



SMART INTERNET
TECHNOLOGY CRC

Working Paper

No. 4

Scenarios of Possible Use of Smart Internet Technologies

By

Researchers in the Smart Internet and User Needs Project of the SITCRC

Table of Contents

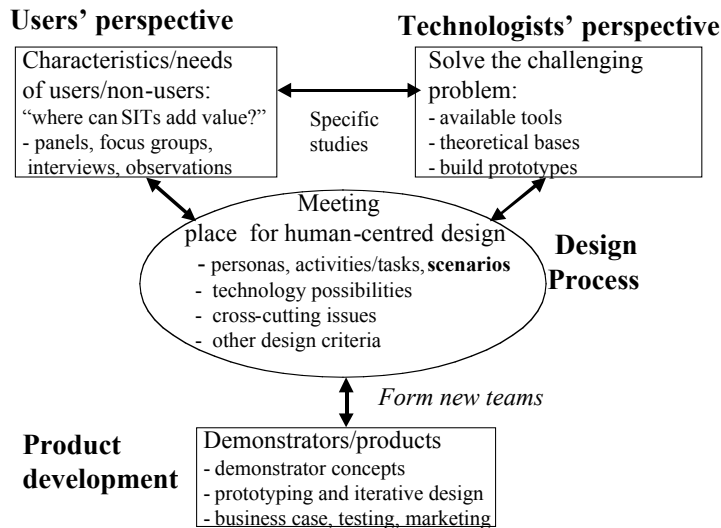
Preface	3
1 Introduction to scenario approach	4
2. SME Scenario Summaries	7
2.1 Farm-based Possibilities for Smart Internet Use	7
2.2 Agricultural Auctions and Smart Internet Use	10
2.3 Smart Credit Unions and Smart Internet Technology	13
2.4 Real Estate Sales and Smart Internet Technology	16
2.5 Supporting Restaurants with Smart Internet Use	18
2.6 Medical Emergencies and Smart Internet Use	20
2.7 Fishing the Tasmanian Rock Lobster	23
2.8 Hotel Customer Service	25
2.9 Surfing Small Business	27
2.10 Networked Project Management Possibilities	29
2.11 Assisted Accounting	31
2.12 Transport Logistics with Smart Internet Technology	33
2.13 Aquaculture with Smart Internet technology	35
2.14 Teleconference Meeting Possibilities	37
3 Scenarios For Young People	40
3.1 Multimedia imaging in a multi-channel environment	40
3.2 Embodied conversational agents in a chat environment	43
3.3 Mobile conferencing call	45
3.4 Story listening Teddy Bears	47
4 Scenarios for People with Disabilities	50
4.1 Safety monitoring in an intelligent home	50
4.2 A housewife with vision impairment wakes up to a new day	53
4.3 International sign language communication	55

Preface

This document provides a pack of scenario summaries. The full scenarios from which these scenario summaries were developed are available as part of the full documentation submitted by the User Needs Project to the CRC.

1 Introduction to scenario approach

The User Needs project is using the following schema to organise its approach to the discovery phase of user-centred design in the CRC.



Fundamentally this approach envisages user researchers, technology researchers and other CRC participants jointly considering desirable possible directions for demonstrators and product development, based on an understanding of user needs and the possibilities emerging from the research in the technology projects.

The development of scenarios is intended to facilitate this collaborative process. Within the User Needs project, researchers have been working with expert panels focused on Small and Medium Enterprises (SMEs), Young People, and People with Disabilities. The following schema illustrates the approach taken within the SME focus:

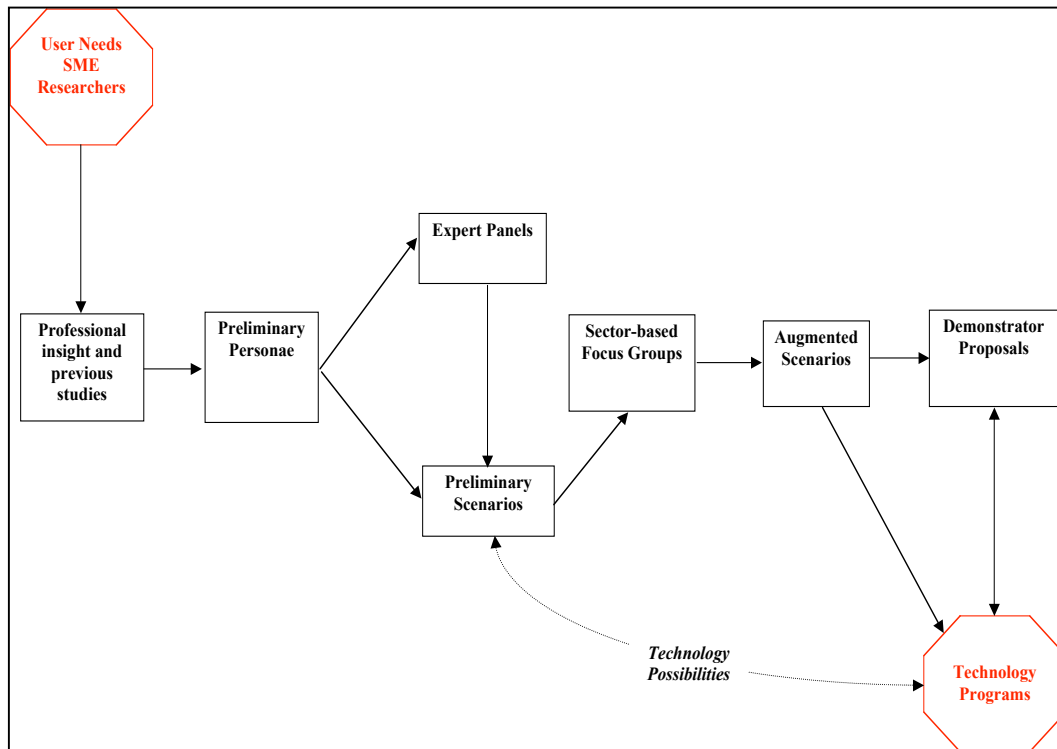
What we have now are the "preliminary scenarios" – requiring the input from technology researchers and industry participants within the CRC in order to collaboratively move forward into the more detailed development of demonstrators for projects and priority setting within specific user segments.

To facilitate interaction with other CRC participants these 'preliminary scenarios' have been prepared in two forms:

- 1 Context (detailed, story like, covering a range of activities, possibly 8-10 pages)
- 2 Executive Summary – which can be used to assess value for users, technology programs and industry partners. **This document provides a compilation of these executive summaries**

When these scenarios have been assessed for relevance, we envisage producing more

- Task focused scenarios, similar to what is generally anticipated in the software field.



Assessing the value of scenarios

If a scenario is to go forward for more detailed examination, it should be established that it has potential value to:

- users (useful, easy to use, social/psychological acceptability, cost effective)
- industry partners (business and market analysis)
- some or all technology programs (capability, research challenge, feasibility)
- CRC generally (profile in relevant area, policy alignments, etc.)

A scenario or demonstrator/product concept may have value on one dimension (e.g., technology programs) but not on another (e.g., users), although there are correlations; e.g., it is difficult to see there being value to industry partners if there is not value to users. This suggests a “balanced scorecard” approach to assessing scenarios may be appropriate. In the following summary scenarios we have included a possible format for making these assessments from these different perspectives. Some criteria are suggested, but it may be that others are more important or the more subjective overall judgment “yes, this material is of interest” or “no, it is not” is the correct approach.

Actions requested from CRC colleagues

User needs researchers are seeking responses from technology programs and industry partners to the following questions:

- Is this scenario approach a meaningful way to create the necessary engagement (“meeting place”) between user researchers and technology researchers?
- As we move forward into the next phase of CRC projects, how can we make this engagement happen:

- (i) through assigned technology research team members working with user researchers on scenarios/demonstrator concepts?
- (ii) through workshops devoted to scenario development and analysis?
- (iii) other?
- Which of these scenarios are of interest from your point of view?

2. SME Scenario Summaries

2.1 Farm-based Possibilities for Smart Internet Use

Persona: Graeme

Graeme is a third generation smallholder farmer. He is married with 3 children. Graeme previously completed a Farm apprenticeship and has formal qualifications from an Agricultural College. He has a flare for mechanics and farm equipment, especially irrigation equipment. Repairing this equipment on neighbouring farms generates additional income. While work involves long hours for small financial return, Graeme and his family love the farming life style. Graeme currently employs 2 workers, one of whom is his son. His wife is an integral part of the farm business. Currently the farm grows a range of arable crops on contract for several different companies as well as small amounts to be sold direct from the farm gate. Graeme has also recently diversified into running some cattle, to generate an additional source of farm income. Ensuring the right crop is planted, watered, fertilized, harvested and sold at the right time at the best price possible is central to the success of the farm.

Scenario:

Scenario Summary:

A regular farm day starts at 5.30am and involves a combination of scheduled and unscheduled tasks. Scheduled tasks include checking the status of the crops being grown, confirming that the irrigation equipment is working and dropping off & picking up the children from the school bus stop. Unscheduled tasks include responding to neighbouring farmers needs for the repair of irrigation equipment, responding to any problems with the cattle, doing repairs/obtaining spares for his own farm equipment and of course dealing with any family related activities that may arise. Throughout the year the weather plays a key role in determining day-to-day farm activities.

These activities involve the need to request, check, record and communicate a broad range of information concerning the workings of the farm, his activities and interactions with others including members of his family. Graeme enjoys face-to-face interactions and also frequently uses his mobile phone. He is not however, good at maintaining records and leaves all of this work to his wife who (with some difficulty) maintains up-to-date farm accounts on their PC.

In this scenario, information and communication activities are supported by a device called the *Farmers Right Hand (FRH)*. This is a palm-based computer that is rugged, water proof, acid proof, floats on water and has an effective battery life of 100 hours. The device is sized so that it will fit comfortably into the breast pocket of a King-Gee® work shirt and can be operated inside the shirt pocket but will also clip onto a belt. It incorporates mobile telephone facilities, wireless networking, speaker and microphone and a touch screen. Input is provided by either; a virtual keyboard on the touch screen, by individualized 'icon-based' shortcuts on the touch screen or by a T9-like abbreviated word completion system.

The FRH enables Graeme to easily and effectively check and record fuel consumption use and ordering requirements, update information on the status of the crops being grown in paddocks around the farm, record other farm cost details, obtain local weather forecasts, calculate irrigation levels, contact contract harvesters. The device also notifies him of scheduled tasks, supports improved contact with clients for his mechanical services and guarantees easy contact with his family. This SIT can also be used as a monitor to ensure that Graeme has not had an accident or been delayed for important appointments.

Supporting Information:

Owner/operators in small business tend to have limited time and face difficulties in maintaining up-date information and records about their businesses. They also have limited resources to maintain accurate information on market prices or other commercially relevant information. Significantly in the farm context there is no clear definition between work and home. Smart technologies that can support multi-channel interaction, are location independent and automate the routine information gathering/sharing will quickly become an essential tool in agricultural environment. Additionally, consideration of the social context is essential - Farmer's and their wife's are a team that engage in numerous interrelated tasks to support the farm. Technologies changing this balance will need to address social acceptability.

Devices like the FRH will also need to be built in a manner that makes them resilient to the hostile environments prevalent on farms where equipment is subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day to day operation.
- Loss – equipment may be placed down and forgotten, especially when a situation demands urgent attention (ie a cow calving).
- Incomplete Telecommunications – farms are often geographically large. Access to network facilities may not be possible in all farm locations, at all times.
- Interference – the proximity of motorized farming equipment (ie Tractors, irrigation pumps) can cause interference with telecommunications.
- Multiple Users – equipment may be used by more than 1 person on several occasions, requiring several user profiles to be stored and accessible.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Notepad for farm cost details recording	Voice/Keyboard/Infra-red transmission from pump/tractor	Background noise.
Weather forecast details	WWW/Mobile phone/Email alerts	Availability of localised weather details.
Commodities prices Harvester Prices	WWW/Mobile phone/ Email alerts	Details available from ASX /Commodity brokers/Security of Information Changing balance of activities between Farmer and Farmer's Wife - who has traditionally been in charge of Financial issues i.e. it may be the farmer's wife surfing the WWW.
Computational activities	Voice/Keyboard	Size of Farmers fingers/hands – buttons on devices will need to be large.
Message Board/Note-taker	Voice/Keyboard	Size of Farmers fingers/hands – buttons on devices will need to be large.
Location of priority people	GPS/Mobile/Email	Issues of privacy and location – see M.Castro paper.
Mobile communications	Mobile/Voice dialling	Network coverage – the capacity to pick-up and filter messages when device comes back into network range.
Appointment	Voice interaction/keyboard	Legislation on mobile phones

reminders/important message alerts		and vehicles. Plus driving a tractor in the field versus a car on the road impacts on driver ability to respond to a device.
------------------------------------	--	--

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4. Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.2 Agricultural Auctions and Smart Internet Use

Persona: Mark

Mark comes from four generations of Farmers and currently lives at home on his parents' farm. He has 1 brother and 1 sister (who is intellectually disabled). He is in the 2nd year of a Farm apprenticeship and has already begun to display a skill for buying and selling cattle. His parents' farm is mixed arable/cattle and Mark assists his father in growing contract crops. His father has also encouraged Mark to buy and sell a small number of cattle for himself as a source of additional income. Mark is a regular user of the Internet and 'lives on' his mobile phone. Mark has always found cattle auctions to be exciting and he is proud of his abilities to spot bargains. Mark is committed to farming and anticipates that he will end up taking over his parents' farm.

Scenario:

Scenario Summary:

On auction day Mark is busy helping his father with the crops in outlying paddocks and is concerned that he will not have time to arrive at the auction house before the first lots are sold. The auction house is approximately 45 minutes drive from his parents' farm and Mark needs time to review the latest cattle offerings, stay up-to-date with prices being paid, find a park in the already packed auction grounds, verify his bidder credentials, make bids and payments and organise delivery for the cattle purchased.

These activities involve the need to request, check, record and communicate a broad range of information concerning Mark's identity as a bona fide bidder, the cattle being sold, location of car parking spaces, bids and secure e-commerce transactions and logistics information for the delivery of the cattle.

In this scenario, information exchanges and electronic commerce transactions involved in the scenario are supported by the *Farmers Right Hand (FRH)* device (described in scenario 1 above) interacting with a technology called the *Smart Auction Room(SAR)* located in Roberts Limited offices and sale yards.

The SAR incorporates mobile telephone facilities, wireless networking and a speaker and microphone unit. Input is facilitated by a virtual keyboard on a master touch screen or by a T9-like abbreviated word completion system. Output is through a series of large flat-screen monitors set into the conference table in the middle of the room or by individual communications to the FRH – *Farmers Right Hand* device.

Supporting Information:

The dynamic nature of auction environments highlights an important aspect of the reality of farming life – the critical importance of market values. As a result the ability to obtain up-to-date information on prices, stock and delivery costs while on the move, provides Mark with the opportunity to concentrate on core buying/selling activity. The availability of voice output/input when required also enables Mark to use driving time to listen to valuable information on setting purchasing priorities and tagging cattle of specific interest.

The SAR at the auction house will need to be robust as it will be subject to:

- Physical shocks – equipment may be hit, poked, or otherwise physically assaulted in day to day operation.

- Multiple Users – equipment will regularly be used numerous people – raises issues of differential access (user, administrator etc.) implications for user profiles to be stored and accessible.
- Power Failure – equipment will need a robust backup system to ensure that loss of power will not effect its effective and secure operation – Reliability will be essential to uptake in the agricultural auction environment.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Driving to Auction House	Voice output/input of new cattle offerings – prioritised on basis on previous purchases. Ability to voice tag particular offerings for examination at auction house	Legislation on mobiles in car – Voice output/input from device will be resilient to legislative changes.
Secure & Identifiable access to SAR	Background function with voice confirmation or could be entirely automated verification process	Location and Security – see M.Castro paper
Electronic identification of auction animals.	Ear tag/Implanted chip on cattle – containing detailed stock information	Health of animal/Robust equip to read tag, etc.
Electronic bidding	Background function with voice/touch confirmation	Machine learning of bidding pattern – user retains control complete control over confirmed bids.
Electronic payment	EFTPOS/Infra-red/WWW	Security of payment & Banking regulations
Quotes for transport of purchased animals	WWW/Email/Mobile phone	Details available/Security of information.

Evaluation of Scenario

1. Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		

Relevance		
------------------	--	--

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.3 Smart Credit Unions and Smart Internet Technology

Persona: Donna

Donna entered the Banking Industry straight from school at 18 yrs old. Now 39 yr, She is married with 3 boys. Donna has previously completed a Banking traineeship with high grades and joined the Credit Union 2 years ago from one of the major national Banks. Donna is enjoying the challenge of her Assistant Manager position and in particular likes customer service with its opportunities to meet new people. Ensuring the successful management of the credit union is essential to maintain the continuation of her employment and to provide for her family's future. Donna's work involves her working in numerous offices, meeting rooms and conference rooms in the building where she engages in activities with clients, staff and occasionally communications with her family/friends.

Scenario:

Scenario Summary:

Donna's arrives at the office secure underground car park around 7.30am each morning – takes the lift to her office, checks her email and morning schedule of appointments. Her first meeting is in the conference room, she then has several client appointments to discuss loan applications on the ground floor (shop front) followed by some OH&S checks for teller staff. Throughout the morning Donna will be away from her office but will almost certainly need to respond to queries/make decisions in addition to her scheduled appointments. Other staff will need to be able to locate her quickly and assess whether it is appropriate to interrupt her activities. Also given the nature of the personal financial information being exchanged security of message content, authorised access, user identification and verification will all be of paramount importance.

Donna's activities involve the need to request, check, record and communicate a broad range of information concerning her identity, location and level of authorisation. Access to the office car park and to different rooms in the office building will be restricted to specific staff. As Donna moves around the building, she will need to access, display and interact with client, staff and company information on a range of different devices. These will vary from PCs through to the flat screen video suite in the conference room.

In this scenario, information exchanges about Donna's identity, location and permissions to enter parts of the building, access client and staff files and engage in electronic commerce transactions are supported by the *Client Advice and Service Informant(CASI)*. CASI is a dedicated system purposely constructed within the credit union's office complex. The system is activated and accessed through a variety of means: smart cards, facial recognition, fingerprint analysis and user voice identification systems. The system incorporates secure wireless networking, cameras, microphones and both user and staff touch screens. Input is provided by either; a virtual keyboard or an individualized 'icon-based' shortcuts on the touch screen or by a T9-like abbreviated word completion system.

Supporting Information:

In financial institutions the need for physical and information security is critical. However, in managerial roles the need to shift location, and interact seamlessly with information to support the business while also being available to others to respond/make decisions about to unscheduled issues is also very important. Making these access and location issues as

transparent as possible within a specific building space removes the burden of remembering/changing passwords, key cards and User ID names.

The CASI equipment is potentially subject to:

- Interference – modern buildings are often shielded from telecommunications by their roofing/wall insulation. This facility can cause interference with telecommunications within the building. Further large amounts of external noise from traffic and crowds can interfere with the effectiveness of the voice recognition software.
- High Installation/Maintenance Costs - because the system is so pervasive, the installation should be accomplished during the initial building phase of the future office complex. Re-modelling an existing building may reduce the cost/benefits and deem it too expensive. Also as the system is internally installed (i.e. within the office walls), maintenance on the ‘hidden’ sections of the system can be expensive and disruptive to clientele
- System Dropout – As the system is essentially a collection of smaller individual technological components (i.e. camera’s, microphones, etc) the opportunity exists for a system malfunction through the demise of a lesser component.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Secure and Identifiable access to vehicle car park.	Object recognition.	Damage to front of vehicle could preclude access.
Intruder identification & security notification.	Foreign object recognition & Machine learning.	Sensitivity of scan – ie no alarm for cats, etc,
Background system log on.	Facial recognition/Smart card	Location and Security – see M.Castro paper
Intelligent Lifts.	Voice command	Large database of persona’s.
Interactive personal computer HCI.	Voice/Face recognition/Smart cards	Personality based HCI limitations
Mobile computing & information sharing.	Voice/Fingerprint analysis	Locatability & privacy – see M.Castro paper.

Evaluation of Scenario

1. Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		

Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.4 Real Estate Sales and Smart Internet Technology

Persona: Emily

Aged 35yrs. Divorcee, re-married with 2 children. Real Estate traineeship completed with high grades 2 years ago then apprenticed. Enjoys the sales lifestyle and meeting new people. Ensuring success of agency is essential to maintaining continuation of employment and family future. Family needs to know where she is as they need security from possibility of vehicle breakdown/accident. Has concerns about health issues re: mobile telephone use.

Scenario:

Scenario Summary:

Emily uses her REPA more as a personal assistant rather than a mobile computer. She regularly accesses its scheduler; client contact recorder; mobile communications; internet access and user identification facility. Emily essentially has one device which deals with a multitude of functions, giving her greater freedom in her busy schedule and less devices to worry about losing.

Supporting Information:

REPA - *Real Estate Personal Assistant* is a clipboard-based computer that is robust, water-proof, heat-resistant, can be individualised (colour coded to individual or company standards) and with an effective battery life of 100 hours. The device incorporates mobile telephone facilities, wireless networking, speaker and microphone and a touch screen. Input is provided by either; a virtual keyboard on the touch screen, by individualized 'icon-based' shortcuts on the touch screen or by a T9-like abbreviated word completion system.

This equipment could be subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day to day operation.
- Loss/Theft – equipment may be placed down and forgotten and the uniqueness of the device can make it a target.
- Incomplete Telecommunications – sales persons often work over geographically large areas. Access to network facilities may not be possible in all locations, at all times.
- Interference – modern buildings are often shielded from telecommunications by their roofing/wall insulation. This building feature can cause interference with telecommunications when inside the building. Further large amounts of external noise from traffic and crowds can interfere with the effectiveness of the voice recognition software.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Daily schedule/planner.	Voice interaction with infra-red updates when in office.	Legislation regarding mobile phone usage and motor vehicles.
Interactive GPS and route planner, combined with traffic warden.	Voice interaction with spoken/graphical directions	Legislation regarding mobile phone usage and motor vehicles.
Priority communication with office and children at times.	Mobile phone / email.	Legislation regarding mobile phone usage and motor vehicles.
Mobile phone personal assistant	Mobile/Email / WWW	Simple to use.
Location of priority people.	Mobile/GPS/WWW	Issues of privacy and location –

		see M.Castro paper.
Secure data transmission between auctioneer and sales people.	Infra-red/Blue tooth/WWW	Legislative requirements for real estate auctions.
Transfer of cash deposit	WWW/EFTPOS/Email	Security and banking industry regulations
On-line bidding	WWW/Email/Chat	Security and reliability of information passed/requested.
Transcription of daily client interactions	Infra-red/Email	Security and Audit trail legislation

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.5 Supporting Restaurants with Smart Internet Use

Persona: Madeline

Born in France and now travelling the world for experience sake. Single, Female, 25 years of age. Has a Degree in Culinary Arts from the French Culinary Institute, New York. English is her second language. She has trouble sometimes understanding the Australian accent. Came to Australia 3 months ago on a working visa. Is looking to go to New Zealand next year, hence this job. Has worked in the hospitality and food industry most of her life. Her main strengths are her ability to interact with people of all ages. Frustrated by the need to manually record all details of a customers' order within a regularly changing menu.

Scenario:

Scenario Summary:

Madeline needs all the help she can get from her SIT. She has trouble with the Australian language; an ever changing menu; our emergency procedures and keeping track of orders and their costs. Madeline uses her device as a main point of contact during her work shifts.

Supporting Information:

MITYO – *May I Take Your Order* is a pocket-based computer that is rugged, water-proof, acid-proof, and has a very effective battery life of 48 hours. The device is sized so that it will fit into the front pocket of the workers apron. The device incorporates mobile telephone facilities, wireless networking, speaker, microphone and a touch screen. Input is provided by either; a virtual keyboard on the touch screen, by individualized 'icon-based' shortcuts on the touch screen or by a T9-like abbreviated word completion system.

Restaurants are an equipment hostile environment. Equipment is subject to:

- Physical shocks – equipment may be dropped, stood on, immersed in liquids, cooking fat and food or otherwise physically assaulted in day to day operation.
- Incomplete Telecommunications – restaurants are often located within and without buildings. Access to network facilities may not be possible in all locations, at all times, especially as modern insulation materials radically reduce mobile communication ability.
- Interference – the proximity of motorized cooking and cooling equipment (ie conveyor cookers, refrigerators) can cause interference with telecommunications.
- Multiple Users – equipment may be used by more than 1 person on several occasions, requiring several user profiles to be stored and accessible.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Secure & Identifiable access to system.	Background function with voice/touch confirmation	Location and Security – see M.Castro paper.
Internet Bookings	WWW/Email/Mobile Phone	Backup of important details.
Taking orders	Infra-red communications	Personal identification/Age notification
Handling emergencies	WWW/Mobile phone	Personal details being communicated.
Electronic Payment	EFTPOS/WWW/Mobile phone	Security of payment & banking regulations.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.6 Medical Emergencies and Smart Internet Use

Personas:

Peter – 52 yr old Bushwalker/Photographer is conscientious about his health and fitness and is very thorough in his preparation to his outdoor hobby. Over the past few years has increased the number of solo bushwalks he undertakes, although he knows that bushwalking solo increases the risk of unassisted injury.

Owen – 28 yrs old Park Ranger is very keen to maintain open access for all walkers in the National Parks but is also aware of the increasing number of ill-prepared walkers. Consequently he takes his duties very seriously, preparing for most situations with extra emergency equipment.

Cathy – 48 yr old Community Nurse is the only trained medical person in Zeehan now that the Doctor's surgery has been closed and the Pharmacy has moved to the nearby town of Rosebery. She is well known within the town and tends to be the first contact for most local ailments and injuries.

Chloe – 24 yr old mother who came to live in Zeehan only 2 months ago. Moving to Zeehan has been hard for her as she has left most of her friends and family behind in Hobart. Her main concern, apart from the daily hazards her husband faces at work, is for her daughter Wendy, who has chronic asthma.

Wendy - 4_ who lives with her mother and miner father in Zeehan. Wendy has lots of dolls, one brought for her for every stay she has had in hospital. She is very fond of her teddy bear, Max, who has been with her since she was born. She gets very distressed and panics when she cannot breath.

Phillip – 19 yr old bike rider who works as a clerical officer in the Comalco Aluminium plant. Phillip has been bike racing since he was 10 years old and regularly rides his training bike to and from work, when the weather allows it. Phillip is willing to help out most people.

Graeme – 36 yr old unemployed for the past 4 years as a result of a fall at work whilst erecting scaffolding. He suffers from constant back and neck pain and can be relegated to lying on the lounge room floor for up to 8 hours to find some relief.

Sara – 14 yr old year 9 high school student lives at home with her mother and father. She would class herself as an average student, making up for it with her sporting prowess. She resents being called a child and would love to have a boy-friend but her parents will not allow it until she is 16.

Scenario:

Scenario Summary:

This SIT device can be utilised in a variety of locations and provides anyone, irregardless of their first-aid training, with an opportunity to assist in a medical emergency. The various persona's identify 3 situations where the device could be of critical assistance: in the bush; in a remote home; at a road side.

Supporting Information:

MEDI-PID – *Medical Personal Information Device*. This device is primarily a sheet of sensor units housed within an emergency blanket controlled by a black box communications/computational device attached to the blanket. The device is rugged, water proof, extremely light and has an effective power source of 100 hours. The device is sized so that once fitted into it's protective lightweight case, it can be housed in a bushwalker's pack, a

vehicle glove box or similar small case. The device incorporates mobile telephone facilities, flexible networking, GPS and a LCD touch screen. Input is provided by either a virtual keyboard on the touch screen or by individualized ‘icon-based’ shortcuts on the touch screen. Output is to the touch screen or by mobile telephony to the physician.

Emergencies are usually equipment hostile environments. Equipment is subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day to day operation.
- Loss – equipment may be placed down and forgotten, especially when a situation demands urgent attention.
- Incomplete Telecommunications – Access to network facilities may not be possible in all locations, at all times.
- Interference – the proximity of any motorized equipment can cause interference with telecommunications.
- Multiple Users – equipment may be used by more than 1 person on several occasions, requiring several user profiles to be stored and accessible.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Sensing patient medical details	Attached or contact sensors	Ease of use and skin irritation.
Sending personal information	WWW/Mobile phone/Email	Security of transmission.
Remote directions	Textual/Graphical display	Language considerations
Drug authorisation	Textual display	State/Federal legislation
Location of priority people	GPS/WWW/Mobile	Issues of privacy and location – see M.Castro paper
Storage of personal data	Internal memory with authorised access	Privacy issues / destruction of data.
Portability	Very light weight Blanket	Powerful transmitter/Power source
Locatability	GPS/Mobile Phone	Current range of GPS.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		

Capacity		
Challenge		
Possibility		
Relevance		

4. Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.7 Fishing the Tasmanian Rock Lobster

Persona: Sebastian Viney

Sebastian is aged 26, and has a long term partner. He is a member of the Australian Volunteer Coast Guard (AVCG) and works as a Tasmanian Rock Lobster Fisherman on his own boat. In order to gain the greatest return on his catch, he needs to be able to sell his fresh catch to foreign countries (usually Japan) within 36 hours. Frozen ones can be stored up to two weeks. His home port is St Helens on the North East coast of Tasmania. He is always on call for the AVCG. Sebastian completed his fishing traineeship two years ago.

Scenario:

Scenario summary:

With the aid of Sebastian's SIT, he is able to assess and go to the optimal fishing locations during the best tides and weather for maximum return. He is also able to access market information. Very importantly, he is also able to respond to AVCG emergencies.

Supporting Information:

The Tasmanian Rock Lobster Fisheries are a small, but very lucrative industry, resulting in substantial disposable income. Although this scenario is based upon the Tasmanian Rock Lobster Fishery, it would be equally relevant to any fishery.

Equipment in the fisheries environment is subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day-to-day operation.
- Incomplete telecommunications infrastructure – in coastal regions there is often little or no mobile network coverage, however mobile phone satellite access is available world wide up to 20 kilometres off-shore
- Salt water – Poseidon and the earpiece and microphone will be wet all the time.
- Temperature extremes – depending upon weather, Poseidon could be in sub-zero conditions or mid forties temperatures in the ship's engine room.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Fishing conditions monitoring	Constant background monitoring of WWW.	Trust and reliability of information sources
Finding a crew	Mobile telephony/voice response	Predetermination of possible crew members
Weather warning	Handsfree, audible, vibration, lights	Trust and reliability of information sources
Communications	Handsfree mobile telephony device	Telecommunications infrastructure
Location	GPS	Current limitations of GPS
Market monitoring	WWW	Trust and reliability of information resources

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Fishing conditions monitoring		
Finding a crew		
Weather warning		
Communications		
Location		
Market monitoring		

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.8 Hotel Customer Service

Persona: Emily Petersen

Emily is a 22 year old employee of the Bayview Hotel in Hobart. Although she is salaried, she has changing hours due to the three shifts within the hotel: morning, afternoon and night audit. Emily has been working for Bayview for the past three years, and was working on a casual basis until she was promoted to the salaried position early this year. She really enjoys the customer service, but the financial statements are fairly onerous to her.

Scenario:

Scenario summary:

Working in a small hotel, in order to be successful, high levels of customer satisfaction are very important because of word of mouth advertising. In order to provide guests with the best possible hotel experience, records are maintained on customer satisfaction and preferences for to encourage repeat visits. One area of expense for the hotel is the mini-bar facility. This has traditionally been on the honour system where, on checkout, the guest tells the desk clerk what was used, and in this past this had resulted in considerable expense to the hotel. Being a very small hotel, night audits are still a manual process, often leading to mistakes. With appropriate technology, the hotel will be able to make a much more reliable audit process.

Supporting Information:

The SIT is able to interface with other small hotels' databases to provide the personalised service to customers, as well as compiling customer information based upon customer activities and decisions. Financial checks are also largely automated.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
The SIT carries out customer profiling by assessing what orders the customer used, what facilities the customer requested or used and uses this information to make current and future stays as pleasant as possible.	This works best invisibly because it decreases the chances of corruption in the data. All data comes directly from the customer or customer's decisions. Interfacing with other hotels helps build the database.	Monitoring customer decisions and sharing the information with other hotels opens many ethical and legal considerations.
On checkout, the SIT is able to assess and charge for the items and facilities used within the rooms, rather than relying on the customer to tell the clerk.	Assessment of use would be invisible, but the output would be textual, enabling the clerk to read and bill the customer.	Incorrect charges will result in very bad customer relations.

Value of Scenario

Competition for hotel guests is fierce, and though customisation of services to customers, quality of service can be increased. This process is of value within any organisation and can potentially provide an SME with a competitive advantage over a much larger firm.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2. Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.9 Surfing Small Business

Persona: Mark Thompson

Mark is aged 43 and is a very keen surfer. He has been surfing since he was eight years old. Surfing is his major passion in life. His love for surfing led him naturally towards a business that specialised in the retail of surfing goods, and he proved to be quite a successful businessman, in his store, Surfy Dude Gear. The store has only a few major suppliers, consisting of the large surfing brands, and the majority of his turnover comes from high price, low margin items. Mark is the owner and only employee of the store.

Scenario:

Scenario summary:

With the aid of Mark's SIT, the Small Business Mate (SBM), he is able to carry out all the business functions required to run his business, with the least possible effort. This leaves time for him to go surfing, and using his technology, he always has the best surf conditions.

Supporting Information

Small retailers make up a significant proportion of retailers generally. They are often sole-trader businesses established by people with few business skills. Providing a device that will not only enhance business decisions and decrease workload, but will also provide recreational benefits will increase the use of the device and aid in take-up.

Equipment in the retail environment is subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day to day operation.
- Incomplete telecommunications infrastructure – although the SBM is designed primarily for business use, in reality, the functionality of the device allows for other uses. Incomplete telecommunications infrastructure is a reality.

Equipment in the beach environment is subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day-to-day operation.
- Incomplete telecommunications infrastructure – beaches and surfing locations are often situated in remote coastal areas where there is often little or no mobile network coverage.
- Water and sand – the SBM is used on the beach, and must be capable of withstanding immersion in salt water, as well as the abrasiveness of sand in the environment.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Security System	Voice Recognition	Security of technology
System Control	Voice Recognition	Security of technology
Price monitoring	Handheld barcode reader	System updates
Inventory monitoring	Background working	Learned/predictive

		behaviour
Accounting	Background working	Learned/predictive behaviour
Surf monitoring	Background monitoring of WWW	Learned behaviour
Alerts	Silent/visual/vibrating	Location dependent. Learned.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Security System		
System Control		
Price monitoring		
Inventory monitoring		
Accounting		
Surf monitoring		

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.10 Networked Project Management Possibilities

Persona: HiTech Medium Organisation

Fairly well established in industry (5-10 years). 20-70 employees. Employees have tertiary IT education and professional development interests. Employees often work long hours. Operates in offices that are located in Brisbane and Sydney. Employees between locations need to communicate on a regular basis. Employees enjoy socialising together at organised events. Use the Internet and voice recognition (VR) technologies to communicate with customers. Use e-commerce methods to sell their products (through Internet/VR). Uses email as a primary communicative tool. Feedback on services provided is given by customers and vendors. Are just entering or planning on entering the global market. Are interested in taking advantage of new technologies.

Scenario:

Scenario summary:

With the aid of HiTech's SIT, the software development project manager is able to assess the options and optimise project management decisions made for the entire project. Software developers in the project team are provided with a customised development environment that changes according to the phase of the project they are working on. The SIT is able to illustrate the entire system development according to project planning decisions and record HiTech's development processes, with specific information about each task completed. The information representing before and after can be mapped to find any discrepancies. Very importantly, the project manager is also able to respond to any major issues with development as they are notified of any major errors or problems when they occur through the SIT.

Supporting Information:

The SIT is able to assess project planning options and project development requirements through recorded information of previous projects completed. It can learn from past activities. The literature suggests that many IT projects fail. This SIT would help to reduce some of the uncertainties in software development, especially for the small to medium enterprises. Small businesses, employing fewer than 20 persons, dominate the IT industry with 96% of all ICT businesses classified as small (AIIA 2002). The IT industry is growing at a sustained average annual growth rate approaching 12% (AIIA 2002). This SIT would help to decrease the costs and problems associated with software development for many IT organisations.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Project manager to propose a number of different project development scenarios, considering all of the options. The software supports activities such as "what-if" predictions, resource planning, time allocations and coordination etc.	Ideally this should search a database of previous projects and provide information from other projects completed.	Due to problems that occurred with previous projects completed, any comments and issues are also identified, however, the project manager can make choices that are not based on this information.
This choices made are recorded via automated tools that record key tasks in each phase of	Data is recorded to the knowledge base as 'actual history' of the development, for	It may be difficult to distinguish what particular information should be recorded and what

development to At the completion of the project, the project history can be compared with project plans and any discrepancies can be commented on to help future projects.	example, versions, evolution of plans etc. The collated (previous) project data, the knowledge base, is stored in a multi-access database and is available to all users on the network.	should not be recorded.
--	---	-------------------------

Value of the Scenario

This scenario is of value to small and medium IT organisations as they are able to access the large amounts of information that could help them from making poor project management decisions. SMEs often do not have the resources for extensive development of new tools to obtain maximum information. The scenario provides support to the software development process, integrating many disparate tasks and tools into one process.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.11 Assisted Accounting

Personae: Bob and Tim Oldaker

Bob and Tim Oldaker own and run a small father and son accounting firm partnership. Bob started operating his own accounting firm in 1954, and Tim joined the firm to create Oldaker and Oldaker, Chartered Practising Accountants. The partnership has a large and loyal customer base, and was very successful until 1999, when Bob suffered from a fairly serious stroke, leaving him with mobility and speech difficulties. Now, in 2002, Bob wishes to return to work and Tim wants him to.

Scenario:

Scenario summary:

Using Hermes, a business support room, Bob is able to resume practicing as an accountant due to the support systems in place to make sure the best decisions are made. By accessing the latest accounting information, Hermes can ensure that greatest benefits accrue to the firm's clients.

Supporting Information:

Although this system has been described in terms of an accountant with a disability, it could be useful to any office-based work. The technology is also not necessarily limited to small businesses either. With the possibility of providing better decisions in an increasingly litigious society, this is quite a valuable technology.

Equipment in the office environment is subject to:

- Bandwidth restrictions during peak times of the day.
- Occasional network outages from the Internet Service Provider.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Security System	Voice Recognition	Security of technology
Document Analysis	Unobtrusive wall-based cameras	Fonts, paper quality, camera angles
Wireless connectivity	Automatic, unobtrusive connectivity to any electronic device	Interface issues.
Accounting information monitoring	Background WWW	Trust and information quality issues.
Medical monitoring	Unobtrusive, remote monitoring	Trust, speed and reliability issues.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Security System		
Document Analysis		
Wireless connectivity		
Accounting information monitoring		
Medical monitoring		

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4. Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.12 Transport Logistics with Smart Internet Technology

Persona: Tony

Aged 39yrs. Divorcee, re-married with 3 children. Has been driving trucks for 15 years. Enjoys the lifestyle and as ha large group of regular customers. Ensuring success of transport route is essential to maintaining continuation of employment and family future. Has concerns that their too much technology about today. Needs better communications, less paper work.

Scenario:

Scenario Summary

:

Tony uses his BDM as a handler of paperwork and details rather than a mobile computer. He regularly accesses its GPS facilities; freight location details; mobile communications; and customer identification facility. Tony essentially has one device which deals with a multitude of functions, giving him greater freedom in his daily delivery schedule and less paperwork to worry about.

Supporting Information:

The equipment could be subject to:

- Physical shocks – equipment may be dropped, stood on, or otherwise physically assaulted in day to day operation.
- Loss/Theft – equipment may be placed down and forgotten and the uniqueness of the device can make it a target.
- Incomplete Telecommunications – Transport Operators often work over geographically large areas. Access to network facilities may not be possible in all locations, at all times.
- Interference – modern buildings are often shielded from telecommunications by their roofing/wall insulation. This building feature can cause interference with telecommunications when inside the building. Further large amounts of external noise from traffic and crowds can interfere with the effectiveness of the voice recognition software.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Use of freight location.	Infra-red updates when in office.	Software availability.
Route planner combined with a traffic warden.	Voice interaction with spoken/graphical directions	Operation of GPS and map availability.
Priority communication with office.	Mobile phone / email.	Legislation for mobile phones.
Mobile phone personal assistant	Mobile/Email / WWW	Simple to use.
Printing of barcodes/packing slips	Thermal printer internal	Weight and consumables.

Relevance to Technology Programs:

This research presents a case for; (a) the reduction in the number of intelligent devices currently required by delivery agents to effectively action their business activities, and (b) the combination of many existing yet differing technological activities into one platform.

Evaluation of Scenario

1. Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as High Medium Low)

Activity	Relevance to Program (H/M/L)	Other comments
Use of freight location.		
Route planner combined with a traffic warden.		
Priority communication with office.		
Mobile phone personal assistant		
Printing of barcodes/packing slips		

3 Technology Program Assessment: (rate as High Medium Low)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as High Medium Low)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.13 Aquaculture with Smart Internet technology

Persona: Sarah Kerrison

Sarah is 27 a years old law student. She is working in the factory to save money to go overseas. Sarah took a casual temporary position at Tasfish where she undertakes pin boning, slicing and packaging of Salmon and sea-run Trout. Conditions are very cold, and whilst most of her roles within the plant involve her sitting still, she can only work for fairly short periods of time without having to move around to avoid injury.

The men in the plant usually perform the more physical tasks of gutting, filleting and cleaning the fish.

Scenario:

Scenario summary:

With the aid the Cool Operator, a pervasive computing system built into the fish processing plant, Tasfish is able to monitor market conditions, fish quality and make sure that the human resources in the organisation are optimally managed.

Supporting Information:

There are several processors of fish products around Tasmania and around the world. Although this market is potentially quite small, the returns from implementing such a system would be high.

Equipment in the factory environment is subject to:

- Extreme cold, making moving parts prone to seizing.
- Potential failures in Internet service, resulting in loss of market information

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Check-in system	Voice Recognition or Face recognition	Security of technology
Market monitoring	WWW, EDI	Trust
Inventory monitoring	Background working	Learned/predictive behaviour
Accounting	Background working	Learned/predictive behaviour
Staff monitoring	Visual, timing, voice response	Learned behaviour

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Check-in system		
Market monitoring		
Inventory monitoring		
Accounting		
Staff monitoring		

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

2.14 Teleconference Meeting Possibilities

Persona: DotCom Small Organisation

Newly established in industry (1-3 years). 5-15 employees. Some employees have tertiary education but not necessarily in IT. Working hours are flexible. The head office of the organisation is located at the home of the owner. Employees generally work from their own residences. Employees use the Internet to communicate with each other each day. Weekly meetings are carried out with videoconferencing technology. Employees meet once a quarter for a meeting and socialising. The Internet is the sole technology used to communicate with customers. Use e-commerce methods are used to sell their products through the Internet. Email is used secondarily to communicate with customers. Are targeting the international market, rather than the local market. New technologies will enable them to remain competitive in the industry.

Scenario:

Scenario summary:

With the aid of DotCom's SIT, the software development team are able to communicate very easily in real-time in their weekly meeting environment. To optimise the input of all participants, each participant has voice recognition software that is trained for their voice, and all communications are recorded. Meeting participants in the project team are provided with a personalised meeting environment that has real-time facilities for presentations with prewritten slides and can facilitate voice-overs alongside a presentation. The meeting room also has a blackboard, notes area and a file transfer facility to enable complete interaction throughout the meetings.

Supporting Information:

The SIT is able to provide an environment for the automatic recording of all meeting communications. The SIT also has certain functions available to each participant to allow them to record their own information, particularly important for the meeting Chair and the Secretary. The recording of the communications will allow for a very accurate representation of what has transpired. Many small online organisations are often geographically dispersed and have no physical office location. As many of the organisations important decisions are made in the weekly meetings (due to geographical dispersion of the project team), it is important to have a very accurate record of the meetings. Often in a small organisation, it is often the case that no person has specific training in recording the minutes of a meeting. This lack of experience can contribute to an inaccurate recording of what actually happened if manually recorded. Small businesses, employing fewer than 20 persons, dominate the IT industry with 96% of all ICT businesses classified as small (AIIA 2002). The IT industry is growing at a sustained average annual growth rate approaching 12% (AIIA 2002). This SIT would help to decrease the costs and problems associated with this mundane but important task for many small high-tech organisations.

(<http://www.aiaa.com.au/cgi-bin/dpms/dpr.cgi/dpmsref85/dpms/original/IndustrySnapshot.doc>)

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Each user logs onto the meeting and an icon appears showing the	A meeting room window is visible by all participants. The	Confirmation of attendance to the Chair will test if the voice

participants presence. The meeting Chair commences the meeting by confirming who is present in the (online) meeting room. Attendance is automatically recorded.	window visually shows each participant by an icon on the screen.	recognition software is working by for parties. Each member is able to speak whenever necessary online and all other members can hear them (just like being in the same room).
Recording of meeting discussions to make up the official minutes of the meeting. Every word that is spoken is recorded in written form automatically on the network and	Every word spoken is recorded in real-time to the system knowledge base as a record of the minutes of the meeting. The transcript is updated in the meeting window of each participant's workstation in real-time to allow them to review what has been said and to record any personal notes for future reference.	The information is stored in a multi-access database and is available to all users on the network. It may be difficult to distinguish what particular information should be recorded and what should not be recorded.
The meeting Chair can block any member from speaking at any time (this gives the Chair some control over the progression of the meeting).	The Chair has functions available on their meeting window that allows them to mute a single participant or a group of participants in the meeting.	
The Chair and the Secretary can flag any important issues or action items and these are recorded to be used in the meeting summary.	The Chair and Secretary can make a note on their meeting window in the transcript.	Each participant can flag individual parts of the meeting as well as getting the flagged items from the Chair/Secretary.
At the conclusion of the meeting, the recorded minutes are summarized by the system by a predefined standard.	The information is taken from the knowledge base and summarised.	The summary is based on predetermined information about what parts of the meeting template are to be used. Flagged items are highlighted in the summary.
The minutes are distributed to all meeting participants and interested parties once summarised.	The mailing list is derived from meeting participants recorded and interested parties that have been noted for the meeting by the Chair.	
Action items for a particular recipient of the minutes are highlighted for them personally.	The mailing list is derived from meeting participants recorded and interested parties that have been noted for the meeting by the Chair.	The knowledge base is searched for instances of a participant and any actions that have been identified for them by the Chair/Secretary.

Value of the Scenario

This scenario is of value to small and medium hightech organisations as they are able to record and access the large amounts of information recorded in meetings which could save them time and problems by having a very accurate record of the communications of the meeting. SMEs often do not have the resources for extensive development of new tools to obtain maximum information. The scenario provides support to the software development process and general meeting process by integrating many features for different members of the meeting.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

3 Scenarios For Young People

3.1 Multimedia imaging in a multi-channel environment

Persona: Tony Nguyen

Tony left school at 15. He is studying dance full time (parents paying) and his main practical goal is to become a professional dancer. He is dedicated and driven. Tony also loves music, and regularly downloads music from the Internet. He dabbles in some music compositions using some of the software available via the web. He has his own web site, with links to other music and dance sites, as well as images of some of his dance and music creations. He has a mobile phone, uses it mainly to make arrangements, meet girlfriends and friends at night. He still lives with his parents. English is his second language- arrived in Australia when he was six.

Scenario:

Scenario summary:

Tony has been participating in a multimedia contest, aimed at encouraging collaboration amongst musicians, dancers, performance artists, animators, and technicians using the Internet. As outlined in the contest proposal he has created a dance sequence for four dancers based on an improvisation of traditional Vietnamese dance, and contemporary moves. The dance is set to music created specifically for the contest using participating musicians, and broadcast via MPEG streaming technology on the web and via radio. The inspiration for the piece of music, came to Eliza while on a train. She was able to record the piece by humming the tune, and recording notes via a microphone attached to her mobile phone.

Tony accesses the music from home via the streaming radio on the web, and has also contacted the musicians online to discuss his interpretation, and improvisation. Four dancers for which the dance is created meet physically and in a chat environment to choreograph and rehearse their dance. The chat environment has access to digital images of the dancers based on body mapping software. The final version of their dance will be sent electronically using the digital images of the entire piece. The audience will be able to shift the view of the performance choosing to focus on one dancer, or on all four at once. A live version of the performance will feature the performers physically dancing against a backdrop of their digital replicas. He has some copyright concerns, but is excited by the melding of physical and virtual performances.

Supporting Information:

Music consumption and production are very popular activities for young people. The Australian Broadcasting Authority's investigation into youth and music¹ found that accessing music programs accounts for a high percentage of young peoples use of all forms of media including radio, television and internet. The report also found that 83 percent of young people participated in some form of music creation. While the 1997 study is a bit dated in terms of internet use, a more recent USA study² found that 53 percent of American youth (aged between 12-17) and 51 percent of 18-39 year olds had downloaded music files on the net.

¹ ABA 1999, Headbanging or Dancing Youth and Music in Australia, Canberra.

² Graziano, M, Rainie, L., 2001, The Music Downloading Deluge, Pew Internet and American Life Project: <http://www.pewinternet.org/>

This activity therefore taps into a popular activity for young people, and also utilises the power of the web to assist people to create content, which is emerging as a priority for young people themselves, as shown in the literature, in our interviews and from the perspective of the expert panel.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Creation of multimedia including digital music, and digitally animated dance performances using body-mapping software &, animation.	Multiple modes and formats	Cross platform use,
Delivery of live multimedia content across Internet in a seamless way	Video and sound	
Recording capacity in mobile phones	Capacity to pick up voice including song, and use of musical symbols	Includes small and portable accessories

Evaluation of Scenario

1 Value to SITCRC:

1.1 Research demonstrates growing interest in downloading and creating music and digital content on the web. There is a need for software to facilitate this, and for the safe, secure and seamless delivery of such content. This area seems ripe for commercialisation. And links to several aspects of TRP work.

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Active secure multimedia content	IE	
Seamless wired convergence	SN	
Body mapping software	SN, NAUI	
Recording capacity in mobile phones	SN	

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

3.2 Embodied conversational agents in a chat environment

Persona: Rachel Arthurs

Rachel is 14. She lives at home with her parents and sister. She is in Year 8 at a private school. She has her own laptop computer, and uses it regularly at school, for homework, for playing computer games and chatting with friends. She is in the district netball team, and her main goals are to get in the netball premierships, do well at school and have fun. She has a mobile phone, and uses it mainly to make arrangements and contact her parents when out, or to pick her up. At home she uses the fixed line phone.

Scenario:

Scenario summary:

In this scenario the use of chat is facilitated by the use of embodied conversational agents (intelligent avatars), which mimic naturally occurring gestures and movement, and replicate this in the chat environment. Other agents are used to provide information on the chat environment and to facilitate scheduling.

Rachel is at home reading. Her mobile phone rings in a special tone, indicating that her friends are chatting on the Internet. She finishes reading the chapter then logs on to her chat. Immediately she can see that several friends are currently chatting. She enters the space and her embodied conversational agent (ECA) is seen on the screen. Throughout the ensuing conversation each person's ECA mimics relevant bodily. Through the use of her SPA Rachel is also able to get an update on the environment including details of the conversation, who has been there for how long, who has left etc. The agent is also able to search for information on the Internet relevant to their conversations. In this instance details of movie sessions at particular locations are provided.

Supporting Information:

Chat is a major form of communication for young people. The ability to converse simultaneously with several people is central to its usefulness. Our research has shown that most young people use Chat to communicate with existing friends, rather than making new ones. In these situations anonymity is not desired, and the use of embodied conversational agents provides enhanced interaction, in that it mimics some of the features of the physical world, that are central to our perceived understandings and social knowledge, relationships and identity cues. (Donath 2000) Further research is however, needed to test this.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Chatting using embodied conversational agents	Avatars may be based on real body scans, icons, animation etc. Not yet determined.	Opt in and out options. further exploration of the kinds of modalities preferable to young users and therefore interfaces required.
alert notifying when friends are in a chat space	Best linked to mobile phone due to its portability and mobility	Preferences given to user to decide on kind of alert- text, vibration or sound etc
Use of personalised intelligent agent to source and respond to	text	Ability to link to several devices

relevant information		
----------------------	--	--

Evaluation of Scenario

1 Value to SITCRC:

- 1.1 Features, which exploit the physical and online characteristics of chat and improve communications, are likely to be popular amongst young people. Any software developed could be used in multiple chat environments, and other forums/formats.

Tools designed to assist communication in chat resonate with many of the research aims and directions of the technology programs including for example:

- 1.2 Aligned to Existing Policy?

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Embodied conversational agents	conversational analysis, conversational agents, NAUI	conversational analysis required to give physical characteristics to the conversation. Require some pattern matching, scripting.
Personalised information sourced by agent	Machine learning, information handling SPA	Could be integrated with the mobile phone, and SMS to.
Web interface, with options for opting in with SMS, mobile telephony and other interfaces	IE	
Phone and internet link	SN or IE?	

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

3.3 Mobile conferencing call

Persona: Lisa Withers

Lisa is an 18 year old. She is in her first year studying Media Studies at Swinburne University. She also works part time in a video shop, near her home in Albert Park. Lisa is a very social young woman. She loves talking to friends, and spends much of her time going out with them, particularly to dance parties and clubs on the weekends. She is a very keen dancer, and likes techno and dance music. Lisa regularly uses her mobile phone to talk to family and friends, make arrangements, chat, and touch base. Maintaining and enhancing friendships are key personal goals. Her practical goals are to complete her studies and get a job in the media field. She is still unsure where exactly she wants to work, but feels OK about that.

Scenario:

Scenario summary:

Tonight Lisa and her friends are going out to a dance party at the Vodafone arena. She is currently at work at the local video store, and is keen to confirm arrangements for meeting up later on. Previously she and Jane had discussed going together, with some other friends Georgia and Nicole. Lisa calls Jane on the mobile, after an initial discussion they decide to call Nicole, and are able to use simple voice commands to create a conference call to Nicole. It is envisaged that there would be some prior registration of friends/potential users who could then be quickly connected to the mobile conferencing call. During the call all three discuss arrangements for the evening, and invite another friend to also participate in the call. At one point Lisa has to return to customers and is able to pause her connection to the call, via a voice command. At the end of the session, when arrangements have been finalised, a voice command to a SPA diarises the event, documenting date, time, place and person to meet. A notification ring tone is also activated.

Supporting Information:

Mobile phones are a favourite form of communication technology for young people. (DoCoMo 2001, Carroll, et al 2001) They are easy to use, portable and provide a sense of security, independence and the power of being in control. Communicating with family and friends comprise most of the mobile communication. Making, confirming and rescheduling arrangements is an important aspect of this communication. Several studies indicate the positive reaction to the additional features available such as SMS, email, diaries and fames. One argument for this is that is much easier to get people to augment their current technology than it is to get them to familiarise themselves with and embrace new concepts. (Anderson 2001)

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
A real time group discussion with friends for making arrangements, clarifying issues	Voice provides a much more effective form of communication on issues requiring clarity, and is more personal.	High percentage of young people own and use a mobile phone.
Ability to connect to several		

people at once using simple commands such as voice, or touch key	Voice and/or touch	Some flexibility with voice or touch, but consistency is preferred, ie if communication is in voice, then preference for commands to be in voice also.
Schedule and notify appointments through the use of SPA embedded in the mobile	Voice and/or touch	Some flexibility with voice or touch, but consistency is preferred, ie if communication is in voice, then preference for commands to be in voice also.

Evaluation of Scenario

1 Value to SITCRC:

1.1 Several partners are directly involved in mobile telephony. The process of augmentation has proven a successful option commercially. Young people are adapting their mobile phones for a variety of purposes and there is indication that this facility would be desirable. It appears to align with several research streams of the TRP.

1.2 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Wireless network management	Smart networks	
Billing management	Smart networks	
Voice commands and Scheduling agents	SPA	
Voice commands for conferencing operation,	SPA	

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

3.4 Story listening Teddy Bears

Persona: Emily Jacobs

Emily is three years old. She lives with her mother and father, and has an elder brother (4.5) and a sister (7). She has her own bedroom, but often plays in her siblings' room. She goes to kindergarten two mornings a week, where she interacts with her friends. She is a social young girl, who enjoys dress ups with her siblings and friends. She also likes make-believe stories, and regularly plays with her toys. Although she cannot yet fully read, she enjoys story time, and understands how one reads a book, and can match pictures with words. She doesn't yet fully understand how to read television, or the computer. Her language skills are good.

Scenario:

Scenario summary

:

In this scenario, a young child Emily is talking to one of her soft toys, Freddy the Teddy Bear. Her parents bought Freddy for her 3 months ago, and she has grown very fond of him. She is delighted that one of her toys can talk to her, and knows her name. She believes that he is real. When she picks up the teddy or begins talking to him, the teddy is able to respond using programmed and learnt responses to the story to prompt her to continue. This may involve

- repeating what Emily is saying;
- affirm the story and ask to hear it again;
- prompt her to tell him more about the particular rhyme;
- add further dialogue if it is a story he already knows or has learnt; or
- provide an alternative story
- or another learnt response

The teddy would be responsive to voice and touch, and be able to learn about its environment.

Supporting Information:

Storytelling is a major educational tool for young people linked to identity formation, role playing, socialisation, the imagination, writing and other core development skills (Cassell and Ryokai 2000, Wartella 2001, Thompson 1995). Few computer based toys actively encourage child centred play. The story listening teddy will prompt children to tell their own stories, in their own voices. It is anticipated that it would therefore have value to educators, parents and carers.

Tangible objects such as soft toys have meaning for young children. They are already integrated into their daily lives and are personalised to the degree that they fit with the young child's natural environment. Young children are highly responsive to physical objects, and readily use all their senses to make meaning of the world. (Thompson, 1995) A soft toy may provide an appropriate interface for young children particularly for story telling activities. (Cassell 2000, Druin et al 1999).

The teddy also encourages open-ended rather than closed play, which is more natural to the young child. It is anticipated that the teddy's capacity to recognise, name and converse with its owner (the child) would be a welcome and innovative feature for the child. However, this will be tested through the user research.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Ability to engage in dialogue with a human	Soft toy	Needs to work out which person is talking and respond accordingly
Has own repertoire of stories	Voice embedded in soft toy	Requires programming, updates
capacity to recognise, name and converse with its owner (the child)	Voice and touch	Machine learning required

Evaluation of Scenario

1 Value to SITCRC:

1.1 Relevant Area? (Please state)

The story listening teddy is a soft conversational agent. It requires some degree of intelligence, potentially utilising natural language interfaces, gestures, and/or speech recognition capacities, and agent based software. The level of intelligence will vary according to the mode of interaction and design of the technology. But to be really participatory and to provide appropriate prompts for the child in their story telling requires machine intelligence, and machine learning. Further exploration of this is required.

1.2 Commercial Prospects

Few, if any of the interactive story listening devices designed by Cassell, Druin and others are commercially available. This is not to say that they are not commercially viable, rather they have been designed and created for research rather than capital purposes. These various systems could offer some commercial prospects, but it is difficult to make claims to how effective they are, without more detail of the technologies and the participants experiences.

Commercial dolls are emerging on the market that begin to provide a space for child centred story telling, but are limited by the lack of machine intelligence. Microsoft Actimates Barney, Mattel’s Talk to Me Barbie, and a newcomer Yano are successful examples. They suggest that such devices could provide real commercial vale for the investor.

1.3 Aligned to Existing Policy? (Please state)

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Ability to converse and respond appropriately to prompts	Voice communication requires some degree of intelligence, potentially utilising natural language interfaces, gestures, and/or speech recognition capacities, and agent based software. NAUI	
Ability to learn about its	NAUI, SPA	

environment		
capacity to recognise, name and converse with its owner (the child)	Voice and touch	Machine learning required

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

4 Scenarios for People with Disabilities

4.1 Safety monitoring in an intelligent home

Persona: Nancy Schmidt

Nancy is 75 and a widow. She lives on her own and has recently moved into a new retirement village offering a range of modern facilities including safety monitoring. She wants to live independently as long as possible and her two children (a daughter and a son) encouraged her to try this new type of housing. Nancy has osteoporosis and has had a hip replacement so she is worried about falling over again. She also has high blood pressure. Both her children lead busy lives and want the best for their mother but can not seem to find the time for more than weekly visits. That is why they contributed to the costs of Nancy's new home. It is a relief for them to know that their mother is in "safe hands" with the intelligent home environment installed in the retirement village.

Scenario:

Scenario summary:

Nancy was very hesitant at first of what she thought was a lot of new-fangled equipment which she did not need. However, the staff at the retirement village showed her how the system worked, tested it with her and after she had used it for a couple of weeks, made some adjustments based on her comments and her lifestyle.

Nancy found that the running costs for the new facilities are lower than in her old house. She still sometimes feels that she is being watched even though the staff of the retirement village explained that it was simply a machine which did the monitoring and nobody could see what she was doing in her own home. Because Nancy could talk to the system, she did not have to worry about any strange new buttons or dials.

Nancy has a wrist band with a monitoring device for checking her heart rate, other physiological signals and activity level. This is linked to the computer in the retirement village and the emergency service centre as well as her doctor. Thus an emergency call to the service centre can be automatically activated but there is an override button which Nancy has learned to use.

One evening, Nancy falls asleep in her armchair whilst watching a two-hour movie. This is a challenging situation for the automatic monitoring system. At eleven in the evening, Nancy is normally in bed, but the bed sensors indicate that no one is there. On the other hand, the system has the information that the TV is still in full operation. Has something happened to Nancy? A short check of the emergency system, done by the central computer, fortunately does not pick up any problems. The computer of the smart home makes a careful search of a comparable situation in the past and the search is successful. Three months ago, Nancy also fell asleep in front of the TV. When the system noticed Nancy's low rate of movement, it immediately reacted with a wake-up tone sequence as a preliminary check before sending emergency signals to the service centre. Nancy was very scared and then extremely angry and shouted some unkind words to the system. At first, the speech recognition system had problems because her voice sounded very different (compared to her normal voice) but then after the analysis of her intonation the system detected the anger in her voice. This

information was analysed by the central computer which concluded that it had reacted wrongly.

The computer therefore decides not to wake her up but it automatically checks all systems and sensors. The alarm sensors start their supervision. Also, the energy saving procedure is performed perfectly: the temperature is reduced and the lights are switched off, except in the living room. When Nancy, after some hours, awakens in her arm chair, the light and the heating is still on, only the TV is switched off. At this moment, Nancy has a feeling of immense gratitude towards George, as she now calls her system, which has "understood" her needs.

Supporting information:

The recently completed User Needs literature review (Morley & Astbrink, 2002) on intelligent home environments found that these type of environments have been developed and demonstrated over the past ten to fifteen years but due to high costs and perceived low usefulness to the mass market, have had a slow uptake. However, there is a strong market for people with disabilities and older people but with cost barriers. Another major barrier has been the lack of standards between devices and systems used in intelligent environments (Roe, 2001)

This scenario is adapted from an existing scenario (Roe, 2001) and based on a new product developed in Finland called the WristCare system for health and safety monitoring (<http://www.istsec.fi/engindex.htm>)

Morley, M. & Astbrink, G. (2002) Identification of intelligent home environment technologies for people with a disability and older people with a focus on user needs and barriers to adoption

Roe, P. (ed.) (2001) Bridging the Gap? Access to telecommunications for all people. Commission of European Communities.

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Safety monitoring	Primary form: Speech recognition Secondary form: Override key	Machine learning Reactive and proactive functions of agent
Environmental control for heating, lights and security	Primary: Speech recognition Secondary: Keyboard (for maintenance and adjustments)	

Evaluation of Scenario

1 Value to SITCRC:

There are components of this scenario of relevance to several research streams of the TRP. There is considerable commercial potential to a successful integrated approach to safety monitoring for older people. It can be supported by the government's policy to find ways of

keeping people in their own homes as long as possible. The IE program is working on the development of standards in the smart housing arena and this scenario can offer practical examples.

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Wireless network management	Smart networks	
Reactive and proactive agent	SPA	
Standards for integration of operation of various devices	IE	
Machine learning of different voice patterns	NAUI	

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

4.2 A housewife with vision impairment wakes up to a new day

Persona: Norma Lewis

Norma Lewis is 45 and married with three children who are aged 8, 10 and 15. Norma's vision has gradually decreased due to Retinitis Pigmentosa. She knows that in the next few years, her sight will reduce even more so that she will have little residual vision left. Her husband, Vince works full-time and she stays home to look after the children and the household. She is a trained teacher and now studies part-time.

Scenario:

Scenario summary:

Norma needs to wake up quite early in order to get the children ready for school. Her alarm clock is her mobile phone. The previous evening she talked to the phone to fix the wake-up time. After going off, her phone alarm speaks to her from time to time giving her the exact time so that she can judge the right (latest) moment to jump out of the bed.

After breakfast, her refrigerator tells her that she should buy milk and cheese. Via a connection between the fridge and the mobile, she just passes her command to the local supermarket. The supermarket requires immediate payment which she arranges by slipping her chip card into the phone. Before she used a PIN, but her oldest boy had found out the code and had ordered and paid for chocolates and sweets when he had felt in need of an extra treat.

Supporting information:

People with disabilities wish to lead as independent lives as possible and this is helped by technological devices developed using universal design principles. Using such design principles means that products meet the needs of a broader range of the population which includes people with disabilities

(Centre for Universal Design, <http://www.design.ncsu.edu/cud/>)

This scenario (adapted from a COST 219bis scenario) indicates how ordinary devices using a multi-modal approach can be more usable.

COST 219bis is a European Commission project which has worked over the past 15 years on telecommunications and disability issues in particular with information dissemination and initiating research and development. COST 219bis latest book, *Bridging the Gap?* uses scenarios to show how technologies can be used by people with disabilities.

Roe, P. (ed.) (2001) *Bridging the Gap? Access to telecommunications for all people.* Commission of European Communities.

http://www.tiresias.org/phoneability/bridging_the_gap/index.htm

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Mobile phone as central device for wake-up call, shopping and bill payment	Multi-modal including speech recognition and speech output	

Schedule and notify through the use of SPA embedded in mobile phone	Multi-modal including speech recognition and speech output	Vibrator as alert function important for those with hearing impairments
---	--	---

Evaluation of Scenario

1 Value to SITCRC:

At least two commercial partners are involved in mobile telephony. The use of an intelligent networked device such as a refrigerator linked with the mobile phone for ordering and bill payment could be relevant for several research streams of the TRP.

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Wireless network management	Smart networks	
Billing management	Smart networks	
Standards for integration of operation of various devices	IE	
Security issues	IE	
Voice commands for managing phone menus and scheduling	SPA	

3. Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4. Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		

4.3 International sign language communication

Persona: Nathan Anderson

Nathan was born Deaf and uses sign language (AUSLAN) to communicate with Deaf friends. He is 17 and has one year left of secondary school. He hasn't decided what he wants to do next. He lives at home with his parents in Sunnybank, an outer Brisbane suburb. He enjoys swimming and loves sports generally. His parents are hearing and learned AUSLAN when Nathan was a young child.

Scenario:

Scenario summary:

Nathan enjoys learning about other countries at school. His class has set up a friendship link with a class in Japan with communication mainly by email messages. Nathan is able to use AUSLAN to his webcam which is sent over the broadband network to an international sign language interpreting service. The images are interpreted and processed so that his Japanese friend, Aki receives a translated Japanese text message. Aki sends a Japanese text message which is processed through the international sign language interpreting service, transformed into AUSLAN and presented to Nathan through an avatar on his computer screen.

Supporting information:

Deaf people use sign language as their first language and English (or another spoken language) as their second language and may have limited literacy in written and spoken languages. Therefore, they find it much easier to express themselves in sign language. The Deaf Australia Online project investigated a range of technologies which Deaf people would like to use. Communicating over distance with sign language rather than text only was considered very important. (Knuckey, J. & Slegers, C., 2001)

There are projects in a number of countries such as Japan (Hitachi's Mimehand II) and the Netherlands working on translation between written and sign language in the same language group (ie Japanese text language to Japanese sign language) but further work needs to be done on interpretation between different language groups. (Delvert, J., Hampshire, B. & Lindström, J-I, 2002)

The above scenario is adapted from a COST 219bis scenario. COST 219bis is a European Commission project which has worked over the past 15 years on telecommunications and disability issues in particular with information dissemination and initiating research and development. COST 219bis latest book, *Bridging the Gap?* outlines scenarios to show how technologies can be used by people with disabilities.

Delvert, J., Hampshire, B. & Lindström, J-I. (ed.) (2002) Bringing universal design to the ICT-market - what are the prerequisites? Office of the Disability Ombudsman, Stockholm

Knuckey, J. & Slegers, C. (2001) Deaf Australia Online II. CIRCIT, Melbourne.

Roe, P. (ed.) (2001) Bridging the Gap? Access to telecommunications for all people. Commission of European Communities, Luxembourg.
http://www.tiresias.org/phoneability/bridging_the_gap/index.htm

Activity Breakdown:

Particular Activity	Preferred Mode	Other Considerations
Language processing between written and image languages		
Use of avatars to present translated images	Synchronous broadband essential	

Evaluation of Scenario

1. Value to SITCRC:

A practical application of synchronous broadband technologies. The Deaf community are heavy users of remote communication possibilities. For example, SMS is used on average 200-400 times per month in Australia by Deaf people. Therefore, the establishment of a synchronous broadband video communication service could have commercial potential.

2 Relevance to Technology Programs: (rate as Low Medium High)

Activity	Relevance to Program (H/M/L)	Other comments
Language processing	NAUI	
Language translation	NAUI	
Synchronous broadband network	Smart Networks	

3 Technology Program Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Interest		
Capacity		
Challenge		
Possibility		
Relevance		

4 Industry Partner Assessment: (rate as Low Medium High)

Criteria for Assessment	(H/M/L)	Other comments
Strategic Market Focus		
Competitiveness		
Relevance		