

Toolbox for Video Conferencing

Based on HTML5 Web Standard

Case Study



Summary

1. Executive Summary	3
2. Problem Statement	3
3. Alternatives	4
4. Conclusion	6
5. Implementation	6

1 Executive Summary

The case study focuses primarily on the development of an integrated toolbox for audiovisual online communication. The study brings together approaches and partial solutions from IT and broadcast technology. These innovative and efficient results that were developed on the threshold between internet and digital TV will become available for audiovisual research and corporate communication.

The Toolbox for Video Conferencing offers its users a homogeneous work environment with software components whose design is coordinated with functionality and allows the easy use of audiovisual content on different devices. The templates for authors and clients are optimized for the web standard of HTML5. The Toolbox does not require any additional software installations as it is a browser-based application. Therefore it can be accessed by stationary and mobile devices.

The focus is on scaling and adjusting the Toolbox to the needs of the user as well as on the independence of operating systems and devices.

The users do not have to install any additional software. The Toolbox integrates seamlessly into existing systems and can be adapted to the specific needs of companies and institutions. The user scenarios deal with both: real-time communication (teleconference with different settings) and the provision of video films in libraries and on web TV broadcast platforms.

2 Problem Statement

Globalization and increased competition demand first class communication solutions in business and science as different business locations, employee groups, sales teams and project partners have to be connected. Audiovisual communication has become more important because companies and research institutions have been generating more video documents and because virtual face-to-face communication is a less expensive alternative to personal encounters. This concerns especially multi-media project communication inside companies and institutions and the external communication with customers, service providers, suppliers and shareholders.

Frequently audiovisual media communication is disrupted due to the incompatibility of hardware and software, insufficient usability and the high costs for the use of specialized hardware platforms. Established platforms for audio-visual online communications do not allow for the spontaneous and flexible exchange of audiovisual content without the drawback of high costs.

Besides the technical integration of communication systems, there are also clear requirements for the implementation of corporate design and branding. These requirements do not only serve a stringent outward appearance but also reflect the corporate identity. The customization of a communication environment to a specific CI / CD is therefore a further development specification.

The adaptation of proprietary solutions to the corporate design of companies requires considerable financial and technical input which cannot be afforded by many SMEs. Some established software solutions do not even allow for any adaptation of its systems at all and are therefore almost useless for marketing communication.

Approach and objectives

The development project is focused on the specific needs of companies and research institutions. It ensures the development of a comprehensive solution for relevant application scenarios.

The basic objective is to enable an open, spontaneous and effective dialogue that integrates seamlessly into existing systems. The solution should be adaptable to the specific needs of the different user groups. The scalability and customization of the Toolbox to the needs of its users and the openness to functions that work across operating systems are of utmost importance.

Access to the content and features, via both stationary and mobile devices should be possible. The system allows to work flexibly at home or on the road.

These goals can only be attained at acceptable costs if universal, technical standards are applied. Individual components of the Toolbox are therefore no new developments but an optimization and customization of existing services. Web standards have risen strongly over the last few years: HTML5, CSS3 and JavaScript allow powerful, desktop-like web applications. Interactive content can now run natively in browser environments instead of exclusive plug-ins.

The technical realization is based on templates for authors and clients using HTML5 and CSS3. Based on these web standards a browser-based application can be realized. *Browser-based* means that that is not necessary to install additional software at the company or project partners. Besides that, the usage of Cascading Style Sheets (CSS) allows an individual personalization of the Toolbox in order to the specific corporate design.

3 Alternatives

The increased acceptance of audio and video conferences is reflected in the purchase behavior of the market: According to a market research of the Wainhouse Research Group nearly 170,000 systems were sold in 2007; in 2006 the number had only been 136,000. About 4,000 group systems were sold in Germany in 2007.

Based on a study of Skype, more than 40 percent of the users see benefits in the business use of video conferencing. According to Skype, 34 percent of all network-internal calls are performed via video communication (January 2010).

The shift in the market is even more pronounced, considering the sales mix of

Polycom, a leading supplier of both telephone and video conferencing systems. In addition to software-based solutions for web conferencing, Polycom offers hardware-based communications solutions. Polycom develops and manufactures a wide range of audio and video conferencing equipment and video-management software. These are for the area of so-called *telepresence*.

The solutions that are proposed require high financial investments and a downstream maintenance by corporate IT. By now 71 percent of Polycom's net revenue comes from video solutions. Polycom also sees good market potential for the SME although the usage rate is still single digit figure (source: Peter Marwan, video conferencing, teleconferencing replace, zdnet.de).

The following companies and products take on a special position regarding communication solutions for the corporate sector: Adobe (Adobe Connect), Cisco (Cisco WebEx Meeting Center), IBM (IBM Lotus Sametime) and Microsoft (Microsoft Live Meeting).

Existing video conferencing systems require a large effort in installation, implementation and maintenance. This ties up resources in the IT departments of larger companies. For small and medium-sized companies without IT department it is hardly to realize. The main reasons against the use of video conferencing systems in SMEs are the lack of experience with those types of systems (35%), high investment costs (33%) and a lack of budget (30%). Furthermore the lack of usability and the lack of customization options regarding specific requirements.

In the study by Andy Nilssen and Alan Greenberg 33 percent of respondents would rather use web conferencing, if the applications would be easier to use ("Ease of Use in Web Conferencing"). Also in the study by Schandl Ted in 2010 is a high-quality "user experience" as well as acceptance by the users in the first place ("The Forrester Wave™: Web Conferencing"). This is important especially to the fact that a primary application scenario in the "ad hoc" or is face-to-face conversation by individual employees.

Existing systems have conceptual deficits regarding the processing and implementation of audio-visual data and its use on different devices. The integration of audiovisual content from the communication environment into existing web presentation requires developmental effort.

To keep technical requirements for the user at a low level such systems are presented as complete solutions in "black boxes." They are often technically sophisticated but offer little individual freedom to the user and require a high monetary effort. Therefore they are barely suitable for medium-sized businesses.

Other video conferencing and communications systems have been developed as open-source projects and so far are mostly based on Adobe Flash. The significant drawback

is the lack of customization of the player. Besides that, it often prevents a cross-platform use since in most companies the installation of programs is regulated by the central management of access and rights system. Communication partners who do not have the same system and appropriate access privileges are excluded. These restrictions are understandable but pose a contrast to increasingly open business communication.

A broad overview of the market of web-conferencing tools is given by the web portal webconferencing-test.com. Based on its detailed reviews this portal provides information about the functionality, operation and security of meeting software. It enables the selection and the decision for the individual online meeting solution for different target groups like small or medium-sized companies or freelancers.

Only web conferencing tools called "application service" (or SaaS) are tested. These solutions are deployed over the internet. There no need to install one's own server system. Complex enterprise solutions are not included in this comparison (Source: Publicare, online marketing agency, Frankfurt am Main).

4 Conclusion

The world of personal computing is going through a radical change. The personal computer as a single fixed location for work and private life is complemented by a variety of new technologies and terminals. Smartphones, tablets, e-readers, netbooks and TV are already offering the option of accessing one's own data or the internet. These concepts and technologies bring about new opportunities for businesses regarding not only new digital products and campaigns but also corporate culture. The characteristics of new devices and changing application scenarios require innovative solutions and concepts.

5 Implementation

The demand sectors of the toolbox are Corporate Communications (B2B, B2C, B2E), Wissenschafts-/Wirtschaftskommunikation (cluster Initiatives) and also dialogue-driven, interactive television (IP-TV, HbbTV, etc.).

In this respect, the Toolbox offers a variety of perspectives regarding the development of new business models and the optimization of communication strategies.