



◇◇ Information and Technology
Operational Strategy
2008-2013



Information and Technology Operational Strategy 2008-2013

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Overview

History

Such information technology (IT) systems as were available in 1995 when the Department of Corrections was formed were unreliable and poorly managed, with poor information, and provided little to enhance business capability or capacity. The systems did not match the business needs and did little to enhance business capability or capacity.

During 1996 the IT unit was developed, the first strategy created and implementation of this strategy commenced.

The first strategy (1996-1999) focused on improving the basic systems within the Department. These covered:

- implementing a nationwide, modern technology platform
- implementing basic systems such as e-mail and SAP financials
- implementing co-ordinated and integrated communication systems (phones, PABXs, etc.)
- developing the Integrated Offender Management System (IOMS) to support then existing business processes and move the Department off the Police Law Enforcement System (LES).

The second strategy (2000-2002) focused on consolidating and enhancing core systems implemented in the first strategy through:

- continuing the development of IOMS (including Integrated Offender Management and Sentence Reform changes)
- moving the technology platform to a thin-client architecture to contain costs and improve manageability and reliability
- the initial implementation of more management-focused systems.

These strategies have been implemented on time and budget, while adapting to large growth in the IT environment and changing business processes. The Department now has a solid IT infrastructure with good operational and basic managerial systems.

The Department has progressed to being reliant on its IT systems for day-to-day operation. The IT systems are now moving from a period of rapid development to one of continuous improvement and incremental change.

The Strategic Plan for 2003-2008 focused on the enhancement and improvement of the IT platform. After a period of rapid growth and development followed by a period of consolidation, the strategy outlined the need to obtain further value from the investment the Department had made in its IT systems. Emphasis was placed on improving information quality in order to deliver better information/knowledge management, decision support, analysis and reporting.

Throughout the period, integrated information systems were further developed, expanded and maintained, meeting the needs of users both internally and externally, and supporting the Department's strategic business plans.

Full achievement of this Strategic Plan was affected by the changes required to support the Corrections Act in 2004 and Effective Interventions in 2007, as well as the ability to find resources, in both the business and IT, to specify and develop changes in key systems.

There has also been significant growth in the number of users and PCs since 1997. For example, the number of PCs grew from 400 in 1997 to 2800 in 2002, to 6500 in 2008. Additional core systems have also been added, such as CARS and Medtech to support changing business needs. This rapid growth and increased key systems have been implemented in a stable manner within the Department.

The IT strategies have always provided guidance and a framework for IT decisions in the Department. There has been recognition through the strategies that changes in technology and circumstances external to the Department will have impacts on the internal environment and the IT support. When these impacts have eventuated, they have been investigated and options presented to the Executive Management Team (EMT) to enable decisions to be made on changes in the direction of IT, if required.

Current Situation

Given the Department's dependence on technology-based systems, there has been a consistent focus within Corrections to maintain systems at current market levels, and implement solutions that are cost effective and meet a business need. This approach has created a stable and supportable environment, which has delivered reliable and cost-effective computing.

The Department has an increasingly sophisticated user base, having more familiarity with technology and the expectation to access that technology instantly.

Corrections continues to maintain a clear focus on IT governance and project management tools to ensure that IT systems and changes are delivered as needed.

At Corrections there is a low-cost approach to IT, focused on minimising expenditure wherever possible while meeting business needs. The result of this, however, is that there is now little capacity to cope with the additional and increasing costs and demands without an increase in financial resource. The 2004 Output Pricing Review provided a level of funding to a restore-and-maintain level only through to 2008.

As an example, the cost per workstation for IT has dropped by 50 per cent between 1998 and 2008 and the spend on IT per departmental full-time equivalent has dropped by 15.5 per cent during the same period. This is despite the increased use of, and reliance on, technology in the business. These kinds of reduction are not sustainable, especially given the low cost base in 1998. The cost structures have only been manageable because of the conservative IT support approach (approved by EMT) to ensure the integrity of the Department's key systems.

This will need to be addressed during the term of this Strategy.

Pervasiveness of Technology

The boundaries between different technologies are now blurring, with people expecting similar technologies at work to those they can access in their private lives. This is leading to the 'consumerisation' of IT. This is shown in changes such as:

- common devices being used for own use and at work
- the ability to be always connected to information
- the explosion in content and information available
- the traditional IT network boundaries disappearing

- the balance between public and private information and its use becoming more important.

The impact of these is that Corrections will need to recognise that staff may want to use the same types of technology in their personal and work lives.

The Corrections Challenge

During all these changes and new approaches, Corrections will still need to work to ensure that the information needs of staff, partners and suppliers are met in a manner that is reliable, robust, secure and available, as and when needed.

Existing support through systems such as financial, HR/payroll, IOMS, reporting and record management will need to be robust, stable, secure and transitioned into this changing landscape in which people will work. Also there will be new functionality and approaches that Corrections will need to integrate into its operation.

Since the 2004 IOMS review, the underlying architecture of IOMS has been progressively moving into an MS.Net and System Orientated Architecture (SOA) structure. This changes the nature of IOMS from a specific application to support offender processing to a more generic information-centric platform to support the custom modular applications (with integrated data) that Corrections requires for its operations. For this reason, on completion of the MS.Net conversion, the generic custom platform (IOMS) that Corrections uses is being renamed the Corrections Offender Information System (COIS).

Changes in the New Zealand technology market will drive changes in how Corrections chooses to outsource its technology support – potentially leading to the use of multiple small companies for specialist support rather than large contracts as at present.

All this will need to be done in a manner that is consistent with the governance and management approach that Corrections uses.

This will drive changes in how the Information and Technology unit supports the rest of the organisation.

While many parts of this Strategy are focused on IT delivery to meet business needs, the direct advantages to the business are less clear. However, these benefits will accrue from the

flexibility that these changes will bring in IT delivery. This will come about through several mechanisms:

- The potential to deliver service improvements within the limited funding and resources that exist
- Improvements in responsiveness and flexibility to meet changing business needs
- The ability to provide flexibility in the working model of staff across the Department if business needs change
- The ability to remove current restrictions on access to technology and tools that have been needed in the past to protect the data and systems the Department needs to operate
- The ability to make a large increase in access to relevant information for staff
- The ability to share more information in a proactive and reliable manner with external providers.

There is a recognition that these changes need to be brought about within the limited resources and constraints that currently exist within the Department and IT.

Relationship of the Information and Technology Operational Strategy to other Departmental Strategies

The Information and Technology Operational Strategy supports the Department's Strategic Business Plan in which the overall vision, outcomes and strategic priorities are laid out for the next five years.

The Strategy does this through highlighting areas of focus that will work to consolidate what is already in place for Information and Technology management and to contribute to the outcomes and strategic priorities as they exist in the Strategic Business Plan and other strategic plans.

Like the Strategic Business Plan and other strategic plans, the Information and Technology Operational Strategy does not outline detailed activity. This Strategy gives direction on where to focus attention and efforts in order to improve the Department's information and technology. The groups and services will need to work together across the Department to ensure that the Strategy can deliver on its potential and support the Strategic Business Plan.

The Departmental documents to which the Information and Technology Operational Strategy links are:

- Strategic Business Plan, 1 July 2008 – 30 June 2013
- Asset Management – Operational Strategy, 1 July 2008 – 30 June 2013
- Maori Strategic Plan, 1 July 2008 – 30 June 2013 through its links with the Strategic Business Plan
- the Pacific Strategy, 1 July 2008 – 30 June 2013 through its links with the Strategic Business Plan
- Enhancing our People Capability Strategy 2008-2013.

External Strategies

Justice Sector

The Department of Corrections is focused on working towards achieving outcomes within the justice sector. With regard to technology, these common objectives will be fulfilled through the Justice Sector Information Strategy. This Strategy, for 2006-2011, has a focus on providing better access to information and resources and extending the focus on information-sharing. Its goals in reference to IT are:

- to improve the quality and integrity of justice sector information assets
- to effectively manage shared justice sector data and information
- to actively leverage the resources base across the justice sector
- to improve information and service provision to communities.

The Department of Corrections fully supports and uses these themes in the development and implementation of its IT strategies.

State Services Commission

The State Services Commission's (SSC's) strategy for e-government requires all government departments to transform how they use technology to deliver services, provide information and interact with people.

There is a continual focus on improving the services that are delivered through technology, as well as standardisation and consolidation where appropriate. Corrections fully supports the SSC strategies and approaches in all these areas and actively partakes in the ventures that are relevant to the Corrections business.

Future of Technology

Overview

Technology is continually evolving and improvements and developments in the IT world are fast paced and increasingly innovative. However, it is not expected that there will be major technological breakthroughs in the next five years – rather, a refinement of existing technologies and changes in how technology is used.

The demands for more and relevant information will continue. The right information will be required to be available anywhere, any time.

In the past, business and military use has driven the direction of technology. This is now changing, with consumers driving technology needs and wants and businesses and the military having to adapt to this change. This shift is known as the consumerisation of IT.

Traditional IT boundaries in terms of networks will disappear, with staff using their own devices to connect to Departmental information. Tools will be available to support and manage the productivity of staff, including the capacity to 'track' the daily use of technology. The balance between safety and privacy will therefore become paramount and will need to be addressed.

Increasingly, IT networks and systems will be required to be open to users from multiple organisations, which will drive changes in enterprise architecture. However, with an increased ability to access these systems and networks comes the danger of becoming unable to maintain full control of every device or piece of software in the environment. This impacts on how they are managed from both a technological and a user perspective.

The lines between open source and proprietary software for enterprises such as Corrections are blurring, which will lead to different licence models.

Changes and consolidation in the outsourcing market will require adjustment to the outsourcing approach and management structure to ensure outsourcing continues to add value to the enterprise.

The evolution of technology and toolsets is leading to a change in how software development is carried out with the need to focus on business-process-driven development rather than a traditional requirements-development approach.

Project management and programme management as disciplines have also evolved over the past few years, and will continue to do so. These changes are making the management and delivery of projects more responsive to business needs and requirements, but do require changes in process, discipline and quality.

All of these will impact on the IT structure and support needed to ensure that Information and Technology supports the business direction and needs that develop over the next five years.

In summary, key impacts on Corrections will be the following:

- Technology that people use in their homes (consumerisation) will drive new technology, not business and Government as in the past
- The Corrections network boundaries and links with other organisations will become more fluid and difficult to control
- The difference between open source and proprietary software will blur
- The use of external partners to support technology will change from an approach of the use of a few large companies to the use of a larger number of specialist companies
- How software is developed will change owing to new ideas and approaches, which will impact on how the Department develops IOMS
- Department-wide project and programme management and governance will need to be strong to ensure that Corrections receives the business benefits it expects from its investment.

Consumerisation of IT

Consumerisation is an attitude, not just the use of technology. It is a reflection of the aspirations of people, the need for participation, the desire to contribute and the sense of being part of a community.

The consumerisation of IT can be defined as the impact of three factors:

- The growing availability of low-cost, easy-to-use devices (frequently characterised as appliances)
- An increasingly ubiquitous, pervasive and affordable communications infrastructure (that encourages new acquisition and delivery models, especially those using the Web)
- An explosion of content (information, entertainment, services and applications).

The combination of these three factors destabilises the balance between enterprises, technology providers and consumers.

Affordable access to technology and content significantly increases the power of staff and affects how they choose to interact with Corrections. As individuals move towards more flexible working patterns and environments, they are building powerful 'personal infrastructures', and even when employers forbid the use of non-company-owned technology they are facing the need to recognise and accommodate changing user behaviours and expectations.

This brings a number of issues that need to be addressed in Corrections, in fact in all enterprises. Examples of these impacts are the following:

- Consumer technologies do not have predictable lifecycles, in fact they have virtually no lifecycles but are continually changing
- Consumer products tend to have a 'fad' factor that impacts on how they are used
- Staff will have more advanced consumer technology at home than they have at work, which will be more responsive and support their needs better than Corrections' systems
- Staff will expect to access information seamlessly.

It will not be possible to deal with these issues with a traditional approach and IT structure without impacting on the ability of people to carry out their work.

Technology Trends/Assumptions

There are a number of technology trends/assumptions that will affect Corrections over the next five years.

Key trends/assumptions are:

- the Windows operating system and Office version that Corrections uses will be valid until 2014
- client virtualisation will become more common, so that Corrections-specific applications (such as IOMS) can be used on any attached device
- enterprise architecture approach
- open source vs proprietary software
- outsourcing approach
- software development approach

Details of each of these trends/assumptions are below.

Windows Operating System and Office

The current version of Windows operating system that Corrections runs is Windows XP. This has an expected life through to 2014. Given the lack of business benefits of moving to Windows Vista (the current version in the market), it is proposed to not install Windows Vista and stay on Windows XP until 2013. This approach was confirmed with Gartner, which could not identify any user gains from the operating system that would justify the required level of expenditure and change management issues that would need to be addressed. It is expected that the next operating system version (after Vista) will be released in the 2010-2011 period.

The current version of Windows Office that Corrections runs is Office 2003. This has an expected life through to 2013. Given the lack of business benefits of moving to Office 2007 (the current version in the market), it has been agreed to not install Office 2007 and stay on Office 2003 until 2013. It is expected that the next Office version will be released in the 2010-2011 period.

Corrections would need to carry out a review of operating systems and Office packages in the market in 2011 to identify its direction after 2013.

Gartner Strategic Planning Assumptions: Vista will be the last major release of Microsoft Windows based on a monolithic architecture (0.7 probability). By 2010, Microsoft will release a version of Windows based on a modular architecture (0.6 probability).

Windows Server Operating System

The current version of Windows Server operating system that Corrections runs is Server 2003. This has an expected life through to 2013. Given the lack of business benefits of moving to Server 2008 (the current version just being released into the market) it is not proposed to install Server 2008. It is expected that the next Server operating system version will be released in the 2010-2011 period. This approach has been confirmed by Gartner.

Client Virtualisation

Part of the shift with the consumerisation of computing is the ability for business organisations (such as Corrections) to run 'virtual' machines on any hardware. Essentially this is like a mini-operating system running on the device so that it is isolated from the device, reducing the risk of viruses and attacks etc.

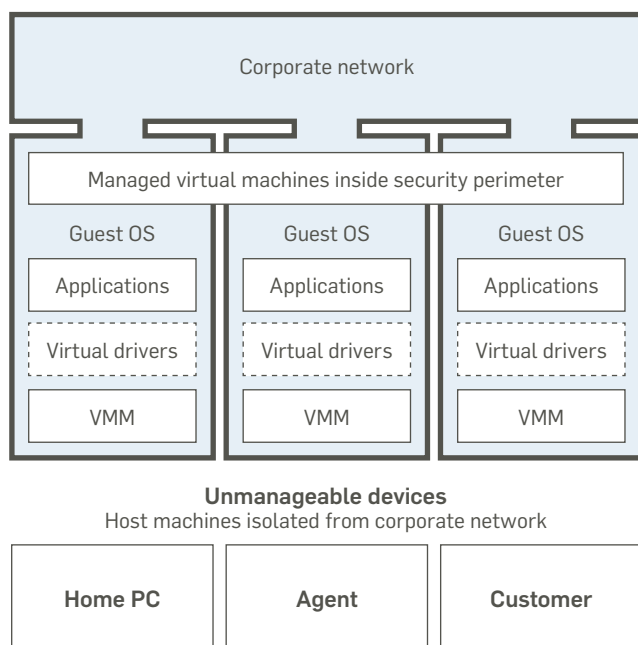


Figure 1 Extended corporate domain

Full hardware virtualisation on desktops provides more alternatives and enables deployment scenarios that align closely with these changing requirements.

Organisations struggling to deal with requests to access their networks from unknown machines (employees wanting "to use their home PCs for work) face a dilemma today. Allowing access means much higher exposure to security

risks, but denial may have an impact on efficiency and user morale. With the increase in home working and the shift toward more flexible staffing, this is a growing and significant business requirement.

Partners, suppliers or customers can also have similar needs. Virtualisation provides one possible solution, by allowing the encapsulation of corporate image – operating system and applications – into a highly controlled, consistent environment on any PC. The 'corporate' virtual machine uses a separate programme stack, and file transfers with the host can be disabled, so personal and company data can be fully and completely separated. This means virtualisation can be used to set up a business partition inside a moderately hostile environment, such as a home PC or a PC that belongs to an agent or a temporary worker. VMware ACE (which is a virtual machine component, like a java application) is specifically targeted at this type of requirement. Some companies are already moving towards employee ownership of PCs, and this technology will boost the popularity of such schemes.

It is proposed to look at starting the implementation of virtualisation in the Corrections environment in 2009, depending on the maturity of the software at that time.

Enterprise Architecture

Traditionally, enterprise architecture has focused on mapping the information and technology layers in an organisation. The aim has been to record and map all aspects of the hardware and software in the organisation, then to develop plans for their maintenance and enhancement.

From now to 2010, the focus of the enterprise architecture plans needs to change owing to the pressures brought about by the consumerisation of IT and the continual demand for more accurate and timely information on an ongoing basis. The focus will need to be on the following:

- Mapping – how systems link and share information, not on the components that make up the systems
- Striving for code interfaces, formats and protocols that are rigid and stable
- Not defining the end state, but focusing on the rules under which an end state will be reached – so the process rather than the outcome

- Recognising that the organisation (and the world) is networked, both internally and externally, and the architecture needs to take account of this
- Integration of internal and external processes and recognising that the Department will outsource not just systems, but also business processes (for example, CPPS outsourcing offender monitoring).

Open Source vs Proprietary Software

Through to 2012, it is expected that open source software will make up to 27 per cent of infrastructure software and up to 14 per cent of application software.

The main drivers of these changes will be organisations looking for:

- cost savings through reduced licence fees, and not paying for what they don't use
- risk management through not being tied to specific suppliers
- flexibility through being able to modify the software
- investment protection through not being tied to a vendor's lifecycle.

Corrections already uses open source software on a number of its servers, firewalls and internet based management systems and in the development environment. It is expected that Corrections will continue to use open source software, and in fact increase its use. However, it is not expected that this will be a major 'rip and replace' approach. Rather open source software will be used where it has a specific advantage.

Outsourcing

Using external service providers to cut costs and improve performance has become commonplace. Outsourcing is a vital, even integral, part of successful operations. Precisely because of this success, two key challenges are emerging. First, the high expectations associated with outsourcing are increasingly hard to meet. Second, as more functions are outsourced, integrating and managing a portfolio of service providers is becoming more difficult, causing service disruptions in many organisations.

Organisations must adopt a new approach to sourcing services – multi-sourcing (using multiple vendors to deliver a service).

This new approach must take into consideration business processes, the workforce, the value chain, relationships and, above all, the business goals. Disciplined multi-sourcing addresses the behavioural shortcomings. Organisations that figure out how to multi-source will gain.

Software Development

As service orientation becomes more normal for architecting systems, the very nature of an application begins to change. In the past, applications were defined by the containers that comprised their structure. These containers included user interface, navigation through screens, embedded logic/data and management of the system. As the Systems Orientated Architecture takes hold, the use of a modular set of software services explodes the application container into a loose set of business components that work together to provide application functionality. These modules are no longer held together through the application container alone. They are now tied together through policies, interfaces and a set of interoperable standards.

Ultimately applications need to map to business processes rather than to individual requirements, as in the past. To drive this there is a change in the traditional 'waterfall' approach of software development, with it being refined to ensure that this mapping is achieved.

Software as a Service

There is an increasing trend in the market for software as a service to become more common. Essentially this is where Corrections could procure access to applications that are owned, hosted and managed by external organisations. Corrections would be the end user of the applications and would not need to procure licences, support, server hardware etc. This will have future implications for how systems are accessed by Corrections, eg should Corrections own its financial system or only purchase access to the required financial modules from a service supplier?

Systems and Infrastructure Services

Information-Centric Approach

A significant change in IT is the shift to an information-centric approach. This will enable Corrections to operate in more open and dynamic ways that support business needs.

There are two parts to this information-centric approach, Technology and Customer Service.

Gartner Strategic Imperative: Organisations that do not enable an information-centric infrastructure by 2015 will mismanage application content and will spend 30 per cent more on their IT budgets.

Information-Centric Technology

An information-centric approach requires the use of different underlying technologies to support Corrections' business processes and outcomes.

Key technologies that are needed to support an information-centric approach are:

- messaging and intelligent routing for rapid information exchange
- metadata management technologies and techniques provide key cataloguing capabilities
- data discovery and integration technologies
- master data management ensures that the right data gets to the right place at the right time in the right format
- business intelligence and business activity monitoring technologies that analyse and monitor environmental data
- semantic reconciliation technologies are emerging to support standards-based interactions
- OWL, RDF and XML enable automation of less-structured content for all types of information exchange
- business process modelling tools facilitate the ability to model services, events and processes, and to associate relevant content.

Corrections, however, must balance its ability to adopt new technologies with its ability to implement them, and must choose wisely in order to implement and support cost-effective solutions.

Information-Centric Customer Service

The shared services model that the Department has implemented provides an opportunity for support functions such as IT to provide services with a clear customer focus. This must become embedded within the IT culture and structure. Changes to support this will also support the need to implement an information-centric infrastructure.

An information-centric infrastructure will enable Corrections to conduct business in more open and dynamic ways, unfettered by application-specific formats or proprietary protocols.

Firstly, rather than just speaking in technology terms, IT must learn to use business terms and business benefits. This gives confidence to the business that IT is in business to help them, not in the business of technology for technology's sake.

Secondly, new roles will emerge – just as business had product line managers, IT must have service line managers who manage service delivery and are always trying to optimise it, for the customer's benefit. Process owners define processes that cross technology domains, application development and business roles that deliver on IT services to meet business requirements. Accounting support is critical so that the costs of service delivery are known, and the business can make trade-offs between cost, quality and risk. Moreover, service delivery staff must learn to package and price services so that they make sense to the business.

Underneath the IT services delivered to customers is a myriad of sub-services that also need to be packaged and priced for delivery to the IT service. Sometimes costs will be allocated in total (such as an entire department's costs), while at other times it makes sense to perform more granular cost accounting.

As much as possible, metrics, pricing and costing should be simple to understand while also motivating the right behaviour. Allocating costs on a variable basis is seen as attractive from a business perspective, but comes with a cost as well (leasing equipment and buying software on a subscription basis, for example, has increased costs over other acquisition mechanisms). Therefore, trials and trade-offs must be made over time before coming to a methodology that works well for all parties.

Gartner Strategic Planning Assumptions: By year-end 2012, up to 30 per cent of large enterprises will define a core set of business-oriented IT services, including formal service-level agreements, up from less than 15 per cent today (0.7 probability). Through 2011, both IT financial management and chargeback processes and tools will see a resurgence in growth (0.8 probability).

IT Structure to Support Change

One of the key Gartner strategic imperatives is that by 2010 IT organisations need to change from the traditional structures to a structure that focuses on the business structure.

This is being driven globally by:

- the increasing consumerisation of technology, which shows itself in key areas of user technology, use of technology and the need to protect key applications
- the need to access relevant information on an ongoing basis
- the change in corporate culture and knowledge among staff,

and particularly for Corrections:

- changes in the outsourcing market in New Zealand leading to a need to focus on multi-sourcing to ensure that Corrections obtains the value it needs
- changes in approaches to software development and process mapping that impact on how systems are developed to meet Corrections' business needs
- the need to complete the implementation of knowledge management and requirements under the Public Records Act to provide a base for knowledge management in Corrections
- the need to enhance and upgrade project management techniques with the implementation of the Programme Management Office (PMO) within Corrections.

Corrections will need to ensure that it has structures that deliver the IT functions in a proactive, customer-focused manner.

To achieve this, IT functions will be delivered accordingly:

- Research, standards and architecture
- Technology development services
- Business support services
- Infrastructure services.

Gartner Strategic Imperative: While IT organisations must proactively build their credibility, emerging alternative delivery models for both IT and business processes offer new approaches to deliver these benefits. IT must lead the way for organisations to plan for them and begin testing the market for such services.

Research, Standards and Architecture

To ensure that Corrections is proactively using technology that supports business processes, there must be a continual process of working with the business to identify technology that enhances current or future operational needs.

To achieve this, there needs to be a constant process of research into new technologies and reviews of existing technologies. Resources will be allocated to allow research into, and piloting of, technology in key areas.

The functions that will support this area through the grouped services approach are:

- support for the architecture council (plus for the technology architecture)
- quality assurance of policies and standards
- mapping of technology trends and vision
- innovation
- information architecture/data standards
- strategic planning research
- strategic vendor research.

Technology Development Services

Technology Development Services is focused around the disciplines required to ensure the delivery of software (purchased or developed) that Corrections requires to meet its operational objectives.

Build vs Buy

Corrections has an established approach of purchasing software packages where possible and tailoring business processes where possible. The only general exception to the rule has been IOMS, as the business requirements that it supports are unique.

Corrections needs to ensure that any packages that are implemented are not customised, only configured, and that it aligns its business processes with generic functions such as finance, payroll and medical management. If custom development is required, it should be developed within the Corrections offender information system.

Design and Build of Custom Applications

Business application services concentrate on the development of new applications and the support of existing applications to deliver business support.

Traditionally Corrections has followed a conservative waterfall approach to its software development. This has been applied because of the complexity of the systems requiring development and the need to provide the business with the opportunity to consider and specify its requirements in a changing business environment.

Since the 2004 IOMS review, the underlying architecture of the system has been progressively moving into an MS.Net

and SOA structure. SOA enables software to be defined as independent services that can be 'composed' into operational systems. This changes the nature of IOMS from a specific application to support offender processing to a more generic information-centric platform to support the custom modular applications (with integrated data) that Corrections requires for its operations. For this reason, the generic custom platform that Corrections uses (IOMS) will be renamed the Corrections Offender Information System (COIS) at the completion of the .Net conversion.

Taking advantage of this change will require Corrections to adopt a new approach to software development. This involves looking for ways to relate business understanding to technical implementations, including operational applications and data warehouses, as well as to automate physical aspects of business processes, including business rules and business intelligence.

The technology trend in development is that organisations continue to move from traditional waterfall structured analysis and design approaches to object-oriented (OO)/Unified Modelling Language (UML) and business process analysis.

Corrections now has an increasingly sophisticated user base, having more familiarity with technology and the ability to articulate its requirements in a manner that supports the shift to a more flexible development approach. This, combined with

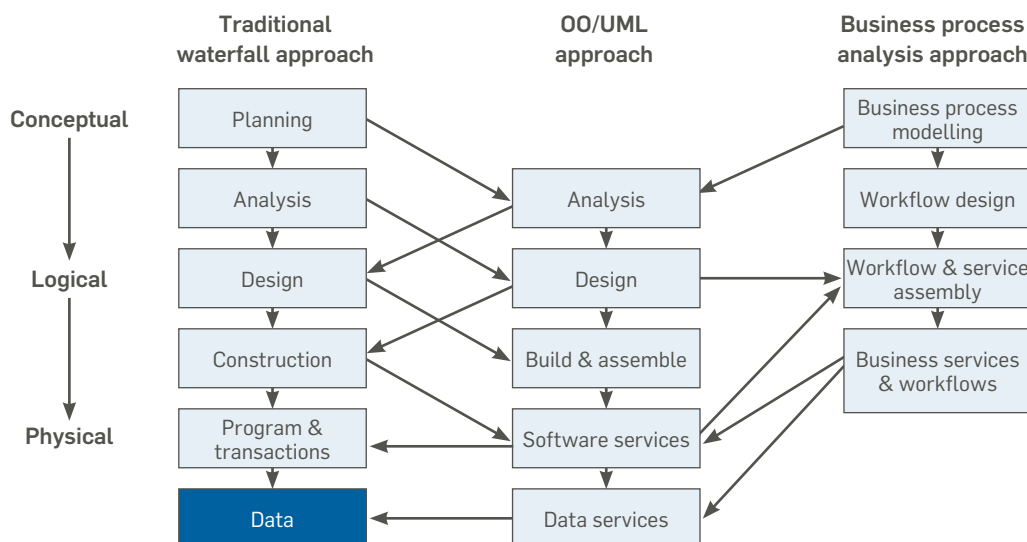


Figure 2 Overview of software development approaches

the change in platform, development tools that IT can now access and increased understanding of the business, enables the move away from a traditional waterfall approach.

From a user perspective, the adoption of a business-process-based development approach increases the responsiveness of the systems to cope with business needs and gives the flexibility to tweak or modify the systems in an evolutionary manner.

This will also drive Corrections towards mapping process across the organisation, rather than their following the organisation structure.

The functions that will support this area through the grouped services approach are:

- solution design
- solution construction
- unit and system testing
- development of policies and procedures
- day-to-day management of outsourced vendors.

Business Support Services

Business Support Services focuses on ensuring technology and information services (be they applications or information) are supported and available as required by the business. This brings together a number of functions that in the past have been independently delivered by individual sections of the traditional IT structure.

From the customer perspective, Business Support Services may be seen as the interface between them and the back room of IT. It will provide a one-stop delivery interface for the provision of technology and information needs.

To be successful, Business Support Services will need to be structured to be able to provide a blended, transparent customer service bringing together the traditional elements such as helpdesk and change requests with non-traditional elements such as service-level agreements and service quality assurance.

The functions that will support this area through the grouped services approach are:

- management of changes
- application support (application monitoring, faults, upgrades, etc)

- quality assurance testing (UAT/regression)
- helpdesks
- training on applications
- development of policies and procedures
- day-to-day vendor management
- customer relationship management
- business continuance planning
- management of software as a service vendors.

Infrastructure Delivery

Infrastructure Delivery is focused on the underlying IT systems that are required to run any business. These are services such as networks, servers, PCs, laptops and phones.

A key change in technology that enables this service delivery to be put in place to support an information-centric approach, as well as the growing consumerisation of IT, is the use of virtualisation. Virtualisation is where an application window is created inside any device so that a person can access its functions (eg IOMS), however the actual system is still secure. For example, IOMS could be accessed on a home PC across the internet while maintaining data integrity and security.

The functions that will support this area through the grouped services approach are:

- fixed network (data and voice)
- mobile voice (data and voice)
- desktop (standard)
- desktop training
- platform
 - hardware
 - operating systems
- security
- policies and procedures
- vendor management
- disaster recovery for systems.

Gartner Strategic Planning Assumption: By 2009, 15 per cent of enterprise customers will use application virtualisation as a method to better manage their PC environments for at least 15 per cent of their applications (0.8 probability).

Governance

Project Implementation

The Department continues to implement successfully new business systems, technology platforms and telecommunications projects on time and within budget.

The success of the implementations is derived in part from the project delivery strategy adopted by Corrections. This continues to be core to its approach to IT development, and centres on:

- effective and accountable project governance structures
- strong project management
- executive sponsorship
- the adoption of IT standards and well established architectures;

The changes to the development approach, from the waterfall approach to the object-oriented (OO)/UML and business process analysis covered earlier, still require the following:

- Emphasis on ensuring specifications and processes are identified and documented very early in the systems' development cycle
- Continuous involvement of the business in all stages of the development, from requirements to testing. This is based around effective partnerships between IT and the business areas
- A clear focus on the business providing requirements and defined business processes and IT providing the technical solutions to meet those requirements
- The implementation of basic functionality, extensive user testing, detailed specification of need, sensible outsourcing arrangements and manageable projects
- The use of a structured project management approach and solid project management disciplines, ensuring that issues are raised appropriately and are able to be managed effectively.

As well as mitigating the risks inherent in development, this approach will enable the Department to manage costs and attain business sign-off for systems, thereby providing assurance of delivery to business requirements.

This approach to project implementation and delivery will be enhanced during the five-year timeframe of this Strategy with the implementation of the PMO and also analysis of the new Gateway™ project approach currently being piloted.

Project and Programme Management

The Programme Management Office (PMO) concept has gained wide acceptance in recent years and can be implemented in various ways. A one-size-fits-all strategy for set-up and operation is unlikely to work. Often, the PMO has a key role in monitoring contracted projects. Enterprises should select an approach that matches the urgency of their needs with their level of project management maturity, depending on their governance style.

Operating independently of the IT organisation and reporting to the General Manager Systems & Infrastructure gives the PMO the clout to raise portfolio management issues to the highest levels and make decisions based on the best interests of the entire enterprise. Maintaining that independence and objectivity is critical for long-term success.

Gartner Strategic Planning Assumptions: By 2009, most IT organisations will have adopted a set of Project Portfolio Management application Web services to plan project portfolios, allocate resources to projects and support tasks, support team collaboration, and track resource use and costs (0.6 probability).

Gartner Strategic Imperative: A project management model should be an incremental process. This can be more beneficial in the near term than a one-time, pass/fail implementation. Using Project Management Model Methodologies assessments need not take months, nor must improvements take years.

System Ownership

The effective management and delivery of IT systems is underpinned by IT and telecommunications system ownership being vested with Systems & Infrastructure, while business process ownership rests with the Department's groups and services.

This approach to ownership is critical to the success of project and Strategy delivery. The approach will continue for the timeframe of this Strategy and is considered a key factor for its successful delivery.

Systems & Infrastructure will continue to report to the Executive Management Team (EMT) on a regular basis. The EMT will provide direction on strategic and tactical issues as well as approving and receiving progress reports on the annual IT operating plan.

Information and Technology Planning and Governance

This Operational Strategic Plan provides five-year guidance for the Information and Technology unit. This Strategy is then used to develop the annual IT operating plan. This plan is negotiated with the business units and reflects both the operational and capital projects for the year. As noted above, this plan is approved and monitored by EMT.

Progress on plan delivery is reported to the EMT. The EMT also makes decisions on IT policies and procedures as well as the direction of IT.

Governance and Management of Outsourcing

Governance and management of vendors providing services under outsourcing arrangements become more important with a shift to multi-outsourcing contracts.

A balance needs to be reached for the management of contracts to ensure that the appropriate level of management is implemented. Excessive management provides no additional benefits, while under-management increases risk.

Although all suppliers need some basic supplier management services, vendor management should only be used for suppliers where there is high value to the business and where the nature of the relationship makes changing suppliers an expensive and

disruptive option. All suppliers need supplier management – only a few suppliers need vendor management.

The split is defined as:

Supplier (Vendor) Management	Strategic Vendor Management
Performance-oriented	Relationship-oriented
Vendor appraisals	Vendor alignment
Externally focused	Internal & external relationships
Static data management	Social network management
Performance data	Business outcomes
Administrative in nature	Leadership role
Scorecards	Value management
Periodic and event-driven relationships	Continuous relationships

Care will need to be taken to ensure that the correct level of vendor management is implemented.

Independent Quality Assurance Unit

The Internal Audit unit within Corrections has an independent audit programme that is run across IT project and systems.

External quality assurance is mandatory for all major projects within IT. This external quality assurance is normally organised through Internal Audit.

User Testing

New and upgraded applications will be required to be tested and reviewed on an ongoing basis in order that they continue to meet the business needs. The involvement of staff from the relevant business units has proved to be crucial in the successful delivery of applications by ensuring the business units see and approve any changes before they are released.

Architecture Council

Within Information and Technology, an architecture council has been created for providing guidance and quality assurance of architecture decisions. This council comprises architects from Corrections, external providers and key vendors.

The architecture council considers and makes recommendations in regard to all architecture decisions, for both software development and infrastructure changes.

Implementation

The technology and support changes in this Strategy will have a direct influence on the way Corrections works. This will be internally and with external partners. These developments will come over the lifetime of this Strategy.

Key developments are that:

- consumerisation will change the computers, laptops, cell phones etc. that Corrections can utilise
- opportunities will develop for Corrections to examine different telecommunications solutions
- there is the potential to engage with more niche suppliers of IT services
- COIS will be reviewed in 2010 to judge its future life
- changes to IT structures will evolve over the life of this Strategy to reflect the changes in IT driven by business needs, consumerisation and virtualisation, changes in IT services and technology evolution
- software development will evolve to reflect the focus on whole-of-business processes and provide faster responses to changing needs.

As the influences of consumerisation, virtualisation, changes in IT services and technology evolution take hold, the approach to control of the IT infrastructure will change. Examples of how this will be reflected in the operational environment are:

- not trying to control every device, rather controlling key information and the systems in which it sits. For example, tightly controlling COIS as an application and the information inside it, but allowing it to run on any device, either Corrections owned or not
- having an increased focus on the identities of people who connect devices to the network (through stronger password systems and biometrics)
- having minimum policies for devices (eg they can run certain pieces of software) but not restricting them in any other way
- using virtual technologies (or Citrix-based) to run Corrections applications within controlled space on the devices, so that if there are problems with the devices they will not put the Corrections applications at risk

- running proactive intrusion and detection systems to see if any devices connected to the network try to carry out unauthorised access to systems
- concentrating on managing the information, not the devices.

Corrections has a number of core business systems in place that are critical to the operation of the business. These systems will continue to be upgraded and enhanced to support changing business needs and in accordance with the strategic approach outlined in this Strategy.

These are systems such as:

- IOMS/COIS
- SAP/TMA
- EDRMS
- CPIC
- Medtech
- CARS
- telecommunications and messaging.

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