

The Information Technology and Telecommunication Strategy for Victorian Public Hospitals

Executive Summary

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The Imperative for Change

In simple terms, hospitals face the challenge of continuing to do more with less.

Over the past decade, the Health Industry has experienced a period of considerable change. Critical factors driving industry change within Victoria's public hospitals are quality, access and efficiency of patient care. Sustainable effectiveness and efficiency will be achieved through a combination of improved decision making capability, the use of effective and integrated information, and work practice change. These will improve the ability to deliver quality health care in a way which makes it more accessible and 'user friendly'.

Victoria's Health to 2050 outlines the future direction for Melbourne's metropolitan hospitals. Integrated health care capability is the central theme of this agenda. To achieve this vision of a long term sustainable transformation, considerable investment in the supporting information, technology, people and processes will be required. Hospitals, in conjunction with other key stakeholders, will play a critical role in enabling the change program.

Scope of the Strategy

The scope of the current strategy is limited to public hospitals, and thus represents an artificial boundary within the continuum of care.

Much of the patient information will flow into and from other care settings and providers outside the public hospital boundary. The strategy must, therefore, provide for future linkage to other health care providers.

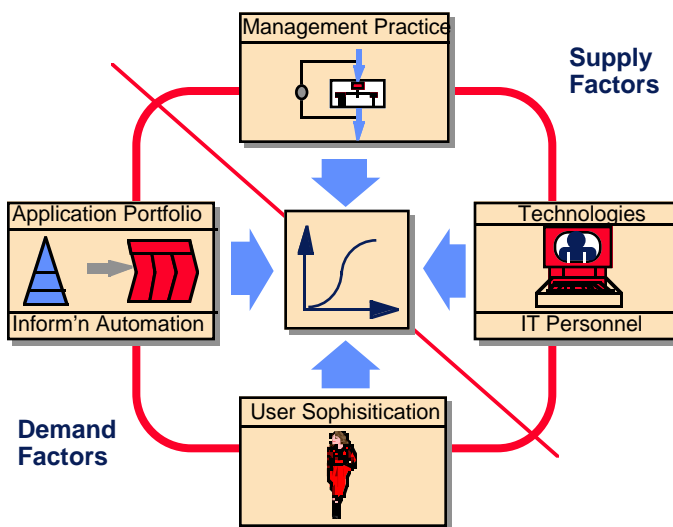
It is expected that the critical mass established through implementation of this public hospital strategy will be a key foundation to an integrated and information intensive health care industry that will be the model for other states and countries in the region.

The Support for Integration

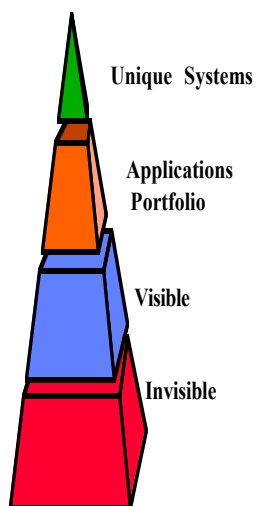
Improved Health Outcomes will be underpinned by integration

Planning for the integration of health care information has been undertaken by the Department of Human Services. The first step in this planning process was an assessment of the current information environment and the development of a plan for desirable future use of information, information technology and telecommunications in Victoria's public hospitals. The analysis focused on five key components influencing covering information, information technology and telecommunications usage. The five components considered exist within a framework addressing all aspects of I.T.

Supply and demand dimensions must be addressed equally to achieve the balanced and sustainable performance improvements which can be realised through I,IT&T.

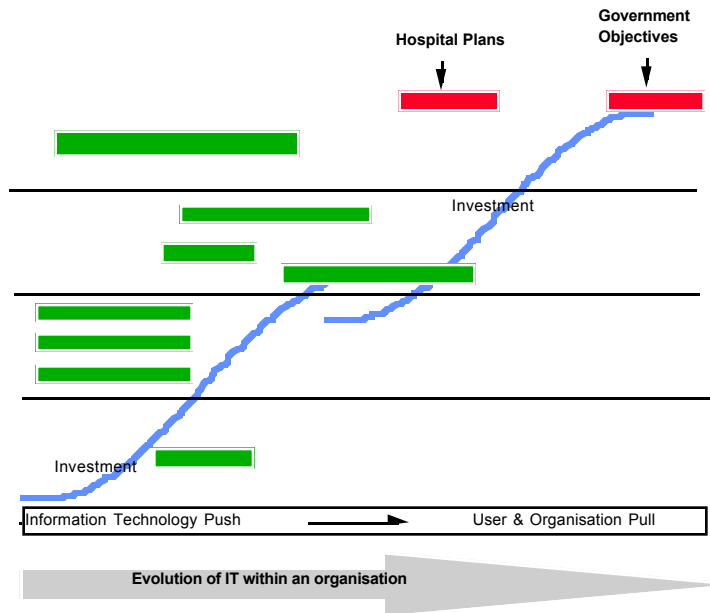


- *Management Practices*, the level of coordination and sophistication in the management of information resources ;
- *User Sophistication*, the extent to which people interact and are competent and proactive in their use of technology and information;
- *Financial Implications*, the investment required to support or enhance the four supply and demand dimensions, and the resulting benefits.



These five dimensions exhibit predictable patterns in their evolution. Ideally all dimensions should be explicitly managed and co-ordinated. Victorian public hospitals exhibit a profile consistent with organisations early on this evaluation, and lack co-ordinated development along all dimensions. Senior Management and Government Healthcare Policy Objectives have set high targets for integrated and information intensive health care for hospitals.

There is a significant difference between where hospitals and Government want to be in IT for the transformation agenda, and where hospital IT is now.



The Current Information Environment

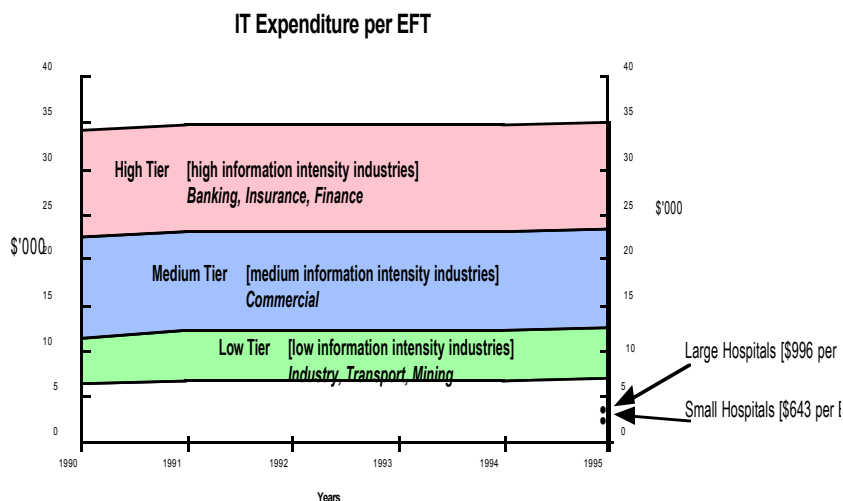
The current information environment will not adequately support integrated health care

A review of the information environment highlighted the fact that information technology was not adequately exploited as a performance enabler. Current capabilities will provide negligible support for the anticipated clinical care and business processes inherent in an integrated health care model. The primary contributing factors to this current position include:

- past under investment over an extended period of time;
- changed focus of service delivery and management from functions to cross-functional processes or pathways;
- a lack of understanding of the critical role that effective and efficient use of information and IT can play within the hospital;
- a perceived shortage of vendor offerings simultaneously aligning to the process view of hospital functions, and offering patient-focused access to integrated information.
- the absence of clear and articulated IT plans aligned with business objectives;
- relatively few examples of successfully integrated IT in hospitals;
- unsophisticated management of IT at many levels in hospitals and a lack of IT expertise specific to the health care industry.

This low baseline means that a significant gap needs to be traversed on the path toward the highly integrated health care environment. A multi-dimensional investment program, phased over several years, will be required to close this gap. A critical success factor is the commitment of senior management and financial resources.

Industry comparisons show that Information Technology capability in most public hospitals is at least a decade behind most commercially oriented organisations.



Source: NNC Benchmark Data

Time Critical Investment

Investment in the future is time critical

Timing is critical given the previous under investment. There is a clear sense of urgency in both hospitals and government to address the gap. With careful planning and execution, it is foreseeable that focused investments during the few years will be instrumental in managing health care costs at sustainable levels despite growth in volume and complexity of demands.

Within the context of a state-wide health industry development initiative, the policy objectives of *Victoria's Health to 2050* and the critical supporting strategy for information, information technology and telecommunications implies a sizeable stretch for the health industry, and there is a recognition that current capabilities and resources will not suffice. Investment must begin to set in train the events leading to future benefits.

Shared Investment, Shared Returns

Shared industry investment will enable delivery of collective benefits

For a number of reasons, the transformation of the public hospital industry through the measured use of information, information technology and telecommunications carries the promise of significant benefit to the entire community. An injection of funds is required for these benefits to be realised. Implementation of the strategy can be effectively cost neutral despite the size of proposed \$400-\$500 million industry investment over the next 5-8 years. The ability to provide more focused, seamless and increasingly pro-active care will also return significant qualitative benefits.

Few hospitals will be able to implement the information, information technology and telecommunications capabilities planned by the strategy on their own. Indeed, most hospitals lack the financial resources to undertake the investments required to implement the strategy. Furthermore, the objectives of an integrated health industry preclude the option of hospitals proceeding without collaboration with other care providers in the industry.

Hospital management teams will take a greater interest in successful implementation if they are accountable for success, share funding, and are able to re-invest financial benefits above a reasonable threshold of expected benefit. The strategy is therefore based on the principle of shared investments and shared returns.

Focus on Strong Industry Leadership

The mission is to strategically raise the capability of the health industry.

Within this partnership framework, the Department of Human Services must play a key role which spans the entire industry. The Department will maintain the vision, facilitate leadership and provide financial support to hospitals. A balanced, structured approach must ensure that the least well positioned hospitals move through measured phases of development as rapidly as possible, without placing constraints or delays on the progress of the innovators and leaders.

The Department's roles include:

- the development, dissemination, & regulation of information & technical standards;
- facilitating learning throughout the industry through education and dissemination of information about the outcomes from pilot projects;
- ensuring current legislative and regulatory barriers are resolved so that rapid progress is not impeded;;
- ensure that new regulations sustain industry-wide progress rather than allowing those who lag to anchor the industry in the past
- ensuring that the partnership with hospitals is maintained, and that co-ordination of the strategy is undertaken with the maximum input from the health industry;
- managing risk and monitoring macro-economic benefits realisation.

Risk Management

Risk Management will ensure success

the significant potential benefits will only be achievable through the careful management of risk. The high risk profile can be attributed to a number of factors:

- the size of the gap, particularly with respect to management practice;
- the magnitude of the required investment;
- the time required to complete the program; and
- the size of the health industry.

Risk Management (Cont'd.)

It is imperative that the early stages of implementation focus on risk management. The most urgent and effective risk management tactic which can be initiated is to increase the awareness of the industry with regard to information, information technology and telecommunications, change management, and process and performance improvement.

Investment risk can be managed through co-ordinated effective management practice, appropriately skilled senior management personnel, and close linking of the hospital information, information technology and telecommunications strategies to the business and clinical objectives and directions of health service delivery.

Phased Program of Change

The phased approach to implementation minimises risk and maximises industry benefits

The strategy describes a three -phased program of change:. Management of the change program will be the responsibility of Metropolitan Health Care Networks and associations of rural hospital "Clusters".

1. Phase One begins at the current profile of the majority of public hospitals and sets a target for integrated campus oriented capabilities. Upon completion of the first phase, hospitals will advance to the second phase.
2. Phase Two sets a target for integrated information and work practice capabilities that link together campuses.
3. Phase Three sets targets for state-wide information integration and work practice capabilities. These targets will build on the operational capabilities of Phases One and Two.

All hospitals are starting from different levels, with some advancing rapidly towards the vision of integrated and information intensive health care. The least well positioned hospital would realistically expect to achieved completion of the first phase within two years, the second phase within five years and the third phase within eight years.

Each Phase is characterised by clear performance measures

Clearly defined performance measures will allow hospitals to progress through the phases, from an intra-hospital to state-wide information network. Performance measures and targets are defined in terms of information integration and work practice capabilities.

The Challenge to Work Smarter using IT as an Enabler

Technology innovations alone will not achieve the goals.. The effective and efficient exploitation of information technology to optimise benefits will require a substantial shift in current attitudes, approaches and practices.

The management of information and information technology in hospitals will change. People, processes and technologies will need to integrate more effectively and innovatively to achieve change and improved patient care. Clinical and business processes will often need to be redesigned before they can be automated through the use of information technology.

Key Implementation Strategies

Focused investment and the provision of the right tools will achieve the strategic intent of a sustainable health industry future

The intent of the strategies is to provide the hospitals with the tool kits, management frameworks, and technological direction that will underpin and enable the continuum of improvement for a sustainable industry future.

1 Enhance Leadership, Management Practice & User Sophistication

Leadership by hospital management and clinicians, and commitment at the highest level of the organisation is critical.

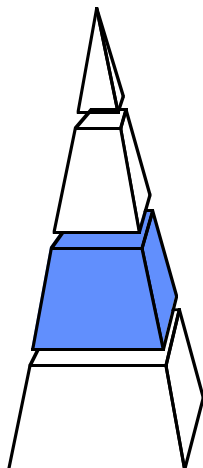
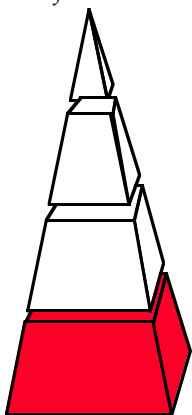
Broad based information, information technology and telecommunications sophistication and skills throughout the public hospital industry will be enhanced. The strategy encompasses:

Senior management and clinicians can demonstrate commitment and leadership through participation in planning processes and education programs.

- customised health industry education programs, focussing on IT management, information planning and process improvement;
- encouraging the formation of associations of hospitals in rural areas into "clusters" to concentrate expertise and purchasing power;
- linking funding access to Networks or rural 'clusters'.
- subsidising the development of an outcomes- oriented, multi-year information, information technology and telecommunications investment and benefit realisation plans for each Network or "cluster", the service plan.
- subsidising for three years the cost of appropriate senior information technology expertise, at executive level, for Networks or "clusters" to plan and manage the strategy implementation;
- concentrate industry purchasing power where appropriate;and
- encourage partnerships between the public hospital sector and the private sector to leverage limited expertise and funds.

2 Build up Basic Technical Resources

The information infrastructure is the critical foundation for future innovation and benefits.



The low level of investment in information infrastructure over previous years necessitates the provision of 'catch-up' funds to ensure that progress is made according to plan, and benefits are realised within the planning horizon.

It is proposed that the Department consider funding 100% of the costs of "invisible" infrastructure on the basis that:

- 'invisible' infrastructures are expected to be difficult to cost justify;
- benefits may accrue to organisations other than the hospitals (eg to General Practitioners and others); and
- they will form a critical foundation for integrating care provision with health care providers beyond public hospitals, and realisation of any later benefits.

'Invisible' infrastructure to be funded must be within the guidelines, and conform to the technical standards of the strategy. Additional capability will be funded by the hospitals.

It is proposed that the Department consider funding 100% of the costs of design and specification of "visible" infrastructure. A level of consistency is required to ensure minimum functionality, integration and standards are obtained, and to optimise benefits to the industry.

It is proposed that the Department fund 50% of the costs of acquisition "visible" infrastructure with hospitals contributing the remainder, on the basis that:

- Some cost benefit will accrue to the hospital with the effective implementation of 'visible' infrastructure;
- The 'visible' infrastructure is the key interface with the clinicians and other information users, and as such is a critical component of work practice change, and progress towards the development of best practice.

'Visible' infrastructure to be funded must be within the guidelines, and conform to the minimum technical standards of the strategy. Additional capability will be funded by the hospitals.

3. Design, Acquire and Implement Integrated Applications Portfolios

Rather than a centralist approach, the strategy is outcomes-based and focuses on supporting an integrated health care model.

The major strategic initiative will be to conduct a number of pilots focusing on process improvement and information systems, prior to wider implementation initiatives in hospitals.

The strategy does not mandate specific common applications, but rather an outcomes-based approach focusing on information standards and exchange, and clinical and business process improvement.

In line with the philosophy of the purchaser-provider model of service provision in Victoria, rural hospitals and Networks will be given management autonomy, but information outcomes will be non-negotiable.

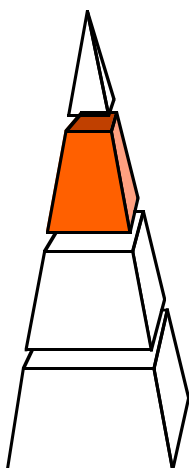
Hospitals will be encouraged to explore the benefits of consortium development and acquisition of applications.

Pilot sites will selected on the basis of

- demonstration of a high level of commitment from all levels of hospital staff and clinicians;
- the ability to rapidly implement integrated systems reducing the lead time to produce results;
- the ability to reduce pilot costs by exploiting the current technical environment;
- ability to leverage from pilot outcomes to other sites; and
- the willingness to share learning with the entire healthcare industry.

Related initiatives include:

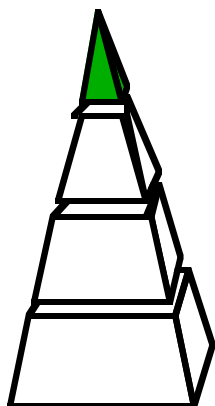
- Facilitation of a series of focused working groups to advance the development of detailed, integrated, cross-functional system specifications;
- Plan and conduct "proof of concept" implementations with integrated systems, work practices and processes. Costs, benefits, pre-requisites and system dependencies will be identified; and
- Prepare, as a matter of priority, in collaboration with public hospitals, a complete set of information definitions.



3. Design, Acquire and Implement Integrated Applications Portfolios (Cont'd.)

It is proposed that the Department consider funding 100% of the costs of design and specification of integrated systems requirements and scope of work practice redesign. This will facilitate minimum functionality, integration and standards are obtained, and to optimise benefits to the industry.

In addition, it is proposed that the Department fund 33% of the costs of the acquisition of application systems with hospitals contributing the remainder. Majority of the benefits will accrue to the hospital and patient care, and the applications will be the foundation to support work practice improvement.



The intent of the strategy is to maximise performance of the hospital industry. While valuable in local or clinic/specialty specific environments *Unique Information Systems* do not offer the same opportunity for industry-wide application and commonality of function.

The Unique information Systems are excluded from the strategy. These systems must comply with the relevant technical and information standards to ensure integration, but development and acquisition must be fully funded by the hospital.

4. Manage a Multi-Year Investment Program

An investment program over an extended period will support the implementation and operation of sophisticated information systems in Victoria's public hospitals.

Establish an agreement with hospital management that repayment of invested funds;

- will begin in the third year of strategy implementation;
- will take the form of a 1.3% reduction of payments to public hospitals.

It is proposed that an industry benchmark or guideline for information, information technology and telecommunications expenditure be set at 2.5% of total operating expenditure.