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### Australian online supermarket usability

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## Australian online supermarket usability

### Abstract

The issue of usability plays a vital role in the success of an online store. However, to date there has been limited published research into this issue and there has been no research conducted into multiple item purchasing. There is much competition in the grocery shopping industry between the two major physical supermarket chains in Australia, Woolworths and Coles, both in traditional stores and online. Online, the major competitor is ShopFast, which does not have a traditional supermarket storefront to complement its online operations. The purpose of this study was to conduct a comparative analysis into the usability of ordering systems of online supermarkets that supply to Australian consumers in 2002. © 2003 ACM.

### Keywords

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# Australian Online Supermarket Usability

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## The Problem Context

The issue of usability plays a vital role in the success of an online store. However, to date there has been limited published research into this issue and there has been no research conducted into multiple item purchasing. There is much competition in the grocery shopping industry between the two major physical supermarket chains in Australia, Woolworths and Coles, both in traditional stores and online. Online, the major competitor is ShopFast, which does not have a traditional supermarket storefront to complement its online operations. The purpose of this study was to conduct a comparative analysis into the usability of ordering systems of online supermarkets that supply to Australian consumers in 2002.

## Background to the Research

With the increase in popularity of e-commerce, it is important for customers to feel comfortable using online ordering systems. Despite most systems requiring similar facilities and information, there is no standard for creating such a system and the inherent differences of such systems affect the usability of these ordering systems. To date, there appears to be a lack of scientific research into this issue.

## Usability

If something is said to have usability it has: ease of use, is easy to learn, is efficient, is visually pleasing, and is quick and effective[1][3][5]. When this interpretation of usability is applied to the Internet, James[2] argues that if a site is usable, casual Internet shoppers are likely to be converted into e-shoppers. Most online purchases are made by users who have had over two years experience, and have therefore adapted to the medium and the related purchasing arrangements. New Internet users are unfamiliar with the technology, making usability a more important issue when encouraging them to complete purchase transactions online.

## METHODOLOGY

### Usability Testing Methodology

To gain information on the usability of the three major online supermarkets in Australia, task-based usability tests were conducted, followed by a post-test questionnaire.

A comparative analysis of the three supermarket sites, Woolworths, Coles and ShopFast, was undertaken. This approach allows judgment of a product, such as a web site, against its competitors based on interface styles, with this information used to better understand the advantages and disadvantages of different designs[6].

### Purpose

The purpose of the usability testing was to gain knowledge of users' perceptions and their comparisons of

the different web sites servicing the online supermarket industry. Task-based testing helped familiarise participants with the sites, and required them to complete a standard set of tasks across each site. The time required to complete the tasks was recorded, providing a basis for comparison. Questionnaires measured those aspects of usability that are qualitatively-based.

## Test Methods

### Background/Screening Questionnaire

This questionnaire was used to gain basic background information such as user demographics, computer/Internet experience and online shopping experience, and to act as the screening process for participants. The questionnaire ensured a representative sample of user participants was tested [6].

### Task-based Testing

Task-based testing involved participants completing set tasks [6], which were assessed on two criteria: the time taken to complete the test; and observation of the user carrying out the tests. The most accurate method of obtaining information about usability is to directly observe users work with the website [4].

Quantitative usability metrics were used to assess the following tasks:

- Creating a basic 'shopping trolley' of items, consisting of 10 items (quantity=1)
- Creating a complex 'shopping trolley' of items, consisting of 28 items (quantity=varied)

### Post-test questionnaire

The questionnaire was designed to consist of three main sections. The first section used the Lickert scale, asking questions about the user perceptions of and attitudes towards each of the web sites. The second section was designed for users who used the search facilities. And the third section asked for general comments about the usability of each of the web sites.

## RESULTS

### Basic Test

This test involved the user purchasing 10 items. Tests undertaken at Coles (mean 6min33sec) were the quickest to finish followed by Woolworths (mean 8min20sec) then ShopFast (mean 10min06sec).

### Advanced Test

The results obtained for the advanced test were quite similar to those obtained from the basic test. The store that took the shortest time was Coles (mean 15min35sec), followed by Woolworths (mean 17min44sec) and ShopFast (mean 20min27sec).

## Summary of Findings

The findings from the testing procedure clearly indicated that Coles was the fastest site to use, therefore increasing user confidence and satisfaction. Coles was closely followed by Woolworths, with ShopFast's slow test script times reflecting the low user satisfaction. Possible reasons for the differences in timing and user responses are reviewed in the discussion, with guidelines provided to help designers increase usability and therefore improve the time required to use each site.

## DISCUSSION

### Post-test Questionnaire Discussion

#### Woolworths

As the purchase list was not visible, users were unsure whether the item had been added to the list. While many suggested Woolworths should present the purchase list in a side frame, most users also commented that they liked the current layout, which would be difficult to maintain if the list was always visible. It was not possible to search using abbreviations, such as 'choc' for chocolate, and 'tiss' for tissues.

#### Coles

Coles was rated by almost all users as the easiest site to use, with the most logical layout and colours that were attractive and confidence-boosting because they reflected traditional Coles branding.

While trolley visibility allowed users to view item quantity and price, some users noted difficulty updating quantities, with users forced to leave the flow of shopping to move to the list at the side to change it. Editing the quantity caused a frame refresh, which users found distracting. Many users complained that the placement of the 'Buy' button on the left-hand side was illogical. The 'add to personal list' also confused users.

#### ShopFast

ShopFast's search feature gave users three options: search for all of the words entered, any word entered, or the exact phrase entered. Despite multiple searching options, ShopFast has been unable to implement an effective search facility. Search terms spanning both brand and description received no or inappropriate results. This repeatedly caused problems when searching for many items, including Heinz tomato soup. Users commonly entered 'Heinz soup' as search terms, which returned only one inappropriate result. Often, users entered many combinations of search terms before finding the item.

### Guidelines for Improvement of Usability

The following ten guidelines have been established from the research conducted, as well as previous research into the topic. These guidelines have been established for the use of multiple quantity and item ordering systems.

1. *Informative home page*
2. *Pages should follow a clear left to right path*
3. *Searching capabilities visible and usable*
4. *Searching available across multiple columns*
5. *Logical ordering of results, with consistent naming*
6. *A separate column for each part of the description*
7. *Each row differentiated by different colours*
8. *Clear method for item and quantity selection*
9. *Buttons differentiated from text and graphics*
10. *Simple instructions*

## CONCLUSION

As previously discussed, the field of usability testing is in its infancy, with little formal research completed regarding the most appropriate method for implementation. Previous applications of usability testing have resulted in benefits to business, with users often discovering basic fundamental flaws in web site design prior to site launches. Usability is especially important on the Internet, because users are not limited by physical locations. Therefore, users are able to easily and rapidly change suppliers if they are not provided with a satisfying experience, giving online users greater power.

The results from this study included both statements made by users, and the observations made by the observer during completion of the test scripts. These results were used to establish a set of guidelines, designed to be used as a checklist when creating or modifying a web site that deals with the ordering of multiple items in varying quantities.

## REFERENCES

1. Bara, J., T. Dorazio, & T. Lesley, *The Usability Business Making the Web Work*. Springer, London, 2001.
2. James, M., Usability key to converting casual users into e-shoppers. *New Media Age*, (May 17, 2001), 7.
3. Mandel, T., *The Elements of User Interface Design*. John Wiley & Sons, New York, 1997.
4. Nielsen, J., First Rule of Usability? Don't Listen to Users. *Alertbox* for 5 August 2001.
5. Preece, J. *Online Communities: Designing Usability, Supporting Sociability*. John Wiley & Sons,
6. Rubin, *Handbook of Usability Testing: how to plan, design and conduct effective tests*. Wiley, New York, 1994