

Pervasive advertising

VGIS 10th semester project
Spring 2012
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TITLE

Pervasive advertising

PROJECT PERIOD

February to May 2012

PROJECT SEMESTER

10th Semester

PROJECT GROUP

1029

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NUMBER OF COPIES: 2

NUMBER OF PAGE: 91

CONCLUDED: 28 May 2012

With the spread of digital TVs replacing traditional analog ones, interactive digital TV is a rising field. Offering new functionalities to TV viewers, its goal is to allow them to have more control on the content they watch. Applying interactivity to TV commercials, viewers' interest in them could increase and lead to more frequent purchasing actions.

Interactive digital TV not being already widely spread among viewers, their expectations and needs are investigated. Different types of products are shown on TV ads. Viewers' interest in them, as well as in the different possible interactions between them and TV has to be defined.

Moreover, TV viewers are already completing other tasks while watching TV, and particularly during TV commercials. As they easily have access to personal portative devices connected to Internet and that a majority of people own one or several of them, the possibility of coupling a second screen to a TV screen to manage interactions between viewers and broadcasters or advertisers is investigate.

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1 Introduction

1.1 Project proposal: Pervasive advertising

“New television technology allows displaying dynamic content (text, links, etc.) layered on top of video feeds. This project aims at investigating this opportunity in terms of advertising. How could advertisers benefit from such functionality? Going one step further as mere product placement, how could interactive ads look in the future? The project would necessitate to:

1. Come up with design proposals for potential future interactive TV ads, based on the content, context, viewer’s watching habits, etc.
2. Implement these ideas and conduct user tests to verify their acceptability and impact, maybe via comparative studies.”

1.2 Definition of the project

Television is one of the main media people watch every day, and from which they get information. It is not new that viewers are commonly doing other tasks and using other devices while watching TV [1] especially during commercial breaks, as their attention on the TV stream decreases. If people are multi-tasking in front of TV, it may be because, using Internet and personal devices, they are already commonly choosing the content they watch, and interacting with it. Watching traditional TV is mostly a passive activity.

The way TV stream is displayed to viewers is indeed unidirectional, while Internet brings interactivity in content. While watching or reading content on Internet, users can pause it, switch web pages, select the exact part of content they are interested in, share it, or comment about it for example. Internet functionalities to control content are more various than the ones available with traditional TV. One of the main attribute of TV, reaching a large number of viewers, also means that the audience is not targeted regarding interests of each person. Applied to commercials, this lack of targeting in the audience does not allow advertisers to reach the best profitability possible [2].

As since few years, TV advertising seems to be caught up [3] [4] by Internet advertising which brings more personal data about customers, digital TV emerged as a possible solution for advertisers. Indeed, the number of multimedia ads is increasing, but TV still remains one of the media in which advertisers invest the most compared to other media (internet, press, radio, outdoors) [5]. Looking at the potential of digital TV, they tend to try to change the way they advertise about their products, creating more interactive ads to target their audience as accurately as possible.

As digital TV offers new tools to interact with viewers, how can they be used to increase the interest of customers in a brand? How to make customers able to interact with a TV ad? How to make them willing to get more information about a product, willing to be linked to a product

(for example by sharing information about it on their social network) and to make them want to purchase it? The purpose of the project is to find what future interactive TV advertising could be.

1.3 Guidelines

For this project, the first guideline is to involve users as much as possible during processes of analysis and implementation, understand their expectations and take their opinions into account.

The second guideline is, based on data collected from users on the subject, to implement a technical high fidelity prototype, in order to test it with users and obtain more accurate feedback.

1.4 Limitations of the project

A possible limitation of the project is its limited duration (one semester). Another limitation can be the incapacity to accurately measure the actual interest of TV viewers in commercials displayed, the data about actual sales volume of the product of a tested commercial missing. As the implementation of this project is not leading to actual purchases, the desire to buy a product of a customer, and not the action of buying itself, will thus be measured.

2 Pre-analysis

2.1 Introduction

Since few years, analog TVs have been replaced by digital ones on the majority of houses [6]. European countries are almost all currently using digital television [7]. The last ones still using analog television plan their Analog Switch Off (ASO) to be done at the latest in 2015 [8].

Table 2-1 Announced digital switchover dates of European countries [8]

Completion of ASO	European countries
Completed	Sweden, Spain, Finland, Switzerland, Germany, Belgium, Netherland, France, Czech Republic, Denmark, Estonia, Austria, Slovenia, Norway, Latvia, Croatia
Expected to be completed in 2012	UK, Italy, Lithuania, Hungary, Portugal, Slovakia, Ireland
Expected to be completed in 2013	Poland
Expected to be completed in 2014	Ukraine
Expected to be completed in 2015	Russia

More than the TV program, digital televisions offer a large range of new possibilities to modify the traditional approach of TV. Instead of sitting passively in front of their TVs, viewers can become active. Indeed, as computers and Internet are now common for most of the people, the way they interact with media has changed. People are now used to quickly find precise information, choose exactly the content they want to read or watch, interact with it, and even influence it. Traditional use of TV does not present these possibilities, and it makes new functionalities of digital TVs interesting for advertisers and broadcasters.

Because both of them thought that displaying traditional 30 seconds ad spots on TV will lose its efficiency and not be able to catch viewers' attention as well as it used to do [9], advertisers and broadcasters invested in interactive TV advertising [10]. In addition to displaying a video about a product to their customers, brands are trying to build themselves an attractive image for customers and to give a cross media aspect to their advertising campaigns. For example, a TV viewer will see a link to a website on a TV commercial, and will then obtain information while using his computer to visit it. TV remaining a good device to

reach customers, brands and advertisers tend to explore possibilities offered by new interactive digital TVs.

2.2 What is Interactive TV

2.2.1 Definition

In 2002, McMillan and Hwang [11] defined interactivity, with the idea of using key points to allow researchers or advertisers to analyze and develop web-based advertising more accurately. As advertising has to be persuasive even with the competition of other ads, advertisers should understand interactivity in order to engage better with their potential customers. Notions they described are still valid today, they are represented in Fig. 2-1 and can be summarized as follow:

- User control: including available interfaces, input devices, navigation tools, and features for users' choices and input.
- Two-way communication: it can be a dialogue between users and advertisers or broadcasters, the possibility for users to give feedback or interpersonal interactivity which allowing them to get customer service.
- Synchronization: it is about the time taken by a data to be sent and received by users, and the possibility for them to navigate through the information they are interested in quickly and easily.

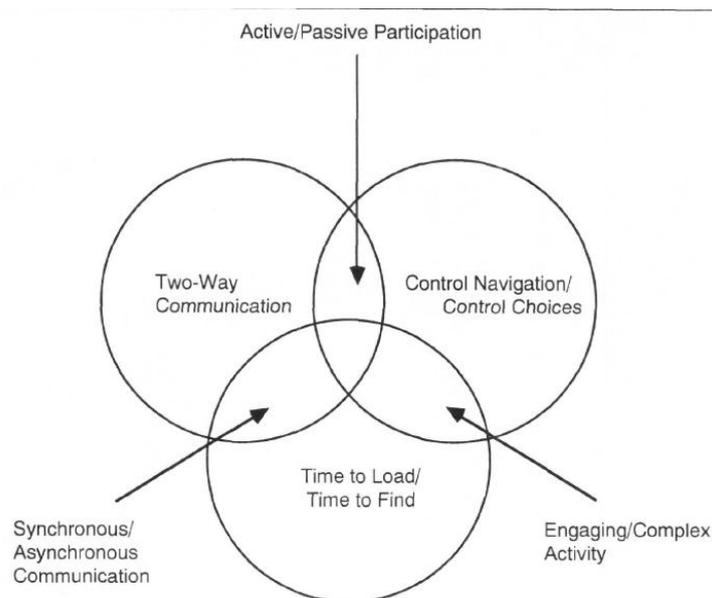


Figure 2-1 Key dimensions of interactivity [11]

These three aspects are present in the notion of interactive TV. Defined in [12], interactive TV is described as a television that does not only send information from broadcasters to viewers, but also in the other way, from viewers to broadcasters. Becoming active, TV viewers become users. By using interactive TV, they can personalize their TV experience and control the content displayed. Synchronization between extra content and TV programs or ads can for example allow users to influence what is on the TV stream.

Interactive digital TV being called to replace traditional analog TV, a comparison between them can be made as follow [13], underlining some advantages of the digital one.

Table 2-2 Characteristics of traditional TV and IDTV [13]

Traditional TV	Interactive, Digital TV
Average picture quality	High picture quality
Average amount of channels	High amount of channels
One way communication	Two way communication
One-to-many	Many-to-many
Passive viewer	Active user
Ad-interruption model	Ad-permission model
Push model	Pull model
Advertising driven revenue model	Commerce driven revenue model
Time restricted	Time shifting
Device centric	Ubiquitous
Entertainment	Entertainment, shopping, email, gaming
Static content	Dynamic content (updated constantly)
Average community building	High community building
Broadcasting	Narrowcasting
Public good - free	Pay TV
National	Global
TV rates through panels	Actual TV rates through STB
Ad zapping	Ad skipping
VCR	PVR
Domesticated	Penetration still low

Something that Table 2-2 also highlights is the low penetration of interactive TV. A negative point that can be perceived from users is that, as it gathers more information about them, it collects some of their personal data, which can make them uncomfortable [12] . Another reason of this low penetration can also be that people are simply not aware of the functionalities offered by their interactive TV and thus do not use them.

2.2.2 General interactive TV interfaces or tools available on TV

Interacting with digital TV can be done in several ways [14], some of them requiring a Digital Video Recorder (DVR). The first one allows users to pause and/or record the TV stream. With this functionality, users can record a show to watch it after its end, or play fast-forward during ad breaks for example. They control the stream of TV, choosing exactly which part of the content they want to watch. A second way to interact with TV is to access a menu gathering different functionalities. To access this menu, a TV remote control can be used, as well as a second screen synchronized with the TV stream. For example, those services can be used to generate interactive narratives [15] where viewers influence a story, and used by viewers to influence TV content (for example, votes giving live results of a reality TV show, or choice between alternatives scenes of a movie). Finally, a third possible type of interaction is to customize TV interface, with personalized design for example.

In [16], the Interactive Advertising Bureau (IAB) describes different interfaces available on digital TV that can be used in interactive TV advertising. A distinction is made between “entry points” and “destinations”. Entry points are the first interfaces users will see and which will

lead them to interact with an ad. Destinations represent interfaces dedicated to a commercial, containing extra information about it or linked content. They are reached when viewers respond positively to a call-to-action from certain entry points. Indeed, while watching a traditional 30 seconds ad spot on TV, people can for example be solicited by advertisers with an entry point displayed on the TV screen, containing a message to viewers. They can then accept or not this invitation to interact with the ad. By responding positively to this call-to-action, users can either complete an action directly on the entry point or they can access to destinations.

When a viewer uses entry points or access destinations, content overlays the TV stream. Using digital TV recorders, TV stream can be paused allowing users to come back to it later, or continue on the background, partially or totally hidden by the overlaid extra content.

Entry points and destinations can correspond to impulsive responses or immersive interfaces. For impulsive responses, actions required by users are fast to complete, and the TV stream is only partially hidden by the overlaying interface. Immersive interfaces are more complex, requiring more attention from users and offering more information or actions to complete.



Figure 2-2 Example of an impulsive response [17]

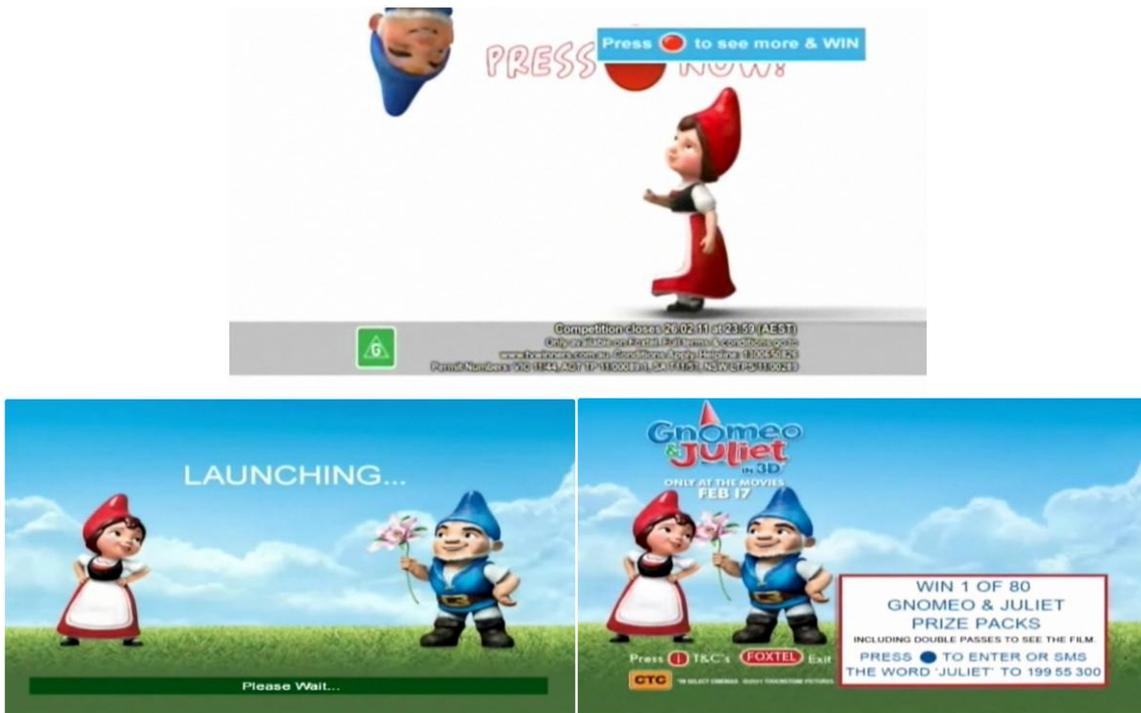


Figure 2-3 Example of an immersive interface [18]

2.2.2.1 Entry points

Entry points can be banners directly displayed on top of an ad as shown in Fig. 2-4, they can be placed on the main menu of an interactive portal, on an interactive guide, or on the paused or deleted scenes of a program for example. If displayed over the TV stream, a possibility is that the action proposed by the banner takes place only during the time of the ad, requiring tasks to remain really easy and quick. It can for example result on the sending of brochures, coupons or samples from an advertiser to users, which only requires their agreement.

By clicking on a button of their TV remote for example, users can also be sent to one of the different destinations possible as in Fig. 2-3, such as little games or microsites. It pauses or hides (partially or totally) the TV stream, and takes most of users' attention away from the TV stream. In this case, it is important for broadcasters to consider the position of the ad in the ad break (at the beginning, in the middle, at the end) to know if users are going to miss some parts of the TV program currently aired if they decide to use destinations.



Figure 2-4 Example of a banner offering a coupon [19]

Entry points can also have the aspect of an interactive tag, which can be placed at any time in TV commercials or programs, integrated seamlessly. These tags are usually calls-to-action as their purpose is to make viewers act. They can have different shapes (example given in the Fig. 2-5), and, as banners, they can require quick actions from users or send them to dedicated destinations.



Figure 2-5 Example of an interactive tag in a commercial [16]

2.2.2.2 Destinations

Destinations are accessed by users when they click on an entry point or answer to a call-to-action.



Figure 2-6 Example of a destination pointed by an interactive tag [20]

Various aspects and purposes for destinations exist.

a. Dedicated Advertising Locations (DAL)

When responding to a call-to-action, users can access a dedicated advertising location (DAL), which can be compared to a website on TV according to authors of [21]. In most cases, a DAL hides totally the TV stream. Branded content can be found in a DAL, as for example a micro-website dedicated to a brand, a specific product, or a TV program. Walled gardens, described in [21] as a type of application similar to enhanced TV are different than DALs because they are always available for users, not only while the program is aired on TV.

Complex dedicated advertising locations can also contain other types of destinations that are listed further.

b. Obtain more information

One goal of interactive TV is to allow users to obtain more information about a TV program or a product from a commercial. In analog TV, this notion had already been developed through the Teletext, which was later replaced by the Digitext [3] in digital TVs. Digitext is an interface usually accessible with buttons of the TV remote control, in certain channels offering it. It gathers information about programs aired on a channel, some little games or electronic program guides (EPG) for example. Interfaces allowing users to obtain information can also be request for information (RFI) [22] which commonly are impulse responses. They require really few actions from users for them to obtain information, sometimes one or two button clicks. With them, users can for example easily request advertisers to call them, to send them coupons, samples and brochures, or they can even instantly buy a product while staying in front of their TV.

c. Extended audiovisual content

During a TV program or a commercial, users may want to access extra videos, pictures or audio files linked to the content of what they are watching. It can be as various as video tutorials of a cuisine technique mentioned in a cooking show, the original video clip of a song presented in a singing contest show, or deleted and making off scenes of a TV program for example. In advertisement, this is present through telescopic ads, as described in [22]. These ads display a call-to-action, and if the user answers positively, he accesses a new interface, leaving the linear broadcast stream [23].

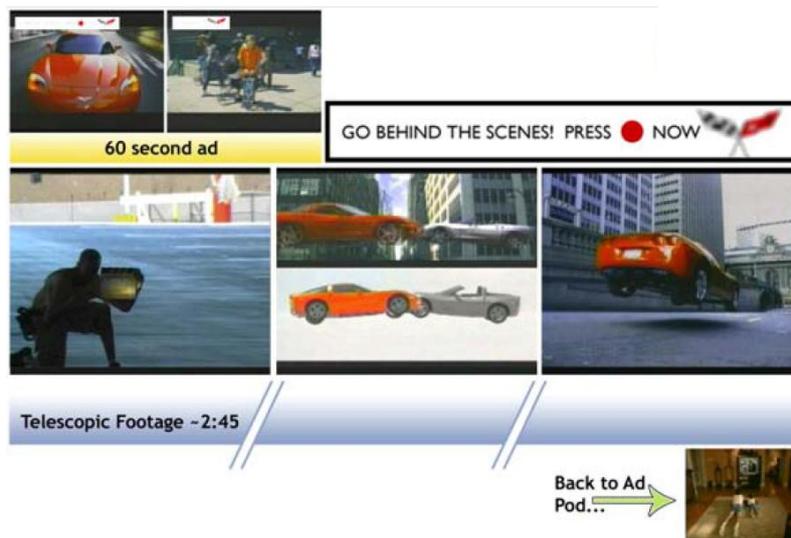


Figure 2-7 Example of extended audiovisual content accessible from an ad [22]

Viewers are taken away from the TV stream for the duration of the extra content. With Digital Video Recorder, it is however possible for a user to go back to the TV stream at the exact moment he left it, allowing him not to miss any part of commercials or of the TV program.

d. Widgets

Widgets [16] are used in interactive TV as interfaces with content, which can be for example web-based, offering the opportunity for users to access their mails, their social networks, the weather forecast or other services. The content of these applications can be linked to TV programs or ads. They can be accessible through interactive tags overlaid on the TV stream or from menu portal interfaces for example.



Figure 2-8 Example of widgets interface made by Intel and Yahoo [24]

e. Games

A service that broadcasters have tried to develop since few years concerns interactive games [16]. By letting users play little free games, broadcasters could for example prevent them to change the channel while waiting for a TV program to begin or during commercial breaks. Another issue of developing games is to associate them to a brand, a product, contributing to create a positive image of the brand for users, or using games as a contest for example.

f. Polls or surveys

A way to make people feel concerned by a TV program or an ad is to ask for their opinion about them. Through polls and surveys [16], users can give a feedback about some TV content or answer to any other question, related or not to the TV stream. Polls and surveys can be overlaid on top of the TV stream, or be part of a DAL such as a micro-website or the interface of a contest for example.



Figure 2-9 Example of a poll displayed during an ad [16]

g. Video on demand

For users who own a DVR and have access to Video On Demand (VOD), broadcasters can use these destinations to display advertisement spots before or after the main video. The

displayed ad is, in most of cases, linked to the content of the chosen video. This is done by broadcasters in order to target their viewers, assuming that they are interested in the topic of the video they selected. A VOD destination can also have a branded interface and/or contain promotion on demand, allowing users to choose valuable offers.



Figure 2-10 Example of a VOD interface [16]

h. T-commerce

T-commerce (Television commerce) consists of interfaces allowing users to purchase products directly from their TV. Tools as Digitext can be used to purchase via television, but more complex interfaces exist too. Websites, which can be considered as DAL, can be sales interfaces, allowing users to browse through products and purchase them. Simpler interfaces linked to t-commerce also exist, such as “click to call” or “text me” interfaces. They usually consist of a single screen containing a description of a product and a phone number or a button that users can click to be instantly called by a company.



Figure 2-11 Example of a sale interface [16]

2.2.3 How and why collecting data from users

A main characteristic of interactive digital TV, in comparison to the traditional analog one, is the possibility for broadcasters to collect data from their viewers. In this way, they can define different types of reachable potential customers, and advertisers can create targeted ads. By selecting more or less precisely the type of viewers for each ad, their content can be more personalized and thus increase chances of an ad to lead to a purchase.

Several categories of data can be observed: first ones are gathered without users clearly noticing it, while second ones require users to purposely fill forms or click on a button to send information they entered.

The first category contains the Set-Top Boxes' IP addresses, some personally identifiable information (PII), but also the "click stream" of viewers. As described in [12], the last method allows broadcasters to collect a lot of raw viewing data about the exact behavior of users in front of their TV, by recording and analyzing clicks they make with their TV remote control. Collecting these data can be done to know when and how often people watch TV, but also what type of content they watch. Types of shows and ads watched can be determined, as well as which ad has been clicked, and which one conducted directly to a purchase of the product. Programs and ads watched can even be detailed in order to know exactly which part has been seen, and when the user decided to switch to another channel. The utilization of services such as widgets for weather forecast, email, chat, or viewing planner for example can be listed.

The data of the second category can be answers to questionnaires, to forms or to a contest for example. Users are aware that they are sending information about them, and can choose what they share with broadcasters and advertisers or not.

Information about customers is useful for broadcasters and advertisers to try to increase their sales volumes, but the point of view of users can also be taken into account. What differences from traditional TV result from the collection and analysis of all these data about them and their behavior? The author of [12] suggests that the data collected will lead to more personalized TV content which can be seen as an advantage for users. Each program, news, commercials can be modified regarding each user's history of actions on his TV. Tools available such as widgets, emails, or chat rooms for example, can also be personalized according to demographic information or by users themselves thanks to themes and others features at their disposal. Personalization of TV content and services is supposed to increase users' interest in them.

2.3 How to use interactive TV

2.3.1 Devices used to interact with TV

When in front of TV, users may need a device to interact with their Digital TV. For that, the two following types of device can be used: the remote control that automatically comes with TV, or a second screen, which can offer more functionality.

a. Remote control

Digital TV presents a wider range of interactions than traditional TV that is usually limited to some actions: turn the TV on and off, change channels, sound and settings, or access to limited informative interfaces as Teletext for example. With new interactions available between users and TV content, digital TV needs an adapted device to allow users to complete them easily. With the TV comes the remote control, and the ones associated to digital TVs are more complex than traditional ones, as they usually present more buttons. However, their functionalities can be limited if they only present buttons for users to navigate in different TV interfaces.

As digital TV includes interactivity, but still keeps the same model than traditional TV, remote controls appear not to be adequate anymore [25]. With new interactions possible, navigation in interactive TV interfaces can be complex and some actions can require a keyboard or a mouse for example, as with a computer. In that case, buttons can be used, but the completion of actions can seem to be long and uncomfortable for users.

However, some advanced remote controls can integrate a keyboard for example. Indeed, TV owners automatically own a remote control, and if they can use it to interact with TV content, they do not have to buy an extra device. Users are also familiar with remote controls to complete some traditional control actions such as turning the TV on and off, or switching channels for example.

b. Second screens

With the wide spread of Internet and new technologies allowing people to use it with devices more or less portable, people are used to easily access cross-media content and to interact with content they read or watch. A way to make TV experience interactive is for viewers to use a second screen. Studies [1] show that TV viewers tend to do several other actions while watching TV, and that they often use additional devices. Actions made on these second screens are various, and can result from a lack of information or interactivity with content for example.

Three second screens that can be used in order to interact with TV are computers, smartphones and tablets. They represent an alternative to TV remote control, offering different functionalities and possibilities to interact with digital TV, and are already commonly used by viewers in front of TV [26].

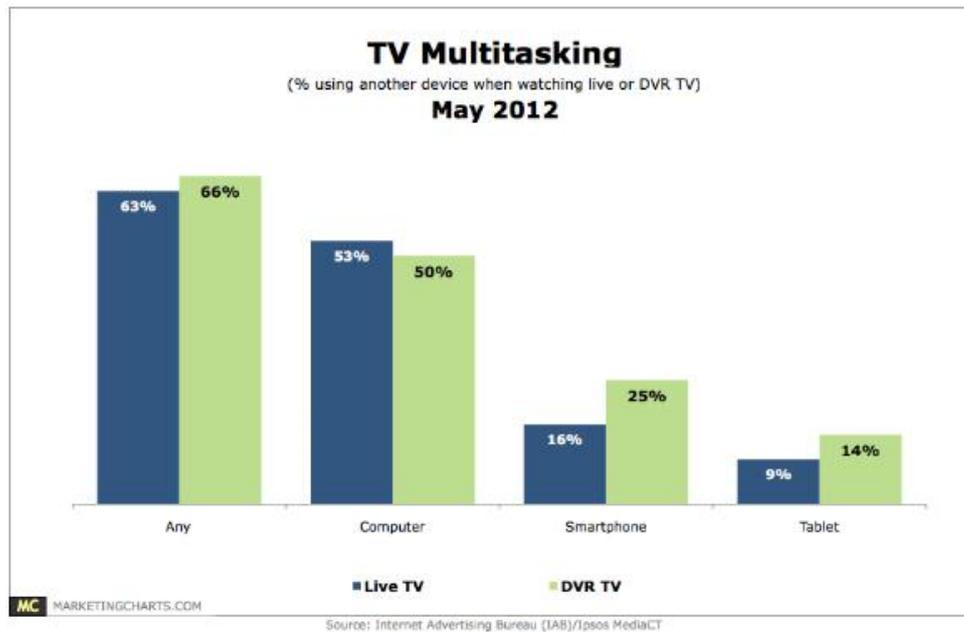


Figure 2-12 Multitasking of TV viewers [27]

Computers have different peripherals, the basics ones being the keyboard and the mouse that allow users to navigate through web pages, to click and to write text. Computers have a big screen allowing comfortable reading and watching of articles, pictures or videos. They can support most of the video, image and sound formats, or updates can easily be downloaded by users. They are personalized devices, and users are familiar with them. Computers can also access Internet.

Other devices offering a big screen are tablets. They present the same advantages than computers, but with different peripherals, thanks to the touch screen technology. Interaction between users and the second screen are thus more instinctive. As computers, tablets can access internet and can support most of the video, image and sound formats offering a wide range of possible interactions.

The third main device that can be used as a second screen in order to interact with TV is the smartphone. Presenting different advantages such as the touch screen technology, and access to Internet, it also presents disadvantages due to his size. Smartphones indeed offer smaller screens than computers or tablets, making the reading of articles or the watching of pictures and videos less comfortable for users. It however can be used for short interactions, and is really portative.

Compared to TV remote control, these three devices offer more comfortable and diverse interactions with TV, thanks to their keyboard, mouse or touch screen technology. They also can integrate control functions of traditional TV remote controls, such as turning the TV on and off, changing channels or sound's volume for example.

2.3.2 Advertised products

Different types of products are represented in TV commercials. Except some European regulations on TV advertising [28] that forbid TV advertisement about tobacco, political ads, or strong alcohol for example, every other type of product can be shown in a TV commercial. The subject of an ad can be about food or hygiene products, clothes, stationery, electronic or media products for example. It can also be about an event, the release of a game, cosmetics, or even press. A hypothesis is that users' interest in products varies from products of a brand with a strong positive image and a strong link with its customers, and products that answer to a necessity.

The second products can gathered for example product families as food and hygiene, which are mandatory for customers. However, even in these categories, some products can belong to the first group of products, if their brand created a strong image among its customers.

Indeed, brands can create an image around their company spirit and their products and promote it among customers. Brand and company marketing can be managed to give products a strong image, in order to attract users' sympathy. Customers sharing the same values promoted by a brand will supposedly feel closer to its products, and be more willing to buy its products [29]. When a product has a strong link with its customers, people can be expected to have more interest in interacting with it or buying it.

2.4 Research question

As people are more and more commonly using several devices to obtain information, work or be entertained, ads tend to become cross-media. TV, although being challenged by others media as Internet for example, still remains a good way to reach a large number of viewers: in 2010 a European person watched, in average, 226 minutes of TV every day [30]. With the spread of digital TVs, interactive TV is a rising media. It could increase commercials efficiency among customers, thanks to the possibility to target audiences regarding their needs. Being able to interact with TV commercials is supposed to make advertising experience more personal for users, and to increase their interest in products.

Moreover, people are already using portative devices as smartphones, tablets or computers while watching TV [26], and these devices could be used to interact with it.

Regarding the different points previously developed, several questions can be asked:

- Are viewers able to use a second screen while watching TV?
- Are people interested in interacting with TV commercials? What interactions are they interested in?
- Which type of products users are interested to interact with?

The system considered in this project will thus be composed of a TV screen and a second screen used to interact with TV content. A research question is defined as: "Using a second screen to interact with TV commercials, what interactions and what products interest users?".

2.5 Conclusion

Most of European TV viewers only have access to digital TV [7]. Broadcasters and advertisers are currently trying to develop interactivity in this field, as they anticipated a decrease of interest in TV advertising from viewers [9]. Indeed, with Internet and the availability of personal devices, people have changed their behavior in front of TV. As viewers are multi-tasking while watching TV [27] (for example they read their emails, browse Internet), advertisers try to get their attention back on advertisement. As TV is not the only media people receive information from, and portative devices connected to Internet are spreading, interactivity tend to be integrated in advertising campaigns. Viewers being used to control the content of what they watch or read, digital TV can offer them similar functionalities than Internet, which were not available on traditional analog TV.

As projects regarding interactive digital TV are still not spread among customers, needs and expectations of potential users can still be defined more precisely. Thanks to interaction between viewers and advertisers, advertisement could become a more personalized experience for customers, as their personal information may be gathered. It however underlines a problem of privacy protection that has to be taken into account to obtain customers' trust in interactive TV projects.

3 Analysis

3.1 Introduction

Authors of [1] underlined the fact that, if some TV programs require full attention from viewers (such as movies for examples), some others do not. With the wide variety of personal devices now available, viewers tend to use them while watching TV, in order to interact with people, or obtain more information for example. Commercial breaks are usually a moment during which users manage to complete other tasks, their attention not being focused on displayed advertisements. People being used to have more control over the content they watch and read, traditional TV commercials were not offering as much interactivity as other personal devices widely spread among customers. Digital TV is now a rising media, interactivity being integrated in TV experience as a tool to catch the interest and attention of viewers.

To interact with TV, several tools are available for users, the two categories developed in this project being remote controls and second screens. Devices automatically bought with TV, the remote controls, allow extra content to be displayed on the TV screen, and users to navigate through it. However, it creates a conflict with the TV stream, as the extra content is overlaying the TV program. Its utilization is also limited because most of these devices only present buttons, but no keyboard, mouse or screen for example.

Second screens are considered as potential devices to interact with TV. They are already widely spread among TV viewers, and people are familiar with them. Allowing users to keep track of the TV stream is one of their advantages over the use of TV remote control to interact with TV, as well as the various interactive functionalities they offer.

3.2 Survey

3.2.1 Construction of the survey

As a lot of different interactions are possible between users and digital TV, the ones that interest users and are possible to complete while watching TV have to be defined. Different user centric tools can be used in order to gather users' feedback, such as card sorting, participatory design, surveys, or low fidelity prototypes for example. At the beginning of the project, a survey seems to be a good option to get an overview of users' opinion on the subject presented, and to reach a maximum of persons with different point of views. A survey can be used to directly ask questions to users and to gather their thoughts and expectations. It is also based on the research question previously enunciated: "Using a second screen to interact with TV commercials, what interactions and what products interest users?".

The range of possible interactions between users and digital TV is wide: obtain more information, comment, or share for example. They can be presented with different entry points (tags, banners) leading to different interfaces such as micro website, extra audiovisual content, widget, or polls. It means that numerous possibilities of interactions are available for users, not all of them corresponding to their expectations and needs.

The objective of the survey is to define limits of what users want and are willing to do regarding interactive TV programs and commercials. To do so, different data has to be collected, and they must answer the following questions:

- Who is the user?
- What experience with technology has he (TV, computer, second screens)?
- What is his behavior in front of TV?
- Regarding interactive TV, what is his experience? What are his interests?

The survey is therefore composed of four main parts:

- General information about the user
- Technology experience
- TV experience
- Interactive TV experience

As suggested in [31], participants can see personal questions as sensitive ones. To avoid people to be scared and end their participation to the survey before completing the questionnaire, the part asking for personal information is located at the end of the survey. Demographic questions (age, education, gender) are asked, along with the status of the participant in his house (is he the one doing the main expenditures for his house?).

The technology experience part is quite short. It defines which type of devices participants are familiar with and which ones they own. If a device is well known and owned by participants, a new service using it could more easily be accepted by users than if they have to learn how to use a new device.

Focusing on TV, participants' general behavior in front of TV and during TV ads is questioned. Devices used to watch TV and time spent watching it are investigated [30]. Previous studies [1] shown that viewers often multi-task while watching TV. Questions

about what participants are doing in front of TV programs or commercials are asked. Introducing the notion of second screens, details about which ones people use while watching TV and for what purpose are also asked. While they are using two devices at the same time (TV and second screen) the attention of participants may focus on one of them more than on the other. Participants are asked to tell in which device their attention mostly goes, or if it is equally divided between the two screens. This information, while maybe not being accurate, will show the impression of users, what they think they focus on while using two devices at the same time. It will be an indication of whether or not they are able to complete tasks requiring attention in front of TV and feel comfortable doing it.

The next main part of the survey is about interactive TV experience. Its aim is to ask participants about their potential previous interaction with TV content, and about their interest in interacting with TV ads. The type of devices they already used for interaction, or the ones they will be interested to use are questioned. Regardless of their experience, participants are asked what action they would be interested to complete in order to interact with TV commercials (play to little games, participate to polls, or buy a product for example).

In order to facilitate comprehension and answering of the survey for participants, several points are taken into consideration. Firstly, a brief and clear presentation of the project is made before the beginning of the survey. Participants then have an overview of it, helping them to understand the context of questions. Secondly, the survey is written in a simple and short way, to make it understandable for the largest number of people possible, and to allow participants to answer it quickly, as advised in [31]. Finally, to keep participants' attention, they are aware of the length of the survey, and questions are displayed on several pages in order not to let participants think that the survey is too long. For the survey to be answerable quickly, close-ended questions are mostly used (multi-choices or ticking boxes for example). The few open questions used to gather participants' opinion are written in a clear and easy to understand way.

Before the survey was launched, it has been verified by two persons: the supervisor of this project and a MBA student not having specific knowledge about the subject. As they gave feedbacks about it, their comments resulted on some modifications of the survey, mainly to clarify questions and make the survey understandable for people with different backgrounds. The survey was then put online on Facebook. This social network was used to spread the survey and to reach a maximum of participants willing to fill it.

3.2.2 Process and results from the survey

The survey was put online on Facebook on the 6th of March 2012, and 24 persons answered it within 3 days. Participants were mostly men (17 over 24 persons) and their ages were distributed according to a Gaussian curve between 19 and 30 years old, with a maximum of participants being 24 years old (6 over 24 persons). All participants had an education level equal or greater than the bachelor, 75% being at their master level.

A majority of persons who participated in this survey were the ones in charge of grocery shopping and main expenditures in their house (17 over 24 persons).

Participants were familiar with computers, TV and smartphones and more than half of them were familiar with tablets. They all owned a computer, while 70% of them owned a smartphone too. Tablets were owned by more than 30% of participants, and TV by 50%. The majority of participants (75%) were using actual TV screens to watch TV, even if computers were also used a lot for that purpose (67% of participants).

Per week, around 30% of participants were watching TV less than 7 hours, and around another 30% between 7 and 15 hours. 30% of them declared never watching TV. While watching TV ads, participants were mostly using another device (75%). They were also switching channels, going to another room, or talking to somebody else, not keeping their attention on ads displayed on TV.

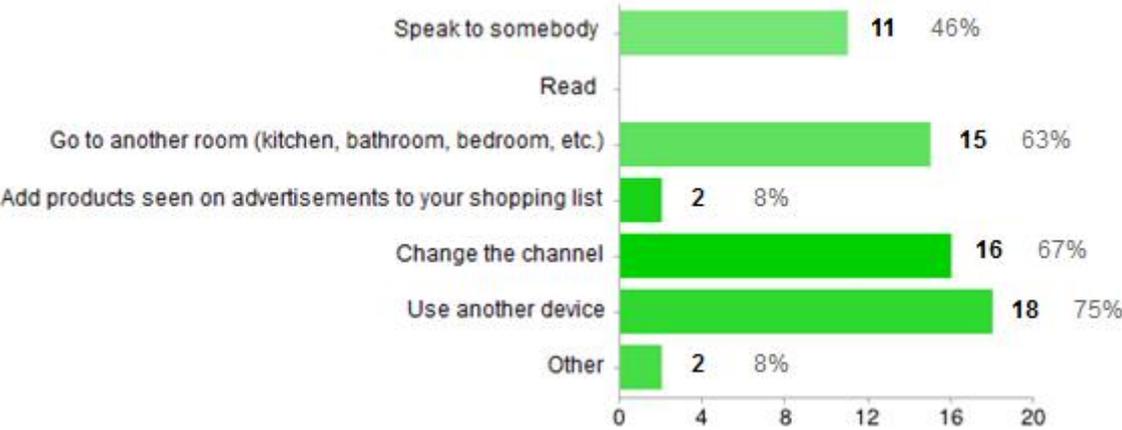


Figure 3-1 What participants usually do during TV ad breaks

Devices participants were using in front of TV were, in order of importance, computers, smartphones and tablets. They were mainly used to read and send messages, browse Internet or visit social networks. Some of participants were interested in scheduling an event (the date of the release of a book or a concert for example) to remember it. However, they did not seem interested in getting references of a product seen on TV ads, or in sharing something they saw on TV on their social networks.

For participants who were using another screen in front of TV, roughly half of them declared having their attention mostly taken by the second screen they were using, while the other half had their attention equally divided between TV and the second device used.

Half of participants never had interacted with their TV before but they were interested in doing it, while a third of them never had interacted before and were not interested in doing it. Some participants had already interacted with TV by sending SMS with their phones to participate to a poll linked to a TV show, but no one has either interacted with TV using their computer or smartphone to display a comment on the TV screen, using an application dedicated to a TV program, or in another way.

For participants who already experienced interactive TV, a majority used smartphone (60%) and tablet (40%) to interact with TV, while computer was not often used and remote control not at all.

When asked what they would like to do if they were able to interact with TV ads, participants mostly shown interest in visiting the brand website to obtain more information, and in receiving free samples, e-coupons for a product or an event. Some of them declared that interacting with TV ads did not interest them. Others were however interested in buying the product directly (6 over 24 persons), or, again, in scheduling an event (date of a concert, release of a game or a book for example) in a calendar to remember it. Playing little games also interested few participants, as well as participating in polls or adding an item to a virtual grocery list. Receiving brochures about a product, or a phone call from a brand to discuss about a product did not interested users.

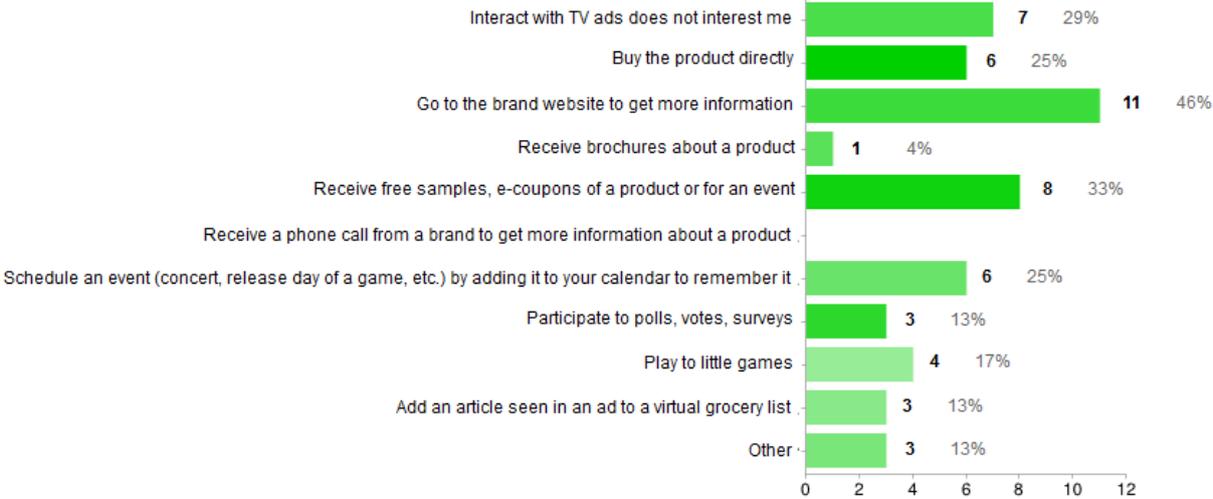


Figure 3-2 What participants would like to do while interacting with TV ads

If they could interact with TV ads, people thought that they would prefer to use, in order, their smartphones, tablets or remote control. The least preferred device to interact with TV was the computer.

None of participants had already bought something using their TV, some of them being interested in doing so in the future, but the majority not being interested (16 over 24 persons).

Regarding the results of this survey, some conclusions can be made. The project targets students between 22 and 26 years old (which represented more than 80% of participants) and in charge of grocery shopping and main expenditures of their house (65% of the 83%).

As participants were familiar with and owned second screens, and considering that a majority (75%) of them was already using them in front of TV, using an extra device to interact with TV seems coherent. While most of participants never had interacted with their TV, half of them were interested in doing so.

The main actions participants interested in interacting with TV ads preferred, in order of importance, were:

- To visit the website of a brand to obtain more information about a product
- To receive free samples or coupons of a product
- To directly buy a product

- To schedule an event in order to remember it.

3.3 Paper based prototypes and Interviews

3.3.1 Construction of the first paper based prototype

Results of the survey provide guidelines for the construction of the paper based prototype. Indeed, the paper based prototype allows users to complete the four actions that were underlined as being interesting for them by the survey: obtaining more information, ordering vouchers, buying products and remembering a product.

Accessing to more information is done by visiting a micro website dedicated to the product of the chosen ad. Users can access raw information linked to it, such as extra media content, polls, ratings or surveys directly on the webpage. The utilization of the micro website is similar to the one a user could have while visiting a webpage on Internet with his computer. An advantage of the micro website over a regular web page is that users can access the content with fewer actions than if they had to search for a web page on Internet, as the interface is simplified.

Users are able to order vouchers from a list of available ones. Choosing one specific voucher, they access a page with information and instructions about the voucher, and they have to enter some personal information (name, address, and email). Here again, ordering a voucher using this application requires fewer actions than using a computer. Information about available vouchers linked to the product is gathered in the same interface, and users can fill forms easily and quickly.

Purchasing the main product seen on the TV commercial is possible with the application, following the same principle than to order a voucher. Other products related to the main product shown on the TV commercial are also available for sale. For example, if the TV commercial is promoting a perfume, a body cream of the same brand can be presented as related product, as it is susceptible to interest customers. These related products should be chosen by advertisers: indeed, they could use data gathered from purchasing online websites where their products are on sale. Looking at purchases made, they can know, for a group of customers buying a specific product, which related products they also bought.

In the survey, some people said they would be interested in buying products, while no one already bought something through their TV. Showing a targeted purchase interface listing all available products and offering the opportunity for users to buy them instantly could facilitate their decision of buying. In the same way than for vouchers, users can access to a list of available products, and after choosing one, have to fill forms with personal information, and confirm their purchase. Personal information that users put in forms is saved, while ordering a voucher or purchasing a product. In that way, they do not have to fill forms asking the same information several time, and the completion of actions (ordering a voucher, purchasing a product) require even less steps and are easier.

Finally, users can bookmark a product. This action is similar to the one possible on Internet browsers. Users can then come back later to a product that interested them, and are able to complete all tasks of the application.

During this project, the use of a second screen to interact with TV ads is investigated. Regarding results from the survey, and advantages offered by this device (for example the touch screen technology), a tablet will be used to implement a prototype. Users are familiar with tablets, and these devices offer a big screen compared to smartphones. The paper based prototype used for interviews thus represents an application on a tablet that viewers could use while watching commercial breaks on TV.

In order to build and use the paper based prototype, a scenario is introduced here, representing a possible utilization of the application by a user watching TV. This tool defines goals and steps to follow to complete them. Starting from a realistic situation (a viewer wants more information about a product seen on a TV commercial), it lists the possibilities that the application could offer, being used in front of the TV. The scenario includes the actions seen as interesting by users, as previously defined in the survey. In it, it is also assumed that the application, referred as IAD (Interactive Ad), is already downloaded on the tablet the viewer is using. The scenario goes as follow:

A user is watching a program on a TV screen, when the ad break starts. He sees the commercial of a movie that will soon be released. A tag, overlaying the ad, invites him to get more information about the movie. He takes his tablet and starts using the application to interact with the ad. He visits the website dedicated to the product, and bookmarks the product's interface. The user then orders a voucher (here, a reduction of 10% on one cinema ticket) and directly uses the coupon, buying a ticket for the movie on the day of its release. He then consults the list of his bookmarks, his basket and history.

The main actions made on the application by users can be listed as follow:

- Enter the code seen on the TV tag to identify the ad
- Obtain more information about the product
- Bookmark the product
- Order a voucher
- Buy a product
- Consult bookmarks, basket and history

In this project, the application represented by the paper based prototype is dedicated to a movie. As this product is for leisure, most of people willing to pay for it may be interested in characters, in the universe presented in the movie, in special effects, in the director, or in the story for example. In that sense, people are already showing interest in the product and are thus more susceptible to be interested in spending time using an application dedicated to the product.

A first version of a paper based prototype is designed, composed of the pages listed before and allowing users to complete the main actions described.

In the first page of the low fidelity prototype, users have to enter a code associated to an ad, in order to access to the interface dedicated to the product shown in the TV commercial.

Product Name <input type="text"/> <input type="button" value="ADD TO BASKET"/>	ENTER PRODUCT NUMBER	YOUR PRODUCT	HISTORY
PRODUCT N°: <input type="text"/> <input type="button" value="ENTER"/>			
KEYBOARD			

Figure 3-3 Paper based prototype n°1, "Enter product number" page

It corresponds to the code displayed on a tag on the TV screen. Indeed, during a chosen commercial, a tag overlays the TV stream, showing a unique code referring to the ad. The tag also displays some instruction or call to action as "get more information using the IAD application", in order to push viewers interested in the ad to use their application.

Then, they have access to a main page called "Your product", and to a main menu composed of three buttons: "Enter a code", "Your product" and "History". Users reach it directly after having confirmed the code they entered in the first page.

Product Name <input type="text"/> <input type="button" value="ADD TO BASKET"/>	ENTER PRODUCT NUMBER	YOUR PRODUCT	HISTORY
WEBSITE		PURCHASE THE PRODUCT	
FREE SAMPLE		BASKET	

Figure 3-4 Paper based prototype n°1, "Your product" page

In this main page, users have an overview of all the actions they can do. The first button of the main menu allows them to enter a product number in order to recognize a commercial they saw on their TV screen. The second one, selected on the previous figure, shows the sub-menu allowing users to access to micro websites, to order vouchers or purchase products, and to access to their basket. Finally, the third button of the main menu leads to the history of products previously seen by the user. A button allowing users to add a product to their basket is available on all pages of the application.

This page also contains a sub menu composed of the buttons “Website”, “Purchase the product”, “Free sample” and “Basket”. Different interfaces are accessible with these buttons. For example, users can obtain more information clicking on the “Website” button. They will access to a micro website gathering several different information about the movie seen on the TV ad, and they will be able to rate it.

Interfaces to order a voucher and to purchase a product are built in a similar way, both inspired by the ones users can find on online shopping websites as <http://www.amazon.com/> or <http://www.ebay.com/>. They are however simplified in order to make the completion of actions (ordering a voucher or purchase a product) as easy and fast as possible.

The “Basket” page gathers products users want to buy as well as vouchers they already ordered. Finally, the “History” page shows to users all the products they already consulted, allowing them to access the interface of each product by clicking on a link. Participants are thus able to use the application to consult interfaces related to TV ads while the commercials are already ended, or even while they are away from their TV.

3.3.2 Construction of interviews

In [32], important steps of an interview inquiry are described. They are used to construct interviews of this project.

Thematizing – The purpose of the investigation led by these interviews is to find out if people are capable of interacting with TV ads and if it represents an interest for them. Interviews' purpose is also to define what type of interaction interest customers, and to determine if they see second screens as a good way to interact with TV.

To support questions of the interview and to make the simulation more realistic for participants, a paper based prototype and some paper tools are used. Participants are asked to complete tasks using the paper based prototype, which represents the application on the tablet. They are also asked to draw some elements of it, and to answer several questions linked to the paper based prototype and to the project.

Designing – Interviews do not take place in a specific room, and only one person is interviewed at a time. Three first interviews are conducted, resulting on the modification of the paper based prototype. Then, three more interviews are conducted using the modified paper based prototype, and result on the construction of the final paper based prototype. This prototype gives the structure and indications for mock-ups, and thus, the application.

Interviewing – Interviews are all conducted in the same way, according to the following process.

At the beginning of the interview, a general presentation of the project is made to the participant. His knowledge on the subject is questioned, and the previous experiences that he had with interactive TV are written down. His interest in interacting with TV ad is questioned.

Then, a scenario is presented and explained to the participant. A paper based prototype is presented, and a brief explanation of the possible actions is made. The participant is then asked to complete some precise tasks, following the previously presented scenario. Tasks are presented and their completion observed. However, if a participant is not able to complete a task, and is stuck, he is guided through it in order to continue the interview.

While the participant is using the paper based prototype, its actions and remarks are written. How and if he completes the tasks asked is observed and written.

When the participant is done with the paper based prototype, questions are asked about the use of the prototype, what he liked or not, what he thought was missing, what he was expecting, and possible ameliorations or modifications he can think of. In addition to these questions, an alternative version for the product recognition is presented to the participant, inspired from the application IntoNow (<http://www.intonow.com/ci>): instead of asking the user to enter a code he saw on the TV ad, sound recognition is used while the commercial is aired on TV. When interested in a commercial, the participant starts its application and wait for it to recognize it, thanks to its audio track. This technique seems to be easier as it requires less effort from participants. The opinion and preference of the participant is asked.

Then, the participant is asked to tell which action is the most important according to him, or which one interested him the most. The purpose of answers to this question is to confirm results of the survey.

Some empty paper shapes of buttons or fields are then presented to the participant, who is asked to draw some icons to represent all the buttons of the app. Some blank paper shapes are available for him to create his own prototype. Observations are made on what the participant keep as it is, and on what he modifies on the paper prototype.

At this moment, questions are asked to the participant about the tag that is overlaid on the TV commercial, displaying the code used in the application to recognize the ad. The subject of how to catch his attention is discussed.

The interview finishes on questions about the use of the second screen: what are its advantages, and will the participant prefer to have the extra content displayed directly on the TV screen?

Note taking – During an interview, the interviewer writes down all the remarks, reactions and answers of the participant. This information is used to modify the paper based prototype in order to improve it.

3.3.3 First interviews: results and paper based prototype modification

Three interviews were first conducted, each one lasting for one hour with a single interviewee. The three participants were students at the bachelor or master level, all men.

Knowledge of participants regarding interactive TV was limited. None of them had already interacted with their TV, except one who owned a DVR, and who was used to pause and fast-forward TV stream. They however all showed interest in doing so.

Some remarks were made regarding elements of the paper prototype and their disposition. The main problem was for participants to clearly understand the purpose of some buttons and to do some tasks they were asked to complete in the smallest amount of actions possible. Icons drawn by participants to represent buttons of the application were almost the same for the three persons. They were icons commonly used on browsers or websites on Internet. One of the participant said that keeping text on buttons was clearer for him, while the others preferred icons.

Regarding the sound recognition to identify the ad viewers were interested in, two interviewees thought that this technology was not accurate enough. One of them also thought that he will not have time to recognize the ad while watching TV, as he may start the application at the end of the commercial. The last one, however, found that technique easier as it required fewer efforts from him.

When asked which action was the most interesting for them, two participants mentioned to order a voucher linked to a product they were interested in. The third one mentioned the website, in order to obtain more information about a product. They all three told being interested in the instant buying option, but were not sure to feel completely comfortable with it, as they had to give personal information.

The use of a second screen to interact with TV ads was mostly liked. Two participants appreciated it, as they both wanted to be able to see the TV stream at all time. They did not like the idea of missing some of the broadcasting content. As they were both already commonly using a second device in front of TV, they thought they will not have any problem using the application on the tablet. The third participant, on his side, said he preferred to have the extra content displayed on his TV screen. His opinion was that he would not like to use two devices (a TV remote control and a second screen) in front of TV. When asked if he would be willing to use a second screen if the control functionalities of the remote control were integrated in the application, he answered positively.

After these three interviews, the main modifications made on the prototype were on the syntax of its labels. Indeed, some buttons and labels were not clear for participants, and were thus modified. The expression “sample” was judged by interviewees as being wrongly used for the purpose of the application. It was thus changed to “voucher”, a word that interviewees were familiar with and understood in the context of the application. The general structure of the application and the position of its elements were kept as in the first paper based prototype.

Labels of the buttons of the main menu were modified, as the label “Your product” was understood by participant as a “Home” page. They all told that it would be more logic for this page to be the first button, so the menu’s structure of the second paper based prototype followed their remarks.

As several products could be purchased through the application, the label of the section referring to this instant buying option was corrected. Another point underlined by interviewees was the necessity to have a “Bookmark” button instead of an “Add to basket” button. Indeed it was too strongly associated with the action of buying instead of to an actual bookmarking action. Users were not comfortable to use it, as it let them think that they were starting a buying process. The use of the star symbol to represent the bookmarking action was chosen because people are familiar with it, as it is present in a majority of Internet browsers.

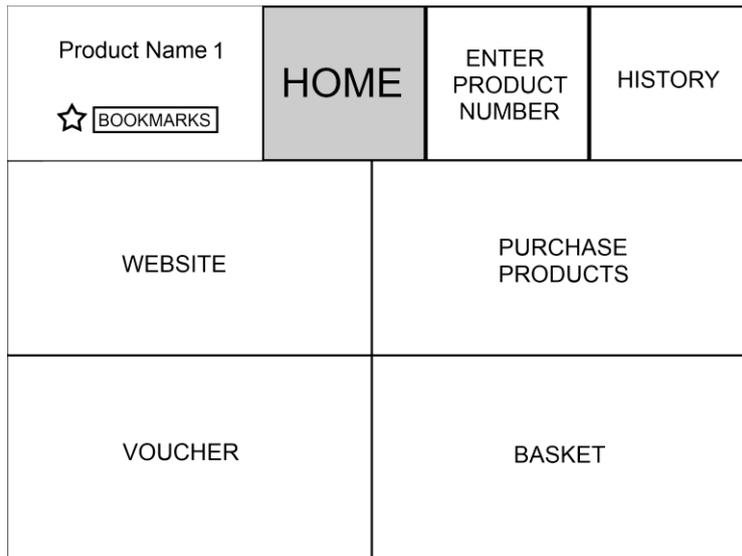


Figure 3-5 Paper based prototype n°2, "Home" page

In the modified paper based prototype, the buttons of the main menu changed, as well as the "Bookmark" button that appeared under the product name in the shape of a clickable star, and labels of the sub-menu. The purpose of these modifications was to make the application easier to understand for users.

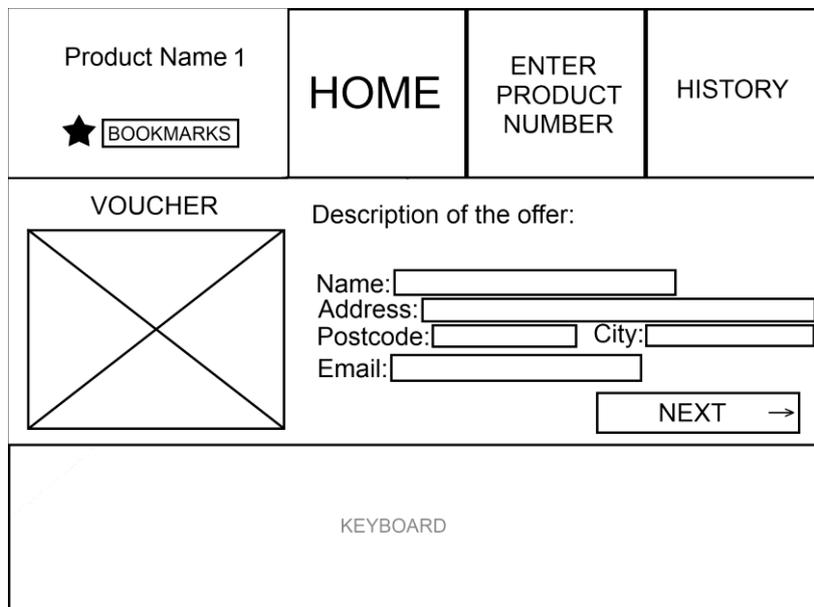


Figure 3-6 Paper based prototype n°2, "Voucher" page

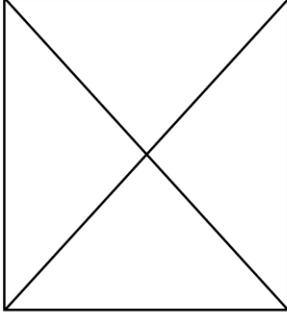
Product Name 1 ★ BOOKMARKS	HOME	ENTER PRODUCT NUMBER	HISTORY
Movie Title (Year)	Genre:	Director:	Actors:
	Synopsis:	Rating ○ ○ ○ ○ ○ 0/5	

Figure 3-7 Paper based prototype n°2, "Website" page

Interfaces of the different pages, as "Voucher", "Purchase", and "History" were not modified, as participants understood them and were able to navigate through them and complete the action they were required to do. Interviewees declared that they were familiar with ordering and purchasing processes, which remind them the online purchasing processes that they were already commonly using.

3.3.4 Second interviews: results

With the modified paper based prototype, three other interviews were conducted. They followed the same process as the previous ones, only with a different low fidelity prototype. Participants were asked to complete the same tasks on the paper prototype, and were asked the same questions. All the participants were students at the master level, one of them being a woman. They were all in charge of the main expenditures of their houses.

This time, two participants over three were familiar with interactive TV, as they had already use their phones to send SMS to interact with live TV shows. One of them also had a DVR, often using it to control his TV stream. The third one, however, was not familiar with it, and his interest in interactive TV was limited.

Regarding the paper based prototype, remarks were made about its structure. Two of the participants considered that the sub-menu and the main menu locations should be switch, allowing users to always access to the extra information, the vouchers and purchases interfaces, and the list of bookmarked products.

Labels of buttons were understood, but the organization of the application and the way of completing tasks were discussed. Participants wanted to clarify the structure and gave their own ideas. They did not like that the button accessing to the bookmarked product list was on all the pages as they all three saw it as secondary. However, they like the use of the star to represent the action of bookmarking. Icons drawn by interviewees to represent the different buttons of the application were mostly not different from the ones resulting from the first three interviews. Again, they used icons commonly seen on Internet browsers. All the participants declared preferring icons instead of text for the main menu.

Using a code associated to a TV commercial in order to recognize a product was preferred by two of the participants. One of them thought that, using sound recognition, he will not have enough time to recognize the product. Indeed, thinking of the time it will take him to start his tablet and launch the application, he thought that in most of the cases the commercial will end before he could start using the application. The second interviewee wanted to be able to use the code associated to the commercial at any time he wanted, not only while the commercial was aired on his TV screen. The third participant, however, preferred the sound recognition, as it was requiring fewer actions from him to recognize the product.

The first participant was mostly interested in the possibility of directly purchase a product with the application. Often using online stores and websites to buy his products, he was comfortable with the idea of sharing some of his personal information. The two others were more interested in vouchers, which represented for them a good way to know a product better.

When asked about it, all interviewees declared being in favor of the second screen. Using their TV remote control to interact with their TV was not appealing for them. They also all considered that having extra content hiding the TV stream will annoy them. One of them underlined the fact that he will not be willing to interact with any TV content for an extended period of time if he was missing his TV program. Moreover, another participant thought that buttons, the only functionality available on a majority of TV remote control, were too limited,

and will make interactions with TV difficult to complete. Each one of the participants was familiar with second screens, and was often using one or several of them while watching TV.

3.4 Conclusion

TV commercials typically do not get full attention from viewers, who are often completing other tasks, related or not to TV, while watching them. Interactivity thus appears a way to increase viewers' interest in TV ads by involving them, changing their behavior from the passive one they used to have in front of traditional TV. Digital TV presents some of the same interactive characteristics and advantages than numerous interactive devices, such as computers for example. As digital TV is already spread among people [7], interactions between viewers and broadcasters/advertisers can be developed, allowing TV viewers to become more active in front of TV, and to have more control on the content they watch.

Users' point of view and expectations about interactive TV is required to define which interaction is seen as interesting or not. It is also important to actually try these interactions with users, to determine which ones they are actually willing or able to do while watching TV. Using tools as a survey and interviews, some preferred interactions stood out, and users' preferences were listed. It results that participants prefer to use a second screen, in order not to hide the stream of their TV and miss a part of their TV program. The use of a tablet was mostly like by participants as it presents a wide touch screen, making interactive tasks easy to understand and complete. This enthusiasm for second screen was also strengthened by the fact that a majority of users are already often using them in front of their TV. Second screen is thus not a new concept for users.

Answers from survey and interviews led to the definition of a final paper based prototype. This prototype is the base of the application, as it presents its structure and the possible actions to complete with it. It will lead to the creation of mock-ups, which will accurately represent the application.

4 Implementation

4.1 Introduction

Final paper based prototype defines the application to be implemented. It gathers all the functionalities needed to complete all tasks seen as interesting by users, here represented by participants of the previous survey and interviews. These two tools, combined with a scenario and paper based prototypes, were used to build an application answering to actual expectations of users.

The final paper based prototype is a draft representation of the application made in white and black with simplified shapes and buttons. Graphical aspect of the application is defined thanks to mock-ups, showing every pages of the application in an accurate way, with colors and coherent design.

The application has to be developed in a way that will allow a fast and coherent display for users. Anticipating its use on a tablet, specific characteristics of the device has to be taken into account. The format chosen should allow users to be able to complete all actions previously listed as part of the application

With interviews, participants were able to give their impression and opinion, but the use of the application was not accurate, as paper based prototypes were used to represent it. With the implementation of the actual application usable on the tablet, users will be able to try it for real. Gathering their feedback while they will be using it is important to verify the coherence of the application. Moreover, it will confirm that the application is really fulfilling their expectations and that its use represents an interest for TV viewers. Usability tests will be conducted in order to test and confront the application to users.

4.2 Technical realization

4.2.1 Final paper based prototype

Gathering results from previously conducted interviews, modifications were made to the paper based prototype n°2. The organization of its structure was changed, as the main menu became the sub-menu, and vice versa. The main menu of the final paper based prototype was thus composed of the following pages: “Home”, “Info”, “Vouchers”, “Purchase products” and “Bookmarks list”. Labels were not used anymore for the main menu, and each button was represented by its corresponding icon.

Pages were added to the structure of the application, such as a page containing a list of available products to purchase, and another containing a list of available vouchers to order. In order to catch users’ attention from the start of the application, these two lists were also added to the “Home” page, giving users an overview of their possibilities. The “Home” page was thus composed of these two lists, and of two buttons: “Enter a new code” and “History”. These functionalities were indeed seen as secondary by interviewees and were relegated to the sub-menu.

During the interviews, participants had to complete several tasks previously defined regarding the scenario presented. Actions required to complete these tasks are as follows, shown here on the final paper based prototype.

Enter the code to identify the TV commercial

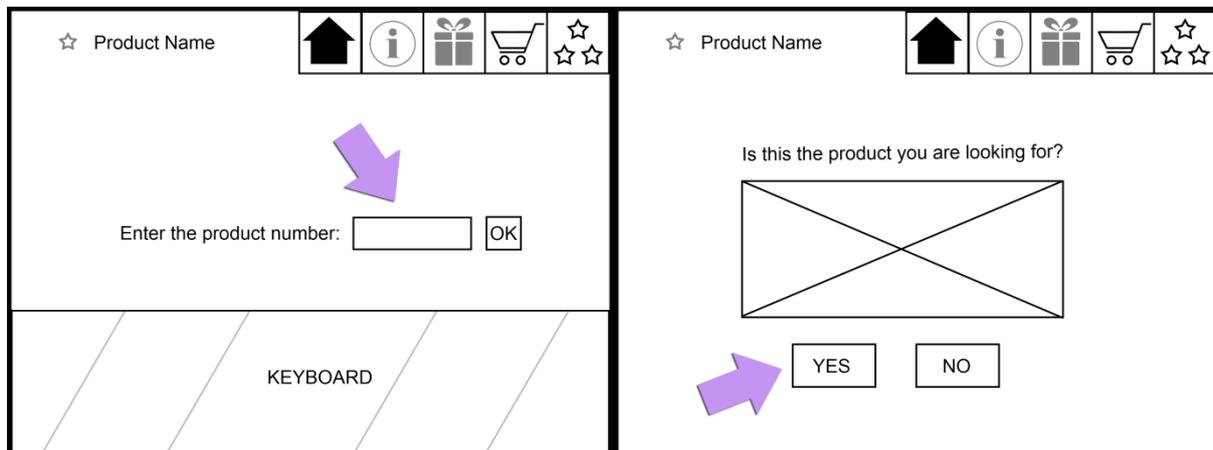


Figure 4-1 Final paper prototype: Enter product number

Obtain more information about the product

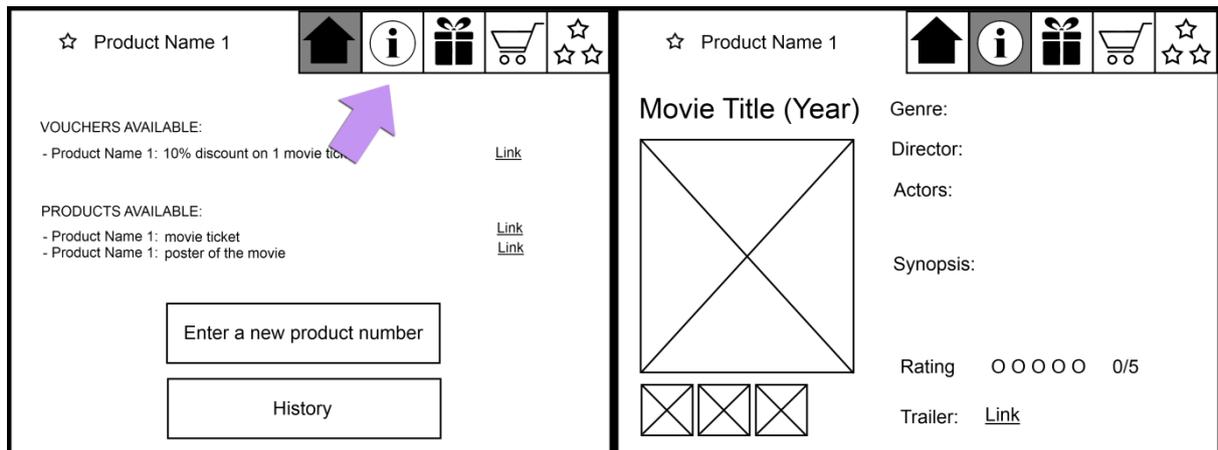


Figure 4-2 Final paper prototype: Obtain information

Bookmark the product's interface



Figure 4-3 Final paper prototype: To bookmark

Order a voucher

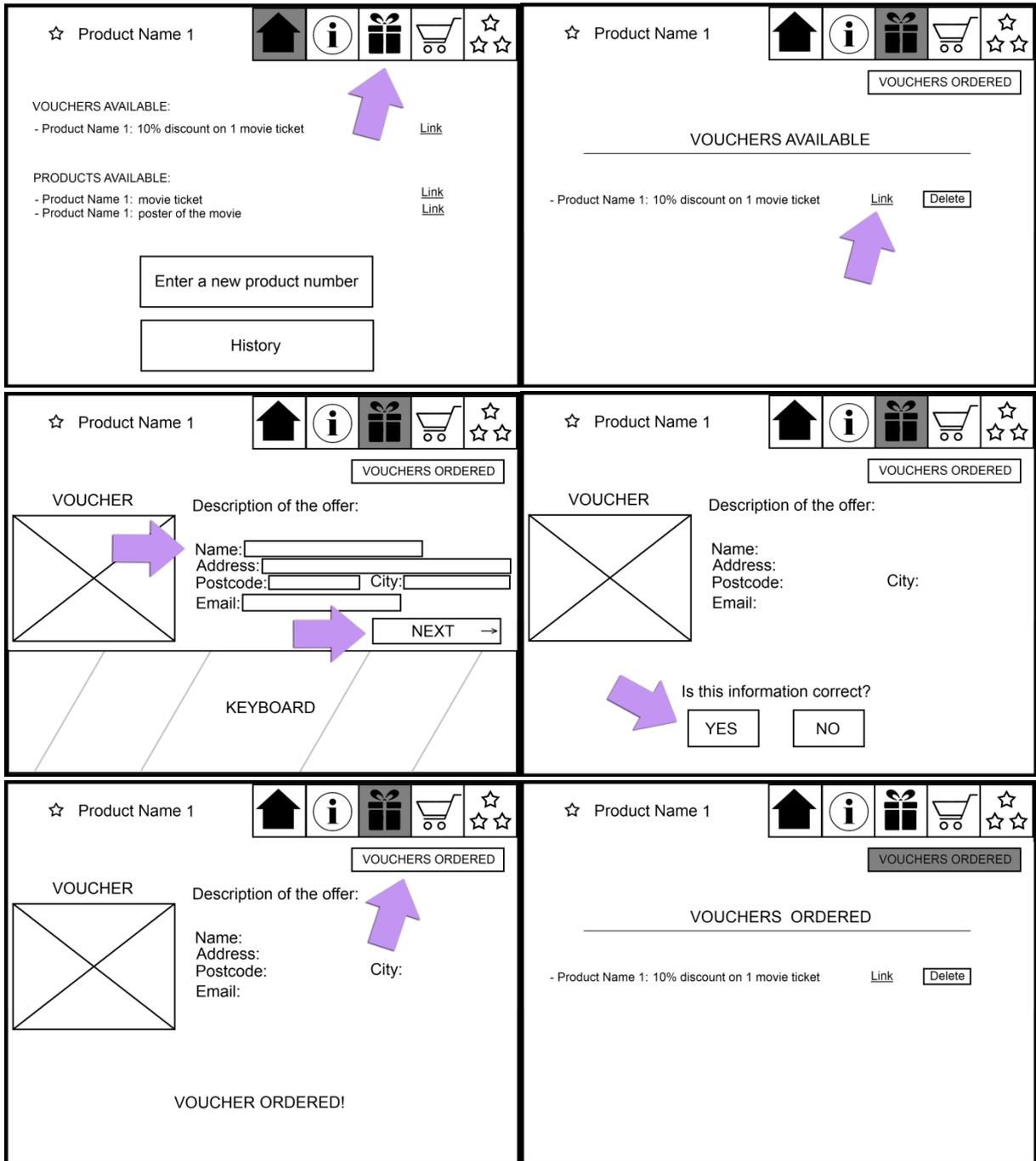


Figure 4-4 Final paper prototype: Order a voucher

Purchase a product

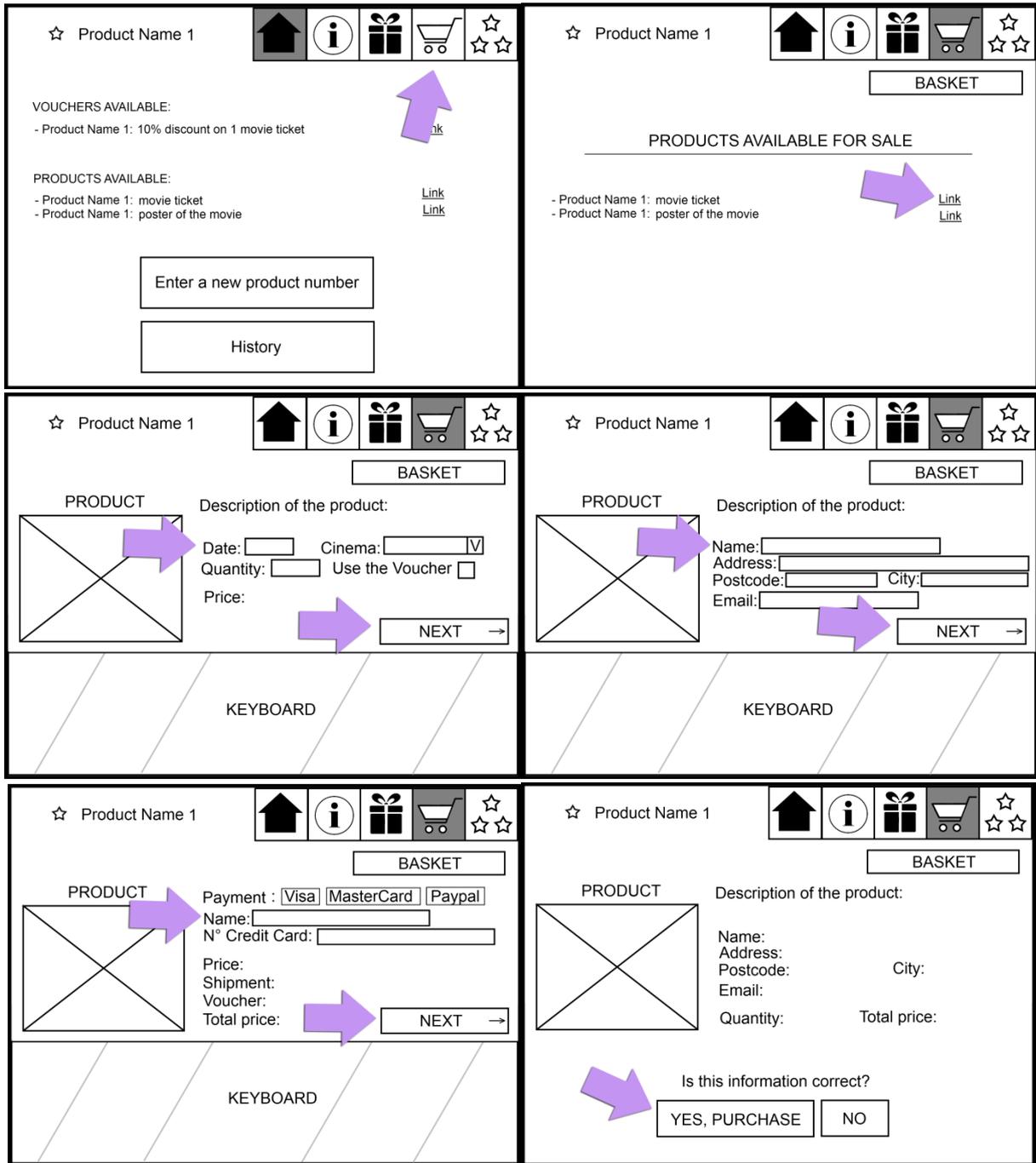




Figure 4-5 Final paper prototype: Purchase a product

Consult bookmarks' list

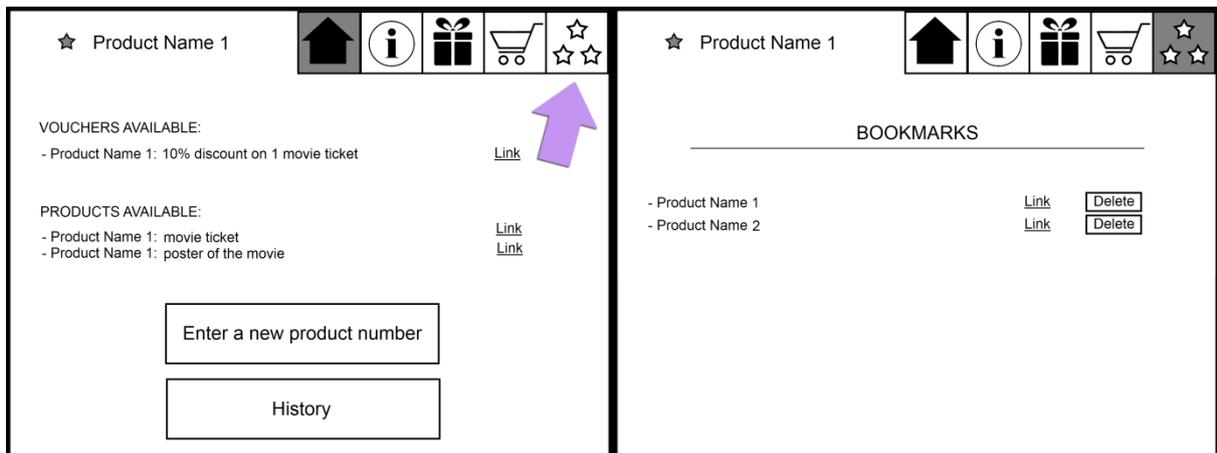


Figure 4-6 Final paper prototype: Bookmarks' list

Consult history

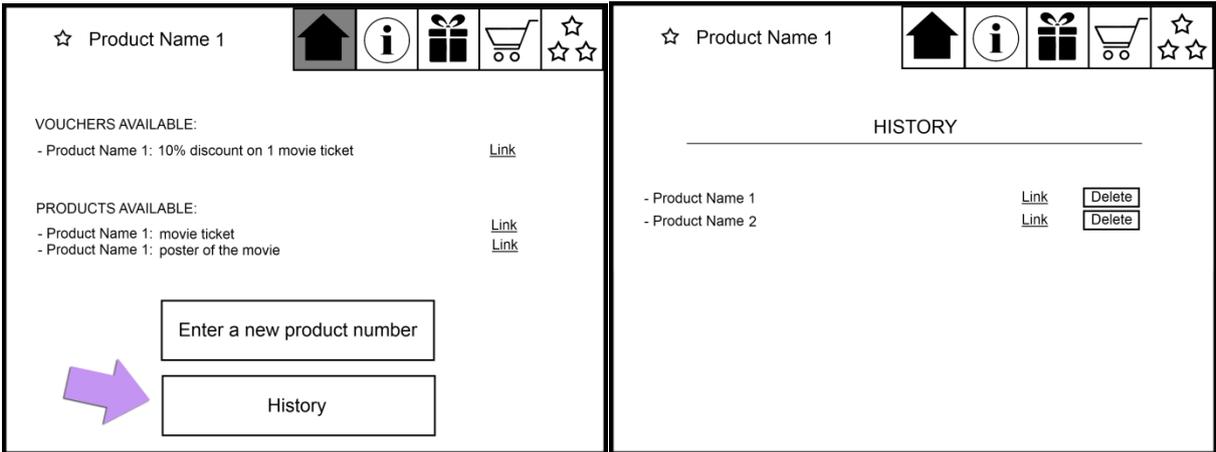


Figure 4-7 Final paper prototype: History

4.2.2 Use case and use case tables of possible tasks

The tasks presented previously on the final paper based prototype can be presented with the following use case diagram and tables. The application must allow users to complete all of these tasks, and no other feature will be added to the prototype.

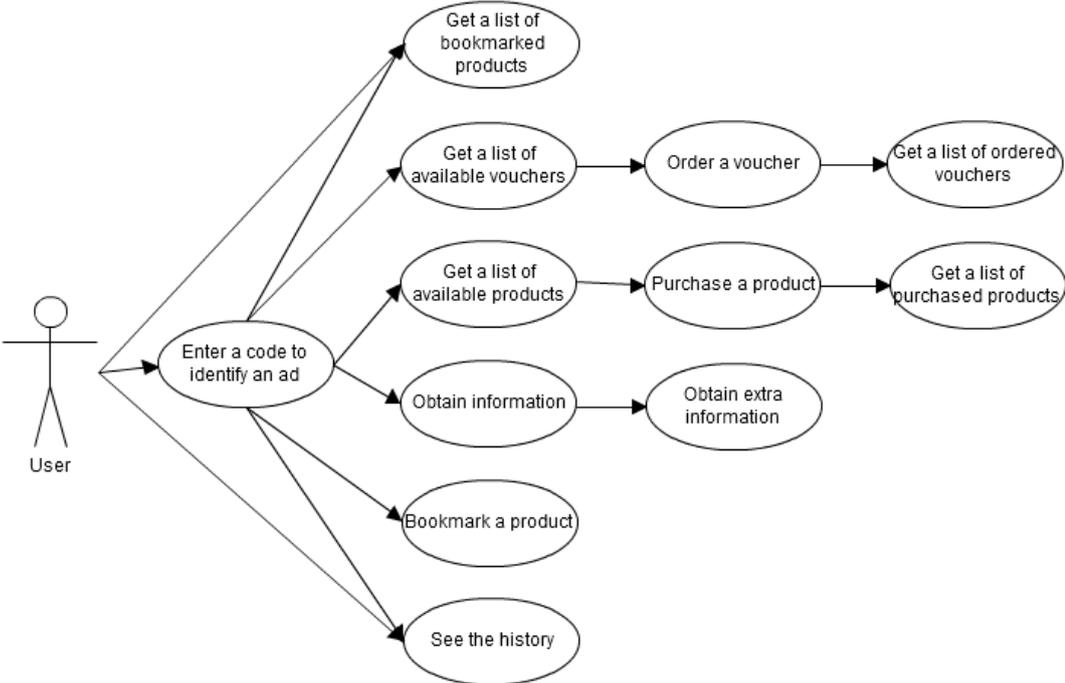


Figure 4-8 Use case diagram, made with <http://www.gliffy.com/>

Tasks available in the application can be detailed in several steps. Goals of main ones are described in the following tables with their preconditions, their success and failure end conditions. Primary and secondary actors are also listed.

Table 4-1 Use case: Enter a code

Use case	Enter a code	
Goal	Identify a TV commercial and access to its dedicated interface	
Preconditions	Application IAD is already download on the tablet; the user knows the code associated to the TV commercial, as he saw it on a tag displayed on the TV screen during the ad	
Success end condition	Access the “Home” page of the interface dedicated to the ad	
Fail end condition	Staying or going back on the “Enter a code” page	
Primary actor(s): Secondary actor(s):	User TV advertisers, broadcasters	
Description/Main success scenario	Step	Action
	1	Start the tablet
	2	Click on the application’s icon to start it
	3	Enter the code displayed on the tag overlaying the ad seen on the TV screen
	4	Confirm that it is the right commercial

Table 4-2 Use case: Obtain information

Use case	Obtain information	
Goal	Obtain information about a product seen on a TV ad, access to extra audiovisual content	
Preconditions	Application IAD is already download on the tablet; the user knows the code associated to the TV commercial, as he saw it on a tag displayed on the TV screen during the ad; the user already entered the code and has access to the “Home” page of the interface	
Success end condition	Access the “Extra audiovisual content” page of the interface	
Fail end condition	Staying on the “Home” page	
Primary actor(s): Secondary actor(s):	User TV advertisers, broadcasters	
Description/Main success scenario	Step	Action
	1	Click on the “Information” button on the menu displayed on the “Home” page
	2	Read information; rate the product
	3	Click on the link displayed to access the extra audiovisual content

Table 4-3 Use case: Order a voucher

Use case	Order a voucher	
Goal	Order a voucher as a discount on a product related to the ad, or a free sample	
Preconditions	Application IAD is already download on the tablet; the user knows the code associated to the TV commercial, as he saw it on a tag displayed on the TV screen during the ad; the user already entered the code and has access to the “Home” page of the interface	
Success end condition	Access the “Vouchers ordered” page of the interface dedicated to the ad	
Fail end condition	Staying on the “Home” page	
Primary actor(s): Secondary actor(s):	User TV advertisers, broadcasters	
Description/Main success scenario	Step	Action
	1	Click on the “Voucher” button on the menu displayed on the “Home” page
	2	Choose a voucher on the list of available vouchers
	3	Read information; fill the form with personal information
	4	Confirm that the written information is correct
	5	Click on the “Vouchers ordered” button

Table 4-4 Use case: Purchase a product

Use case	Purchase a product	
Goal	Purchase the main product presented on the TV ad, or a related product	
Preconditions	Application IAD is already download on the tablet; the user knows the code associated to the TV commercial, as he saw it on a tag displayed on the TV screen during the ad; the user already entered the code and has access to the “Home” page of the interface	
Success end condition	Access the “Basket” page of the interface dedicated to the ad	
Fail end condition	Staying on the “Home” page	
Primary actor(s): Secondary actor(s):	User TV advertisers, broadcasters, credit card company, bank, shipping service	
Description/Main success scenario	Step	Action
	1	Click on the “Products on sale” button on the menu displayed on the “Home” page
	2	Choose a product on the list of available products
	3	Read information; fill the forms with personal information

	4	If so, choose to use a previously ordered voucher or not
	5	Confirm that the written information is correct
	6	Click on the “Basket” button

Table 4-5 Use case: Bookmark a product

Use case	Bookmark a product	
Goal	Bookmark a product in order to have access to it later and be able to complete all the actions of the application while the TV ad is not aired on the TV screen anymore	
Preconditions	Application IAD is already download on the tablet; the user knows the code associated to the TV commercial, as he saw it on a tag displayed on the TV screen during the ad; the user already entered the code and has access to the “Home” page of the interface	
Success end condition	See the product listed as a bookmarked one on the “Bookmarks’ list” page	
Fail end condition	Not filling the star button representing the bookmarking action	
Primary actor(s): Secondary actor(s):	User TV advertisers, broadcasters	
Description/Main success scenario	Step	Action
	1	Click on the star button representing the bookmarking action to fill it
	2	Click on the “Bookmarks’ list” button on the menu displayed on the “Home” page
	3	See the product listed on the “Bookmarks’ list” page

4.2.3 Interface colors, shapes and mock-ups

Two gradients of neutral colors are mainly used to design the prototype: purple and grey. As the background and buttons of the prototype are purple, the grey is used for texts and labels, in order to contrast and create a design easily readable. Moreover, bright colors are avoided, and pale colors chosen, in order to let pictures of products be more visible and, again, to let them contrast with the background.

Yellow is chose to fill the button in shape of a star used to bookmark a product, reminding the ones that users can commonly find on Internet browsers. As users are familiar with this button, it is designed in a similar way in order to facilitate the understanding of its function. The three colors used (grey, purple and yellow) are complementary, creating a balance in colors of the prototype's interface.

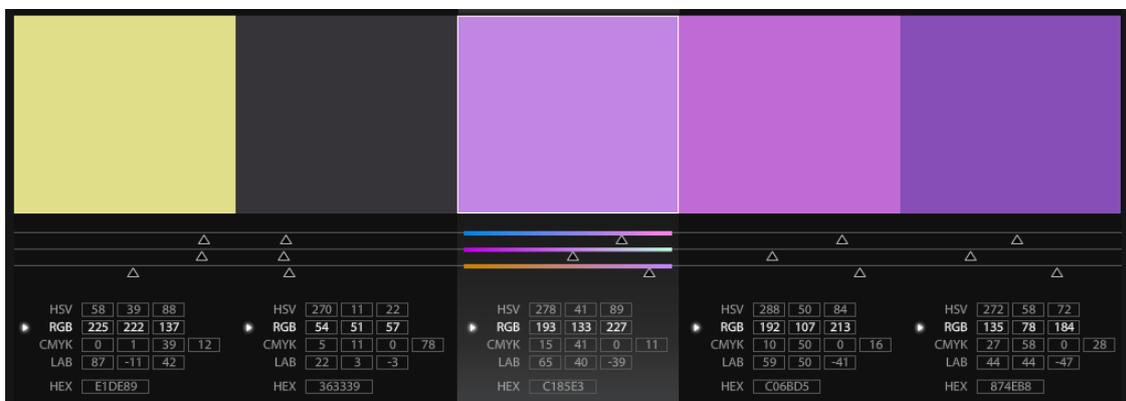


Figure 4-9 Interface colors of the prototype, made with <http://kuler.adobe.com/>

The basic font Arial is used, to make the reading of texts and labels easy for users. As the prototype is developed on a tablet, the style guide of application involving rounded corners for buttons is adopted.



Figure 4-10 Menu's buttons (not selected, selected) of the prototype



Figure 4-11 Example of a button and a label of the prototype

Before starting the implementation, a mock-up of each page of the application is made, in order to define precisely the design and functionalities of the high fidelity prototype.



Figure 4-12 Mock-up of the "Home" page of the prototype



Figure 4-13 Mock-up of the "Purchase a product" page of the prototype

4.2.4 Technical choices and high fidelity prototype

The application is implemented on an Apple tablet (iPad 2); the option chosen in this project is to develop it as a website that is shown as an application. As the application is not developed as an Apple application, an icon is created on the tablet. It links to a full screen version of the website, displaying it as a regular application.

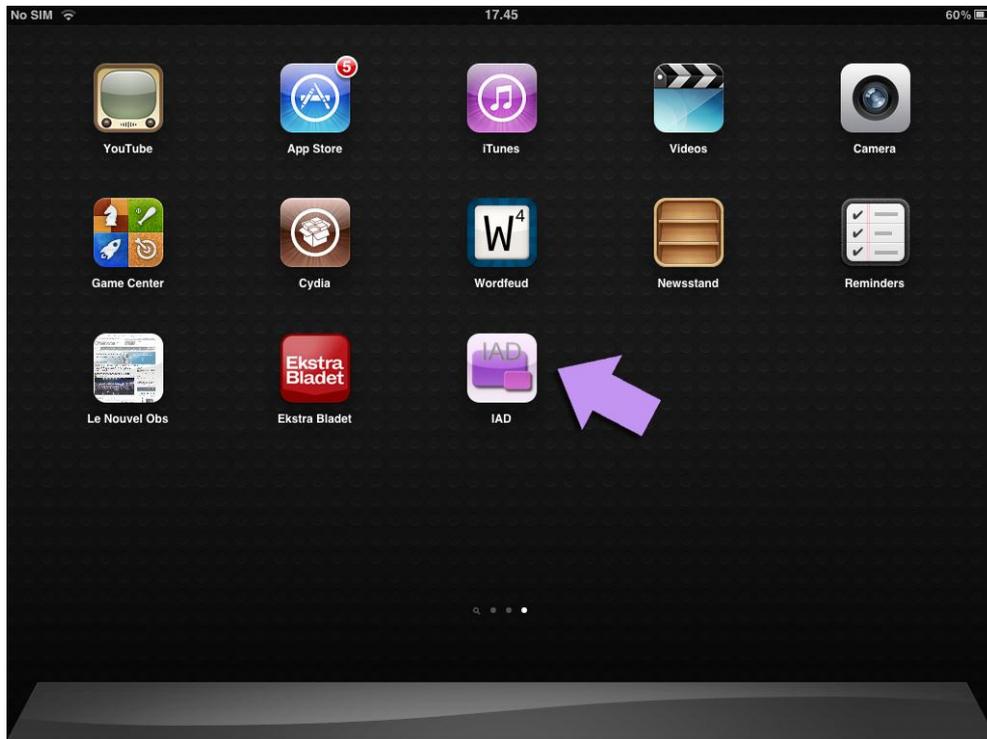


Figure 4-14 Screenshot of the tablet interface with the icon of the prototype IAD

The code of the website involves the following programming languages: HTML5, CSS3, PHP and JavaScript. The website is hosted on an Aalborg University server.

The main part of the code is done in HTML5 and CSS3, as they are used to build structures of pages of the application. Pages are linked together thanks to menu buttons or other buttons and links, and together constitute the structure of the website.

In order to save and reuse information that users enter in forms of the application (their name, address or the quantity of products they want to purchase for example), text files are created and filled with them. To open, read or write on text files, PHP instructions are used. These files are also used to know if a product is bookmarked, and to list the history of a user. JavaScript functions and instructions are used to display the website in full screen mode on the tablet, or to link a button to the right page when several buttons are shown in the same form of a page for example.

The high fidelity prototype is part of a system composed of a TV screen, an iPad tablet and the AAU server hosting the application. The stream of the TV screen displays a part of a TV program and a commercial break in the middle of it. On the first ad of the ad break, a tag is visible on the right top corner of the screen. The user has to enter the code shown in this tag

on the first page of the application, and it determines which ad he is watching. The user can then access to the interface dedicated to the ad he choose.



Figure 4-15 TV stream displaying a commercial with a tag

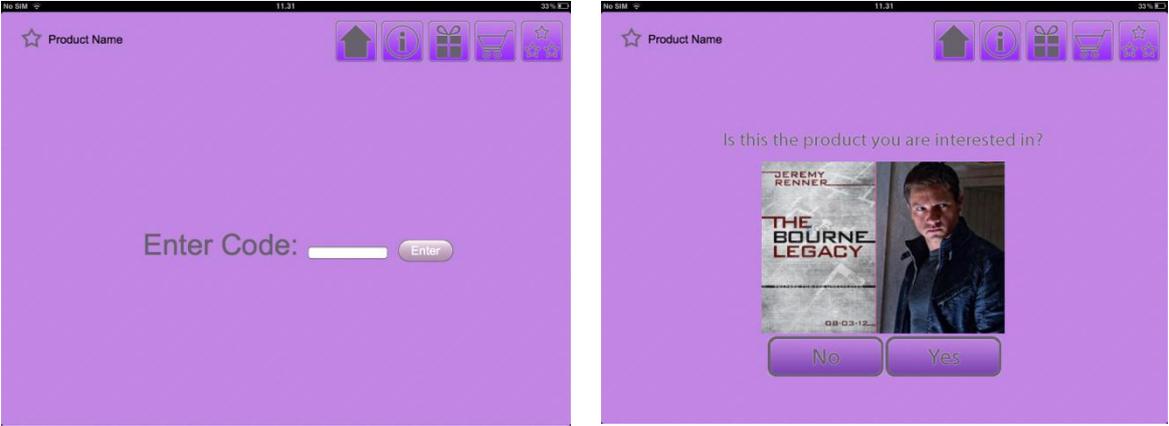


Figure 4-16 "Enter a code" page on the prototype

4.3 Usability tests

4.3.1 Construction of usability tests

Thematizing – The aim of these tests is, in a first time, for users to try all the functionalities of the application, to be sure that they can understand and complete tasks without problems. These tests are also conducted to answer several questions. Indeed, they should determine if people are able or not to complete a task on a second screen in front of their TV. Various points are observed: where users' attention goes, the time they took to complete an action, their success or failure in completing tasks, and their general behavior while using a second screen. One other goal of these tests is to determine if the selected tasks are seen as interesting to complete by users, while they are watching TV commercial breaks. The question of whether or not they are interested in the presented products is also asked, trying to determine which products interested them the most to interact with.

Designing – These usability tests take place in specific rooms, as the ambient of a living room is recreated. A TV screen and a tablet are used. To give the impression of being in a living room, people sit on couches, to make them comfortable during the test, and for them to have more realistic reactions toward the utilization of the prototype. Each test is conducted with a single participant.

Interviewing – Tests are all conducted in the same way, according to a process similar to the one used for the previously conducted interviews with paper based prototypes. A system composed of a TV screen, a tablet and the website hosted on the AAU server is used. The stream displayed on the TV, simulating a channel program and a commercial break, is made with Pinnacle VideoSpin (http://apps.avid.com/Studio_trial/?cmpid=ST-PA-P151). A tag displaying a call-for-action and a specific code is displayed on the right top corner of the TV screen from the beginning to the end of the first ad. The process of the usability tests is as follows.

The test starts with some general questions asked to the participant about what he thinks interactive TV is, and about his knowledge and experience about it. A quick definition of interactive TV is given, as well as some examples, in order to give the participant an overview of the subject.

The prototype is then used. As the participant is sitting on a couch in front of a TV screen, a tablet is put near him. He is told that he will have to use it in order to interact with a TV ad, in which he will see a tag displaying a code. The tasks he will have to complete are listed a first time.

TV stream is launched, and a cooking show appears on the TV screen. After few minutes of it, the ad break starts. The first commercial displayed is the one the participant will be asked to interact with. As a tag, displayed on the right top corner of the TV screen, shows a specific code, the participant enters it in the first page of prototype on the tablet and starts using the application. After 6 minutes of TV commercials [28], the ad break ends, and the cooking show starts again.

While using the application, the user is reminded the tasks he is asked to do: obtain more information, order a voucher, buy a product, bookmark the commercial's interface and consult his history and bookmarked products. His behavior during the completion of these tasks is observed, to know in which device he focuses his attention the most. The success or failure to complete tasks is also observed, and his remarks and behavior are written down while he is testing the application. To make the application more realistic, a link to another commercial interface, about a perfume, is listed in the application's bookmarks' list and history. The user has access to an interface dedicated to this product and some of its related products, and can decide to remove this commercial interface from his personalized lists of bookmarks and history. He can thus access to a commercial interface while he is not watching the corresponding ad anymore.

When the participant stops using the prototype, questions are asked. In the same way than during previous interviews, the participant is asked to choose the action that he sees as the most interesting for him. General questions about the prototype are then asked to know if something has to be improved. Interest of the participant in the product presented on the TV ad with which he interacted is asked, as well as his interest in using an interactive application during TV commercial breaks. Finally, a question regarding advantages or disadvantages of using of a second screen in front of TV ads is asked.

Note taking – During the entire test, the interviewer takes notes of every action and remark of the participant. His answers to questions are also written. His behavior with the second screen is observed, as well as his success and failures in completing tasks on the application. Where his attention goes while using two devices at the same time is observed and written too. This information is used for the conclusion of the project.

4.3.2 Results of usability tests

Five tests were conducted, involving three women and two men aged between 22 and 29 years old, all at the master level. Usability tests took place on specific rooms where the ambient of a living room was created, and lasted, on average, for 45 minutes. Only one participant was interviewed at a time.

All the participants understood what Interactive TV is, and two of them already had had an experience with it. Three users over five shown an interest in interacting with their TV, while the two last ones were not interested mainly because of the money they thought it could cost (for example, the cost of sending a SMS to interact with a TV show) and that they were not willing to pay.

While using the prototype during the TV ad break, three participants were mainly focusing on the tablet, rarely looking at the TV and paying no attention to what was shown on the TV screen. One of them had his attention divided between the two devices, and was looking frequently at the TV screen but still being able to complete tasks on the tablet. The last participant's attention was mainly focused on the TV screen, and completing tasks was requiring him an effort of concentration. For the three users who were still using the application when the ad break ended, two of them continued to use the prototype and did not stop to watch the TV program again.

Participants thought that the prototype on the tablet was easy to understand. However, they underlined some problems on the interface of the application as, for example, some buttons that were considered too small, or the fact that the "star" button, used to bookmark a product, was not visible as it was on the left top corner of the screen. Two of them also talked about a lack of images and animation on the application, as they thought it would be a way to catch their attention over TV.

Moreover, two participants would have preferred the "Basket" and "Vouchers ordered" buttons to be accessible from the main menu, having a hard time finding them on the application. Participants also asked for the possibility to have a wider choice of products to purchase, as the list presented on the application was considered too short.

Buying a product was the favorite action of three of the participants. They were all three seeing instant buying as the most interesting interaction you could have with a TV commercial, saying that vouchers will contribute to push them to buy more impulsively. They were all enthusiast about this function. One of the two remaining participants thought that obtaining more information about a product was the most interesting interaction, as he was not used to purchase products online. The second one, also not familiar with online buying, was more interested in the possibility of ordering a voucher, preferring offers as free samples for example, that will not require a purchase from him to try a product.

Movies were seen as interesting products to interact with by all the participants. When being interested in a movie, they were almost all trying to obtain more information about it: a list of the featured actors, the duration of the movie, the name and previous movies of the director, a synopsis or a trailer for example. A participant expressed his interest in interacting with products from brands having a strong and good image on medias, meaning that people will be willing to associate their name with the brand or product and to share it. Two other

participants shown interest in interacting with products they were occasionally buying, as tickers for a concert, clothes, books for example, as they were already buying them on Internet. Participants however did not shown interest in interacting with groceries products or in buying them through an application.

When asked about the interest of interacting with an application while watching TV commercials, participants were all positive. Four participants over five were commonly doing something else during TV ad breaks, as for example using a second screen or going out of the room to go to the kitchen or another room. Two participants declared that they will be even more interested in interacting with an ad related to the TV program aired at that time (before and after the commercial break).

Regarding the tag displayed on the TV screen during the commercial, participants had different opinions on how it could catch their attention. Displaying text with a contrasting background was seen as a good option, as long as the tag was displayed with a small delay compare to the beginning of the ad, as it was done during usability tests. In that way, viewers quickly understood that it was a message added to the ad. Adding images and logo to the tag were some ideas given by participants, as they thought having a moving image will catch their attention. Two participants would have liked to see the tag's message displayed on a banner (more or less transparent to allow viewers to follow the commercial streaming behind) on a part of the TV screen. A participant declared that the solely fact to see a code shown on the tag pushed him to start the application and see what was linked to it.

Having an intrusive message displayed over their TV ads was not bothering participants who were enthusiast about this idea. Four of them however stated that these messages should only be displayed during advertising, and not during TV program, where they will be considered as too intrusive.

Finally, participants were all comfortable with the tablet, even the ones who were not familiar with this device (two participants over five). They understood easily how to use it, the touch screen allowing interactions to be quickly completed. Having a second screen in their hands was not seen as a negative point by participants, as a majority of them was already commonly using another device in front of TV.

4.4 Conclusion

The implementation of the prototype was made respecting functionalities defined by previous survey, interviews and final paper based prototype. In order to respect these functionalities, the prototype was defined precisely before the start of the implementation: its structure, its possible actions to complete, its interface. Use case and use case tables were made, as well as mock-ups to create guide lines to follow during implementation.

The system used for the high fidelity prototype was composed of a TV screen, an iPad tablet and the Aalborg University's server to host a website. Indeed, the prototype was implemented as a website and displayed on the tablet in full screen mode, its appearance being similar to the one of a tablet application.

During usability tests, the ambient of a living room was recreated, in order to try to put participants in a situation as realistic as possible. While sitting on a couch in front of a TV screen, participants used the prototype and gave their feedback about different points regarding it. They also answered to several questions. The easiness of the completion of the tasks or the shapes of buttons' icons was discussed for example. Moreover, interest of participants in the products presented (a movie, a perfume), and in the utilization of such an application in front of TV ads was questioned. A majority of them declared that they were enthusiast about the idea of using an application during commercials, as they were already commonly doing something else while watching TV ad breaks.

The second screen was mainly liked, as its made interactions between users and TV easy and fast. Participants, even when not being familiar with tablet devices, understood rapidly how to use it.

5 Conclusion and perspectives

5.1 Project achievement

TV viewers are commonly doing something else during commercial breaks [1]. Multi-tasking, their attention on the ad tends to decrease as they are focusing on the other task they are completing, or as they even leave the TV room. Indeed, proliferation of personal devices connected to Internet accustomed people to have more control on the content they watch or read. As digital TV is already available in almost all European countries [8], interactivity can be integrated in it to change people passive behavior toward TV, allowing them to interact with TV content. Indeed, a purpose of interactive TV is to make people become active in front of their TV screen. Involving viewers in TV content with applications, games or polls for example can increase their interest in it. Applying this to TV commercials, users can spend the ad breaks' time interacting with products, increasing their willingness to make actual purchases of them. When asked what they are doing as other tasks while watching TV, a majority of people answer that they use another personal device such as computers, smartphones or tablets. As users are already familiar with these devices, second screens could be integrated in interactive TV, their technologies as touch screen for example allowing interactions between users and TV to be fast and easy.

One of the guide lines of this project was to be user centric. Indeed, to interact with TV content using a second screen is not something spread among TV viewers, and their needs and expectations can be define more precisely. Taking them into account will lead to the implementation of prototypes answering to what users actually want or need. To gather viewers' opinion, knowledge and feedback on this theme, several tools were used during this project. They were involving users as much as possible in each step leading to the construction of the final high fidelity prototype. A survey was first used to gather information about their behavior with TV, with second screens, as well as with interactive TV and TV commercials, from a maximum of persons. During interviews, questions were more focused on TV ads and possible interactions between them and viewers. A scenario and paper based prototypes were used to allow participants to imagine as accurately as possible a situation where they could use second screen to interact with TV ads. A final paper based prototype was made and was used as a base to implement the high fidelity prototype. After implementation, usability tests were conduct with participants to gather their feedback. They were questioned about the application presented, the use of a second screen to interact with TV content, their interest in the presented interactions as well as about their opinion on using an application while watching TV commercials.

The prototype was developed on an iPad tablet. It was coded as a website and presented on the tablet as an application. The realization of this high fidelity prototype was another guide line of the project. Indeed, it was considered as required to gather accurate feedback from people about the use of a second screen to interact with TV commercials. The scenario and paper based prototypes used during interviews helped to define the final prototype but still had a wide range of inaccuracy as participants were asked to imagine a situation. The

interview environment not being realistic enough, a high fidelity prototype was necessary to gather more accurate information. For example, to observe in which device participants' attention was focusing while they were using the second screen in front of the TV screen.

Analyzing results coming out of the different tools used in this project, and especially from usability tests, an answer to the question "Using a second screen to interact with TV commercials, what interactions and what products interest users?" can be made.

The interaction seen as the most interesting by a majority of participants of this project was to be able to instantly purchase a product seen on a TV ad, or a product related to it. Ordering a voucher corresponding to an offer on these products was also seen as an interesting interaction. Participants thought that having access to vouchers will push them to buy more easily, attracted by the offer. Finally, participants liked the possibility to obtain more information about a TV commercial and products displayed in it.

A negative point about online purchase was underlined by some participants not familiar with it, regarding the security of online transactions and the protection of their private information. This problem is though not specific to interactive TV.

Participants were not interested in interacting with all types of products. The ones catching their attention were products creating a desire, or impulsive purchases. The impulsive character of a purchase could be accentuated by the possibility to benefit of a voucher on the product. Participants were interested in products from brands having a strong positive image in medias, and which were promoting ideas shared by participants; brands with which people were willing to associate their name. Types of products with a strong image among customers could be various, as for example video games, events as concerts, movies or high technology electronic equipment. A lot of these products could be associated to entertainment.

Products associated to a necessity, as groceries shopping made for the daily life for example, were not seen as interesting, and participants were less willing to interact with them.

The use of an application during TV ads, and the display of intrusive messages overlaying the TV stream were not seen as bothering by participants. They thought that, as long as messages were shown during commercials, and not during the TV program, they will be willing to read them and interact with them.

Finally, the use of a second screen and the completion of tasks while watching TV commercials were easily made by most of participants. A majority of them were already familiar with second screens, and also commonly using one of them (a smartphone, a computer or a tablet for example) while watching TV.

5.2 Further development

This project investigating a field not widely spread, several further developments can be considered.

Products seen as interesting by users can be defined more precisely with a prototype focusing on the different families of product displayed on TV commercials. What exactly makes a TV viewer more interested in a product instead of another can be investigated. Types of interactions seen as interesting can also be differentiated and classified regarding the type of the product shown in an ad.

Another aspect that can be investigated is the fact that the TV ad that users can interact with is related or not to the TV program currently aired (before and after the ad break). Users watching a certain TV program could tend to be more interested in interacting with a product linked to the program than with a random product. It could be another way for advertisers to target the TV viewers they want to reach.

Moreover, as TV advertising can also be product placement in a TV program, investigation can be made to know if viewers would be interested in interacting directly with a product they saw in a TV show. Here again, interactions seen as interesting could be classified regarding the type of product concerned.

Focusing on this project, the high fidelity prototype could be improved to investigate one of the previous points. Finally, it could be tested on a wider range of persons, in order to gather more feedback and be more accurate.

6 Glossary

ANALOG AND DIGITAL TV

'Digital television (DTV) is the transmission of audio and video by digitally processed and multiplexed signal, in contrast to the totally analog and channel separated signals used by analog TV.'

<http://en.wikipedia.org/>

ENHANCED TV

'It is the mixing (embedding) of various interactive functions with the television (video) program. Viewers with the aid of some sort of decoder (as a set-top box for example) can view and choose to explore these additional features (elements) embedded in the picture.'

<http://www.itvdictionary.com/>

INTERACTIVE TV

'Interactive TV (iTV) is any television with what is called a "return path". Information flows not only from broadcaster to viewer, but also back from viewer to broadcaster.'

http://www.whitedot.org/issue/iss_story.asp?slug=shortSpyTV

SECOND SCREEN

'A term that refers to an additional electronic device (e.g. tablet, smartphone) that allows a television audience to interact with the content they are consuming.'

<http://en.wikipedia.org/>

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8 Appendixes

High fidelity prototype



Figure 8-1 Product interface 1: "Home" page



Figure 8-2 Product interface 1: "Information" page

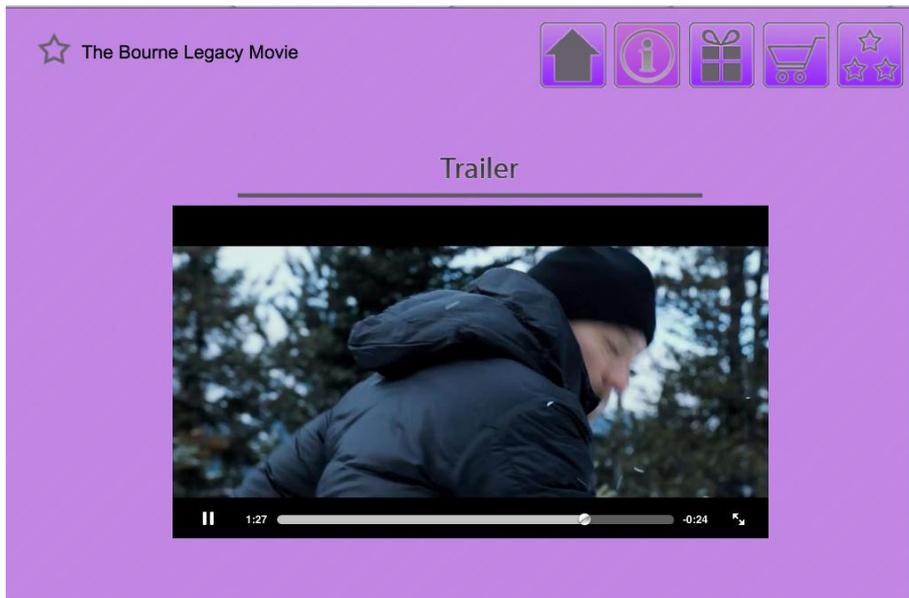


Figure 8-3 Product interface 1: "Information" page, trailer

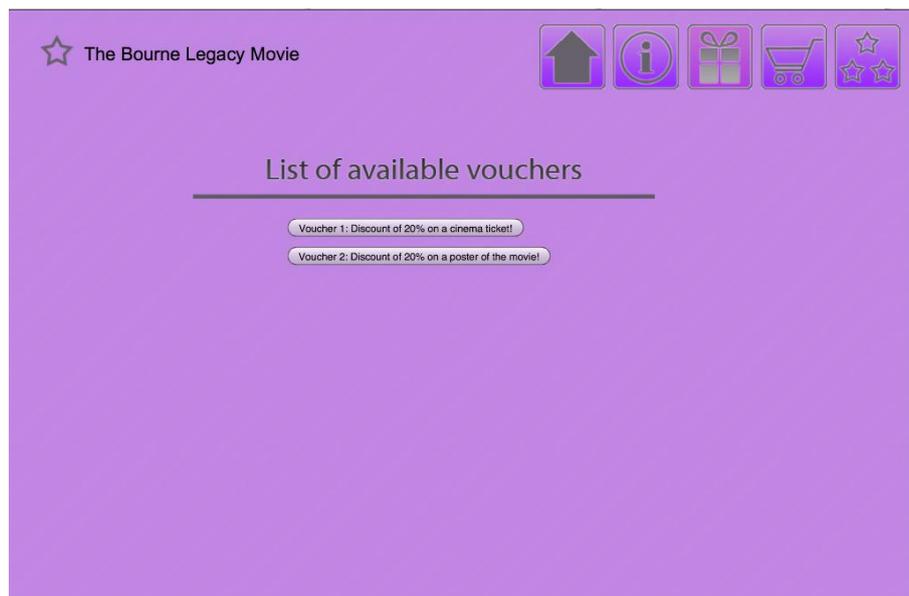


Figure 8-4 Product interface 1: "Available vouchers" page



Figure 8-5 Product interface 1: "Order a voucher" page, 1



Figure 8-6 Product interface 1: "Order a voucher" page, 2

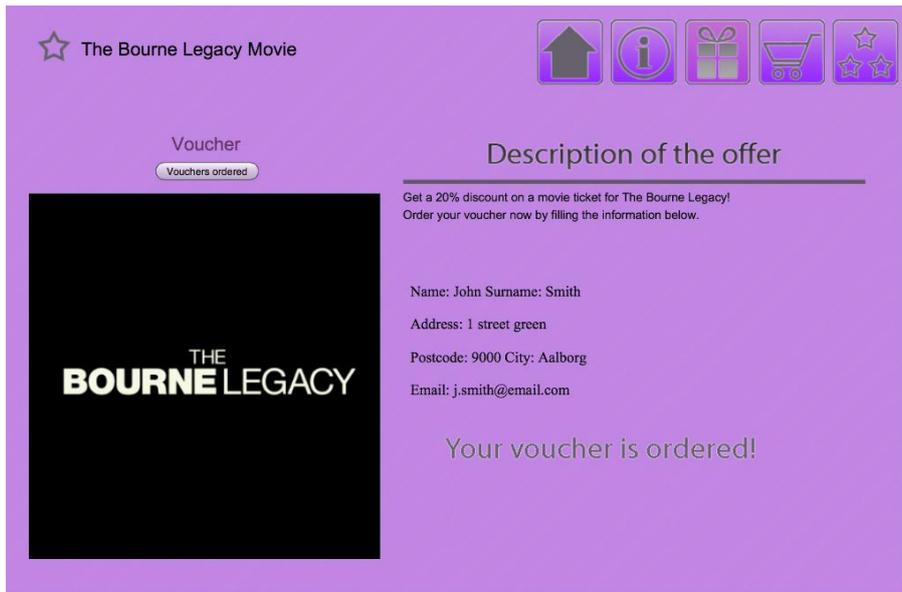


Figure 8-7 Product interface 1: "Order a voucher" page, 3

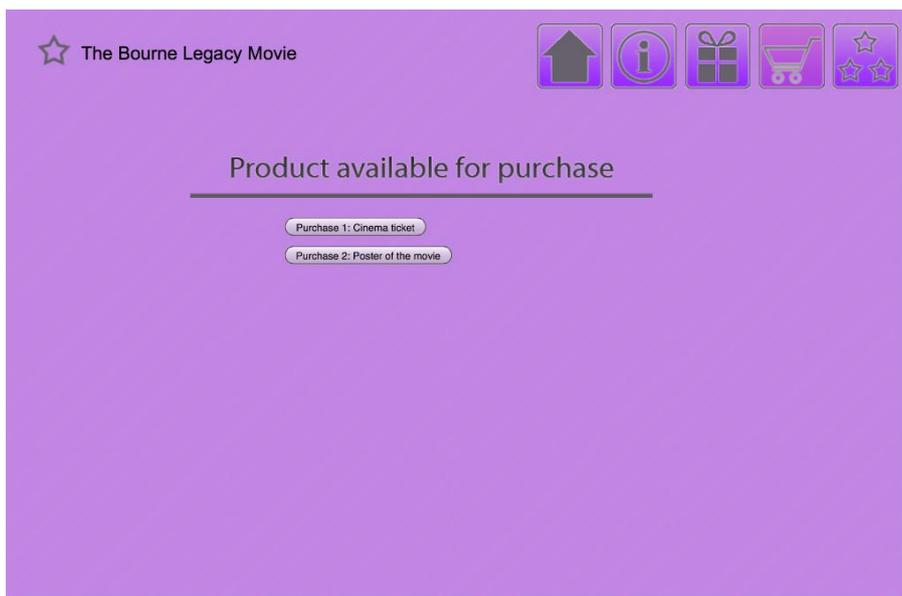


Figure 8-8 Product interface 1: "Available products" page

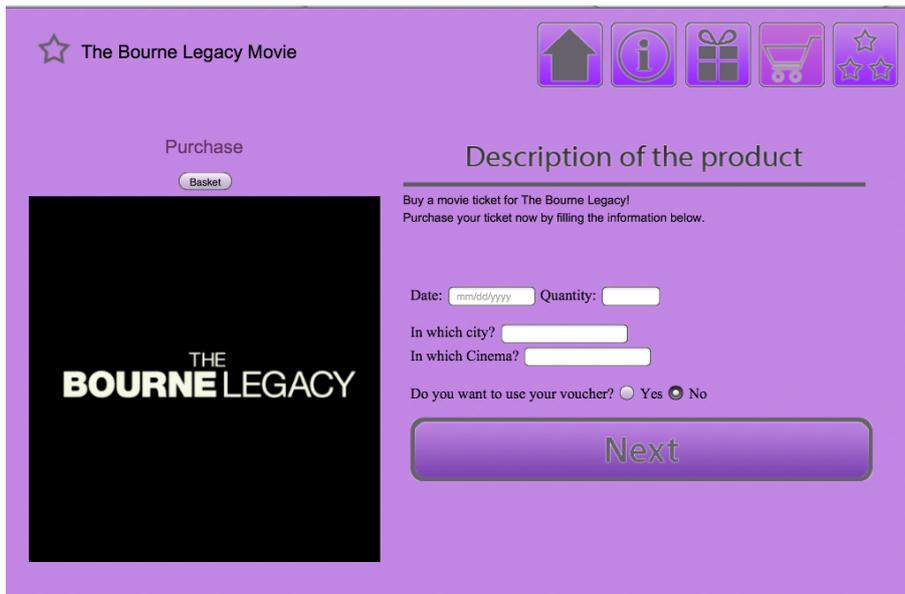


Figure 8-9 Product interface 1: "Purchase a product" page, 1

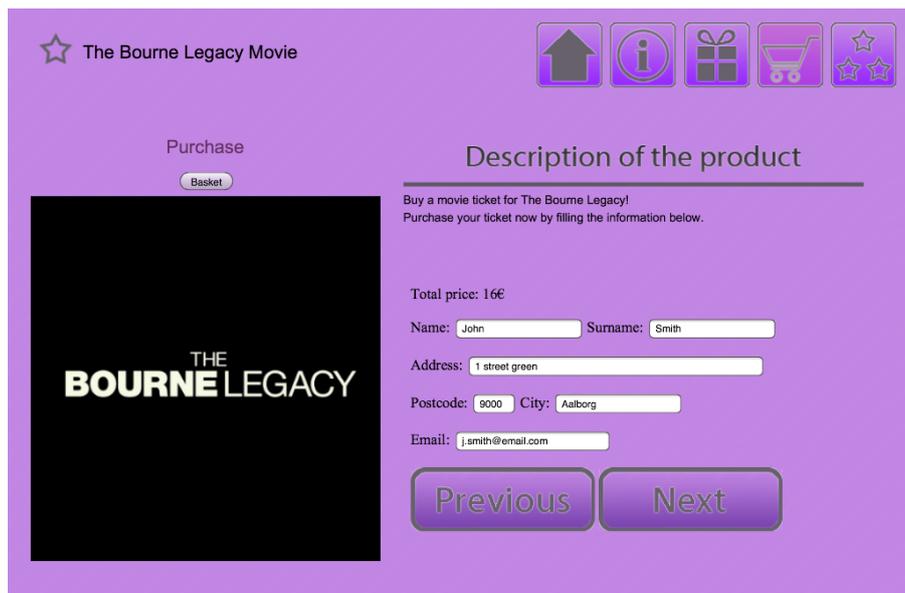


Figure 8-10 Product interface 1: "Purchase a product" page, 2

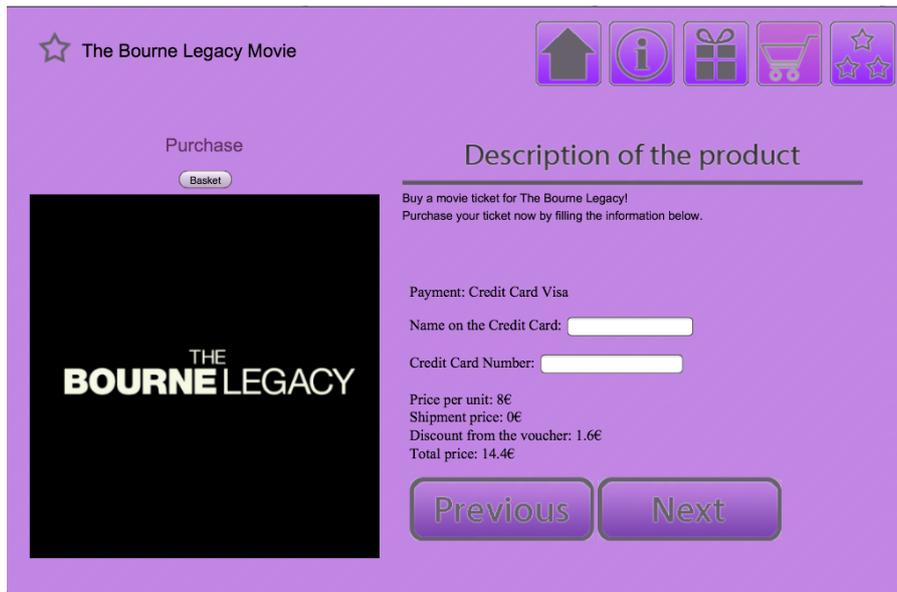


Figure 8-11 Product interface 1: "Purchase a product" page, 3



Figure 8-12 Product interface 1: "Purchase a product" page, 4

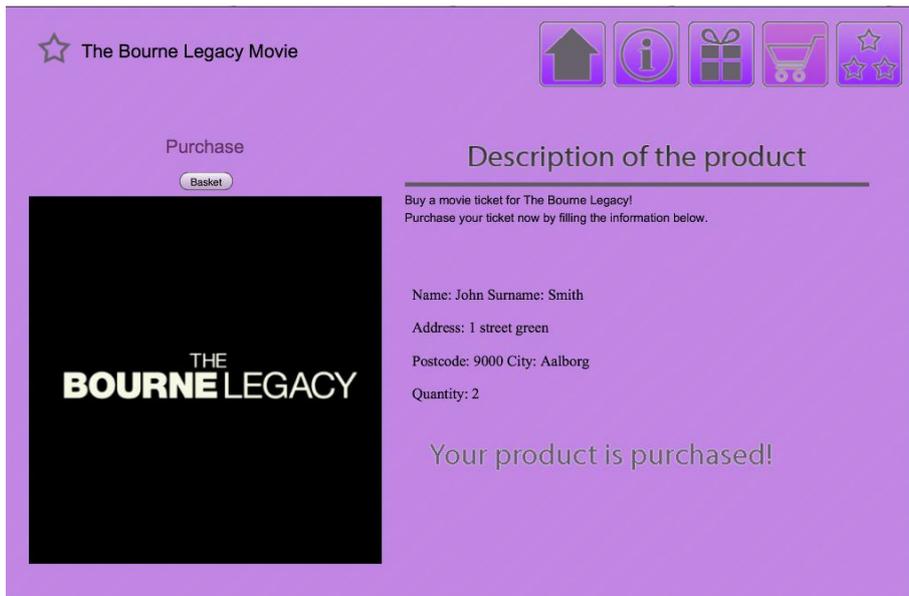


Figure 8-13 Product interface 1: "Purchase a product" page, 5

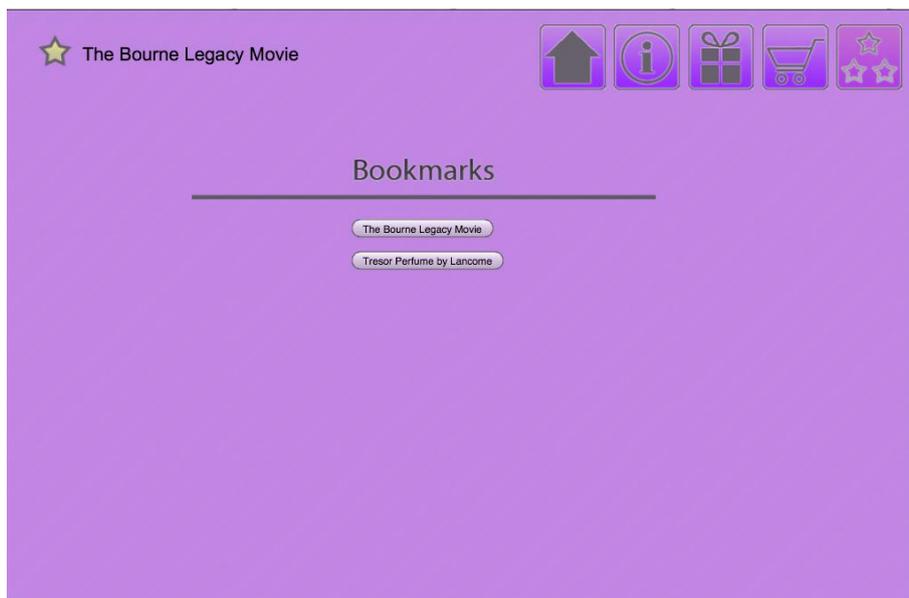


Figure 8-14 Product interface 1: "Bookmarks list" page

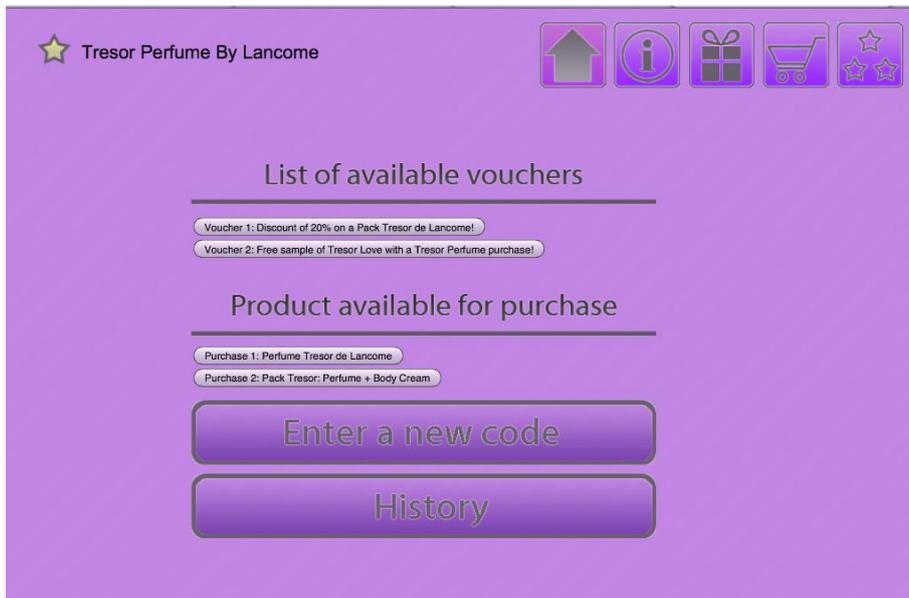


Figure 8-15 Product interface 2: "Home" page

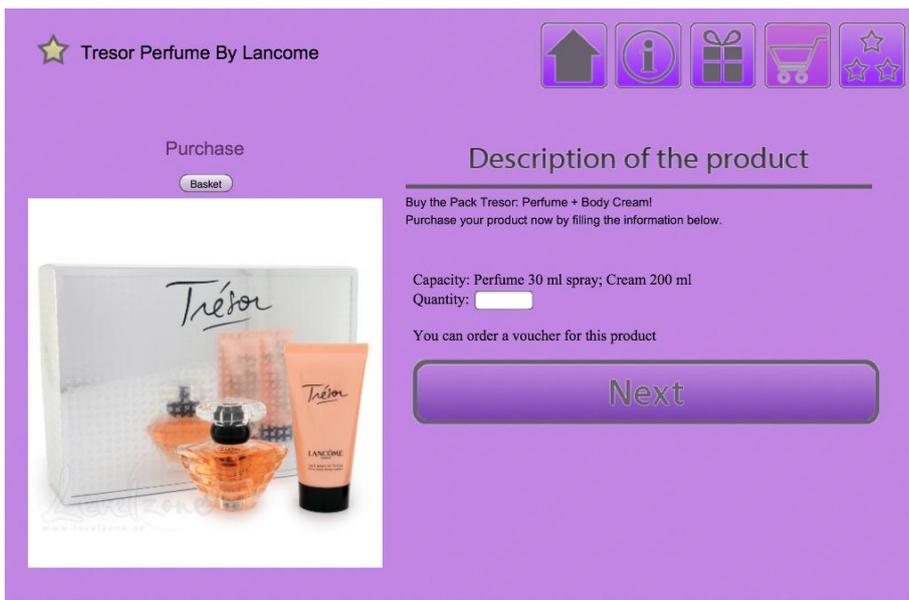


Figure 8-16 Product interface 2: "Purchase a product" page

★ Tresor Perfume By Lancome

Voucher
Vouchers ordered



Description of the offer

Get a free sample of Tresor Love with a purchase of the perfume Tresor de Lancome!
Order your voucher now by filling the information below.

Name: Surname:

Address:

Postcode: City:

Email:

Next

Figure 8-17 Product interface 2: "Order a voucher" page