Australian Winery Websites: Moving Towards Satisfied Customers

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ABSTRACT

This paper presents the results of a four year longitudinal study of Australian winery websites. The research sets out to determine if Australian winery websites have matured and increased their content and functionality since 2003. Data has been collected over the 2003 to 2006 period and analysed to determine if Australian winery websites are providing 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.

Keyword: Website Evaluation, Electronic Service Quality, Australian Winery Websites

1. Introduction

Electronic commerce literature indicates that websites will mature over time and as they do there will be an increase in content and functionality. 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. This study uses the results of a previous study that determined customer requirements as the basis for an evaluation tool to investigate whether or not Australian winery websites have increased in content and functionality over a four-year period.

The primary research question posed in this paper is "have Australian winery websites matured and increased in content and functionality over the four-year period from 2003 to 2006?" 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.

2. Prior Literature

2.1 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).

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

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

eMICA proposes that a developing commercial website will typically start simply 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) and within each of those stages of development are attributes first proposed by APT (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 provision and processing 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.

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

Table 2: Summary of Frameworks

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 model in that specific features are listed; the difference is that once features are identified they are given a score.

2.2 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 determinate 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.

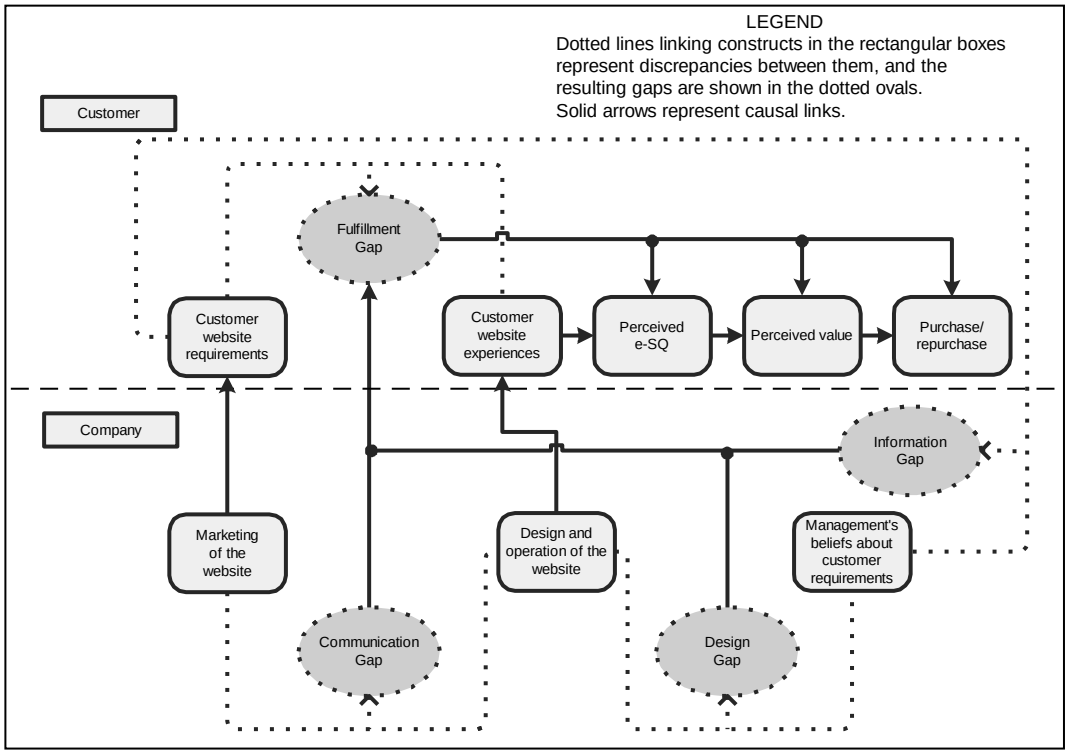

Figure 1: Conceptual Model for Understanding and Improving e-Service Quality (Zeithaml et al., 2002)

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.

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 mangers 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.

2.3 Australian Winery B2C Website Design Framework

By using all the attributes listed in the 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 an extensive list of 135 content and design issues. This list was refined following an extensive study of winery websites, winery managers, and winery website customers. 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 annual winery website evaluations.

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.

Table 3: Australian Winery B2C Website Design Framework

2.4 Customer Satisfaction and Website Maturity

As the Australian winery B2C website design framework contains attributes that winery customers consider to be important, then 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 over a four year period to determine if websites are maturing to meet customer requirements and to provide increased customer satisfaction.

3. Method

Australian winery websites have been evaluated each year over a four year period from 2003 to 2006. 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. All evaluations were carried out by the author during February and March in 2003.

Due to the time needed to conduct evaluations (approx half an hour per website), data collections in subsequent years has been carried out by 3rd and 4th year Flinders University students from an eCommerce class. In each year the number of websites evaluated is determined by the number of students enrolled in the topic. 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.

In 2004, each student was allocated one winery website to evaluate resulting in 87 responses. Each student filled in a paper evaluation form which they submitted with their assignment. Data from this was entered into an electronic spreadsheet by a research assistant.

In 2005 and 2006 an on-line survey was used which allowed the students to enter their evaluation results directly into a form on the topic's website. This form data was

piped into a database retrievable by the author. In 2005 and 2006 students were allocated 3 winery websites each to evaluate which resulted in 195 and 178 responses respectively. A summary of the number of responses each year is given in Table 4

	Year of survey			
	2003	2004	2005	2006
Number of evaluation	228	87	195	178

Table 4: Number of Responses by Year

Each year the websites were chosen from the original 228 that were used in 2003. As the study is looking at how websites have matured over the time period, the same sites have been used each year with more added or deleted in a proportionate number from each stratum to suit the number of data collectors available.

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 each year 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 was 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.

4. Results

The evaluations consisted of 73 questions which represent each 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, hence, there are more questions than dot points in the above framework.

For each of the 73 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 percentage of 'yes' responses for each attribute are shown in Table 5. For example in 2003, of the 228 responses, 39% (89/228) gave a contact person's name (attribute 2). However, for attribute 15 – 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.

	The percentage of 'yes' responses each year				Increases/Decreases (±1% considered equal)			Yearly Increase/Decrease percentage points			4 year Inc/Dec percentage points
Attribute	**2003**	**2004**	**2005**	**2006**	**'03-'04**	**'04-'05**	**'05-'06**	**'03-'04**	**'04-'05**	**'05-'06**	**'03-'06**
Company Information											
1 Company details	97	97	93%	93%	≈	V	≈	-1	-4	0	-4
2 Contact person	39%	46%	67%	71%	Λ	Λ	Λ	7	21	4	32
3 Region	98%	81%	92%	96%	V	Λ	Λ	-17	11	4	-2
Product information											
4 Wine description	87%	86%	93%	94%	V	Λ	≈	-1	7	1	7
5a Bottle price	63%	67%	60%	70%	Λ	V	Λ	4	-7	10	7
5b Case price	n/a	n/a	53%	56%	n/a	n/a	Λ	n/a	n/a	3	3 *
6 Technical notes	30%	30%	42%	37%	≈	Λ	V	0	12	-5	7
7 Tasting chart	2%	10%	12%	15%	Λ	Λ	Λ	9	1	3	13
8 Best seller list	0%	5%	7%	7%	Λ	Λ	≈	4	2	0	7
9a Reviews - wine maker	83%	48%	51%	45%	V	Λ	V	-36	3	-6	-38
9b Reviews - professionals	21%	28%	40%	40%	Λ	Λ	≈	7	12	0	19
9c Reviews - consumer	1%	3%	13%	9%	Λ	Λ	V	2	10	-4	8
On-Site Tasting and Sales / External Distributors											
10 Cellar door opening hours	46%	47%	51%	53%	≈	Λ	Λ	0	4	2	7
11 Cellar address and map	38%	59%	55%	56%	Λ	V	≈	22	-4	1	18
12 External distributors details	38%	39%	48%	47%	≈	Λ	≈	1	9	-1	9
On-Line Orders											
13 On-line ordering available	31%	36%	38%	43%	Λ	Λ	Λ	4	2	5	12
14 Order retained while within site	25%	43%	43%	51%	Λ	≈	Λ	18	0	8	26
15 Price & freight calculated	51%	52%	59%	50%	Λ	Λ	V	1	7	-9	-1
16 Export freight prices	6%	14%	38%	36%	Λ	Λ	V	8	24	-2	30
17 Order confirmed	63%	50%	60%	59%	V	Λ	≈	-13	10	-1	-4
18 Several payment options	97%	76%	50%	55%	V	V	Λ	-21	-26	5	-42
19 Secure transaction	25%	27%	51%	48%	Λ	Λ	V	2	24	-3	23
20 Form Validation	36%	63%	67%	61%	Λ	Λ	V	27	4	-6	25
21 Customer and orders details remembered	6%	29%	23%	24%	Λ	V	≈	24	-6	1	18
22 Similar products	3%	16%	9%	9%	Λ	V	≈	13	-7	0	6
Additional Products and Services											
23 Corporate gift service	0%	4%	8%	7%	Λ	Λ	V	3	5	-1	7
24 Single bottle purchase	28%	60%	49%	59%	Λ	V	Λ	32	-11	10	31
25 Mixed dozens only	83%	52%	48%	51%	V	V	Λ	-31	-4	3	-32
26 Delivery / order status on-line	1%	4%	2%	6%	Λ	V	Λ	3	-2	4	5
27 Customer wish list	0%	1%	7%	5%	Λ	Λ	V	1	5	-2	5
28 Delivery choices	1%	10%	10%	14%	Λ	≈	Λ	9	0	4	13
29 Loyalty discount when ordering	28%	9%	24%	23%	V	Λ	≈	-18	15	-1	-5
Off-Line Orders											
30a Printable order form available	45%	49%	52%	59%	Λ	Λ	Λ	4	3	7	14
30b Fill-in form before printing	40%	25%	35%	34%	V	Λ	≈	-15	10	-1	-6
30c Fill in form automatically calculates price and freight	18%	26%	15%	22%	Λ	V	Λ	7	-11	7	4
31 Email orders	20%	46%	42%	44%	Λ	V	Λ	26	-4	2	24
32 Phone orders	18%	45%	48%	52%	Λ	Λ	Λ	26	3	4	34
Content, Organisation & Timeliness											
33 Company name in title bar	78%	85%	88%	92%	Λ	Λ	Λ	8	2	4	14
34 "Contact us" link on each page	72%	50%	28%	31%	V	V	Λ	-22	-22	3	-41
35 "last updated" on every page	17%	18%	18%	23%	≈	≈	Λ	1	0	5	6
36 Downloads in < 10 sec	78%	80%	91%	97%	Λ	Λ	Λ	2	11	6	19
37 Security/Privacy statement	31%	11%	21%	18%	V	Λ	V	-21	10	-3	-13
38 Press releases	30%	37%	38%	33%	Λ	Λ	V	7	1	-5	3
Value-Added Features											
39 Special offers	5%	14%	24%	26%	Λ	Λ	Λ	8	10	2	21
40 New product announcements	21%	24%	34%	30%	Λ	Λ	V	3	10	-4	9
41 Best buys	0%	6%	9%	8%	Λ	Λ	V	6	3	-1	8
42 Wine making info	28%	51%	51%	43%	Λ	≈	V	23	0	-8	15
43 Wine storage info	7%	17%	17%	17%	Λ	≈	≈	9	0	0	10
44 Wine ageing info	51%	44%	37%	38%	V	V	Λ	-7	-7	1	-13
45 Complementary foods	44%	38%	42%	40%	V	Λ	V	-6	4	-2	-4
46 Wine show awards	53%	35%	57%	58%	V	Λ	≈	-18	22	1	5
47 Virtual tour of winery	17%	23%	74%	78%	Λ	Λ	Λ	6	51	4	61
48 A form of contact (email or form)	81%	90%	89%	90%	Λ	≈	≈	8	-1	1	9
49 FAQs	4%	3%	6%	4%	V	Λ	V	-2	3	-2	0
50 Members / wine club	12%	12%	24%	30%	≈	Λ	Λ	-1	12	6	18
51 Electronic newsletter	36%	32%	41%	38%	V	Λ	V	-3	9	-3	2
52 Contests / giveaways	4%	3%	6%	8%	≈	Λ	Λ	-1	4	2	4
53 Tourism promoted	28%	24%	43%	37%	V	Λ	V	-4	18	-6	9
Navigation											
54 Site map	4%	19%	33%	20%	Λ	Λ	V	15	14	-13	16
55 Search facility	5%	4%	15%	10%	≈	Λ	V	-1	11	-5	5
56 External site links	30%	40%	38%	36%	Λ	V	V	10	-2	-2	6
57 Standard link colours	42%	47%	40%	34%	Λ	V	V	5	-7	-6	-8
Aesthetics											
58 Colourful pages	n/a	91%	79%	80%	n/a	V	≈	n/a	-12	1	-11 *
59 High contrast b't text & background	n/a	89%	87%	84%	n/a	V	V	n/a	-2	-3	-5 *
60a Text size easy to read	n/a	89%	79%	83%	n/a	V	Λ	n/a	-10	4	-6 *
60b Font size not fixed	67%	50%	62%	62%	V	Λ	≈	-17	12	0	-5
61 Uncluttered pages	n/a	n/a	88%	85%	n/a	n/a	V	n/a	n/a	-3	-3 *
62 Short pages	63%	67%	78%	80%	Λ	Λ	Λ	4	11	2	17
63 Same branding / logos used	93%	91%	86%	91%	V	V	Λ	-2	-4	5	-2
64 Short paragraphs	n/a	n/a	92%	93%	n/a	n/a	≈	n/a	n/a	1	1 *
65 Headings	n/a	n/a	95%	97%	n/a	n/a	Λ	n/a	n/a	2	2 *
66 Bulleted lists	n/a	n/a	43%	42%	n/a	n/a	V	n/a	n/a	-1	-1 *
67 Multiple linked pages	n/a	n/a	66%	65%	n/a	n/a	V	n/a	n/a	-1	-1 *

* Change calculated from the earliest year data were available

Table 5: Percentage of times an attribute is present each year

In table 5 the coloured columns show whether or not the presence of the attributes has increased, decreased, or stayed the same over the four-year period. The first group of three coloured columns gives a simple indication of an increase, decrease, or no change with the symbols ∧, ∨, and ≈. The symbols are colour coded for ease of reading. For the purposes of deciding if there has been 'no change' an allowance of ±1 has been made, hence a move from say 93% to 94% equates to no change.

The next group of three columns gives the actual percentage points of change between the years. For instance, the '03 – '04 change is calculated with the formula:

2004 percentage of yes responses – 2003 percentage of yes responses

As for the previous three columns, colours indicate the direction of change with no change being within ±1 of zero.

The last column shows the percentage change over the four-year period. The formula used to calculate this is:

2006 percentage of yes responses – 2003 percentage of yes responses

During the course of the study two attribute were found to be ambiguous and subjective and were broken up into smaller components. This is the reason why some data is not available for the early years, as it was collected as a whole under a different question and could not be broken down into the individual components. In these cases the figure in the four-year change column represents fewer years and is calculated from the earliest year data were available.

A discussion of the findings follows.

4.1 Company Information

The main change in the company information section is the presence of a contact name, which went from 39% to 71% over the four 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 the mid range of 90% even though they did show a slight decrease in presence over the two years.

4.2 Product Information

The amount of product information being presented has steadily increased over the four years. In all but one of the nine areas there has been an increase by 3 to 13 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.

4.3 On-Site Tasting and Sales / External Distributors

The promotion of cellar door opening hours and external distributors increased over the four-year period. Roughly half of all websites evaluated now provide this information compared to around 40% in 2003.

4.4 On-Line Orders

The ability to place orders on-line has increased at a steady rate every year going from 31% in 2003 to 43% in 2006. 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, price and freight are calculated, forms have inbuilt validation, and security measures are in place. The only item to significantly decrease (97% to 55%) 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 48%) decreases the need for alternative payment methods.

4.5 Additional Products and Services

Additional products and services have increased over most 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.

4.6 Off-Line Orders

There has been an increase in the offering of off-line orders by way of a printable form (45% to 59%), promotion of email orders (20% to 44%), and phone orders (18% to 52%). 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.

4.7 Content, Organisation & Timeliness

The big surprise in this category is that the presence of a security or privacy statement has decreased. 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.

4.8 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 increased in the majority of cases. Of particular note is the increase in virtual tours of the winery (17% to 78%). 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, and awards won at shows. Specific information aimed at the customer to promote sales includes special offers and best buys, and the provision of a members club and newsletter.

4.9 Navigation

While three of the four attributes in the navigation section, i.e. site map, search facility, and external links, have shown an overall increase over the four-year period, they are still only present on 20%, 10% and 36% of sites respectively. It is interesting that the presence of standard link colours has decreased from 42% to 34%. The

general guide regarding links has always been to use the standard colours of blue and reddish/purple so that users can easily recognise a link. This move away from standard colours may be the result of website developers being more creative and recognising that as users become more familiar with the web they can still find links regardless of what colour they are.

4.10 Aesthetics

Aesthetics saw more decreases than any other section. However, this doesn't accurately reflect on how well websites are presented as these attributes were present on a high number of sites to start with. While a decrease is shown, it is only a small amount and still reflects a high number of sites with the attribute present. For example, the use of the same branding and logos on each page decreased from 93% to 91% over the four year period. While this shows as a decrease in presence, the feature is still present in over 90% of sites evaluated. Generally the high number of attributes present in this section indicates well designed sites that are pleasing to the eye.

4.11 Summary

Table 6 presents a summary of the results. This shows the percentage of attributes in each category that has increased, decreased, or not changed in presence over the four-year period. For example, in the category on-line orders, 7 of the 10 (70%) attributes had an overall increase over the four-year period, 2/20 (20%) decreased, and 1/10 (10%) did not change.

Category	Inc.	Dec.	NC
Company Information	33%	67%	0%
Product information	89%	11%	0%
On-Site Tasting and Sales / External Distributors	100%	0%	0%
On-Line Orders	70%	20%	10%
Additional Products and Services	71%	29%	0%
Off-Line Orders	80%	20%	0%
Content, Organisation & Timeliness	67%	33%	0%
Value-Added Features	80%	13%	7%
Navigation	75%	25%	0%
Aesthetics	18%	55%	27%
Overall	67%	26%	7%

Table 6: Percentage of Attribute Changes in Each Category

Overall, 67% of the attributes were more frequently present on the websites than they were four years ago, while 26% decreased and no change was seen in 7%.

These findings are relatively consistent with the website adoption models which claim that a websites will develop and increase in content and functionality as they mature.

5. Discussion and Conclusion

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 in fact

unrealistic. All wineries can hope for is to strive towards closing the e-SQ gaps and increasing customer satisfaction and thus increasing sales.

This study has shown that over time more of the attributes that are based on a previous customer requirements survey are being added to websites. Theoretically, this must go some way towards satisfying customers and increasing sales. This gives rise to a further area of study. The questions that come to mind are: are customers more satisfied with the added functionality being offered on websites, and does this added functionality increase sales?

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