The Extended Web Assessment Method (EWAM) Applied:
Do Websites for Consumer Goods Stand the Test?

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Abstract

The paper presents an analysis of four commercial Web sites in the consumer goods sectors. The Web sites were evaluated using the Extended Web Assessment Method (EWAM), an evaluation tool which has been specifically created for the assessment of e-commerce applications. EWAM builds on the Web Assessment Method developed at the University of St. Gallen, Switzerland [Schubert/Selz, 1999] and integrates findings from the Technology Acceptance Model [Davis, 1985] and several alternative approaches. It defines an evaluation grid including a set of criteria to appraise the quality and success of existing e-commerce applications. The focus lies on consumer perspectives and the specific features of the Internet as medium. The findings show that most Web sites are far from fully meeting user expectations. The paper presents the findings of an empirical study carried out in April 2001. Twenty students from an executive training class in E-Business completed the web assessment forms.

1   Introduction

The paper presents the findings of an empirical study carried out in April 2001. The assessment forms were completed by 20 Internet-experienced students who attended an E-Business executive training, and who were thoroughly instructed in the use of the tool beforehand. Since the study was conducted in Switzerland, the results represent a Swiss perspective. E-Business is still a very regional affair, making it hard for consumers to assess Web sites in countries other than their home country. Nevertheless, we included the leading US company, Webvan, in our sample to make the study more interesting and to add an international perspective in a study about the inherently global Internet commerce environment and to be able to compare the state-of-the-art in the US with that in Switzerland.

Only Web sites which were intensively used or tested by the assessors were investigated. Accordingly, the sample represents a small quantity of highly-qualified user opinions. The evaluations resulted into Web assessment reports which compare the individual performance profile of three companies with the "best of its class" (best practice profile) and the general sector profile (aggregation of all companies in the same sector). Additionally, the students had to hand in a qualitative report on the four Web sites.

2   Methodology

The methodology used for this study is based on the Extended Web Assessment Method (EWAM). This method has its origins in the original Web Assessment (WA) method developed in St. Gallen, Switzerland in the early 1997th. In recent months it was adjusted to latest technological developments. The following paragraph gives a brief description of the EWAM principles.

The original Web Assessment Method was developed in 1997 at the Competence Centre for Electronic Markets (CCEM) at the University of St. Gallen in conjunction with the company partners [Selz and Schubert, 1998; Schubert and Selz, 1999, 2001]. The method defines an evaluation grid with a set of criteria to appraise the quality and success of existing e-commerce applications. Besides the rigorous focusing on consumer perspectives, the success in implementing the offer of products and services is considered with reference to the specific features of the electronic medium.

In summer 2000 the method was fundamentally revised; besides taking account of new research findings - especially in the Internet marketing field - it also incorporated the Technology Acceptance Model (TAM) [Davis, 1985], established for the acceptance of information systems, which incorporates important social factors of user behavior. For an extended explanation of the new, revised method see [Schubert and Dettling, 2001]. Besides the fundamentals of the TAM some alternative approaches of Web site evaluation were taken into account during the revision of the Web Assessment Method:

Figure 1 shows the combination of the Web Assessment Method with the 'Ease of Use' and 'Usefulness' categories of the 'Technology Acceptance Model' together with the 'Trust' category taken from the Theory of Reasoned Action (TRA) [Fishbein and Ajzen, 1975]. The

'sector 1 ... n' dimension illustrates the extension of EWAM with sector profiles and the consideration of differing importance of individual criteria within these sectors.
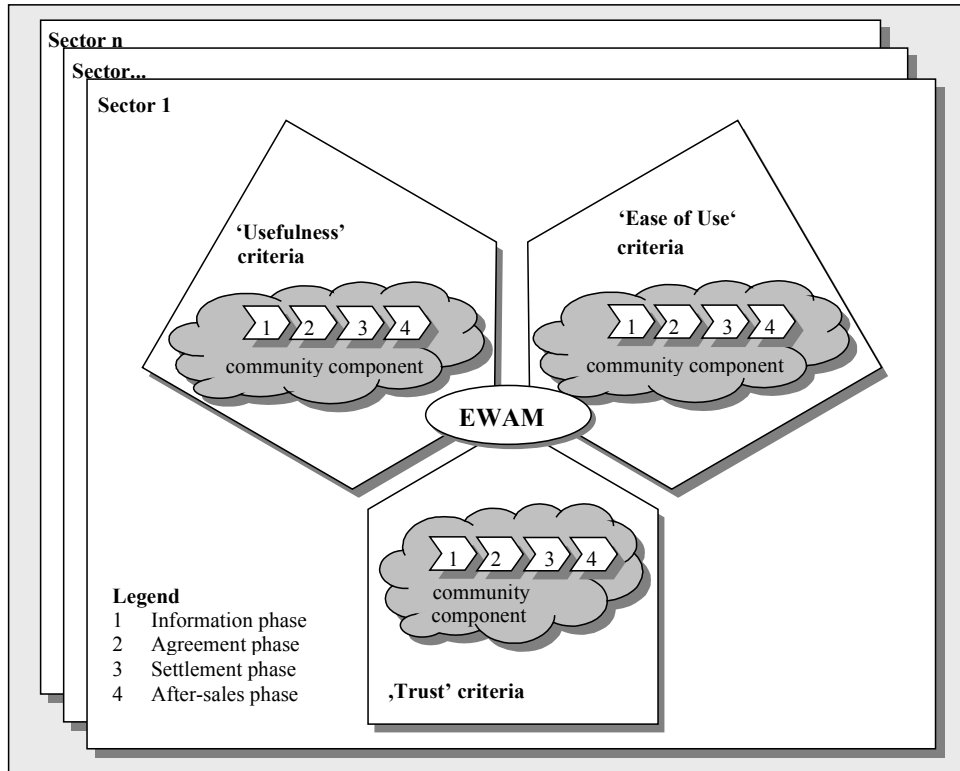

Figure 1: Diagram of the ‚Extended Web Assessment Method‘

3 Findings of the Study

Data is collected over the Internet with an online questionnaire ('EWAM tool') in which the usual structure of the original tool [Selz and Schubert, 1998] has been retained. The following paragraphs present the findings of our study for the consumer goods sector.

Web sites assessed:
- http://www.webvan.com (***)
- http://www.le-shop.ch
- http://www.migros.ch
- http://www.mcfood.ch

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The companies which were chosen for the consumer goods sample are from two different countries: Switzerland and the USA. **WebVan** was an ambitious American online venture with a vision "of 26 massive automated warehouses and a national fleet of vans that would deliver groceries – and just about anything else – to everyone in America" [Helft, 2001]. Based on big money investments it is not surprising that WebVan came out as "Best of Class" although the company had been experiencing some problems [Platoni, 2001] and was forced to end its operations by mid-2001. **Le-Shop** is a Swiss independent online business which acts as a reseller for food and drugs. Acting solely on the Internet it is not surprising that it was voted "best in Switzerland". **Migros** is a Swiss store chain selling all kinds of consumer goods with a focus on the food sector. **McFood**, finally, was a small Swiss "newcomer" which had – at the time of the assessment – not yet been able to setup its logistics and was deliberately picked as the "bad example" by the course instructor. McFood, like WebVan, ceased operation by mid-2001.

In order to be able to assess the Web sites we had to interview the assessors about their perceived importance ratings for the consumer goods sector. The "raw data" for a data set does not allow interpretation of the performance of a Web site. We distributed a general Web assessment form to a selected set of people who are familiar with using the Web as a source of information and shopping. These people were asked to state their expectations for Web sites in the consumer goods sector. Their forms where collected and the data was entered into the tool as the so-called "importance rating". The importance rating shows the expectation of a user for a certain criterion. If expectations are high, meaning that a certain feature is important for a Web site from the user perspective, and cannot be found during the assessment the result will be a bad evaluation for the respective criterion. For the evaluation, the criteria are then summed up and aggregated to show only one value for a certain phase.

For an explanatory presentation of our results we picked www.webvan.com (the best practice profile). The following table shows the aggregated values for the consumer goods sector. The column labeled "importance" shows the perceived user expectations. The possible range of values is +2 to -2. For the calculation, the importance values are later transferred to a scale of 0 to 1. The final section is the most important followed by the after-sales and the information phase. The final section contains general criteria which apply to all phases (availability, user interface, interactivity, trust) and seems to be very important for consumer goods.

Results (Range -2/+2) / Phase	Importance	Company Profile	Difference to BPP	Difference to SCP	Best Practice Profile (BPP)	Sector Profile (SCP)
1. Information Phase	**3.** 0.71	0.67	0.00	0.30	0.67	0.38
2. Agreement Phase	0.50	0.61	0.00	0.14	0.61	0.47
3. Settlement Phase	0.56	0.45	0.00	0.41	0.45	0.05
4. After-Sales Phase	**2.** 0.83	0.83	0.00	0.55	0.83	0.27
5. Community Component	0.17	-0.68	0.00	0.11	-0.68	-0.80
6. Final Section	**1.** 1.43	1.04	0.00	0.46	1.04	0.58
7 Overall Score	n.a.	0.49	0.00	0.33	0.49	0.16

Figure 2: Aggregated data set for the consumer goods sector, company profile: www.webvan.com

The community component received a very low importance rating. This could be due to the fact that the assessors do not yet know about the power of community building on the Internet and were thus not able to really judge the importance as e.g. pointed out by Schubert [2000]. On the other hand, purchasing food and drugs might indeed not be an activity during which community-support is appreciated although examples could be recommendations, product ratings, aggregation of demand to lower prices, etc.

What are the main features of WebVan, which represents the best practise profile? Assessors pronounce: this is the way, shopping makes fun! This fun starts while entering the WebVan Web site. It embodies an ambitious Web solution with good communication towards the customer. The product supply is extremely large and manifold and you find a lot of additional information about the products. WebVan distinguishes itself with a fast registration and with user-friendly features in the agreement phase. Unfortunately delivery is limited to some regions in the United States.
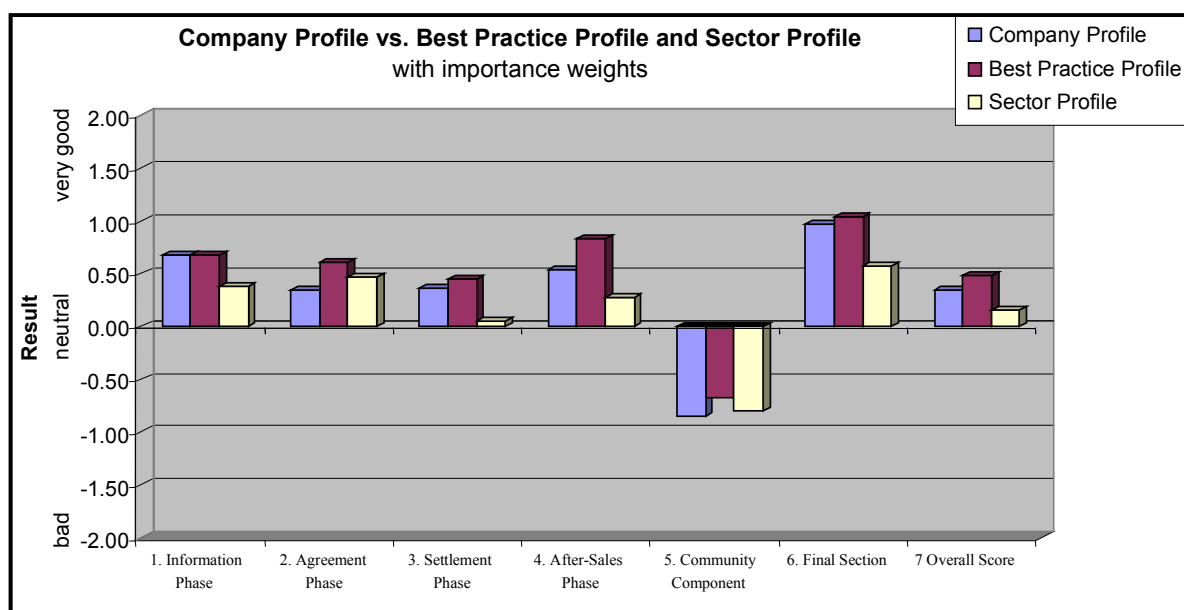
Figure 3: Company Profile of www.le-shop.ch

Figure 3 shows the company profile for www.le-shop.ch, the best Swiss Web site for consumer goods (second after the American company WebVan). As we can see, Le-Shop scored almost as high as WebVan in two of the three important sections, the final section and the information phase. There seems to be room for improvement in the after-sales phase and especially in the agreement phase which received a lower value than the sector average.

The high assessment in the information phase is due to a simple way of getting started with Le-Shop. The contents of the site are clearly arranged and present-day. Words and pictures contain additional information about the products. Features of the agreement phase such as prices and conditions are clearly arranged. Multiple shopping lists can be created. The assessment of the ordering process varies among the students: some find it complicated, others find it comfortable. Considering the settlement phase the main opinion is that it is working well, delivery and payment included. Order tracking and tracing is not possible. What is not found on the Le-Shop site is a community component which is not popular in the consumer goods sector as a whole (Fig. 3).

As can be seen in Figure 4 the assessment results of Migros are not as good as the results of Le-Shop or WebVan. The presentation of content is rather old-fashioned than modern and the structure of the Web site is complicated. The search engine supplies hardly any good results. The shopping tool in the agreement phase works without difficulties. For the settlement phase you can choose between three modes of delivering (e. g. home delivery, pick point delivery) and payment by credit card or deposit slip. The process of payment is well structured but the security level is low. Delivery reaches a high level of performance but it is limited to business hours. In the after sales phase assessors miss a list of the goods ordered.

Company Profile vs. Best Practice Profile and Sector Profile
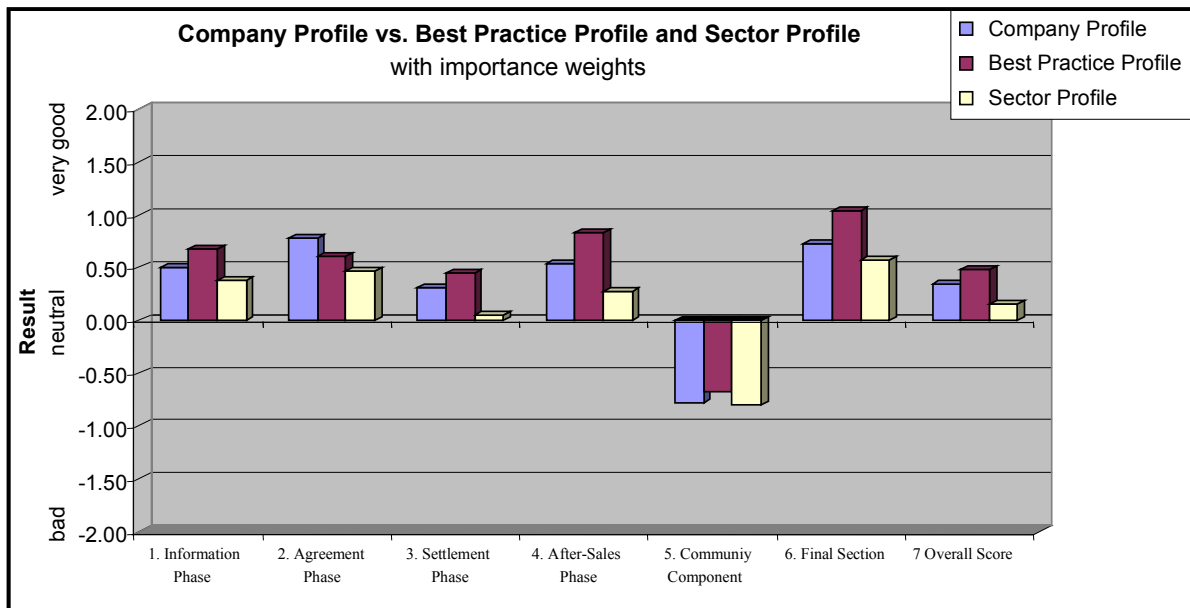with importance weights

Figure 4: Company Profile of www.migros.ch

Figure 5 shows a comparison of perceived user expectations and assessment values. The four sectors represent recommendations for generic strategies which should be applied dependent on the results in the various sections. As we can see from figure 5 www.migros.ch scored *higher* than the expectations in the category Agreement Phase. Interestingly, this is a category which was deemed unimportant for the consumer goods sector. The diagonal shows the points where expectations meet actual assessments. Most assessments for www.migros.ch are grouped around the diagonal. The general advice for www.migros.ch is to focus its future improvements on the settlement phase and the community component.
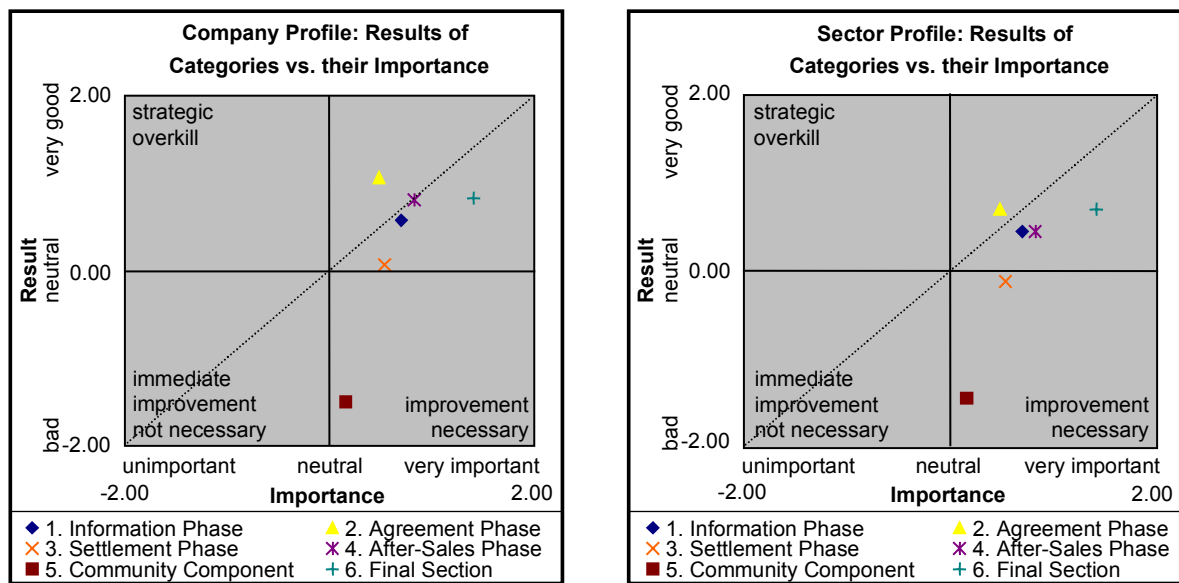
Figure 5: Company Profile of www.migros.ch

EWAM unmasks bad web shops as can bee seen in figure 6. The McFood Web site consists of badly designed pages. The site offers interesting discount prices but poor information about products. Additional advice is helpful. The shopping basket lacks functionality. Information about delivery date and location is available only after finishing the ordering process. Delivery did not take place during the assessment month.
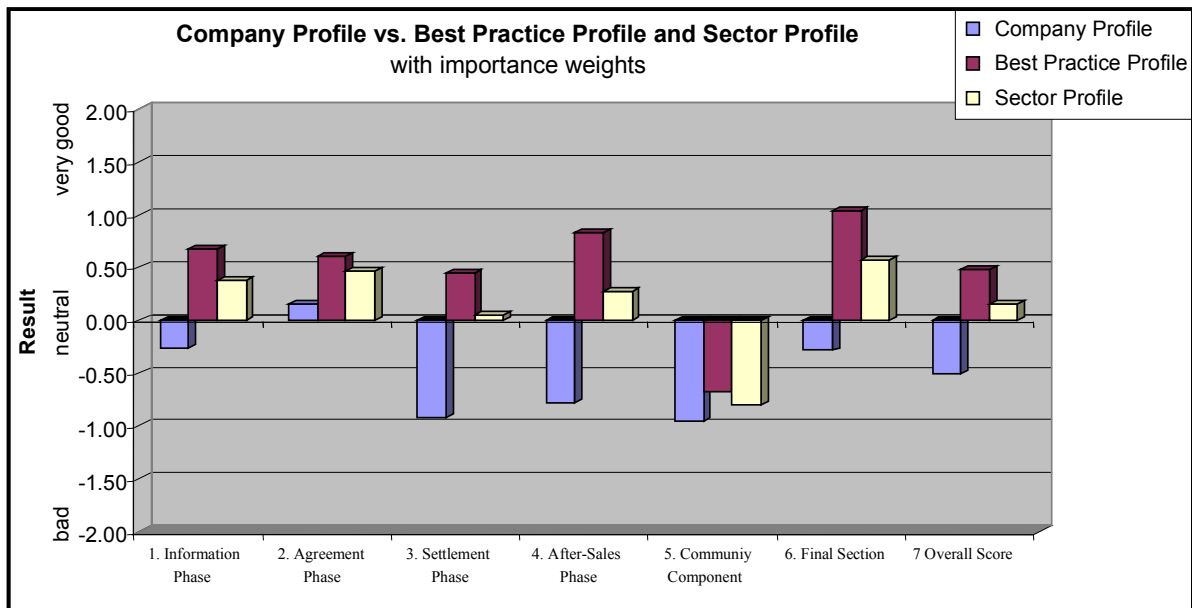
Figure 6: Company Profile of www.McFood.ch

4 Conclusions

EWAM lays down a conceptual framework for the evaluation of commercial Web sites whose basic form – the Web Assessment Method – has already proved itself in operation for several years. With the EWAM this work is placed in the context of current developments in e-commerce and united with an established scientific model (the TAM). Web sites can thereby be thoroughly appraised and implicitly the degree of customer orientation can be judged. An important improvement was considering the importance of a criterion for a specific business sector which let to a more differentiated assessment of Web sites in different industries.

Acknowledgements

Link to the EWAM questionnaire

http://e-business.fhbb.ch/survey/ewam.nsf
User: watool
PW: bestsite

References

[Davis, 1985] Fred D. Jr. Davis. *A Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Doctoral Thesis, Sloan School of Management, Massachusetts Institute of Technology, 1985.

[Fishbein and Ajzen, 1975] Martin Fishbein, Icek Ajzen. *Belief, attitude, intention and behavior: an introduction to theory and research*, Reading, MA: Addison-Wesley, 1975.

[Helft, 2001] Miguel Helft. *Reality Check, Aisle 5*, in: The Standard, [http://www.thestandard.com/article/ 0,1902,24035,00.html?nl=dnt], 30.04.2001. [Accessed: 10.06.2001].

[Platoni, 2001] Kara Platoni. *The Last Mile*, in: Eastbay Express Online, [http://www.eastbayexpress.com/issues/2001-05-25/feature.html/page1.html], 25.05.2001. [Accessed: 10.06.2001].

[Schubert, 2000] Petra Schubert. *Virtuelle Transaktionsgemeinschaften im Electronic Commerce – Management, Marketing und Soziale Umwelt*, Lohmar, Köln: Josef Eul Verlag, 2000.

[Schubert and Dettling, 2001] Petra Schubert, Walter Dettling. *Web site evaluation: Do Web applications meet user expectations? Music, consumer goods and e-banking on the test bed*, in: Proceedings of the 14th International Bled Electronic Commerce Conference, Bled, Slovenia, June 25-56, 2001.

[Schubert and Selz, 1999] Petra Schubert, Dorian Selz. *Web Assessment - Measuring the Effectiveness of Electronic Commerce Sites Going Beyond Traditional Marketing Paradigms*, in: Proceedings of the 32nd HICSS Conference, Hawaii, Internet and the Digital Economy Track, Jan. 1999.

[Schubert and Selz, 2001] Petra Schubert, Dorian Selz. *Measuring the Effectiveness of Electronic Commerce Websites with the Web Assessment Method*, in: Hunt, Brian (Ed.), E-Commerce and V-Business, London: Imperial College, 2001.

[Selz and Schubert, 1998] Dorian Selz, Petra Schubert. *Web Assessment - A Model for the Evaluation and Assessment of successful Electronic Commerce Applications*, in: Proceedings of the 31st HICSS Conference, Hawaii, 'Internet and the Digital Economy Track', Vol. IV, 1998, pp. 222-231.