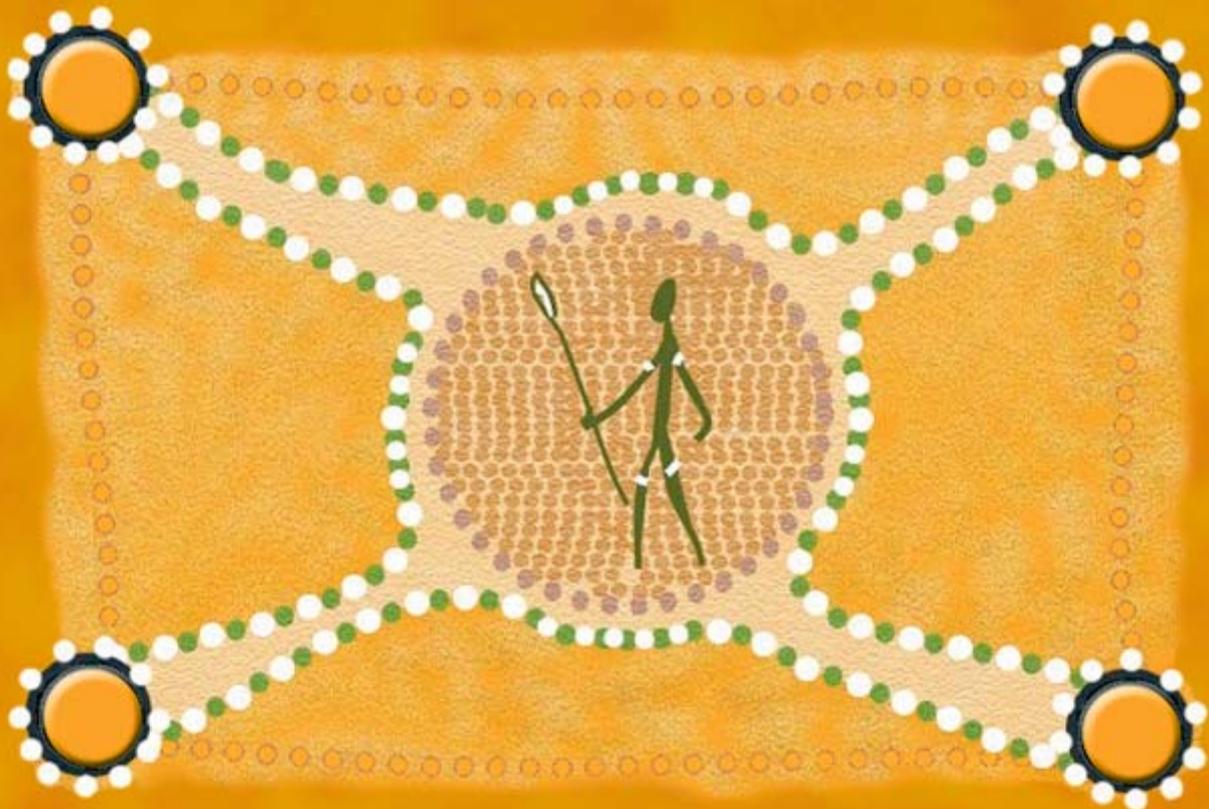# Production and evaluation of the technology and processes for setting up and running touch screen kiosks in Aboriginal communities

Diabetes

Joint pains, sprains and feet

Who can I talk to

What's happening in the community

jsc

Commonwealth Department of
Health and
Ageing

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Background to the wider project

An IT-based health intervention in an Indigenous community – Yarrabah – has been funded by Glaxo SmithKline (previously SmithKline Beecham) as part of its world-wide health education and community programme. This includes the use of interactive health education touch screens which can also carry locally-generated content such as community announcements, events and contact information. The purpose of the Yarrabah work was to develop an environment which, if successful, can easily be duplicated and extended.

The current project, funded by OATSIH with contributions from Glaxo SmithKline and Queensland Health, had the purpose of testing this. It provided for the development of extra health information content (diabetes was the selected topic), extension of the Yarrabah initiative to another Indigenous health service site (Inala), and evaluation of the process and impact across the two sites.

The evaluation is described in a separate report. This work described in this report covers:

- development and evaluation of the process of creating an additional interactive health topic using the existing framework and Queensland content expertise.
- equipment, installation and operation at a second site.

This report

This report details the techniques used, technology choices made and findings of the one-year deployment of two touch screen kiosks running in Inala and Yarrabah (July 2001 through June 2002). The kiosks gave access to a variety of information, presented in the form of pictures with a voice commentary and only limited use of written text. This is a differentiating factor against other most other kiosks where instead of audio the content is heavily text-based. This report, prepared for the Office of Aboriginal and Torres Strait Islander Health, documents all aspects of the work undertaken by JSC Australia, giving pointers to where further attention might be beneficial. It then highlights any weaknesses with how these might be addressed.

The report is organised in three sections:

- **Introduction and background**
  – here background details are given on why choices were made, what technology was needed for supporting the evaluation and context from other similar work.
- **Production of titles**
  – here the production process is looked at and analysed. The section also covers how the techniques might be generally deployed.
- **Findings and recommendations for the future**
  – here the findings from the evaluation are given from the point of view of the technology, support of the evaluation and what is needed to maintain the two units in the field. Also included in this section is information on genericising the work further so it can be more widely deployed.

Technical details, information on the subjects produced and specific process facts associated with production are given in the Appendices.

1.1 Kiosk systems in health

Throughout the world there are a number of health kiosks or interactive Internet public access terminals (PAT). These units are very popular and increasingly used (see Appendix 1 – Victoria Better Health Channel). The Inala / Yarrabah units are unusual in that the information is given primarily by voice. The aim of this short section is to briefly position the approach adopted.

1.1.1 The two groups of kiosks /Public Access Terminals

Health is one of the areas where there is general interest in seeking information from computer-driven terminals This has led to a growth in the use of various devices from straight websites to smartcard-driven kiosks (France). Public access may be personal through a computer at home or work, from a unit that has a keyboard and mouse (or tracker ball) or through touch-screen units. In Switzerland "through glass" units were used where touch panels were placed behind the windows of pharmacies. Delivery may be through the web (personal web access applies mainly to those who might normally not use the present tool) or through a stand-alone or networked kiosk.

The types of information presented fall into two broad categories:

1. **Text based web**
   Often a website and a public unit are developed together. The public access terminal will mainly offer access to the web with this site being the primary service. Some units can link into other sites though many do not. Historically, there is a whole set of applications on areas like immunisation (travel and children), products for homeopathy and natural treatments, find a local service (doctor, nurse, care, pharmacy, dentist, etc) and general sites giving drilldown type information. Although the material may be illustrated, primarily people read the text from screens or get printouts of what they want. Rarely are there many interactions although in some cases

appointments can be booked. There have been quite lavish text-based units that are smartcard-driven for areas where health centres give such cards but these are not common. France, to date, has been the leader in using this technology. Recently, to assist accessibility, some of these terminals have had phones with the availability of someone phoning to a call centre to be talked through the site (using "Voice over IP"). This has helped those unfamiliar with the web but has the disadvantage of needing costly support. Trends are moving towards having SMS messaging to mobile phones to confirm appointments or phone numbers / contact details but this hasn't been seen as a deployed unit as yet.

Figure 1: Victoria better health channel

2 Topic-driven kiosks

Driving a parallel public access development has been the desire to give more detailed information as part of a health programme to certain groups of patients or citizens. Kiosks here have mainly been touch-screens with some printout facilities, although use of this material by a multimedia PC with a mouse is available in most cases. Some units have a phone for asking for help or using an additional access channel. Here too text-based topics are used but a more TV-like approach will be better because this is so easy to use and familiar. The idea here is to still have an interactive, question-based framework but to give the information in voice. These kiosks may still have some text pages but text would be minimal.

The kiosk units can offer card swipe or smartcard if needed and it is important that the unit chosen is robust. Factors like ensuring that there is no interference (especially if the unit is in a hospital) and that the lighting is right so the screen can be seen are important. For all units if private information is given then where it is located is important (see Appendix 2 – checklist for kiosk installations). These topic-based units tend to be part of a clinic or specific health programme.

1.2 Web or CD

Here the different approaches to storing and running the material produced are discussed for completeness. As time moves on the situation will of course change and once reasonable quality can be achieved over the web then this technology should be used.

Figure 2: Yarrabah Kiosk

Ideally the kiosks would benefit from being networked, both for support reasons, and for ease of sharing and updating common information.

The present kiosks, because of the amount of graphics and sound, would need broadband communication to work effectively over a network.

Currently the kiosk runs the topic locally where it has been placed on the hard disk. Updating is carried out from a separate PC / laptop and major changes or removing the traces have been performed via telephone linking directly. This is inelegant but effective and works.

Why not use the web?

Given that the material was to be used from remote locations and there was no knowledge about the reliability of the phone lines the decision was made to run everything from the kiosk. Kiosk units come with a large hard disk and 128 MB of memory was specified so that the database ran quickly. Running the actual topic over the web requires high-speed lines so this wasn't attempted, it also incurs some cost of the line. It should be possible to retrieve the traces via the web but the issue here was as much process as lack of technology. Web use would require a web address and ISP for the communication. It would additionally require software in the kiosk for which there was no budget. For a small trial of this kind, it was felt best to keep the communications simple, as there was no technical support locally and the critical factor for an evaluation is that the topics, collection of trace information and updates must be stable.

Updates were carried out by CD where these were major because over the web this process would be too slow and there is always a danger then of a line dropping out part way through the transfer. Local updating was provided and used at Inala for dates and contacts but through constant change at Yarrabah as yet these facilities have not been handed over to the designated person.

What for the future?

There are three processes involved in the kiosks. These are:

- Running the topic and material
- Collecting the traces (if needed)
- Updating small amounts of information to customise for the local environment

Each needs to be looked at separately.

Running the kiosk material itself, because of its size, for the foreseeable future a 'video on demand' approach is likely to be unrealistic because of the time this would take and the fact that not all communities are likely to have the fast line facilities. New kiosks are being specified with CDROM drives so this can be a simple loading method – over the network has been utilised to date and can still be used.

For local smaller updating, this needs to be looked at again to see what is practical. Having a web update for small changes like events or the odd picture on the attractor would be more practical and achieves the necessary personalisation to the individual groups. It also creates ownership locally, which is so important. Once the updates are not controlled from one PC then there needs to be security so that the health messages are not altered and a process that stops more than one person changing something at the same time is needed. Organisationally, these may well be processes that for actual communities are not easy to control – in a health clinic the position is different. Finally, there needs to be a change on how the traces are collected either through the web or through a dial up of some kind to a PC. Again who collects these and how it is controlled is almost more important than the technology.

It can be concluded that for the present the current methods of use on the kiosk are the simplest but that updates need looking at, as does the collection of traces. What is collected though as feedback depends very much on the structure of the project and who needs what material. For example, for some applications like the alcohol audit it may be that information on use needs to be sent both to the community and the health professional. In other cases, it may be that the user is identified and keeps their own information with this going to their health professional. In that case then data registration would be required under the data protection legislation.

1.3 A walk through the application

As not everyone reading this report will know of the application used, a walkthrough is given here. The system as used in Inala and Yarrabah has five components:

- The "attractor" – a set of screens that run when the system is not in use giving health messages
- An introduction and main menu – the introduction, which is optional, positions the unit with the menu providing choices

- Health topics – material on subjects like "Diabetes" and "Pains and Sprains"
- Questionnaire screens
- A path of events and general information

The structure is flexible and other suggestions have been proposed particularly a section for children.
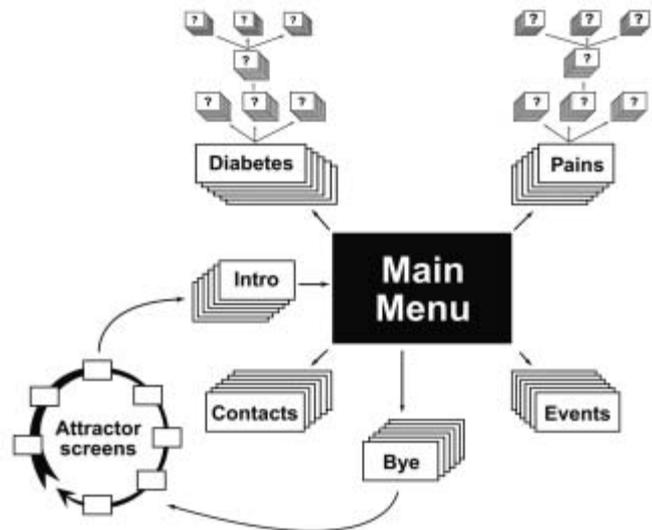
Figure 3: Flowchart for the system as it stands

1.3.1 The "attractor"

This, unlike the rest of the system, runs silently. The reason for this is that any voiceover or music tends to annoy those people who are permanently near the kiosk. The "attractor" is really a set of screens that give three messages:

- What the system is for
- General health messages
- The message "touch" so people know how to get started.

Figure 4 shows several attractor pages; some produced specifically for Yarrabah. At present 10 "slots" are provided for these screens but it is intended to increase this to 15. Each can be given a different time for display; some may be more important or need extra time for reading. The attractor has a play list so if one picture needs to be shown more often this can be set. A local updating tool was produced but not used as there was a hitch in update machine for Inala and Yarrabah did not select who would be the person to carry out updates. All pictures used are stored on the kiosk, so old ones could be utilised again if desired without having to insert these a second time. The principle behind intuitive, public access, touch screen applications is that at the start very large touch areas are presented – for the attractor this is the whole screen area.
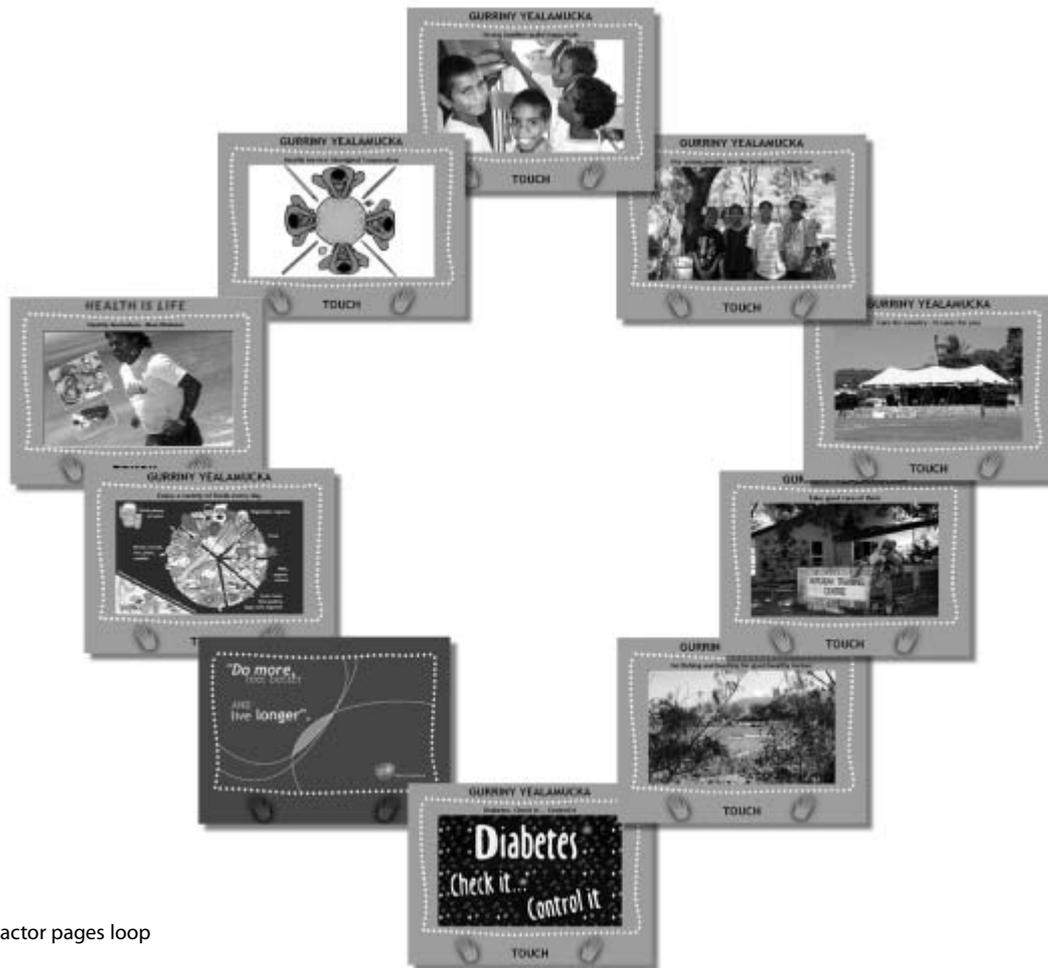
Figure 4: Attractor pages loop

1.3.2 Introduction and main menu

For Yarrabah an introduction has been prepared that is displayed when touching the screen. It says what the kiosk is and starts with some local music. It has been recorded by someone in the community and includes local pictures produced by children in the school. This has not been deployed for Inala.

Leading from the introduction, or the "attractor" where there is no introduction, is the main menu. This has selections placed at the four corners so that if someone can't see well they can still find the areas to touch (given that the topic chosen by the government was diabetes this was thought to be important). Still the touch areas are large to ensure there are minimum errors for new users whilst they familiarise themselves with the control of the system.

Figure 5: Yarrabah Introduction

It gives access to the topics "Diabetes" and "Joint pains, sprains and feet" and to more information in "Who to talk to" (contacts) and "What is happening in the community" (events).

Users leave the touch screen from the main menu by touching "Bye" which takes them through a general questionnaire to the credits screen, before returning to the attractor.
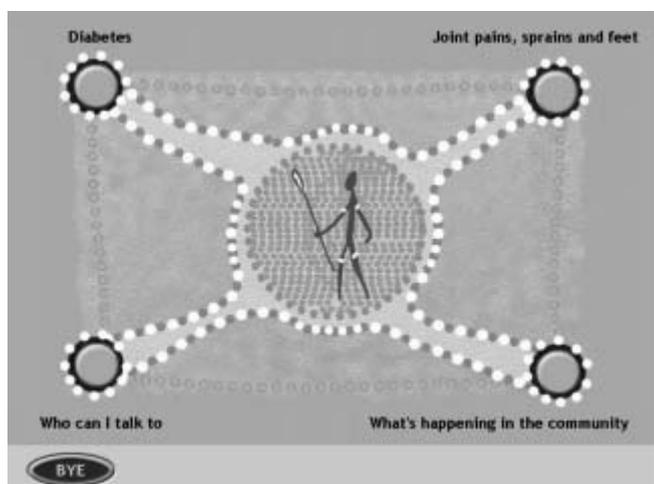
Figure 6: Main menu

1.3.3 Topics

Diabetes was written specifically for this project to test the process of creation (see section 2). Topics should always be introduced, describing what they are about before a question menu is shown. The questions are usually based on those commonly asked by patients. Scripts need to be short, in consumer language and if they contain "bad news" the rule is to always end on a highpoint. Scripts are spoken, supported by illustrations. Small amounts of text are used occasionally to reinforce a point, usually in the form of bullet points. Straplines can also be used in combination with pictures.

Figure 7 gives the introductory audio script for Diabetes, which is followed by the question menu *(Figure 8)*. As the script on the left hand side is read the picture on the right is displayed on the screen.

Figure 7: Diabetes Introduction

Diabetes is very common and is becoming a world-wide health problem. A recent Australian survey found that 7.2 percent of the general population aged 25 years and over had diabetes.

In the indigenous population, diabetes is even more common – 1 or two people have it on average out of ten. In some outer islands of the Torres Strait this rises to 4 or 5 people out of 10, so be checked, see your doctor and take care of yourself.
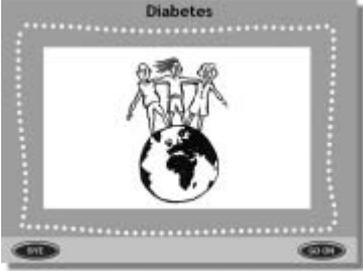
In the indigenous population, diabetes is even more common – 1 or two people have it on average out of ten. In some outer islands of the Torres Strait this rises to 4 or 5 people out of 10, so be checked, see your doctor and take care of yourself.
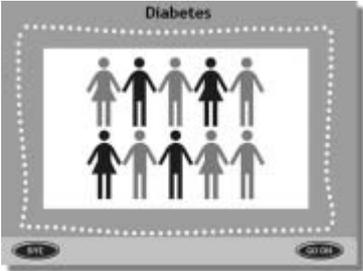
Diabetes is caused by the body not producing enough insulin, or none at all. Insulin is a body hormone produced by the pancreas which is located behind the stomach. It is needed to move sugar from the blood into cells. For example, moving sugar into muscle cells so you can be active and do things. Insulin acts as a key helping the passage of sugar in to cells. Sugar is not just sweets and cakes, but is found in most foods.
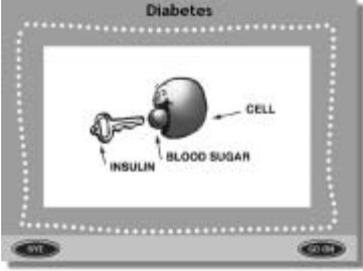
Some fruits can contain very high amounts of sugar, so be aware of how much sugar is in different types of food. Insulin not working properly will cause sugar in the blood to rise significantly, resulting in diabetes. People with high blood sugar may experience no symptoms at all and feel no different so regular check-ups are important especially if you have a family history. There may be symptoms though so browse through the material here to find out more.

Diabetes is a serious disease. If detected early and treatment is started early diabetes can be managed successfully avoiding complications such as heart disease, blindness and kidney failure. Managing your diabetes well, doing regular activity and eating healthy foods will make you feel better and help avoid these complications.

When the diabetes introduction is finished the menu questions are read, followed by 'see your doctor' and instructions such as how to go on and other choices 'You and your rights' and 'Have your say'.
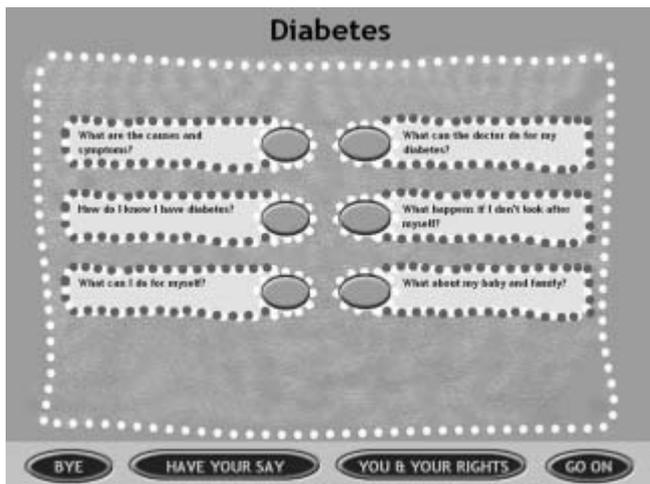
Figure 8: Diabetes menu

> You can now look at the answers to these questions:
>
> • What are the causes and symptoms?
> • How do I know I have diabetes?
> • What can I do for myself?
> • What can the doctor do for my diabetes?
> • What happens if I don't look after myself?
> • What about my baby and family?
>
> These provide you with general information. You must also seek professional advice and see your doctor. Look at as many as you like, those you have visited will be marked with a tick, but this does not stop you looking at them again. When you have finished choose "Bye" to leave or "Go on" to see other choices. You can also look at "You & your rights" or "Have your say".

Answers to questions follow the same construction and if they cover a number of points there can be a second level menu. For example, the diabetes question "What are the causes and symptoms?" leads to a menu covering "pregnancy", "feet and legs" and "your eyes".

Figure 9: Second level menu
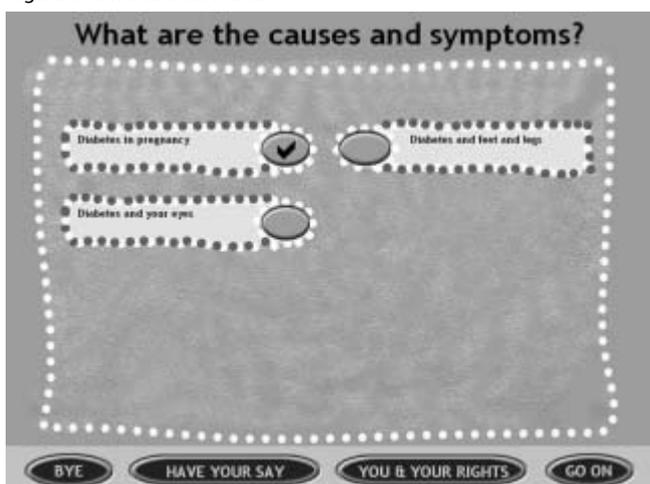
People can view the question answers as many times as they like. There are simple controls like "go on" if someone wants to jump to the end of a sequence. Backward navigation is provided to the menus and where this is unclear the "go on" button enables people to go on further.

1.3.4 Question pages

For the evaluation, it was important to ask some simple questions. These were minimalist in wording and laid out so as to be clearly presented. All answers are anonymous and used only as statistics. Two types of questions were used, health-related questions such as "Did this kiosk help you learn about diabetes?" and general ones such as "What age are you?" The health questions are asked in "Have your say" within the topic and the general ones in the "Survey" from "Bye".

Figure 10: A question page

1.3.5 "Who to talk to" (contacts)

This is a short section, from the main menu, addressing local contacts and where more information can be found. Contact addresses can be entered for organisations within or near the community, but general ones like "Diabetes Australia Queensland" are also included. Users can print the details of a contact if they wish. Currently the contacts are updated using the laptops to upload the changed information to the kiosk.

Figure 11: A contacts screen

1.3.6 "What is happening in the community" (events)

This is section is similar to the contacts, but here all information is local. Communities can enter any events they want to publicise, but health related events such as "Walkabouts Walking Group" are encouraged.

Figure 12: An events screen

1.3.7 "Bye"

At key points in the dialogues people can say "bye". This leads to the general questionnaire asking users how they got on with the kiosk, their age, gender, whether they would like to see other topics and which ones (from a list).

It also shows the credit list of all that took part in the work before going to the attractor. This again has a spoken word dialogue reinforcing key messages of "go to the doctor" and "get help" plus "eat good food".

1.4 Technology

The project has three elements of technology:

• The kiosk
• The update machine
• The software.

All are briefly described here but the specification for the kiosk is given in Appendix 3.

1.4.1 The kiosk

The software will run both on a touch-screen kiosk and a normal, mouse-controlled PC. Currently it is expected to be loaded by experts so the mouse-controlled version would need a more user-friendly install to be published more widely. Technical details of the kiosk are given in Appendix 3 – for the future it is recommended that a CD drive is added to this in the short term until electronic communication can be more generally established (it is a useful set-up backup if there is a hard disk failure in any case).

A number of kiosks were looked at but a retail unit from NCR was selected. Appendix 4 gives a checklist of factors to be considered when looking for a kiosk. Where units are to be placed very remotely reliability and having national support was felt to be critical. In the trial neither of the kiosk units failed at all.

1.4.2 The update machine

In the future it is possible to put updating through other channels, but control processes will be needed and some kind of dial up facility. For this project a low spec laptop was set up with the application and a tool that would enable the loading of new version and the changing of the events. The idea was to test how practical it was to provide local updates and whether these would risk the stability of the material. The results were good at Inala and the trial is still needed at Yarrabah when there is a kiosk manager.

1.4.3 The application software

The software is implemented using standard Microsoft development languages and tools. The kiosk software is a Visual Basic application. Data is stored MDB files as used in Microsoft Access, and accessed for the application via JET.

The system is entirely data-driven, so that the content and the flow of control are determined by entries in tables and not by the software itself. This ensures that the software does not need to be changed to accommodate changes in content, and also that the same content could be re-used in other contexts or with later versions of software.

There are two subsidiary tools. The Update tool can be used locally to set up and alter local pages for each site. These are the pages that show in the "attractor" loop, ie. when the kiosk is not currently being used, and pages that give information about local organisations and events. The data capture tool is used to take data off the kiosk such as how many people have used it and statistics of how the various questions have been answered. These tools are implemented using the same software technology.

1.5 Glaxo SmithKline

This project was a joint initiative between Glaxo SmithKline (GSK), The University of Queensland and the Office for Aboriginal and Torres Strait Islander Health (OATSIH).

GSK is one of the world's leading pharmaceutical companies. Its global quest is to improve the quality of human life by enabling people to do more, feel better and live longer. GSK's strategic intent is to become the indisputable leader in its industry – not simply in terms of size, but in how it uses that size to achieve its mission. Through its Global Community Partnerships function and Corporate Donations Committee, GSK partners with

and supports organisations whose goals and objectives reflect its mission of improving the quality of human life.

In its International region, Global Community Partnerships focuses on providing partnership funding for health education and mobilisation. Key characteristics that GSK looks for in proactively researching and identifying programmes are: need, sustainability, leverage, measurable outcomes, partnership and innovation. Fulfilment of these criteria ensures that GSK's programmes have the best chance of success for those who stand to benefit from the results. Because of the emphasis placed on process-driven management, they also ensure that, if appropriate, successful programmes can be reproduced in other similar communities.

GSK additionally funded two health improvement programmes for indigenous population communities in Australia, one on Thursday Island in the Torres Straits, the other in Gurriny Yealamucka, Yarrabah. This kiosk initiative, working with the government, was an extension of the second and the company is very pleased with the results.

1.6 Other partners

JSC (Australia) produced the software and provided technical support. Based in Melbourne but with a larger parent company in London, where the approach was researched initially, the company selected the hardware, commissioned this with NCR, installed it, ran the content workshops and built the application. During the evaluation small changes were installed, problems solved, technical advice given and traces supplied.

The University of Queensland: Professor Ernest Hunter, Helen Travers performed the evaluation, which will be written up in a separate report.

Queensland Health and Inala Community Health Service: Noel Hayman and Nola White provided voiceover from Inala. Noel also acted in the role of "editor in chief" for the scripts.

Others who helped with the project are:
- Yarrabah Health Project
- Guy's & St. Thomas's Hospital, London
- Cairns Diabetes Centre
- NCR Australia, NCR Netherlands.

Key to success with those using the units is the right tone and appearance of material. Research previous to this work has shown that better inclusivity can be achieved through illustrated audio as a technique and that "dialogues" need to have a certain style (see Appendix 5 – scripting checklist). It is important from a budget point of view too that the process for production is easy and can be undertaken without the need for professional studios or photo shoots.

This section covers:
- the process for production
- the need for a content workshop
- organisation of material and scripting
- photos, images and graphical elements
- provision for collecting user data
- customisation locally.

The great success for audio production was utilisation of a consumer minidisk as the recording method, used here for the first time in this application. For titles where material might be created in very distant places this has saved studio time and worked well. It means that local customisation is much more possible now than for earlier European titles.

2.1 The process for production

Currently there are four general types of information tracks on the kiosks:
- The attractor – see also section 1.3.1
- General local information
- The health topics themselves
- Questionnaires – see 2.5.2.

Section 1 gave a walkthrough of a title. Here, the processes used in production are described listing any points where methods need updating after the evaluation experience.

2.1.1 Ownership and principles

Behind the MediBook concept are some general principles that drive production and style. The intention is to generate local ownership and enable input of expert knowledge. Success is seen to come when local participation is integral to what appears on the kiosk – for example the use of the kids school pictures with health messages on the Yarrabah attractor. Computers are seen as impersonal and it is important that material overcomes this.

General principles or goals can be listed as:
- **Appropriate**
  A title must be appropriate to the group using local images and pictures that are of interest if possible.
- **Localised**
  When considering a title how local materials can be incorporated with known voices needs to be considered so it does not become remote (if possible groups should be used to create this like the school children).
- **Ownership**
  How to gain local ownership to ensure the unit is used is important (location, materials, voices, having a local owner, having some changeable items like lists of contacts, etc.).
- **Location**
  The material is developed so it can be used generally by the appropriate groups of the community so the kiosk needs to be located in a place where people can find it but have some privacy if the nature of the material dictates this.
- **Inclusive**
  The displays, images and presentation with voiceover must be inclusive, ie. not exclude particular community groups.

The idea behind the system is to utilise staff time better in that routine information can be easily given through a kiosk provided it behaves more like interactive TV than a text based website.

2.1.2 The production process

The production process for a MediBook has 8 steps.

1 **Definition**
  An early step when the subject, user group, delivery mechanism (kiosk, PC, digital TV or notebook) is set out. Details of who will be involved, where the content will come from, whether there is to be a content workshop (depends on whether people have done this before), etc. are collected. Deliverables may be just a short note confirming scope and other steps to be taken or a costed proposal. The stage, even though it can be very short, is useful in that the production leader is able to send out a note to all concerned ensuring that everyone understands the process to be adopted, who is doing what, the scope and other factors like the timeline.

2 **Specification** (content workshop)
  In this project a very effective workshop was held (discussed in 2.2). This brings together the production team, details of titles, key questions and enables the immediate production of scripts against a set of guidelines (see Appendix 5). The outcome is normally

a title flowchart, framework details and early drafts of scripts.

3 **Scripting**
Using outcomes from the workshop a stage of scripting and revision takes place to collect and refine all information to be presented.

4 **Graphical illustration**
Once scripts are produced then the illustrations can be listed at the bottom of these showing where each will be "pinned" to the wording. Credits, general illustration and other details will be collected at this point.

5 **Audio production**
Once scripts are agreed then they can be recorded by the selected voices and sent to the production team. The minidisk with noise reduction headphones has been very effectively used.

6 **Implementation**
Once all the content is available then the database can be set up and the title produced.

7 **Testing and validation**
A final stage before installation on a kiosk is testing and validation. Applications should always be tested, but sometimes, detailed validation is carried out once installed because changes are easy to make and opinions may differ.

8 **Installation on the kiosks**
Once built and tested the application can be loaded ready for delivery on to the chosen hardware (usually undertaken by the technical team or supplier of kiosks).

Other sub-sections will describe elements of the process in more detail.

2.2 The need for a content workshop

It is important that content tasks and technology issues are clearly separated. The end result is only as good as the content that is provided – technology only has the role of organising this and presenting it in a useable form. The need for a title, knowing the users, evaluating results and making changes to accommodate feedback are all part of the process.

When viewing a MediBook the material looks so simple that anyone could prepare one. Commonly though the simpler the appearance the more difficult something is to produce. Understanding the framework of questions and naming, having the knowledge to not only write down the content points but organise it in a consumer friendly way and sorting out a balanced presentation are part of the process – it is easy when you know how!

Often there are a number of people involved and the first task of a project is to gather their experience whilst getting everyone working from the same starting point. Two methods have been used. The first is a one to one meeting which works well if there are one or two drivers – say a doctor and a funding organisation.

The second is to run a topic workshop which will define and agree as a group:

- The title
- The user group
- The key questions to be addressed
- The key points to be covered under each question
- Any feedback and how this is to be carried out
- What images and illustrations are available – what new ones need producing
- Who will do the audio – two complementary voices are usually used
- Who needs credits and acknowledgements
- The scripts themselves
- The plan and process going forward.

Normally such a workshop will take one day of everyone being together and at the end there is always a draft title with some scripts completed. It is critical that there is a plan going forward and that those involved are able to input as agreed because the team and timeline are compromised otherwise.

For this project, a one day workshop was held at the Hilton Hotel in Cairns where catering was available. Having people so their office or colleagues do not distract them is important, as it is a tight schedule. The format worked well and much of the material was produced during this day – it is a participation session not a series of presentations. The facilitator needs to know the "rules of the game" and help people through their tasks explaining these.

2.3 Organisation of material and scripting

The presentation of material is organised on a set of simple rules and a question answer format. The idea is to make the presentation look more like TV, which is familiar to everyone, and less like the web. The voice presentation has been found to be friendly and effective – people take in information poorly when reading from a screen.

A scripting checklist is given in Appendix 5 but there are other rules that have emerged during the six years of producing this type of information.

Some of the keys ones are:

- Contrast should be clear and easy to read – if a background image is used with text overlaid this should be looked at carefully for readability
- Fonts need to be clear and large enough for easy reading when standing facing a screen
- Attractor messages must be large enough to be seen from a distance
- Animations should be used with care because they can affect those with neurological conditions
- Organisation of choices needs to be looked at carefully so that the menus can be used by everyone (if within the user group there are likely to be people

with poor sight then being able to find choices from a physical location is important e.g. a corner)

- No more than 8 at the most and usually less choices should be offered from one screen
- Questions need to be simply worded and unambiguous to answer
- If a picture is used, say of an instrument, it is best to have a visual frame or surround (it makes this easier to see) and should be large enough for the detail to be easily visible
- Scripts need to be written so that they are able to be illustrated with a flow of images
- If one topic within the subject is long and the others short then then this should be organised to have a lower level menu
- There should not be more than one lower level menu as people get confused when backtracking
- No period of information should last more than 3 minutes as retention of information decreases (research has shown that around 2 minutes is best – it is a surprising amount of audio)
- Keep it simple.

Video is not normally used unless it is unlikely to be changed. It is easy to localise images and voices almost individually, this is not so for video. Getting video shot to a required local consistent standard is also difficult. It has been found that people learn more from the stills and voice than they would from a video clip in most cases unless this is showing, say, a complex test – for example, someone having a CAT scan.

2.4 Photos, images and graphical elements

Attractiveness is part of the appeal. This means that graphics, images and photographs used need to be of high quality when viewed on a screen and appropriate. Ensuring these are clear is also important so it is obvious what point is being made.

Many medical professionals have numerous slides they have used for presentations, x-rays, blood test results, etc. All have been used either having been given to the technical team digitised or these have been scanned. It is important to give instructions – it is amazing what can go in to a topic upside-down. Most important of all is that the copyright and use permissions are known. Clearance is often needed for use on a MediBook.

It has been found that people pictures, which need to be inclusive, should be mixed with medical ones. Too many strictly medical pictures is off-putting and can destroy confidence in the material. Showing medical procedures also needs careful thought. For example, in the first rheumatology title an orthopaedic surgeon was very keen for a clip of him operating to be shown, but the image used in the end to show joint replacement was just a prosthesis out of the box which was interesting and not

going to put people off. Showing blood can be a problem as some subjects are sensitive within certain communities, "women's business" in Yarrabah, for example.

The presentation can be very powerful and effective even if people only look at a well produced attractor and learn what foods are good and bad, say for diabetics. However, people need to be told what the system is and even doctors might require a reminder to tell patients to use it. To this end posters or similar are useful around the area where the kiosk is to be placed. Finally, for some images if an illustration has to be drawn some countries, the US for example, demand a qualified medical illustrator is used.

Figure 13: An attractor page showing what foods to eat.

2.5 Collection of data

Normally, so that an evaluation of a title can take place four methods of data collection are proposed. These are:

- Traces on the machine showing where people have gone and how long they spent
- Questionnaires on the machine
- Paper-based questionnaires
- Interview.

Running an evaluation of the use was not part of this piece of work as it was carried out independently by University of Queensland.

2.5.1 Traces

At the workshop the traces were discussed and the points requested set up for reporting on. This is a difficult subject to agree at the start of the project as very few people fully understand what is possible. Standard reports were created from the kiosks, picked up by the technical team, and sent out to those who needed this information. As a backup reports are kept on the kiosks so if they are lost they can be retrieved.

Later in the project the raw data was sent through so that a researcher could analyse this differently and produce comparisons. This was extremely useful and

demonstrated that more attention could be given to the traces – it is important to define what is needed so that the software can be set up. Software though can only track where people are, keep times of how long they spent, see where they exited or where they went. It is not possible to find out age, for example, this way. Having said this with careful planning taking answers to questions and the traces some interesting pictures of use can built up.

2.5.2 Questionnaires

People do not like spending long filling in questionnaires. It is important too not to place these too near the start so the perception is a research project not provision of health information. It is an individual choice as to how many questions are asked on the screens and where these are placed within the "dialogue". There are though some important considerations:

- Questions can only be "ticked" so provision or exact ages is not easily possible
- If a personal detail is provided, say through showing a touch keyboard, then the relevant data protection clearance is needed
- It is not recommended to put more than two questions on a screen
- Navigation around a number of question screens together needs careful thought (this was not perfect in the current systems – see section 3)
- Wording needs to be simple and unambiguous – avoiding technical or medical terms is important
- There shouldn't, as a general rule, be more than four question pages in a topic although this might vary if there are a number of subjects covered from one unit.

For the subjects chosen the general statistics were useful. In others it might be that specific information needs to be kept – say the score from different audits. This needs to both be given to the user and the evaluator or even a health professional. Printouts are a good method for communicating with users – these were not fully tested here. However, if individuals need records so they can check back what they did then this poses other questions that are briefly discussed in section 3.

Figure 14 shows the summary section of an example report for Inala. A copy of the full report can be seen in Appendix 7.

2.6 Customisation locally

A simple tool was provided for updating information like contact details and dates of events locally. This was successfully used at Inala but not tested in Yarrabah because of issues of location and ownership of the kiosk. The vision is to offer more updating, and alterations were put on the tools during the project so that messages on the attractor could be altered – even the pictures with some processes. This raises issues of software and of local processes. For example if two people alter a message who owns it? How is quality controlled? etc.

It is important that local languages and voices are used. Terminology needs to be local too and pictures of people that are known can be effective. For "pains and sprains" material was adapted from a UK topic which had some general pictures. Although experts were sensitive to these, and if the title were rolled out more widely they could be changed for the new area of use, nobody seemed to obviously comment on them – in fact the "pains and sprains" topic proved more popular than Diabetes.

Inclusivity is important, ie. the use of young and older people, men and women appropriate attention to ethnicity, etc. Pictures of locations that are known help too. In Yarrabah the children produced some of the pictures in the school part way through the project. This had an advantage of generating great interest and also could encourage children to bring their parents to the kiosk – perhaps they would come back and use it.

Figure 14: Example report (summary section)


```
HealthKiosk - Survey Report
========================================

Report date:        1 July 2002
Kiosk location:     Inala
Period:             24 June 2002 to 30 June 2002

The report is divided into two sections:

* Kiosk usage

* Response to Survey questions

1  Kiosk usage
----------------------------------------

Total times followed by usage (by date and subject) :

Total number of users:          59

Total time spent in use:        4 hours 35 minutes

Time spent in Attractor (idle): 20 hours 8 minutes

Maximum user time:              10 minutes

Average user time:              5 minutes
```

This section draws together the findings from the evaluation, looked at from the title production and process point of view. It looks at any shortcomings and makes recommendations regarding MediBooks if they are to be used more widely.

The section covers:

- General findings
- Technology – hardware and software
- Production processes
- Updating and control
- Managing feedback
- Management and purchasing
- Recommendations and conclusions.

Findings from the user evaluation, including health feedback, are not part of this report and are covered by that produced in parallel by the University of Queensland.

3.1 General findings

The project has run for a short time, which means that it is early days for general findings. The hardware has worked well and the software been stable although some updates that will make it run faster are needed and minor changes in navigation. The consumer nature of material appears also to have been received well in that it has attracted a regular audience and there were no complaints about not understanding points. Surprisingly, "pains and sprains" was as popular as diabetes. More updating of events and "attractors" could have taken place but Yarrabah suffered from the last move of the kiosk not being successful and Inala need to send through the updates when these will be made (although after the end of the project).

For running two kiosks it has been possible to manage these individually by downloads and personally talking with those involved. For larger numbers this will not work so well as it is costly and less effective. This points to a need of improved processes, work to localise more of the production and management and much improved updating.

Sourcing of the material seems not to have been a difficulty and the involvement of local people, particularly the Yarrabah children from the school, has provided a uniqueness that creates ownership. Once the kiosk was in the pharmacy the interest of children showed that a priority should be to provide something for them that included printouts too – perhaps a way of influencing parents and teaching younger people health messages? More titles though means changing the front

menu, which is organised with very large touch areas rather than a list for new, or unfamiliar users. Issues like this and points on helping people identify where they are more easily, need to be addressed (possibly colour coding questions).

Working with the evaluation team and the centres with having the kiosks live produced specific findings listed in the sub-sections below.

3.2 Technology – hardware and software

Much effort went into selection of the hardware and ensuring the software platform was stable. During the evaluation various issues of how to move kiosks, what options there are for payment and how to make a choice came up. This information is collected together here – it will change rapidly as new units and options arise.

3.2.1 Hardware

Apart from the installation problem with a different sound chip (not known to NCR Australia who supplied the units), the hardware performed well and reliably. This has proved that use of the high end of the market units is an investment well worth the extra money for very remote locations although none of the other lesser options were tried out against these in Australia. Here, for completeness, the different options are listed and comments made on alternatives that have appeared since the NCR kiosk was chosen. Serious considerations for remote locations are support for breakdown and who can install throughout Australia.

Key factors required in the hardware are:

- An attractive kiosk that will fit in to numerous spaces (some units are large and not easily transported to other locations if necessary)
- A unit that could be boxed and returned for support (important for very remote location – shipping of the large units would be very costly)
- A unit that can support different peripherals like printers (built in, not separate), card swipes (not used) etc.
- A unit with a flat screen rather than touch added to a normal monitor (the screens are smaller but clearer and there is no distortion at the edges so all the space can be used for display)
- A unit that can be floor and wall mounted
- A unit that has speakers and supports sound

The specification of the unit used is given in Appendix 3.

In June 2002, there appear to be five possible options of kiosks in Australia that provide the features required.

Kiosks are often built by small companies and an exhaustive study was not made but being able to support the units remotely was an important factor for those listed here.

- **NCR**
  NCR is used here and known to be reliable. The units had already been extensively used in retail, particularly in the US and were known to JSC. NCR can deploy engineers throughout Australia although some are not very familiar with kiosks. NCR gave good support during the project and invested considerable time in helping out which was given without charge. The NCR kiosk is one of the most expensive. It can be purchased or leased.

- **IBM**
  IBM has a new kiosk that is very similar to NCR's. Both resulted from the same manufacturing process and work. IBM is now selling its kiosks in Australia and it looks to be slightly less expensive. IBM, because it supports other machines throughout Australia, will be able to offer installation etc. throughout the country. This looks to be a real alternative and more information is being sought.

- **Neo**
  Based in Melbourne, Neo produce kiosk for numerous locations including those used by Centrelink. The manufacturing is normally in Australia although they do build units in Europe (UK) too. They have considerable knowledge of kiosks but the units tend to be larger than the NCR ones unless a reasonable number are ordered when these will be specially designed. JSC used Neo for kiosks for ATO and found that support, being through associate companies, was patchy. They are an option for larger rollouts and the units are likely to be cheaper.

- **Microtouch**
  Microtouch (now acquired by 3M Touchsystems) make touch screens and supply many of these in Australia. One of the largest rollouts is for the checkouts for Coles Supermarkets. The company does have a kiosk but it has to be obtained, through them, from the US. It has not been seen in Australia and Microtouch support isn't well known in remote locations. Microtouch though do have an input to this kind of work as they can put touch overlays on normal monitors or if there needs to be cost savings ordinary machines could be purchased with a touch screen. They also make units that operate through windows but these are not useful if printouts are needed.

- **pie NETWORKS**
  Based in Perth, pie has become well known in the health area particularly related to the "better health channel" in Victoria. Units have not been seen with a touch screen though but it is possible this could be added. They are good at supporting units in West Australia remotely and have achieved this too in Victoria. They are deploying units to aboriginal communities as public access web terminals so a discussion may well be worth having. The units are less expensive than the NCR and IBM boxes.

The local web addresses for each of the above are:
- NCR's main web site
  http://www.ncr.com
  Contact details for NCR Australia can be found at http://www.labyrinth.net.au/~technoma /ecomm/ncr.php3
- IBM Australia
  http://www.ibm.com/products/au
- NeoProducts
  http://www.neoproducts.com.au
- MicroTouch (have been acquired by 3M Touchsystems)
  http://www.3m.com/3mtouchsystems
- pieNETWORKS
  http://www.pienetworks.com

Often particular states have preferences for different manufacturers. The software used in this project is not particularly demanding and will run on any unit that has the right screen resolution (800 x 600 in True Colour) and has built in speakers with a multimedia facility.

The printers were not extensively tested but worked well except in Yarrabah when the unit was moved (here it is suspected that the pharmacist may have not been able to load the paper as he kept taking this out to stop children using it). The choice of a "tally roll" printer was made so sheets did not get left everywhere and, more importantly, it would run for a long time without needing new paper. Anyone buying a kiosk needs to check what printers are supported, whether these need software changes to provide printing, what size roll they use (the larger the better) and whether the unit is built in with the paper printed before it is ejected. The latter is important as otherwise output can be pulled through before it is ready which damages the unit.

Other hardware used were two low-specification laptops to run the update tool that had no special features, and a minidisk player. The minidisk was used for sound recording and bought from a HiFi shop but it did use special headphones with built-in microphone that had noise reduction for recording. These need to be purchased from specialist HiFi stores they are not generally available from the bulk suppliers.

3.2.2 Software

The kiosk software is described in section 1.4.3. It has been written so that changes can be easily produced. The idea originally was to have different levels of update but only events were tried. Changes to software are needed to extend the updating.

Web-enabling is not really an option unless broadband facilities are available because of the size of files caused by the use of so much audio and graphics. Windows NT is still widely used so the environment should work well currently but it will need to be tested under Windows 2000 or XP in the future. One issue that has caused problems with the software is speed, which resulted from the method of how the files were played from the

database. This has been corrected in the next version of the application but it wasn't deployed because new software can have bugs and this would have affected badly the evaluation results.

3.3 Production processes

Four production processes were used. The findings from these are given briefly below.

1 Title workshop

For short titles or inserts where people have produced a MediBook before, holding an initial workshop is not essential, but otherwise it cuts costs and draws the framework together in the most effective way. There are many small points that make a MediBook run smoothly, these have been built up with experience. Having feedback on early questions prior to the workshop helped the focus of this. If the scheme were to be extended then the workshop and production process would benefit from a short booklet or website taking people through the ten steps and acting as a central exchange for comments.

2 Scripting and audio

Version control of scripts proved difficult as many people wanted to input their comments all at once and these conflicted at times. In the future it would be useful to have an "editor-in-chief" who facilitates changes and sends out new versions. There is a temptation to keep changing scripts so it is useful to have one round of changes with the script circulated rather than sent out to everyone at once and changes logged so that those seeing it down the chain do not just alter what has been updated already. The process would benefit from better scripting guidelines or a checklist – this has been written and is in Appendix 5. Once the script was ready then the recording on to minidisk worked well and this will be adopted in the future rather than using a larger or studio system. Choosing the right voices and carefully listening to the results of recording is important as otherwise quality varies.

3 Logging changes (a "wish list")

Having a "wish list" to collect feedback was tried and worked reasonably although the process was poorly understood and the entries rather too long. Better control of this and other central documents like the glossary (which did work well) is needed so that everyone can see what is happening. JSC has now produced a web-based tool for issues, which replaces the need to have everyone circulated – the site can be just dialled up and will log comments.

4 Reporting problems

Problems were difficult to track especially at Yarrabah. This is partly because there was no defined owner so if the kiosk didn't work a problem often didn't get reported until either it was dialled up for a report when it was checked by JSC too or Helen Travers heard of a difficulty whilst undertaking an evaluation task. It is proposed that the systems have an owner

who dials them up every week at least to check all is well.

Processes for updating and management will be dealt with in the appropriate sub-sections.

Figure 15: An extract from the Wish list

3.4 Updating and control

Feedback did show that customisation locally was important and desired. Inala were very successfully able to update their events and the system was changed so they could alter messages on the attractor but Yarrabah did not do this through lack of having one person who could be trained to start the process off. Offering updating has some complex issues associated with it, which are not purely software related. For the duration of this project so that updates could take place, JSC undertook these on request but this is not a good way forward for numerous units.

The kiosk broadly contains three types of information:
- General health related illustrated messages (found in the attractor)
- Health topics ("pains and sprains" and "diabetes" in this case)
- Local information about contacts and events (updated locally successfully in Inala)

When all of this is under the control of the production team all the versions can be backed up, if there is an error this can be dealt with and quality is not an issue.

This places an overhead though on what is a simple and low budget system. The kiosk is, in simple terms, a multimedia database that is played according to an agenda defined by the menus. This removes the need for technical staff to be involved in the changes. However, if everyone and anyone can alter elements of the system then if there is a breakdown restoring might be difficult because there is no backup. Similarly, information about health is being given and this should be protected and only updated by those who are known experts in the subject. Quickly it can be seen that the issues here are not technical but process.

Events and Contacts

Although displays according to a graphical layout, these pages are text-based and simple to enter. Local updating worked well through a special tool and the risk, if say a hard disk broke, would have been that all of them had to be entered again. This is the worst case as not everything is changed all the time so some of the set-up ones would still be relevant. Apart from possible telephone number errors and spelling mistakes, which could occur there is not a real quality issue if updating of this area, is devolved.

Attractor updates

Here text message alteration and changing of the play list is easy to achieve locally. The software for the update tool would need to be changed to allow pictures or graphics to be inserted but this is not a major change and should occur. However, there begins to be a quality issue as to who owns what messages and whether alterations are correct. Similarly, the whole system is only as good as the weakest page so if pictures were to be changed then people would need to be taught the rules and someone agree to quality check new entries. The plan is to leave the database of pictures in the systems so these can be used again – in this way if there are 50 pictures and messages can be changed with only 10 shown at a time then there is already scope for alteration. It may be that the easiest and most effective way for changing the attractor is to have the production team put in regularly batches of pictures and allow updating locally by having images selected and messages attached.

Health information

One of the most difficult tasks is to sequence images with the voice tracks. It is unlikely that for the short term this can be devolved other than to a "technical team". Having said this if there were someone in each community that has the skills or could be taught them then new health topics could be created if desired. Once a topic is in place it is suggested that having local updating is unwise as messages could be changed and the material become inaccurate.

This leads to a need for processes to be both drawn up and adopted if local updates are to be more widely adopted. Who keeps the master application, how it is backed up, who owns what and is "allowed" to alter it and where the quality control must be are all issues for discussion.

3.5 Managing feedback

Ignoring feedback via interviews, observation and paper-based questionnaires, the kiosk had two forms of data collection for the evaluation. These were:

- Traces
- Touch questionnaires

No personal data was kept for this project.

3.5.1 Traces

The traces worked well and provided useful feedback on what was used, when and for how long. Reports were provided and raw data. For a future project it is likely that some additional parameters could be added for monitoring and that the data could be organised so that it could be obtained through email. JSC used a direct dial up to get the data from the kiosks.

3.5.2 Touch questionnaires

There were divided into topic related and general questions.

The topic related questions (asked from "Have your say" within the topic) were:

- "Have you ever been told you have diabetes by a doctor or health worker?" (yes or no)
- "Have any of your family members got diabetes?" (yes or no)
- "Did it help you to learn about diabetes?" (not at all, a little, quite a bit, a lot)
- "What parts were most helpful for you?" (multiple choice: What are the causes and symptoms?, How do I know I have diabetes?, What can I do for myself?, What can the doctor do for my diabetes?, What happens if I don't look after myself?, What about my baby and family?)
- "What parts were most helpful for you?" (multiple choice: neck pain, shoulder pain, elbow pain, back pain, pain all over, looking after your feet)

General questions (asked from "Bye) were:

- "Did you find it easy or hard to use this touch screen?" (easy, a little hard, quite hard, very hard)
- "Have you used this kiosk before?" (yes or no)
- "How old are you?" (less than 20, 20 to 34, 35 to 49, 50 or over)
- "Are you male or female?" (man or woman)
- "Are you Aboriginal or Torres Strait Islander?" (yes or no)
- "Would you use a machine like this to find out about other health problems?" (yes or no)
- "Which other problems would you like to know about?" (multiple choice: "heart problems", "mental health", "chest and breathing", "problems with kids", "alcohol (grog)", "drug problems", "men's business", "women's business").

Questions had to be phrased so they had touchable answers. Most questions were single choice from one or four possible answers. Multiple choice questions were used to gain feedback on the usefulness of the sections within the topics and what new topics people might like to see in future on the kiosk.

There is always a dilemma about where to place question pages and these were inserted in diabetes and as part of the "bye" sequence. The navigation was not perfect and needs improving. The pages did work and

Figure 16: A question page

people filled them in so data was collected. For the future it may be possible to have some templates and enable evaluators put in the questions.

3.6 Managing and purchasing

Management of the project was a significant overhead for both teams. One reason for difficulties resulted from Yarrabah still implementing its health policy meaning that staff members who might own this kind of project weren't yet in place so, although there was huge commitment, the project lacked a long term owner. Once Gurriny Yealamucka is fully operational this difficulty should be resolved. Yarrabah also had issues with where to locate the kiosk. The Inala part of the project ran much more smoothly but the health centre here was much more established and already staffed.

Liaison between the technical and evaluation teams worked well and the three project review meetings, from the production side, were invaluable. An unforeseen small management issue was ensuring that all concerned understood better operational issues associated with installation and management of a kiosk. Most of the slight difficulties were based around differences in knowledge related to installation processes and providing for the future – i.e. backing up systems or moving them. It is proposed that additions are made to the "crib sheet" for error checking associated with these points and assuming there is a workshop this information is given then (it would likely take about 15 minutes to go through). Points that are important relate to positioning the kiosk, cleaning its screen, ensuring power is either behind the housing or above the unit so it cannot easily be turned off, looking at lighting and understanding some of the basic terms associated with the units so that easier conversations can be had if technical support is needed.

Purchasing was carried out by JSC for the units that arrived with the software installed. It is suggested that all units are supplied with the software installed. It is important though that should an additional unit be needed that this is the same as others or alterations

manageable – for example printer drivers are the same, sound cards, screen size, etc. A checklist has been provided with this report to help purchasing (see Appendix 4).

Finally, there were some tasks carried out by JSC which, if a technical team were not involved which is likely for any new rollouts of the same material, would need to be addressed. No local backing up of the systems was provided nor a log of changes. CD drives have been provided as part of the new kiosks so that a backup of the system is initially available but a small housekeeping tool should also be written that would do a backup on to a PC for copying over the normal processes. Alternatively the CD drive should have update facilities.

3.7 Recommendations and conclusions

A number of points have been raised in the findings paragraphs that would make another project of this kind run more smoothly, or address specific difficulties. Here recommendations are made for wider use of the titles with different options of approach discussed where needed.

3.7.1 General infrastructure and management

If the kiosks are to be rolled out more widely then three recommendations are made as to improved information and control. Sharing of information and topic creation costs are important so as to keep production costs down and utilisation options high.

Central database

Once there are a number of topics, even if these have to be customised for re-use, it would be useful for there to be a central database. Who should own this and how people would know where to look is important to success. However, there are likely central groups and organisations who could disseminate this information or place it on a public website.

Issues list

For this project issues and suggestions were kept in, what became a rather unmanageable list as a Microsoft Word document. Research on other projects has shown that this type of information can be better managed by a tool where comments can be logged and the list made available through a private or public website.

Asset site

If a number of topics are to be created using the same software and techniques, then having a special site for "MediBooks", or a different name for the material, would be useful. This might act as a repository for information like where to find pictures, it could contain information on how to write a MediBook and enable those getting started to learn from the experience of others. Such a site might help too with the technical aspects of the work like purchasing hardware as the key points to be covered

would be there in a checklist for tenders or other procurement processes.

3.7.2 Creation of material

Three recommendations are added here to those given above:

- **Creating a new title**
  The 10-step process is developed as an online process so it can better back up the production workshop or remind those who have created a title before what is involved

- **Scripting and audio**
  Checklists and notes are made public along with some example scripts for people to copy as they produce their own material

- **Youth involvement**
  Aboriginal schools are encouraged to provide pictures and health messages that can be used on attractors and help teach children in a simple way about some of the issues. These could be placed on the general "asset site".

3.7.3 New titles and information

Many suggestions for new titles and information have been proposed. These have included:

- A path for children (very important given the proven interest)
- Respiratory and cardiothoracic material
- Alcohol audit
- Breast cancer screening
- MediCare information – possibly the form (although input of personal details would be required here)
- Information about Centrelink
- Information on tooth care
- Some fun information like sports, events etc to get people to attend
- More printed info that is attractive.

There are many other possibilities and topics could be built by communities once the processes were learned.

3.7.4 Hardware

There is little doubt that the hardware chosen worked well. JSC were able to support this themselves, which kept costs managed. Help has been given to the project partners regarding how to purchase new hardware. There are though three recommendations:

- Guidelines for purchasing are drawn up and kept publicly – there are many small points that need addressing
- The IBM unit is looked at to see if it is a viable and a slightly cheaper unit
- Options for small community use are looked at as to whether a public access terminal might work or a normal PC with a touch screen

It would be advantageous to draw the knowledge here together in a more manageable way so that purchasing was simpler. It might be a useful idea for OATSIH to pre-qualify with two suppliers so that, as the units "trickle out" economies of scale can be achieved in costings – these are significant with kiosks.

3.7.5 Extending the software

The software was produced on a small budget and worked well. It has been built with the vision of production locally. However, to achieve this there needs to be investment in the updating tool so it can run on PCs and offer this flexibility. There is always a dilemma in investment now to bring down pricing later or living with small changes with costs not greatly produced. Given the size of current projects, unless there is another partner, it will not be possible to make the software adjustments all against one project.

The update tool is the weakest part of the system but then this wasn't really part of the delivery of topics. If this was developed further then the titles could be put together entirely locally. It is unknown how much could be produced in communities but the concept would be worth examining as titles could be exchanged and useful skills would be developed. Many in communities are artistic and creative – is this another way to create ownership of health messages and create new skills.

3.7.6 Extending the titles on the kiosk

Currently the titles are organised in one set of four – see front page opposite.

The strategy of using corners has been adopted so it is easy to find the options for those who have poor sight and the touch areas can be kept large at the start of a session. It is proposed that this layout be extended as if all four slots are not used simple messages can be temporarily inserted. This means adding a "more" button that will cycle round the options. In this way the extended options might be "Scabies and bugs", "When can alcohol hurt?", "Medicare" and "Kids corner".

3.7.7 Future strategy

For the concept to work it needs investment and commitment publicly. There is little doubt that a number of topics could be created and the units are creating interest. In less than a year of operation it is difficult to judge the real health outcome. It is recommended that the concept be looked at as to how many units are needed to substantiate greater use with what investment is needed to change the creation from a technical team to completely local production. Once all results are collected it is suggested that a strategy is looked at for using the kiosks and CDs versions of the material running on touch screen PCs more widely.
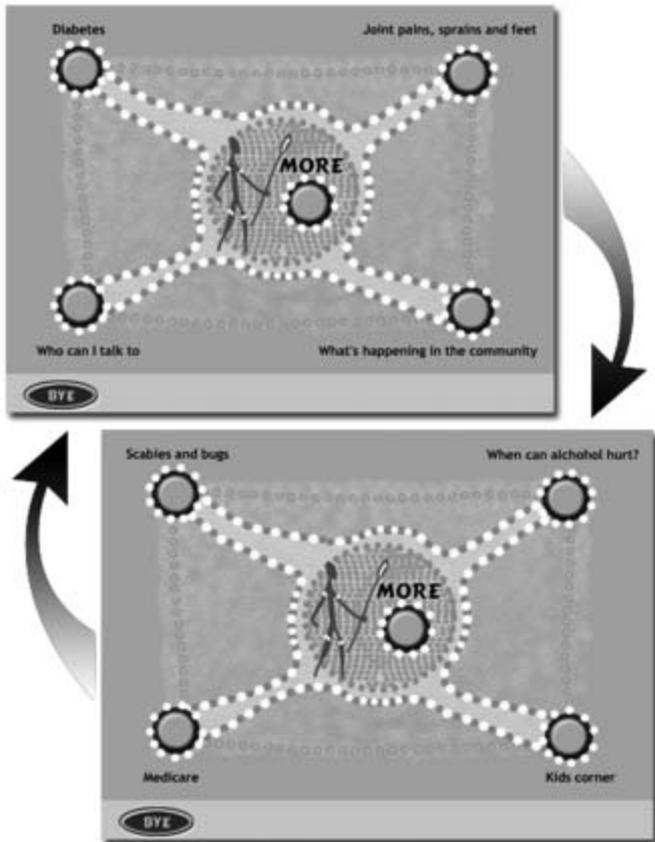
Figure 17: Main menus cycling via "more"

3.7.8 Conclusion

The project has demonstrated already that it is sustainable with minimal support, will run remotely and is a concept that people will use. The findings though need drawing together and the ideas examined as to whether it should jog along or be invested in so that local production in communities could occur. For the latter a business case of how many units would support such a case needs looking at and what costs are involved to finalise software, support materials, etc. However, from initial research it looks to be a small pump priming rollout that could achieve this and the investment might well be worthwhile in creating local ownership of health in a creative way.

Touch and see (and hear):

Appendices

Department of Human Services Better Health Channel

www.betterhealth.vic.gov.au

The Better Health Channel program forms part of the wider Government program to provide Government information in consumer friendly ways.

Project Context

Individual health is a key concern for all Victorians. This has even become more prevalent through the increased awareness of public health issues, which has led to an increase in demand or better health information.

To address this need, the Department of Human Services established the Better Health Channel. The channel provides the community with access to online health information, which is quality assured, reliable, up-to-date and locally relevant. The Better Health Channel program forms part of the wider Government program to provide Government information in consumer friendly ways.

Overview

Since May 1999, the *Better Health Channel* has provided health information on the internet. In more recent times, the service has been extended to make it more accessible to the public and break down the *digital divide*. This was achieved through installing 130 specialised public access terminals located at hospitals, pharmacies and regional health centres throughout Victoria. Information that is made available through the Better Health Channel is produced in consultation with reputable health organisations, which have specialised knowledge on specific health issues. All articles are then subjected to a rigorous approval process, which includes the provider, the Department of Human Services and a final review of all articles by Victoria's former Chief Health Officer, Dr Graham Rouch.

Benefits

The Better Health Channel has already achieved the following benefits:

- **Accessibility**
  The website is available on a 24x7 basis and provides seamless and equitable access to basic health information throughout the metropolitan, regional and rural areas of Victoria. This is especially important to people living in geographically remote areas, who do not have access to local health care facilities or services.

- **Convenience**
  The Better Health Channel provides the public with a single source for health information, consolidating information supplied from over 100 peak health bodies.

- **Better-informed**
  A better-informed public means that individuals can seek earlier intervention, diagnosis and treatment, which reduce the risk of longer term health issues or complications.

- **Improved Health**
  The Better Health Channel contributes to a healthier community, which in turn, lowers community-related health costs.

NOTE – Specific manufacturers will have their own list of checkpoints for any unit, which should be asked for. These points are purely included here as guidance.

Lighting

- Position the unit so the screen is not in direct light as this makes it difficult to view.
- Some screens are damaged by bright light or direct sunlight (check if there are any restrictions).
- Look at the angle of the screen, as well as just its potential position, so there is no reflection from windows, lights, or other illuminated items (some units offer a range of screen finishes which vary in their reflectivity).

Power and sockets

- Ensure sockets are kept out of the reach of children.
- If possible hide the socket behind the housing or above the unit so it is not easy to turn off inadvertently.
- Avoid trailing wires or even loops of cable around the unit (cables should be tucked away out of sight).
- If a phone line is needed position a point at the kiosk, preferably plugged in permanently and staple the wire if it has to travel to another point.

Positioning the unit

- Ensure if the unit is to be wall mounted that the wall is strong enough and, if it is not solid, that the fixings can be placed in to supports, not a vacuum.
- People may pull themselves up on the kiosk, hang on to it, trip and need to hold on, or lean on the unit – it must have the right fixings!
- Look at whether the unit will protrude and ensure it is tucked away not in a walkway or thoroughfare.
- Ensure the unit can be seen easily.
- Ensure that someone both sitting and standing can use the screen at the height set – the recommended height is around 120 cm measuring from the floor to the centre of the screen.
- Ensure someone can put something down like a shopping bag near the kiosk beside them and has space for this.
- Ensure the kiosk unit and its position conform to any local regulation for health and safety, emission control or other factors.
- Ensure the kiosk is not close to a door or blocking a fire exit if someone is using it.
- If there is a printer put a waste paper bin close to the kiosk and allow for this in the positioning.

- Do not position near a drinks vending machine or water dispenser to avoid liquids being poured on the unit.
- Ensure there are no shelves or window sills immediately next to the unit where people may put drinks down, then knock them over.

Installation

- Have the supplier of the units install them and ask for their installation checklist prior to the visit.
- Ensure that the kiosk is fully tested, ie. all functions gone through with someone watching, including the printing.
- Ensure that the printer isn't just tested on the test setting but that it is used "for real".
- Write a test scenario for the engineer.
- Ensure that the modem or communications are tested fully not just shown that the setting is "live".
- Check that the unit powers up correctly after being switched off (turn the power off and, after a few seconds, on again), then run through the installation checks again.
- Ensure that the software is pre-loaded before installation so the system is delivered working and ready for use. This makes testing much easier and doesn't lead to a non-working kiosk being present in a public area.

Julia Schofield / Eleonora Budden – July 2002

This appendix details the hardware and operating system software chosen for use in the Inala / Yarrabah trial. Although kept non-technical it will include the specification of the kiosk. Details are also included for any other tools like the mini-disk player and its special headphones.

This technology changes quite rapidly. Microsoft too has since released XP and other environments that might be used in the future depending on knowledge and deployment locally. Where a community is small then the unit perhaps might be combined with an Internet public access terminal (PAT) although the supplier would need to run the MediBooks software locally because of the size of the files. A list of known suppliers is given in section 1 of the report, which might have alternatives – there will be others only those that JSC has direct experience of have been included here. The purpose of the appendix is to record what was used but also help those looking at similar units, make comparison and know what questions to ask.

Requirements

The choice of hardware was driven by a number of requirements:

- The kiosks needed to be chosen so that there was as little risk as possible of them having interference from hospital equipment. This affects the screens particularly so TFT displays were needed.
- The kiosks needed to be secure. This meant selecting a unit that could be fixed to the wall and wasn't either floor mounted alone or made to be free-standing on a table or desk. Wall mounting also has been shown to minimise damage from the units being banged in to or moved.
- The unit needed to conform to health and safety requirements with no possibility of it being moved so cables trailed or were strung across areas.
- The unit needed to be small so it didn't take up to much space.
- The units needed to have high definition clear displays that didn't suffer from degradation when in strong light.
- The units needed to be modern so that they would be supportable for some years without needing expensive upgrades.
- The units needed to be known to be robust when used in public places for long periods of time.
- The unit chosen needed to be extendable as the trial might show a need for printers, card scanners etc.
- The unit needed to be easily serviceable for paper change etc. by a novice who didn't have engineering experience.

- The unit needed to support sound.
- The unit needed to be supportable throughout Australia and be able to be duplicated or "rolled out" to a number of sites easily.
- The printer chosen was required to print and be cut off inside the unit so that people pulling the paper before printing had been completed didn't cause damage.

Kiosk Hardware choice

The hardware chosen was the NCR 7401 because this unit was known to be built for retail and so would exhibit most of the requirements listed above. NCR had the capability to roll out a number of systems, clone these or duplicate throughout Australia. The specification of hardware selected is:

Processor: Intel Pentium PIII 500 MHz

RAM: 128 Mb

Display: 15" TFT capacitive touch screen

Hard disk: 12 Gb

Sound: Cirrus/Crystal CS4614

Speakers: Hi Fi

Modem: 56K (V.90) PCMCIA

Printer: K580

Additionally, the kiosks include the following peripherals (currently not in use):

Scanner

Motion sensor

Infrared reader

Magnetic stripe reader (MSR).

Software environment

Microsoft NT was selected as the kiosk operating system because this was the environment already used by the kiosks. The kiosk software itself was written in simple tools so that no further expensive licences were needed if more units were purchased. Although Internet technology was considered seriously because this tends to change very quickly and need updating it was not selected. VisualBasic 6 was used for linking the databases together with Microsoft Access selected as the database tool (this does not require a licence for delivery systems). A retail printer was selected that had a paper knife inside the unit so that users couldn't pull out paper before printing had been completed. The NCR OPOS software was used for the printer driver because the kiosk environment required this.

Communications

It was decided to have phone links to the two kiosks during the trail so that updates and changes could take place remotely to keep down travel costs. A modem (interface from the machine to the telephone system) was used with a normal telephone line. A program called PCAnywhere was added so that remote use of the kiosk could take place whilst faults were being looked in to – this would not be used normally in a production system but is useful during testing.

Updating

Given that each kiosk had a modem then two methods of updating could be considered.

Remote updating – this worked through the telephone line with the update tool on any PC. The method required that "off line" changes were made on a PC and then the kiosk is dialled up with the database including its changes being sent. As the setup of local machines differed this was not used as the preferred option.

For the two kiosks in the trial inexpensive notebooks were provided for the update tools. This meant that the environment was controlled whilst the update level was being established – what updates should be made by whom, where. The specification of the laptops used is:

Processor:	Intel Celeron 788MHz FCPGA
Display:	12.1" TFT (800x600)
RAM:	64Mb SDRAM
Hard disk:	10Gb
Cache:	128Kb
CD-ROM:	24x speed
Floppy drive:	1.44 Mb
Video card:	Integrated SIS graphics Chips Shares System
Modem:	56K (V.90)
Audio:	Built-in 3D Stereo Sound
Speakers:	Stereo

Additionally, the laptops have a built in LAN port.

Minidisk player / recorder

Audio is recorded onto Minidisk and then transferred to computer. This method allows medical experts to produce their own audio track without the need for a recording studio or sound engineers. Any good make can be used, but it is important to use a microphone that cuts out background noise.

The following equipment has been used for audio recording in Inala and Yarrabah:

Sony MZ-R3 Minidisc recorder

Beyer DT108 noise-cancelling headset microphone (automatically cuts out most background noises)

Reporting

The kiosks keep traces of each user dialogue. A small tool is being produced to pick the traces up and produce meaningful information from the raw trace data. The reporting tool can be run on the laptops or remotely although some problems have been experienced with the quality of the phone lines in Yarrabah.

Julia Schofield / Eleonora Budden – July 2002

This appendix covers the key points associated with purchasing and installing a kiosk by non-technical experts.

Factors to consider

It is important to understand lighting, robustness, interference, clarity of different screens, the options for printing (if needed), communication choices and update methods when choosing equipment for a MediBook. Some kiosks also have coin mechanisms, which might be wanted in certain circumstances others provide mag-stripe card or smartcard readers. Other options include proximity sensors (so that the kiosk comes to life when someone is near it), telephone handsets (for phoning or listening to sound on the unit) and even scales (for use in stores). Before looking at the different units and options it is also important to understand where the unit is to be located and whether there are any restrictions or special considerations.

Steps in the process

Excluding software and equipment used in producing the actual title (like mini-disk players, scanners, digital cameras, etc – dealt with separately) the process for choice to delivery of equipment includes the following steps:

• Set out the requirements and know exactly what you want.

• Research the market for equipment that fits the requirements.

• Write a specification (this may need technical expert input on areas like which type of touch screen, what communications, which peripherals might cause difficulties like headphones, etc.).

• Set out a detailed list of questions for manufacturers.

• Obtain demonstrations, pictures, listen to the sound quality, ask for example printouts, check how paper is loaded, etc.

• Test the equipment chosen i.e. what will it run, does it support sound, what does it look like (best to see the actual units if possible and even write a small test program).

• Negotiate price – lease or purchase? (including whether this should or should not be with manufacturer support and for how long).

• Place an order.

Kiosks are not always available off the shelf and may have up to 10-week delivery times. Some items like cables, modems and paper may have to be ordered separately but the manufacturer should be able to advise or even supply. Even with this level of attention

to detail though some minor changes still can be made between choice and delivery. For example the change of sound chip on the current kiosks that caused so much grief because the software drivers supplied for testing were not the same as those on the delivered unit.

Support and repair

Most equipment will have a warranty but it is usual that the cost of getting broken equipment back to the main base to be borne by the customer. Repairs may be free assuming it is breakdown. Where kiosks are deployed in very public places a choice of whether these should be fixed to the wall has to be made too, or they can be standalone. If there is no technical team, buy a support contract but watch how much this is charged at. In some cases it is worth insuring the screens for breakdown but not those using flat screen, which are very reliable now.

Getting the software on to the unit

There always needs to be a master copy of the software either placed with the supplier, if they are supporting the unit, or kept with the kiosk owner so that a hard disk can be rebuilt if this fails. This can cause problems if the system is locally updated and records are not kept of the changes from the last backup of the whole system. It is important that someone centrally knows what kiosks are deployed, where they are, what is on them, who is the local contact in communities, etc.

Julia Schofield / Eleonora Budden – May 2002

The following gives brief points that are useful when writing a MediBooks script.

- Use consumer language – write as though talking.

- Keep the script short – if it exceeds around 250 words check that these don't need refining or require another lower level menu to hold interest.

- Use short sentences.

- Use medical or technical terms that people will hear when talking to professionals but always define them (in some cases a picture might be needed that goes with the definition – for example, with "… will look at your eye with an ophthalmoscope", show the instrument).

- If negative or serious messages have to be given they must be covered but always end on a positive note or people don't go on through the subject.

- Think about illustrations and, as you write, jot down comments.

- Always read the written script aloud to ensure it is in a conversational style .

- Cover each point in one place unless it is very important to re-emphasise – for example "seek health centre advice".

- Keep the question that is being answered in front of you so that the script is focused on this and wording doesn't drift.

- Number each version of a script when it is completed so that comments can be inserted and there are not two or more copies of the same material.

- When spoken always replay to check a reasonable volume, no interference and that the spoken word is not too fast or too slow – if you are unhappy, record again.

- Put short pauses in between "paragraphs" when recording and ensure you start and finish with a pause.

NOTE: It is possible to undertake some limited editing of audio scripts but this should not be assumed.

Julia Schofield – Eleonora Budden, June 2002

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STEP 1
Who for, key messages

A step initiated with examples prior to the workshop to gather input and start engaging the content team.

STEP 2
The questions – agreeing a framework

This step establishes the framework and scopes the material to be written – the moral always being "keep it simple". Simple wording and naming is key and the points are best circulated prior to the workshop with examples from other titles so that there is a base from which to work.

STEP 3
Developing a script (do's and don'ts)

Each question is taken and the script produced conforming to a set of simple rules, which are to keep it simple. Not make the script itself more than half an A4 typed page and if there are additional subjects within this break them out to a new menu.

STEP 4
Visualisation; illustrating a script or break it down into sub menus if too long

Scripts need to be written so that there are obvious illustrations to the points made. Choosing illustrations that are simple, entertaining and informative is key. Copyright issues always have to be addressed.

STEP 5
Common messages (what does the system show when not in use?)

Blank screens when public systems are not in use are boring. For those who don't like using systems having key messages displayed as an "attractor" is important. There are also other small messages to look at like "continue", "bye", what to call a menu, etc. All has to be fitted into the framework in the write style.

STEP 6
The start and finish sequences; what should they say? (acknowledgements and credits)

The system needs introductions, which might be personalised, it also requires an end sequence. Disclaimers need putting in and people involved need credits. At this stage the whole framework for the title needs looking at so that these introductions and credits can be inserted correctly.

STEP 7
Collecting information the question pages

Capturing information from patients, where to put in these questionnaires and how to organise them is important. Too many questions too early and people go away as they see no benefit. Too few questions and the results and use cannot be captured.

STEP 8
Traces and what needs keeping about paths taken

Alongside the question pages the system can keep a trace. What should be kept i.e. how much time on the system, which paths visited, which questions are not visited, etc can be important especially at early stages where an unvisited path, for example, might mean it is in the wrong place or unattractive.

STEP 9
Other messages, where to find out more, etc

For many titles the kiosk can be used for other information about say clinic dates, who to contact, useful tips, etc. Sometimes this is printed. In this step it is important to determine whether this information path is needed, what should be printed either from the scripts or this path, etc.

STEP 10
Production and recording of scripts

Each script must be given a version number and a plan for who owns this, how comments and changes will be made and a planned timescale is needed. It is useful for someone who has prepared a title before to review scripts as they can often help formalise the structure so that illustrations are evenly spread, etc. All scripts should be kept as documents and the results from this review and update / finish writing stage is a set of material for recording. Alongside the scripts should be the listed images with where these are to be found and agreed copyright position.

Julia Schofield July 2002

Report date: 1 July 2002
Kiosk location: Inala
Period: 24 June 2002 to 30 June 2002

The report is divided into two sections:

1 Kiosk usage

2 Response to Survey questions.

1 Kiosk usage

Total times followed by usage (by date and subject):

Total number of users: 59

Total time spent in use: 4 hours 35 minutes

Time spent in Attractor (idle): 20 hours 8 minutes

Maximum user time: 10 minutes

Average user time: 5 minutes

Usage by date / day (in minutes):

Date/Day	Times: start/end	Total time	Average	Total users
Mon 24 Jun	11:34–16:06	75	5	16
Tue 25 Jun	08:28–13:09	61	4	14
Wed 26 Jun	09:19–13:03	44	6	8
Thu 27 Jun	09:57–16:31	26	4	6
Fri 28 Jun	08:34–13:46	68	5	15

Usage by subject (summary):

Subject	No. of times visited
Diabetes	7
What are the causes and symptoms?	0
How do I know I have diabetes?	1
What can I do for myself?	0
What can the doctor do for my diabetes?	0
What happens if I don't look after myself?	0
What about my family and baby?	1
Joint pains, sprains and feet	20
Neck pain	5
Shoulder pain	1
Elbow pain	3
Back pain	3
Pain all over	7
Looking after your feet	4
Who to talk to?	31
Where can I find out more?	18

Usage by subject by visit:

The following table gives the number of times a user visited each subject.

Subject	1	2	3	4	5	6	7	8	9	10
Diabetes	0	0	0	1	0	0	0	0	1	0
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	1	0
What can I do for myself?	0	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	0	0	0
Joint pains, sprains and feet	0	1	0	0	0	0	1	0	0	1
Neck pain	0	1	0	0	0	0	0	0	0	0
Shoulder pain	0	0	0	0	0	0	0	0	0	0
Elbow pain	0	2	0	0	0	0	0	0	0	0
Back pain	0	0	0	0	0	0	0	0	0	0
Pain all over	0	0	0	0	0	0	1	0	0	1
Looking after your feet	0	0	0	0	0	0	0	0	0	1
Who to talk to?	0	0	0	1	0	0	0	0	0	7
Where can I find out more?	0	1	0	1	0	0	0	0	0	2

Subject	11	12	13	14	15	16	17	18	19	20
Diabetes	0	0	0	0	0	0	0	1	0	1
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	0	0
What can I do for myself?	0	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	0	0	0
Joint pains, sprains and feet	0	0	1	0	1	0	0	0	0	1
Neck pain	0	0	1	0	0	0	0	0	0	0
Shoulder pain	0	0	0	0	0	0	0	0	0	0

Subject	11	12	13	14	15	16	17	18	19	20
Elbow pain	0	0	0	0	0	0	0	0	0	0
Back pain	0	0	1	0	0	0	0	0	0	0
Pain all over	0	0	1	0	0	0	0	0	0	0
Looking after your feet	0	0	0	0	0	0	0	0	0	0
Who to talk to?	0	0	0	1	0	0	0	0	0	8
Where can I find out more?	0	0	1	0	0	0	0	0	0	1

Subject	21	22	23	24	25	26	27	28	29	30
Diabetes	0	0	0	0	0	0	0	1	0	0
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	0	0
What can I do for myself?	0	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	1	0	0
Joint pains, sprains and feet	0	0	0	0	0	1	3	1	0	0
Neck pain	0	0	0	0	0	0	0	0	0	0
Shoulder pain	0	0	0	0	0	0	1	0	0	0
Elbow pain	0	0	0	0	0	0	0	0	0	0
Back pain	0	0	0	0	0	1	0	0	0	0
Pain all over	0	0	0	0	0	0	2	1	0	0
Looking after your feet	0	0	0	0	0	0	0	0	0	0
Who to talk to?	0	1	0	0	0	0	0	1	0	0
Where can I find out more?	0	1	0	0	0	0	2	0	0	0

Subject	31	32	33	34	35	36	37	38	39	40
Diabetes	0	0	0	0	0	0	0	1	1	0
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	0	0
What can I do for myself?	0	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	0	0	0
Joint pains, sprains and feet	1	0	1	0	0	0	0	0	1	1
Neck pain	0	0	0	0	0	0	0	0	0	1

Subject	31	32	33	34	35	36	37	38	39	40
Shoulder pain	0	0	0	0	0	0	0	0	0	0
Elbow pain	0	0	0	0	0	0	0	0	0	0
Back pain	0	0	1	0	0	0	0	0	0	0
Pain all over	0	0	0	0	0	0	0	0	0	0
Looking after your feet	1	0	0	0	0	0	0	0	1	0
Who to talk to?	2	0	0	0	0	1	0	0	1	0
Where can I find out more?	0	0	3	1	0	0	0	0	1	0

Subject	41	42	43	44	45	46	47	48	49	50
Diabetes	0	0	0	0	0	0	0	0	0	0
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	0	0
What can I do for myself?	0	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	0	0	0
Joint pains, sprains and feet	0	1	0	0	0	1	0	1	0	1
Neck pain	0	1	0	0	0	0	0	1	0	0
Shoulder pain	0	0	0	0	0	0	0	0	0	0
Elbow pain	0	0	0	0	0	0	0	0	0	0
Back pain	0	0	0	0	0	0	0	0	0	0
Pain all over	0	0	0	0	0	0	0	0	0	0
Looking after your feet	0	0	0	0	0	1	0	0	0	0
Who to talk to?	0	0	0	0	0	1	3	0	0	1
Where can I find out more?	0	1	0	0	0	1	0	0	1	0

Subject	51	52	53	54	55	56	57	58	59
Diabetes	0	0	0	0	0	0	0	0	0
What are the causes and symptoms?	0	0	0	0	0	0	0	0	0
How do I know I have diabetes?	0	0	0	0	0	0	0	0	0
What can I do for myself?	0	0	0	0	0	0	0	0	0
What can the doctor do for my diabetes?	0	0	0	0	0	0	0	0	0
What happens if I don't look after myself?	0	0	0	0	0	0	0	0	0
What about my family and baby?	0	0	0	0	0	0	0	0	0
Joint pains, sprains and feet	0	0	0	0	0	1	0	0	0

Subject	51	52	53	54	55	56	57	58	59
Neck pain	0	0	0	0	0	0	0	0	0
Shoulder pain	0	0	0	0	0	0	0	0	0
Elbow pain	0	0	0	0	0	1	0	0	0
Back pain	0	0	0	0	0	0	0	0	0
Pain all over	0	0	0	0	0	1	0	0	0
Looking after your feet	0	0	0	0	0	0	0	0	0
Who to talk to?	0	1	0	0	0	0	1	0	1
Where can I find out more?	0	0	0	0	0	1	0	0	0

2 Response to survey questions

This section details the responses given by users to the questionnaires.

Question 1: Are you male or female?

Response	Total responded
Man	4
Woman	17
No response	4

Question 2: How old are you?

Response	Total responded
Less than 20	13
20 to 34	4
35 to 49	3
50 or over	2
No response	4

Question 3: Are you Aboriginal or Torres Strait Islander?

Response	Total responded
Yes	17
No	5
No response	3

Question 4: Have you used this kiosk before?

Response	Total responded
Yes	10
No	12
No response	4

Question 5: Did you find it easy or hard to use this touchscreen?

Response	Total responded
Easy	15
A little hard	2
Quite hard	2
Very hard	9
No response	5

Question 6: Did it help you to learn about diabetes?

Response	Total responded
Not at all	1
A little	0
Quite a bit	0
A lot	0
No response	0

Question 7: Have you ever been told that you have diabetes by a doctor or health worker?

Response	Total responded
Yes	0
No	1
No response	0

Question 8: Have any of your family members got diabetes?

Response	Total responded
Yes	1
No	0
No response	0

Question 9: What parts (of diabetes) were most helpful for you?

Response	Total responded
What are the causes and symptoms?	1
How do I know I have diabetes?	1
What can I do for myself?	1
What can the doctor do for my diabetes?	1
What happens if I don't look after myself?	1
What about my baby and family?	1
No response	0

Question 10: What parts (of pains) were most helpful for you?

Response	Total responded
Neck pain	2
Shoulder pain	1
Elbow pain	2
Back pain	2
Pain all over	2
Looking after your feet	2
No response	1

Question 11: Would you use a machine like this to find out about other health problems?

Response	Total responded
Yes	17
No	4
No response	2

Question 12: Which other problems would you like to know about?

Response	Total responded
Heart problems	2
Mental health problems	2
Chest and breathing problems	3
Problems with kids	7
Alcohol (grog)	4
Drug problems	4
Men's business	3
Women's business	7
No response	3

This glossary was produced solely for the use of the project team working on the evaluation of kiosks in Inala and Yarrabah over the time period June 2001 to July 2002. It has definitions of words in context of that work; these may not be equally applicable or accurate outside this context.

Attractor – The series of screen savers that play when the kiosks are not in use displaying key messages.

Batch file – a set of instructions grouped together that calls other programs in turn as they are needed without the requirement of the user to do this separately for each one. Often used for installation or when a number of updates need to be applied to a program all together.

'**Black box flight recorder**' – a term sometimes given to the mechanism that collects the trace information. Black box traces will be in coded form and need interpretation for use in reports.

CHARM – a change request mechanism / form for logging requested changes.

Code – the program that enables navigation of the content and makes the kiosk work.

Content – everything that is seen or heard on the kiosk and can be changed. This does not include buttons and system messages like "bye", "continue" etc.

Content change – a change to the content that does not involve any coding.

Content components – groups of content that all have a similar set of attributes. For example, attractor slots.

Commission – An engineering process undertaken for anything new, car, boat or computer, to check all the parts are working prior to handing over to the customer.

Credits – the credits at the end of a MediBook that will be shown when the "bye" or any other finish button is touched.

Crib-sheet – A set of abbreviated user instructions used as an aide memoir for updates or communications; sometimes for setting up machines.

Functional change – a change to the program code.

Installation and commissioning – the process of physically installing and commissioning hardware, in this case kiosks.

Mag-stripe card (magnetic stripe card) – an everyday card with a magnetic stripe with limited data tracks that can be used. Useful in health for identification and carrying very limited data like blood group, medications, height, etc.

PAT – public access terminal; usually with a keyboard and trackerball rarely touchscreen (touchscreen units tend to be called kiosks).

PCAnywhere – a software utility used for remote control of a kiosk or other computer so problems can be fixed or support given.

"**Play list**" – the list which gives the order that the slots are played from in the "attractor".

Proximity sensor (or motion sensor) – a device on a kiosk that detects, usually by light sensitivity although it can be heat, someone approaching it. Software can use this to come to life or give a message.

Showstopper – a fault or bug that causes the program to fail catastrophically. This type of problem will not go on the wish list in most cases but be corrected as soon as possible.

"**Slot**" – the project term used for the "posters" and pictures or messages that are "played" within the attractor. "Slots" are customisable to the location and usually updated locally although some may be reserved for user help with the system.

SMS (Short Message Service) – for example, text messaging on mobile phones.

Source code – the actual computer language instructions that are initially written by a programmer and will be compiled into machine instructions by a software tool.

Strapline – A concise, consumer message, or brief description going with an illustration or image.

Staging – the process undertaken by the hardware company that involves (1) integration of the kiosk, printer and application software; (2) function & quality assurance checks; (3) assignation of an ID number to each kiosk (for later updating or maintenance); and (4) shipping out.

Test plan – a plan of tests used for checking code or changes. These are written against the requirements of the system and will always be carried out consistently each time a functional change is made before it is released for citizen use.

Timeout – if nobody uses the kiosk or someone walks away a time is set for it, assuming nothing is happening, when it will return to showing the "attractor". This programmable length of time is called "Timeout".

Traces – the collection of information based on "touches", time used, order of answers, etc.

Training and initiation – the process of taking staff through the content on the kiosk. As MediBooks are intuitive this may mainly involve sharing the vision for the project more than just using it.

Update tool (supervisor) – the update tool or supervisor is the separate program that enables the database of content to be viewed and altered without having to change the MediBook systems code. This can be called an update tool or a "supervisor".

Upload – the process of "uploading" information or software to the kiosk.

VOIP (Voice over IP) – This is the transmission of voice using the Internet protocol. Its use allows the integration of voice and data over the Internet and other networks. It also provides a potentially cheaper alternative to conventional telephony, though at present with a lower quality of service.

"**Wish lis**t" – a list of changes that have been suggested. This will be organised in a formal template for each change so that information like date of suggestion, suggestor, likely priority of the change, what it is and the status / review date is kept with some comments on feedback or actions.