Rapid design and the online experience: incorporating the human factor into the process

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The need for usability in creating online services is well documented. However, there are still many online services that fail to engage the user and are difficult to use. In addressing the need for good design, this paper discusses a rapid and intensive process for the evolution of a value proposition, and its realisation as an online service. Key to the process is the incorporation of timely feedback from the customers themselves and involvement of all key stakeholders. This includes qualitative analysis of the interaction between customers and the prototype service in a dedicated suite. The results of these design evaluation sessions are promptly fed back into the design process, helping to ensure usability, engagement and satisfaction for customers on service release.

Introduction

It is argued that creating an engaging customer experience is a powerful and cost effective way of improving conversion rates and customer retention. Indeed by focusing on purchasing conversion rates ventures can significantly increase revenue figures. Focusing on customer retention as well can increase revenue figures for a high volume site even further. Where competitors are only a click away, ensuring customers enjoy a compelling experience is paramount and critical to the success of interactive services.

The online customer experience is formed from the entire interaction that customers have with an e-business. It is the sum total of the customer touch points, which span from the point at which the customer first becomes aware of the e-business right through to the after sales service long after the transaction has been carried out.

Five key elements have been identified, which collectively provide customers with an engaging online experience spanning from initial awareness through to after sales service (Table 1). However, there are few e-businesses that incorporate all these elements in their on-line experiences. Their failure to do so may be costly, with the benefits of focusing upon the customer experience and the human factor being considerable. In monetary terms, Hurst (1999) suggests that $1 spent on advertising produces $5 in total revenue whereas $1 spent on customer experience improvements may yield $60.

Table 1 Key elements present in a compelling on-line customer experience

Key elements	Description	Example characteristics
Personality	The way in which a site develops a connection with its audience at an emotional level and the means by which it immerses users in an experience that appeals to the user style and preferences	• Editorial style • Community • Interaction Style • Presentation Style
Content	Content is the primary method by which a site delivers its message to users. Refers to the copy and graphics that populate a site	• Clear • Up-to-date • Clear policies • Personalised
Usability	More than just the look and feel of the site, usability encompasses how the user interfaces with the site and how easily they are able to accomplish what they set out to do	• Clear navigation and structure • Consistency • Simple page design • Speaks the users language • Easy to use
Functionality	A functional site is one that offers supportive processes and mechanisms to carry out the users instructions and efficiently guide them through their intended tasks	• Efficient registration and transaction processes • Supporting customer service
Operational excellence	Achieved when an e-commerce proposition delivers in line with customer expectations from the point of logging on to the arrival of goods and beyond	• Robust • Fulfilment • Cross platform

Working in eCommerce presents an increasing demand to work at "e-speed" and rapidly develop applications. The traditional approach to such projects is to allow customer feedback either early on during concept definition or in late-stage usability testing. Site release reflects compromises made in the rush to get to market, compromises which are typically made based on judgment of developers and anecdotal feelings on what customers want/need. Design testing, if done at all, is typically done in the form of formal usability testing towards the end of the project, when major alterations of information architecture or user interface design are costly to implement.

This failure to integrate customer feedback into the critical design issues made throughout the project lifecycle is likely to impact on the ultimate success of the site. There is clearly a need to consider the human factor in eCommerce projects, and involve

the end user throughout the design lifecycle. This paper discusses elements of such an approach, while continuing to consider the compromises required during a project (e.g. tight timescales).

Processes

A process for integrating customer feedback and usability into the design lifecycle has been used by the Accenture Interaction Design Group with successful results without impacting deadlines. A number of elements are critical to this process. These include;

- Identifying target users
- Identifying competitors
- Creating information architecture
- Building storyboards

The key to the success of the process has been its iterative nature, involving end users throughout the whole design cycle and into the technical build. This involvement typically occurs in regular design evaluation sessions. These sessions borrow from usability testing, however rather than employing a quantitative, task focussed approach, they adopt a more interactive 'listening' and qualitative approach with active facilitation. The results of these sessions are fed directly into design workshops, allowing decisions to be made quickly, based upon customer research rather than the 'hunches' of the design teams.

Design evaluation sessions

The process for the design evaluation sessions (Figure 1) provides rapid and timely evaluation of the customer experience. Six representatives of a given target customer segment are recruited by an independent field recruitment agency. Nielsen (1993) has found that 85% of usability problems can be uncovered by such a number of users; anecdotal evidence from design evaluation sessions suggests that major issues will be highlighted by even fewer users.

The sessions take place in a dedicated lab facility, with two test rooms; one set up as a lounge, simulating a home environment, the other an office environment. Both rooms allow testing of applications on PCs and mobile devices, whilst the former also includes interactive TV devices and games consoles with Internet connectivity. Each room has two discrete wall mounted cameras and a ceiling camera with desktop and ceiling microphones.

Each representative participates in an hour-long 'depth' session with their behaviour, physical actions and comments being remotely observed' digitally recorded and logged using dedicated software (Noldus™ Observer Pro). A viewing room with a plasma screen allows the development / client team to observe each session.

The approach adopted during the session depends upon the level of maturity of the site being investigated, varying from 'wire frame' prototypes that are task and scenario driven to fully functional sites in which the user is left to explore the product/application, to find out what is of interest. These approaches are discussed below.

Following each session, debriefs are conducted with the facilitator, logger and observers, covering synthesis of observations, analysis of web pages and germination of solutions. Results are presented to a design workshop the following morning, allowing for immediate action. If required, a presentation detailing the results with supporting video

clips is also delivered a day and a half after the participant sessions, allowing stakeholders to review the user feedback. This rapid turnaround of results ensures timely user input into the process, and the ability to react to this when making key decisions.

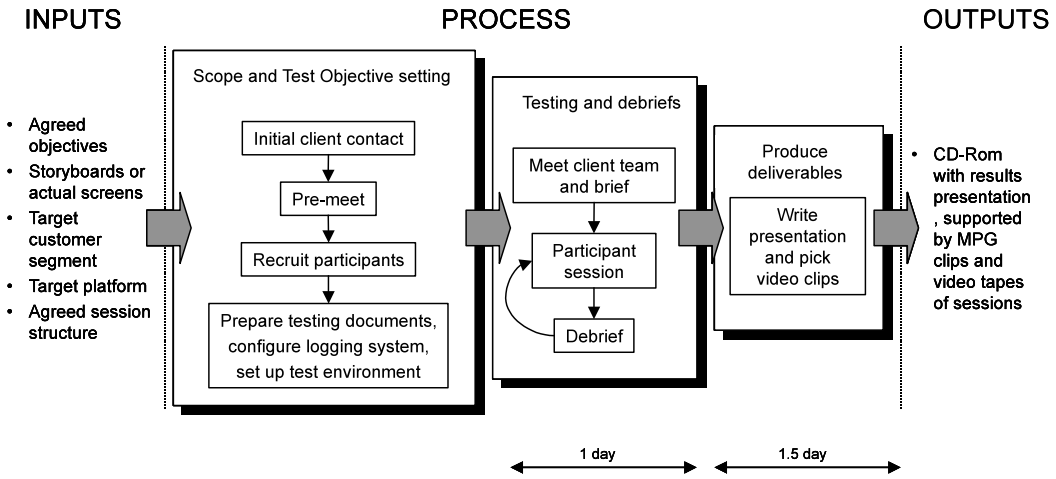

Figure 1 Process for Design Evaluation

Stakeholder involvement

From the outset of the project it is essential to identify all stakeholders (business sponsors) within the company to ensure buy-in to the project and an understanding of what is in and what is out of scope. It is not unusual for different parts of the business to approach the project well into the design and build phase requesting content to be included. Regular meetings are essential, with workshops following design evaluation sessions reviewing the results and steering the project based upon the feedback from the users.

Identify target users

It is essential to have a clear purpose of the offering so it will support customers' interests, needs and goals. Customer insight and an understanding of target market are essential, with conventional demographics, (evaluating market data, customer requirements and developing an audience and customer description) being augmented by an understanding of online user behaviour. On the Internet different people interact in different ways, it is important to consider different interaction styles and ensure that the approach of the web site will appropriately accommodate all target user styles, such as task orientated as opposed to opportunistic, serendipitous browsing.

Competitor analysis

There is a great deal that can be learnt from an eBusiness's competitors; both those competing directly in their market space and investigating how other sectors deliver value using different interaction styles, mechanisms, content and tools. Design evaluation sessions are run with target users interacting with direct competitors' sites. The approach for these sessions is driven by the users, who are invited to browse the site as they would do at home/ work and discuss the experience as they interact. There are no set tasks, the

objective being to identify how the site engages the user *overall*, with feedback being qualititative, probing the user for his/her perception of the experience, ease of use and willingness to return.
Task based testing can be successfully used when investigating competitor sites. In particular, when investigating how different tools and mechanisms can be used to support a process. Whilst the content within the tool may be different, much can be learnt on the usability of the presentation method. For example using tools for comparing different products such as tools for comparing electronic products that a company offers may highlight important issues for their implementation and delivery that could be employed in a tool comparing financial products. Similarly, the use of animation for helping customers select clothing for use may be explored for its utility in helping customer select financial products in banking sites.

Information architecture

Information architecture has been defined as the 'art and science of organizing information to help people effectively fulfil their information needs' (Hagedorn, 2000). The process is presented in Figure 2. The organization of the content is undertaken with the co-operation of users in workshops whereby content headings are presented on flash cards and customers are asked to divide and 'chunk' content into appropriate, logical units (Rosenfeld and Morville 1998). The organisational schema are used to inform the process and help develop the structure and architectural blueprint, from which storyboards are developed.

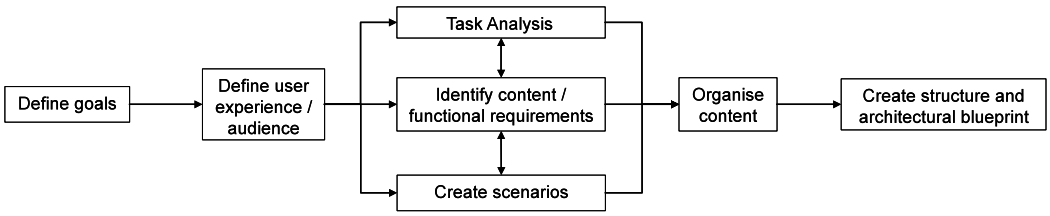

Figure 2 High level process for defining information architecture

Build storyboards

In order to validate the information architecture and to investigate high-level page design, storyboards are mocked up. These are typically crude 'wire frame' illustrations of pages mocked up in a graphical or presentation software package (e.g. Figure 3). They are simple and allow rapid modifications to be made. Storyboards will walk through a particular scenario and are presented to users in design evaluation sessions. Whilst they are task orientated, and linear, users are invited to talk around the page, discussing what their expectations are, both for what they would do next, and around the different elements of the page. Storyboards have the additional advantage of allowing the development team to express their ideas in a simple to understand format to sceptical parties rather than complex functional and technical requirements documents that can be difficult to relate to.

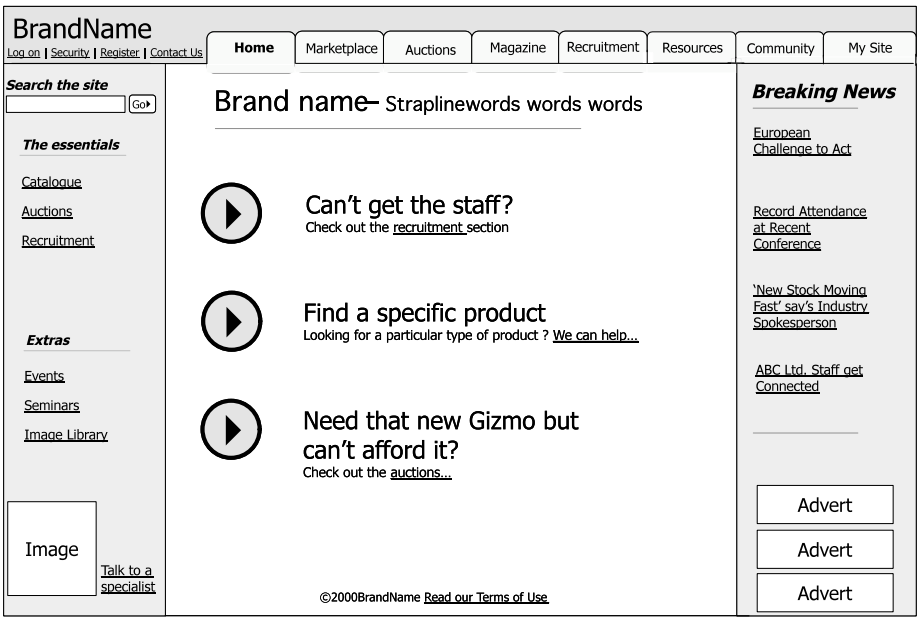

Figure 3 Example of home page for storyboard

Discussion and conclusion

This methodology has been used successfully with Internet, intranet, interactive TV and mobile device applications. Working with numerous clients, by including the human factor in the design process and by involving end users throughout, the result has been a shared vision of a customer-orientated solution. It has also reduced the time to validate a design through the focused and iterative nature of the process, improving usability & increased customer satisfaction. As an example, the immediate benefits of the design evaluation session were demonstrated by a high street grocery retailer with an online presence. The 6 customer sessions focused on searching for products within the site, the registration process, product purchase and the overall customer experience. Issues were identified and fed back to the development team. The findings were used to inform the redesign process. In conjunction with a marketing campaign of hanging boards in stores, leaflets and extra loyalty points for the first purchase, the redesigned site resulted in a sustained increase in sales of 700% and 300% for the sections of the site investigated and an improved conversion rate of 6-7%, well above industry norms.

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