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COMMUNICATION AND INFORMATION TECHNOLOGIES
CIRCIT**

**HEALTH COMMUNICATION NETWORK:
PREPARING FOR THE 21ST CENTURY**

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THE INFORMATION INDUSTRY: POTENTIAL PARTNERS PERSPECTIVE

**Mr Jeff Parker
Business Consultant, National Health Programs
Digital Equipment Corporation (Australia) Pty Ltd.**

INTRODUCTION

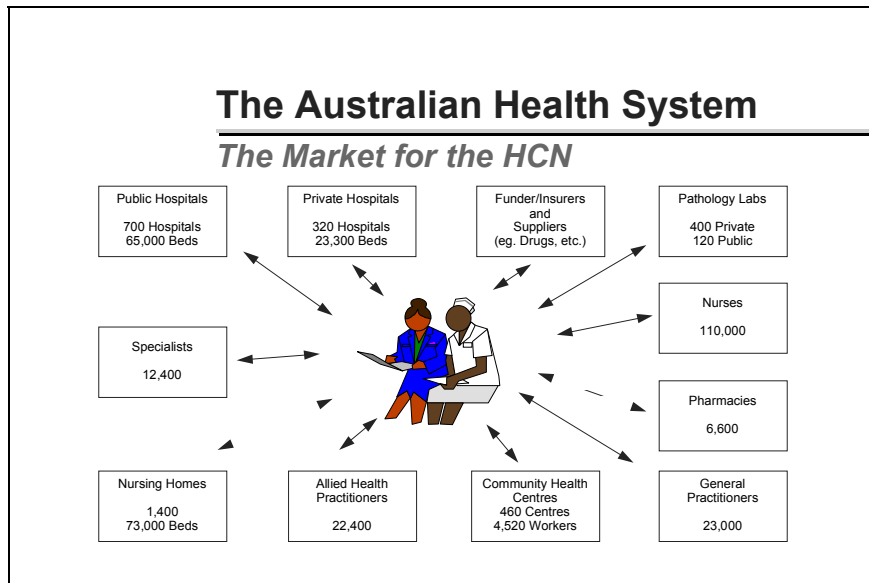
What I'd like to do in this paper is to give you an idea of some thinking about what the HCN can mean for organisations that might partner with it, to discuss some types of relationships that may be appropriate, and how these might be beneficial to those involved.

You may be wondering why a person from a computer company is speaking at this conference. Where the topic is about an initiative in Australia's national health system that is centred around a communications paradigm and not about information processing. The message we're getting is that the HCN is about helping the health system talk with itself and not about saturating the system with information technology. I think that to be accepted and successful, the HCN will need to retain its focus on providing communications services to people and organisations in the health system who provide patient care, and to not fall into the trap of a technology-led approach.

You have heard from the previous speakers that improving the communications in our health system has the potential to drastically improve the quality of patient care through improved service delivery; and, in addition, that it has the potential to provide significant improvements in cost distribution through reductions in hospital admissions, duplications, waste, shorter turn arounds, and so on, which should lead to higher system capacity, throughput and also improved productivity.

You may also have noticed recently that many organisations in the information industry are beginning to talk about doing business in different ways. For example by diversifying into the provision of networked information services. We are seeing a shift by vendors to not only providing the technology and related services that supports information services, but also getting into the business of running them; often through partnership arrangements such as joint ventures.

Later in this presentation, I'll explain how it is that organisations in the information industry will actually have an important collaborative role in helping the health system achieve the types of benefits that are expected with the HCN initiative.



But first, let's take a look at the profile of the market for the HCN.

It is estimated that the cost of providing health care to Australia is around \$33B per year. That's around 8% of the nation's GDP. By any measure that's a big number. And big numbers are worth looking at. If you also look at health globally, with a view to the export potential for the HCN, then numbers that are difficult to imagine are involved.

You can see from this slide that the Australian Health System comprises quite a number of diverse groups, and to add even more complexity, they also cross the public/private boundaries. The health system is fairly fragmented. It has working arrangements that have deep historic roots which cause a degree of isolation amongst many practitioners. Despite the tendency that these have to reinforce the fragmentation, it is encouraging to see cooperation in fairly significant reforms throughout the system. And it is fair to say that the HCN is well positioned to support these health system reforms.

In these modern times of customer focus, putting the client first and so on, you can imagine that the HCN, with its focus on communications to support health care service delivery, that is, to put patients and care into the centre; along with the tantalising promise of improvements in service quality and costs, that the HCN would have to be the health system's dream come true!

But what is it that the HCN will actually do? and how does this relate to what it will actually take to create the changes that people with high hopes of the HCN want to achieve?

Remember, the HCN is about health communication services, essentially the arrows on the slide, and not about information processing, which is something that happens in the boxes. This might appear to be a fine distinction, and from fifty-thousand feet it probably is. In order for information to be used more effectively in the health system, it does need to flow, and it also needs to be processed - somewhere, at some stage.

By acting as a facilitator for changes in information flows and probably new flows of information, the HCN will be basically bringing together a fragmented industry, that at present is reasonably difficult to do business with. In effect, what the HCN is providing to the information and other service industries is access to an expanded market.

So, the HCN also has the potential to become the information industries' dream come true. Let's now take a look at how this might occur.

HCN: Who does what?		
Communications Facilities and Standard Network Services	Connection Facilities and Services, incl. Standards	Client/User Information Systems

The model I am about to present is offered as a base for further discussion and might assist organisations who are contemplating a collaborative role with the HCN.

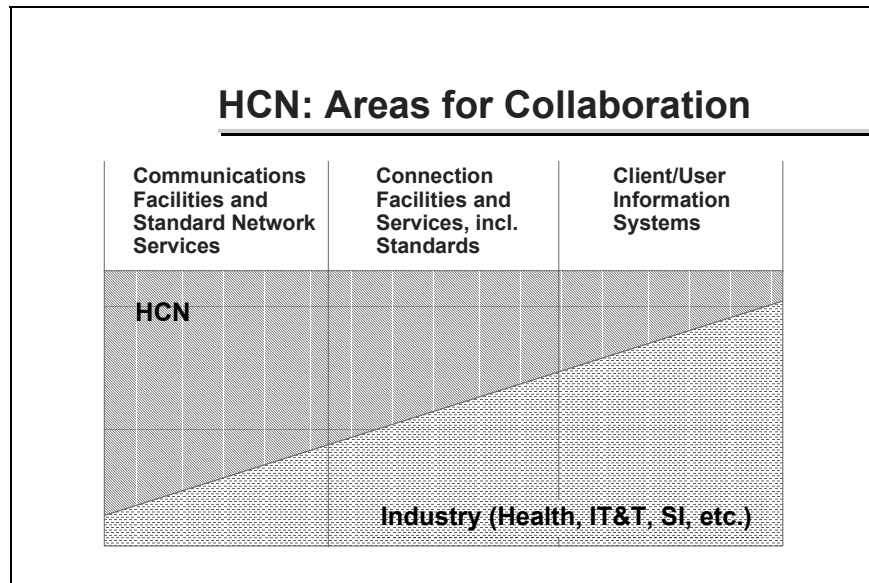
We can look at the provision and operation of health communication services as having basically three domains.

There's the "network", the section on the left of the slide. Imagine this as the facility on which information flows. There may also be some standard services available on the network, such as directories and other common reference information services.

At the other end, there's the HCN client, for example, a GP or a hospital. These organisations, like any other, use information to do their business. The information in this domain would be in all types of different medium and formats, for example, voice on the telephone, facsimiles, hand-written medical records and other notes in filing cabinets, x-rays and perhaps even videos of consultations. Many of these organisations would also use some sort of technology, including information technology, to help process their information. The use of the words "information systems" on the slide is meant to be taken in its broadest context, and not meant to imply simply computer based systems.

In the middle we can identify a domain that connects the HCN client with the network, and then to the services it provides. It is in this domain that the style of connection would be defined. That is, one that matches the network service with the facilities of the client. It is also in this domain that the matter of standards, particularly information and information flow standards need to be addressed. Examples of standards that are relevant here are the connectivity and interoperability standards.

So how can this clean slate be drawn on to represent who can or should do what in these domains? It would seem reasonable to expect that the HCN would have little to do with the way information is used within their clients' organisations. But at the same time it is certainly in the HCN's interest that their clients have the facilities to utilise the services of the network to their fullest. It is when the facilities at the client end give the client the highest value from the information on the network, that the benefits of the HCN will be at their greatest; to both the HCN client and to the health system as a whole.



On this slide, the lower section represents a group called “industry”, which includes the clients of the HCN, that is organisations in the health system; and also the information related service industries, like Information Technology & Telecommunications, Systems Integration and so on. The reason for combining these groups in this manner will become obvious in a moment.

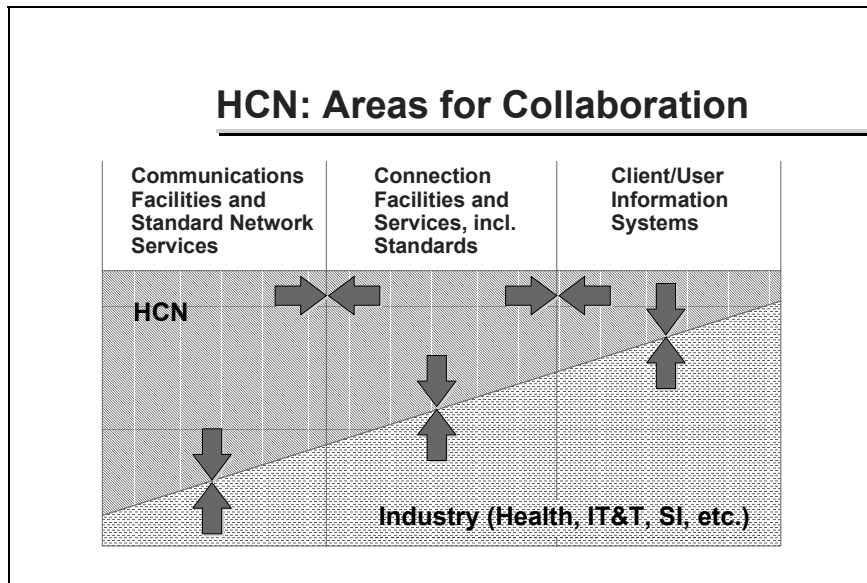
The HCN is represented by the upper section.

You can see at the right hand side of the model, that “industry” has a large role in what happens in the world of the HCN client. This is an area where the HCN might have an advisory or consultative role. This role could include bringing parties together, who perhaps don’t usually work closely with each other, to consider new and different ways of doing useful things with health information.

The left hand side indicates that the HCN has a dominant role in the provision of the network and most of the standard services. Industry would also play a role in this space - not only in terms of letting the HCN know what it wants, as every good client does of course, but also perhaps in the provision of some network services. An example of which may be electronic mail. In this role, industry basically uses the platform or infrastructure of the HCN to offer services to the HCN’s clients.

The middle section is fairly evenly shared. This is a domain that a great deal of work needs to be done in. In a way it’s where the rubber hits the road. As a client of the HCN I might ask: What things do I need and how do I get access to the services on the network? How will the choices I make now impact access to further services later on? As the HCN: In what manner will services be made available? How will privacy, security and information routing be achieved? Can standards help here?

There’s lots of questions, and not many answers at this time. Which, given where the HCN is at, is probably the way it should be for the moment - the concrete is still not set.



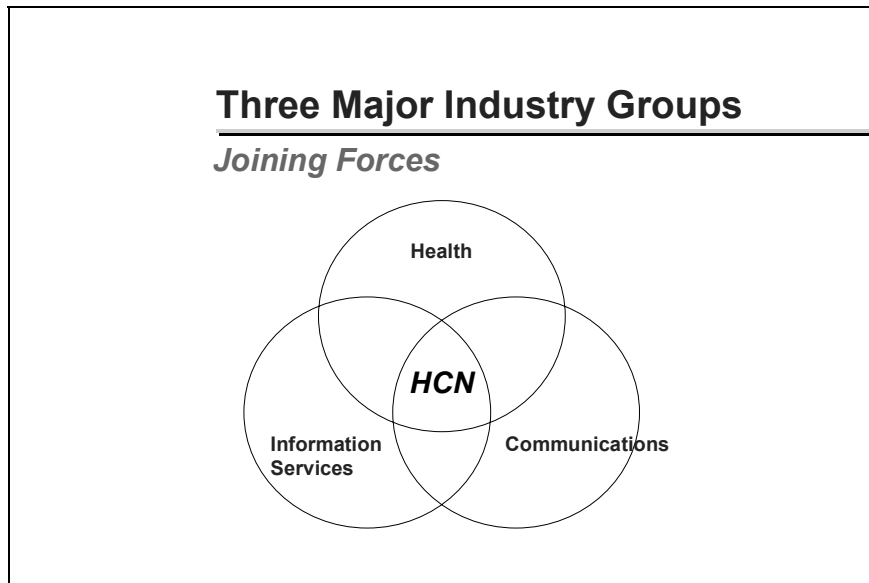
It is at these edges, as indicated with the arrows, where very productive discussions and effective collaboration can take place.

What this slide is basically saying, is that it is really upto the health industry and the information related industries to work together to ensure the best possible outcomes are achieved as a result of the HCN initiative. The HCN isn't a white knight that can do it all on its own. It is going to take new ways of working together, probably with new partners, and also people who have been thought of to date as competitors or even irrelevant, to achieve the benefits to the health system that the HCN indicates are possible.

This model, as presented so far, looks at the technical aspects of who does what. There are other dimensions that also need to be considered. For example, in the middle section, there's the job of bringing together and working out some common language and protocols between health practitioners who haven't had much to do with each other to date, at least as far as their shared patients go. Gaining this consensus is not easy, but is required before the technical issues can be worked. This, if you like, is a dimension about how people work with each other.

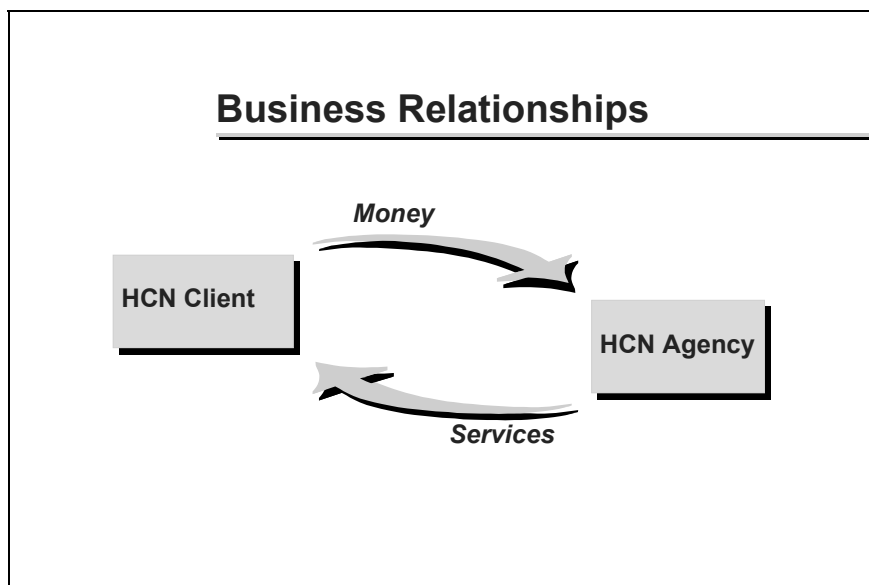
Another dimension to consider is about business. What types of funding, paying, charging and, cost and gain sharing arrangements can be put in place, that represents the value of the services and motivates the right sort of behaviour in the system? As a HCN client: What impact will new flows of information have on the way I do my business? Can some of my ineffective business processes be removed or modified as a result of using new information? More questions to ponder.

Perhaps this model can provide a framework for refining these and other questions, and may help in the decision making process.



This is another way of looking at the boundaries. It also importantly indicates that there are areas of business that the three industries might partake in that are not related to the HCN. These three industry groups are, I think, key to the success of the HCN.

I'd now like to move on and discuss some ways in which the HCN and its information services partners might relate to each other.



This is a fairly straight forward arrangement. The HCN will be offering some services on the network, and it's clients will pay for them. What could be simpler? How the paying actually happens is not yet known, and will most likely depend on the type of service, who benefits from it and how the resultant gains in the health system are shared.

An example of why this is not straight forward, is with communications that might happen between GPs and hospitals that relate to the care of their shared patients. Besides the issues about having to cross private and public systems, there's a fair difference between the two in terms of what constitutes a largish investment.

For communications between a hospital and the neighbouring community of GPs to be effective, a large proportion of the GPs will need to participate. This type of scenario won't work if only a handful of GPs in a given community are involved.

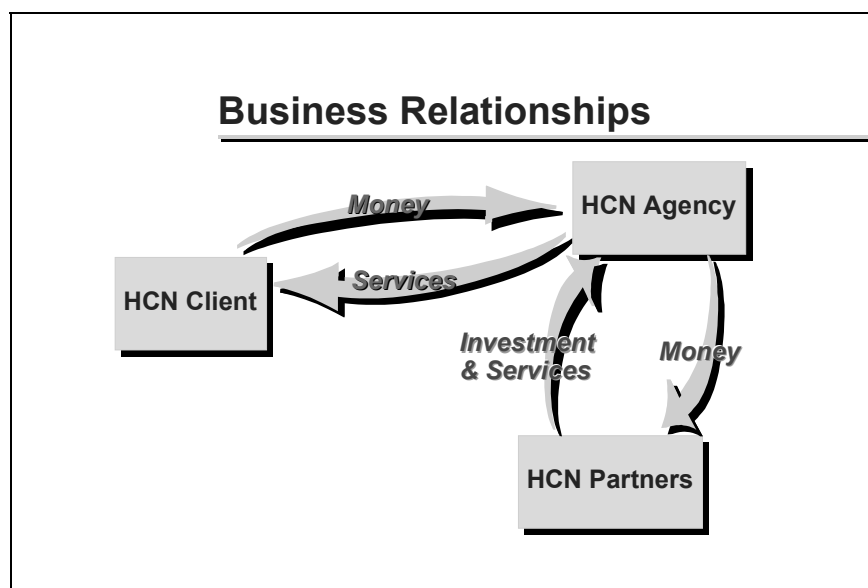
To get the most that the HCN can offer for services that relate to specific patient care, it is likely that the GPs would need some form of computer equipment. And for a small business person, this can be a significant investment.

The question then arises, that if the GPs and hospitals start to share information that results in improved patient care, and as a consequence, for example, a reduction in the number of emergency admissions occurs at the hospital, which by the way, HCN pilot projects indicate is a distinct possibility, then, is it reasonable that the relatively significant investment made by individual GP should benefit the publicly-funded hospital? The avoided cost of a single hospital admission would cover the cost of computer equipment for quite a number of GPs. How can this kind of gain in the health system be fairly shared around?

This example of course assumes a traditional investment and charging model.

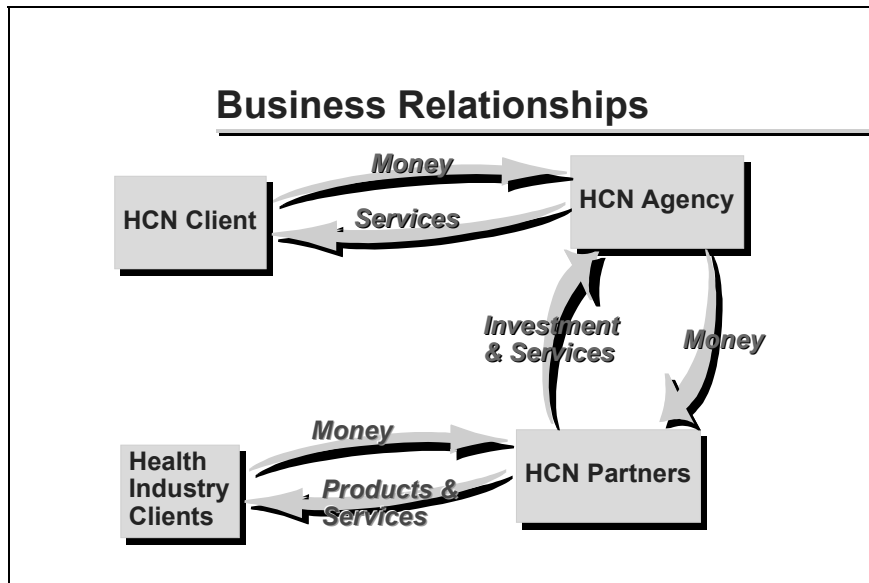
What if things were different? Imagine how it might be if something like a joining fee, a monthly subscription based on chosen services, or perhaps a small fee per information transfer was in place, and that the provision of the necessary facilities was included in those costs. Treating the services provided by the HCN the same as you might consider say the services provided to your house by utilities such as electricity and gas, would appear to make the HCN more palatable to a wider range of potential clients. Imagine also if the hospital was motivated in some way to “sign up” as many of the local GPs and Specialists as possible?

A fair amount of thinking and discussing in this area is still to be done. But let’s move on for now.



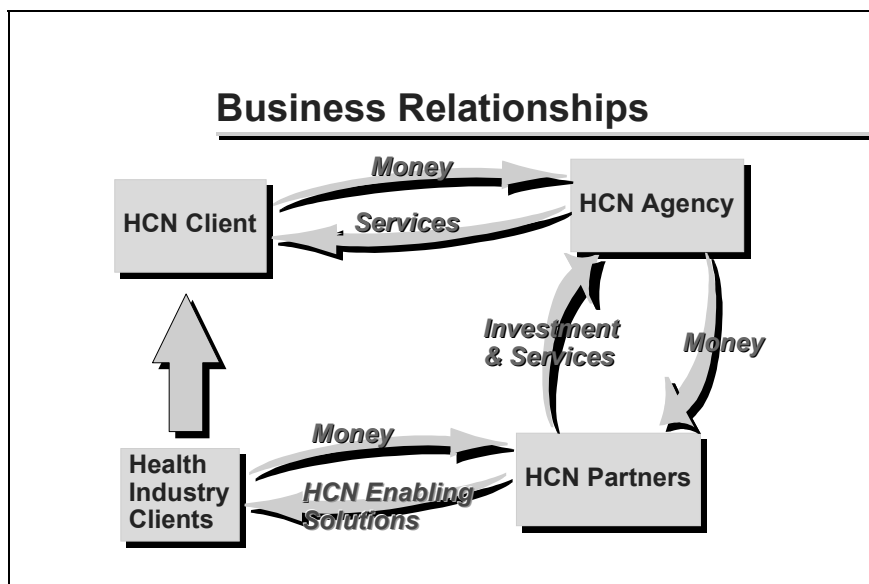
I suggested earlier that it is going to take organisations new ways of working with each other to bring about the types of benefits to the health system that the HCN believes are possible.

Partners of the HCN may take many forms, but, as in any business relationship it will revolve around exchange for value. Institutional and other investors will seek return on their investment, and service partners will seek payment for their services.



It is very likely that many of the partnering organisations will have an existing client base in the health system. In addition, most of them will probably have extensive and well-connected sales and marketing functions that reach out into many parts of the health system. Others might also have support and service operations.

So we have some “business as usual” relationships happening at the same time that the HCN is making an entry into the market. Relationships, by the way, that may well be enhanced by its entry.



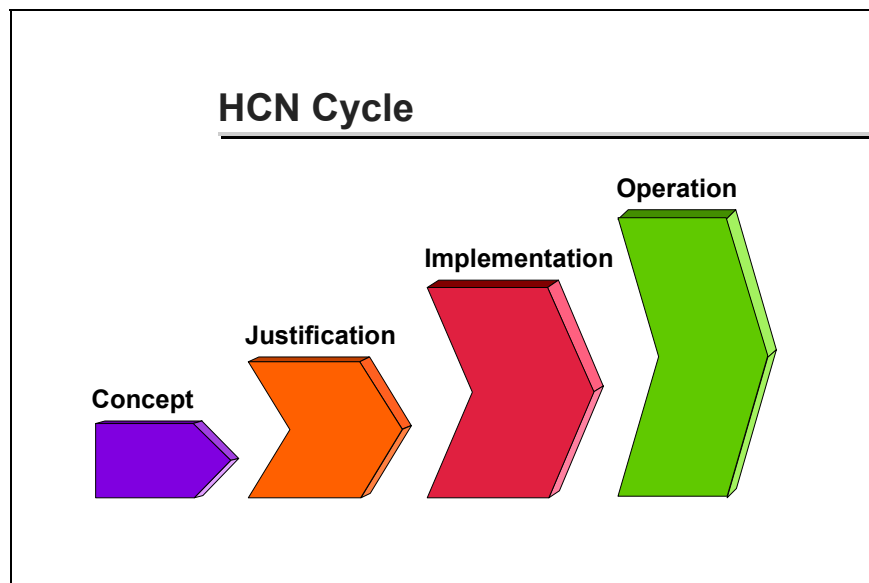
Now suppose the HCN’s partners were armed with offerings that in some way enabled their clients to participate in the HCN. You can see that what in effect happens, is that the relationships are enhanced by creating a self-reinforcing loop.

As more health organisations become HCN clients, then more services will be used on the network, which in turn strengthens the link between HCN and partner. While this is all happening of course, the health system and people of Australia will be enjoying the benefits of improved information flows.

I can imagine that you would be asking: “What will the HCN Enabling Solutions look like?”. The answer is a mix of “it depends”, and “I’m not entirely sure”. It really depends on what things can be made and provided to health organisations, to assist them, in the most appropriate way, to access the communications services that *they want* to be available on the HCN. That is, the answer lies in the

health system, and through working the arrowed edges in a previous slide with common intent so that the right sorts of solutions that support the right sorts of communications services are bought into being.

I'd now like, before summarising, to talk a little about service development.



The process shown on this slide, besides being a map of the life of the HCN, also serves as a map for the development of communications services.

The HCN itself started life as a concept. The concept was developed, through many steps which included an important 3 day workshop held at the Sebel Townhouse in Sydney in December 1991. This workshop used a Digital consulting technique called TOP Mapping™. The concept began to take form, the early thinking crystallised, a common understanding of the need for change began to emerge, and the "Compelling Case" was presented to the Health Ministers Conference in April 1992.

The Justification stage included much consultation, the development of a business case and the establishment of a number of early pilot projects to help test the feasibility of the concept.

Of course, as a result of the July 1993 session of the Health Ministers Conference, the HCN is now in the Implementation stage, as the commonwealth, on behalf of the Australian Health Ministers, works to create the organisation that will take the HCN into Operation; which is expected to commence around March or April next year.

It is not too difficult a task to use this map, and some lessons from the HCN experience so far, to look at how communications services might develop and be made available on the network.

Concepts are usually derived from needs. And a great place to look for these is where patient care takes place - around the outer edges of the health system.

Testing the concept was a very important part of the justification for the HCN. An ideal means of testing the concept of services and gaining some insight that can help with justification, is what's called Process Modelling. Going through the steps of building a robust working model of the service, trying to break it, fine tuning it, and so on, can save valuable time, effort and money. It will cost much more to change the design of a service once it has commenced implementation or operation, than to change it earlier in the design stages. There's a saying: that if you can't model it, you can't build it.

The information industry has a great deal of expertise and experience that can help in these early stages in the development of health communications services.

HCN: Potential Partners Perspective

Summary

- The HCN has a “communications” paradigm
 - It’s clients also need to process information
- Health, IT&T, SI, etc. need to collaborate to maximise the benefits from the HCN
 - Take services from concept to operation
 - The HCN is expanding the market
- HCN-enabling Information Systems for clients
 - HCN Partners can potentially share clients with the HCN

In closing I’d like to summarise this presentation with three main points.

The first is that the HCN has and needs a communications paradigm, and yes information does need flow to achieve the benefits; but it also needs to be processed somewhere, at some time.

The second is that the HCN can’t do it all on its own. There is the potential for major improvements in Australia’s health system with the HCN, and they can only be achieved through collaboration between the health sector and the information related service industries. In bringing together a fragmented health industry, the HCN is in effect expanding the market and creating new opportunities for partnerships.

And finally, that existing health system clients of HCN partners may well benefit from the partner’s ability to provide HCN enabling solutions. Not only this, many potential partners who have a global approach to health care could provide ready access to international markets for Australian exports and industry development.

A symbiotic relationship between the HCN, partners and shared clients would create the type of setting where the benefits of the HCN would flow as favourably as the information on the network.