

# Organizational Motivations for Web Accessibility Implementation – A Case Study

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**Abstract.** Universal access to information and communication technologies represents an indispensable prerequisite for people with impairments' equal participation in societal life. Despite legal regulations and economic advantages, accessible web sites are rarely implemented in private sector organizations. This paper introduces a holistic, managerial approach to identify business experiences with web accessibility implementation in three industry sectors. The findings of this case study research include organizations' motivations for web accessibility implementation and therefore generate a sound basis for management decision recommendations.

**Keywords:** web accessibility, design for all, case study research, business approach, motivation, change management.

## 1 Introduction

Despite various efforts for the raise of awareness for web accessibility, its implementation in private sector organizations is still in its infancy. In Austria, public and governmental organizations face pressure due to legal regulations (e.g., Austrian e-Government Act) and a certain responsibility towards society. These drivers led to an increase in accessible web sites in public organizations in recent years. However, the motivations for managers implementing web accessibility are different. Mere social drivers do not suffice for organizations to consider accessible web sites; above all, new products or processes have to be promising in terms of profitability in order to be implemented in private sector organizations.

This contribution uses case study research for an exploratory analysis of motives for and against web accessibility implementation in the business-to-consumer (b2c) segment of three industry sectors and provides an initial knowledge base and facilitation for organizations intending to consider the implementation of web accessibility<sup>1</sup>.

## 2 Background

Current Austrian legislation in terms of web accessibility does not only concern public and governmental web presences. The Austrian Equalization Act for People

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<sup>1</sup> This contribution is part of the „Web Accessibility Quality Management” Project (Project Nr. 12461) funded by the Austrian National Bank.

with Disabilities indicates that people with impairments must be granted equal rights for participation in societal life [1]. This act also holds for private sector organizations. The Austrian Equalization Act for People with Disabilities foresees a compulsory arbitration process before filing a lawsuit. In other words, in case of complaints by consumers due to inaccessibility of web presences, an arbitration process has to be conducted by the Federal Ministry of Social Affairs in order to achieve a settlement out of court. In Austria, several arbitration processes have already been executed, most of which with positive outcome<sup>2</sup>. This mechanism may support accessibility considerations in organizations because of possible negative media due to arbitration processes.

Despite legal requirements, business considerations may also provide arguments for an implementation of web accessibility in private sector organizations. It can be estimated that in the EU at least 50 million people, which is about 10% of the population, have some type of disability [2]. People with impairments may be more dependent on using the Internet as the main source of information, since other sources, like printed information or personal advice, may be difficult or even impossible to access.

Accessible web is also of high value for elderly people, a user group that is becoming increasingly important from an economic point of view. Many age-related conditions, such as vision impairments, hearing loss, motor skill diminishment, memory and processing problems are similar to those experienced by the disabled. The world population, particularly in developed countries, is aging rapidly; the EU estimates that by 2030, 24.7% of the EU population will be older than 65 years [3]. Currently, only 10% of people older than 65 years use the Internet [4]. In the near future, this number will increase dramatically, due to two developments: (i) an increase in the Internet penetration in this age group, and (ii) a more Internet-accustomed elderly generation in the years to come. Another user group that benefits significantly from web accessibility is the group of the mobile device users. In the age of smart phones and PDAs, these users are facing similar barriers as people with disabilities (e.g., they rarely use the mouse, they often do not or cannot load images). All the same, mobile internet use is becoming increasingly popular but still suffers from accessibility and usability problems [5].

In a nutshell, organizations with accessible web sites may profit at least in two ways: (i) they eliminate the risk of negative media and penalties that may result from arbitration processes, and more importantly (ii) they profit from an enlargement of their customer group as the web sites are accessible to people with disabilities, elderly people, and mobile device users.

## 3 Research Design

### 3.1 Methodology

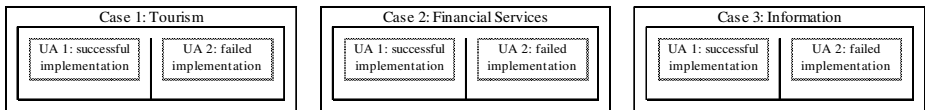
Due to the exploratory nature of this research problem, case study research methodology was applied. Several theories on case study research have appeared in

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<sup>2</sup> An overview of arbitration processes in Austria is available on an arbitration database at: <http://www.bizeps.or.at/gleichstellung/schlichtungen> (last access 29/03/2010)

literature [6]. This research design is based on Yin's suggestions who defines a case study as an empirical method of analysis of "a contemporary phenomenon within its real life context" ([7] p. 13) taking into account multiple information sources (e.g., qualitative and quantitative data combination). Yin distinguishes four types of case study designs: holistic single-case, holistic multiple-case, embedded single-case, and embedded multiple-case design [7]. For reasons of validity, the embedded multiple-case design is chosen from these types as it addresses more than one case and permits multiple units of analysis.

Our model comprises the analysis of private organizations in the b2c segment of three industry sectors with high relevance in electronic business, representing day-to-day operations that provide facilitations for people with disabilities when performed online: (i) tourism, (ii) financial services, and (iii) information [8]. In each of the three sectors, the benefit of web accessibility is analyzed focusing on two polar types [6], namely organizations which have successfully implemented web accessibility and organizations which have failed in web accessibility implementation. Figure 1 shows the industry sectors investigated and their embedded units of analysis (UA).



**Fig. 1.** Embedded, multiple case study design for web site accessibility in three e-business-affine sectors

The purpose of the case study design outlined in Figure 1 is to monitor the motivations for organizations for web accessibility implementation in three selected sectors with high e-business affinity. The results will provide first insights in the business and managerial perspective of web accessibility and therefore constitute an important input for further (quantitative) research.

### 3.2 Research Instruments and Analytical Approach

Typically, in case study research, multiple data collection methods are combined in a so called triangulation process [6]. In this case study, both quantitative and qualitative data is involved that resulted from an application of various research instruments:

- (i) web site evaluations: 89 web sites in three industry sectors have been evaluated following a 3-step procedure: (a) selection of relevant organizations, (b) automated tests, and (c) manual tests. Automated tests have been performed with the help of the Total Validator tool. Sites having passed automated tests have been evaluated by manual tests (Lynx browser, Web Developer Add-on) [9].
- (ii) industry information: sector specific information used for this case study included quantitative website evaluation, general industry information (fact sheets, business reports, search queries), and information about the accessibility in the three industry sectors.
- (iii) interviewers' notes and meeting minutes.

- (iv) semi-structured interviews: in total, 12 semi-structured interviews that lasted between 45 and 90 minutes have been conducted following a pre-determined guideline (cf. [10]) in order to ensure comparability across cases [11]. The interview transcripts have been analyzed using Atlas.ti software performing an iterative approach [12] that suggests going back and forward in data for an identification of common themes, a subsequent development of categories, and finally, of relationships between categories. Open and axial coding procedures were applied for this purpose [13]. Moreover, only patterns that continuously appeared in the data were considered in order to attain saturation [12].

## 4 Findings

The reasons for web accessibility implementation of all three cases analyzed are summarized in Table 1. The indication of the sector is given where the respective reason has been identified: tourism (T), financial services (F), information (I). Moreover, the reasons are classified into three different categories (economic, social, and technical motivations) and substantiated by selected quotations. Patterns across all three sectors can be derived as some of the reasons appear in every case analyzed (key personality, social commitment). Others are mentioned in two of the cases (e.g., web site quality, design for all, elderly customers) and others again turn out to be specific to one certain case (e.g., consumer consciousness, importance of web site).

**Table 1.** Categorization of motivations for web accessibility implementation

Motivation	Reasons for implementation	Sector	Selected quotation
Economic	Differentiation	F	<i>"We tried to be the first to implement accessibility in order to be different from our competitors".</i>
	Elderly Customers	F,I	<i>"Our website is being used by elderly people above average".</i>
	Fear of negative image	F	<i>"We cannot afford negative headlines".</i>
	Importance of website	T	<i>"Every guest will see our web page first, judge it, and then decide if he wants to come or not".</i>
Social	Consumer consciousness	F	<i>"Ethical criteria are more and more being included in the purchase decision process".</i>
	Design for all	T,F	<i>"Our main reason was 'simple and for all'; the simpler the better and the more customers will understand and buy the product".</i>
	Key personality	T,F,I	<i>"The technical department colleague's girlfriend has a hearing impairment; he had first suggestions about the issue".</i>
	Social commitment	T,F,I	<i>"We have always had awareness for social issues. In this case, implementation of web accessibility is easier; when the awareness already exists".</i>
	Top management support	F	<i>"We had the advantage that one member of the management board was 150% web affine; this made it easier to convince him".</i>
Technical	Website quality	T,I	<i>"Nobody was satisfied with the old website. It did not look good, did not work satisfyingly, and did not have enough traffic".</i>

T=tourism, F=financial services, I=information

### 4.1 Economic Motivations

First, the implementation of web accessibility in an organization can be initiated out of *economic motivations*. In this case, organizations focus on customer orientation and

customer satisfaction and implement an accessible web site as a means to increase turnover, image, and customer base. Organizations with Internet presence (both “click and mortar” companies with an additional offline presence and pure online companies) face the problem of lower switching costs of customers compared to traditional (“brick and mortar”) companies. Thus, the importance of customer satisfaction and loyalty increases tremendously [14]. At the same time and out of similar reasons, competition and, thus, the need of differentiation gains in importance. Web accessibility implementation can provoke competitive advantage due to differentiation from direct competitors which is mentioned as one of the economic reasons for its implementation.

The ongoing demographic shift and the continuing trend of elderly people using the Internet constitute other economic motivations for web accessibility implementation. Elderly people are a rapidly growing segment of the Internet economy [15] with significant purchasing power [16] and may dispose of mobility limitations similar to people with disabilities. Thus, for organizations with accessible web presences elderly people represent a new customer group.

The “design for all” aspect of accessible web sites implies not only the consideration of people with disabilities and elderly, but the inclusion of any Internet user group. Simplicity, usability, and high web site quality of accessible web presences entail advantages for every user. Design for all has been identified as a major economic reason for accessible web presences.

Prospective image amelioration through web accessibility is a major motivation for organizations. This aspect is closely linked to the differentiation aspect and has also a strong relationship to the social reasons for web accessibility implementation (e.g., social commitment). The way how an organization is perceived by its customers influences customer loyalty which is, in turn, strongly related to a firm’s profitability [17]. As a consequence, image enhancement due to web accessibility implementation may result in an increase of a company’s profitability.

## 4.2 Social Motivations

Second, *social motivations* may be the trigger for web accessibility implementation. In this case, web accessibility efforts are merely targeted to people with disabilities. Social aspects, such as equality, ethical behavior, social commitment, and responsible attitude towards society represent the main drivers for web accessibility implementation. Organizations that dispose of elaborate social values due to a corporate social responsibility strategy and corporate culture will rather implement web accessibility out of social reasons. Additionally, organizations in crisis-ridden business sectors (e.g., financial services sector in times of the economic crisis) focus on image amelioration by social instruments. These reasons may especially be the case for large organizations which usually dispose of corporate social responsibility strategies.

The degree of social commitment of an organization is closely linked to its corporate culture. A study shows that social responsibility of organizations represents one of the central motives for corporate culture [18]. The important role of corporate culture in conjunction with web accessibility implementation out of social motivations becomes obvious. Moreover, corporate culture is identified as the most important reason for driving innovation [19]. Besides other factors, organizational

culture is influential on the readiness of employees for organizational change [20]. In their “Competing Values Framework”, Quinn and Rohrbaugh (1983) put forth four culture types and conclude that the culture focusing on human relations and morale has a higher readiness for change [21]. Drawing on these assumptions, the change process of web accessibility implementation can be facilitated in a culture based on social commitment.

Therefore, the organizational background may play an important role in the implementation of web accessibility. An extensive social commitment of an organization and a corporate culture that includes social values may facilitate web accessibility implementation. The awareness for social issues is present in organizations with an elaborate corporate social responsibility strategy. Thus, the need for web accessibility as a social instrument is perceived important in organizations that dispose of such a background.

Social commitment as a reason for web accessibility implementation has been identified across all three sectors. However, traditionally, mostly large organizations dispose of a clearly defined corporate social responsibility strategy. Jenkins points out that “the power and resources of large companies produces responsibility to use that power and develop those resources responsibly” [22]. Despite recent trends of CSR for small and medium enterprises [23], large organizations are more likely to define and implement CSR strategies than SMEs [24].

Moreover, some business sectors seem to be especially concerned for their reputation towards customers. In the financial services sector, this has particularly become obvious. The ongoing financial crisis led to the fact that banking institutions are eyed on suspiciously which – in turn – has forced them to focus on social issues. Many interview partners have expressed the need to be perceived as a “decent bank” that “cares for others” as a reason for web accessibility consideration.

In a nutshell, organizations that dispose of elaborate social values due to a corporate social responsibility strategy and corporate culture will rather implement web accessibility out of social reasons. Additionally, organizations in crisis-ridden business sectors (e.g., financial services sector in times of the economic crisis) especially focus on image amelioration by social instruments. These reasons may especially be the case for large organizations which usually dispose of corporate social responsibility strategies.

### 4.3 Technical Motivations

Third, web accessibility implementation can be initiated out of *technical motivations*. They encompass the intention of an organization to improve the web site from its technical point of view in order to obtain a stable, secure, high quality site. This is the reason why the implementation of web accessibility out of technical motives is often initiated by IT experts who know about the advantages of accessibility in terms of quality of web pages. The poor web site quality of existing sites is a major reason for the consideration of accessibility, as it comprises several elements that lead to an increase in simplicity, clarity, usability, download speed, and web site quality. The usage of structural elements (e.g., headings, lists) contributes to a clearly arranged web presence, the separation of content and layout reduces code and provokes a reduction of download times, and the consistent navigation and layout for the whole

web presence causes an increase in usability. In short, accessible web sites dispose of a higher web site quality than inaccessible sites.

The mere focus on the aesthetic design of a web site goes at the expense of its usability and may therefore cause frustration by the customer [14]. Moreover, web sites with many design elements tend to be more voluminous and thus slower in their download times. This is a crucial issue, given the fact that convenience and speed are the main reasons why customers prefer the Internet over traditional “offline” firms. Fast download times of a web site are therefore decisive for the success of the firm. Cox and Dale (2002) identify six key quality factors for web sites: clarity of purpose, design, accessibility and speed, content, customer service, and customer relationships. Additionally, they classify accessibility as the “most critical factor for any web site” [14]. The increasing use of mobile devices for Internet access further enforces the use of accessible web sites which provide device independency.

Compared to the tourism and financial services sector, the information sector was more concerned about the stability and quality of their web sites. Technical reasons were among the major motivations for web accessibility implementation in this sector because of a high fluctuation of web site contents especially in the online media branch. The improvement of web site quality may concern every sector analyzed. However, its importance increases with the importance of the web presence for the organization. Additionally, web sites where content is subject to high fluctuations will be more interested in web accessibility implementation.

## 5 Conclusion and Perspective

The findings of this exploratory case study indicate that three different kinds of motivations for web accessibility implementation may occur in organizations: (i) economic, (ii) social, and (iii) technical motivations. The type of motivation why organizations implement web accessibility depends on various factors, e.g., the size and complexity of the organization, the business sector, the corporate culture and degree of readiness for change, and the purpose and degree of complexity of the web site. For instance, complex organizations in the financial services sector rather implement web accessibility out of social motivations. By contrast, small organizations in the information sector rather draw on technical motivations.

This contribution uses case study research for an exploratory analysis of motivations for web accessibility implementation in three industry sectors with high e-business affinity and provides an initial knowledge base and facilitation for organizations intending to consider web accessibility implementation in the near future.

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