Business Case Guidelines for Investment in Information Technology

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Acknowledgements

These guidelines have been written following significant input from a wide range of people across the health sector. Those contributions are gratefully acknowledged. The resulting document is intended to be of practical assistance to the health sector.

Feedback

These guidelines need to pass the following test:

- Do they improve the process of investing in information technology?
- Do they make it easier to secure a quality outcome?

Your feedback on these guidelines and any other comments are welcome and will be acted upon.

This document is in its first published iteration and will be updated from time to time. Check the Ministry of Health website http://www.moh.govt.nz for updates to these guidelines.

Guide to this Document

These guidelines are structured in the following way.

Document map	Level of involvement
Objectives and Principles on Information Technology (IT) Business Case (pages 3–6)	Overview
Building the IT business case – overview of stages and stakeholder input	
Strategic analysis (pages 10–12) / Options analysis (pages 13–16) / Completed business case (pages 16–19)	Overview
Business case table of contents	
Table of contents for each stage (pages 20–25)	Building the case
Sign-off schedules for each stage	
Strategic analysis (page 26) / Options analysis (pages 27–28) / Completed business case (pages 29–30)	Building the case
Guidance per stage	
Strategic analysis (pages 31–34) / Options analysis (pages 34–39) / Completed business case (pages 40–45)	Building the case
Evaluation criteria	
Evaluation criteria (pages 46–54)	Building the case Sign-off and ownership
Board checklist	
Board checklist for the IT business case (pages 55–57)	Sign off and ownership

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1 Introduction

Business Case Guidelines for Investment in Information Technology has been prepared to complement the Ministry of Health's *Capital Investment Guidelines* and the 2003 national Information Systems Strategic Planning (ISSP) process.

These guidelines are designed to provide a logical sequence of steps with a transparent set of review points. They should be available for the wide group of stakeholders in the information technology (IT) business case process. Appropriately applied, these guidelines are designed to foster a culture of quality decision-making and accountability within the sector. This will ensure the best outcomes from investments in information technology.

The guidelines provide a suite of tools to assist DHBs to complete a successful business case. These tools include a:

1. template to guide the development of each stage
2. set of evaluation criteria for each stage
3. table of contents for the total business case
4. final evaluation tool for use by District Health Boards (DHB) boards, Regional Capital Committees and the Ministry of Health.

The evaluation criteria are set out for the DHB and associated parties to objectively self-assess each business case at each of the strategic analysis and options analysis stages. This ensures that time is spent up-front establishing a clear mandate. It also allows the Ministry of Health and the Crown to review the rigour of the process and preserves appropriate DHB accountabilities.

There are three stages in developing the final IT Business Case. These are:

1. strategic analysis stage
2. options analysis stage
3. completed business case stage.

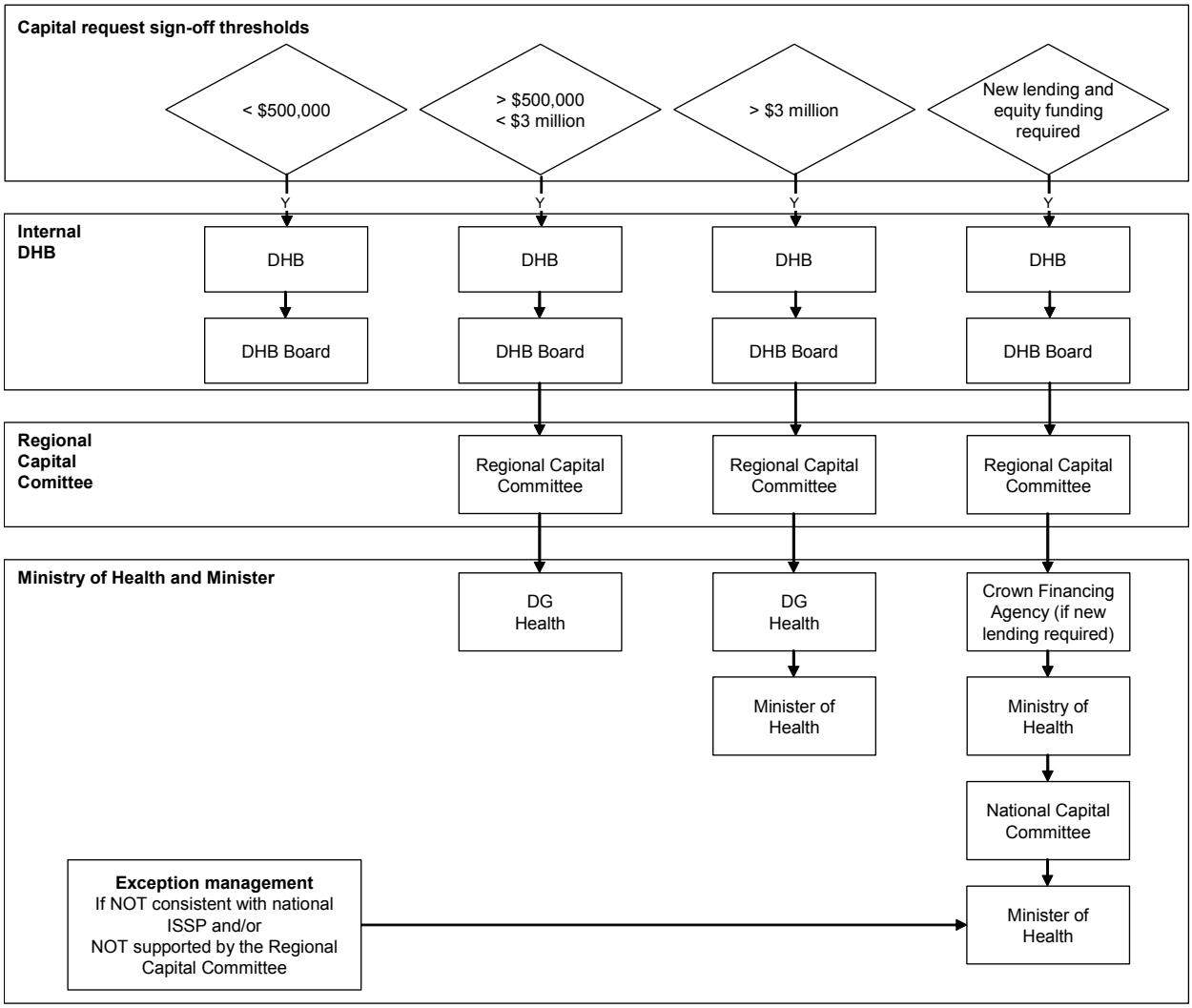
Each stage follows on from the previous stage, building on the level of detail in sequence. Approval and sign off are required at the end of each stage in order to progress to the next stage.

It is essential that each stage builds to the final business case. Retrospective reworking can cause inconsistencies and lack of coherence in the final business case. Following the step-by-step process leads to a business case that is clear, robust and complete.

The Ministry of Health should be able to be sign off within weeks.

Figure 1 outlines the sign-off thresholds for IT business cases. Further detail is in the body of this document.

Figure 1: Capital request sign-off thresholds



Source: Derived from page 3, *2003 Guidelines for Capital Investment*. Per September 2003 ministerial directive regarding investment in information systems and communication technology.

2 Objectives and Principles of an Information Technology Business Case

The guidelines for capital investment in IT are not designed as a prescriptive set of requirements. They are designed to show rigour of planning relative to the level of investment being undertaken.

The objectives of IT business cases are that they:[1]

I. are consistent with the integration of clinical information across the region's health providers (primary and secondary)

II. empower clinicians to provide efficient health care delivery through the use of shared information systems

III. maximise return on information systems investment across DHBs

IV. maximise opportunity for savings from joint purchasing of IT

V. minimise the risk associated with new implementations and big bang approaches

VI. identify and develop centres of excellence within the health sector with resources and expertise prior to outsourcing.

The following principles should also be followed.

1. Create the best use of limited resources and funds within the sector.
2. (Re)-use proven technology within the sector.
3. Provide incentives for innovation in a way that is co-ordinated within the sector (ie, ensure there is no duplication).
4. Ensure the sharing of information between providers aids in best patient care.
5. Ensure the consequential impacts of the initiatives outlined in the business case are fully understood (eg, the opportunity cost of this investment and the future commitments that this investment may result in).

[1] Objectives from page 9, regional capital committees and information systems and communication technology investment, *Guidelines for Capital Investment*, Ministry of Health, 2003.

What investments should the information technology business case framework be applied to?

> 'Following concern regarding the quality of health IT investment, the Minister of Health has directed that a stepped approval be required for information systems and communication technology.
>
> Information systems and communication technology is defined as computer systems such as applications, hardware and software. It also includes networking and communications. This definition excludes laboratory analysis equipment, telephone equipment and digital radiology systems. All information systems and communication technology investment must be consistent with the sector Information Systems Strategic Plan (ISSP), unless Ministerial approval is given for a variation.'[2]

The following areas relate to the IT business case framework:

- infrastructure
- package products
- development
- joint ventures.[3]

Leasing costs

The underlying principle relating to leasing costs is that the capital equivalent of the asset is to be reflected in the business case request. For example, if a DHB elects to take an operating/finance lease over three years for an asset worth $1.2 million, the capital equivalent of the business case assessment will be $1.2 million. These guidelines apply as though the business case is for capital approval of an asset of this value.

Note that any business case that requires a finance lease needs to have the lease approved in terms of the Operational Policy Framework.

Fit with the Operational Policy Framework

Depending on the nature and structure of the project (eg, shared services, joint ventures, leasing arrangements) other specific approval may be required through the Minister of Health or Ministry of Health. This other approval features alongside the capital expenditure approval covered by these guidelines.

[2] Section 2, page 3, *Guidelines for Capital Investment*, Ministry of Health, 2003.

[3] Section 1, page 3, *Guidelines for Capital Investment*, Ministry of Health, 2003.

Role of Regional Capital Committees in information technology business cases

Health IT projects offer significant scope for collaboration. Regional Capital Committees (RCCs) are expected to consider IT proposals (eg, via a subcommittee). For IT projects to proceed, evidence is required that all collaborative opportunities have been explored. Joint agreements to support from the RCC must be sought for all information systems and communication technology investment proposals more than $500,000.

Sector peer review ensures that the level of risk for new projects is minimised. In addition, there should be leverage of investment from existing systems that have already been proven within the sector through regional collaboration between DHBs.

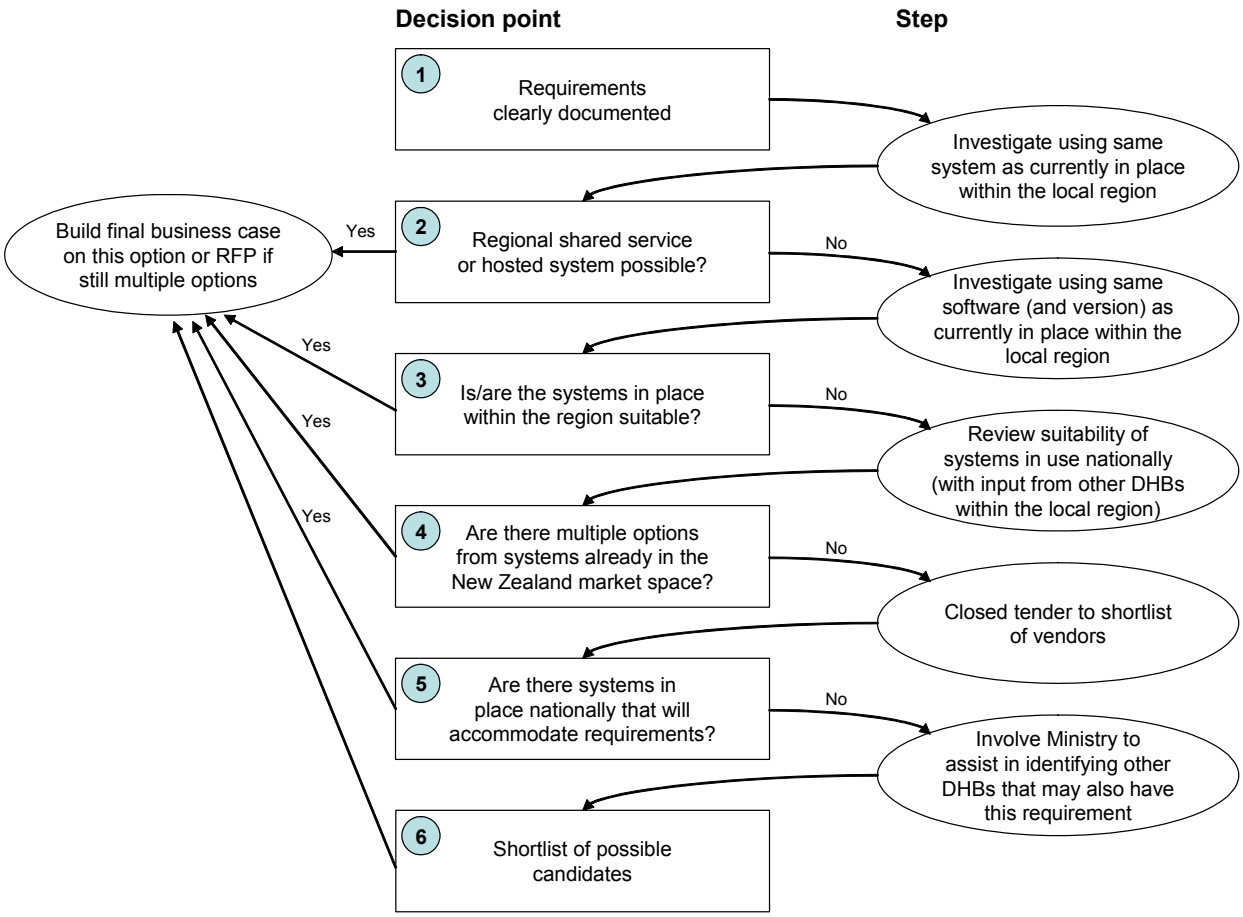
To meet the IT collaboration requirement, DHBs should seek written support from the other DHBs. This may range from establishing joint agreements to regional participation in the business case. Alternatively, it may come from confirmation that proposals are consistent with the objectives and principles outlined in the above section, 'Objectives and principles of the information technology business case'.

the RCC may then prioritise the IT project within the region's overall capital expenditure.[4]

Figure 2 outlines how to select a system and vendor.

[4] Page 9, regional capital committees and information systems and communication technology investment, *Guidelines for Capital Investment*, Ministry of Health, 2003.

Figure 2: System and vendor selection



A request for proposal (RFP) is recommended when no existing regional software solution (including the version proposed to be implemented) that is appropriate for the DHB's needs.

The RFP should be limited to vendors that have proven experience in the New Zealand market and in similar work. Where there is a request to include vendors not fitting this description, support is required from the Ministry of Health's Corporate and Information Directorate. This is so the Ministry can help DHBs see what options exist.

This is not to preclude new vendors to the New Zealand health marketplace but seeks to put tighter controls around the requirements definition and make DHBs look to what is already in place within their local region and nationally.

3 Structure and Use of this Document

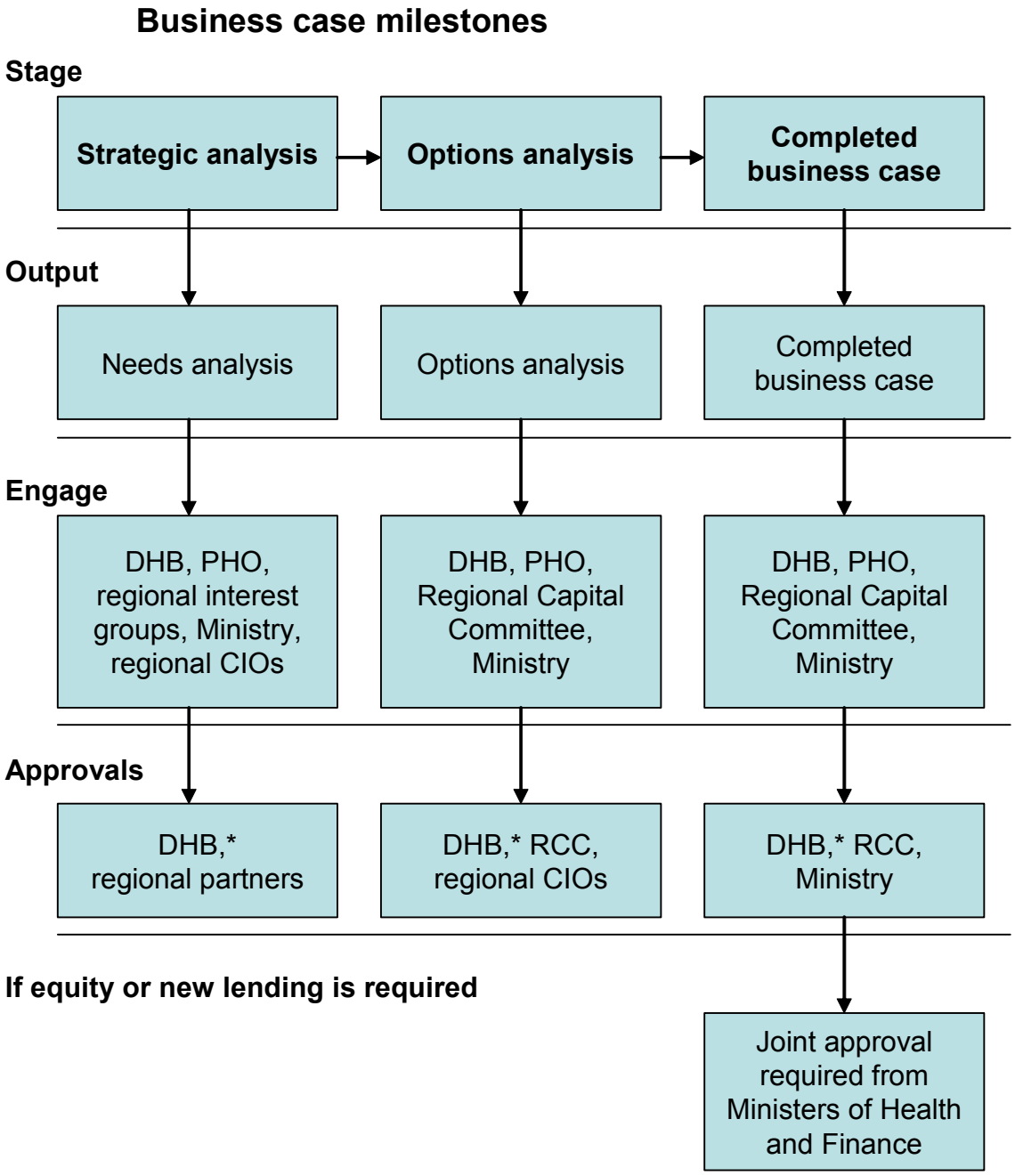
This document contains guidelines and templates to help DHBs complete each stage of the business case. The business case format, as outlined in the IT business case table of contents (Appendix A), is designed to be a 'living document' with the relevant section updated at each of the three stages of the business case.

Information technology business case stage	Output
Strategic analysis	Needs analysis section
Options analysis	Options analysis section
Completed business case	Completed business case section

The progression of the business case through the three stages and corresponding integration points are outlined in Figure 3.

This document also contains a list of evaluation criteria for scoring each stage, including the evaluation of the completed business case.

Figure 3: IT business case stages, outputs and approvals



Notes:

- The DHB approval process should ensure that there is a clear and logical business owner, not an IS driven initiative.
- Ministry of Health contact points include the Corporate Information Directorate and DHB Funding and Planning.

4 What is a Business Case?

A business case is complex and involves many stakeholders. It outlines the commitment to an investment, assigning scarce capital and resources to deliver successful outcomes to patients, both directly and indirectly.

A business case is not a request for capital but it can be the justification for capital. It explores critical need, options and planning. This is necessary to ensure any investment is wisely made and the delivery of best outcomes with the best risk management strategy is balanced. A business case should work backwards from the successful goal and include all the planning that accompanies that goal.

IT projects have long been recognised as potentially high risk with correspondingly high failure rates in terms of non-delivery, budget overruns and the end result not meeting initial requirements. Any business case process should reflect planning that is critical to the project's success including:[5]

- user involvement
- executive support
- clear business objectives
- experienced project management
- small milestones
- firm basic requirements
- competent staff
- ownership
- effort.

An IT business case is the result of a partnership with the Ministry of Health and, often, collaboration with other DHBs on behalf of the local and regional community. It is designed to stand alone and is owned by the DHB. The business case should be a logical progression from the District Annual Plan, ISSP and asset management plan. It is not an administrative requirement set down by the Ministry of Health. However, it does require resources and commitment to complete.

[5] Extract from OAGIT Project Governance report, *Reasons for Project Success and Failure*.

5 Building an Information Technology Business Case

This section outlines the three stages of a business case and provides guidelines to support the development of the IT business case.

Stage 1: Strategic analysis stage

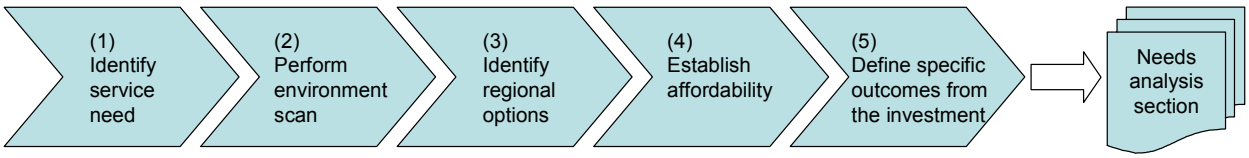
The strategic analysis stage links the organisational objectives (DAP), the ISSP and the capital plan.

Objectives

- Establish the 'burning platform' (a critical need).
- Outline the imperative for change.
- Define the specific outcomes planned from the investment.
- Test links to the clinical model of care and/or business operations.
- Test feasibility for change.
- Define ideal steps.
- Outline the timeframes to achieve the objectives.
- Identify major strategy links between the business and IT at national, regional and local levels.
- Test regional or collaborative models with regional groups.
- Test that what is proposed is acceptable to the Crown.

Key elements

The output of the strategic analysis stage is the needs analysis section in the business case.



Inputs

The key inputs to inform the strategic analysis stage of the business case includes the following.

Source	Context
District Annual Plan	Identifies and cross-references major strategic links between the service and business drivers (the 'burning platform' (a critical need)) and the proposed capital intentions for IT expenditure.
ISSP / Asset Management Plan	Links the proposed project and investment with the DHB and regional strategy. Forecasts estimated expenditure and funding for each proposed project.
Asset Management Plan	Provides an asset forecast and the corresponding investment required and identifies the source of funds. This will summarise the forecast IT capital expenditure reflected in the ISSP and put it in the context of the DHBs overall capital and funding plans.
National ISSP	Sets national focus and guidance. Is used by DHBs to reflect these drivers in the local DHB and regional IT initiatives.
National IT Survey	Is used as a reference point for CIOs and DHBs to review regional and national trends and benchmark performance.

The needs analysis stage identifies key requirements and helps to prioritise the needs for the project. A needs analysis is required before RFI/RFPs are undertaken.

Output

The strategic analysis stage of the business case is reflected in the needs analysis section of the IT business case.

Stakeholders and input

The following table outlines potential key stakeholders and their expected input.

Role	Input
Clinical or business sponsor	Provides the clinical and business 'drive' behind the project. This involves proving a clear link between a critical need as outlined in the district annual plan and the corresponding requirement for a project to address this need.
Chief Executive Officer	Reviews and endorses the project and its fit within the delivery of the DHB's strategy.
Chief Information Officer (CIO)	Defines the project in the context of the overall portfolio of IT projects, asset management, regional opportunities and any relevant constraints. Is responsible for analysing the needs in the context of the environment (local, regional and national trends).
CIOs from the local region and relevant service representatives	Assist the DHB's CIO to identify links between the local DHB needs and regional needs. Work with the DHB's CIO to identify possible regional collaboration in reviewing the options as a region and sharing the project initiative. Endorsement of the needs analysis from a regional consistency perspective in terms of information sharing and the best use of limited resources.
Chief Financial Officer (CFO)	Provides guidance on the project's overall affordability of the project and the funding options available.

Examples of sign-off requirements

The Operational Policy Framework guides the sign-off requirements regarding delegated authority.

The following are good practice examples of anticipated sign-off points for the completed business case stage.

1. The DHB should identify a primary sponsor (senior management, clinical director or executive team member) for the proposal. They should have a close vested interest in the proposal's outcome.
2. The Chief Information Officer needs to sign off the strategic analysis stage
3. If the proposal is over $500,000, the DHB may consider having the Chief Financial Officer sign off the document.
4. If this is a Collaborative Technology Initiative (CTI) or the proposal is more than $500,000, endorsement from the other Chief Information Officers within the region is recommended.
5. The CEO should sign off and ensure that the project is in line with DHB strategies.

Stage 2: Options analysis stage

The options analysis stage refines the requirements from the strategic analysis stage and identifies the options and recommended solution. This involves regional collaboration.

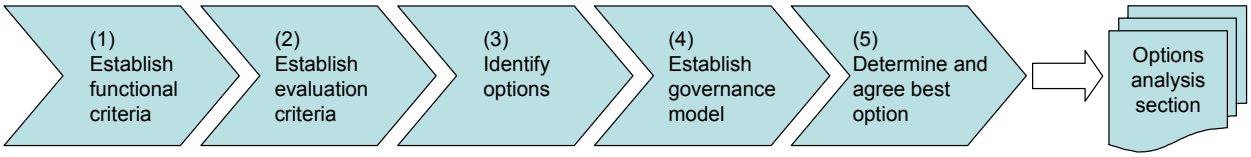
Objectives

The objectives of the options analysis stage can be summarised as follows.

- Establish a functional criteria.
- Establish a funding criteria.
- Establish an evaluation criteria.
- Establish a governance model (particularly relevant to joint ventures or shared service models).
- Draft design and costing.
- Test affordability.
- Test link to District Annual Plan.
- Test link to ISSP.
- Test the feasibility of a non-IT solution.
- Test the proposal with the Regional Capital Committee, DHB Board and Ministry.
- Scan the environment (via the national IT survey).
- Include an RFI to inform, if relevant.
- Agree on the best option.

Key elements

The output of the options analysis stage is the options analysis section in the business case.



Inputs

The key inputs to inform the options analysis stage of the business case include the following.

Source	Context
Stage 1: Strategic analysis section of IT business case framework	Expand the outputs of the strategic analysis stage into options.
Request for Information (RFI)	The DHB should: • check in the region to determine whether a system and version used in the region is suitable • The DHB should review the systems being used by other DHBs nationally if there is not an existing system within the region. If a suitable option is not found, an RFI is recommended. This process should include consultation with the region.

Output

The options analysis stage of the business case is reflected in the options analysis section of the IT business case.

Stakeholders and input

The following table outlines potential stakeholders involved in the options analysis stage and their expected input.

The anticipated flow of approval is from CIO to CEO to RCC.

Role	Input
Clinical or business sponsor	Outlines all options to address the need, including non-IT options. Identifies key stakeholders for input to the functional requirements. Sponsors the project actively and ensures sign off is obtained from relevant parties. Ensures the report reflects the project's change management and non-IT aspects. Reviews the ongoing operational impacts of the recommended option in terms of clinical workforce configuration and costs.
Chief Executive Officer (CEO)	Signs off the project's overall affordability and the DHB's willingness to fund it. Endorses the proposal to the RCC for its consideration.
CIO	Ensures the requirements are put in the context of national and regional standards and direction. Explores actively options for regional collaboration and a shared services option for managing the resulting system. Reviews the ongoing operational impacts of the recommended option in terms of IT workforce configuration and costs.
CIOs from the localised region and relevant service representatives	Ensure the consistency of the recommended option regionally and nationally. Ensure regional input into the requirements gathering, analysis and recommendations. Work with regional CIOs to get the best leverage from shared implementation, the migration path for the region and shared operational support.
Chief Financial Officer (CFO)	Provides detail as to the source of funds (that is, free cash flows, sacrifice of other projects or initiatives or a Crown equity or debt request).
CEO or board (depending on delegated authority)	Signs off that the recommended option: • meets the DHB's needs as outlined in the district annual plan • is within the DHB's financial constraints • is the best use of limited capital in terms of opportunity costs.
Regional Capital Committee (RCC)	Reviews that the recommended option best addresses regional needs by: • being consistent with regional direction • having the best leverage off regional resources • leveraging off an existing regional solution or providing a migration path for other DHBs in the region.
Ministry of Health	Reviews where an request for proposal (RFP) process is recommended involving solutions not currently in use within the New Zealand health market. Reviews the options analysis as per the NZPHDA where ministerial consent is likely to be required under section 24 (co-operative arrangements) and/or section 28 (shares in bodies corporate).
Crown Financing Agency	This review point is required only if new lending is required. Reviews the funding options and affordability (requests for equity and debt require the support of the National Capital Committee and Ministers of Health and Finance).

Examples of sign-off requirements

The Operational Policy Framework guides the sign-off requirements regarding delegated authority.

The following are good practice examples of anticipated sign-off points for the options analysis stage.

1. The DHB should identify a primary sponsor (for example, a senior management member, a clinical director or an executive team member) and should be the same sponsor as the one identified in the needs analysis section.
2. The CIO must sign the options analysis section.
3. If the proposal is more than $500,000, the DHB may wish to have the CFO sign the document.
4. If this is a collaborative technology initiative (CTI) or the proposal is more than $500,000, endorsement from the other CIOs within the region is recommended.
5. It is expected that the RCC will receive written guidance from the CIOs in the region regarding their endorsement of the business case.
6. The chair of the RCC should sign a letter of endorsement if the proposal is more than $500,000. If the chair does not do so, the DHB should seek support from the Ministry of Health and/or Minister of Health to decline the RCC's advice.
7. The CEO, the RCC chair or an authorised board member must sign the document for any proposal more than $500,000. (This will depend on the board's delegated authority policy.)
8. The business case should be consulted on with the Ministry of Health's Corporate and Information Directorate.

Stage 3: Completed business case

The completed business case refines the options analysis to a stage where the best solution can be chosen, supported and planned for implementation.

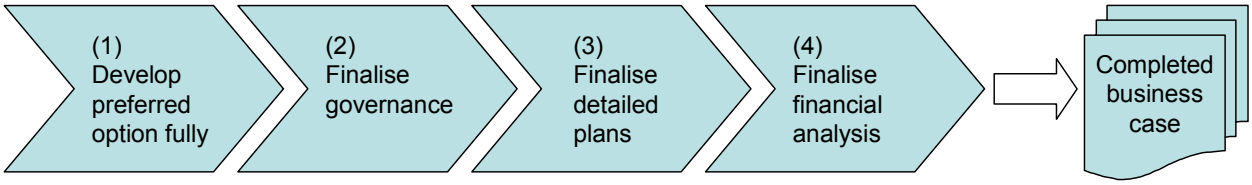
Objectives

The objectives of the completed business case stage can be summarised as follows.

- Develop preferred option fully.
- Finalise design and costing details.
- Undertake full financial analysis, including affordability.
- Finalise governance model.
- Finalise the project plan, risk analysis and business links.
- Go to RFP (open or closed), if necessary.
- Outline a plan regarding the savings that will be made by implementing the project.
- Detail the change management and workforce planning required.

Key elements and output

The output of the completed business case stage is the business case.



Inputs

The key inputs to inform the completed business case stage include the following.

Source	Context
Stage 2 – Options analysis section of the IT business case framework	The completed business case builds on the options analysis section. It should develop and confirm the preferred option recommended in the options analysis section. This should include results of the regional and national environmental scans and any RFI undertaken during the options analysis stage.
Asset Management Plan (AMP)	Used to reconcile the: • final project capital request with the budget signalled within the AMP for relevant asset replacement • total capital committed and requested to date (including this business case request) to the assets signalled for replacement during the period in the AMP.
Request for proposal (RFP)	Your business case will have covered off how systems already in use in the region meet your needs. If use of an existing system in the region is not suitable, a (regional) RFP process may be required. This should attempt to limit the RFP to a closed tender with identified vendors who have proven, stable systems in place in New Zealand to address the clinical and business requirements. The national IT survey may be used as an initial source to identify this list. When there is no existing degree of comfort within New Zealand DHBs as to these solutions, a wider RFP may be considered. The Ministry of Health should be consulted when this is the case to assist in co-ordinating and reviewing the requirements.

Output

The completed business case should incorporate the following appendices.

- a risk management plan
- a contractual framework
- an implementation plan
- the vendor due diligence questionnaire
- a shared service or collaborative framework document
- financials worksheets
- benefits worksheets
- the capital request.

Stakeholders and input

The following table outlines potential stakeholders involved in the completed business case stage and their expected input.

The anticipated flow of approval is from CIO to CEO to RCC.

Role	Input required
Clinical or business sponsor	Participates actively and endorses implementation approach. Is actively involved in change management, workforce planning and risk analysis. Sponsors the proposed actively to the executive, peers, clinicians, board and Ministry of Health.
Chief Executive Officer (CEO)	Signs off on the overall affordability of the project and the willingness of the DHB to fund. Endorsement of proposal to RCC for consideration.
Chief Information Officer (CIO)	Ensures the requirements are put in the context of national and regional standards and direction. Plans and outlines how regional collaboration will feature in this project and resulting solution (for example, shared implementation, migration path, regional shared instance or regional shared service). Plans and outlines the operational impacts of the recommended option in terms of IS workforce configuration and costs. Participates actively in the implementation planning review and risk management planning.
CIOs from the localised region and relevant service representatives	Co-ordinate input to the regional RFP process. Plan and sponsor actively the shared implementation or migration path for the region and shared operational support.
Chief Financial Officer (CFO)	Provides detail as to the source of funds (that is, free cash flows, sacrifice of other projects or initiatives or Crown equity or debt requested).
CEO or board (depending on relevant delegated authority)	Signs off that the project: • will meet the DHB needs as outlined in the district annual plan • is within the DHB's financial constraints • is the best use of limited capital in terms of opportunity cost (including that the funding is consistent with meeting the asset management plan).
Regional Capital Committee (RCC)	Reviews that the business case best addresses regional needs by: • being consistent with regional direction • the best leverage off regional resource • leveraging off an existing regional solution or providing a migration path for other DHBs in the region.
Ministry of Health – Director General (if more than $500,000 < $3 million)	Signs off that the Ministry endorses the business case as being consistent with national standards and direction and a sound use of scarce capital.
Minister of Health (if > $3 million)	Signs off that the Minister endorses the business case as being consistent with national standards and direction and a sound use of scarce capital. Specific consent is required under the NZPHDA for co-operative arrangements (section 24) or special purpose entities or joint ventures (section 28).

Role	Input required
Crown Financing Agency	This review point is required only if new lending is required. Reviews the funding options and affordability (requests for equity and debt require the support of the National Capital Committee and Ministers of Health and Finance).

Examples of sign-off requirements

The Operational Policy Framework guides the sign-off requirements regarding delegated authority.

The following are good practice examples of anticipated sign-off points for the completed business case stage.

1. The DHB should identify a primary sponsor (for example, a senior management member, a clinical director or an executive team member) who will sponsor this proposal. This person should have a vested interest in the outcome. This should be the same sponsor as the one identified in the needs analysis and options analysis sections.
2. The CIO must sign the completed business case.
3. If the proposal is more than $500,000, the DHB may wish to have the CFO sign the document.
4. If this is a collaborative technology initiative (CTI) or the proposal is more than $500,000, endorsement from other CIOs within the region is recommended.
5. The chair of the RCC should sign a letter of endorsement if the proposal is more than $500,000. If the chair does not do so, the DHB should seek support from the Ministry of Health and/or Minister of Health to decline the RCC's advice.
6. The CEO, the chair or an authorised board member must sign any completed business case document for any proposal more than $500,000 (this will depend on the board's delegated authority policy).
7. The thresholds for Ministry of Health sign off and the relevant signatories are:

Threshold	Signatory
$500,000–$3 million	Director General
> $3 million	Minister of Health
more than $500,000 requiring equity support and/or new lending	Crown Financing Agency Support of the National Capital Committee

8. If an RFP is required for a solution over $500,000 with a vendor product that is not implemented within the New Zealand DHB marketplace, support from the Ministry of Health's Corporate and Information Directorate should be sought.

9. Note that additional information (for example, relevant legal documents) may be required to support applications for ministerial consent under section 24 or section 28 of the New Zealand Public Health and Disability Act 2000.
10. The CEO should submit the business case Director-General of Health for consideration by the Ministry of Health or the National Capital Committee and Ministers.

Appendix A: Information Technology Business Case Table of Contents

Note: Business cases must be developed for the DHB to effectively deliver the best project for its population. A business case is as much the DHB's own tool, for its own needs, as it is a document for the Crown. This fact must be a key driver of business case content and structure. The case should stand alone and the specific needs of the project should be the ultimate drivers of the contents and structure. DHBs should consult with the Ministry of Health at each stage of the project.

See Appendix C for detailed guidance on using this table of contents.

Contents

1 Strategic analysis and background 21
2 Clinical or business requirements and analysis 22
3 Systems analysis and requirements 23
4 Financial analysis 25
5 Implementation and post-project review 26

1 Strategic analysis and background

Strategic stage	**Project objectives** • Define the problem to be solved and the imperative for change. • Define the specific outcomes planned from the investment. • Define at a broad level the resources (financial and clinical) available to apply to the problem. • Outline regional and national service implications. **DHB strategic context** This proposal is made in the context of: • DHB's Asset Management Plan and ISSP • its fit with district strategic plan and district annual plan • its fit with government health policies and strategies • the potential of the project to maintain the trust and commitment of the clinical and business sponsors. **DHB board resolutions** • Early board resolutions should be included at the strategic stage.
Completed business case stage	**DHB board resolutions** • Insert a copy of each relevant board resolution here. **Regional Capital Committee peer review** • Detail results of the RCC's consideration.

2 Clinical or business requirements and analysis

Strategic stage	**Clinical or business driver** • Demonstrate the link between clinical or business needs and the proposed IT solution. **Collaborative technology initiative (CTI)** • Detail the process and conclusions of the relevant CTI. • Include links with neighbouring DHBs. • National and/or regional IT co-operation. • Link with national IT standards. • Link with national IT programmes. • Details of any relevant joint IT development or shared services group. **Project's link with primary health care and population health activities** • Detail relevant primary health and health promotion strategies undertaken or planned by the DHB and the potential for this development to contribute to the proposed strategies.
Options analysis stage	**Clinical and business requirements analysis** • Define, in detail, the outcomes of the investment (critical success factors). • Define alternative methodologies and approaches to address the problem, including a non-IT solution. • Document stakeholder consultation – composition and process. **Functional requirements options analysis** • Compare, contrast and score alternative methodologies (include non-IT solution). • Benchmark methodologies against other relevant examples (in particular, show the proposal in the context of the findings of the national IT survey). • Evaluate preferred option against other potential options. • Analyse sensitivity. • Consider and make priorities and trade-offs. • Identify non-IT components that need to be addressed. **Functional requirements specification** Outline the key areas of functional analysis, including: • functional requirements to support the process • usability requirements • relevant IT standards • architectural requirements • scalability requirements (for local and regional purposes) • support requirements • system and network requirements • reporting requirements • interface requirements.

Options analysis stage (continued)	**Preferred methodology or approach** • Detail preferred methodology or approach. • Detail how non-IT components will be addressed. • Show how preferred methodology or approach meets strategic objectives (as per district strategic plan, district annual plan and CTI and national IT strategies). • Show how the solution meets the critical success factors. • Show the consequences on other services and systems (including other DHBs). • Show workforce implications. • Show flexibility and robustness to change. • Show ability to maintain the confidence of the clinical and business sponsor(s). • Show value for money (that is, highest ratio of financial and non-financial benefits to costs). • Show community consultation (if required by the Operational Policy Framework).
Completed business case stage	**Workforce development plan** • Detail workforce requirements for proposed development – staff types, full-time equivalents (for implementation and operational support). • Benchmark workforce requirements against similar services. • Show workforce cost estimates – current and proposed workforce. • Include professional association and union discussion. **Indicative change management plan** (Refer implementation section.)

3 Systems analysis and requirements

Strategic stage	**Benchmarking of systems requirements** • Review current systems. • Review current systems in place in the region. • Review systems in place nationally. • Justify why any existing regional option is not considered appropriate. • Analyse the national IT survey to contribute to completing this section. **Stakeholder consultation** • Composition. • Process. **Initial briefing and design process** • IT infrastructure requirements to support the proposal. • Size requirements. • Location requirements. • ISSP and current systems context.

Options analysis stage	**System and vendor options analysis** • Identify potential system and vendor options. • Build own consortium. • Evaluate preferred system and vendor against other potential options, such as: – fallback vendor (required) – non-IT option – other options (including regional strategies) – minimum compliance option. • Analyse NPV potential options (including sensitivity analysis). • System description. • Preferred vendor. • Service levels. • Vendor due diligence including financial stability. • Initial capital cost estimate. • Link with overall health objectives. • Links with DHB's existing systems and vendors and regional alignment opportunities. • Prioritisation and trade-offs considered or made. • Value for money (ie, highest ratio of financial and non-financial benefits to costs).
Completed business case stage	**Develop preferred system(s) and vendor(s)** (should be informed by value management workshops/analysis) • Demonstrate fit with service and/or clinical requirements. • Demonstrate fit with all current and foreseeable compliance and legislative requirements. • Fit with Asset Management Plan and ISSP. • Consequences on other services/regions/infrastructures/IT systems. • Future expansion and flexibility. • Ability to maintain the confidence of the clinical and business sponsor(s). • Operational cost impact analysis. • Detailed capital cost estimate. • Preferred and alternative staging options, prioritisation and costs (cross check with implementation).

4 Financial analysis

Strategic stage	**Initial affordability analysis** • DHB's willingness to fund. • DHB's capacity to afford operating costs and costs of capital. • Health capital budget's capacity to afford.
Options analysis stage	**Refined affordability analysis** • Continued DHB willingness to fund. • Continued DHB capacity to afford operating costs and costs of capital. • Continued health capital budget's capacity to afford.
Completed business case stage	**DHB's overall ability to afford the project** • Statement of financial performance. • Statement of position. • Statement of cash flows. • Consequential financial impacts (including total cost model). • Efficiency gains. • Demonstration that break-even requirement is met. • National prices and DHB prices. **Project in the context of the DHB's overall capital plans** • Completed capital intentions spreadsheet (ISSP detailed level copied into the capital intentions spreadsheet and asset management plan). • Detailed fit with the DHBs AMPs (which includes an IT component). • Show the project in the context of the DHB's overall capital plan and detail the DHB's financial contribution: – provisioning (for asset replacement) – prioritisation of free cash flow expenditure on capital – maximising funding from asset sales. **Project financing** • Statement on the financing and bank-ability of the DHB from the Crown Funding Agency (if new debt is required). • Debt requirements (including timing). • Equity requirements (including timing). • DHB financial contribution/provision for the project. **National prioritisation and affordability within health capital envelope** • National prioritisation analysis – append completed DHB capital priority analysis form.

5 Implementation and post-project review

Completed business case stage	
	Outline project plan • Include indicative timetable. • Procurement options. **Implementation management** • Maintain 'business as usual'. • Joint purchasing arrangements with other DHBs. • Ability to maintain the confidence of the clinical and business sponsor(s). • Addressing non-IT impacts of the project (including change management, training and process). • Risk management. **Service delivery/models of care change management plan** • Include clinical quality plan. **Efficiency gains realisation process or programme** • Benchmarking. • Indicative efficiency plan. **Post-project review** • Indicate intentions after project completed.

Appendix B: Sign-off Schedules for Each Stage

Strategic analysis stage – sign-off schedule

Signature:	Title:	Date:	Note:
			1
	Sponsor		
Name:			

Signature:	Title:	Date:	Note:
			3
	Chief Information Officer		
Name:			

Signature:	Title:	Date:	Note:
			2
	Chief Executive Officer		
Name:			

Signature:	Title:	Date:	Note:
			4
	Regional representative		
Name:			

This schedule may be in the form of a memo regarding endorsement by the CIOs in the local region.

The Operational Policy Framework will guide the sign-off requirements regarding delegated authority.

Notes

1 The DHB should identify a primary sponsor (senior management, clinical director or executive team member) who will sponsor this proposal. This person should have a vested interest in the outcome.

2 The CEO must sign off on the needs analysis.

3 The CIO must sign the document.

4 If this is a CTI or the proposal is more than $500,000 the CIOs from the region must indicate their endorsement of the proposal.

Options analysis stage – sign-off schedule

Signature:	Title:	Date:	Note:
			1
	Sponsor		
Name:			

Signature:	Title:	Date:	Note:
			3
	Chief Information Officer		
Name:			

Signature:	Title:	Date:	Note:
			4
	Regional Chief Information Officers		
Name:			

This may be in the form of a memo regarding endorsement by the CIOs within the local region.

Signature:	Title:	Date:	Note:
			2
	Chief Executive Officer		
Name:			

Signature:	Title:	Date:	Note:
			5
	Chair of Regional Capital Committee		
Name:			

This schedule may be in the form of a memo regarding endorsement by the RCC.

Signature:	Title:	Date:	Note:
			6
	Authorised DHB board representative		
Name:			

Signature:	Title:	Date:	Note:
			7
	Ministry of Health		
Name:			

The Operational Policy Framework guides the sign-off requirements regarding delegated authority.

Notes:

1 The DHB should identify a primary sponsor (senior management, clinical director or executive team member) who will sponsor this proposal. This person should have a close vested interest in the outcome. This should be the same sponsor as the one identified in the needs analysis section.

2 If the proposal is more than $500,000, the CEO is required to sign the report.

3 The CIO is required to sign off on the options analysis.

4 If this is a CTI or the proposal is more than $500,000, the CIOs within the local region should indicate their endorsement of the needs analysis.

5 The chair of the RCC must sign the document for any proposal more than $500,000.

6 The CEO, the chair or an authorised board member must sign the document for any proposal more than $500,000 (this will depend on the board's delegated authority policy).

7 If an RFP is required for a solution more than $500,000 with a vendor product that is not implemented within the New Zealand DHB marketplace, support from the Ministry of Health's Corporate and Information Directorate should be sought.

The business case should be submitted by the CEO of the DHB to the Director General of Health for consideration.

Completed business case stage – sign-off schedule

Signature:	Title:	Date:	Note:
			1
	Sponsor		
Name:			

Signature:	Title:	Date:	Note:
			3
	Chief Information Officer		
Name:			

Signature:	Title:	Date:	Note:
			4
	Regional Chief Information Officers		
Name:			

This may be in the form of a memo regarding endorsement by the CIOs within the local region.

Signature:	Title:	Date:	Note:
			2
	Chief Executive Officer		
Name:			

Signature:	Title:	Date:	Note:
			5
	Chair of Regional Capital Committee		
Name:			

This schedule may be in the form of a memo regarding endorsement by the RCC.

Signature:	Title:	Date:	Note:
			6
	Authorised DHB board representative		
Name:			
Signature:	Title:	Date:	Note:
			7
	Ministry of Health		
Name:			

Ministry of Health reference:		8

The Operational Policy Framework guides the sign-off requirements regarding delegated authority.

Notes:

1 The DHB should identify a primary sponsor (senior management, clinical director or executive team member) who will sponsor this proposal. This person should have a close vested interest in the outcome. This should be the same sponsor as the one identified in the needs analysis section.

2 The CEO must sign the completed business case.

3 The CIO must sign the report.

4 If this is a CTI or the proposal is more than $500,000, the CIOs within the local region should indicate their endorsement of the business case.

5 The chair of the RCC must sign the document for any proposal more than $500,000.

6 The CEO, the chair or an authorised board member must sign the document for any proposal more than $500,000 (this will depend on the board's delegated authority policy).

7 The thresholds for Ministry of Health sign-off and relevant signatories are:

- $500,000–$3 million Director General
- > $3 million Minister of Health

The business case should be submitted by the CEO of the DHB to the Director General of Health for consideration.

8 A reference number will be given to all business cases received by the Ministry of Health.

Appendix C: Guide to Developing the Business Case Stages

Guide to developing the strategic analysis stage

Key objectives

- Establish a 'burning platform' (a critical need).
- Show firm links back to national, regional and local drivers.
- Test:
  - links to service or business need
  - links with wider primary and community health needs
  - feasibility for change
  - Crown acceptability
  - regional or collaborative shared service models for implementing
  - high level affordability.

Executive summary

Provide a succinct summary of the project. This may require only one or two paragraphs, depending on the nature and scale of the proposal. This should cover:

- what clinical and/or business need the project will meet (including links in terms of meeting national, regional or local drivers as signalled within the DSP and DAP)
- the assessment of the criticality of the business need
- the proposed or signalled budget.

Project objectives

- Define the problem to be solved and the imperative for change.
- Define the specific outcomes planned from the investment.
- Define at a broad level the resources (financial and clinical) available to apply to the problem.
- Outline regional and national service implications.

DHB strategic context

Define the proposal in the context of:

- the DHB's asset management plans
- the fit with DSP, DAP and ISSP
- the fit with government health policies and strategies
- the project's potential to build trust and confidence by the owning clinical and/or business sponsor(s).

DHB board resolution(s)

Reference any relevant board resolution(s).

Clinical or business requirements and analysis

Clinical or business driver

Demonstrate the link between clinical or business needs and the proposed IT solution.

Collaborative Technology Initiative (CTI)

A Collaborative Technology Initiative is a shared service or joint project proposal between the DHBs within a region or a wider consortium, wishing to address a common problem. In the evaluation of a business case, a strong weighting will be applied to the adoption of a CTI that meets national and regional goals.

Examples of a CTI include the following.

1. Agreement by a region to move a DHB onto an existing system and database within a neighbouring DHB, under a shared service or bureau model.
2. Agreement for DHBs within a region to jointly identify and implement a software solution (with one DHB taking the lead and the others joining later).
3. Development of a system that can be used nationally (for example, an immunisation database).

In outlining the CTI detail:

- the process and conclusions of the relevant CTI
- links with neighbouring DHBs
- national and/or regional IT co-operation
- links with national IT standards
- links with national IT programme
- any relevant joint IT development or shared services group.

Project's link with primary care and population health activities

Detail relevant primary health and health promotion strategies undertaken or planned by the DHB. Explain the potential for this development to contribute to the proposed strategies.

Systems analysis and requirements

Benchmarking of system requirements

- Provide a review of systems in place in the DHB to accommodate the service or clinical need in the event of this business case not proceeding.
- Review systems in place in the region and comment on their fit to the requirements.

- Review systems in place nationally.
- Analyse the national IT survey to contribute to completing this section.

Stakeholder consultation

- Describe the stakeholders who have been consulted on this proposal.
- Describe the process undertaken in this consultation.
- Stakeholders should include relevant internal DHB services and regional DHBs.

Initial briefing and design process

Outline the IT infrastructure requirements to support the proposal, including:

- size requirements (size and scalability especially scalability for a regional solution)
- location requirements (regional, local or service based)
- fit within the ISSP and current systems context.

Financial analysis – affordability

Estimated effort and budget

- Initial affordability analysis.

Affordability estimate

- Show the link to the relevant DHB proposed capital budget.
- Outline the DHB willingness and ability to fund within own free cash flows.
- Indicate if this project may require Crown support by way of debt or equity.

Actions required to progress to options analysis stage

Outline a list of actions required to progress to the options analysis stage. The following table outlines the mandatory steps to progress to the next stage. Add additional lines for internal DHB requirements.

Step	Description	Responsibility
1	Obtain sign off for the needs analysis section.	Sponsor
2	Verify financial forecast and affordability.	CEO
3	Obtain regional endorsement for the proposal from neighbouring regional CIOs.	CIO
4	Copy to the Ministry of Health. *[Insert any remaining items outstanding from the this stage.]*	CIO

Supporting documents

List any supporting documents. Electronic copies of these should be provided with the proposal to the Crown.

Guide to developing the options analysis stage

Links

Follows the approved strategic analysis stage.

Key objectives

Establishes:

- functional criteria
- funding criteria
- evaluation criteria
- governance model (especially relevant for JV or shared service models)
- draft design and costing.

Tests:

- affordability
- link to DAP
- link to ISSP
- link with national standards
- link with national and regional trends
- acceptance by RCC, DHB board, Ministry of Health.

May include an RFI to inform.

Endorsements from strategic analysis stage

List the endorsements received from the corresponding strategic analysis stage. These should include the:

- clinical or business sponsor
- CEO
- CIO
- CIOs from the localised region and relevant service representatives of the CFO
- Ministry of Health (if relevant, such as a CTI).

Outstanding actions from strategic analysis stage

List actions still outstanding from the list under the section ‘Actions required to progress to options analysis stage’.

Clinical or business requirements and analysis

Clinical or business requirements analysis

This step relates to the broader clinical and/or business requirements, not systems functionality.

- Define, in detail, the outcomes of the investment (the business benefits and corresponding key performance indicators).
- Outline any alternative methodologies and approaches to address the problem, including a non-IT solution.
- Describe the stakeholders who have been consulted and had input into the requirements analysis. (Stakeholders should include relevant internal DHB services and regional DHBs.)
- Describe the process undertaken in this consultation.

Functional requirements options analysis

This section reviews the types of solution proposed, including system and non-system options.

- Compare, contrast and score alternative methodologies (include non-IT solution).
- Benchmark the methodologies against other relevant examples.
- Show, in particular, the proposal in the context of the findings of the national IT survey and the corresponding solutions in place in the region for the business or service problem that this solution seeks to address.
- Evaluate preferred option against other potential options.
- Analyse financial sensitivity (for example, the linking of risks to overruns in costs or delays in uptake of financial benefits or both).
- Outline the prioritisation process and trade-offs considered or made (ie, the opportunity cost). This may include the forfeiting of another project or the trade off of functionality against price.
- Identify non-IT components that need to be addressed.

Functional requirements specification

Based on the functional requirements analysis, a functional requirements specification document will be produced. This will be used as the basis on which to assess system and vendor options.

Outline the key areas of functional analysis, including:

- functional requirements to support the process
- usability requirements
- relevant IT standards
- architectural requirements
- scalability requirements (for local and regional purposes)

- support requirements
- system and network requirements
- reporting requirements
- interface requirements.

The functional requirements document that is produced during the options analysis stage needs to be referenced as an appendix to the options analysis section.

Preferred approach

- Detail preferred approach.
- Detail how non-IT components will be addressed.
- Show how the preferred approach meets strategic objectives (per DSP, DAP and CTI, and national IT strategies).
- Show how the solution meets the critical success factors.
- Outline the consequences on other services and systems (including other DHBs).
- Outline any workforce implications. (This includes additional IT staff required to support the solution or re-configuration of support. It is especially relevant under a shared services model.)
- Flexibility and robustness to change.
- Ability to maintain the confidence of the clinical and business sponsor(s).
- Value for money (ie, highest ratio of financial and non-financial benefits to costs).
- Outline benefits for Mäori.
- Outline community consultation (if required by the Operational Policy Framework).

Systems and vendors options analysis

Recommended option

Outline the recommended system and vendor option, including details of any shared service or collaborative implementation and bureau recommendation. If the process has not disqualified other vendors and systems, provide details of the second choice or alternative vendor and system. (This provides leverage in the completed business case stage for vendor negotiation.)

Identifying options including request for information

Evaluate the national and regional trends using the national IT survey as a starting point for this information. If these trends indicate dated systems or systems that are in use by other DHBs but where there are low levels of satisfaction expressed about them, an RFI process may be undertaken.

Relevant regional representation is required for any RFI process.

Consortium or shared service option (Collaborative Technology Initiative)

Outline the consideration given to a shared service or consortium option including:

- the use of an existing system within the region or nationally (on a single database)
- common RFI and business case process with lead DHB and migration path for remaining regional DHBs.

Analysis

- Identify potential system and vendor options. This should incorporate a commentary regarding those systems and vendors reviewed in the context of regional and national trends.
- List any relevant standards against which the system has been assessed.
- Evaluate preferred system and vendor against other potential options, such as:
  - fallback vendor (required)
  - non-IT option
  - other options (including regional strategies)
  - minimum compliance option.
- Analyse affordability – estimated quantum of costs, source of funds (own cash flows or equity or debt required).
- Describe system.
- Describe preferred vendor.
- Indicate service levels required and those provided by the vendor.
- Summarise due diligence assessment of vendor (including the financial stability of the vendor).
- Provide initial capital cost estimate.
- Link with overall health objectives.
- Link with DHBs existing systems and vendors and regional alignment opportunities.
- Identify priorities and trade-offs considered or made.
- Identify value for money (ie, highest ratio of financial and non-financial benefits to costs).

Shared service or regional collaboration – governance

Outline the proposed governance model for a regional collaborative or shared service initiative, including:

- representation on the steering committee
- an overview of how the solution will work in an operational sense (eg, what service is provided by whom and how this will be managed)
- high level responsibilities of constituent DHBs
- high level overview of cost-benefit sharing.

Financial analysis – refined affordability analysis

Using the information outlined in the financial analysis aspect of the needs analysis section, outline the following.

Variation between needs analysis and options analysis estimates

Needs analysis – estimated effort and budget	
Options analysis – refined effort and budget	
Variance	

Explain any variance.

Consequential impacts or projects

Capital projects must not lead to unexpected requirements for additional capital funding or service costs.

Not only must the full costs of the proposal be included, but the consequences must also be made explicit.[6]

People preparing and reviewing the business case should ensure the projected expenditure for the proposed business case is consistent with the original projected expenditure.

If it becomes apparent that expenditure for the project may be greater than originally estimated, the DHB should revise the capital programme for the period to show how this increase will be accommodated.

Affordability estimate

This needs to take into account the continued:

- DHB willingness to fund
- DHB capacity to afford operating costs and costs of capital
- health capital budget's capacity to afford.

Shared service or collaborative funding

If this is a collaborative or shared service solution, outline the implications (positive and negative) in terms of both dollars and resources. This should provide narrative around the assumptions and differentiate between initial implementation (capital investment) and forecast ongoing operating costs.

[6] *2003 Guidelines for Capital Investment*

Actions required to progress to full business case stage

Outline a list of actions required to progress this through to the full business case stage. The following table outlines the mandatory steps to progress to the next stage. Add additional lines for internal DHB requirements.

Step	Description	Responsibility
1	Obtain sign off of the options analysis.	Sponsor
2	Cross-reference any relevant national IT or clinical guidelines or standards.	CIO
3	Gain regional input and support if an RFP process is proposed.	CIO
4	Gain Ministry of Health support if the RFP process involves vendors not currently represented in the New Zealand marketplace. *[Insert any remaining items outstanding from this stage.]*	CIO

Supporting documents

List any supporting documents. Electronic copies of these should be provided with the proposal to the Crown.

At a minimum, the supporting documents required for this stage include a functional requirements specification document.

This section should also outline any standards used to assess the vendor (privacy and security, data standards etc).

Guide to developing the completed business case stage

Links

Follows the approved options analysis stage.

Key objectives

Develops preferred option.

Details:

- design
- cost
- financials and affordability
- governance
- project plan and approach
- risks.

Validates:

- affordability
- approach.

Will include an implementation planning study.

May include an RFP.

Regional Capital Committee peer review

Detail results of RCC peer review consideration. This should include any recommendations or follow-up actions requested by the group and corresponding action taken.

Outstanding actions from options analysis stage

List actions still outstanding from the list under the section 'Actions required to progress to completed business case stage'.

Clinical or business requirements analysis

Workforce development plan

- Detail workforce requirements for proposed development – staff types, full-time equivalents (for implementation and operational support).
- Benchmark workforce requirements against similar services.
- Show workforce cost estimates – current and proposed workforce.
- Include professional association and union discussion.

Indicative change management plan

Outline the change management plan that will ensure:

- minimal disruption to service provision in the rollout of the project
- maximum and most effective uptake of the solution being implemented by the project
- risk is minimised by use of pilot and phased rollout approach, so the project has checkpoints to review the effectiveness of delivery.

Systems analysis and requirements

Develop preferred system(s) and vendor(s)

- Demonstrate fit with service and/or clinical requirements.
- Demonstrate fit with all current and foreseeable compliance and legislative requirements.
- Demonstrate fit with ISSP.
- Detail consequences on other services, regions, infrastructures or IT systems.
- Detail future expansion or flexibility.
- Detail ability to maintain the confidence of the clinical and business sponsor(s).
- Detail operational cost impact analysis.
- Detail capital cost estimate.
- Detail preferred and alternative staging options, prioritisation and costs.

Requirement for a request for proposal (RFP)

Based on the recommendations from the options analysis stage, an RFP process should be undertaken if:

- the recommended option does not involve the implementation or leverage off an existing system (of the same version) within the region
- an RFI process was carried out at the options analysis stage, indicating more than one suitable vendor.

The RFP should be limited to a number of vendors that have proven working solutions in the New Zealand market. These solutions should address the same or similar clinical and/or business issues that this project wishes to solve. Where there is a request to include vendors not fitting this description, support is required from the Ministry of Health's Corporate and Information Directorate.

The purpose of this is for the Ministry of Health, from an overarching visibility perspective, to aid the DHBs in working together to see what options exist.

- This is not designed to preclude vendors new to the New Zealand health marketplace.
- It does seek to put tighter controls around the requirements definition and DHBs looking to what is in place within their local region and nationally regarding a solution that fits their requirements before introducing another vendor product to the market.

The corresponding RFP process is required to take a regional view by ensuring that the compilation of questions, scoring and review are undertaken within the region. There should also be a corresponding commitment by the regional DHBs to migrate to the chosen solution over an agreed timeframe.

Consortium or shared service option (Collaborative Technology Initiative)

Outline the model for a regional implementation or migration to the chosen solution.

Shared service or regional collaboration – governance

Outline the governance model for a regional collaborative or shared service initiative for this project. This should include:

- the steering committee structure for implementation
- an outline of how regional or collaborative implementation and corresponding capital costs will be managed
- an outline of the model for sharing of ongoing operational costs
- an outline of how service levels between the constituent DHBs will be managed
- a demonstration of how the decision making for future enhancements and changes to the system (once operational) will be managed by the consortium or shared service
- an outline of the contractual framework between the consortium and corresponding back-to-back arrangements with vendors

- an outline of the responsibilities of constituent DHBs for the implementation and ongoing maintenance and development of the system(s)
- an outline of the cost/benefit sharing that will be realised by the use of a shared service/ consortium.

Financial analysis

DHB's overall ability to afford the project

- Statement of financial performance.
- Statement of position.
- Statement of cash flows.
- Consequential financial impacts (including total cost model).
- Efficiency gains.
- Demonstration that break-even requirement is met.
- National prices and DHB prices.

Project in the context of the DHB's overall capital plans

- Completed capital intentions spreadsheet (ISSP detailed level, copied into the capital intentions spreadsheet and asset management plan).
- Detailed fit with the DHB's asset management plan (which includes an IT component).
- Show the project in the context of the DHB's overall capital plan and detail the DHB's financial contribution:
  - provisioning (for asset replacement)
  - prioritisation of free cash flow expenditure on capital
  - maximising funding from asset sales.

Project financing

- Statement on the financing and bank-ability of the DHB from the CFA (if new lending is required).
- Debt requirements (including timing).
- Equity requirements (including timing).
- DHB financial contribution/provision for the project.

National prioritisation and affordability within the health capital envelope

- National prioritisation analysis – append fully completed 'DHB capital priority analysis form'.

Shared service or collaborative funding

If this is a collaborative or shared service solution (a CTI), outline the:

- contribution of investment by the constituent DHBs

- letter of intent regarding contribution of capital by constituent DHBs
- treatment of assets in balance sheet terms (license, hardware and software)
- apportionment model and forecast of ongoing maintenance and support of the system.

Implementation and post-project review

Outline project plan

- Indicative timetable.
- Procurement options.

Implementation management

- Maintenance of 'business as usual'.
- Joint purchasing arrangements with other DHBs.
- Ability to maintain the confidence of the clinical and business sponsor(s).
- Addressing non-IT impacts of the project (including change management, training and process).

Risk management plan

- Outline risks.
- Outline impact(s) if risks eventuate.
- Outline likelihood of risks eventuating.
- Outline risk mitigation strategies for those risks identified with medium to high likelihood and medium to high impact(s).

Service delivery and models of care change management plan

- Clinical quality impact and plan.

Efficiency gains realisation process or programme

- Key performance indicators.
- Benchmarking.
- Indicative efficiency plan.

Actions required to complete the completed business case stage

Outline a list of actions required for the completed business case stage. The following table outlines the mandatory steps for completion. Add additional lines for internal DHB requirements.

Step	Description	Responsibility
1	Obtain approval from the RCC.	CIO
2	Obtain approval from regional CIOs.	CIO

3	Obtain approval from Ministry of Health. *[Insert any remaining items outstanding from the this stage.]*	CEO

Supporting documents

List any supporting documents. Electronic copies of these should be provided with the proposal to the Crown.

At a minimum, the supporting documents required for this stage include:

- the RFP document and summary of response(s)
- the implementation planning study (including the risk management plan)
- the draft contract framework
- financial worksheets.

This section should also reference any standards that the system(s) will be required to conform to (privacy and security, data standards etc).

Inputs to the completed business case

- Risk management plan.
- Contractual framework.
- Implementation planning study.
- Vendor due diligence.
- Shared service or collaborative framework document.
- Financial worksheets.
- Benefits worksheets.
- Capital request.

Appendix D: Information Technology Capital Priority Analysis (Evaluation Criteria)[7]

DHB capital priority analysis

Purpose

For analysis of proposals submitted to the Ministry of Health or the National Capital Committee (NCC) and as a checklist and self-assessment tool for DHBs.

Note: The following section uses the capital priority analysis criteria from the *2003 Guidelines for Capital Investment* and provides additional criteria for IT projects.

DHBs submitting proposals should also include a completed 'DHB capital priority analysis'. Please provide a short statement or reference the business case or other material to justify the response to each question.

Please attach a copy of the board and RCC recommendations regarding the project.

Project details

Name of project DHB

Short description of project

Additional DHB-wide capital planning and funding details should be provided by attaching a 'DHB capital intentions spreadsheet' (DHB to complete).

Financial details

Planned funding arrangements	($ million)
Internally generated funds Free cash flows Asset sales Approved private debt Crown Financing Agency Existing credit facility (refinancing)	
New lending Total	
Equity Total	

[7] *2003 Guidelines for Capital Investment*, Appendix 2.

Essential criteria

For a project to receive funding, the answer to all essential questions must be 'Yes'.

1 Governance

Has the DHB Board demonstrated a commitment to the assumptions of the business case and ownership of its implementation and consequences?

Yes / No

2 Option analysis

Has the DHB demonstrated that it has explored all practical options (including non-IT options) and demonstrated the comparative benefit of the preferred option?

Yes / No

3 Appropriate 'fallback' option

Has the DHB developed a 'fallback' option if planned funding is not available?

Yes / No

4 Regional DHB support

Does the proposed project have peer support from DHBs in the same region or has the DHB suitably justified a different view?

Yes / No

5 Planned efficiencies

Has reasonable effort been made to identify efficiencies as a consequence of the investment?

Yes / No

If any efficiencies are planned are they achievable and defensible?

Yes / No

6 Project budget

Project costing
Are the processes, assumptions and cost rates used when developing the budget appropriate and defensible?

Yes / No

Consequential projects and impacts
Does the financial analysis capture the financial impact of all projects and expenditure that needs to progress or is impacted on as a consequence of this investment?

Yes / No

7 Maximising the DHB's ability to contribute to the project's capital cost

Has the DHB maximised its ability to afford the project via management of free cash flow expenditure, asset sales and strengthening of its balance sheet by repayment of debt?

Yes / No

8 Overall affordability

Over the life of the project can the DHB break even, given its forecast available PBF funding?

Yes / No

9 Crown Funding Agency (CFA) analysis

In the event of equity support being required, has the business case been reviewed by the CFA and is the CFA prepared to endorse the project (subject to Ministerial approval)?

Yes / No

10 Management of public expectations

Has the DHB managed public expectations to a level consistent with the ability of the DHB and the Crown to afford the project?

Yes / No

11 Site master plan

Has the DHB demonstrated that the project has been developed in the context of an overall assessment of the future use of the whole site and/or clinical space and that it will not unreasonably compromise future options?

Yes / No

1 Efficiency justified project criteria

Efficiency justified projects are projects justified on the basis of their ability to generate cash surpluses that are available for reinvestment.

An efficiency project must have the following criteria:

(i) The project has separate and identifiable revenue and expenditure.

(ii) The business case demonstrates to the satisfaction of the CFA that the savings planned are adequately verified and will be realised.

(iii) The DHB has detailed how the savings will be applied.

(iv) The project demonstrates a relatively short payback period.

(v) The business case has been reviewed by the CFA and the CFA is prepared to lend to the project (subject to ministerial approval).

(vi) The business case meets all the essential criteria above.

If these criteria are met, the NCC will consider recommending funding for the project as a priority on a case-by-case basis. The qualitative criteria below do not apply to these purely commercial efficiency projects. Funding is, of necessity, still subject to the judgement of the NCC as to the ability of the Health Capital Budget to accommodate the requested funding.

2 Qualitative criteria

1 DHB capital expenditure history

On the measure of capex to depreciation, over the last six years has the DHB been:

Low investment	Medium investment			High investment
5	4	3	2	1

2 Asset management planning

What is the quality of the DHB's asset management planning?

Sound	Medium			Poor
5	4	3	2	1

3 Asset condition

What is the physical condition of the asset requiring investment or replacement?

Poor	Medium			Sound
5	4	3	2	1

4 Service quality A

What is the quality of the service currently provided by the asset requiring investment or replacement?

Unacceptable					Acceptable				
10	9	8	7	6	5	4	3	2	1

5 Service quality B

Is the quality of the service provided by the proposed new asset likely to be?

High	Low

10	9	8	7	6	5	4	3	2	1

6 Service capacity

What is the ability of the asset requiring investment or replacement to meet forecast service need?

Low					High				
10	9	8	7	6	5	4	3	2	1

7 Service priority

In the context of the New Zealand Health Strategy and New Zealand Disability Strategy, what is the priority for the planned services?

High					Low				
10	9	8	7	6	5	4	3	2	1

8 Primary care integration and population health activities

To what extent does this project maximise the potential to integrate with primary care and population health activities?

Maximum integration		Minimum integration		
5	4	3	2	1

9 Inter DHB collaboration

To what extent has the DHB maximised gains from collaboration with other DHBs (via a Health Development Initiative (HDI) for example)?

Maximum integration		Minimum integration		
5	4	3	2	1

10 Workforce planning

What is the state of workforce planning for the project?

Sound		Poor		
5	4	3	2	1

11 Implementation planning

What is the state of implementation planning for the project?

Sound		Poor		
5	4	3	2	1

Sum of qualitative criteria scores expressed as a percentage: .....%
(This ensures that if criteria are not applicable they can be deleted without disadvantaging a DHB.)

3 'Value for money' judgement

Overall, in comparison with recent and other current requests, does this project represent 'value for money'?

Good					Poor				
10	9	8	7	6	5	4	3	2	1

Recommended next steps

- What should the next steps be?
- Is funding recommended?
- What conditions should be attached to the funding?
- Are there still requirements under the Operation Policy Framework that remain to be addressed (sponsor consultation, service reconfiguration, public private partnerships for example)?

Note: The following criteria are designed as specific considerations for IT business cases to supplement those outlined in the *2003 Guidelines for Capital Investment.*

Strategic analysis – suggested supplementary IT business case criteria

Is the 'burning platform' (a critical need) established?

Yes	No
5	0

Size of positive impact (covers Collaborative Technology Initiative and local DHB weighting)				
5	4	3	2	1
National	Regional	Community	Local	Service

Guidance – if the proposed project has national applicability in terms of being able to be used nationally, the highest score should be provided. If the solution relates to a service with no specific benefits to community, local DHB overall or regional applicability, the lowest score of 1 is given.

Initial affordability analysis

Has the DHB an upper budget limit and is the funding shown in the context of a defensible overall capital plan?

Yes	No

5	0

4 Options analysis – supplementary IT business case criteria

Alignment with Stage 1 – needs analysis Y / N
Alignment with tried/proven New Zealand-based solution Y / N

Alignment with relevant standards Y / N
Can fund on own cash flows Y / N

Yes	No
5	0

Does the project remain within the dollar boundaries of the needs analysis stage and the asset management plan? Y / N

Has any change been justified and offset? Y / N

Is there any consideration of a non-IT option if relevant for the clinical/ business problem? Y / N

Degree of collaboration on the systems solution				
5	4	3	2	1
Shared single regional instance.	Regional implementation.	Lead DHB with Regional migration path.	Local DHB leveraging off shared contract and purchasing power.	Stand alone.

(Relevant for development solutions) national/regional fit of development				
5	4	3	2	1
Endorsement by New Zealand CIOs as the beacon site implementation with shared budget and governance.	Endorsement by New Zealand CIOs as the beacon site implementation.	Localised development with commitment from region as a shared development.	Endorsement by regional CIOs as a worthwhile development.	An existing and proven vendor package is already in place in the New Zealand sector and no regional or national CIO endorsement.

Final business case –supplementary IT business case criteria

Will the net result of this investment be a usable/standalone asset for the DHB? Y / N

Guidance: Is the resultant asset an independent asset or should this request fit within a wider capital request? This question is intended to deal with cases where there may be

a dilution of a logically wider capital funding request. This may occur by way of splitting of capital requests to fit under a sign-off threshold.

Outline of contract terms in place with fixed price quote from vendor(s)	Y / N
Contract framework negotiated (awaiting sign off of business case)	Y / N
Robust, detailed implementation plan (including structure and costs) in place and peer reviewed	Y / N
Risk register in place	Y / N
Benefits achievement plan in place	Y / N

Relative size of investment in relation to total projected IS capital budget				
5	4	3	2	1
≤ 20%	20–40%	40–60%	60–80%	> 80%

* This question needs to be considered in the context of the portfolio of projects and asset management plan (ie, how many other projects and corresponding dollars are forecast in the ISSP).

Supports convergence of major systems within the sector				
5	4	3	2	1
Shared single regional instance of proven technology.	Regional implementation of proven technology.	Proven technology and on the same path of convergence within the New Zealand sector.	Minor evidence of convergence with sector initiatives and package implementation.	'Orphan' system or development with no logical convergence with the sector.

Supports flows of patient information (inter and intra regional)				
5	4	3	2	1
Seamless integration of patient information within the region and to wider DHBs.	Seamless integration of patient and clinical information within the local region.	Some level of patient and clinical information shared outside the provider arm.	Provider arm only level integration of patient information.	Stand alone DHB system with no regional sharing of patient and clinical information.

Degree of maturity of (collaborative) governance model				
5	4	3	2	1
Established shared service model.	Planned (and validated) shared services model.	Regional contract and migration path to shared services.	Regional endorsement of solution and contractual assignment rights.	Stand alone option.

Risk and corresponding risk mitigation

5	4	3	2	1
Use of existing regional system and processes.	Use of existing regional system and incremental process improvement/ rollout.	Use of a known system used in New Zealand with incremental rollout/ implementation.	Use of a package system unproven in New Zealand.	Developed or modified package (unproven).

Risk of no action or alternative path				
5	4	3	2	1
High risk of existing infrastructure not supporting the DHB/regional needs and of clinical risks being incurred.	Similar costs will be incurred in supporting the existing solutions compared with implementing the proposed solution.	Delays or no action will cause minor impact on a limited service basis and will not impact delivery of patient care.	No action/activity in this area will cause little impact to patient care, provision of service and delivery of DAP.	No action/activity in this area will not cause any impact on the DHB delivery of service and delivery of the DAP.

Appendix E: Example District Health Board Checklist for Approval of Information Technology Capital Projects

DHB boards are expected to take full responsibility for the assumptions and consequences of a DHB's business case. Such full support by the board of a business case before submission to the Crown is an essential requirement for ministerial support for capital funding.

It must also be clear that boards have taken the prioritisation decisions necessary to ensure that capital expenditure proposals are affordable to the DHB overall.

To adequately demonstrate this, boards need to demonstrate that they have covered the full range of issues key to the business case. A useful approach is a checklist of key details and consequences of the investment that have been considered by the board. Below is an example of such an approach.

However, just as each business case must be structured for a particular project, so should board consideration of individual projects be specific to each project and to each board's own approach.

Example board checklist for XYZ IT business case or initiative

a) **Note** that following the board resolution of xx the following options were considered. • A non-technology solution (ie, is it more cost effective to consider the use of a manual alternative). • Retaining the status quo. • Collaboration at a regional level in the use of shared services or sharing of project resources and results.	Yes / No
b) **Agree** that the implementation of XYZ system by the DHB (with/without) a shared services or collaborative regional system is the best option.	Yes / No
c) **Note** that the preferred option is consistent with the overall district annual plan and district strategic plan.	Yes / No
d) **Note** that the preferred option is consistent with the health priorities and service delivery options approved by the board on xx.	Yes / No
e) **Note** that the preferred option will deliver a high and acceptable level of clinical quality and a modern delivery of health services	Yes / No
f) **Note** that this project has been supported by the Regional Capital Committee and issues raised by the committee have been addressed.	Yes / No
g) **Note** that the project design and costings have been developed with and confirmed by the DHB's Chief Information Officer with relevant input from clinical advisors, finance, regional and independent QS advisors.	Yes / No
h) **Agree** that the complete project budget, including all consequential financial impacts, will be $XX million.	Yes / No

i) **Note** that the project will result in increased annual operating costs (eg, IDCC, utilities costs, staffing etc) of $XX,000.	Yes / No
j) **Note** that the new facility is planned to result in annual operating savings of $XX million.	Yes / No
k) **Agree** to the establishment of a change management programme to achieve these planned savings.	Yes / No
l) Note that the project will be funded via: • $X million contribution from the DHB's free cash flow • Clinical Funding Agency debt $X million • Crown equity injection $X million.	Yes / No
m) **Agree** to reserve $X million pa for 200n/0n and 200n/0n from the DHB's free cash flow to contribute to this project.	Yes / No
n) **Note** that taking into account the net cost impact of this project the DHB will continue to achieve a break-even result.	Yes / No
o) **Agree** to request new debt and equity of $X million from the Crown.	Yes / No / N/A
p) **Note** that new debt from the Clinical Funding Agency will require agreeing to banking covenant requirements of xyz ... and amortising the debt over xx years.	Yes / No / N/A
q) **Note** that the implementation and project management planning to deliver the project is complete.	Yes / No

Business case approval steps if equity or new lending is required

A business case should progress through the following steps.

1. Initial board resolution regarding health service priorities, likely specific capital requirements and initial financial parameters. Boards may also report back requirements during the development of the case.
2. Initial contact with the Ministry of Health.

Complete stage 1 – strategic stage

3. Ministry support to proceed to next stage.

Complete stage 2 – options analysis stage

4. Ministry support to proceed to next stage.

Complete stage 3 – completed business case stage

5. Regional Capital Committee input and support.
6. DHB board full approval (per suggested recommendations approach above).
   - **31 August –** all business cases requiring new lending and equity funding due to the Ministry.

7. National Capital Committee consideration and recommendations to Ministry (via 'capital priority analysis form'). This point is represented by the **September/ October Capital Allocation Round.**

   Note 1: The NCC will likely recommend the Ministry of Health refer back to a DHB any case that is not fully complete, detailing outstanding issues and establishing a report-back timeframe relevant to the specific business case. (This will be agreed with the DHB.) Business cases may, therefore, go before the NCC more than once before the NCC recommends approval to the Ministry of Health.)

   Note 2: After initial NCC consideration, Ministers may write to DHBs accepting the need for a project and indicating that funding is available. However, such correspondence accepting the need for a project will note that the NCC has determined that some areas remain outstanding and are required to be addressed before the project and funding being approved.

8. Ministry of Health and the Treasury joint paper to Ministers of Health and Finance.
9. Paper to Cabinet if requested by Ministers.
10. Letter approving funding from Ministers – **approved project.**

Then:

11. Monitoring of project via standard 'project assurance' approach (available from the Ministry).
12. Ministerial 'stop points' per conditions of project approval (for example, at site master plan stage, efficiency planning stage and any specified design phase).
13. DHB board 'stop points' as specified by the board.
14. Completed project – post project evaluation.

Appendix F: Supplementary Tools and Templates

Examples of the following tools to assist with the development and implementation of the business case are available on request:

- financial worksheets
- vendor due diligence questionnaire.

These are not exhaustive; nor are the specific formats mandatory.

Appendix G: Financial Worksheets

Brief instructions for completion of net present value model

The following contains an example of a fictitious business case NPV calculation. Please overwrite with your details.

Introduction

Data fields requiring your input are highlighted in yellow. All other fields are protected for your safety.

Discount rate

Enter the discount rate currently used by your organisation (in this example it is 11%).

This should be set by your finance department and the spreadsheet protected before distribution to the organisation for business case development.

Enter the discount rate here: 11%.

Project life

This field must be filled in.

The term of the investment is usually the useful life of the asset.

Investment

You are required to classify capital items into the categories as listed.

Leases need special consideration, please contact Corporate Finance for ruling.

Working capital

The investment required in working capital to enable the project to be used. This includes, for example, increases in stock or debtors, or may include increasing the level of creditors or a reduction in the level of stock (negative investments in working capital).

Disposals

Any revenue generated from the disposal of old assets (which are being replaced should be included as a reduction in the required investment expenditure. The amount used here should be net of costs of disposal (eg, removal, auction).

Benefits

Enter as ***positive*** number.

Costs

Enter as ***negative*** number.

Capital investment evaluation model ($000)

Enter cash outflows as negative numbers and cash inflows as positive numbers.

Discount rate	11%	Initial investment	Years															
Project life years	6		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1) **Investment:**																		
Hardware		-110																-110
Software		-250																-250
Vendor implementation		-340																-340
Interfaces		-35																-35
Internal implementation		-486																-486
Audit		-25																-25
Contingency		-122																-122
																		0
Working capital																		
																		0
																		0
(Disposals)																		
																		0
Total investment outflow		-1,368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,368
2) **Benefits**																		
Eliminate manual processes			110	110	110	110	110	110										660
New and simplified processes			80	80	80	80	80	80										480
Reducing pay queries by 50%			110	110	110	110	110	110										660
Reduction in wage creep			250	500	500	500	500	500										0
																		0
																		0
3) **Costs**																		
Additional costs																		0
Software maintenance costs			-120	-120	-120	-120	-120	-120										-720
Additional employee costs			-150	-150	-150	-150	-150	-150										-900
Redundancy costs			-220															
																		0
																		0
																		0
Operating cash inflows/-Outflows		**0**	**60**	**530**	**530**	**530**	**530**	**530**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**
Net cashflow		**-1,368**	**60**	**530**	**530**	**530**	**530**	**530**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-1,188**
Cumulative		-1,368	-1,308	-778	-248	282	812	1,342	1,342	1,342	1,342	1,342	1,342	1,342	1,342	1,342	1,342	

Investment evaluation

Net present value	**451**	**Non-discounted cash payback**	**3.47 years**
Internal rate of return	**20.07%**		

Appendix H: Vendor Due Diligence Questionnaire

Organisation

Issues	
1. What is the company's administrative and operational structure and size?	
2. Is the company a public company?	
3. Who are the company's major shareholders?	
4. How many years has the company been trading?	
5. Do you offer the products/services as an agent/distributor/ local subsidiary or did you develop them yourself?	
6. If you are acting as an agent/distributor/local subsidiary, what is the supplier's strength and reputation?	
7. What are the terms of the agency/distributorship?	
8. Do you have the intellectual property rights to the software products?	
9. Does the company have a growth strategy for expansion into the New Zealand market?	

Organisation – contracts

Issues	
10. Who can bind the company legally?	
11. Does the supplier have standard contracts it uses for software purchasing, services and maintenance?	
12. Does the review by the contract developer ensure: • the contract's scope of the contract and requirements are defined and documented • possible contingencies or risks are identified • proprietary information is adequately protected • any requirements differing from those in the tender are resolved • the developer has the capability to meet contractual requirements • the developer's responsibility with regard to subcontracted work is defined • the terminology is agreed to by both parties?	

Issues	
13. Are the following relevant quality criteria in the contract: • acceptance criteria • how changes in customer's requirements are handled during the development • how problems detected after acceptance, including quality-related-claims and customer's complaints are handled • activities carried out by the customer, especially the customer's role in requirements specification, installation and acceptance • facilities, tools, and software items to be provided by the customer • standards and procedures to be used • replication requirements?	
14. Is the company prepared to quote fixed price work?	
15. What is the backup or fallback position should the vendor fail in the New Zealand market?	
16. Do you have an escrow arrangement?	

Organisation – financial

Issues	
17. What financial interest do you personally have, if any?	
18. Is the business exposed to any one person?	
19. Are any mergers or acquisitions planned that could be of interest to the client?	
20. When was the last change of ownership?	
21. What has been the market growth for your corporation over the last 10 years?	
22. What profits have been declared by the organisation over the last 10 years?	
23. Has the agency/distributor company been profitable for the last three years?	
24. What was the revenue for the last year?	
25. What is the company's present indebtedness?	
26. Who is your banker? Can you supply two credit references?	

Organisation – staff

Issues	
27. What is the number of staff, by functional area?	
28. What has been the rate of staff turnover over the last three years?	
29. What is the allocation of responsibilities within the company?	
30. Are there separate specialists for particular consultancy tasks?	
31. What is the range of implementation skills available? Are there separate specialists for project management and quality assurance?	
32. What is the current availability of operations and support resources?	
33. What is the range of consultancy skills available?	
34. What are the qualifications, experience and training of the training staff?	
35. Do you provide an account manager? Has one been assigned to this account?	
36. Who would be the person assigned to this implementation?	
37. How long has this person been with the company? Provide a profile of that person.	

Organisation – support

Issues	
38. Is support part of the product contract or a separate contract?	
39. How many full-time support staff are available locally?	
40. Is 24-hour/seven-day support available? What staff are available after normal working hours?	
41. What is the response provided when support is requested? Is there a target response time for problems?	
42. What type of support is available, for example: • a warranty • an 0800 number/help desk • another type of telephone support • onsite or remote patching.	
43. What is the volume of support calls currently received?	

Issues	
44. Can you define the breakdown of calls received by: • 'bugs' or system faults • input errors • set up errors • operational errors • support problems.	
45. Are there levels of response depending on the problem's priority?	
46. What does support cost? Does the support vary between normal hours and after hours?	
47. How can problems be escalated? Where do the problems get escalated?	
48. Do you provide onsite consulting or implementation services? What is the cost of these services, rates charged?	
49. How many full-time staff exist for consultancy or onsite support?	
50. What is the response to requests/suggestions to change the existing software?	

Organisation – testing

Issues	
51. Is a formal testing methodology used?	
52. How conscientiously/consistently is it followed?	
53. Are the tests and results documented?	
54. How are functions, performance and volumes tested?	

Organisation – training

Issues	
55. Do you provide training of the product(s)?	
56. do you have a separate training department with specialist staff?	

Product

Issues	
57. Describe the overall strategic direction of the product in question.	
58. How long has the product(s) been sold in New Zealand?	
59. What industries use the software?	
60. Name recent major deals with the product proposed.	
61. Can you supply the names of two reference customers? Can they be contacted?	
62. When and where was the product's last implementation?	
63. Is there a user group set up for this product?	
64. What hardware or operating system (and what versions) will the software run on?	
65. What networking protocols are supported? (For example Internet, browser, client/server, etc)	
66. What RDBMS is/are supported by the product[s]?	
67. What language are the software product(s) written in?	
68. Is the software parameterised and user configurable?	
69. What development tools and versions are used? Are these the latest versions? If not, what plans are there to move to the new versions? What hardware implications are there?	
70. Is the source code provided with the product?	
71. Who owns the source code?	
72. What software maintenance options are available? When would maintenance start, at the end of the warranty period?	
73. Are there any warranties with the software? If so, what?	
74. Is there online help?	
75. Does the software product include tools for ad hoc reporting and querying?	
76. Can the reports be viewed on the screen?	
77. What are the licensing terms of the product(s) (corporate/ site licence, user licence – concurrent or named)?	
78. How will the product(s) be brought up to date with ongoing worldwide standards?	
79. Are later versions backward compatible so that archived information can be restored to the current system?	
80. What impact does this have on the current system if the implementation design has changed in the interim?	

Issues	
81. Does the design strategy take this into account? If yes, is it guaranteed?	
82. Is it possible for users to write their own reports and queries?	

Product – capacity

Issues	
83. What is the proposed hardware?	
84. If client server based, what client server model is used (eg, thin/thick client)?	
85. Does the hardware configuration have any physical constraints, eg space, power, air conditioning?	
86. Are necessary interfaces to peripherals included in the hardware configuration?	
87. How much data is stored? How long is data stored?	
88. Are there any standard archiving procedures?	
89. How much disk space is required on the users PC?	
90. What is the minimum processor required per user?	

Product – documentation

Issues	
91. What is the level of documentation for the system?	
92. What software product documentation exists, for example, user manual, operational manual, or a technical reference?	
93. Does all user documentation have the same look and feel?	
94. Is there a system manual for each application, showing data dictionaries?	
95. Are there user manuals? Do these include report layouts?	
96. Is the documentation available online?	

Product – implementation

Issues	
97. Is there a formal documented implementation methodology?	
98. How rigorously is the implementation methodology followed? What quality assurance checks are carried out?	
99. What service level agreements will be in place, if required?	
100. What are the prerequisite tasks/environment for the implementation to proceed?	
101. Is the customer aware that it is their responsibility to ensure that the requirements reflect the true needs of the users?	
102. Are joint reviews involving the developer and customer held? Do they cover the following: conformance of the software to the customer's agreed requirements specifications; verification results; and acceptance test results? Are the results agreed and documented?	
103. Who is responsible for defining acceptance testing? Has it been planned?	
104. What are the identified constraints, for example, time, finance, hardware?	
105. What initial setup of user-defined data is required?	
106. Has environmental testing been planned, ie, testing that will test actual live conditions?	
107. How easy will the system be to maintain? Will it require specialised skills?	
108. Will data conversion be required?	
109. Will the system (hardware) be operated by the user or IT staff?	
110. How many existing or proposed systems interface directly or indirectly with the system?	
111. Has stress testing been planned? Has volume testing been planned? Performance testing?	
112. On what basis is the implementation planned, for example, parallel running, phased implementation, or Big Bang?	
113. What operational procedures will need to be written, for example, backup scripts or archiving?	
114. Will the system be the supplied package or customised? How long will customisation take if this is the case?	
115. Is a backup or recovery strategy planned? Is there a disaster recovery plan?	
116. Is the responsibility for the correctness of customer-supplied information and material clearly stated in the contract?	

Issues	
117. Are detailed test specifications and procedures identified in the test plan for all phases of integration and acceptance testing?	
118. Has a statement of test expectation been prepared?	

Product – software upgrades

Issues	
119. How do customers advise you of perceived shortcomings in the software?	
120. Is there a formal software maintenance release procedure?	
121. How often are new releases of software issued? How often are patches released?	
122. How are customers notified of bugs or changes to the product? Is there a patch or flash or release support letter procedure?	
123. How is the release process done? What quality assurance checks of the release are undertaken?	
124. Do you have any policies and procedures for installing new releases? Are customers required to stay with the current release of the software?	
125. How are the releases/patches distributed? Is a user database maintained of which releases/patches have been distributed?	
126. How are changes to software managed? What standards are in place for specifying, costing, testing and implementing changes?	
127. What is the policy on developing software modifications to meet legislative or regulatory requirements?	
128. What delivery procedures exist for protecting the software's integrity?	
129. Do the procedures for configuration management include: • ensuring version identification, issue and control • obtaining approval to implement a modification • ensuring the modifications are properly integrated through formal change control procedures • controlling the identification of development status • ensuring non-conforming software is identified and controlled?	

Issues	
130. Does the control of the development environment include: • secure maintenance of libraries containing software under configuration control and the implementation of all changes • provision of authorised backups • proper identification, storage and handling of software media • control of the software support tools, techniques and methodologies to be used?	

Product – training

Issues	
131. What is the range of training services offered: • formal documented courses • interactive video or online tutorials • train-the-trainer courses • interactive hands-on sessions?	
132. Where is the training held? Can onsite training be organised?	
133. What is the cost of your training course(s)?	

Product – security

Issues	
134. What levels of security are provided for online access, file access, printing and system recovery?	
135. Describe how access to the system can be controlled through the use of passwords.	
136. Describe how access to the system is to be restricted to normally expected hours of attendance for users, recognising the requirement to work extended or unsociable hours.	
137. Describe the forced log-off feature provided to ensure that unattended terminals logged-on to the system are automatically logged off after a user specified time interval.	
138. Are passwords non-display, at least six characters in length and user specific?	
139. Are passwords stored on the system encrypted using a one-way encryption algorithm?	
140. Describe how password violations are logged and reported for action by the security administrator.	

Issues	
141. Can the system track repeated password violations, with the option of suspending or disabling the users' access to the system in the event of repeated violations?	
142. Can access to data be determined according to user? terminal? Database or file? Field? function? screen? user-group? Are authorisations object-orientated (authorities given to users by inheritance from multiple parents).	
143. Describe how access to the system can be controlled through the use of information stored on magnetic media such as identification cards.	

Standards

Issues	
144. Is there a formal documentation methodology?	
145. Is all documentation current and in a standard format of commercial quality?	
146. What configuration management (version control) procedures and standards are in place for both customised and core software? What QUALITY ASSURANCE checks are undertaken for the procedure?	
147. What is the policy regarding customisations? Are there various versions for various customers? To what degree is customisation usually required? What impact does this have on upgrades, for both the customer and the supplier?	
148. Is an automated tool used for maintaining various customer versions?	
149. What internal procedural documentation exists, ie, policy manual, standards manual, support procedures?	
150. How is documentation updated and supported?	
151. Is there a formal procedure for reporting and fixing documentation errors?	
152. What QUALITY ASSURANCE checks are undertaken to ensure that the version control procedures are working?	

Standards – quality

Issues	
153. What quality assurance regime is used?	
154. Is there a quality manual?	
155. Is there a representative who will act as a focal point for co-ordination and resolution of quality matters?	

Issues	
156. Is planning undertaken to ensure that adequate resources are available for all the development, testing and implementation phases of the software?	
157. Is the impact of changes resulting from amendments, ambiguities or omissions in the requirements, and errors as a result of testing, fully measured, assessed and approved prior to implementation?	
158. Are all production versions of the software kept; can they be reproduced in readable form, including source code?	
159. Do the standards and procedures cover: project management, design techniques, development, review procedures?	
160. Do the developers identify, adopt or develop and maintain clear and complete documented standards and procedures that prescribe the performance of the development tasks?	
161. Are all changes to the developer's standards authorised, dated and processed?	
162. Is notification provided to users concerning known critical design defects or operational errors?	
163. Is it possible for personnel to identify and record any quality problems? [How?]	
164. Is it possible for personnel to initiate action to prevent the occurrence of non-conformity?	
165. Is there a comprehensive system of planned and documented internal quality audits?	
166. Does the system illustrate that the quality system is effective?	
167. Is there any objective evidence that planning has been undertaken?	
168. Does the system provide for the early and prompt detection of actual or potential deficiencies, trends or conditions which could result in non-compliance with requirements and for timely and effective corrective action?	
169. Does the system demonstrate both the recognition of the factors that may affect quality and an organised approach to control these factors?	
170. Are the software product requirements clearly defined and agreed on between customer and developers?	
171. Is there appropriate evidence of adherence to the standards through reporting and reviews?	
172. Are the accepted programming and user documentation standards adhered to?	
173. Is the methodology used appropriate to the type of software being developed and the development environment being used?	

Issues	
174. Do the developers establish and maintain appropriate measures for software quality improvement?	
175. Is the software reviewed at appropriate intervals by the development's management to ensure its continuing effectiveness and suitability?	
176. If online documentation is used does a mechanism for changing this documentation in place and effective?	
177. Is the compatibility between hardware, software and peripheral devices included any development?	
178. Do the software modifications have [and do follow] a systematics change control cycle?	
179. Does the audit trail include the user id of the person making the change, date, time, column name and the data in the column prior to modification?	
180. Is it possible to limit further development or delivery of non-conforming software until the deficiency or unsatisfactory condition has been corrected?	