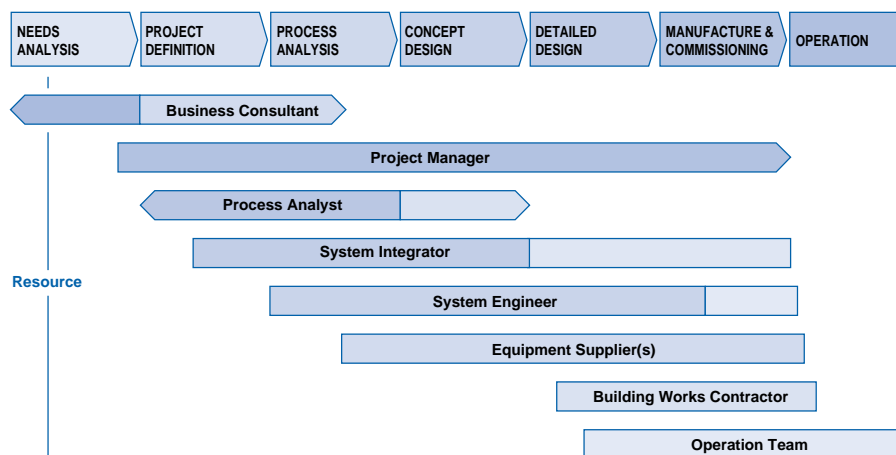
External Resource Management

The art of successfully managing external resources such as industry suppliers, system engineers and process consultants lies in deciding when these resources are required and making them available at exactly the correct point. With baggage systems, there can be a tendency to either over-involve suppliers, leading to ‘solutions’ which are not always relevant to the business problem, or to adopt an excessively academic approach leading to a process which cannot be delivered by industry.

It is therefore important to:

- Relate the procurement strategy to the timing of resource needs.
- Ensure that the process design developed is seen, by industry, as viable.
- Select external resources in the context of delivering a British Airways business need.
- Maintain a competitive project environment for industrial participants, aiming for two or three bidding organisations for as long as possible.
- Recognise the impact of funding and design, construction and operation strategies on the availability of external resource.

An example resource plan is shown below. The selected procurement strategy will indicate how the various resources are to be provided.



Example Procurement Strategies - Resource Plan.

The alternative procurement strategies must be explored during the early stages of the project and the various benefits established to facilitate selection of the correct strategy during the Project Definition stage.

Change Management

The business of British Airways is unlikely to remain unchanged from beginning to end of a baggage handling project. It is therefore likely that the business requirements will change and the project management team must be prepared to track the requirements and adapt the project as they change.

The tracking process must meet some key criteria:

- Conform to the last responsible moment decision strategy.
- Commence as soon as the initial requirement is established.
- Continue seamlessly until hand over/final acceptance of the service.
- Maintain a requirement set which provides an audit trail for changes and can easily be checked by the project sponsor.
- Be visible to the whole project team.

Team Building and Facilitation

Building a project team which pulls together will greatly improve the likelihood of success for many projects. Baggage handling projects are no different but the team is often complex. The project manager should consider the following activities to help build the team:

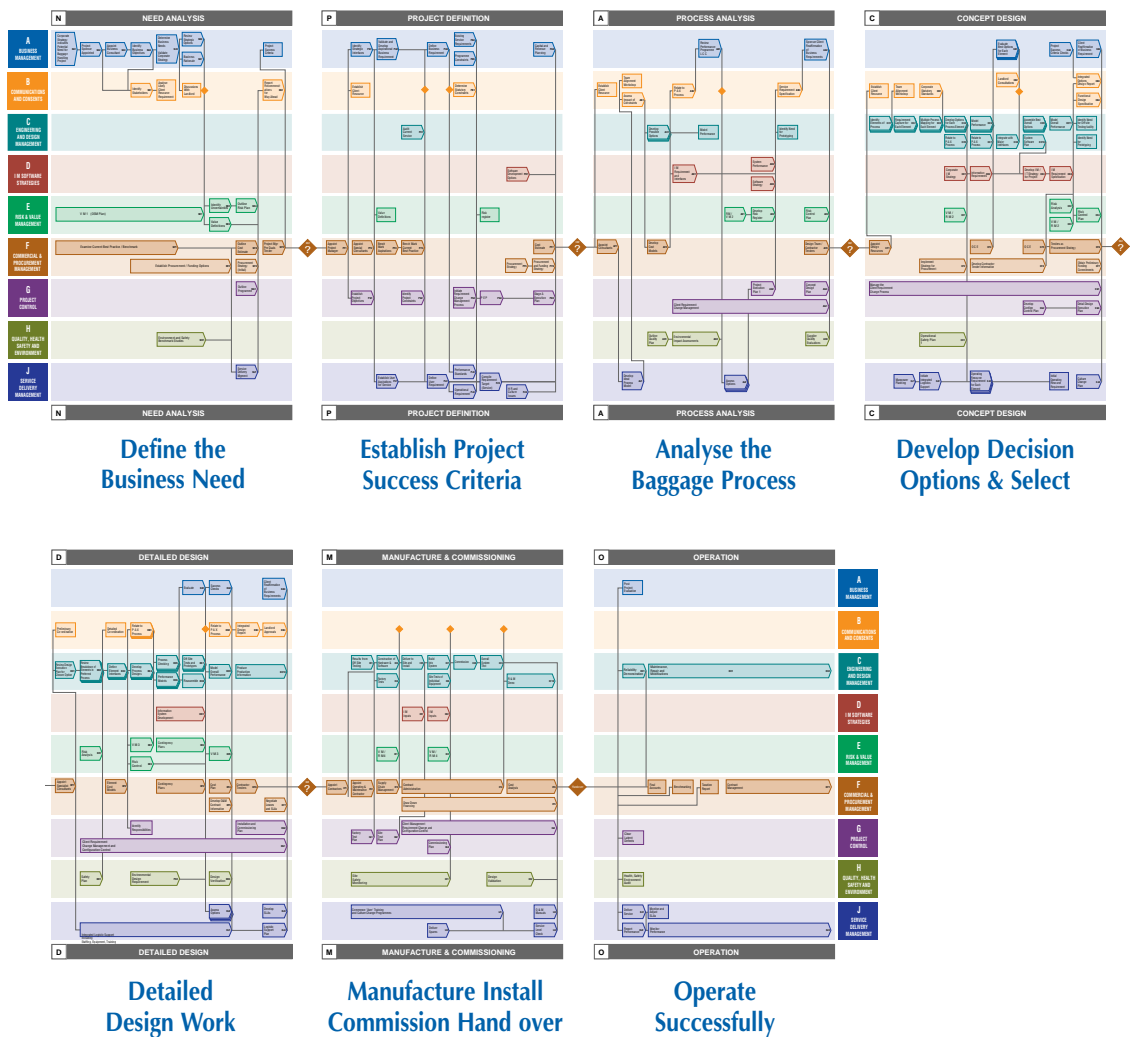
- Consultant and contractor interviews to ensure compatibility of proposed team members on a personal and corporate level.
- Alignment workshops to agree team objectives and workplan.
- Team analysis using techniques such as Belbin.
- Resource programming.
- Develop and implement a communications strategy.
- Defining roles and responsibilities.
- Incentivisation and reward strategies.
- Internal communication meetings.

Particular efforts will be required to ensure that newly joined consultants and suppliers are swiftly integrated into the project team.

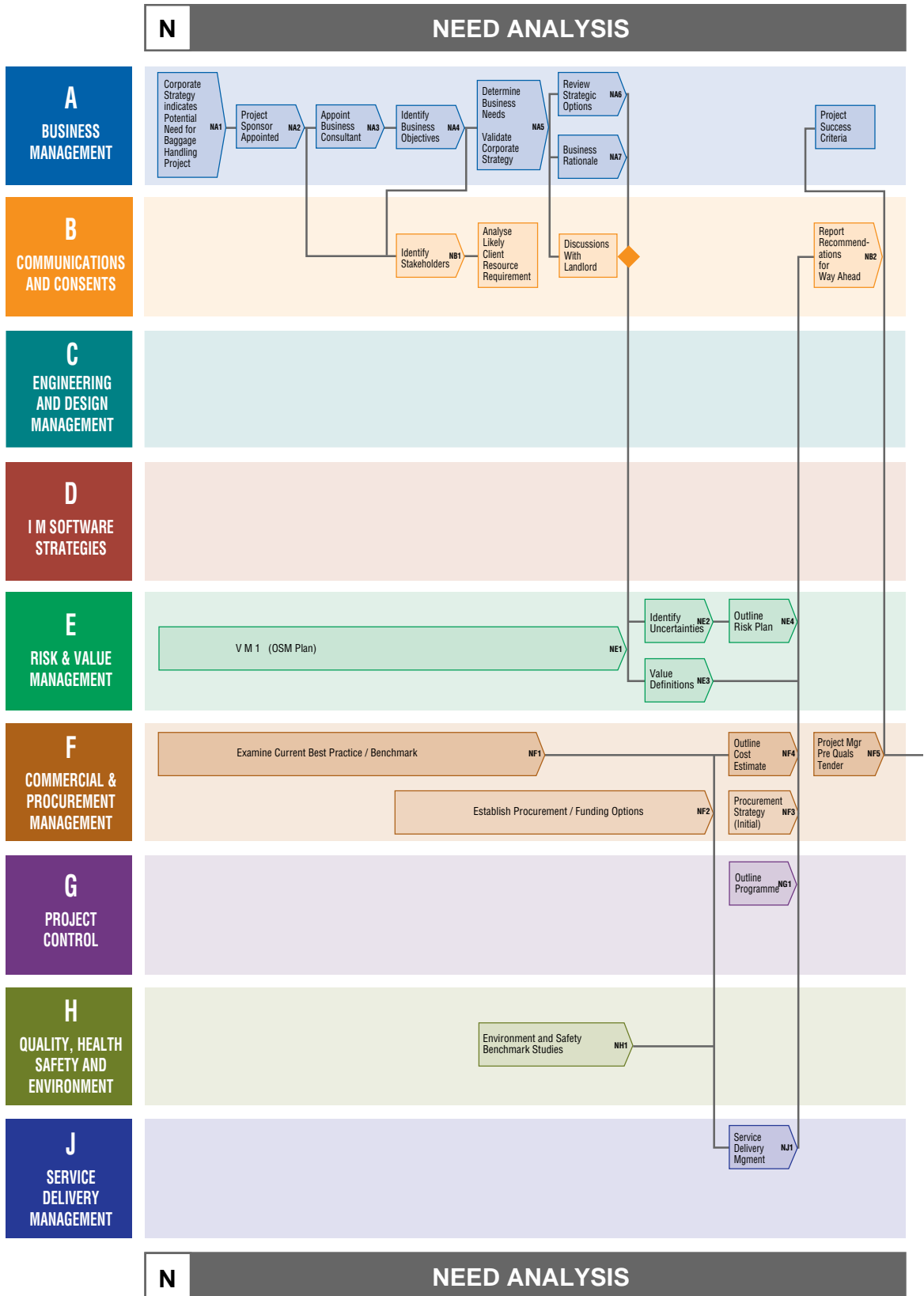
Overview of Project Stages

This section of the Manual breaks the overall process down into its individual stages. For each stage, there is a statement of the main thrust of activity during the stage and an overview of the various strands which make up the stage. Finally, the principal deliverable is outlined.

The Project Manager must bear in mind the purpose of the route map in interpreting the detail of each stage. The process map is indicative, and cannot cover every activity which is needed in a particular project. However, the key elements of the end-of-stage deliverable are common to all baggage projects, so the Project Team should use their experience and skill to ensure that these are established.



The Stages of the Project Process.



Stage 0 – [N] Need Analysis

The primary effort at this first stage of the project is focused on defining the business issues which will justify the project.

The early appointment of a suitably qualified 'Business Consultant' will be important to the development of a robust initial report and it is appropriate to consider appointing a 'Solution Management' service with the skills to develop the business aspects of the project in parallel with project management and delivery management activities.

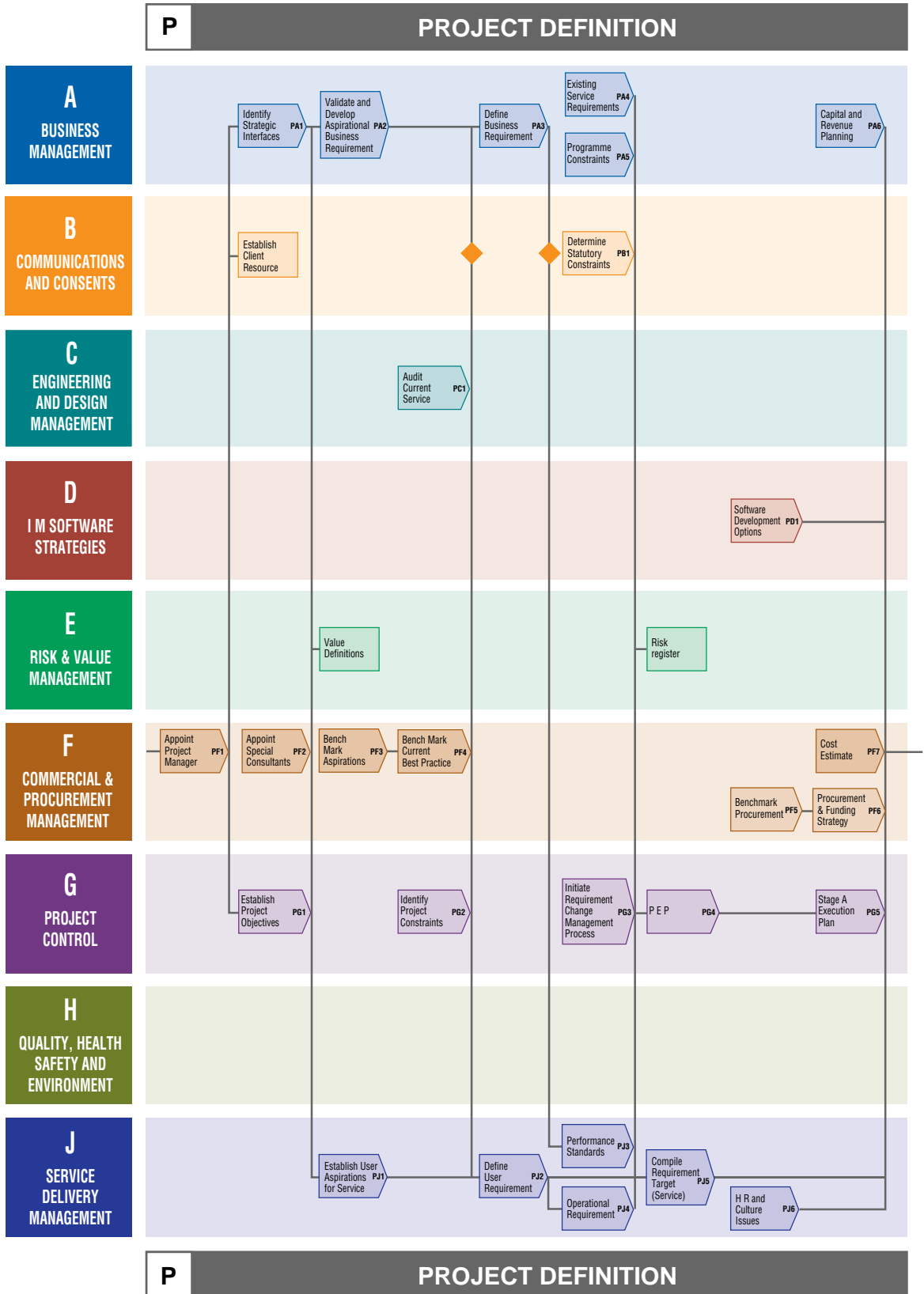
Starting from the business objectives necessary to meet the goals of corporate strategy, the benefits, uncertainties and needs can be identified and tested against corporate strategy.

The Project Sponsor should assist the Business Consultant to identify a hierarchy of value which will be provided by a project. As part of the process, alternative options to a baggage project should be identified and examined.

Parallel work examines the ways in which the project might be funded, the available procurement strategies and possible options for managing the eventual service delivery. Later decisions in these areas will do much to irrevocably shape the future management of the project.

The business rationale and options developed in this stage should be tested by means of a Value Management Workshop (VM1) to ensure that a baggage handling project is the optimum solution to the business objectives. A set of Key Performance Indicators will developed from this workshop.

This stage should culminate with the development of the criteria by which success will be measured and the setting of service standards which the project is to deliver. These are part of the project outline package which will be presented for approval.



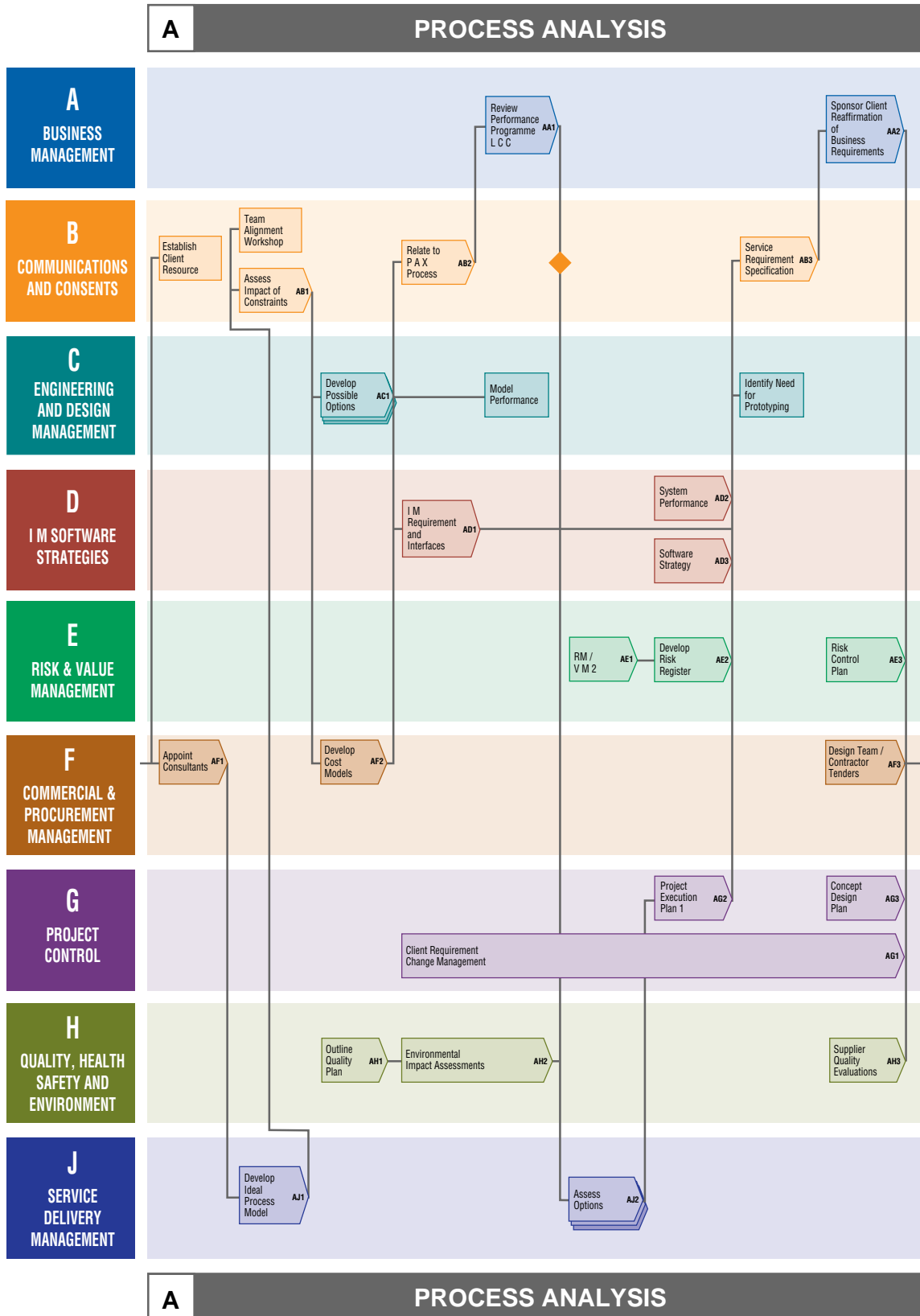
Stage 1 – [P] Project Definition.

The business needs and rationale outlined in Stage 0 (Need Analysis) are further developed and refined during Project Definition, so that the project manager has a clear vision of the project objectives and the service which the project is expected to deliver. The aspirations of the users are tested against current performance and benchmarked before being rationalised with the numerous constraints which attend the project. The outcome is the Service Requirement Target.

During this stage the project manager must also address the first issue of the Project Execution Plan and define and initiate a client requirement change management system. It is unlikely that the business requirement will remain static for the whole of the project cycle so it is essential to capture and assess the impact of any future change to these requirements.

People will form a key element of the service delivery, supported by baggage handling equipment and information systems, so only by understanding the operating resource requirement can the life cycle cost of the service be projected. Thus, once there is a service target in sight the issues of HR and culture can begin to be addressed.

The Service Requirement Target, risk statement and procurement strategy are submitted to the Steering Group for Target sign off and approval in principle and subsequently for BA Board approval.



Stage 2 – [A] Process Analysis

The essence of this stage is to capture the process by which the baggage service will be provided, relate it to the passenger process and ensure through comprehensive modelling and sensitivity analysis that the process is robust enough to deliver. The IM needs and interfaces of the system are first considered as part of this process, modelling information flows in parallel with physical processes and 'people' processes. The overlaps between the three are particularly important. Processes need also to be considered from a number of 'view points' such as passenger, marketing or management to expose all facets and obtain a comprehensive model set. This model set must be reviewed against the business requirements, physical and technological constraints as a 'sanity check' that all can be delivered in due course.

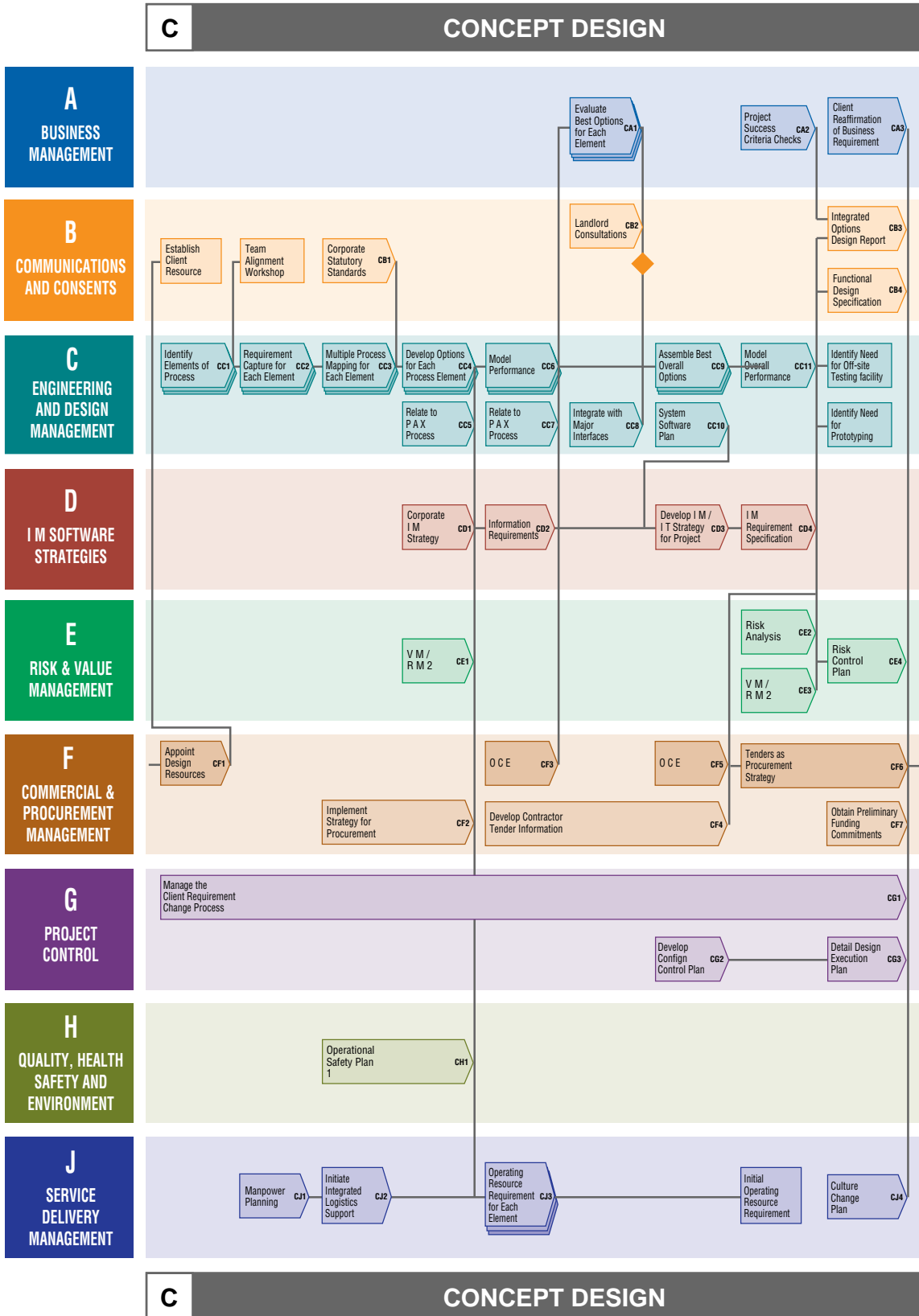
Value and risk management exercises are performed as part of the assessment and evaluation work for each process model, and the risk register is updated accordingly. Further work is also done on the impact of the process on HR and IR.

There are thus some important resource requirements for this stage:

- Process Analysis and modelling expertise
- System Integration ability
- Detached review of the developed process to ensure its business capability and technical feasibility

There are a number of possible procurement strategies which can deliver this expertise, but in selecting and implementing these strategies, it is important to maintain focus on delivering the project through the process and not to leap to solutions. Thus, whilst the industry is clearly able to review the process and determine capability and feasibility, design work must be limited to that which is able to meet the immediate project requirement. Design options, equipment selection and detailed work are not part of this stage.

At the end of the stage the Service Requirement Specification is checked by the Project Sponsor to ensure that it remains valid for the current business requirements and then submitted to the Steering Group for Approval of Concept.



Stage 3 – [C] Concept Design.

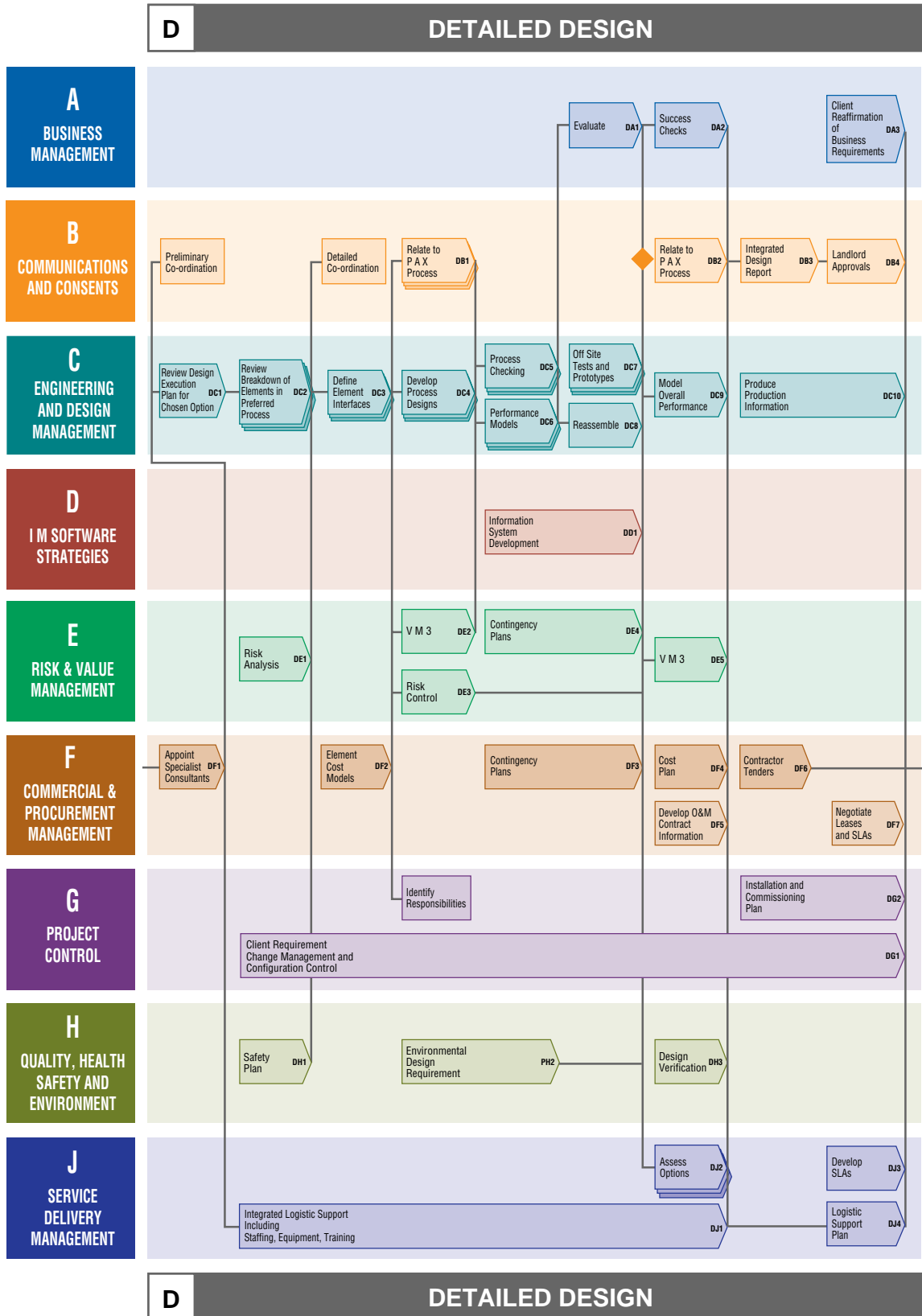
During this stage the process identified at stage 3 is broken down into its elements and each element process is developed in detail and in a number of options. These options are individually checked for performance, cost, value delivered and operating resource before the best options are assembled into an overall process which itself can be evaluated, costed and tested against the passenger process. Outline techniques for delivering the processes are examined and the major system interfaces reviewed to ensure the developing design remains viable. The three elements of the service solution are developed into an integrated Concept Design:

- Operational and Manning strategy.
- IM/IT/control system strategy.
- Baggage handling equipment.

Together these define the Service Solution.

The Project Execution Plan is further developed to provide plans for the detailed design stage, determine the IM/IT strategy and establish the control system software plan.

The Integrated Options Design report, containing a service Functional Design Specification and external IM requirements is checked against the key Performance Indicators and the current business requirements before presentation for Project sign off at BA Board level.



Stage 4 – [D] Detailed Design

This stage provides a complete, detailed design for the system, the resources necessary to provide and maintain the service, the training necessary for the maintenance and operating personnel, the interfaces with the enclosing building and external IM systems and a fully developed life cycle cost plan.

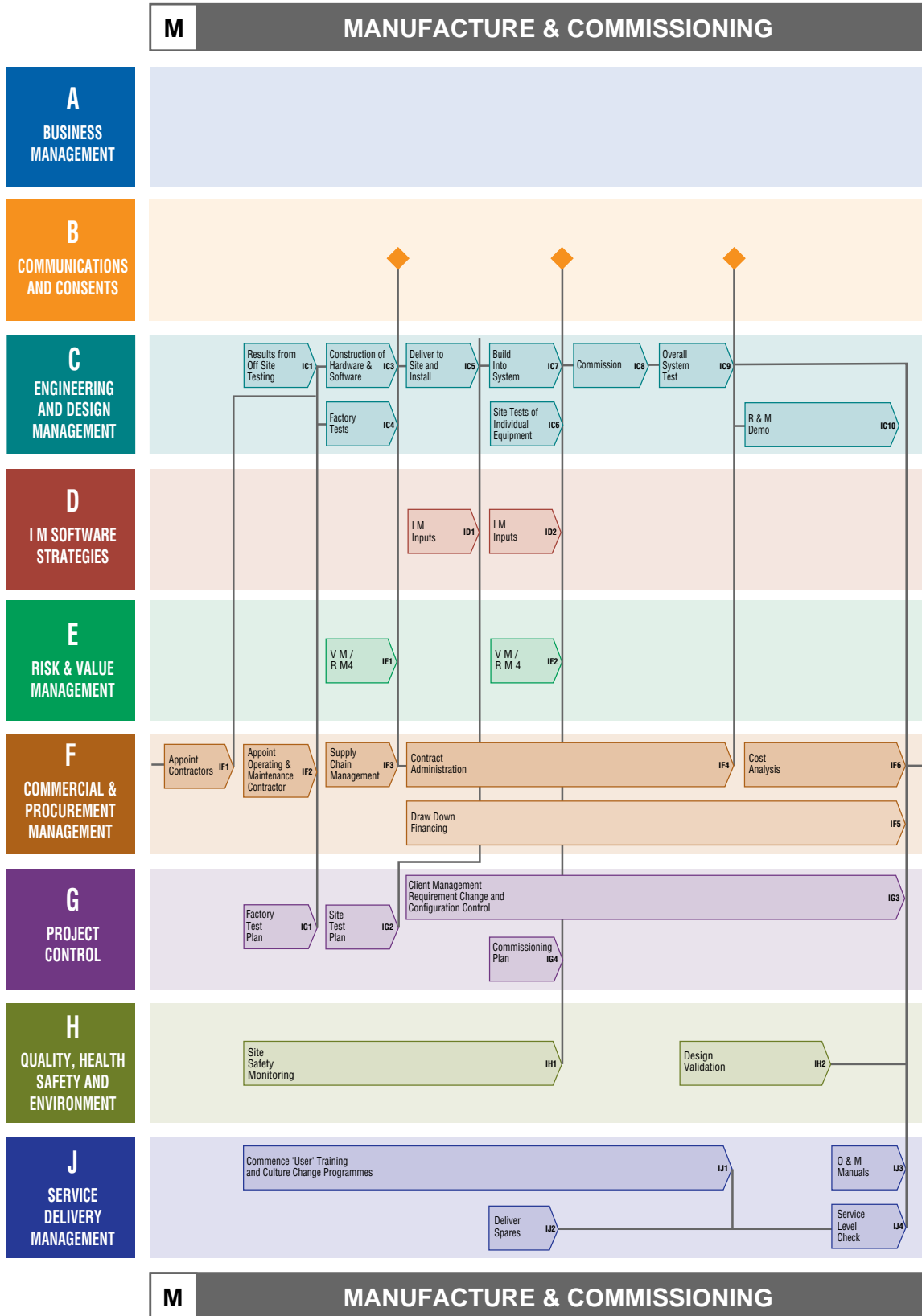
Integrated Logistic Support is the principal tool used to evaluate the impact of design decisions on:

- Life Cycle Cost
- Support requirements (personnel and equipment)
- Spares provision
- Training
- Reliability
- Resilience

Throughout this stage the project manager will deploy relevant project management techniques such as risk management, configuration control and will ensure that statutory, commercial and technical approvals and consents are obtained.

The developing design will be subject to careful cost analysis and value engineered so as to develop the earlier cost models into a comprehensive cost plan with a high degree of final cost confidence.

The Integrated Design Report is prepared during this phase to show that the project meets the success criteria and the current business requirements whilst remaining within the approved budget (from Stage C - Project sign off). This report is submitted to the Steering Group.



Stage 5 – [M] Manufacture and Commissioning.

The project which has been developed, designed and approved in the earlier stages is realised during this stage.

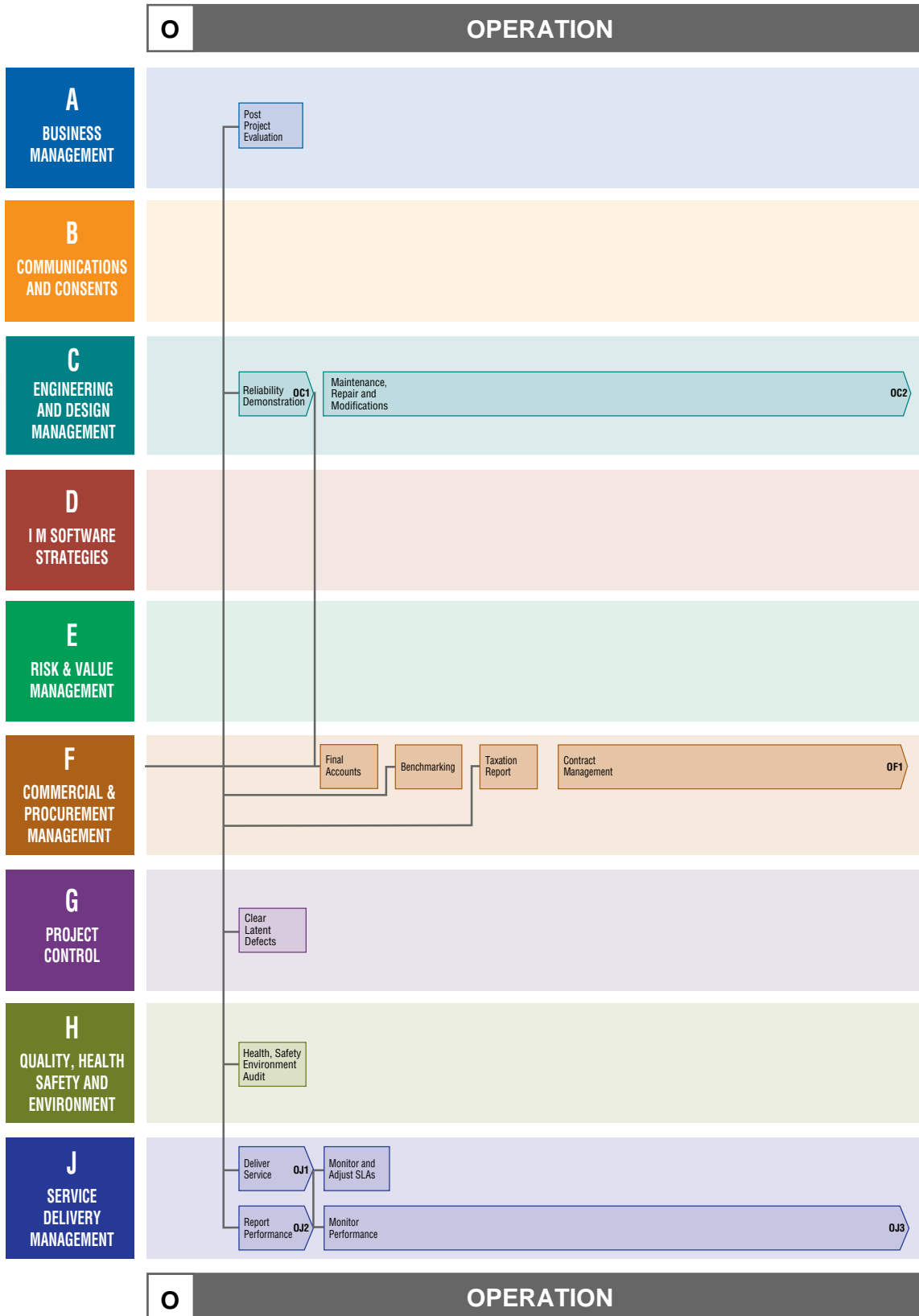
Project Management effort is devoted to ensuring the timely planning, manufacture installation and testing of the works together with the delivery of training and operational support resources. Maintaining an existing service may well constrain activities to a less than ideal path during the works.

During the construction activity the Project Manager will liaise closely with the stakeholders, airport and airlines, maintain a help-desk and generally be pro-active in seeking out potential future problems. In many projects this role will be sufficiently demanding to warrant the appointment of a specialist 'internal PR' resource.

The principal monitoring and reporting mechanism is the PEP, backed up by ongoing risk management and change control procedures. Close attention to Quality, Health, Safety, Environment matters will be required during this stage.

IM inputs have an essential role to play in ensuring that equipment and system tests are both realistic and relevant.

Once the service as a whole is available for use and has been tested, both in its components and as a whole service, reliability and maintenance data gathering can commence at this point, before the system is handed over by the project management team to the operating team in a complete, defect free state with all support equipment available. Reliability and maintainability proving activities will continue after hand over.



Stage 6 – [O] Operation

The operating team having assumed responsibility for the service, the project management team will provide initial assistance and undertake the Post Project Evaluation.

This Evaluation is vital to assure British Airways that the business requirements have been met and the business benefits delivered. It also helps to identify strong and weak areas of the overall project process.

Activity Breakdown

This section contains details of the activities required at each stage, in each of the project workstreams. Each activity is broken down on the following pages in the format below:

Purpose	Endorsement	Deliverables
Method		
Responsibility	Communications	
Support		

References:

Format of Activity Breakdown.

Stage: N - Need Analysis

Activity Description: NA4 Identify Business Objectives

Purpose: To identify the Business Objectives which the project will enable British Airways to meet	Endorsement: Project Sponsor	Deliverables: Business Objectives Report
Method: Structured workshop to develop Business Objectives from Corporate Strategy. Subsequently compile objectives and associated reasons into a report.		
Responsibility: Business Consultant	Communication: All Stakeholders	
Support: Project Sponsor British Airways Customer Services Finance Marketing Operations		

References:

Stage: N - Need Analysis

Activity Description: NA5 Determine Business Needs and Validate Corporate strategy

<p>Purpose: To identify the Business Objectives</p>	<p>Endorsement: Project Steering Group</p>	<p>Deliverables: Business Needs Report</p>
<p>Method: Dedicated workshop to identify the Business Requirements which the project must deliver and to review them for continued consistency with corporate strategy.</p>		
<p>Responsibility: Business Consultant</p>	<p>Communication: Steering Group All Stakeholders</p>	
<p>Support: Project Sponsor British Airways Customer Services Finance Marketing Operations</p>		

References:

Stage: N - Need Analysis

Activity Description: NA6 Review Strategic Options

<p>Purpose: To determine the strategic options for delivery of the business needs and identify the most suitable.</p>	<p>Endorsement: Project Steering Group</p>	<p>Deliverables: Not Applicable</p>
<p>Method: Idea generation and scoring techniques. VM1 Workshop</p>		
<p>Responsibility: Business Consultant</p>	<p>Communication: All Stakeholders Steering group</p>	
<p>Support: Project Sponsor British Airways Departments</p>		

References:
Property Manual Vol 6

Stage: N - Need Analysis

Activity Description: NA7 Business Rationale

<p>Purpose: To identify the positive and negative effects on the business of delivering the Business needs.</p>	<p>Endorsement: Project Steering Group</p>	<p>Deliverables: Not Applicable (forms part of Concept of Operation document)</p>
<p>Method: Stakeholder interviews.</p>		
<p>Responsibility: Business Consultant</p>	<p>Communication: All Stakeholders Steering group</p>	
<p>Support: British Airways Departments</p>		

References:

Stage: N - Need Analysis

Activity Description: NB1 Identify Stakeholders

<p>Purpose: To identify the internal and external stakeholders in the project.</p>	<p>Endorsement: Not applicable.</p>	<p>Deliverables: Stakeholder listing.</p>
<p>Method: Desk top activity.</p>		
<p>Responsibility: Project Sponsor</p>	<p>Communication: All Stakeholders Steering group</p>	
<p>Support: Business Consultant</p>		

References:
Other Stakeholders

Stage: N - Need Analysis

Activity Description: NB2 - Report and Recommendations

<p>Purpose: To identify the Business Objectives which the project will enable British Airways to meet.</p>	<p>Endorsement: Project Steering Group.</p>	<p>Deliverables: Project Needs Report</p>
<p>Method: Report drafted by Business Consultants and Project Sponsor, signed off by Stakeholders and endorsed by Steering Group. Format and content of report as approval process.</p>		
<p>Responsibility: Project Sponsor</p>	<p>Communication: All Stakeholders Steering Group</p>	
<p>Support: Business Consultant</p>		

References:

Stage: N - Need Analysis

Activity Description: NF2 - Establish Procurement & Funding Options

<p>Purpose: To identify the range of viable project procurement and funding options.</p>	<p>Endorsement: Nil.</p>	<p>Deliverables: Workshop Report</p>
<p>Method: Independently facilitated procurement workshop to develop and analyse issues related to project procurement.</p>		
<p>Responsibility: Project Sponsor</p>	<p>Communication: Steering Group</p>	
<p>Support: Business Consultant BA Operations Contracts Facilitator</p>		

References:

Stage: P – Project Definition

Activity Description: PA1 – Identify Strategic Interfaces

<p>Purpose: To identify and list the project interfaces with existing and planned airport services, systems and facilities. Examples include Departure Control systems, existing baggage systems and other terminals.</p>	<p>Endorsement: Project Sponsor</p>	<p>Deliverables: Strategic Interface Report</p>
<p>Method: As appropriate to scale of project.</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: Project Steering Group All Stakeholders</p>	
<p>Support: Business Consultant</p>		

References:

Stage: P – Project Definition

Activity Description: PA2,3; PJ1, 2 – Establish and converge user and business requirements

<p>Purpose: To define a coherent set of service requirements which can be taken into Process Analysis. The precise feasibility of the requirement is not at this stage fully confirmed.</p>	<p>Endorsement: Steering Group</p>	<p>Deliverables: Service Requirement Target Section (a)</p>
<p>Method: A series of briefings, interviews and structured workshops which will establish a comprehensive set of service performance requirements defined in business terms, rather than equipment capabilities.</p>		
<p>Responsibility: Business Consultant</p>	<p>Communication: All Stakeholders</p>	
<p>Support: Stakeholders Project Manager</p>		

References:

Stage: P – Project Definition

Activity Description: PF5 – Benchmark Procurement and Funding

<p>Purpose: To establish reference criteria for the performance of the procurement and funding strategy.</p>	<p>Endorsement: Nil.</p>	<p>Deliverables: P & F Benchmarking Report</p>
<p>Method: Review of similar projects undertaken by BA and others, to establish costs, constraints and benefits of various procurement and funding strategies.</p>		
<p>Responsibility: Project Sponsor</p>	<p>Communication: Project Manager Stakeholders</p>	
<p>Support: Business Consultant BA Operations Contracts</p>		

References:

Stage: P – Project Definition

Activity Description: PF6 – Select Procurement and Funding Strategy

<p>Purpose: To choose the optimum procurement and funding strategy from a range of options.</p>	<p>Endorsement: Steering Group, and BA Infrastructure Board</p>	<p>Deliverables: Project Procurement and Funding Strategy</p>
<p>Method: Structured group decision making process based on options identified in activity NF2.</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: Steering Group Stakeholders</p>	
<p>Support: Project Sponsor Business Consultant Stakeholders Facilitator</p>		

References:

Stage: P – Project Definition

Activity Description: PG1 – Establish Project Objectives

<p>Purpose: To identify and record the objectives of the report.</p>	<p>Endorsement: Project Steering Group</p>	<p>Deliverables:</p>
<p>Method: Structured workshop with Stakeholders and Project Sponsor.</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: All Stakeholders</p>	
<p>Support: Business Consultant</p>		

References:

Stage: P – Project Definition

Activity Description: PG2 – Identify Project Constraints

<p>Purpose: To identify the physical, financial and programme constraints within which the project must be delivered.</p>	<p>Endorsement: Stakeholders</p>	<p>Deliverables:</p>
<p>Method:</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: All Stakeholders</p>	
<p>Support: Business Consultant B A Departments</p>		

References:

Stage: P – Project Definition

Activity Description: PG3 – Initiate Requirement Change Management Process

<p>Purpose: To develop and promulgate procedures for managing changes to the client business requirement and their impact on the project.</p>	<p>Endorsement: Project Sponsor</p>	<p>Deliverables: Project Change Management Procedures</p>
<p>Method: Stakeholder consultations Procedure writing and review Procedure promulgation and implementation</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: Project Team Stakeholders</p>	
<p>Support: Project Team Project Sponsor</p>		

References:

Stage: P – Project Definition

Activity Description: PA4 – Existing Service Requirements

<p>Purpose: To establish the need and timescales for the continuation of the existing service so as to inform the Project Manager of the resulting limits on freedom of action.</p>	<p>Endorsement: Project Sponsor</p>	<p>Deliverables: Forms part of SRT</p>
<p>Method: As appropriate to scale of project.</p>		
<p>Responsibility: Project Manager</p>	<p>Communication: Stakeholders affected</p>	
<p>Support:</p>		

References:

Stage: P – Project Definition

Activity Description: PA5 – Programme Constraints

<p>Purpose: To identify constraints on the project programme arising from the client's business needs.</p>	<p>Endorsement: N/A</p>	<p>Deliverables: Programme Requirements Document</p>
<p>Method: Internal client consultation.</p>		
<p>Responsibility: Project Sponsor</p>	<p>Communication: Project Manager</p>	
<p>Support: Client Departments</p>		

References:

Appendix 1

Terms of Reference for Project Steering Group

Purpose

The purpose of the Project Steering Group is to oversee the development of the project, review progress at specific points and, at the conclusion of each stage, to progressively approve proceeding to the next step.

Principal Tasks

- 1 Monitor the performance of the Project Sponsor and act as necessary.
- 2 Endorse the results and/or deliverables from appropriate project activities according to the activity breakdown in the British Airways Baggage Handling Project Manual.
- 3 Review information and covering programme, cost and service reports from the Project Manager and agree any actions arising.
- 4 Agree the project decision-making process.
- 5 Champion team building and facilitation.
- 6 Agree the major milestones and overall project programme.
- 7 Monitor progress against milestones and agree corrective action with the Project Manager or Project Sponsor as needed.
- 8 Monitor the project's costs and act as necessary to maintain them within the approved budget.
- 9 Monitor the service level which the project will achieve and take action as appropriate.
- 10 Approve Change Requests which affect the major issues of programme, cost and service level.
- 11 Make recommendations needed for the project decision process.
- 12 Assist the Project Manager in consultations with the landlord and airport company as appropriate to the project.

Appendix 2

Terms of Reference for the Project Sponsor

Purpose

The Project Sponsor is a British Airways Senior Manager appointed to arrange and manage provision of all necessary project resource and approvals.

Accountability

The Project Sponsor is accountable to the Steering Group Chairman.

Principal Tasks

- 1 On appointment, to obtain financial sanction for the Need Analysis stage of the project.
- 2 To appoint business consultants and other specialist consultants necessary to complete the Need Analysis stage.
- 3 Task and brief the consultants to prepare outline programmes and work breakdown structures for the project.
- 4 Work with the consultants to;
 - a identify the stakeholders likely to be involved in the Project, both British Airways and externally,
 - b prepare initial estimates of the British Airways resources likely to be required at each stage of the project,
 - c review procurement and funding options available for the project.
- 5 Ensure that a project Steering Group is formed.
- 6 Arrange the provision of British Airways personnel, information or facilities necessary to progress the project, when requested by the Project Manager or Business Consultant.
- 7 Assist the project team to compile reports and recommendations for review by the Steering Group and eventual submission to the approval process.
- 8 Assist the Project Manager to provide periodic progress reports for the steering group.
- 9 Subject to the necessary approvals, arrange the appointment of a Project Manager in accordance with British Airways Property Purchasing procedures.
- 10 Monitor and audit the performance of the Project Manager and take corrective action when needed.
- 11 Monitor the development during the project of British Airways business requirements for the project so as to ensure that the project management team continues to deliver against accurate requirements.

- 12 Arrange and report the Post Project Implementation Audit and Post Project Evaluation.
- 13 Ensure that records of Steering Group meetings are kept and that their decisions are communicated.

Appendix 3

British Airways' Example Scope of Services for a Business Consultant (Baggage)(BB)

At All Stages

Principal Role

- 1 Establish changes to the client's business need, objectives and requirements and monitor changes during the project.

Client Interface

- 2 Progress work and provide sufficient detail to obtain the appropriate approvals in accordance with the client's approvals processes.
- 3 Attend meetings called by the client to progress any aspect of the commission.
- 4 Provide information as requested by the client to the client and/or any other participant.
- 5 Initiate and maintain liaison in order that the client is kept fully informed on the progress of the commission.
- 6 Research and deliver information for benchmarking purposes in the form required.

Participants

- 7 Advise on the need for and scope of services of other consultants that may be required.

Processes

- 9 Provide management plan indicating structure of the Business Consultant's project team and resources to be committed at each stage.
- 10 Provide a management plan indicating the level of resources required to be committed by the client.
- 11 Execute services in accordance with agreed project programmes.
- 12 Assist in preparation of a register of risks formulating and reviewing strategies for minimising the same.
- 13 Assist in preparation and updating of overall project programmes showing all significant activities and events.
- 14 Obtain information on and become familiar with any client procedures and standards applicable to this commission and adhere to these in carrying out any services.

- 15 Participate in the carrying out of independent audits including in relation to CDM Regulations.
- 16 Participate in the implementation of client performance testing initiatives and procedures.

Clarifications

- 17 This scope of services is to be read in conjunction with BA's Baggage Handling Project Manual.
- 18 The project stages described below are intended for general guidance only. The actual sequence and timing of activities will be as required to meet the needs of the project and as directed by the client.
- 19 For the purposes of this document, the term 'client' refers to the Project Sponsor.

N Stage N: NEED ANALYSIS

- 1 Analyse information relating to existing conditions and known requirements.
- 2 Assist the project sponsor to identify project stakeholders, develop and implement communication strategy.
- 3 Conduct interviews to establish client business needs and objectives.
- 4 Visit existing establishments to view conditions at first hand and participate in benchmarking exercises.
- 5 Carry out an initial analysis of business issues relating to the stated need and prepare an outline for the concept of operations document covering;
 - a statement of business need,
 - b business objectives,
 - c analysis of political, environmental and operational considerations,
 - d analysis of options for delivering the business objectives,
 - e statement of uncertainties imperatives and restrictions including planning issues,
 - f Initial project value identifiers and interrelationships,
 - g review of options for service delivery management,
 - h analysis of procurement and funding options suitable for the proposed project,
 - j timescales.
- 6 Review objectives and constraints with project stakeholders to ensure common direction and consensus on the way forward.
- 7 Arrange for the preparation of outline cost estimate including life cycle costs through reference to benchmark data.
- 8 Prepare and document outline analysis of project risks.

- 9 Organise, facilitate and document value management workshop and incorporate results into the concept of operations document.
- 10 Prepare an execution plan for the Project Definition stage incorporating outcome of value management workshop (VM1).
- 11 Assist the Project Sponsor to prepare submission documents and seek relevant client approvals.

P Stage P: PROJECT DEFINITION

- 1 Collect and analyse available project data.
- 2 Assist the Project Manager to prepare the Service Target comprising the following;
 - a statement of business need,
 - b project objectives,
 - c analysis of political, environmental and operational considerations,
 - d analysis of property and building issues,
 - e statement of constraints including planning issues and security matters,
 - f timescales.

A Stage A: PROCESS ANALYSIS

- 1 Review the Service Target and identify any errors, omissions and conflicts.
- 2 Assist in modifying the Service Target to correspond to any changed requirements and communicating these to the project team.
- 3 Attend progress meetings involving project stakeholders.
- 4 Assist the project manager with managing the impact of any changes to the client's requirements for programme, cost or service level.
- 5 Review development of process to ensure;
 - a compatibility with the Service Target,
 - b that the project will deliver business objectives.

C Stage C: CONCEPT DESIGN

- 1 Liaise with project stakeholders to identify any changes to requirements and objectives.
- 2 Assist in communicating any changed requirements to the project team.
- 3 Attend progress meetings involving project stakeholders.
- 4 Review development of detailed design to ensure;
 - a adherence to delivery of Service Specification,
 - b that the project will deliver business objectives.

D Stage D: DETAILED DESIGN

- 1 Liaise with project stakeholders to identify any changes to requirements and objectives.
- 2 Assist in communicating any changed requirements to the project team.
- 3 Attend progress meetings involving project stakeholders.
- 4 Review development of detailed design to ensure;
 - a adherence to delivery of Service Specification,
 - b that the project will deliver business objectives.
- 5 Assist with the development of contingency plans.

M Stage M: MANUFACTURE AND COMMISSIONING

- 1 Liaise with project stakeholders to identify any changes to requirements and objectives.
- 2 Communicate any changed requirements to the project team.
- 3 Attend progress meetings involving project stakeholders.

O Stage O: OPERATION

- 1 Assist in post completion review of project to enable future improvements to delivery process and prepare report.

Appendix 4

British Airways' Example Scope of Services for a Baggage Handling Project Manager (PB)

At All Stages

Principal Role

- 1 Establish and implement systems and procedures to facilitate the meeting of all project objectives.
- 2 Manage project processes, with particular emphasis on;
 - a client interface and approvals,
 - b value and risk management,
 - c consultant selection and fee management,
 - d formulating and implementing procurement strategy,
 - e monitoring the activities and performance of all other participants.

Client Interface

- 3 Attend meetings called by the client to progress any aspect of the commission.
- 4 Provide information as requested by the client to the client and/or any other participant.
- 5 Initiate and maintain liaison in order that the client is kept fully informed on the progress of the commission.
- 6 Communicate the development of the project to all stakeholders through appropriate management processes and procedures including chairing and minuting regular client meetings.
- 7 Make applications for client approvals in accordance with the client's approvals processes.
- 8 Establish procedures for the provision of information for benchmarking purposes in the form required.
- 9 Establish liaison with client information management departments, define interface and maintain communication as necessary to integrate activities.
- 10 Provide regular progress reports to the project Steering Group.
- 11 Manage the impact on the project of changes to the client business requirements, including establishing procedures for change control.

Participants

- 12 Advise on the need for and scope of services of other consultants that may be required.

- 13 Identify, select and assist in procuring the appointment of consultants required to complete the project at each stage in accordance with client consultant procurement process including;
 - a pre-qualification enquiries and interviews,
 - b preparation and issue of enquiry documents,
 - c receiving, opening and recording bids,
 - d analysis of bids,
 - e post bid interviews and negotiations including preparation of agendas,
 - f drafting and issuing letters of appointment,
 - g raising of purchase orders,
 - h drafting and arranging execution of contracts and warranties, etc.
- 14 Manage the expenditure of consultant's fees including;
 - a monitoring the fee impact of variations to the scope of services agreed,
 - b approval of invoices submitted,
 - c monitoring expenditure on fee accounts via draw down schedules.
- 15 Monitor the performance of all participants and report on a regular basis.

Processes

- 16 Provide and update a management plan indicating the level of resources required to be committed by the client at each stage.
- 17 Provide a management plan indicating structure of Project Manager's project team and resources to be committed at each stage.
- 18 Establish procedures which provide for participants to;
 - a be familiar with client approvals procedures,
 - b prepare all information for project approval in accordance with client requirements.
- 19 Prepare and maintain up to date a project directory.
- 20 Manage value engineering exercises as the project develops, and in so doing use reasonable endeavours to optimise the balance of capital/life cycle/costs in use.
- 21 Prepare a register of risks formulating and reviewing strategies for minimising the same.
- 22 Prepare and update overall project programmes showing all significant activities and events.
- 23 Execute services in accordance with agreed project programmes.
- 24 Obtain information on and become familiar with any client procedures and standards applicable to this commission and adhere to these in carrying out services.
- 25 Participate in the carrying out of independent audits including in relation to CDM Regulations.

- 26 Participate in the implementation of client performance testing initiatives and procedures.
- 27 Establish procedures to provide for necessary consultations to take place with and for approvals to be obtained from all authorities with a legitimate interest in the project, with particular reference to; landlord, local authority, national authorities, airport authorities, statutory bodies and public and private utilities.
- 28 Establish procedures to ensure that CDM and other health and environmental legislation requirements are identified and a health and safety plan and file prepared and maintained.

Clarifications

- 29 The term 'consultant' includes all customary professional appointments, the construction manager (where applicable), site staff employed by the client and any parties carrying out the following;
 - a topographical and dimensional surveys of the site and adjacent features,
 - b geotechnical and contamination investigations,
 - c any special studies, e.g. aerial surveys, site master plan, environmental studies risk analysis, etc.
- 30 The Project Manager will arrange for the establishing of the information technology requirements of the project and establishing procedures to integrate its delivery into the overall project process, including;
 - a preparation of an IM Specification,
 - b design co-ordination with construction elements,
 - c incorporation of the delivery and installation of the client furnished IM equipment into the overall construction process and management of the interface,
 - d inclusion of all IM costs into the cost plan for the project.
- 31 Invoices may only be approved within specific limits authorised in writing by BA.
- 32 This scope of services is to be read in conjunction with BA's Baggage Handling Project Management Manual.
- 33 The project stages described below are intended for general guidance only. The actual sequence and timing of activities will be as required to meet the needs of the project and as directed by the client.
- 34 For the purposes of this document, the term 'client' refers to the Project Sponsor.

External Bodies

- 35 Assist in consultations and negotiations with the landlord and other bodies identified by the client.

P Stage P: PROJECT DEFINITION

- 1 Analyse information relating to existing conditions and known requirements.
- 2 Identify the project interfaces with other airport systems and services, including but not limited to departure control and flight information systems, other terminals or airports and existing baggage services.
- 3 Prepare an initial project directory together with organisational chart showing all project participants.
- 4 Visit existing establishments to view conditions at first hand and facilitate the conduct of benchmarking exercises to ensure that client aspirations are realistic and consistent with best practice.
- 5 Co-ordinate an analysis of business issues surrounding the stated need and prepare an outline for the Service Target covering;
 - a statement of business requirements,
 - b project objectives,
 - c the value definitions and relationships,
 - d analysis of political, environmental and operational considerations,
 - e analysis of property and building issues,
 - f statement of constraints including planning issues and security matters,
 - g timescales.
- 6 Develop, with the client, a set of business requirements, performance standards and operational requirements which the baggage service should deliver.
- 7 Review objectives and constraints with project stakeholders to promote common direction and consensus on the way forward.
- 8 Manage preparation of order of cost estimate including life cycle costs through reference to benchmark data.
- 9 Prepare and document initial analysis of project risks.
- 10 Organise, facilitate and document value management workshop and incorporate results.
- 11 Make recommendations (within the sphere of a project manager's duties) on the suitability and use of standard designs/systems and components.
- 12 Draft a Project Execution Plan and a plan for the completion of Stage A - Process Analysis.
- 13 Compile the Service Target, prepare submission document and obtain relevant client approvals.
- 14 Provide the necessary cost and expenditure data to facilitate the client's capital and revenue planning.

A Stage A: PROCESS ANALYSIS

Client Interface and processes

- 1 Collect and analyse available project data.
- 2 Arrange and conduct a Team Alignment workshop to ensure that all team members are agreed upon the goals, deliverables and methodology for this stage.
- 3 Prepare and evaluate a range of process options for further consideration.
- 4 Organise, facilitate and document value management workshops and establish procedures providing for incorporation of results into the process analysis.
- 5 Arrange for the development of process options and models to fulfil the requirements of the Service Target.
- 6 Establish procedures for the completion of such studies as may be necessary to determine the performance process options.
- 7 Prepare a Service Specification comprising the following;
 - a statement of business requirements,
 - b description of background and current state of the project,
 - c details of project stakeholders,
 - d analysis of process options,
 - e analysis of property and building issues,
 - f statement of service standards,
 - g cost targets,
 - h timescales,
 - i Project success criteria.
- 8 Communicate SRS to project stakeholders and seek agreement.
- 9 Develop the initial project execution plan to ensure an effective management framework for project and prepare detailed plans for execution of concept design.
- 10 Seek stakeholders' concurrence with the range of process options under consideration.

Cost Planning and Control

- 11 Establish procedures for the preparation of estimates of project costs on an elemental basis including life cycle costings.
- 12 Establish procedures for preparation of a project cash flow forecast.
- 13 Establish procedures for the preparation of a taxation appraisal, allocating and recording project costs within taxation categories.

Procurement

- 14 Advise on the need for specialist contractors and suppliers to design and execute parts of the works.
- 15 Make and act on recommendations for early design input from specialist consultants, subcontractors and suppliers.
- 16 Prepare strategy for construction procurement.

C Stage C: CONCEPT DESIGN

Client Interface and Processes

- 1 Organise facilitate and document value management workshop: and establish procedures for the incorporation of results into the design.
- 2 Arrange and conduct a Team Alignment workshop to ensure that all Team members are agreed upon the goals, deliverables and methodology for this stage.
- 3 Arrange the preparation of Functional Design Specifications, communicate to stakeholders and make revisions necessary to provide for final stakeholder sign off.
- 4 Develop an execution plan for the detailed design stage.
- 5 Prepare the initial operating resource plan.

Design & Documentation

- 6 Establish procedures for the development of concept design from the approved Service Requirement Specification.
- 7 Establish procedures for preparation of the integrated design options report and submit to client for approval.
- 8 Identify the need for special research for the project including design of prototypes, mock-ups or models and any off-site test facilities.

Cost Planning and Control

- 9 Establish procedures for cost management of concept design development.
- 10 Establish procedures for preparation of cost analysis in form required for property cost database and for benchmarking purposes.
- 11 Establish procedures for preparation of a taxation report allocating and recording project costs within taxation categories..
- 12 Implement change control and develop configuration control procedures.

Procurement

- 15 Implement strategy for procurement in light of developing design process.

D Stage D: DETAIL DESIGN

Client Interface and Processes

- 1 Implement the project execution plan promoting continuous control and communication of management processes.
- 2 Prepare final service delivery plan.
- 3 Establish design team responsibilities and interfaces and communicate to stakeholders and team members.
- 4 Establish and communicate the name and responsibilities of the system integrator to design team members.

Design & Documentation

- 5 Establish procedures to provide for the development of a detailed design from approved concept design in accordance with the SRS and cost estimate.
- 6 Seek the landlord's approval of those elements of the design, construction plan and hand over plan which affect the landlord's business.
- 7 Prepare project integrated design report and submit to client for approval.
- 8 Establish procedures for the preparation of a detailed programme for the release of production information and monitor work against this.
- 9 Agree the form and content of tender information for the main contract and any nominated subcontractors/suppliers.
- 10 Establish procedures to facilitate the full co-ordination of the design between different disciplines and specialist contractor inputs.
- 11 Establish procedures to provide that design information, bills of quantities and or schedules of works are prepared in sufficient detail that fixed price tenders may be obtained for the main contract and any subcontractors/suppliers.
- 12 Arrange for the testing of prototypes, mock ups or models etc. and establish procedures providing for the results to be incorporated into the design.
- 13 Arrange the development of integrated logistic support for the baggage service and the preparation of a logistic support plan.
- 14 Prepare plans for testing, commissioning and hand over including securing maintenance manuals from contractors prior to practical completion.
- 15 Arrange for the preparation of contingency plans for operation of the service.

Cost Planning & Control

- 16 Establish procedures for the preparation of an accurate cost plan for detailed design of the project including life cycle costings.
- 17 Establish procedures for the development of cash flow forecasts.
- 18 Manage the preparation of comprehensive financial statements.
- 19 Implement change and configuration control procedures.

Procurement

- 20 Establish procedures to provide for tenders to be invited in accordance with client requirements.
- 21 Manage the review and analysis of tenders and prepare initial tender report.
- 22 Establish procedures to provide that all relevant negotiations are concluded with tenderers and participate in the same.
- 23 Establish procedures provide for the preparation and agreement to the final bid placing report.

M Stage M: MANUFACTURE AND COMMISSIONING

Client Interface & Processes

- 1 Implement the project execution plan promoting continuous control and communication of management processes.
- 2 Establish procedures for the following to be reported on immediately;
 - a performance of the contractor(s) where this is likely to affect the design, programme or cost of the work,
 - b any disputes, arbitration or terminations,
 - c actions or incidents likely to affect safety or security.
- 3 Establish a helpline for all project stakeholders which is accessible at all reasonable times.
- 4 Establish procedures for the preparation of method statements covering phasing and access requirements through liaison with operational management.
- 5 Establish procedures for the issue of access permits and passes.
- 6 Establish procedures for the application of the client permit to work system.
- 7 Establish procedures for the preparation of factory test plans, site test plans and an overall service commissioning plan.
- 8 Establish procedures to provide for user demonstrations and training and all other activities required to set the service to work.
- 9 Prepare a plan for hand over of the project incorporating any move management processes required at completion of any relevant phases.
- 10 Establish procedures for the implementation of the plan for hand over of the project at completion of any relevant phases.

Design & Documentation

- 11 Establish procedures to provide for the preparation of schedules of conditions where work is being carried out to existing facilities, including photographic surveys.
- 12 Establish procedures to provide for;
 - a preparation of additional design information required to complete the works,
 - b preparation and checking of fabrication and installation drawings.

- 13 Establish procedures to provide for preparation of comprehensive operation and maintenance manuals prior to hand over.

Cost Planning and Control

- 14 Establish procedures to provide for identification of all costs associated with design changes, contract awards, construction activities and client changes.
- 15 Establish procedures to provide for the preparation of financial reports for the client in the form and at the frequency required.

Contract Administration

- 16 Manage preparation of contract documents, warranties, bonds and licenses and arrange formal execution by the appropriate parties.
- 17 Establish procedures to check that all insurances required by the contract are in place and copies of appropriate certificates are obtained.
- 18 Issue letters of intent and arrange for the raising of purchase orders for contractors in accordance with client procedures.
- 19 Establish procedures providing for satisfactory administration of the terms of the contract.
- 20 Establish procedures providing for meetings to take place with the contractor at regular intervals to review progress and identify information requirements.
- 21 Visit the site at intervals appropriate to the stage of construction to review the progress of the works.
- 22 Establish procedures to provide for verification that construction activities and completed work is in accordance with the requirements of legislation, client requirements and other good practice guidance.
- 23 Establish procedures for the agreement and implementation of a detailed methodology and programme for inspection and testing of the works.
- 24 Establish procedures for inspections, witnessing and approval for acceptance of all services and systems regardless of the contractual method for commissioning.
- 25 Prepare and issue certificates for payment to the main contractor and any nominated subcontractors/suppliers.
- 26 Evaluate claims for delay and additional costs made by the contractor and any nominated subcontractors/suppliers.
- 27 Prepare and issue certificates of practical completion in accordance with any contract requirements relating to completion, submissions and approvals, particularly where concerning operation and maintenance manuals.

Procurement

- 28 Establish procedures to provide for the appointment of a service operation and maintenance contractor in accordance with client requirements and procedures.

O Stage O: OCCUPATION

- 1 Undertake post completion review of the performance of service partners/suppliers, prepare and submit formal report.
- 2 Undertake post completion review of project to promote future improvements to delivery process and prepare report.
- 3 Prepare audit report on and close down project execution plan.
- 4 Manage satisfactory completion of outstanding items and resolution of any problems which may arise during the defects liability period.
- 5 Agree and manage preparation of final account for the project.
- 6 Prepare and issue certificate of making good defects and final completion in accordance with any contract requirements relating to completion, submissions and approvals.
- 7 Establish procedures for completion and submission of final elemental cost analysis.
- 8 Establish procedures for preparation of taxation reports allocating and recording project costs within tax categories.
- 9 Establish procedures for reporting the results of reliability monitoring and initiating any actions arising.

Appendix 5

British Airways Example Scope of Services for a Process Analyst (Baggage) (AB)

At All Stages

Principal Role

- 1 Establish and implement systems to facilitate the development of baggage process.
- 2 Manage analysis, development and recording of baggage processes.

Client Interface

- 3 Attend meetings called by the client or Project Manager to progress any aspect of the commission.
- 4 Provide information as requested by the client and/or other participant.
- 5 Initiate and maintain liaison such that the client and Project Manager are kept fully informed on the progress of the commission.
- 6 Communicate the development of the process and models to all stakeholders, through the Project Manager.
- 7 Establish procedures for the provision of information for benchmarking purposes.
- 8 Provide regular progress reports to the Project Manager and Project Sponsor.

Processes

- 9 Provide and update a management plan indicating the structure of the Process Analyst's team and the resources to be committed at each stage.
- 10 Provide and update a management plan indicating the level of client resources required to be committed by the client at each stage.
- 11 Establish procedures which provide for participants to:
 - a) Be familiar with the analysis techniques to be used
 - b) Prepare information needed for project approvals in accordance with client requirements
- 12 Obtain information on and become familiar with any client procedures and standards applicable to this commission and adhere to these in carrying out services.
- 13 Participate in the implementation of client performance testing initiatives and procedures.

Clarifications

- 14 This scope of services is to be read in conjunction with BA's Baggage Handling Project Management Manual.
- 15 The project stages described below are for general guidance only. The actual sequence and timing of activities will be as required, to meet the needs of the project and as directed by the client.
- 16 For the purposes of this document the term 'client' refers to the Project Sponsor

A Stage A: PROCESS ANALYSIS

Client Interface and Processes

- 1 Collect and analyse available project data.
- 2 Attend and participate in a Team Alignment Workshop to agree the goals methods and deliverables for this stage.
- 3 Prepare, document and evaluate a range of process options for further consideration.
- 4 Attend and participate in value and risk management workshops and incorporate the results into process models and evaluations.
- 5 Conduct and complete such studies as may be necessary to determine performance process options.
- 6 Establish procedures to record the results of process modelling in a format agreed with and acceptable to the Project Manager.

C Stage C: CONCEPT DESIGN

Client Interface and Processes

- 1 Assist the system design team with process mapping activities.
- 2 Develop and record process models for passenger activities relevant to the project.
- 3 Compare and correlate the passenger and baggage process models so as to identify and correct any instances of non conformance.
- 4 Assist in modelling the performance of design elements and the overall performance of the concept design.
- 5 Attend and participate in risk and raise management workshops and incorporate the results into process models and evaluations.

D Stage D: DETAIL DESIGN

Services required as At All Stages Section

M Stage M: MANUFACTURE AND COMMISSIONING

Services required as At All Stages Section.

O Stage O: OCCUPATION

- 1 Assist the Project Manager to undertake the post completion review of the project so as to promote future improvements to the delivery process.

