

Taste and Place: Design, HCI, Location and Food

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ABSTRACT

This paper describes the design and envisioning of a novel system that enables anyone interested in cooking and wild food to create menus, locate local ingredients, make recipes and understand the local food culture of an area. The system is the development and evolution of a generic multi-media publishing platform that we are developing, called Placebooks. This incarnation of the platform is called Tastebooks. Within the book we are able to add pictures and live-maps, locate and geo-tag any media, use videos, pictures and even publish our book. This paper demonstrates the system and gives examples of some of the Tastebooks that we have produced. We also offer a development framework for small businesses to use the system to their advantage, by matching up their locally available resources to the trails and recipes in the Tastebook, and this creates its own set of issues.

Categories and Subject Descriptors

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

General Terms

Management, Design, Economics, Factors

Keywords

HCI, Food, Economics, Local, Ethnography, Design

INTRODUCTION

Previous food and HCI papers have discussed: food and mood [9]; the celebration of food [11]; and food and sustainability [10]. However, few papers have discussed the use of locative media and wild food. Within recent years there has been a resurgence of both the use and collection of wild foods, whether it's just picking Wild Garlic from near a local stream, or going to different countries in order to experience rare and exotic mushrooms in a Finnish forest (*see* Chamberlain and Griffiths [3] for a further treatment of this in regard to wild food, HCI and Design). Multimedia applications can be designed that take advantage of the recent developments in locative technology. For example, one can now go to a town and use applications to see where the nearest cafes and bars are. One can do searches at home using

mapping services that allow the user to find a plethora of different food stores, from farmers' markets to supermarkets. There are also numerous videos on Youtube [13] that show us how to prepare different foods and make a variety of different recipes. However, many of these services are based around the individual making a food dish, and although they offer tips on where one might find some ingredients, this locative element is not often part of the system, particularly when we think about using and sourcing wild food ingredients in our recipe. The research discussed in this paper describes a system that we have developed, that combines social media, with multimedia and locative technologies in order to allow a multitude of people to create digital books that link local and wild food, with recipes and cooking instructions. We call this system Tastebooks. We start this paper by initially discussing wild food and location, we give an overview of the system, discuss the use of social content, give an illustration of a Tastebook, discuss expert user input and give some examples of the possible economic implications of the system.

Wild Food and Location

One could argue that local dishes are often emblematic of the region from which they come, and it is no coincidence that often the ingredients that are brought together to make these dishes are native to the area. The location of food as an ingredient is even more important when we think about using wild foods. One of the difficulties associated with the use of wild food is, knowing where and when to find it. It is not as simple as visiting the local supermarket, there are a whole range of other factors that need to be thought about before one is able to go out to find such ingredients. For example: is it the right time of year? Is it dangerous or poisonous? Where are they? How much can I pick? In many respects this was the impetus for the design of the system that we will further illustrate in this paper. Although food and cooking are often based around the more 'domestic' spheres of our existence it is worth thinking about the activities that many cultures and groups engage in that go beyond our domestic understanding of food and eating. Perhaps by further understanding some of the issues that are associated with these 'other' ways of doing cooking we can look to develop and make IT-based systems that support these real world practices in a plethora of ways. The novelty of this system lies in its ability to make, (collaboratively authored if the users wish) and share, a variety of books that can contain a plethora of ubiquitous multimedia content.

TASTEBOOKS

This application is based on a system that we initially produced called Placebooks [2][8]. In its first incarnation it was developed in response to the needs of rural users that wanted to map their unmapped local environment, in terms of their interests and

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activities. In this envisioned re-design of the system we are using it to provide information that relates to a user's location and the availability of local ingredients and recipes. By doing this we are combining the culture of cooking, local ingredients and local knowledge. Here we give a brief technical overview of the system. The Tastebooks system allows users to make and share their own digital books. The original system is further described in Chamberlain et al [2], and is currently in use as a heritage-based application. We use this paper as a space in which we can explore its design in relation to other domains of use. It has four constituent parts:

- A web browser-based interface for authoring and viewing.
- A mechanism for linking to external data sources.
- A mobile application for viewing.
- A server-side infrastructure for managing construction and use.

It is a Java based web application developed using Google's Web Toolkit. The mobile application was written for the Android platform and this allows users to view books while on the move. The Android part of the system allowed users to view the content that users made in different locations. As well as being able to view the content, users are also able to use the application to find other Tastebooks in the local area, as the system will find other content located within the area.

Making and Using Tastebooks

In this section we give an overview of the ways in which people can use and make a Tastebook. Table 1, below, shows the different basic functions that people can use to make their book. One only has to drag the icon over onto the empty book page, and an empty space relating to the type of media content appears in the book. This allows the user to edit the text or upload further content.








	The Header allows the user to drag a title into the book
	Body Text is normal text for writing paragraphs
	Bulleted Text can create a bulleted list
	Image lets the user upload an image
	Video inserts a video
	Map lets the user insert and edit maps
	Audio inserts a playable audio file into the book

Table 1. Icons allowing the user to add different content

By using the different media elements a user can quickly and easily make a book that can contain different recipes, different places to find ingredients and a whole range of articles that specifically relate to cooking and eating. They can also go back to

the book and edit the content that they have written, update the content, share it and publish it. Other users can also be invited to edit the content (as we shall explain in later sections). Once a book is made it can be seen in the system's library as one of many books that the user can choose to download: because the user can download the book to their mobile phone, the system will work in areas where there is no 3G coverage.

In figure 1, below we can see a page from a book that was quickly (10 minutes) made in order to demonstrate the system. It contains text, an image, hyperlinks, a video and a live map. All of the media elements can be geo-tagged and the pages can be turned.

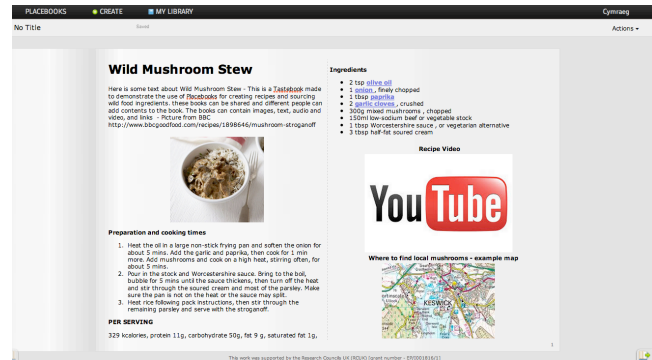


Figure 1. Example page from a food book.

Making Food Trails

One interesting application of Tastebooks could be the making of food trails. The system allows users to add GPS-based trails into the Tastebook and to add points onto the trail (illustrated in figure 2. using orange numerical markers – the markers can be alphabetic or numerical) Once a map is added a user can choose to add a marker to a map: the marker (when clicked) can then link (internally) to other content within the book. In other studies that we have conducted the development of food trails was raised as an interest of local food producers and growers [5].

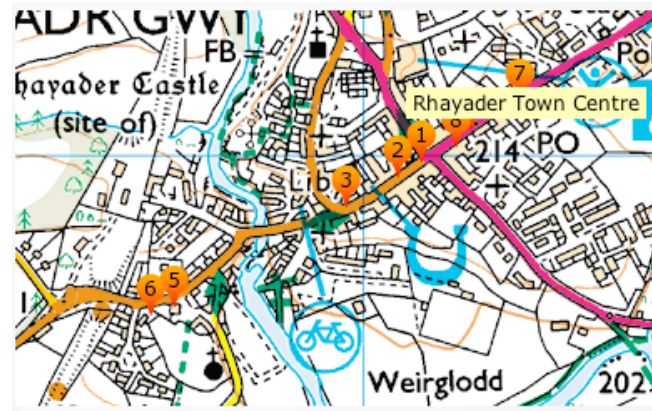


Figure 2. A simple trail with active elements

On hover-over the markers open a text box, as shown above. The marker is related to a multimedia element, for example a video. If the user clicks the marker, the system will flick through the pages until it finds the related content. In this way a user can navigate the system using our Android version that we are developing while out in the real world. Users can also use this part of the

system to illustrate where the different media that are in the book relate to, and they might even use it to refer to as parts of a process, e.g. “at point 1, listen to the content and move to point 2”. Instructions and content may be given and used in relation to the marker points, because they can both represent points in a process, for example a recipe or geographic points.

Sourcing Social Content

Micro-Crowdsourcing

One of the key features of the platform is the ability to give open access, or to specify who can add to the book. This is important as it means that many different users can engage with the content. Of equal importance is the fact that many local people can add, or edit the content of the book. It is also possible to add further maps and edit them to show what produce is in season or where to find authentic local produce. This crowdsourcing may occur on a small level, what we would term micro-crowdsourcing. What is important here is not the quantity of content, but that the content is relevant, up to date and that the information provided is appropriate to the user’s needs. This could be achieved through sharing authorship of a book amongst a given community.

Engagement

As we move to further design, refine and develop the system, a key part of getting anyone to use a system is the initial engagement with a specified user, or user group. Although this is rarely discussed, we think it is important as we have developed a framework as seen in [1] that might be applicable and useful to designers and developers who want to engage with communities outside of the lab, in what are more commonly known as ‘in the wild’ [4][7] settings. These settings are important as they can allow researchers to find out the ways that the system might be used in a real world setting. We list these below in a concise manner (adapted from [1]):

- Use *local experts*. These people know other people in the area, have a wealth of knowledge and are often able to initially help with the design of the system.
- Carry out *ethnographic scoping studies* within the local context of the field-site, to target the different communities of practice that were both part of and related to the research.
- Offer *technical help* to the public taking part in the project.
- Take part in *meetings, conferences, workshops and general events* that are thought to be beneficial to the research, relating to rural enterprise. This allows further understating of the issues and concerns of other people working within the area.
- Use different *media* to inform the public about the projects, including social media such as Twitter, Facebook, online news, and RSS feeds, as well as mail outs.

Social Media

The books that are created can also be shared on Facebook, Google+ and Twitter. Another functionality of the platform is the ability to add a Twitter feed. This can be done by adding a search for the hash tag and then inserting that page as an element in the

book. This means that the books are both social in their own existence, but can also contain other social elements that relate to other services. It also means that anyone constructing a Tastebook can add in a hash tag term, for example #JapaneseMushrooms and see live information relating to this term. This is very useful if you are looking for ingredients for a recipe and they are not available locally, or are out of season. The initial platform is social in respect to the books being authored by a group who can provide different content, and in that the books themselves can be shared appearing as a Facebook timeline link.

Multi-lingual Support

We have developed the system to be multilingual in terms of the interface (currently in Welsh and English, due to the geographical location of the research). This feature can support food tourism. Many people go abroad and want to try the local dish, some people want to make it themselves, or buy the ingredients to take home and cook. This means that tourists can buy and recognize what they are buying and eating. What may be a porcini mushroom in Italy can be a tatti in Finland and a birch boletus in the UK: a pine mushroom in the UK would be a matsutake in Japan [14]. Audio support can be added to show people how to pronounce the name of the food too. A possible addition to the service would be to link the content through to Google Translate, in order to offer a basic translation service.

Imbuing Trust

An issue that is prevalent is that of trust. How does one create a trustworthy system? What are the media and content that can be used in order to create a level of trust between content user and content provider? This is something that is beyond the remit of this paper, however it is something that we aim to carry out more research into. It is particularly relevant in relation to the context of this research as it is imperative that the users trust the content of the books. No one would eat something that they thought was poisonous, or go to places that they thought were dangerous, or where there might be no food to be found.

Provenance

We would like to enable people to demonstrate the authenticity of the content that they are providing: the recipes, ingredients and information about the more cultural aspects of the food and how to prepare it. Being able to show where the recipes and ingredients come from, how the livestock has been raised and offering information relating to the traceability of the products used can be very important to the people that are using this type of system [5], and buying the produce that people may suggest.

Displaying expertise

How do expert users display expertise in the context of a multimedia e-book? This is again something that we think is another component of the system, as there are skills that could be passed on and also because expertise is a key aspect of both trust and provenance.

Initial Expert Input

As we are in the early stages of re-purposing a system for another use domain, we have been engaging with an expert user who leads wild food walks and courses. We would aim to expand this engagement as the study further develops. In this section we briefly describe some of the issues that were raised by that expert user, how they might impact upon future iterations of the system and how the system may be further re-purposed. This relates to a

design session where the expert was able to give input into the design of the system. Overall they thought that the system could enhance some aspects of their work, and noted the following points:

Teaching – One of the first comments that was made about the system was, that it could be used for educational purposes. As it contains a series of geo-tagged multimedia elements, the user proposed that it could be used in-field to help teach people about wild food. It might not be able to be used as a tool to identify certain foods that are highly toxic, but as part of a led teaching session it would be possible to use the system to teach other people about finding, identifying and cooking some wild foods.

Culture – Tastebooks might also be used to display the cultural aspects of the food. This could include stories about how it is picked, prepared, cooked and eaten. Myths, legends and religious beliefs could also provide useful background to the cultural significance of the food, and are very suitable materials, which could be created for the book.

Medicinal – One interesting topic that was raised was the medicinal uses of food and in particular the use of local herbs as remedies. We had not previously thought that the system could be used in this way. There are a plethora of folk remedies that can be made, for example, raspberry vinegar for sore throats, mint tea for indigestion and so on. Obviously any content of this kind would need to be accompanied by caveats which emphasized the need for GP guidance before taking any such remedy and reminders that people should check first that they are not allergic to any of these foods before trying them.

Environmental Considerations – Another issue that was of concern was that of damage to the environment. Any system that in some way promoted the use of wild foods, and foraging for them, could actually damage the ecology of the environment if too many people were to pick one species, meaning that plant could not regenerate, or pick in one place, meaning the area could be trampled or nesting birds disturbed. Therefore it would be important to inform the consumers of the content about the problems associated with over-picking.

Seasonality – We were able to find out that many species have a season and this is important when designing a system that can take account of what produce might be available to cook with at particular times of the year. We would like to see part of the system deal with the temporal aspects relating to the availability of produce. In design terms this could relate to the ordering of pages, for example, what is in season appears first in the book, or that the book itself is chapterised in regard to different seasons.

Legality – Our expert user informed us that there could be legal implications with regard to the foraging of wild foods. What might be legal in one place may not be legal in another. In the UK for example, the Theft Act 1968, for England and Wales [9], states that:

"A person who picks mushrooms growing wild on any land, or who picks flowers, fruit or foliage from a plant growing wild on any land, does not (although not in possession of the land) steal what he picks, unless he does it for reward or for sale or other commercial purpose."

However, in Scandinavia a "Commoner's Right" means that one can legally gather wild foods from public and private land, while in the US, like the UK, the landowner must give permission to the person wanting to gather wild food.

Engaging with an expert user was beneficial in relation to the development of the design. By using this method we were quickly and cost efficiently able to understand how we may need to further develop and design the system. Working with this type of user is about the quality of information that we are able to gather, not the quantity [5].

A Micro – Economic Framework

A focus on using and developing applications, and their use in [5] the real world has been influential with regard to the development of this research. In regard to this, we have tried to articulate a stance on the possible ways in which the system could be used in a beneficial way by micro-rural enterprises, in order that we might tailor its design appropriately and understand the way that it may be used in a sustainable manner. Food sellers may use the system to put themselves on the map and add recipes and local food or produce. Menus could use a QR code to link to a Tastebook and the different pages of that book. The books might be used in tourism to promote local walks and act as guides, and people that are selling tools that relate to the gathering of wild foods may use them to add their own content too. It is envisaged that tourists would access the content through an app-based system.

Conclusion

This paper has described a partially envisaged system called Tastebooks, a system that enables users to both make content, in a social way and to use it to find ingredients and ways to cook food. Designing the system has highlighted a set of challenges that relate to the sourcing of ingredients and their use. Our user study has raised some interesting and important design considerations in regard to the way that people may further use the system to find out about the culture of food, its medicinal uses, seasonality, the legal implications of gathering food and using the system to teach people about wild food. We think that the system that we have developed has shown much potential and we aim to integrate the design suggestions from the expert user. We have currently developed a mobile app that works in co-ordination with the system. This means that users could be mobile in any location and use a Tastebook to find local recipes and ingredients in-situ.

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