Questions to ask throughout the ICT investment life cycle

Executive officers and investors

Are you satisfied that...

Stage 1: Understand and explore

- There is a clear business imperative for this investment?
- The urgency and priority of the investment has been tested against other investment opportunities?
- Estimates of time, cost and benefits have been adjusted for optimism bias?

Stage 2: Identify and refine options

- Technology and non-technology options have been considered?
- Restructuring or re-engineering of existing business processes to achieve the desired result without any ICT investment has been considered?
- Partnering with other agencies has been considered?

Stage 3: Decide to invest

- The investment is based on an evidence based business case that:
  - clearly demonstrates that benefits exceed costs?
  - is a reliable roadmap for the investment?
  - costs and benefits for all partner agencies upfront so shows that these are clearly understood?
- An analysis of capability of your agency and any partners to execute the ICT investment has been performed?
- Partner agencies have committed to the investment and to any co-contributions and ongoing costs?

Stage 4: Procure a solution

- The market is able to deliver the required needs?
- Alliancing and public private partnerships have been considered as procurement options?
- Processes and checks are in place to ensure probity and transparency of procurement decisions?
- Where possible tested and standard technologies are being procured?
- Probity auditors and advisors are in place?

Stage 5: Manage delivery

- A senior responsible officer has been appointed as the project owner, sponsor and champion—with personal accountability and overall responsibility for the delivery of benefits?
- A governance oversight body with the necessary authority has been established to monitor the investment benefits and resolve issues such as the allocation of adequate resources and risk management?
- Rigourous testing of compliance with quality standards and business needs is in place?
- A skilled project manager is appointed and a recognised project management methodology is in place?

Stage 6: Review and learn

- A sound benefits management approach is in place and used to monitor and track the investment?
- Realisation of benefits is clearly allocated to a business and not a project or technology owner?
- Gateway reviews and independent assurance are being performed?

Project managers

Are you satisfied that...

Stage 1: Understand and explore

- There is clear business support for the investment, and the business drivers and enablers are defined in an investment logic map?
- A benefits management plan has been prepared, and realisation of benefits is clearly allocated to a business and not a project or technology owner?
- Optimism bias has been addressed by using reference class modelling, scenarios and sensitivity testing?

Stage 2: Identify and refine options

- The options are comprehensive and consider all viable approaches?
- Roles, authority and delegation are clearly defined in project charters?

Stage 3: Decide to invest

- An adequately resourced business case is developed, taking into account any optimism bias?
- Governance is not being driven solely by the project team?
- Regular reporting has been established to escalate and resolve risks and issues?
- Project reports to the governance body capture all costs, including those for any partner agencies?
- Project progress is monitored using earned value measurement or a similar technique?

Stage 4: Procure a solution

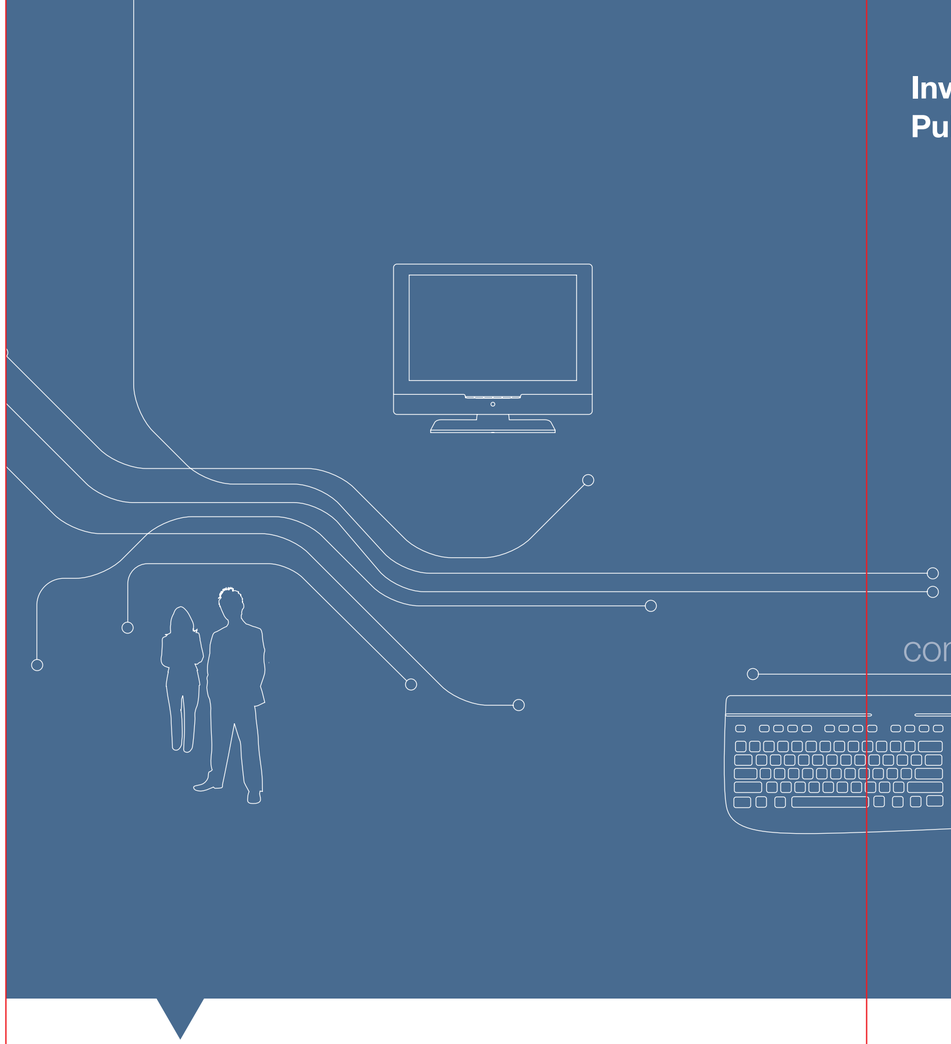
- Requirements are clearly defined by the business and used as a basis for engagement with the market?
- A rigourous analysis has been done of the technical feasibility of the project given the current state of agency infrastructure?
- Market soundings have been undertaken to ensure the (proven) technology exists to deliver on business requirements?

Stage 5: Manage delivery

- Adequate skills are available internally or in the market for the project to succeed?
- Recognised project management methodologies or standards such as PRINCE2 or PMBOK are being used?
- A recognised software development methodology is being used?
- Users are advised and consulted on any changes?
- Users are involved in rigourous testing and signoff of any technology solution?
- A risk management strategy and plan based on a framework such as the Australian and New Zealand Standard AS/NZS 4360:2004 Risk Management is in place?

Stage 6: Review and learn

- Benefits and post implementation reviews are planned and conducted?
- Clear baselines for existing business processes to which ICT-enabled change is to be applied have been established?



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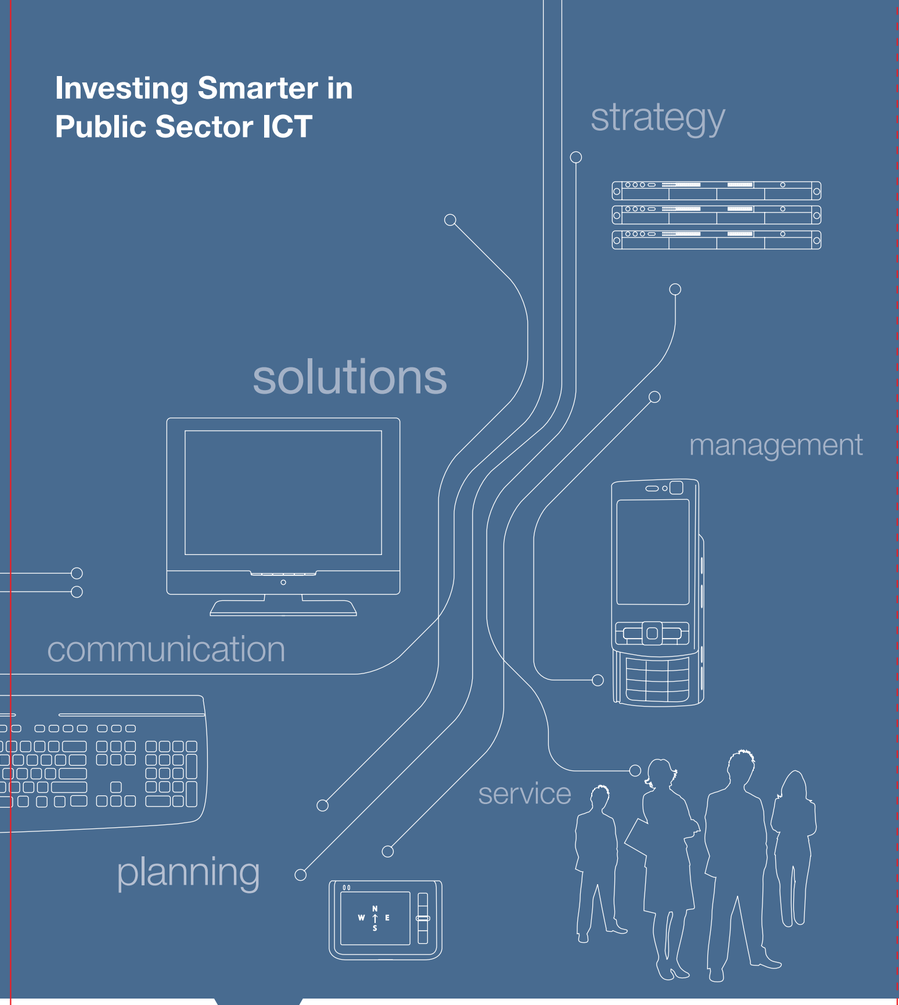
Investing Smarter in Public Sector ICT



Key Better Practice Principles for Senior Officers

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Introduction

Better Practice for the ICT Investment Life Cycle

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In 2007, the Victorian public sector spent over $1.5 billion on new and existing information and communication technology (ICT) enabled asset investments and infrastructure.

The government funds these investments to improve service quality, deliver new types of services and enhance the efficiency and cost effectiveness of public administration in important sectors such as education, health, justice, transport and water.

Despite the potential benefits and returns, experience shows that ICT investments are often challenging and difficult to execute, that they do not always deliver the expected benefits, and can be time consuming and costly.

Recent VAGO audits, together with evidence from Gateway reviews and academic literature, highlight the need to improve the governance and management of ICT investments.

Active leadership plays a significant part in the success of an ICT investment. Good governance and management help ensure that the strategic and business benefits of any ICT investment are realised.

This guide and its associated checklists have been designed to assist public sector chief executive officers (CEOs) and senior responsible officers (SROs) to question and assess whether their investments are delivering their intended benefits, resulting in better business and financial value for government and the public.

The guide and checklists complement the Department of Treasury and Finance's investment lifecycle guidelines for asset investments. Practical advice is structured around the lifecycle of an ICT investment—from the definition of the business need and rationale behind the investment decision, to the delivery of the investment and the evaluation of the expected against the actual benefits.

Key points to consider

- **Investments need to be driven and controlled by the business leaders.** ICT is a business and service delivery issue, not a technical one. ICT investments must be led by senior management and not ICT experts. Active business leadership plays a significant role in the success or failure of an ICT investment and ensures that the strategic and business benefits of any ICT investment are realised.
- **Build robust logic and evidence based business cases.** Invest effort in clearly defining the logic and rationale for your investment and ensure that the business case is based on evidence of need. Recognise any constraints in the capability of your agency and any partners (the market, other agencies, internal stakeholders) to deliver and realise benefits.
- **Establish sound governance and management structures and processes.** Clearly define authority and accountability for the delivery and realisation of benefits. This is especially critical in multi-agency collaborative investments where authority and accountability can become diluted or confused.
- **Involve those with authority to impact on the investment's acceptance.** ICT investments often require commitment and participation from multiple agencies and business stakeholders. Where this commitment and cooperation is not obtained, investments benefits may not be realised or delayed, or cost significantly more.
- **Avoid optimism bias and be a 'tech' sceptic.** By their nature, ICT investments are complex, and this complexity needs to be better recognised before committing your agency. Question and be sceptical about the benefits of using technology: consider non-technology options as well.
- **Understand what the market can and cannot do for you.** Consider alternative procurement approaches such as alliancing and public private partnerships to better share risk. Create 'environments of trust' with vendors. This could involve rewarding good performance rather than just focusing on penalties for poor performance.
- **Use a benefits management approach to keep the focus on business value.** Establish rigourous monitoring and measurement of the achievement of this value. Look out for 'dis-benefits' and ensure that these are minimised.
- **Recruit and retain talent.** Ensure that you have access to project managers and technical staff with the skills to manage and deliver complex technology projects. Ensure that knowledge and skills are transferred from consultants to agency staff.
- **Always seek external and independent assurance.** Seek external assurance through gateway reviews, audits and expert independent advice. Treat this assurance as a 'learning' rather than 'blaming' exercise.

Issues we have observed

1 understand and explore

- Investment decisions made without clear understanding of need or evidence of linkages to government policy and agency objectives.
- Poor commitment and support from stakeholders and partner agencies who are often not involved in defining the business need.
- Time not invested at early stages of the investment's life in critically assessing likely implementation challenges.
- The propensity towards optimism bias—tending to be over-optimistic about delivery timeframes and benefits expected, and underestimating the costs and complexity of implementation.

2 review and refine options

- Non-technology options such as process or legislative changes not considered.
- Poorly defined options or 'thin' set of options considered.
- Opportunities for whole-of-government or collaboration to share costs not evaluated.
- Alternative procurement approaches not considered.
- Whole-of-life costs not considered in assessing and evaluating alternative options.
- Options analysis conducted without an understanding of enterprise architecture and current ICT infrastructure and its capability.

3 decide to invest

- Investments are made on the basis of business cases that can't demonstrate that the investment is viable—i.e. that benefits outweigh the costs.
- Implementation schedules and budgets based on poor understanding of capacity and capability of agency and partners to execute.
- Market's ability to deliver the investment outcomes not assessed.
- Total cost of ownership over investment lifecycle is not considered.
- Poor understanding of key risks to delivery and mitigation strategies not established.
- Commitment to financing for project not obtained from partner agencies.

4 procure a solution

- Market capability and interest in delivering on the investment outcomes not assessed or understood.
- Innovative procurement options such as public private partnerships or alliancing not considered.
- Unproven or non standard technology procured.
- Processes not in place to ensure fair and transparent procurement.
- Commercial and procurement skills not available.

5 manage delivery

- Poor or non functioning governance. Accountabilities and responsibilities not defined.
- No awareness of the true state of a challenged investment, until it is too late to take effective remedial action.
- Limited or no consideration given to terminating poor performing investments.
- A structured project methodology not applied.
- Key positions are assigned to inexperienced staff who lack the capabilities to deliver
- Comers cut on quality assurance and testing.
- Poor change management—resistance to the change not addressed or understood.
- Lack of independent assurance. Gateway reviews/internal audit or external project assurance not sought.

6 review and learn

- Governance bodies don't give the same focus to the realisation of expected benefits, as they do to 'hard' project measures, such as 'on time', 'on budget', and 'in production'.
- Immature or no benefits management systems in place. Benefits not defined or measured.
- Accountability for benefits diffused and monitoring diluted. This is more likely to occur in multi-agency collaborative projects.
- No base-lining of existing processes done, making it difficult to measure progress.
- Benefits reviews or post implementation reviews not done.

Practical steps to take

1 understand and explore

- Build an investment logic map (ILM) to help visualise business drivers and evidence that the proposed solution is likely to meet the business need.
- Use stakeholder mapping to identify and manage stakeholders. Involve those with the influence and authority to impact the investment.
- For investments spanning multiple entities, consider getting senior responsible officers from each agency to define the logic for the investment.
- Build a benefit management plan, develop measurable key performance indicators (KPIs) and assign accountability for delivering benefits.
- Address optimism bias by using reference class modelling, scenarios and sensitivity testing to compare the proposed investment with similar experiences.
- Refer to DTF life cycle guidance—Strategic assessment.
- Conduct Gateway Review Gate 1: Strategic assessment

2 review and refine options

- Develop a 'straw man' non-technology option to understand the generic business costs and issues that the ICT investment will face.
- Consider partnering with other agencies to obtain economies of scale and concentration of (scarce) critical technology skills.
- Consider restructuring or re-engineering existing business processes to achieve the desired result without any ICT investment.
- Consider re-use or adapting technology or architecture that is already in use.
- Refine large complex projects into phases.
- Consider whether the investment could be a potential Partnerships Victoria project.
- Refer to DTF option analysis guidance and template

3 decide to invest

- Build an evidence based business case that clearly demonstrates that benefits exceed costs and is also reliable roadmap for the investment.
- Take care to define costs and benefits for all partner agencies and that these are clearly understood.
- Ensure that partners in the investment are clear about the level of funds they are required to contribute, and confirm that they will have the funds available when required.
- Analyse the impact of any change, resources required and capability of your agency and any partners to execute.
- Refer to DTF life cycle guidance: Business case.
- Conduct Gateway Review Gate 2: Business case.

4 procure a solution

- Be an informed buyer—undertake a market evaluation to test market responsiveness to the requirements and that the investment will attract sufficient competitive interest
- Engage and involve potential suppliers as early as possible to test that the market understands the outcomes desired from the investment and agrees that these are achievable.
- Consider using alternative procurement options such as alliances or private financing to better manage investment risks.
- Where possible use known rather than new technologies, and minimise customisation of standard software.
- Refer to DTF life cycle guidance: Project tendering and Victorian Government Purchasing Board (VGPB) policies for procuring goods and services.
- Conduct Gateway Review Process Gate 3: Readiness for market.
- Conduct Gateway Review Process Gate 4: Project Tendering.

5 manage delivery

- Ensure that the responsibilities, accountability and decision making authority of each party involved in the investment are clearly defined.
- Consider appointing independent external members to governance bodies.
- Cancel or re-scope a project as soon as it becomes apparent that it cannot be delivered satisfactorily.
- Appoint an appropriately skilled project manager who has the support of senior management.
- Use recognised project management methodologies or standards such as PRINCE2 or PMBOK.
- Develop a risk management strategy and plan.
- Seek independent advice and assurance.
- Refer to DTF life cycle guidance: Solution implementation.
- Conduct Gateway Review Gate 5: Readiness for service.

6 review and learn

- Ensure that benefits and post implementation reviews are conducted.
- Actively measure accidental and dis-benefits as well as expected benefits.
- Establish a clear baseline of each individual existing business process to which ICT-enabled change is to be applied.
- Ensure there is clear responsibility and accountability for benefits capture and measurement.
- Refer to DTF life cycle guidance: Post implementation review.
- Conduct Gateway Review Gate 6: Benefits evaluation.