VRbook

Project 1 IAK060
Group 3 (QWERTY)
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Why we chose this product?

IRL			VRL		
Product	**Advantage**	**Disadventage**	**Product**	**Advantage**	**Disadventage**
Mobile/calender	Easy to test on people	To much options	VRBOOK	Simulation	How do you make this?
	Different usage			Keep tradition; turn page etc	Browsing
	Allot of options			Size	The feeling
3G	Easy access	New type of OS (not usual)		Milions of books in one!	The cost
	Tested	Learning problems			Read and throw away
	As simple as GSM/GPRS		Vreality	Simulation	How do you make this?
Flightsimulator	Reality	Testgroup		Mnemonic	The cost
		Accessibility		Easy usage	
				Easy access	
				Reality based	
			Drivers ED/NFS	Simulation	How do you make this?
				Extreamly fun!	Maybe too fun
				The ability to learn	

Our first thoughts where basically that most of the products today are evolving as they should basically, we didn't really see a point to analyze something existing yet again in our studies. Our choice became much more clear when we started to brainstorm 3 existing products and 3 non existing products, we wanted to make something new and this table showed us what would be more realistic to make. We chose a digital type of a book, a Virtual Reality Book.

What is a VRbook?

VRbook is a solution for all kinds of users that reads a book of any kind. The point is to make a produkt that's so easy to use and makes it more profitable to have than a set of ordinary books. By having such a large scale of users a new industry may be introduced, pedagogic self learning books for the mentally handicapped for example. With this new product animation and sound will become a standard for people with disabilities like; sight-, hearing- or understanding problems. By following the traditionel book form even the simplest kind of use is now possible.
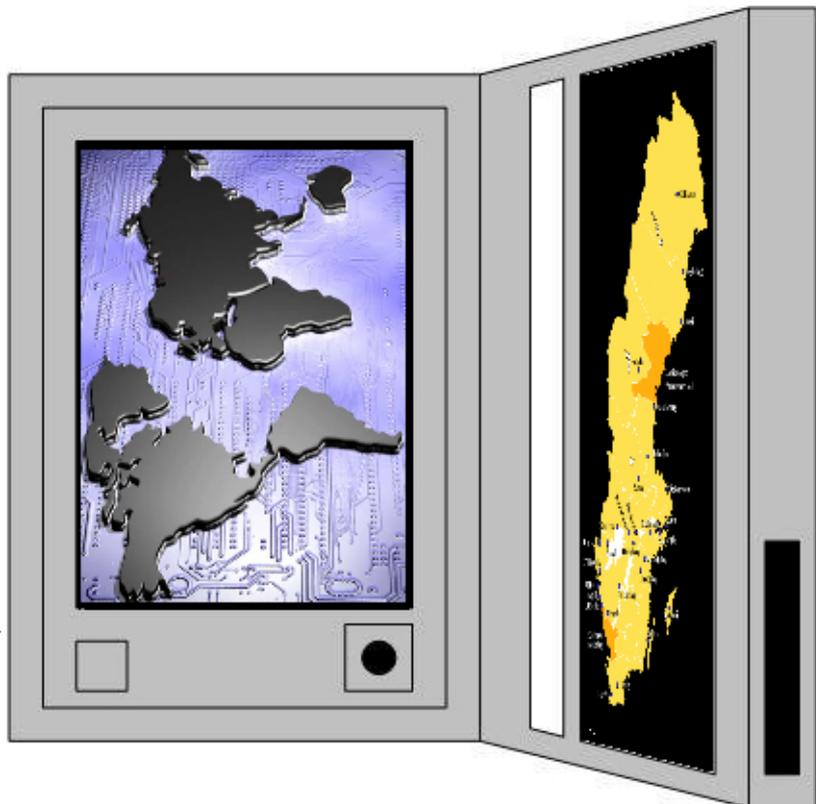
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Industries and Fiction

Ebooks and Audio books will fit right in as they are right now, the industry for just those kinds of literature have prove itself to be popular enough to keep on growing. We are hoping that our product will do so as well. Our product will be merely be a compliment to such kind of medias but it will add the possibility for more usability. The book managing will be primarily managed by retailers from Internet shops like Bokus.se, Adlibris.se etc. They provide the user with buy able book medias of choice, make it down loadable and payable directly via the web interface showing up in the VRbook. As a choice we sell the VRbook with a mobile account which also provide a credit account of some kind, when a book is bought a check is written out to the household or can be paid directly from the user account.

The Setup

The VRbook consists of 2 tft screens, the shape of the VRbook is just like an ordinary book or notepad in a size of a ordinary paper or such. A set of different tools will be added in 2 different types of this VRbook. The first one (STANDARD) very easy to use with not to many options added, it will look like a book as much as possible and we make this type strictly for the elderly. The second one (SOLID), it's basically the standard version with Kevlar and it's especially designed to take a beating, mostly because the mentally disabled may confuse the VRbook to be a actual book which can be thrown around without breaking. For more accessories that depends on a disability will be able to buy separate, such as; braille(for blind persons), joystick or any ergonomic mouse-types.

A dockingstation designed to fit a normal sized bookshelf

Single user setup

Multi user setup

Students:
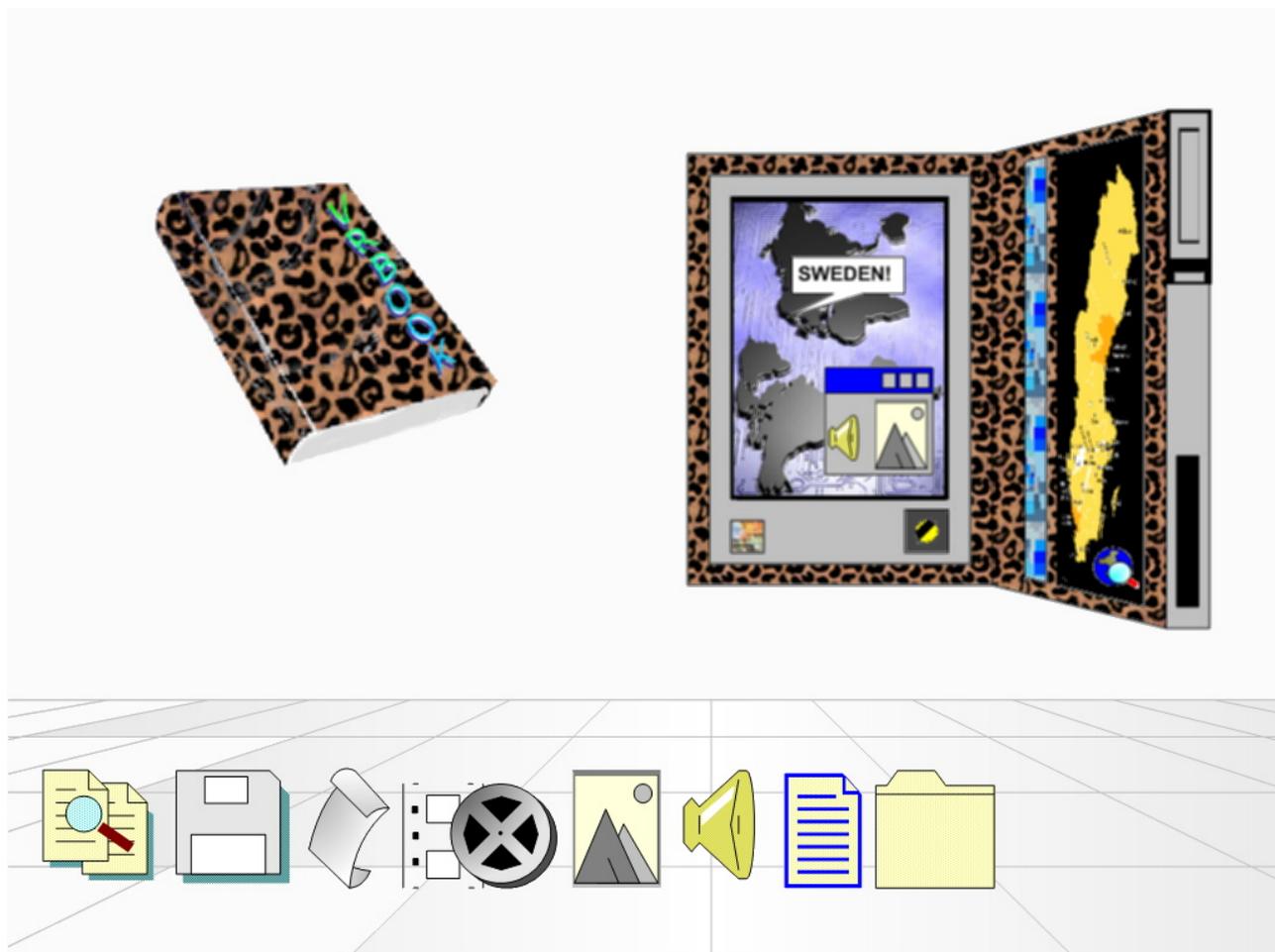Peter Carlsson, Tor Faxén
Daniel Andersson, Nichlas Sageland

The Standard Configuration

The VRbook comes with:

- Memory card reader(Compact Flash, Multimedia Card, SmartMedia Card, Secure Digital Card and Memory Stick.
- Stylus Penn
- Speakers/headphones
- Mic (Voice recognizer)
- 3 book skins (leather, paper and plastic)
- A main hard drive for storage for OS and books/files
- Docking station for bookshelves
- 3G/GSM/GPRS/WiFi/Blue tooth Account
- A set of Ebooks, Audio books and Visual books

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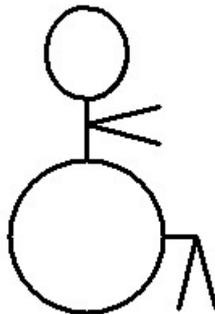Daniel Andersson, Nichlas Sageland

Problems we encountered
- Toughness (heat, cold, water, could be dropped etc...)
- Usability (realistic book usage etc...)
- The users intelligence (age, handicap etc...)
- Accessories (mouse, headphones, braille etc...)

Pensioner

* Opens book
* Read books
* Want's to Change pages
* Recives welcome
message: with reminder
* Do not throw book, it contains
more then one book!!!
* Throws book?
* Wants more books
* Turn off the device?
* Recharge the device?

Handicapped

* Opens book
*Animations that
shows functions
* Recives choices in
form of symbols (Depending
on handicap)
*Chooses bunny! cake!
(if mentaly handicapped)
* Starts to combine and
experiment
* Gets bored and throws
away the book.
* Starts to use the book to
something else?
* Can't or won't
turn off the device
*Can't or won't recharge the
device

Average user

* Opens book
* Startmenu with
multiple options
* Selects function
* Reads/Plays content
* Buys new books online
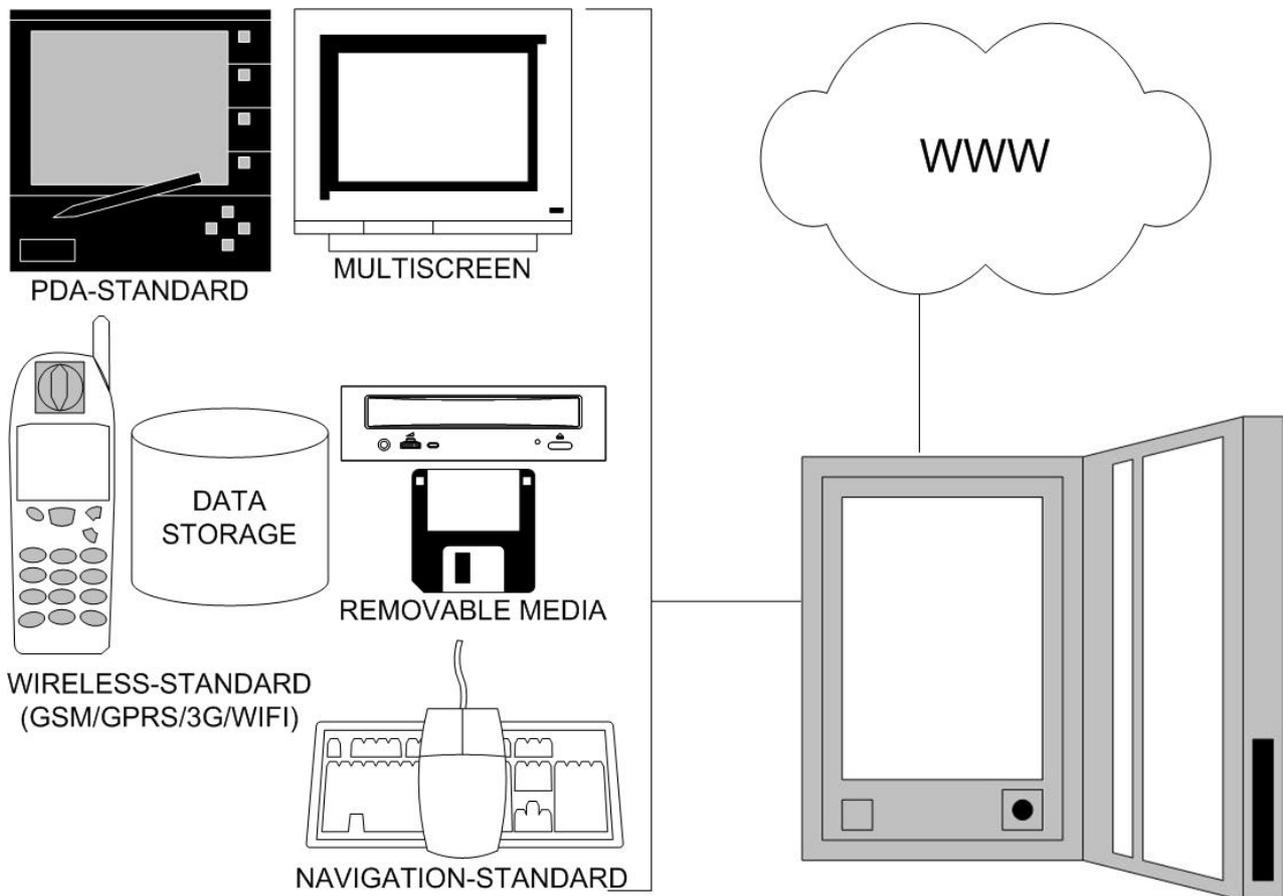* Turn off the device
* Recharge the device
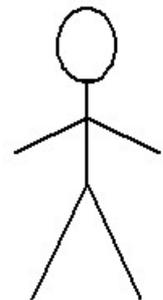
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Requirements we realized
- Speakers
- 2 screens
- Stylus Penn
- 3G/GSM/GPRS/WIFI/BLUETOOTH
- USB
- Weight
- Size
- Space
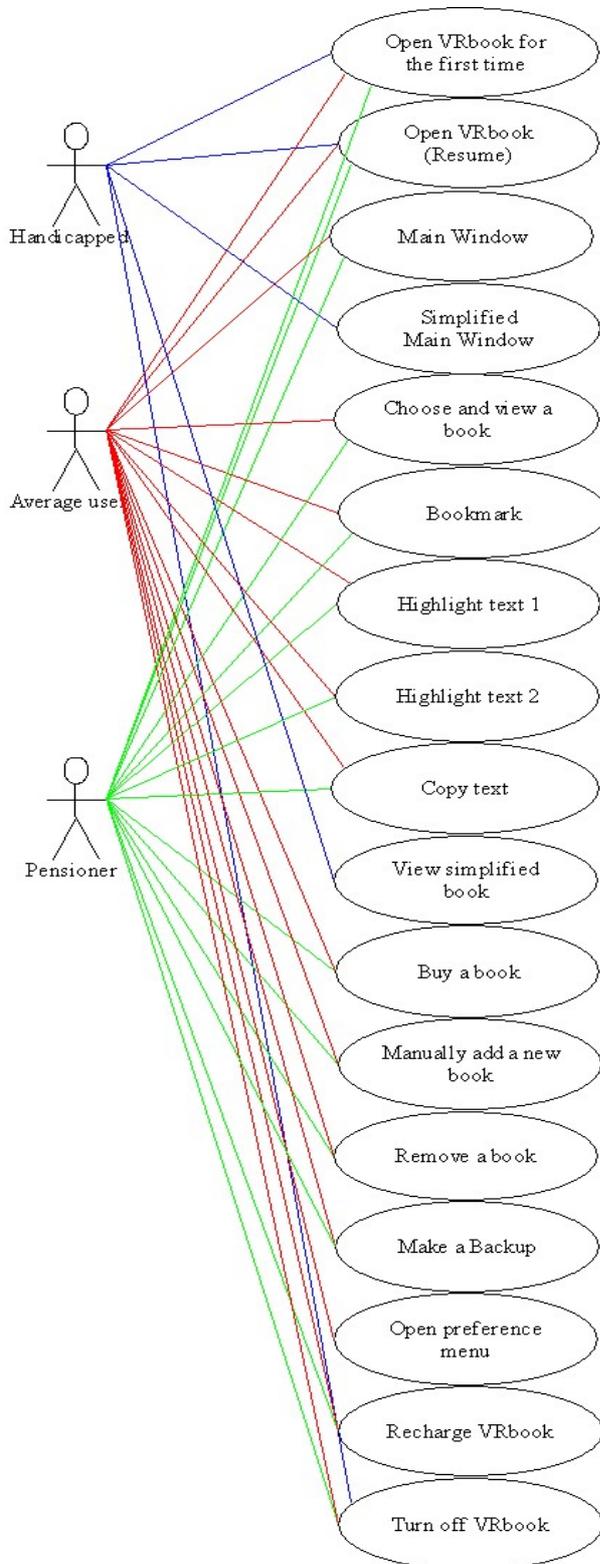- Battery time
- Cheap
- Environmental

Use Case Diagram

Open VRbook for the first time (all)
Resume reading a book (open VRbook) (all)
Main window (average, pensioner)
Main window simplified (handicapped)
Choose and view a book (average, pensioner)
Bookmark (average, pensioner)
Highlight text 1 (average, pensioner)
Highlight text 2 (average, pensioner)
Copy text (average, pensioner)
View simplified book (handicapped)
Buy a book (average, pensioner)
Manually add a new book (average, pensioner)
Remove a book (average, pensioner)
Make a Backup (average, pernsioner)
Open preference menu (average)
Recharge VRbook (average, pensioner)Turn of
Turn of VRbook (all)

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Use Cases

Prerequisites
The VRbook is made to look like a regular paper book.
There is only a magnetic lock to keep it the VRbook closed and it easily opens

Open VRbook for the first time (all)
1. The user physically grabs the VRbook
2. The user physically opens the VRbook
3. A welcome message is displayed

Resume to read a book (open VRbook) (all)
1. The user physically grabs the VRbook
2. The user physically opens the VRbook
3. The last to be displayed when closing the VRbook is now displayed

Main window (average, pensioner)
1. Choices are displayed
2. The user make a choice

Main window (handicapped)
1. A random simplified book starts

Choose and view a book (average, pensioner)
1. Available books of all sorts are displayed
2. It is optional to choose any of the following categories: text, audio, video, simplified
3. The user chooses a book by touching the wanted book on the screen

Buy a book (average, pensioner)
1. Available books of all sorts are displayed
2. It is optional to choose any of the following categories: text, audio, video, simplified
4. The user chooses a book by touching the wanted book on the screen
5. A preview and table of contents can be displayed if desired
6. The user buys the chosen book by touching the "buy" icon

Manually add a new book (average, pensioner)
1. The user puts in a removable media with the desired book
2. A pop up window displayed that shows the progress of importing the book
3. In the same window, when the import is finished he user i prompted to remove the media

Erase a book (average, pensioner)
1. You do not, you buy more memory.

Recharge VRbook (average, pensioner)
1. The user puts the VRbook into the supplied bookshelf docking station
2. The red LED symbolize that the VRbook is charging
3. The green LED symbolize that the VRbook is fully charged

Turn of VRbook (all)
1. The user closes the VRbook the same way as a regular paper book

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Bookmark (average, pensioner)

1. The user touch the bookmark icon
2. A pop up window is displayed, asking what the bookmark should be named

Highlight text 1 (average, pensioner)

1. The user touch the highlight icon
2. The user draw its finger over the text to be highlighted
3. To stop the highlight function, the user touch the highlight icon again
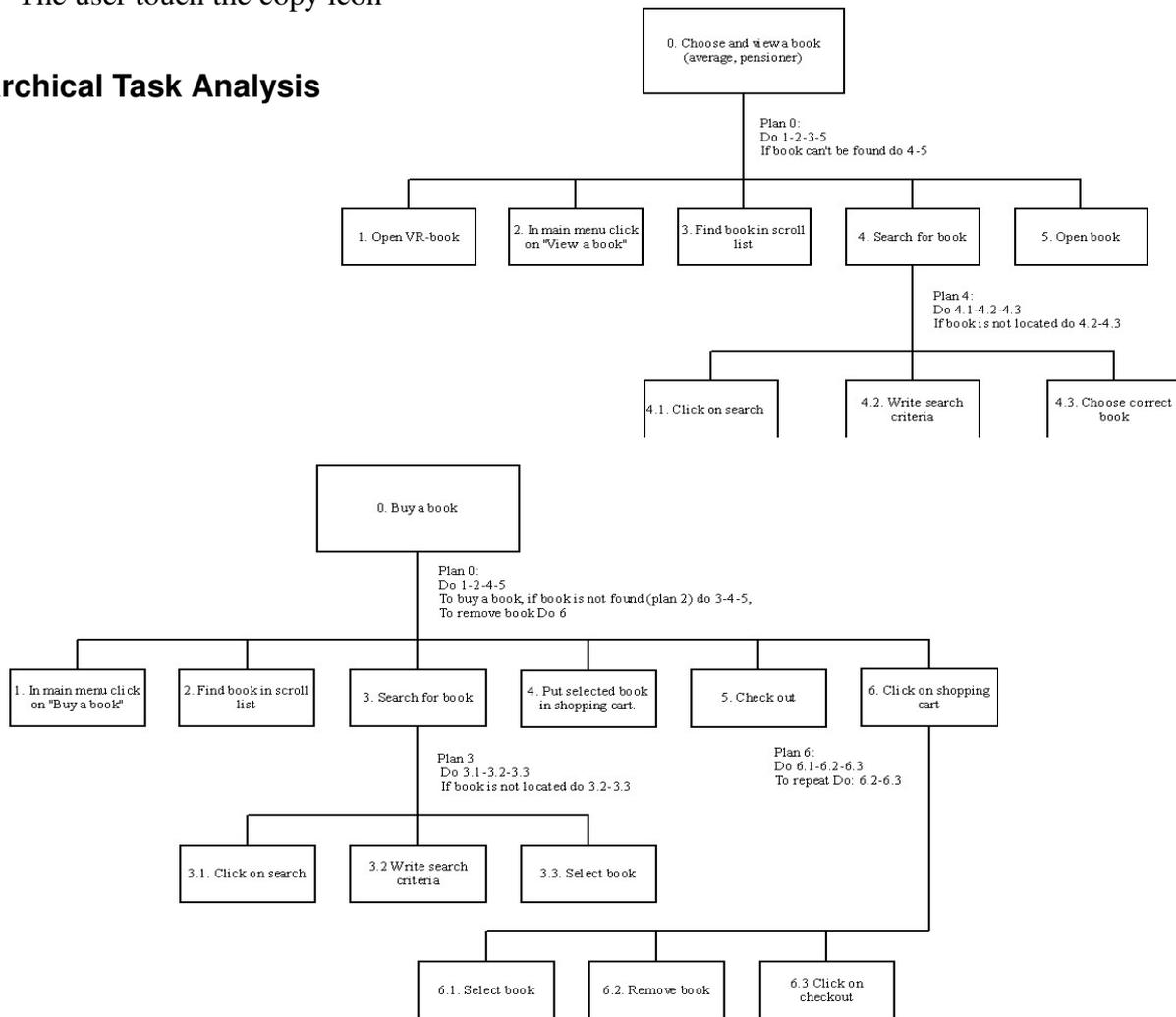4. A text file is created on the removable media

Highlight text 2 (average, pensioner)

1. The user draw its finger over the text to be highlighted
2. The user touch the highlight icon
5. A text file is created on the removable media

Copy text (average, pensioner)

1. The user draw its finger over the text to be copied
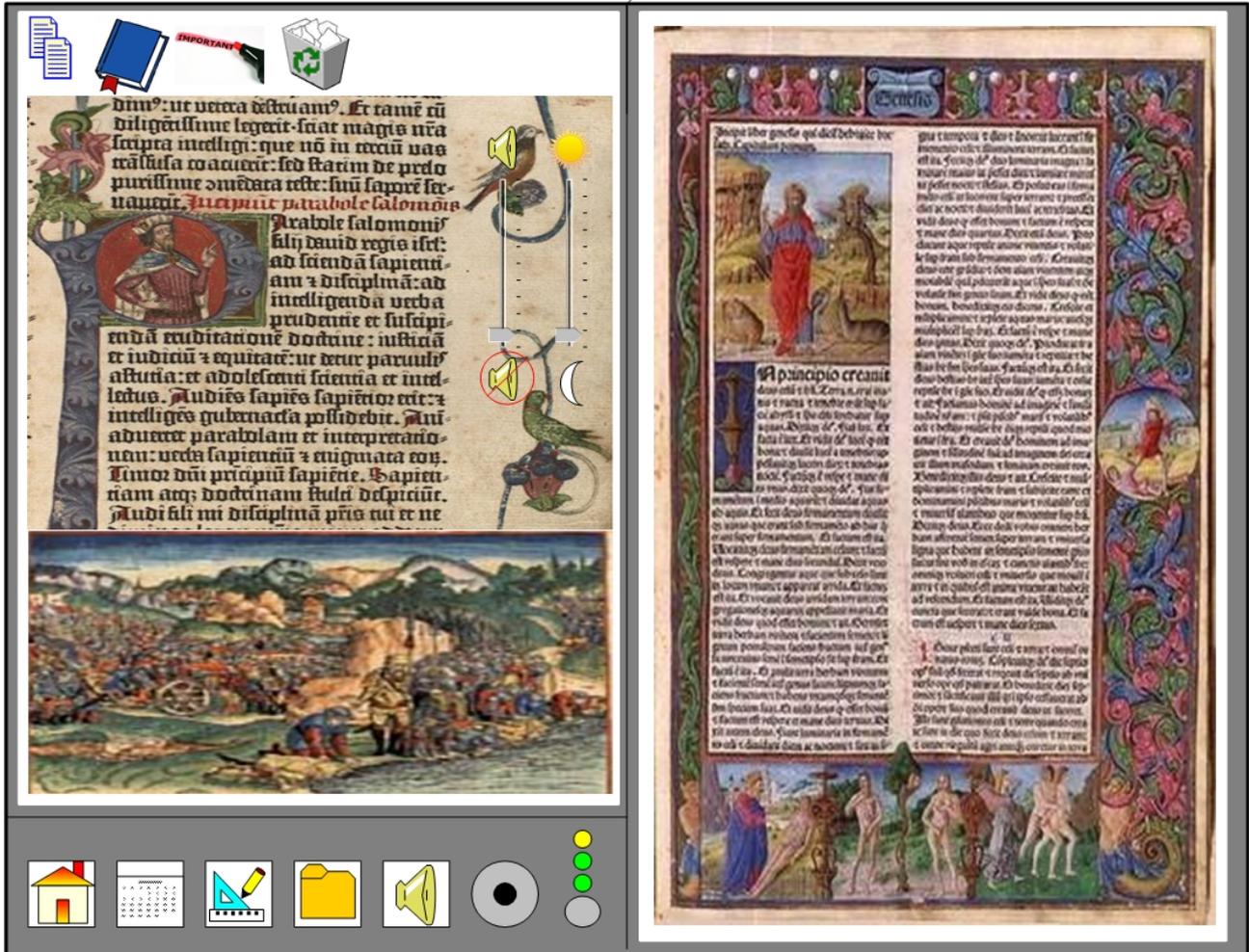2. The user touch the copy icon

Hierarchical Task Analysis

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Interface

Below is a prototype of the interface.

An example of reading a book

Survey

Our survey was a set of questions we send through out the campus and other directions around us. The form held 15 questions to test our theories of usage and choices, a field where the test group could type in suggestions and a person state. The most answers came from students or Internet users of different kinds other than that we encountered what we hope to be 2 senior citizens.
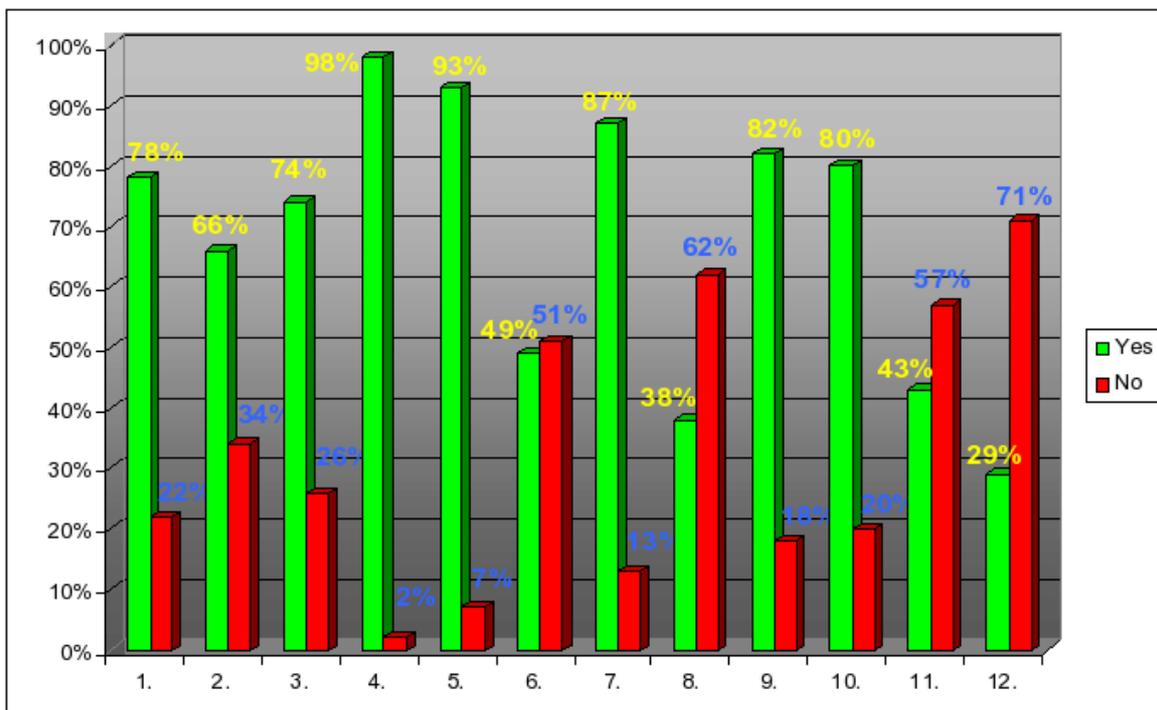
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The survey questions

1. Instead of carrying allot of books, would you like to have everything in one place instead?
2. Would you like do buy digital book formats like; Audio-, video- or ordinary e-books?
3. As a student you pay large amounts of money on studentliterature. Would you like to buy digital books for much less instead of real book for allot more?
4. Should there be functions to make changes in the book you read, like pictures, words, sentences and such?
5. Should there me options to copy material from the books?
6. Should it feel and look like a real book?
7. Do you think a VRbook would be a good tool for handicapped persons with different disabilities, like sight-, hearing- or mental handicaps?
8. Do you think a pensioner would use a VRbook is it looks and feels like a ordinary paper book?
9. Do you think there's a new industry for authers to make pedagogic books for people with hearing- , sight- or mental handicaps, or just new kinds of electronic book medias?
10. Functions like; VOICE-Controller: A reading voice which can interpret and explain text/pictures for the user, VISUAL-Controller: A animation interpreter which explains text/pictures for the user. Is these functions a good idea and would you use it?
11. If you have understod this koncept and what this product can do, would you say that it could be a revolutionary product today if it where to be made?
12. In what way would you like to browse the VRbook?;
   • Fold it than open it, like a book?
   • Use a scrollbutton or joystick?

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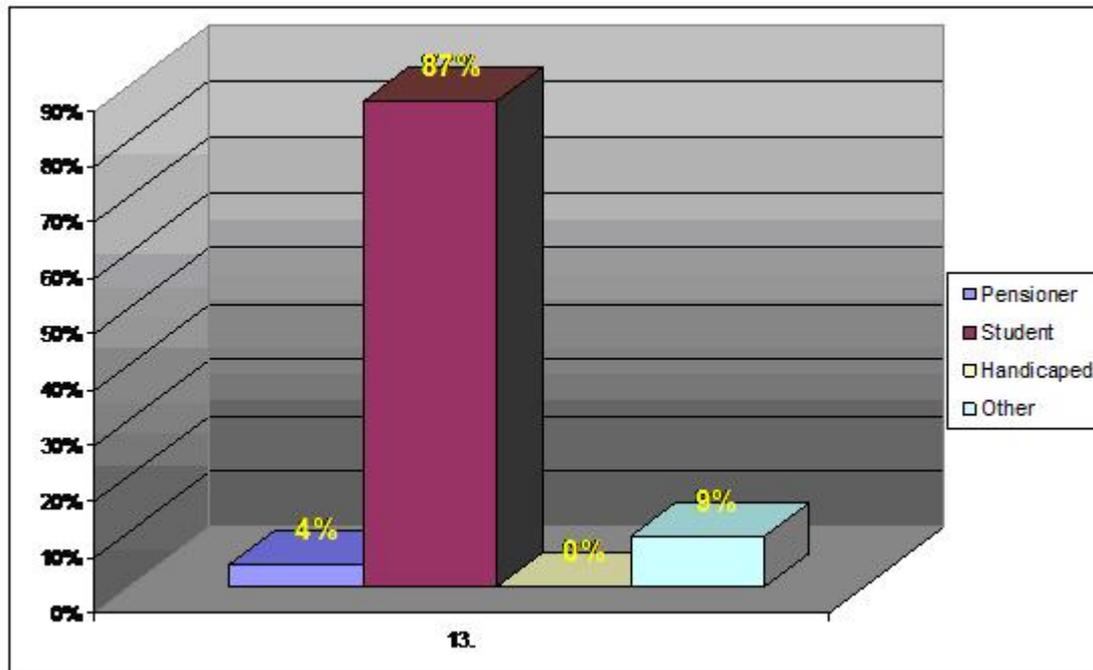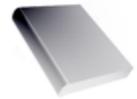
Outcome

From the survey some interessting functions was mentioned that we hadn't thought of, some of them was merely functions we se in everyday computer usage, but these are commonly mistaken for "advanced" functions by others. These functions could easily be displayed as icons on the side of the book. From survey we set some new rules and functions to the VRbook. Here are the most interesting ones.

- Ability to get rated by readers, a statistic will be shown on the sellers page when the user view or buy a book online, the same result will also be displayed with the downloaded book and get updates from the server.

- The screens must have a ergonomic choice to reduce light or contrast so that it can be costumized for the user.

- The VRbook has to be somewhat tough to be tossed around like a book, like falling asleep with it and drop it from a distance like a sofa or bed. More heavy usage than that should be referred to the "Solid VRbook".

- Wordlist function to each book and a Internet search solution to match words or sentences. These will be displayed as icon options from what the VRbook can perform on each book.

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Discussion

As we proceeded with our prototyping of this project we had "standard usage" scenarios already thought of, because using a book is something we all learned as a basic navigation (most of us). The only real critical aspects was that it would be used as a book and if it was used a sa book what would a user do with it. As from the survey shown most of the questions was exactly what we had expected. Only a few questions differed but was merely just added functions. Our estiments was right, the usage of this VRbook would be 90 % book reading and processing from it.

Though it seams that a normal computer usage like, search, index, statistics, matching and stuff like that is options that users during this sruvey considered to be standards in any literature processing digital unit, still having in mind that the survey was almost only answered by students. Still, having mentioned that a student as a everyday user of some kind, we still have to consider these options as standards even if it starts to cross the barrier from pda/book to pda/book. We always had a fiction that the book would be used as a laptop with tools such as "on screen" keyboards etc, but after carefully consideration we thought of the usage the whole time, and the usage was always "What if they really think that it is a book, before they open it or toss it away?". The VRbook will come in allot of different size and chapes and will clearly be used as "a book", just with allot more functions. Which led us to these conclusions...

- An old person will only use this book for the main purpose, reading. The tools will probably never be used, tried once. But the online buying function will almost be a "need to know" function.

- A everyday user or student will "hack" the book to make it meet their demands as good as it can. Students or Advanced users will most likely buy this product if it's cheap/easy to mod and use it as a laptop.

- A handicapped person with disabilities or mentally problems will have costumized VRbooks that will meet their demands fysically and mentally in usage.

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