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Adaptation of the Hersey Web Site Evaluation Model for Application to the Banking Sector

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Abstract

Thirteen banking web sites in Chile were analysed using an adaptation of the Hersey generic web site evaluation model. The model was modified to improve its applicability to the banking sector, and a total of 37 different aspects of Internet based services were analysed. The modified model was applied with uniform weighting for each element. The degree of fulfilment of these aspects ranged from 51% to 86% across the different bank sites. Chilean banking sites perform well in serving their clients, but still many business opportunities are available to them. The modified Hersey model is quite effective in evaluating banking web sites. Web site developers may use these results as a means to improve their sites.

Keywords

Internet banking, Hersey web site evaluation model, Chilean banks

INTRODUCTION

The purpose of this paper is to evaluate banking web sites in Chile in terms of their provision of company, consumer, product and financial information, ease of use, order services, provision of legal and privacy information, aesthetic presentation, e-commerce services, performance, innovation, community facilities and added value for the banking clients.

Financial institutions worldwide have embraced e-commerce as a fundamental channel through which their customers access the services and products offered to the public (Wright and Ralston, 2002; Davidson, 2000; Chung and Paynter, 2002a, 2002b; Paynter et al., 2001, Paynter et al., 2002; Huff et al., 1999; Kalakota and Whinston, 1996). The cost of a banking transaction has been estimated at \$1.07USD when the customer comes in person to the bank office, \$0.35 when the customer calls the bank by phone, \$0.27 when the customer uses an automatic teller machine (ATM), but only \$0.10 when the transaction is performed across the Internet (Amenábar and Godoy, 1999). The cost to the bank is much lower and the convenience for the customer is much greater. Access is available 24 hours a day, 7 days a week and an Internet connection is likely to be much closer than the bank office.

Uncertainty regarding the security of transactions may be one of the main factors that hold back an otherwise win-win relationship between banks and their clients. Despite a quite positive picture of the future of Internet banking, stand alone Internet banking has not been successful (Zinski, 2001). Internet banking in Australia has also proceeded at a pace less than desirable (Wright and Ralston, 2002). Evaluation of services and performance of Internet access offered by banks is an important tool for ensuring success in the business.

The Hersey web site evaluation model (Whiteley et al., 1999) was adapted for use in the banking sector. The value of the web site evaluation model is to permit an objective comparison of differing sites for benchmarking studies. Other models, such as the Extended Web Assessment Method (Schubert and Dettling, 2001) have also been used for differing aspects of electronic commerce. Such models can be used to forecast the effect that modification of the banking site might have on customer relations, and as such is a tool to assist managers in designing their business plans (Whiteley, 2003).

In the following section the Internet banking context in Chile will be given, the original Hersey model will be described and the modifications made for application to bank web sites will be detailed, results from the evaluation will be presented and discussed and conclusions drawn from them.

INTERNET BANKING IN CHILE

The development of Internet banking in Chile was based on the internal computing services of the banks that in the early 1990's began to process salary payments of their business customers making direct deposits to the

employee's accounts. Telephone based access to individual accounts was another service offered by the banks to their clients. Internet services came into the banking picture in the mid-90's. Initially the banking sites simply presented the corporate image to the public. Later individual account balances were offered; at the end of the 90's Internet transactions were enabled. The banks offering e-banking cover 98% of the total banking accounts in Chile (Lever et al., 2002). The banks direct their services to differing market segments:

- Individuals
- Companies
- Investors
- International trade

and the platforms may be classified as:

- Corporate sites
- Vertically integrated sites (financial services for the client)
- Horizontally integrated sites (non-financial services)

As of Lever et al. (2002), 46% of Internet users in Chile also had checking accounts and 40% of checking clients performed transactions over Internet. In Chile many individuals have savings book accounts with limited withdrawal rights. A bank will open a checking account for a client only after a relatively rigorous background study where the client must show economic solvency. Between June 2001 and June 2002 Internet access to banking sites increased 44%, account balance requests increased 59% and transactions increased 87%. The total amount of money moved in transactions increased from 3% to 4.8% of that moved in check based transactions. 75% of Internet customers declared to be very satisfied with the service and 18% declared to be satisfied. On a scale of 1 to 5, 1 being very poor and 5 being very good, the customers rated the Chilean banks as 4.7.

To relate the use of the Internet in Chile to use in other countries, Lever et al. (2002) analysed an index on the basis of education, infrastructure, communications costs, density of PC's, and others. The results of the ranking show a group of leaders among which are the USA, Holland and the Scandinavian countries followed by an advanced group including the main European and Australasian countries, then a group of emerging countries such as Italy, Spain and Greece. A group of potential players includes Chile in overall position 24. The fifth group of countries considered to be left behind includes China, Brazil and Mexico, and the final group is completely excluded from the Internet community. This ranking is surely highly correlated with national per capita income. Similar rankings have been published which show that Chile has 54 computers per 1000 capita, while USA has over 400 (El Mercurio, 2000), or that in the USA 50% of the population has Internet access while in Latin America 5% and Europe 28% of the population has access (Lever et al, 2002).

In this section, the use of Internet in Chile has been shown to be quite dynamic and expanding. In the international context, Chile is in the midrange of countries, with the possibility of moving up into the category of the 'haves' or falling behind in the 'have-nots'. In the following sections, the Hersey web site evaluation model will be described and the modifications to this model for banking sites indicated.

METHODOLOGY

The purpose of this research is to evaluate the web sites provided by the banking sector in Chile. As a means of realizing objective measurements the Hersey model (Whiteley, 2000) was adapted to describe banks' web sites. This modified model was then applied to the principal banks in the Chilean market.

Hersey Web Site Model

The Hersey model divides the web site – remote user interaction as a series of components:

- Company information
- Customer Information
- Product information
- Negotiation
- Order
- Payment
- Product delivery

- After sales service
- Community development

and four components which are present in all of the above mentioned steps:

- Performance
- Ease of use
- Aesthetics
- Innovation

The performance component is emphasized at the beginning and end of the interaction process while ease of use is more relevant in the middle stages. Aesthetics and innovation are present at all stages of the interaction.

The negotiation component refers to the possibility of obtaining product prices, availability and sales conditions. Product delivery refers to the possibility of specifying the procedures and mechanisms for delivery of the product. Community development is the facility that a web site may provide to gather feedback from clients and to allow them to share information among themselves.

Adaptation of the Hersey Model for Banking Web Sites

Bank sites are special since the relationship between clients and banks is different than that between clients and other service providers. Typically the client will use a bank over the long-term; to move from one bank to another is a major decision for the individual client, whereas on-line shoppers show less loyalty to specific product or service providers. Due to the specific requirements presented by the banking industry, such as security, privacy, data integrity, performance, etc., their web sites have to be carefully designed to fulfil these needs. A web site evaluation model must take into account these factors. Therefore, the Hersey model has been tailored by Chung and Paynter (2002a) for the evaluation of banking web sites.

In the tailored Hersey model, the components “Company Information”, “Customer Information”, and “Product Information” were subsumed in a general component called “Information”. The components “Order”, “Payment”, “Delivery”, and “After-Sales” were subsumed into a general component “Order”. The component ‘Ease of Use’ was expanded to include the following elements: frequent questions, demonstration of the site services, help facility, navigation, search, and assistance for disabled clients. The legal statement for transactions and privacy policies are particularly important for financial institutions. A component named “Legal statement” was added to the Hersey model to cover these concepts (Chung and Paynter, 2002a). “Innovation” and “Community” were grouped into the “Others” component. The components “Performance” and “Aesthetics” were retained in the original form.

In this study, a further refinement of the tailored Hersey Model has been done to incorporate the evaluation of new banking sector requirements. The component ‘Negotiation’ which was dropped from the Hersey model by Chung and Paynter (2002a) was reincorporated as a single component entitled “e-Commerce” including elements such as the offering of virtual malls, special deals on non-banking goods and exchange of bonus points in coordination with other businesses. Another component, “Added Value” was incorporated into the model. This new component includes stock market, insurance and mutual funds transactions. The “Information” component was also expanded to include the element “Financial Information” such as exchange rates and financial indices.

The components, elements and descriptions of bank site evaluations used in the modified model are listed in Table 1.

Bank Survey

In order to apply the adapted Hersey model a demonstration account that illustrates the services available but manages no funds, was requested from the each bank. In certain cases where a demo account was not available, clients were contacted who permitted the researchers access to their personal accounts. In each case the presence or absence of the specific feature in the modified model was noted.

During the survey, each element was evaluated to be present or absent according to the description in Table 1. For an element considered to be present, the value one (1) was assigned for the item, otherwise it was given a zero (0). The model elements could have been weighted as to provide a more complete image of the value of certain service with respect to others. For example, the provision of account balances could be expected to be more important than animations or audio content in a bank site. However, the determination of the weighting factors was judged to be too subjective to be included at this stage of research.

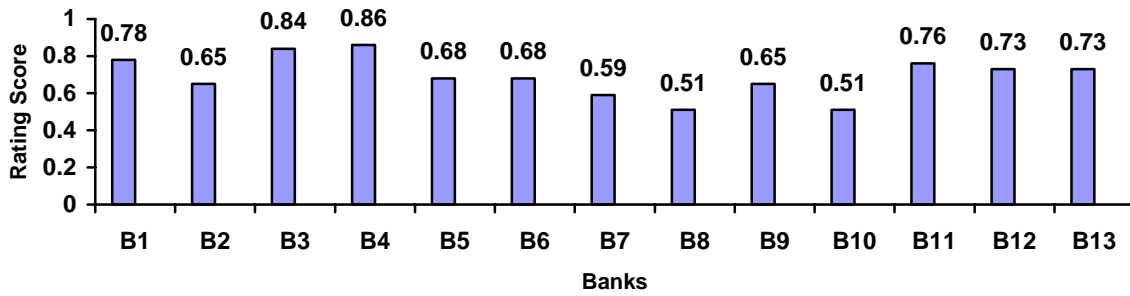
Table 1. Modified bank site evaluation model

Component	Element	Description	
Information	Company information	Company information, history, mission, objectives available on the web site	
	Consumer information	Client information available when requesting a product or making a transaction.	
	Financial information	Data such as exchange rates, stock market indices	
	Product information	Descriptions of each of the financial products offered by the bank; an electronic catalogue	
Legal statement	Privacy policy	Declaration of the privacy policies of the bank with respect to its customers	
	Security policy	Explicit description of the security mechanisms available when conducting transactions across the web	
Order	Account balances	Account balances available	
	Fund transfer (same bank, same client)	Transfer of funds between two accounts belonging to the same client within the same bank	
	Fund transfer (same bank, different clients)	Transfer of funds between accounts of differing clients within the same bank	
	Fund transfer (different banks)	Transfer of funds between accounts of differing banks	
	Transaction history	Availability of the history of account transactions available on the site	
	Obtain services and products	Can the client request a loan, open an account or obtain other services over the web	
	Download information	Can account information be downloaded in a format suitable for local, offline processing ^o	
	Payment of external services	Can public services such as gas, electricity, water bills or taxes be paid using the bank web site	
	Obtain check books	Can the client request a check book to be delivered	
	Change password	Can the client change the account password	
	After sales service	Can the client contact the bank regarding problems with use of the financial products	
	Ease of use	Frequent questions	FAQ, is there a list of the frequently asked questions available to assist clients with doubts.
		On line demos	Is a service available to show new users how to use the web site
Search		Is it possible to search the bank web site to find information and services	
Help		Is a mechanism available to assist clients personally with the use of the site	
Navigation		Is the site architecture complex and difficult to navigate	
Accessibility for disabled persons		Does the site offer assistance for visually impaired users?	
Aesthetics		Graphic design	Does the site include visual elements and cues
	Animations	Does the site include animations	
	Audio	Does the site include audio elements	
e-Commerce	Virtual stores	Does the site assist clients in purchasing goods from virtual stores	
	Bonus points	Does the site permit clients exchange bonus points obtained in the various promotions	
	Special offers	Are special offers available on-line	
Added value	Stock market	Can the client buy and sell stocks through the bank site	
	Insurance	Can the client purchase insurance through the site	
	Mutual funds	Can the client purchase mutual funds through the site	
Performance	Update frequency	Is the site updated daily	
	Response time	Can the portal be totally downloaded in 20 seconds across a 56kbps modem connection	
	Technical problems	Is the site totally functional	
Others	Innovation	Are there any innovative aspects to the site	
	Community	Does the site facilitate clients to share information, complaints, suggestions between themselves	

RESULTS AND DISCUSSION

The results of the bank survey using the adapted Hersey model can be summarized in Figure 1, where the total number of elements available at each banking site is illustrated as a proportion of the total number of elements considered in the model. The ratios range from 0.86 down to 0.51 with more than half the banks having less than 70% of the total.

Figure 1. Overall rating of bank sites



This illustrates a significant variability in web site services available across the Chilean banking system, with some banks well behind others in their web site offerings.

Information

When one looks more closely at the variation between the banks, certain model components show significant variations while others are fairly uniform. In the information component, comprising company, customer, financial and product information, all of the banks except one have 100% of the elements present. This is probably because the banks' initial web site offerings were informational presenting minimal security problems. The site designers have had many years to ensure that the site incorporates all the information that they would like to have available.

Legal Statement

In the legal statement component, only one bank has complete privacy and security information available, four banks have only one element present and eight banks publish no security or privacy information at all. As a contrasting example, in research covering New Zealand banks (Chung and Paynter, 2002a) the sites show a uniformly high degree of security and privacy. A hypothesis of this research is that security concerns are one of the restraining factors for Internet banking; consequently the bank managers should attempt to ensure that the security and privacy of their customers is clearly maintained, and that the customers know that they are being protected.

Order

The order component of the banking sites is varied, but fairly complete. Four banks have all the modelled order elements present, four have a 91% rating and only two are below 70%. One can hypothesize that the concept of order is well understood by the web site architects. This is in contrast to the previous result in which the implementations' performance is variable and many are poor.

Ease of use

The ease of use component shows a very wide variation, with three bank sites at 33%, three at 50%, four at 67% and three at 83%. For a user to conclude that one site is easy to use and another is more difficult might be a reflection of the expectation of the individual. By means of the web site evaluation model this evaluation can be made more objectively. The proposed banking web site evaluation model rates the ease of use by presence or absence of frequently asked questions, a demonstration service, search facility, on-line help, complicated navigational schemes and handicapped persons assistance. Of these elements, the only one that might be considered subjective is whether the navigation is complicated or not. In this case, all banks but one have sites with clear navigational structure, so one may conclude that the evaluation is objective.

Special mention should be made of the complete absence of handicapped person's assistance across all of the banks; not one site evaluated in the Chilean banking system has any assistance for clients with disabilities. This might be a reflection of a lack of a generalized social awareness; it also represents an opportunity for a bank to target this market segment. For example, many older people have reduced visual capabilities, but they also might have investment funds and a special program to assist them using the web site might attract new customers. This should be a message to the bank Internet managers that they should pay more attention to the component of ease of use of their sites.

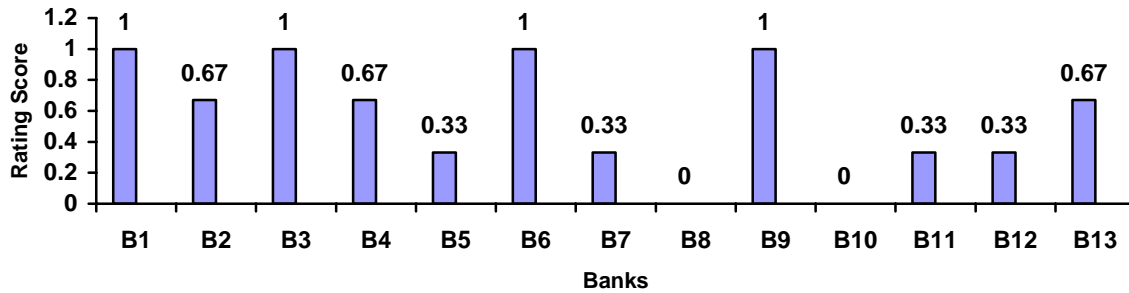
Aesthetic effects

The component aesthetic effects, includes graphic design, animation and audio. Two banks have all these elements; all the rest have one or two. Given that the sites are quite functional, one might suppose that the decision to include advanced aesthetic effects is a result of a conscious decision on the part of the site designers.

e-Commerce

In this component the survey shows four levels of fulfilment. Four banks include all the elements. Three banks have two of the elements. Four banks have only one element and two of the banks have none. This component clearly separates the leading banks from the followers. One would expect that the banks lagging behind would be able to catch up to the leaders in order to be more competitive. Figure 2 illustrates the relative ranking of the banks for the e-commerce component.

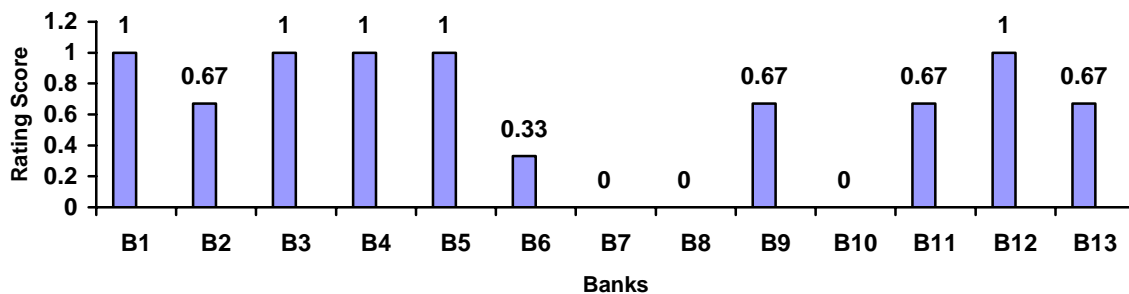
Figure 2. Rating of bank sites for e-commerce component



Added value

Similar variability is observed for the component added value. However, not all the leading banks in this component also lead the e-commerce component. This would suggest that the more competitive banks are exploiting niche markets. It is interesting to note that the trailing banks are the same in the e-commerce and added value components. This may be due to market orientation of the banks rather than poor management. Figure 3 illustrates the relative ranking of the banks for the added value component.

Figure 3. Rating of bank sites for added value component



Performance

An area in which the results are variable and not quite satisfactory is the performance component. Of the thirteen bank sites surveyed, two failed the tests completely, four fulfilled them completely and seven came in with 66%. Performance is not likely to be related to bank policy; the bank might not want to offer special deals on vacations on remote islands, but certainly they need their site to work correctly, to be completely functional and to download rapidly. The Chilean banks must ensure that the performance of their web sites is satisfactory. For example, in the New Zealand study, all banks but one fulfilled all the performance elements completely.

Innovation and Community

Only three of the thirteen banks were rated as innovative. Two of these three banks plus a third which was not rated as innovative promote community interaction. In general, the Chilean Internet banking offers services which are of good quality though not very innovative. Additionally, the Internet banking sites do not offer the public a place to share information, express complaints or make suggestions.

CONCLUSIONS AND FUTURE RESEARCH

An overall conclusion of this study is that the Chilean banking sites perform well in serving their clients, but still have many business opportunities available. The bank web sites evaluated with the adapted Hersey model are

particularly complete for the components concerning information and order services for customers. Another conclusion regarding the methodology of this study is that the modified Hersey model is quite effective in evaluating web sites.

Chilean banks should consider publishing their privacy and security policies on their Internet sites. One can not conclude that the banks are mistaken in not publishing their security and privacy policies; however it does lead to the question whether such policies do indeed exist, if the banks simply don't realize that such policies can be published and whether the bank computer specialists are capable of performing the tasks necessary to provide this important service. The example of the New Zealand Internet banking regarding privacy and security policy should be taken as a model for the Chilean Internet banking industry.

Performance deficiencies within sites suggest that adequate resources should be assigned to the development teams to permit them to ensure that the sites work as expected without errors. Likewise, web designers should pay attention to the ease of use of their sites since considerable improvement can be made in this area. As a particular goal, a bank might incorporate a special policy of assisting handicapped people to use their site.

Bank site developers can use the results of this study as a means to improve their sites. The model can be used to predict customer satisfaction with Internet banking at the different financial institutions, and thereby provide a means with which the individual banks can customize their Internet offerings to their intended clients. Future research in evaluating banking web sites will validate the modified Hersey model among bank clients, surveying users as to their evaluation of the banking services available across the web. An important future goal is to determine objectively weighting functions for the different model components and elements as a means of modelling more closely the status of the banking site.

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