

SOFTWARE APPLICATION PORTALS

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Abstract—The paper aims to present the main feature of an application used within the Chamber of Commerce and Industry of Brasov, as a result of a hard work for planning and improving the information system.

Keywords—Portal, information system, Chamber of Commerce and Industry

I. INTRODUCTION

THE necessity of a structured system within the Chamber of Commerce and Industry was revealed many times before, and the past few years the information system evolved into the system almost complete.

The paper thus is structured upon the personal work, presenting some features specific for the most important application of the software applications portal used at intranet level, called “Partners”.

II. INFORMATION SYSTEMS

Information technology and information systems are a means for change. Numerous studies have reported how the introduced systems have the potential to change and are indeed changing organizations [1]. The technology may affect everything from the overall organizational structure and culture [2], to more specific work routines and social interaction patterns [3].

Often, changes are related to politics and power relations in the organization. Several studies, for instance, report how the introduced information system causes de-centralization, the removal of certain, often middle managerial layers, and gives the organization a networked structure. Still, many systems development approaches do not anticipate the future changes the implemented systems have the capability of causing. It has repeatedly been pointed out how systems developers do not pay sufficient attention to the organizational context in which the systems are intended to function [2], [4].

III. INFORMATION SYSTEMS AND INFORMATION TECHNOLOGY

The concept of information systems (IS) can be

applied to all systems that process and transfer information [5]. However, the concept is most often used to denote computer-based information systems. When information systems in the 1950s, 60s and 70s began to be implemented in organizations, the focus was on the technology itself, on data transfer and processes for administrative purposes [6]. The recent decades have, however, seen an extension of the concept to include human, organizational, and social aspects as well [6]. Information systems have even been viewed as technical implementations of social systems [7].

The concept information technology (IT) has been described as the use of computers for the processing, storage, transmission and presentation of information, with a focus on satisfying user needs [8]. In recent years, the term information and communication technology (ICT) has increasingly been used to denote the merging of computer, telecommunication and media technology [5]. They claimed that contemporary information technologies and systems are intertwined; impossible to separate from each other and from the lives of the humans with whom they continuously interact [9]. Even though this opinion is shared by the author of this thesis, the concepts information systems and information technology, respectively, will be used although with slightly different connotations, in order to facilitate distinguishing between the different research areas included in the thesis. The concept ‘information systems’ will mainly refer to the parts of the thesis dealing explicitly with systems development and consequences of implementations of design solutions. ‘Information systems’ will then be used to denote computer-based information systems embracing the broader perspective, including technology and information as well as communication, human, organization and social aspects.

‘Information technology’ will most often be used when discussing non-profit organization information technology needs, use and consequences in general, since these needs may be sustained either by entire information systems or stand-alone applications. ‘Information technology’ will then refer to information and communication facilities based on computer- and telecommunication technology.

IV. INFORMATION SYSTEMS DEVELOPMENT

Up until the 1960s, methods, structures and standardization for information systems development were in the main non-existent. Contact with the end-users was infrequent and documentation of the development process low (Avison & Fitzgerald, 1995). The lack of structure and co-ordination of activities resulted in frequent systems development project delays, exceeded budgets, and error-prone systems [10]. As a response, the area of information systems development saw an emergence and continual growth of formalized systems. Today, there exists a wide variety of development philosophies, approaches and methods. These may be related to software engineering or requirements engineering which much focus on technology or handling of requirements, or be more oriented towards organizational analysis and human and social aspects [1]. When software engineering emerged as a research area in the late 1960s it was to a great extent focused on the end product and the code. Approaches such as structured programming, testing, and code inspection were applied to identify and remove system errors [10]. Gradually, there emerged awareness that errors could not be eliminated in spite of careful testing, and the error correction process itself was a resource consuming process [2].

Avoiding mistakes from the beginning of the development process seemed a better alternative and the focus hence came to embrace development process as well [3]. A number of software development methodologies came into existence, e.g., the System Development Life Cycle, embracing the steps of feasibility study, system investigation, system analysis, system design, implementation, review and maintenance [2]. Gradually, the issue of usability was addressed and users were involved, e.g., through Joint Application Development and Walkthrough methods [11]. One might say that software engineering has switched focus, from detail to system, where it greatly relies on functional decomposition, i.e., the breaking down and reconstruction of complex processes [9]. However, software engineering still most often refers to the system specification, programming, implementation, and maintenance parts of systems development [12]. There has been increasing awareness about the need for approaches and methods for capturing users' context and requirements, i.e., a need for requirements engineering [7].

Requirements engineering has been described as a systematic process of developing user requirements by means of an iterative co-operative process of analyzing the problem, documenting subsequent observations and representation formats, and checking the accuracy of the understanding gained [10].

V. SYSTEMS DEVELOPMENT IN NON-PROFIT ORGANIZATIONS

Developing and introducing information systems in organizations is a complex task often involving multiple interests and user groups [13]. Active user participation in the design process is of great importance in order to make the introduced system useful and used [6]. Nevertheless, many approaches to systems development tend to not involve the users until at a late stage in the design process, in a form of passive consultation. One exception is Participatory Design, which has as its focus active participation of users throughout the entire design process [5]. Participatory Design has a strong connection to trade unionism and technology, since it was the approach used in DEMOS and UTOPIA (Ehn, 3 Information Technology for Non-Profit Organizations Extended Participatory Design of an Information System for Trade Union Shop Stewards 1993). Further, it has strong connotations to non-profit organizations in general, since it shares with them ideological values of equality and work according to democratic principles. It has been argued that developing information systems in the third sector puts certain demands on the approach used. It has to be able to deal with identifying organizational strategy and often officially unclear goals. User participation thereby becomes of utmost importance [7]. Moreover, it is even more essential that the systems bring substantial benefit to the users than in for-profit organizations; the use of the information systems is as voluntary as the users' participation in the non-profit organization and is not imposed as part of regulated work tasks in relation to ordinary jobs [8].

Participatory Design, therefore, seems to be a suitable approach for non-profit organizations. It has been applied successfully when working with volunteers for whom cooperation and consensus is important [9]. However, so far, Participatory Design has been targeted towards projects involving a limited group of users who are physically situated at the same work place, since otherwise active participation by all users becomes problematic [10]. Participatory Design has also, thus far, mostly been applied to small parts of organizations, in projects of low strategic importance and with a homogeneous user group.

VI. CRITERIA SELECTION LISTS

One of the portal application's objectives, based on data and information called "Criteria selections list".

This feature allows data extraction and aggregation into lists of partners based on various cumulative filtering criteria. The process of obtaining lists of partners requires three steps: specifying the filtering criteria, mentioning the required information and deciding the list format.

Filtering criteria is separated into sections, similar to punctual information grouping about any partner:

identification, contact, activity, financial and membership data.

Identification data filter, as presented in Fig.1., allows users to include only partners that meet specified values of the following filters.

Fig. 1. Identification data filter.

For partners like companies, the values are: period of registering year at Trade Register Office, status of the partner and legal organization form.

Contact data filter is presented in Fig. 2. and allows selecting none or some of elements related to the location of the partner (country, county, city and street name). Users can choose for instance one or more counties and the corresponding one or more cities existing in selected counties. Additionally, users can limit the partners included based on possibility of direct contact by phone, fax and e-mail, and contact persons, using logical operators and/or combined with the option of having or not having specified direct contact method.

Fig. 2. Contact data filter.

Activity filter, presented in Fig.3., offers the possibility of selecting one or more activities that must be carried by the partners. It presents the CAEN nomenclature in hierarchical form, and allows searching activities by code or description.

Fig. 3. Activity filter.

Financial filter allows selecting minimum and maximum values of the most used financial indicators. This can be combined by logical operators AND/OR. It also contains a customizable set of predefined values (for instance, values for micro-size companies or combined like micro and small-size companies). Fig. 4. presents available financial indicators for data filtering.

Fig. 4. Financial filter.

Membership filter can be used in case of required lists containing for example only members of certain membership type and also registered as members in specified period. All of this filter options are presented in Fig. 5.

Fig. 5. Membership filter.

Users can apply one or more of mentioned filters that combined will meet his needs of relevance for the companies included or excluded.

VII. REQUIRED INFORMATION

Required information refers to what information about filtered partners must the list contain. Required information is grouped in 5 sections, similar to filtering criteria, as presented in Fig.6.: identification, contact, activity, financial and membership information.

Fig. 6. Required information.

Users may select one or more information about partners that the list will contain.

Values of applied filters and required information are shown in a separate section for easily summarizing.

VIII. LIST FORMATS

List formats offers three available ways of presenting the resulting list: on screen, as a PDF file or as a Microsoft Excel workbook. On screen list presents data in tabular format being used for data investigation, with the possibility filtering, as shown in Fig. 7.

Fig. 7. On screen list format.

The PDF file format version presents resulting data as a list of companies with all required information, as shown in Fig. 8. It is mainly intended as a print-friendly format.

Fig. 8. PDF file format.

The resulting data can be saved as a Microsoft Excel workbook, as shown in Fig. 9. This is a good option if the list is needed for later data usage.

Fig. 9. Saving as MS Excel Workbook.

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