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Changes in Australian Winery Websites Over a Five Year Period

Robyn Davidson
Flinders University, Robyn.Davidson@flinders.edu.au

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Dr Robyn Davidson

Flinders University, Australia
Robyn.Davidson@flinders.edu.au

Abstract

This paper presents the results of a study of Australian winery websites over a five year period. The research sets out to determine if Australian winery websites have matured and increased in content and functionality since 2003. Data collected in 2003 and 2007 have been analysed to determine if Australian winery websites have significantly changed to provide more to satisfy customer requirements. The results indicate that overall more customer requirements are being met; however, Australian winery websites still have some way to go before customers will be fully satisfied.

Keywords: website evaluation, electronic service quality, Australian winery websites

Introduction

Electronic commerce literature indicates that websites will mature over time and as they do there will be an increase in content and functionality (Ho, 1997; Burgess & Cooper, 1999, 2000; Timmers 2000). The maturity of websites would then seem to go some way towards satisfying customer requirements and increasing the chance of resultant sales. At least, this is purported in the electronic service quality field of literature that suggests that the most effective websites will be those that cater to customer requirements (Zeithaml, Parasuraman & Malhotra, 2002). Using the results of a previous study that determined customer requirements as the basis for an evaluation tool, this study investigates whether or not Australian winery websites have increased in content and functionality over a five-year period.

The primary research question posed in this paper is "Have Australian winery websites matured and increased in content and functionality over the five-year period from 2003 to 2007?" This paper is structured as follows. First a review of the literature on website evaluation frameworks and electronic service quality is presented. This is followed by a description of the Australian winery B2C website design framework which underpins the data collection for this study. The method is then outlined. The results are then presented along with an analysis and discussion of those results. Finally conclusions are drawn and suggestions are made for further research.

Prior Literature

Website Evaluation Frameworks

Numerous website evaluation frameworks/adoption models have been presented and tested since the birth of the World Wide Web (Web). These include Cockburn and Wilson (1996), Ho (1997), Burgess and Cooper, (1999 & 2000), McKay, Prananto and Marshall (2000), Elliot (2002), and Gartner (2002). Each framework builds on previous work, hence a common theme can be seen throughout. The premise behind each is that as a website matures, so will its functionality and content. For example, in Burgess and Cooper's (2000) Extended Model of Internet Commerce Adoption (eMICA) a number of stages and layers of maturity are proposed (Table 1).

Table 1: Levels of functionality in eMICA (Burgess & Cooper, 2000)

eMICA	Examples of functionality
STAGE 1 – PROMOTION	
Level 1 – basic information	company name, physical address and contact details, area of business
Level 2 – rich information	annual report, e-mail contact, information on company activities
STAGE 2 – PROVISION	
Level 1 – low level interactivity	basic product catalogue, hyperlinks to further information, online enquiry form
Level 2 – medium interactivity	higher-level product catalogues, customer support (e.g. FAQs, sitemaps), industry-specific value-added features
Level 3 – high interactivity	chat room, discussion forum, multimedia, newsletters or updates by e-mail
STAGE 3 – PROCESSING	secure online transactions, order status and tracking, interaction with corporate servers

eMICA proposes that a developing commercial website will typically start by establishing a Web presence and build functionality over time. The three levels of business processes proposed in eMICA (promotion, provision, and processing) are similar to those proposed by Ho (1997). These layers are also synonymous with Timmers' (2000) classification of business models. At the initial stage a firm has the lowest degree of innovation and functionality, and as the firm moves through the provision and processing stages the level of innovation and functionality increases (Burgess & Cooper, 1999).

A summary of frameworks is presented in Table 2. Each framework has been classified into one of three categories: digital business models, stages of development models, and scoring systems. Digital business models typically describe a particular type of website. A website can be analysed based on these model descriptions and classified as being of a certain type such as an e-shop, e-procurement, e-mall, or e-auction site. These classifications are very broad in that they give little indication of the amount of functionality within a site. For example, a website classified as an e-shop, could be a simple online brochure or have the facilities to place orders and process payments on-line.

In the stages of development models, website functionality is mapped to a predefined stage of development. To classify a website, its functionality is compared to the functions on the list of criteria and the site is slotted into the stage of best fit, i.e. the stage with the most features from the website. Higher stages generally indicate higher levels of functionality.

In scoring systems specific features of a website are identified and given a score. An overall score can then be calculated that is used to rank the website compared to other sites. Generally the higher the score, the more features the site has, and presumably, the better the site is. These frameworks are similar to the stages of development models in that specific features are listed; the difference is that once features are identified they are given a score.

Table 2*: Summary of Frameworks*

Website Evaluation Frameworks
Digital Business Models
• Internet business models, Afauh & Tucci, 2001
• Business models for selling on the Web, Schneider & Perry, 2000
• Business models for internet commerce, Lawrence et al., 2000
• EC models, Turban et al., 2002
• Business models for electronic commerce, Timmers, 2000
• Typology of corporate web users, Hoger, Capel & Myerscough, 1998
Stages of Development
• Business use of WWW study, Cockburn & Wilson, 1996
• Evaluating the WWW, Ho, 1997
• Model of Internet Commerce Adoption (MICA), Burgess & Cooper, 1999
• Modified MICA, Boon, Hewett & Parker, 2000
• Extended MICA (eMICA), Burgess & Cooper, 2000
• Stages of Growth for E-Business Model (SOG-e Model), McKay et al. 2000
Scoring System
• CEC Website Evaluation Framework, Elliot, 2002
• Website Evaluation Application, Gartner, 2002

The above frameworks were used as the starting point for creating an extensive list of website content and design features which lead to the creation of the Australian winery B2C website design framework (see section 2.3). This framework was the result of a study that investigated electronic service quality (eSQ) gaps in Australian wineries (Davidson, 2005; Davidson & Cooper, 2005). Section 2.2 explains the basics of eSQ so that the purpose and importance of evaluating website can be demonstrated.

Electronic Service Quality

Zeithaml et al. (2002, p.363) provided the first formal definition of electronic service quality (e-SQ) as "the extent to which a website facilitates efficient and effective shopping, purchases and delivery of products and services". In this definition the meaning of service includes both pre- and post-website service aspects. They believe that e-SQ is the key determinant of success or failure of a Web presence. As an extension to comprehensive work they have done in the field of traditional SQ, they conducted several focus-group discussions with consumers who had purchased on the Web to probe participants about their perceptions of buying on the Web. This resulted in the publication of a conceptual model for understanding and improving e-SQ, which focuses on shortfalls in companies interacting with their customers (Zeithaml et al., 2000). In 2002 Zeithaml et al. published a refined version of this model as shown in Figure 1.

In this model a series of e-SQ gaps are identified, which when present, give rise to customer dissatisfaction. The top section of the model is the customer side. Zeithaml et al. (2002) purports that the elimination of e-SQ gaps will result in a better website experience for customers; that the customer expectation of the experience is based on the customers' website requirements; and that the creation of satisfied customers will lead to greater perceived e-SQ, value and ultimately

purchases and repeat purchases. In the lower section of the model, the company side, there are three e-SQ gaps: the information, design, and communication gaps.
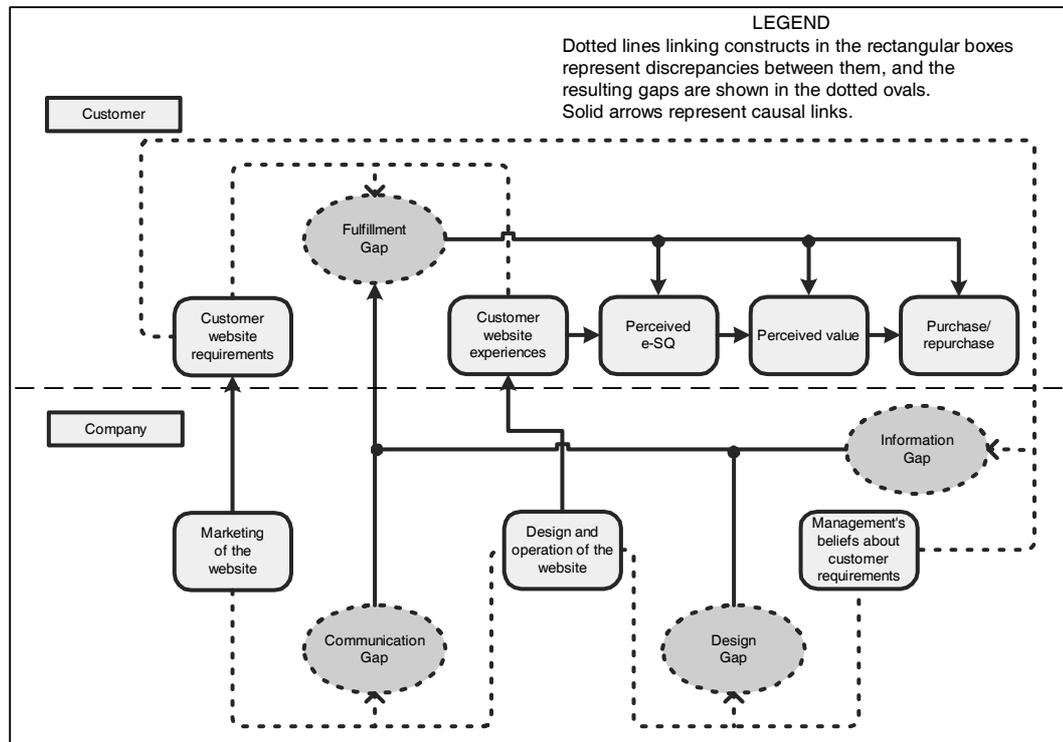

Figure 1: Conceptual Model for Understanding and Improving e-Service Quality (Zeithaml et al., 2002)

The information gap represents the difference between customer website requirements and management's beliefs about those requirements. An information gap may be present because the company managers responsible for guiding the design and operation of the website have insufficient or inaccurate information about customer requirements (Zeithaml et al., 2000, 2002).

The design gap represents the company's failure to fully incorporate knowledge about customer requirements into the structure and functioning of the website. Even if the company has complete and accurate knowledge (the information gap is absent), this knowledge may not be reflected on the website giving rise to a design gap. The presence of an information gap would increase the extent of the design gap as the lack of knowledge of customer requirements flows through to the design of the website. Apart from lack of knowledge of customer requirements, the design gap could be caused by inadequate management commitment to e-SQ, resource constraints, and lack of capabilities for delivering superior e-SQ (Zeithaml et al., 2000, 2002).

The communication gap represents the inaccurate or inflated promises made about a website through traditional media and on the website itself. This could be caused by a lack of understanding by the marketing personnel about the website's features, capabilities, and limitations. These inaccuracies could also be fuelled by the increasing competitive intensity of rival firms and that marketing are prepared to ignore the reality of the firm's capabilities in order to match it with its rivals (Zeithaml et al., 2000, 2002).

The fulfilment gap on the customer side of the model represents the discrepancy between customer requirements and experiences (what they actually receive). Each of the information, design, and communication gaps contribute to the fulfilment gap. As stated above, the lack of knowledge of customer requirements (information gap) and the failure to incorporate customer requirements into

the website (design gap) leads to customers not receiving what they require which contributes to the fulfilment gap. Similarly, the inflated promises by marketing (communication gap) will lead to customers not receiving what they expect which also contributes to the fulfilment gap.

If a customer's experience is less than satisfactory (giving rise to the presence of a fulfilment gap), it affects the customer's perceived e-SQ, perceived value, and ultimately purchases and repurchases.

In an extensive study conducted by the author a method of identifying and measuring e-SQ gaps was developed and tested on Australian wineries (Davidson, 2005, 2006; Davidson & Cooper, 2005). As a result of this study an Australian winery B2C website design framework was developed (Davidson & Lambert, 2005). The next section describes this framework.

Australian Winery B2C Website Design Framework

By using all the attributes listed in existing website evaluation frameworks and taking into account input from website designers/developers, web style guides, and personnel from the Australian wine industry, a website design framework specific to Australian wineries was derived (Davidson, 2002, 2003). This framework consisted of a comprehensive list of 135 content and design issues. This list was refined following an extensive study of winery websites, winery managers, and winery website customers (Davidson & Lambert, 2005). The refined framework (Table 3) has 65 attributes spread across 10 categories.

This framework reflects winery customer requirements (Davidson, 2006). During the original study a large survey was conducted where 401 customers rated the importance of website attributes. The figures in parenthesis following each attribute is the medium score given by customers (1 not important – 7 very important). These allow users to gauge the relative importance placed on each attribute by customers. This winery B2C framework forms the criteria for the data collection instrument in the winery website evaluations.

A limitation of the winery B2C website design framework is that customer requirements may change over time. This is especially so with the introduction of new technologies which opens up greater possibilities on the Web which customers then come to expect. It is important to remember that this framework represents customer requirements at a point in time; 2003 when the original study was conducted. This limitation does not retract from this study, as this study sets out to test whether or not content and functionality has increased. Hence an unchanged evaluation criterion is necessary.

The following section explains the method used.

Table 3*: Australian Winery B2C Website Design Framework*

Australian Winery B2C Website Design Framework

1 Company information
- Company details (4.80)
- Contact person (3.76)
- Winery region (4.63)

2 Product information
- Wine description (4.68)
- Price – bottle and case (4.65)
- Technical notes (3.05)
- Tasting chart (3.75)
- Bestseller list (3.29)
- Reviews-winemaker, professional, consumer (3.84)

3 On-site tasting and sales / external distributors
- Cellar door hours (4.51)
- Cellar door map (4.54)
- Distributor details – restaurants, retail, wholesale (3.82)

4 On-line orders
- On-line ordering (4.36)
- Order retained – within site and between sessions (4.25)
- Price and freight calculated (4.57)
- Export freight prices (3.35)
- Order confirmation (4.62)
- Payment options (4.23)
- Secured transmission (4.82)
- Form validation (4.38)
- Previous orders and customer details remembered (4.13)
- Similar products suggested (3.07)

5 Customer service
- Gift service (3.17)
- Single bottles (4.04)
- Mixed cases (4.65)
- Order status on-line (4.11)
- Wish list (3.20)
- Deliver methods (3.87)
- Bonuses and discounts (4.36)

6 Off-line orders
- Fill in, calculate, and print-out order form (4.05)
- Email orders (4.53)
- Phone orders (4.32)

7 Content, organisation & timeliness
- Title bar- name and description (4.00)
- Contact on every page (3.02)
- Last updated date (3.85)
- Less than 10 second download time (4.37)
- Security and privacy policy (4.69)

8 Value-added features
- Press releases (3.12)
- Special offers (4.36)
- New products (4.38)
- Best buys(4.37)
- Wine making information (3.31)
- Storage information (3.53)
- Ageing information (4.22)
- Complementary foods (3.57)
- Show awards (3.67)
- Photographs (3.21)
- Local tourism promoted (3.38)
- Contact by email or form readily available (4.11)
- Frequently Asked Questions (FAQs) (3.25)
- Wine club (3.91)
- Electronic newsletter (3.51)
- Contests/give-aways (3.20)

9 Navigation
- Site map (3.54)
- Search facility (3.88)
- Relevant external links (3.63)
- Standard link colours (3.36)

10 Aesthetics
- Colourful web pages (3.48)
- Contrasting colours (3.83)
- Text size – easy to read, not fixed size (3.65)
- Uncluttered pages (4.64)
- Short pages (3.28)
- Same menu/structure (3.85)
- Clarity - short paragraphs, headings, lists (3.85)
- Multiple linked pages (3.23)

Note: Figures in parenthesis indicate medium customer ranking: 1 – not important, 7 – very important.

Method

Website Content and Maturity

Website evaluation frameworks such as eMICA purport that websites will add more content and functionality as they mature. This research sets out to test whether this is the case. Hence, the null hypothesis is:

H_{null}: **Australian winery websites have not increased in content and functionality between the years 2003 to 2007.**

To test this each individual attribute will be tested for significant change; therefore the above hypothesis is broken down into 63 hypotheses:

H_{null} *n*=1…63: **The presence of the attribute n on Australian winery websites has not increased between the years 2003 to 2007.**

Customer Satisfaction and Website Maturity

The Australian winery B2C website design framework contains attributes that winery customers consider to be important, therefore theoretically, if a winery website contains all of the attributes listed in this framework we can conclude that:

- customer requirements must be known to the winery manager (no information gap);
- the winery manager has implemented what he/she knows into the winery website (no design gap); and
- provided that this information is communicated to customers accurately through marketing media (no communication gap);

then the customer experience should be equal to their expectations (no fulfilment gap) (Davidson & Cooper, 2005).

As proposed by Zeithaml et al. (2002) such a situation should theoretically lead to increased perceived e-SQ, perceived value, purchases and repurchases. This study looks at the number of attributes present on Australian winery websites in 2003 and again in 2007. From this we can infer whether or not websites are maturing to meet customer requirements and providing increased customer satisfaction based on customer requirements at the start of the study. Actual testing for customer satisfaction and changes in requirements are the subjects of further research.

The Surveys

Australian winery websites were evaluated in 2003 to 2007. The data collection instrument used to conduct the evaluations is based on the winery B2C website design framework. Each question in the evaluation relates to an attribute in the framework.

The websites evaluated were chosen from a complete list of Australian wineries. This list, that included details about each winery's size, geographical region, and Web address, was obtained from Winetitles, the publisher of the *Australian and New Zealand Wine Industry Directory*. The directory is considered to be the most detailed and current source of data in the wine industry (Winetitles, 2002a, 2002b). The directory is published yearly and updated continually as data comes to hand; therefore the spreadsheet file obtained on the 13th December 2002 contained the most current data available at that time.

In December 2002 there were 1,577 registered wineries in Australia with 849 of them listing URLs. From these 849 wineries, 53 were eliminated because information was missing; either the size of the winery or its geographical region. This left a sampling frame with 796 elements of which a sample of 260 was drawn. Proportionate stratified random sampling based on size and

geographic location of the winery was used to ensure the sample was representative of Australian wineries.

The 2003 evaluations of 260 wineries resulted in 228 valid responses, as some URLs could not be retrieved or were under construction. Each site was evaluated for the presence of each attribute listed in the framework. The author carried out all evaluations during February and March in 2003.

Due to the time needed to conduct evaluations (approximately half an hour per website) the data collection in 2007 was carried out by 3rd and 4th year Flinders University students from an eCommerce class. To encourage participation and diligence in carrying out the evaluations, the data collection formed part of an assessable assignment and students were required to analyse and report on how well they thought customer requirements were being met.

The number of websites evaluated was limited by the number of students enrolled in the topic. Each student was allocated 3 winery websites to evaluate which resulted in 178 responses. The websites were chosen from the original 228 that were used in 2003. A proportionate number were deleted from each stratum to keep the sample representative of Australian winery sites.

The students entered their evaluation results directly into an on-line form on the topic's website. This data was piped into a database retrievable by the author.

To ensure consistency in the data collections, students were given detailed instruction on the B2C winery website framework and the requirements of the survey. In addition, data collections were carried out in the University's computer lab with the author or a colleague on hand to answer any enquiries. To ensure the accuracy of the data the author evaluated a random sample of websites and a number of students were assigned the same websites. The results from the duplicated surveys were compared to ensure that the results were consistent and that students had not falsified their data collection. In cases where the results were markedly different enquiries were made to the students involved. Students were also required to write a report about their evaluations. If the report indicated a lack of care by the student their data were looked at more closely to see if it had been falsified. In very few cases data were considered to be suspect and removed from the study. The researcher is confident that the students have conducted the evaluations honestly and to the best of their knowledge.

The Data

Some websites that were evaluated in 2003 were not retrievable in 2007. In addition, limited resources meant that not all websites that were evaluated in 2003 were evaluated in 2007. Therefore some data from 2003 were discarded so that only winery websites that had repeat evaluations in 2007 were used. This resulted in a sample size of n=130. That is, 130 winery websites were evaluated in 2003 and the same 130 sites were evaluated again in 2007.

The evaluations consisted of 63 questions which represent the attribute in the framework. Note that some items in the framework contain multiple attributes such as "Reviews-winemaker, professional, consumer." In the evaluations this is broken up into three questions. Also data from some attributes from the aesthetics category had to be discarded as they were not comparable between years; hence, the number of questions and dot points in the above framework are not equal.

For each of the 63 attributes a 'yes – attribute is present' or 'no – attribute is not present' was recorded. The total number of 'yes' and 'no' responses for each question were counted. Some questions were left blank if they were not applicable for that site. For instance, the questions relating to on-line ordering are not applicable if the site does not offer this function.

The Analysis

The percentage of 'yes' responses were recorded for each attributes and the change between 2003 and 2007 calculated by subtracting the 2003 percentage of yes responses from the 2007 percentage of yes responses. To test if the change is significance the McNemar test was used. McNemar's test is used to test for a statistical difference between paired proportions. When the resultant P-value is less than the conventional 0.05, the conclusion is that there is a significant difference between the two years.

Results

The percentage of 'yes' responses for each attribute are shown in Table 5 (on the following page). For example in 2003, of the 130 responses, 34.6% gave a contact person's name (attribute 2). However, for attribute 17 – whether the price and freight is calculated when placing an on-line order, the 51% (in 2003) relates to 51% of those that offer on-line orders, the sites that did not offer on-line orders are excluded from the calculation.

In Table 5 the third column shows whether or not the presence of the attributes have increased, decreased, or stayed the same over the five-year period. Shaded cells indicate an increase in the attribute's presence. The final column indicates whether or not the change is significant using McNemar's test. The shaded cells indicate a significant increase in presence at the 0.05 level. These cells also represent a rejection of the hypothesis H_n for that attribute.

Table 4 presents a summary of the results. This shows the number and percentage of attributes in each category for which the hypothesis was retained or rejected and the overall total number of attributes.

Table 4: Summary of hypotheses tests

Category	Null Hypothesis Retained Attributes did not increase in presence		Null Hypothesis Rejected Attributes did increase in presence		
	Number	Percentage	Number	Percentage	Total attributes
Company Information	2	67	1	33	3
Product information	2	25	6	75	8
On-Site Tasting and Sales / External Distributors	1	33	2	67	3
On-Line Orders	4	40	6	60	10
Additional Products and Services	2	29	5	71	7
Off-Line Orders	3	60	2	40	5
Content, Organisation & Timeliness	4	80	1	20	5
Value-Added Features	5	33	10	67	15
Navigation	2	50	2	50	4
Aesthetics	2	67	1	33	3
Overall	27	43	36	57	63

***Table 5**: Percentage of times an attribute is present each year, percentage point change and significance*

Attribute	Percentage of *yes' responses* 2003	2007	5 year Inc/Dec percentage points 2003 - 2007	McNemar test of significance
Company Information				
1 Company details	99.2%	92.3%	-7	<0.001
2 Contact person	34.6%	68.2%	33	<0.001
3 Region	100.0%	92.3%	-8	0.002
Product information				
4 Wine description	86.9%	96.1%	9	0.019
5 Bottle price	70.0%	70.3%	0	1.000
6 Technical notes	26.2%	50.0%	24	<0.001
7 Tasting chart	2.3%	22.3%	20	<0.001
8 Best seller list	0.0%	10.8%	11	<0.001
9 Reviews - wine maker	82.3%	66.7%	-15	0.005
10 Reviews - professionals	20.0%	48.0%	28	<0.001
11 Reviews - consumer	1.5%	15.3%	13	<0.001
On-Site Tasting and Sales / External Distributors				
12 Cellar door opening hours	49.2%	62.3%	13	0.008
13 Cellar address and map	38.5%	63.1%	24	<0.001
14 External distributors details	35.4%	44.6%	10	0.126
On-Line Orders				
15 On-line ordering available	39.2%	60.0%	21	<0.001
16 Order retained while within site	21.6%	58.4%	36	0.001
17 Price & freight calculated	51.0%	56.8%	6	0.454
18 Export freight prices	2.0%	33.8%	32	<0.001
19 Order confirmed	62.7%	51.4%	-12	0.332
20 Several payment options	96.1%	53.2%	-43	<0.001
21 Secure transaction	25.5%	51.3%	25	0.017
22 Form Validation	34.0%	70.9%	37	<0.001
23 Customer and orders details remembered	5.9%	35.6%	30	0.021
24 Similar products	2.0%	16.9%	15	0.219
Additional Products and Services				
25 Corporate gift service	0.8%	17.5%	17	<0.001
26 Single bottle purchase	30.0%	66.7%	37	<0.001
27 Mixed dozens	78.8%	55.6%	-23	0.002
28 Delivery / order status on-line	1.0%	12.7%	12	0.002
29 Customer wish list	0.0%	15.9%	16	<0.001
30 Delivery choices	1.0%	21.1%	20	<0.001
31 Loyalty discount when ordering	24.1%	30.7%	7	0.118
Off-Line Orders				
32 Printable order form available	50.0%	57.0%	7	0.322
33 Fill-in form before printing	44.6%	40.5%	-4	0.629
34 Fill in form automatically calculates price and freight	21.5%	29.1%	7	0.424
35 Email orders	24.6%	61.6%	37	<0.001
36 Phone orders	20.8%	68.8%	48	<0.001
Content, Organisation & Timeliness				
37 Company name in title bar	80.0%	85.4%	5	0.311
38 "Contact us" link on each page	73.8%	27.7%	-46	<0.001
39 "last updated" on every page	14.6%	20.0%	5	0.281
40 Security/Privacy statement	26.4%	32.0%	6	0.648
41 Press releases	26.2%	39.2%	13	0.030
Value-Added Features				
42 Special offers	6.2%	39.1%	33	<0.001
43 New product announcements	20.8%	41.1%	20	<0.001
44 Best buys	0.0%	17.7%	18	<0.001
45 Wine making info	24.6%	63.8%	39	<0.001
46 Wine storage info	3.1%	27.7%	25	<0.001
47 Wine ageing info	53.1%	39.5%	-13	0.043
48 Complementary foods	43.1%	43.1%	0	1.000
49 Wine show awards	51.5%	59.2%	7	0.212
50 Virtual tour of winery	17.7%	86.2%	68	<0.001
51 Form of contact	85.4%	93.1%	8	0.087
52 FAQs	5.4%	6.2%	1	1.000
53 Members / wine club	16.2%	38.9%	23	<0.001
54 Electronic newsletter	34.6%	48.5%	14	0.020
55 Contests / giveaways	3.1%	18.8%	16	<0.001
56 Tourism promoted	27.7%	42.2%	14	0.013
Navigation				
57 Site map	2.3%	28.7%	27	<0.001
58 Search facility	4.6%	31.8%	27	<0.001
59 External site links	29.2%	35.7%	7	0.262
60 Standard link colours	40.0%	39.4%	-1	1.000
Aesthetics				
61 Variable font size	70.0%	46.1%	-24	<0.001
62 Short pages	62.3%	77.3%	15	0.007
63 Same branding / logos used	95.4%	80.6%	-14	<0.001

Overall, 57% of the attributes were more frequently present on the websites than they were five years ago, while 43% of attributes decreased or had no change. At the category level, 5 of the 10 categories saw increases in the presence of attributes. These findings are relatively consistent with the website adoption models which claim that websites will develop and increase in content and functionality as they mature. A discussion of the findings follows.

Company Information

All of the attributes in company information had significant changes, however, two changed in the negative direction. The main change in the company information section is the presence of a contact name, which went from 34% to 68% over the five years. This could be the result of wineries trying to personalise their sites in an attempt to build a customer relationship. The other two attributes, company details and region, you would expect to find on a site and were present in 92% of the sites even though they did show a slight decrease in presence over the five years.

Product Information

The amount of product information being presented has increased over the five years. In six of the eight attributes there has been a significant increase by 9 to 24 percentage points. The only area to dramatically decrease has been reviews given by the winemaker. However, as reviews given by professionals have increased, it is possible that the students conducting the evaluations did not have a clear idea of what the differences between the two were. This is one area of uncertainty that needs to be clarified with the data collectors in the future.

On-Site Tasting and Sales / External Distributors

The promotion of cellar door sales significantly increased over the five-year period. More than 60% of all websites evaluated now provide this information compared to around 40-50% in 2003. External distributor details has also increased but not by a significant amount.

On-Line Orders

The ability to place orders on-line has increased going from 39% in 2003 to 60% in 2007. In addition, the sophistication of the ordering experience has also increased. This has been achieved in a number of areas: partly completed order forms are retained, forms have inbuilt validation, and security measures are in place. The only item to significantly decrease (96% to 53%) is the availability of several payment options. This is not surprising; as the increase in more sophisticated ordering systems with increased security measures (25% to 51%) decreases the need for alternative payment methods.

Additional Products and Services

Additional products and services have increased over five of the seven attributes. An increase/decrease of note is that more sites are offering single bottle sales and fewer are offering mixed dozen sales. This could indicate that winery managers have recognised that a market exists for smaller volume sales.

Off-Line Orders

The promotion of email and phone orders significantly increased. This is a similar increase to that shown for on-line orders and is consistent with the literature that suggests that sites will move from an information provider to ordering as they mature.

Content, Organisation and Timeliness

The unusual feature of this category is that the presence of a security or privacy statement has not changed much over the years. Such a statement is currently present on around 30% of sites. This is despite an increase in implementing secure transactions when placing on-line orders. The literature suggests that a site with secure transaction facilities should make a statement to reassure the user of the security of the site.

Value-Added Features

It would appear that the website is increasingly becoming a means to offer the customer value-added features. Provision of additional, general interest information has significantly increased in the majority of cases. Of particular note is the increase in virtual tours of the winery (17% to 86%). This could take the form of a video clip or photo gallery. This is probably due to advances in technology that allow multiple images and video to be downloaded without affecting speed. Other general information that is offered includes information about wine making and storage. Specific information aimed at the customer to promote sales including special offers and best buys, and the provision of a members club and newsletter.

Navigation

Two of the four attributes in the navigation section, site map and search facility, show significant increases. However, all of the attributes are only present on 30% to 40% of sites.

Aesthetics

In the aesthetics section there were two significant decreases. The use of the same branding and logos on each page decreased from 95% to 80% over the five year period. While this shows as a decrease in presence, the feature is still present in the majority of sites evaluated. The only attribute not well represented was the ability to change the font size. The font size was changeable in only 46% of sites in 2007, which is a significant decrease from the earlier year when it was 70%. This means that more website developers are fixing the font size to control the layout of pages, which prevents users from adjusting the size through their browser to suit themselves.

Conclusion

This study has shown that over time Australia winery websites have generally increased in content and functionally which is consistent with website adoption models. In addition, as the evaluation attributes are based on customer requirements, theoretically this must go some way towards satisfying customers and increasing sales. However, there would appear to be some way to go before customers will be totally satisfied and e-SQ gaps are eliminated resulting in the 'perfect' website from the customers' perspective. A perfect situation with no e-SQ gaps would of course result in every customer making a purchase. While this would be an ideal situation, it is probably unrealistic. All wineries can hope for is to strive towards closing the e-SQ gaps and increasing

customer satisfaction and thus increasing sales. However, it must be remembered that this is only theory. The proposition that meeting customer needs leads to better e-SQ, perceived e-value, and results in purchases and repeat purchases has not been tested. This is an area for further research. Changing customer requirements must also be taken into consideration. Further research needs to be conducted to ascertain whether and by how much customer needs change. As content and functionality are added to websites, do customers require even more?

References

Afauh, A., Tucci, C.L., (2001): "Internet Business Models and Strategies: Text and Cases", McGraw-Hill/Irwin, N.Y.

Boon, O., Hewett, W.G., Parker, C.M., (2000): Proceedings of the 13th International Bled Electronic Commerce Conference, "Evaluating the Adoption of the Internet: A Study of an Australian Experience in Local Government", Bled, Slovenia, June 19 – 21.

Burgess, L., Cooper, J., (1999): Proceedings of the 12th International Bled Electronic Commerce Conference, "MICA: A Model for Classification of Business Adoption of Internet Commerce", Bled, Slovenia, June 7 – 9.

Burgess, L., Cooper, J., (2000): Proceedings of the International Conference on Telecommunications and Electronic Commerce, "Extending the Viability of MICA (Model of Internet Commerce Adoption) as a Metric for Explaining the Process of Business Adoption of Internet Commerce", Dallas, Texas, November.

Cockburn, C., Wilson, T.D., (1996): Business use of the World Wide Web, International Journal of Information Management, Vol. 16, No. 2, pp. 83 – 102.

Davidson, R.A., (2002): Proceedings of CollECTeR'02 Annual Conference on Electronic Commerce, "Development of an Industry Specific Web Site Evaluation Framework for the Australian Wine Industry", Melbourne, Australia, December 1-2.

Davidson, R.A., (2003): Proceedings of PACIS 2003 Doctorial Consortium, "A Business-to-Consumer Internet Commerce Model for Australian Wineries", Adelaide, Australia, 10 July.

Davidson, R.A., (2005): Proceedings of CollECTeR Europe 2005, "Measuring Electronic Service Quality Gaps", Furtwangen, Germany, June 12-13.

Davidson, R.A., (2006): Electronic Service Quality Gaps in Australian Wineries, PhD Thesis, Flinders University, Australia.

Davidson, R.A., Cooper, J., (2005): Proceedings of Bled E-Commerce Conference, "Electronic Service Quality Gaps in the Australian Wine Industry", Bled, Slovenia, June 6-8.

Davidson, R.A., Lambert, S., (2005): Proceedings of CollECTeR Australia 2005, "An Australian Winery B2C Website Design Framework and Contributing Factors to the e-SQ Gaps", Sydney, Australia, July 13.

Elliot, S., (2002): "Electronic Commerce B2C Strategies and Model", John Wiley & Sons, UK.

Gartner (2002): 'Gartner Web Site Evaluation Application', available www.gartnerg2.com, accessed 21/08/01.

Ho, J., (1997): Evaluating the World Wide Web: a global study of commercial sites, Journal of Computer-Mediated Communication (JCMC), Vol. 3, No. 1, available www.ascusc.org/jcmc/vol3/issue1/ho.html, accessed 11/4/02.

Hoger, E.A., Capel, J.J., Myerscough, M.A., (1998): Navigating the web with a typology of corporate users, Business Communication Quarterly, Vol. 61, No. 2, June, pp. 39 – 47.

Lawrence, E., Corbitt, B., Fisher, J., Lawrence, J., Tidwell, A., (2000): "Internet Commerce: Digital Models for Business", 2nd Ed., Wiley, Qld.

McKay, J., Prananto, A., Marshall, P., (2000): Proceedings of ACIS 2000 "E-Business Maturity: the SOG-e Model", Brisbane, Australia, December 6-8.

Schneider, G.P., Perry, J.T., (2000): Electronic Commerce, Course Technology, MA.

Timmers, P., (2000): "Electronic Commerce: Strategies and Models for Business-to-Business Trading", Wiley, Qld.

Turban, E., King, D., Lee, J., Warkentin, M., Chung, H.M., (2002): "Electronic Commerce 2002. A Managerial Perspective", Prentice Hall, N.J.

Winetitles (2002a): "The Australian and New Zealand Wine Industry Directory", 20th Ed., Hyde Park Press, Adelaide.

Winetitles (2002b): "The Australian and New Zealand Wine Industry Directory Database of Australian & New Zealand Wine Producers", Wine Publishers Pty. Ltd., Adelaide.

Zeithaml, V.A., Parasuraman, A., Malhotra, A., (2000):, A conceptual framework for understanding e-service quality: implications for future research and managerial practice, Marketing Science Institute, Working paper report no. 00-115.

Zeithaml, V.A., Parasuraman, A., Malhotra, A., (2002):, Service quality delivery through web sites: a critical review of extant knowledge', Academy of Marketing Science Journal, Fall, Vol. 30, No. 4, pp. 362 – 375.