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AN ORGANIZATIONAL CHANGE PERSPECTIVE OF SMES WEB PRESENCE EVOLVING STRATEGIES

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Abstract

Firms are constantly evolving their Web presence. The premise of this study is that monitoring the behaviour of Web sites gives insights into the actual evolving strategies and motivations behind Internet investments in organizations. A variety of models have been utilized to study the progression of adoption of Internet technologies from different perspectives (e.g. Stages of Growth models). However, from the organizational change perspective there is little research to explain why and how organizations continually evolve their Web presence. Therefore, the aim of this paper is to present a framework to characterize and model the evolution of the Web presence of small and medium-sized enterprises (SMEs) in the UK and undertake its preliminary validation by monitoring the evolution of a sample of Web sites. A total of 185 Web sites from SMEs were collected and monitored over an 18-month period in order to study the process and content of their change. In addition, 25 telephone interviews were undertaken to ascertain the drivers of the change and complement the previous quantitative observations.

1 INTRODUCTION

The majority of small and medium-sized enterprises (SMEs) in the UK have already established a Web presence (DTI 2003). Firms have numerous reasons for establishing a Web presence, and these reasons influence the design and implementation of the site. Carrying out online sales and other business transactions is seldom the main reason for establishing a site, which can be used to achieve a variety of purposes (McNaughton 2001). For example, SMEs are finding a presence on the Web to be important for enhancing their corporate image, increasing brand/product awareness and providing customer service (Leong et al. 1998).

In this era of globalisation, with the advent of the Internet the level of competition is increasing and consumers are becoming more demanding. Given the growing importance of Web sites in relations between companies and consumers, businesses are ever more aware of the need to improve their offerings. Trust is an important factor when making decisions for potential online shoppers (Jarvenpaa and Tractinsky 1999) who may need to make enlightened decisions based on information supplied on Web sites. Therefore, a Web site is likely to be a dynamic entity, demanding continual maintenance, investments, skill acquisition and management commitment to build and maintain relationships. This is especially important in interactive and complex Web sites in order to ensure currency of its content and avoid its decline in quality over time (Kowtha and Choon 2001).

The sophistication and complexity of a firm's Web site may reflect its electronic commerce strategic objectives since the Web site is the portal through which most electronic transactions are conducted today (Kowtha and Choon 2001). Depending on the organization's Internet strategy, its Web site will have different functional characteristics, the extent of which tends to increase when Internet adoption progresses from a lower to higher level (Teo and Pian 2004). Therefore, studying how Web sites evolve over time is also one way to study the progression of electronic commerce adoption by organizations.

The adoption of Internet technologies by SMEs has been suggested to follow a sequence of stages (Daniel 2002, Rao 2003). These models describe their evolution in a sequential manner from a basic use of the Internet for informational purpose (marketing tool) to a more sophisticated use that integrates business systems and redesigns business processes. It is assumed that greater benefits will be obtained when a company engages in a process of business transformation (Chau 2003). However, despite the efforts of governments and the various support programs that have used these models, the achievement of the advanced stages of e-Commerce by SMEs is very low and some small company Web sites do not seem to follow this general path. Recent research in Europe (Brown and Lockett 2004, Levy and Powell 2003) reveals that e-Commerce initiatives in SMEs in most cases are still in their initial stages, which do not exceed the use of email and simple information-based Web pages. Indeed, several studies into the state of e-business in the UK report a decline in the number of SMEs implementing e-trading and even using Web site and e-mail (DTI 2003, CBI and KPMG Consulting 2002). Therefore, these models seem to be inadequate to describe the actual adoption of Internet technologies by SMEs (Martin and Matlay 2001, Levy and Powell 2003, Alonso Mendo and Fitzgerald 2005a).

Other models have been proposed in trying to explain this progression. Firstly, the stages of adoption have been suggested to be replaced with stages of organizational learning, because it has been acknowledged that the commitment of owners/managers and their perception of the benefits of Internet technologies appear to be critical factors for adoption in SMEs (Martin and Matley 2001).

Secondly, institutionalism concepts of 'isomorphic practices' have been found to be more useful than the Stages of Growth model to examine the adoption and use of organizational intranets (Lamb and Davidson 2004). The new institutionalism in organizational theory comprises a rejection of the organizational actors' rationality, and it claims that the structure and behaviour of an organization are shaped by the characteristics of the environment in which it operates. In this sense, organizations

within a particular industry, consciously or unconsciously, copy each other's practices over time, regardless of efficacy.

In addition, growth and progression in SMEs has been suggested to occur when an appropriate combination of factors takes place. There are both exogenous and endogenous factors influencing the adoption, implementation and the successful management of ICT (Southern and Tilley 2000). For example, Martin and Matlay (2001) affirm that it is the reactive or proactive approach of owners to rapid technological changes in the marketplace that is crucial to ICT adoption and implementation. In another example, Mehrtens et al (2001) identify perceived benefits, organizational readiness, and external pressures as the main factors that influence adoption decisions.

Finally, e-commerce can be approached in many different ways depending on the specific business process that might be carried out through the Internet (Tagliavini et al., 2001). Thus, several Internet usage profiles or approaches are possible. A company must determine which profile or combination of profiles best suits its particular business context and strategy. For example, Tagliavini et al. (2001) identified five e-commerce approaches, namely, public relations, company promotion, pre/post sales support, order processing and payment management. Unlike stage models, these models do not prescribe a necessary sequence of stages or specify that a firm that is approaching the Internet in certain way must proceed to another use in order to get more benefits. Rather, this approach imply the idea that firms must consider which mode of e-business is right for their businesses and asses if moving to another mode would be best for them or not.

Like traditional information systems, Web sites are constantly evolving. The previous theoretical models provide some insights into the general issues of the broad implementation of Internet technologies in organizations from different perspectives. Implementation of computer-based information technologies can also be seen as an organisational change process that extends over time (Lucas, 1994). Thus, it is suggested that a change perspective could provide a useful lens through which to view SMEs Web site evolution. However, there is relatively little research evidence to explain why and how organizations evolve their Web presence over time, and less that examines this as a set of change sequences. Therefore, the aim of this paper is to present a framework to characterize and model the evolution of the Web presence of SMEs and undertake a preliminary validation by monitoring the evolution of a sample of Web sites. The premise of this study is that monitoring the behaviour of these Web sites provides insights in the actual evolving strategies and motivations behind Internet investments. The rest of this paper is organized as follows. In the next section, a research framework, based on three dimensions of organizational change, is described. The research methodology utilized in this study, which included Web site monitoring, content analysis and telephone interviews, follows. Then, preliminary results of the study are presented and discussed in the subsequent section. The paper concludes with a summary of contributions.

2   RESEARCH FRAMEWORK

Conducting research with a single preconceived change theory in mind has the risk of oversimplification and obtaining only a partial account of the development and change process at the expense of others. For example, researchers using a priori staged model may expect a certain number of stages of development to occur and find their results becoming self-fulfilling prophesies (Boudreau and Robey, 1999). Organizational change is more complex than this and it typically involves a number of simultaneous change drivers, interacting with each other. This suggests a need for a broader, multidimensional, framework to be adopted in its study. This section describes such a framework to help understand the evolution of e-business practices within SMEs. Whilst the framework itself is new, the contents of the dimensions and elements in the framework are partly, although not totally, derived from existing literature and studies (Alonso Mendo and Fitzgerald, 2005b). It is hoped that this combination of a variety of different perspectives will provide a more fruitful approach in the future.

Given the variety of definitions associated with organizational change, it is important to establish a clear indication of what is meant by change and how these concepts might be applied to the context of change in Web sites. Levy and Merry (1986) suggest that organisational change in organizations can be viewed in three dimensions: the process of change, the content of the change, and the reasons for change. Each of these dimensions provides a particular lens for viewing change. The first dimension is concerned with how change occurs, for example continuous (incremental) versus episodic (discontinuous) changes in a sequence over time. The second dimension focuses on what the changes are, examining the empirically observable differences in the form, quality or state of an entity over time. The third dimension examines why change occurs, focusing on the forces and sources for change. These dimensions were utilised to create the framework (Figure 1) and pose the research questions, as follows: (1) How do SMEs change their Web sites (process of change)? (2) What kind of changes do SMEs make to their Web sites (content of change)? and (3) Why do SMEs change their Web sites (drivers of change)?
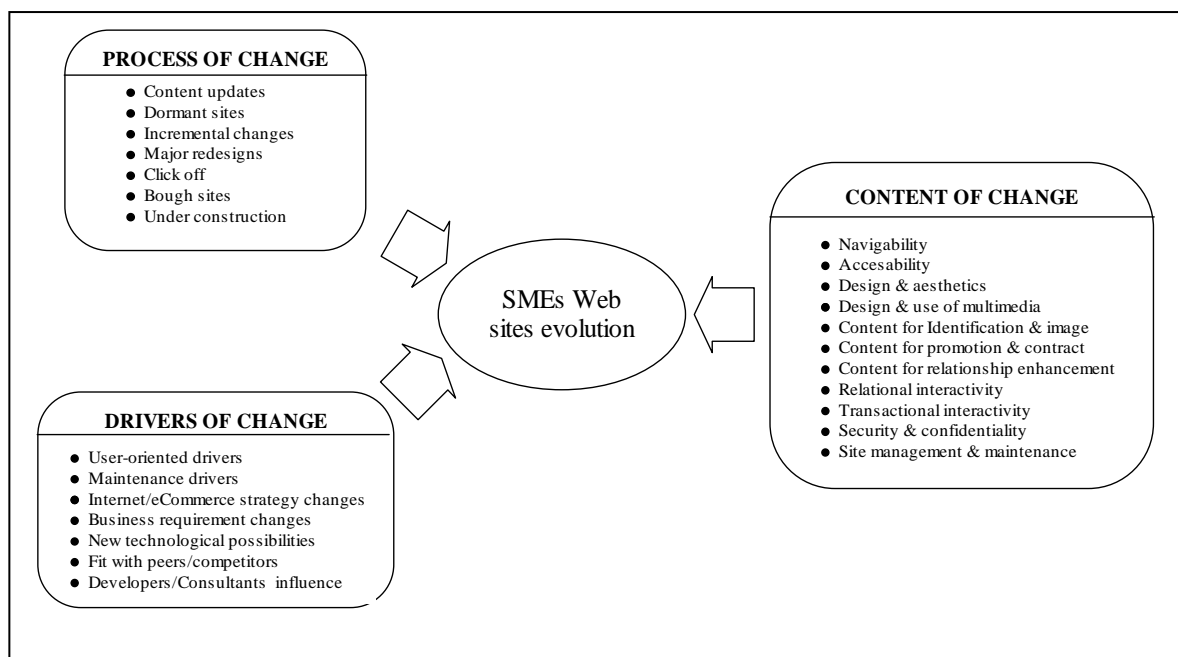

Figure 1 – Framework for investigating the progression of SMEs in their use of Internet technologies.

These dimensions form the core of the framework, with the categories of each being examined below

2.1 The process of change

Web site evolution can follow a number of different patterns over time. For example, Web sites may disappear, they may remain stagnant for long periods of time, their content may be regularly updated, they may be enhanced with additional features or functionality, and they sometimes undergo sudden wholesale redesign or redevelopment (Alonso Mendo and Fitzgerald, 2005b). The framework described here adopts the following comprehensive set of categories as to how Web sites evolve (or evolution strategies):

Content updates: represent common maintenance of Web content without changes in the functionality, look and feel or features of the Web site. For example, addition of news about the company, changes in prices etc.
Dormant sites: correspond to cases where there are no apparent changes or updates.
Incremental changes: characterize upgrades that occur with the normal maintenance of a Web site that do not entail a major redesign (Ryan et al, 2003). For example, adding a privacy policy page, adding a sitemap.

Major redesigns: denote sudden and major shifts in a Web site that involve more than mere alterations in look and feel. They usually imply changes to the organization of pages and functionality of the site (Ryan et al, 2003).
Dead sites (click off): represent Web sites that disappear and which domain is found to be unavailable or URL produces an error.
Bought sites: are found to have been bought and then redirect to a different company.
Under construction: display an under-construction page, while they are being redesigned.

Table 1 – Evolution strategies.

2.2 The content of change

Web site evolution can also be characterized by considering the observable differences that Web sites experience over time. Two evaluation approaches were adopted in this study with this aim. Firstly, an automated evaluation approach that deploys software tools to analyse Web sites and collect information on key quantitative characteristics of a large sample of Web sites. Secondly, a product-based approach that manually measures the presence, absence, or quantity of certain features or components in a Web site. Such content analysis intends to measure the development of a Web site focusing on externally perceivable aspects of the potential functions accomplished by the Web site. Consequently, eleven categories relevant to Web site evaluation were selected based on an analysis of previous Web evaluation studies. They are briefly introduced below:

Navigability (NAV): relates to features that facilitate intuitive and consistent navigation and enable to find information and products. For example, sitemap, glossaries and in-site search.
Accessibility (ACC): refers to features that make the site and its content more accessible in different browsers, connection speeds, for users with disabilities and from various locations. For example text only versions, links to plug-ins required and search tags.
Design & aesthetics (DA): these features measure that the design of the site is aesthetically pleasing and that its 'look and feel' is appropriate for the content and purpose of the site. For example, correct space allocation, choice of colors, readability, scannability and consistence of layout.
Design & use of multimedia (DUM): points to the appropriate use of multimedia content, such as graphics, images, audio and animations.
Content for Identification & Image (CII): comprises the content to identify the company and promote its expertise and contribution to society and the environment. For example company profile, history, mission and values, customer's testimonials, press releases etc.
Content for Promotion & contract (CPC): comprises the content to promote the products/services of the company, build brand identity and informs the customers of conditions related to a transaction. For example, catalogue of products, services offered, conditions regarding financing and payment.
Content for Relationship Enhancement (CRE): relates to specific information to customers and other stakeholders in order to maintain relationships, technical support and professional after-sales service. For example, FAQs, useful links, generic information, financial status and careers information.
Relational Interactivity (RI): includes any features to develop personalized relations with stakeholders, build interest and a sense of community, and promote user/organization communication. For example messaging/alert on company information or product, discussion groups, only member areas.
Transactional Interactivity (TI): embraces features that enable users to carry out transactions like online ordering facilities, direct sales and payment, and real-time order-processing.
Security & Confidentiality (SC): relates to features to ensure the security of transactions, the confidentiality of information received and the respect for people's wishes regarding the processing of personal information. For example, security certifications and entry in secure zone of site.
Site management & maintenance (SMM): includes features that indicate how current the content is, avoid broken links and provides contact details to advice of Web site problems and other issues. For example, last update date and Webmaster link.

Table 2 – Categories of Web site evaluation.

2.3 The drivers of change

The third dimension examines why change occurs. There are different forces or factors that drive these changes and a previous phase of this research entailed the development of a categorization of these reasons, elaborated from previous studies and further refined and validated based on a qualitative content analysis of secondary Web site redesign case studies (Alonso Mendo and Fitzgerald, 2005c). The resulting categories of drivers were identified as:

User-oriented drivers: refer to the necessity of accommodating user needs (Benbunan-Fich and Altschuller, 2005). User-oriented redesigns are aimed at producing a better fit between the site and its audience by creating a better online experience and/or responding to user feedback/demand. For example, taking into account user characteristics and preferences to improve overall usability or build more intuitive navigation.
Maintenance drivers: the evolution and growth of the content of a Web site may lead to a number of maintenance problems (e.g. site architecture erosion, outdated information, broken links etc). Maintenance-oriented redesigns are aimed to facilitate the management/maintenance of the site or fix design shortcomings.
Internet/eCommerce strategy changes: in order to better accomplish the organization's strategic objectives, a firm might shift the focus of its online strategy accordingly (Ryan et al., 2003). Thus, the redesign of the Web presence can be explained in terms of a modification in the organization's purpose with the Web site (e.g. to focus on the efficiency of internal processes, expand access to information content, incorporate online sales, provide better customer relations or support, etc).
Business requirements changes: Web site redesigns may also be undertaken due to the company undergoing fundamental alterations, such as changing focus, combining/dissolving divisions, applying a new business model, re-branding process or otherwise altering its products/services.
New technological possibilities: this category would explain Web site redesign in terms of firms trying to take advantage of the rapid advances in Internet-related technologies (Benbunan-Fich and Altschuller, 2005) (e.g. the evolution of backend technologies, Web presentation technology and formats, security services etc).
Fit with peers/competitors: this driver would explain Web site redesigns in terms of organizations trying to achieve a better fit between their Web site and the sites of other organizations to which they compare themselves (Ryan et al., 2003). Thus, when enough number of peers/competitors incorporates particular functionalities or design then the firm changes in the same way so that it can be seen as belonging to the same group.
Developer's influence: other potential drivers include the role of Internet consultants or Web developers, who may influence an organization by suggesting the necessity of a redesign. Sometimes redesigns could also be in response to the creativity of developers or their desire to mature and develop new skills.

Table 3 – Drivers of Web site redesign.

3 RESEARCH METHODOLOGY

An empirical and quantitative approach was firstly adopted which identified and observed changes to SME Web sites over time. The advantages of this method are that it allows a non-obtrusive data acquisition of actual changes in the Web without explicit interaction with the organizations and does not impose an artificial conceptual framework (such as a staged model) on the subjects of study. A sample of 185 Web sites was monitored over an eighteen-month period and the changes recorded. This data was collected in order to study the types and characteristics of changes on these Web sites (process of change). A content analysis was then performed based on the differences between the versions of the same Web site over time (content of change). Secondly, for studying the drivers of change a qualitative approach was adopted, so that the circumstances around these changes could be investigated. This entailed contacting the companies that had their Web sites redesigned during the monitoring period and enquiring them for the main reasons for their redesign.

3.1 Monitoring of Web sites

The sample Web sites were selected from two small business directories (www.small-business-finder.co.uk and www.uksmallbusinessdirectory.co.uk) under the following business sectors: advertising, aerospace, agricultural, automotive, builders, business services, chemicals, dating services and Web design. One reason for choosing this group of companies was that it consists of small businesses with Web sites that had to register themselves into the above directories, what implies a proactive use of their sites and its importance for their strategies. This sample does not intend to be representative of the total SMEs population in the UK as the aim of this pilot study is not making inferences about such population as a whole. However, it was deemed to provide enough variety in terms of company sizes, locations and industries for an exploratory study.

In October of 2003, a copy of each of the Web sites was made by downloading Web pages using WebCopier v.3.5 (www.maximumsoft.com), an offline browser. This tool records entire Web sites and stores them locally allowing them to be analysed and compared (even when they have been replaced or changed in the Internet). To ensure data consistency, once data collection had started, no new Web sites were added. Another tool, WebSite-Watcher 3.50f (www.aignes.com) was used to compare the content of the companies pages with those downloaded to detect any changes. This tool allows the automatic monitoring of Web pages for updates and changes in menus, links and content. In order to monitor the evolution, data was collected regularly, from October 2003 to March 2005. Those sites where change was detected were then downloaded again to detect any further changes.

3.2 Content Analysis of changes

The previous monitoring allowed the identification of a number of Web sites that had been redesigned during the monitoring period. Subsequent analysis explored the content of these changes by evaluating the same Web site before and after a redesign to check whether it experienced any growth in functionalities and/or technical sophistication. The method applied surveyed the new Web sites in detail and mapped all changes detected. The detected changes were mapped to the eleven categories of evaluation described in Table 2. For each case, the categories were assigned a binary numerical code of '1' when there were features of that particular category affected and '0' when there were not. The categories of the framework were found to be comprehensive and relevant as all the changes were able to be placed in one or other of the categories.

3.3 Telephone Interviews

In order to complement the previous analysis and get a more complete picture of the motivations behind the Web site redesigns, semi-structured qualitative interviews by telephone were undertaken between December 2004 and March 2005. A letter was first sent, by post and email, to 34 companies that were found as having redesigns during the monitoring period. Such letters were personally addressed to the owners and directors of the companies to invite them to participate in the research. Follow-up calls were made and a questionnaire of eight open-ended questions used to obtain information about the reasons for the redesign, the objectives of the Web presence and other Web maintenance and planning issues. Whenever the respondent had no time to participate on the phone, it was offered the alternative option of replying by email. For shorthand purposes, all the responses received will be referred as interview responses in the rest of the paper. In total, reasons for redesign were obtain from 23 companies, attaining a 67% participation rate.

4 RESULTS

4.1 Monitoring of Web sites

After the 185 Web sites were monitored for an eighteen-month period, a number of kind of changes, indicating different evolution strategies, were identified. Sites that just updated content were the most numerous group (71, 38%). It is interesting to note that the second most common category of change in the sample is major redesigns (36, 19%). It seems that Web sites are more frequently revamped than incrementally enhanced (28, 15%). Sites that seem to have disappeared are a relevant group too (26, 14%). Some of these did not response for several months consecutively but further research should investigate whether the companies disappeared permanently, dispensed of the Web site or just changed their URL. Still a small proportion of sites seems to not having any change or update during the monitoring period (18, 10%). These cases were termed 'dormant' sites as do not seem to have any activity or progress, some of them for several years. Finally a few sites were just bought (4, 2%) or went under construction (2, 1%). It is interesting to note that in some of the Web sites several of these evolution strategies took place. For example, the same site having content updates, incremental changes and redesigns. This shows that the maintenance process itself evolves with time. However, for simplification and comparison purposes, each case was finally counted only in the category having the greatest extent of change. For example, when a site was found to have content updates and later a redesign, the site was counted only in the redesign category.
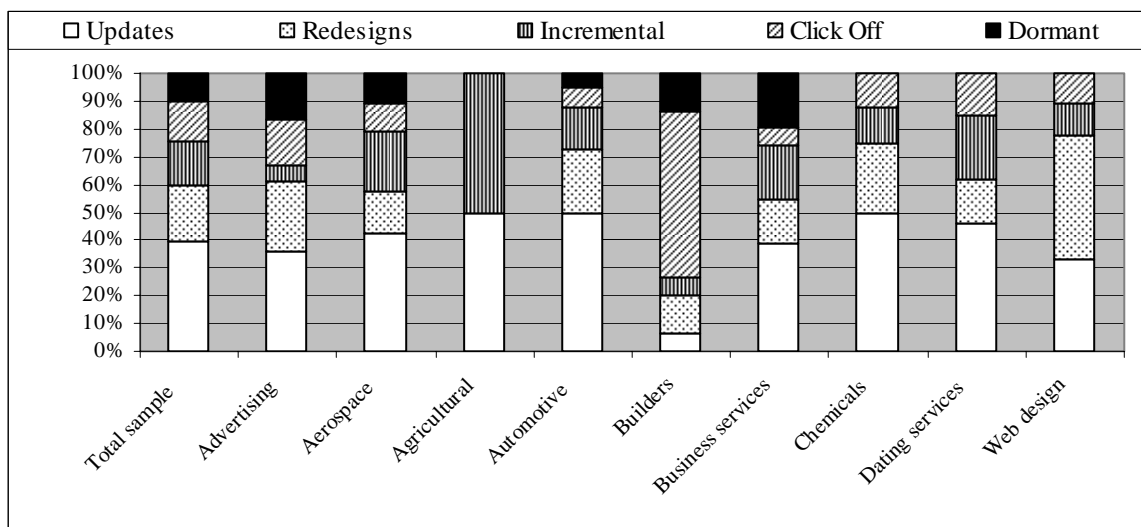

Figure 2.   Evolution strategies by sector

Figure 2 above shows the detail of the evolution strategies found broken down into business sectors. Given that the number of companies belonging to the sample sectors in this preliminary study were different, a 100% (percentage) stacked column graph is provided in this figure to allow their comparison. 'Bought' and 'under reconstruction' categories have been omitted for the shake of its readability. This chart displays what percentage each evolution strategy comprises of the total cases for each sector so all values from the same column (sector) add up to 100%. These percentages will allow us to realise the sectors that differ most from the proportions of the total sample (first bar), in terms of the evolution strategies found. As shown in figure 2 different sectors have also different evolution strategies. For example, regarding to content updates the Builders sector seems to do it rarely. Referring to redesigns, these seem to occur more frequently in the Web designer sector. For the case of incremental evolution, this seems to be rarely found in the Advertising and Builders sectors

while it is more common in the Agricultural and Dating Services. Click off cases are found in the Builder sector in high proportion. Finally, dormant sites seem to be found more frequently in the Business Services and Advertising sectors.

4.2   Content analysis of Web sites

In order to explore further these changes, an analysis of the frequency of the Web site evaluation categories affected during the 39 redesigns accounted was undertaken. Such analysis shows that most of the redesigns analyzed in the sample incorporated changes in DA (35, 90%) and NAV (33, 85%) features. Following these were CII (26, 67%), RI (25, 64%), SMM (20, 51%), CRE (14, 36%), CPC (28%) and ACC (8, 21%). The least affected categories were SC (7, 18%), TI (7, 18%) and DUM (3, 8%).
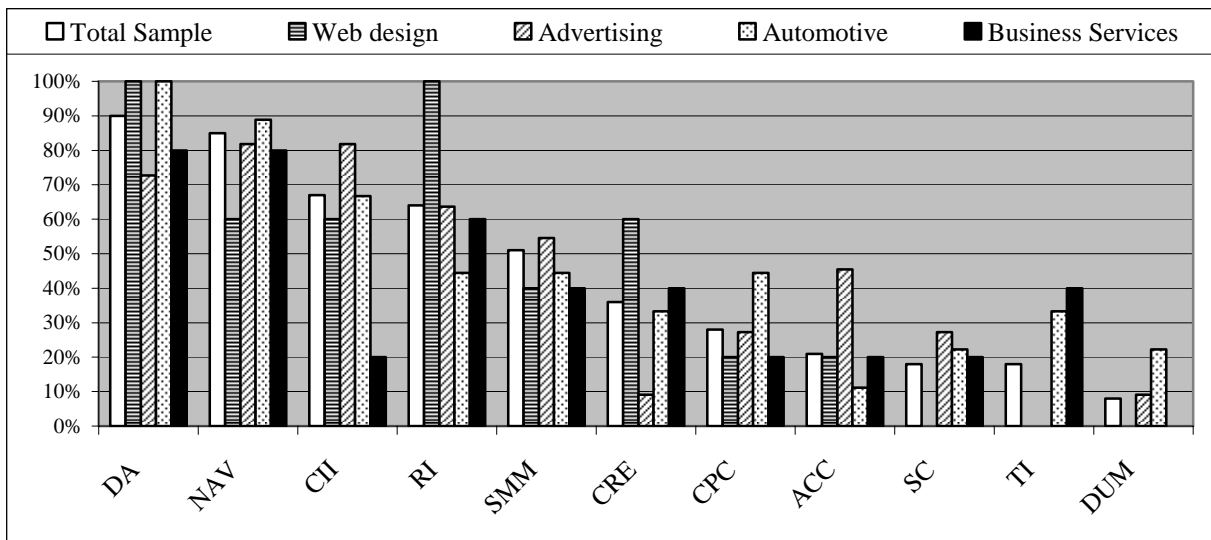

Figure 3.   Web evaluation categories affected by sector

Eight out of the nine business sectors selected for the study presented redesigns. These were explored and analysed to investigate whether different kinds of SMEs incorporate different types of features when redesigning their Web sites. The Figure 3 above shows the relative frequency of occurrence of each dimension by business sector. These percentages show how the features by sector differ most from the total sample given in the first group of bars. For the shake of its readability only four business sectors are presented in this figure. For example, in the case of Web designer sector the DA, RI and CRE categories were more frequent than average while the NAV, SC, TI and DUM were less. In the case of the Advertising redesigns features, ACC and CII were more frequent than average while TI, CRE and DA were less. For Automotive sector the DA, CPC, TI and DUM were more frequent than average while the ACC and RI were less. Finally, for business services TI is more frequent while DUM and CII and RI are significantly less frequent than the average.

4.3   Telephone interviews

The responses of the companies, relating to their main reasons for redesigning their Web site, were collected and coded according to the a priori classification described in Table 3. An analysis of the frequency of the main drivers of redesign identified in the 25 redesigns where responses were obtained was undertaken. The results show that the most frequent reasons were 'Business requirements changes' (18, 72%), 'User-oriented drivers' (16, 64%) and 'Internet/eCommerce strategy changes' (14, 56%). Less frequently the following drivers were mentioned: 'Maintenance drivers' (4, 16%),

'New technological possibilities' (2, 8%), 'Developers influence' (1, 4%) and 'Fit with peers/competitors' (1, 4%). It is important to note that in many cases two or more categories of drivers were mentioned.

5   DISCUSSION OF RESULTS

In addressing the first research question (how SMEs change their Web sites), a number of different evolution strategies were found during the study. It seems that the main way these sites evolved was by updating their content. Interestingly, redesigning was the second strategy most commonly found, being these more frequent than incremental enhancements. However, according to Hudson (2000), major redesigns could be counterproductive, as users generally do not like rapid, drastic changes to their interfaces. A completely new Web site can frustrate users by depriving them of a familiar system and forces them to relearn the site, reading content and scanning links for the material they need. Instead, an evolving approach, with gradual and continuous improvements, has the advantage of presenting a consistent look to the user and not surprising them with a new design, only having to adapt slightly to new components (Ryan et al, 2003). Therefore, further research should examine the specific reasons when a major redesign is inevitable and a better option than incremental changes. When looking at sectors significant differences were found in the way that they evolved.

In relation to the second research question (what kind of changes SMEs made in their Web sites), it was found that most of the redesigns in the sample involved the improvement of features Design & Aesthetics and Navigability. These frequencies may suggest that the majority of companies evolved their Web sites to refresh their aspect and keep customers attention, as well as to improve their navigation and ease of use. The third and fourth most relevant categories affected were the "Content for identification and image" (e.g. company news, history, directors' profiles) and "Relational interactivity" (e.g. enquiry forms, login area). These frequencies may suggest an effort for improving the image and credibility of the company and for achieving a more efficient communication tool with customers, rather than for adding transactional features or other eCommerce facilities. Some of these findings are in line with previous work, describing transformation of commercial Web sites, that found a tendency to expand information and improve usability (Benbunan-Fich and Altschuller, 2005) and to focus on information convenience, site navigation and customer confidence (Piccoli et al, 2004).

From the sectors studied mainly the Automotive and business services sectors included 'Transactional Interactivity' (e.g. online shopping). Interestingly, the motor industry is one of the few examples where there is some evidence of SMEs having engaged in more complex ebusiness applications because of the influence of the e-practices of larger organisations (Brown and Lockett, 2004). The few transactional changes found here seems to support the notion that e-commerce stage models are not the best way of representing the e-business progression of SMEs as such models assume that Web sites grow in sophistication and functionality over time. Whereas it would appear that SMEs more frequently simply refine their existing Web presence. Transactional Web sites are often not the primary strategy of small business to generate online sales. Alternative strategies, such as selling by online auctions and email campaigns, have been found to be more suitable for the limited resources and technical skills of small business (Gribbins and King, 2004).

With regard to the third research question (why SMEs change their sites), it seems that many of the redesigns analyzed were motivated by business requirements/goals such as an expansion of products/services, a desire to 'refresh' an old looking Web site, or a change of branding. User-oriented drivers are also important reasons. For example, to improve the look and feel and aesthetic appealing of the Web site, to improve its navigation and to adjust the Web presence to user needs and expectations. The Internet/eCommerce strategy considerations mentioned include a desire to enhance the image of the company and customer confidence and to improve their rankings in search engines. However, improving the e-commerce functionality of the site was only mentioned in four of the companies.

The findings reported here provide little support for the stage approach as few companies were seen implementing transactional features or reported this as a main reason for a Web site redesign. Regarding to the theoretical alternative approaches presented in the introduction, the Institutional theory that see companies converging in their organizational field has also little support because only two companies mentioned 'fit with competitors' or 'developers influence' as reasons for their redesigns. Rather, it seems that a rational approach could better explain the evolution of these Web sites over time. For example, regarding to Tagliavini et al. model (2001), the changes observed and the reasons obtained seem to indicate that the companies were trying to improve their Internet approach, being this maybe a combination of a PR and 'Company promotion' profile. Only four of the companies actually implemented eCommerce features, what could be explained as a move to an additional 'order processing' or 'payment management' profile.

6   CONCLUSIONS

The Stages of Growth model is one of the most common approaches to explain the evolution and progression of Internet technologies adoption by organizations. However, this approach is not exempt from criticism and other alternative models and approaches are to be found in the literature. This paper has presented and utilized an alternative, multidimensional, research framework, based on organisational change concepts, such that the study of SMEs Web evolution can be undertaken in a more insightful way and in a way that better fits with empirical findings found in the literature. The framework consists of three dimensions: process of change, content of change, and drivers of change.

The benefits of the framework are first, in the context of research, it provides a range of different perspectives or lenses with which to study SMEs adoption and progression of e-business, rather than single dimensional approaches e.g. the stages model. This should lead to better understanding of why and how SMEs evolve their Web sites and Internet strategies for supporting their Web and e-business strategies. In addition, it facilitates comparisons of commercial Web sites over time and in different regions of the world. Second, it should be of benefit to managers, knowing the Web site features that other companies in their sector, i.e. potential competitors, are implementing would be useful in relation to new Internet investment decisions. In addition, they should know what features need to be provided in order to implement the most suitable Internet strategy. Customers may have different views of the firm depending on the Web features available. Presence or absence of various features or content may determine whether a customer visits the site again or engages in transactions (Teo and Pian, 2004). In all, being aware of the evolution of SMEs Web sites, in terms of the types of drivers of change, the features that have been incorporated and how implemented should be a valuable addition to what is known about e-business in SMEs and will help to clarify the drivers (and barriers) that influence their adoption of more sophisticated Internet technologies.

References

Alonso Mendo, F. and Fitzgerald, G. (2005a). Theoretical approaches to study SMEs e-Business progression. Journal of Computing and Information Technology (forthcoming).

Alonso Mendo, F. and Fitzgerald, G. (2005b). A multidimensional framework to study SMEs e-business progression. Journal of Enterprise Information Management, (forthcoming).

Alonso Mendo, F. and Fitzgerald, G. (2005c). Exploring drivers of Web site redesign. Accepted for publication in the Proceedings of the International Association for Computer Information Systems Pacific Conference, Taipei, Taiwan.

Benbunan-Fich, R. and Altschuller, S. (2005) Web presence transformations in the 1990s: An analysis of press releases. IEEE Transactions on Professional Communication (forthcoming).

Boudreau, M.C. and Robey, D. (1999). Organizational Transition to Enterprise Resource Planning Systems: Theoretical Choices for Process Research. Proceedings of the 20th International Conference on Information Systems, Charlotte, NC.

Brown D. H. and Lockett, N. (2004). Potential of critical e-applications for engaging SMEs in e-business: a provider perspective. European Journal of Information Systems, 13 (1), 21-34

CBI and KPMG Consulting (2002) Reality bites - The second annual report on e-business in the UK, London.

Chau, S. (2003). The use of e-commerce amongst thirty-four Australian SMEs: an experiment or a strategic business tool? Journal of Systems and Information Technology, 7 (1), 49-66.

Daniel E., Wilson H. and Myers A. (2002). Adoption of E-Commerce by SMEs in the UK; Towards a stage model. International Small Business Journal, 20 (3), 253-270.

DTI. 2003. Business in the Information Age - International Benchmarking Study, London.

Gribbins M.L. & King, R.C. (2004). Electronic Retailing Strategies: A Case Study of Small Businesses in the Gifts and Collectibles Industry. Electronic Markets, 14 (2), 138-152.

Hudson, L. (2000). Radical usability (or, why you need to stop redesigning your Web site)". Library Computing, 19 (1-2), 86-92.

Jarvenpaa, S. L. and N. Tractinsky (1999). Consumer Trust in an Internet Store: A Cross-Cultural Validation. Journal of Computer-Mediated Communication 5 (2).

Kowtha, N. R., and T. W. I. Choon (2001). Determinants of Website Development: A Study of Electronic Commerce in Singapore, Information and Management, 39 (3), 227–242

Lamb, R. and Davidson, E. (2004). Understanding Intranets in the context of End-User computing, Data Base, 35 (4)

Leong E. K. F., Stanners P. J. and Huang X (1998). Web Site Objectives: Perspective from Western Australian Companies. ANZMAC 1998 Conference Proceedings (on CD), University of Otago, Dunedin, New Zealand, Nov/Dec.

Levy, A. and Merry, U. (1986). Organizational transformation: Approaches, strategies, theories. New York: Praeger

Levy, M. and Powell, P. (2003). Exploring SME Internet Adoption: towards a contingent model. Electronic Markets, 13 (2), 173-181.

Lucas, H.C. (1994). Information systems concepts for management. McGraw-Hill, New York, Ny. Fifth edition.

Martin, L. M. and Matlay, H. (2001). 'Blanket' approaches to promoting ICT in small firms: some lessons from the DTI ladder adoption model in the UK. Internet Research: Electronic Networking Applications and Policy, 11 (5), 399-410.

McNaughton, R. B. (2001), A Typology of Web Site Objectives in High Technology Business Markets, Marketing Intelligence & Planning, 19 (2), 82-87.

Mehrtens, J.; Cragg, P.B. and Mills, A.M. (2001) A Model of Internet Adoption by SMEs, Information and Management, 39 (3), 165-176

Piccoli, G., Brohman, M.K., Watson, R.T. & Parasuraman, A. (2004). Net-Based Customer Service Systems: Evolution and Revolution in Web Site Functionalities. Decisions Sciences, 35 (3), 423-455.

Rao S. S., Metts G., Mora Monge C. A. (2003). Electronic commerce development in small and medium sized enterprises; a stage model and its implications. Business Process Management, 9 (1), 11-32.

Ryan, T., Field, R. H. G. and Olfman, L. (2003). Why do Universities make discontinuous changes to their Web sites? Examining the relative importance of four reasons for change. 9th Americas Conference on Information Systems (AMCIS), Tampa, Florida, USA, August 2003.

Tagliavini, M.; Ravarini, A. and Antonelli, A. (2001). An evaluation model for Electronic Commerce activities within SMEs, Information Technology and Management, 2 (2), 211-230

Teo, T. S. H. and Pian, Y (2004). A model for Web adoption, Information & Management, 41(4), 457-468