

FUNCTIONAL CHARACTERISTICS EXPECTED IN SOFTWARE REPOSITORIES FOR SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract. The small and medium-sized enterprises are the main nucleus, which moves the economies of countries such as Mexico. Many of them have emerged by need lack of sources of employment, attending to the needs in an empirical manner; identifying here an area of opportunity for IT professionals. We can provide the tools for anyone involved with SMES, to improve the productivity and competitiveness of the business. Therefore, the purpose of this paper is to present the desirable characteristics that must contain the software repositories for SMBS, and an assessment of state show that SMES.

Keywords: Small and medium-sized enterprises, functional characteristics, technological needs.

1 Introduction

In spite of the importance of SMES for the economic life of Mexico and of the possibilities that currently offered by the government and the various public institutions aimed to the progress of SMES, it is well known that have internal problems as well as external. The internal factors are due to the lack of organization, technological backwardness, lack of training of the staff, as well as a shortage of financial resources. The external factors largely relate to the lack of access to financing, interest rates are not competitive, among others.

The objective of this work is caused by the remarkable growth that small and medium-sized enterprises exist in Mexico, and the economic importance that represents the operation of them. Preliminary work, show the zero or low use of computers and information technologies [1]. As a result, a strong dependence to the use of technological resources from the family nucleus. That is to say, don't invest in basic equipment or technology, or specialized; also, the maintenance and information management is carried out by a person with a minimum of knowledge in information technology.

Unfortunately, the new national policy reforms and furrowed brow to small and medium-sized enterprises to the use of information technologies. In the work we characterize the conceptual elements present in the software repositories for SMES, to provide a better service, take advantage of their resources and improve its competitiveness as a company.

A repository is a centralized site, where it stores and maintains digital information, usually databases or computer files, is divided into three different types [2]:

- Institutional Repositories: developed and used by political institutions, social and educational, while enabling their members archive materials in digital format, available to the public.
- Thematic Repositories: Are characterized by store and provide access to academic production of a particular subject area.
- Software Repositories: Contains a classification that depends on the licensing, either private license or free license.

In the case of software repository, refers to store computer tools in the same site, and this is her most remarkable feature, because in this way a small and medium-sized enterprises can add the technological tools in a professional manner and directed to their sector, without having to be guided by empirical learning.

2 Repositories

Defined the term repository, identified repositories of software aimed at SMES, in order to obtain a vision of the current state of the same, its organization and accessibility for the companies. We identified 8 repositories available on the web, which are described below:

- Shortlist Software [3]. This repository has a directory of software, expert articles and reviews of software for the management of an enterprise. Its most outstanding feature is the personalized attention via telephone to meet the needs of a larger system..
- SourceForge [4]. Available in ten categories and one of them is destined to businesses, it offers near a wealth of software for any area. Much of the software software is free or trial versions.
- CESLCAM [5]. Contains an analysis of applications, technology items, courses, documentation, reference guide and a technological center of TIC'S. Its acronym mean Center of Excellence for Free Software Castilla-La Mancha.
- Herramientas para PYMES [6]. It is a repository that guides individuals eager to undertake an SMEs, as there are articles related to the technological tools, as well as a gauge of software
- IBM [7]. IBM Express Advantage, is a set of products and solutions of IBM designed to help SMES to solve problems, work with greater productivity and seize opportunities. On this site is marketed the software from IBM, but it is worth mentioning that presents software at low cost that are especially aimed at SMES. Offers trial versions
- Free Software Repository of Venezuela [8]. It is a collaborative reference space, where they are, and promoting applications, projects and tools in IT, which are developed in Free Software under open standards, useful and of interest to the public administration and organized communities.
- OpenPyme [9]. It is a catalog of free software where they are collected, categorized, robust and reliable products that can be incorporated in any productive sector of a company, thus improving their management and competitiveness thanks to the inclusion of ICT tools.

3 Evaluation of Repositories.

The repositories identified, especially in Mexico; are not available to small and medium-sized enterprises. Existing ones, providing different services and do not have as main objective support for SMES. These are available on the web, and do not exhibit structures and elements homogenates.

These are not directly aimed at SMES, have little or no information about the available applications producing greater confusion among users; not all the owners or employees of SMES are aware of how to use the technological tools. However, with this comparison we have been able to determine that the requirements that a repository aimed at SMES and users with little technology experience must meet are:

- Training. The dissemination of courses through this repository; information on tenders or training programs, related to the tools, or training available online.
- Categorization. In the case of the categories, instead of that there is a category for businesses; the categories must be specified by the turn of the company and/or functionality.
- Specifications. Includes description, operating system compatibility, hardware requirements, functions of the software, etc.
- Evaluation. Functionality to provide a rating of the chosen software; comments from the users who have downloaded and used the tool, with the purpose to inform other users in the usefulness of the application.
- Language. The language of the application should present as a minimum: spanish and english.

- Licensing. One of the major problems facing an SME is the limitation in financial resources, and so promote the use of free software is an alternative. On the other hand, access to commercial versions of software according to the size and rotation of the enterprise may be available or accessible.
- Tutorials. The availability of tutorials or video-tutorials to support the user in the installation and use of the tool, make it more accessible and satisfactory experience with the software.
- Search Assistant. Internal search tool to locate tool on the basis of specific criteria.

4 Conceptual Characteristics

Identified the repositories, extracted various conceptual elements that must be present in the design of repositories for small to medium businesses. Then describe and define these characteristics

- Language. Languages that are available in the software tools; such as language desirable is expected english and spanish.
- Country of Origin. The specification of the country in which it was developed the application.
- Categorization. Structure or catalog, to identify or label the types of applications stored in the repository.
- Software Comparator. Tool that allows you to compare two or more applications in the same category.
- Licensing. Type of license or licenses in which the application is available (free software or commercial software).
- Usability. Ease of implementation and the repository to be used.
- Form. Availability of registration forms for newsletters or contact.
- Technical Support. Technical Support or guidance or economic in relation to specific product
- Articles. Specialized or technical articles available for consultation online or electronically.
- Specifications. Information on the functions, features, requirements, technical requirements and price of the software product.
- Courses. Training, manuals or guides available for the users of the repository of the application or consulted.
- Video-tutorials. Videos or video clips that show the features or operation of the software.
- Demos. Links to download demo versions of software.
- Documentation. Access to the official documentation, or processed by third parties.
- Download Count and consultation. Accounting for the consultations and downloads of the repository.
- Rating. Assessment provided by users accessed or consulted about any application.

5 State of the small and medium-sized enterprises

In order to begin the process of identification of initial requirements in information technologies, continued to be the following procedure:

- Initial diagnosis of needs. Design is a initial instrument in that it was considered: identification of the company, technological resources (hardware, communications), use and domain technologies, software tools, training.
- Design of a model of categorization software. Subsequent to the implementation of the instrument, and with the results obtained from the sample; identified tools and technologies required for the software companies. .
- Linking profiles with model needs. Based on the rotation, identified needs and the resources available, a link was established
- Determination of a strategy to follow. The results will provide data to determine: if the instrument must be redesigned; carry out a new application to larger samples; proceed to a migration or the implementation of free software technology and/or open source; training in case it is required.

For the identification of the needs of SMES, a survey was carried out to the owners of SMES, which consisted of the following sections:

- Information of the company. It is requested the general data of the company, as well as the number of employees working there and the economic sector to which it belongs.
- Use of computing tools. In this section, we inquired into the current state in terms of technology, the hardware that are in use, as well as the software.

- Use of telecommunications. Information has been raised with respect to the availability and operation of telecommunications.
- Financing. Identified the source financing SMES.

As a result of the implementation of the survey and its analysis was obtained as follows:

- Training. Empirical presented a training and guided in the use of software tools. Introducing the fear of using other alternatives, the free software or open source, that lead to the possibility of investing resources, or well, unconfigure your computer. Must identify which are the real needs of chord to the giro and the financial resources they have available.
- Software tools. Have access to software that is preloaded on their computers from the factory. Highlight office computer tools, antivirus, messaging and design tools. Introducing the use of trial versions, or versions with licensing is not valid. Recursos tecnológicos. Se cuenta con recursos tecnológicos básicos como telefonía, internet, computadoras personales y/o portátiles. Sin embargo, dichas tecnologías no forman parte de la empresa, es decir, utilizan los recursos del núcleo familiar.
- Use of the domain and technologies. Have basic knowledge in the use and management of computer equipment; however they do not know the use of software tools and technologies that enable us to increase your productivity and save resources

6 Conclusion

Evaluating the results obtained, it was noted that the needs of each SME, are related to the type of industry in which they operate. That is to say, that an SME sector trade could not use the same technological tools, or receive the same type of training that the service sector, already that there are significant variations in the administration, functions and the number of staff required.

They identified the needs of SMES in terms of technology is concerned, and thus establish conceptual elements according to the type of SME sector, to recommend the technological tools that can be used to obtain more profits and manage their resources, without investing more money, because it would implement the use of the software free or low-cost. The document proposes the elements that must contain a repository of software aimed at small and medium-sized enterprises.

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