

# TERMINOLOGY MANAGEMENT SYSTEMS AND ITS ROLE IN THE DEVELOPMENT OF THE LANGUAGE INDUSTRY IN COLOMBIA

Juan Carlos Diaz Vasquez<sup>1</sup>, Carolina Franco Arroyave<sup>2</sup>

1. Professor at the Department of International Business, Universidad EAFIT, Medellin, Col. International Information Centre for Terminology, InfoTerm, Col. Researcher in the International Studies Research Group.  
jdzv@eafit.edu.co
2. Student of Master in International Business at Universidad EAFIT, Medellin, Col. Research Assistance in the International Studies Research Group.  
cfranco3@eafit.edu.co

**Abstract.** This paper reflects the importance of Information and Communication Technologies ICTs specially Terminology Management Systems TMSs as a key factor for the development of the language industry in Colombia and its economic global projection. Services offered within the scope of the Language Industry are mostly related with terminology management including tools for terminology extraction, knowledge management and communication throughout the productive chain. The article concludes upon a survey conducted in the biggest cities of Colombia pointing the appropriation levels of such tools by this specific industry in Colombia in its performance for the whole economic development.

**Keywords:** Terminology Management Systems TMS. Language Industry. Linguistic Software. International Standards. Internationalization.

## 1 Introduction

This research paper highlights the importance and dependence of the language industry on the newest ICT. Such technologies are the foundations for the effective providing of such services which includes, among others: translation, interpretation, subtitling, dubbing, software localization, web site globalization, development of language technologies, language education, consulting [LTC, 2009] and tools such as

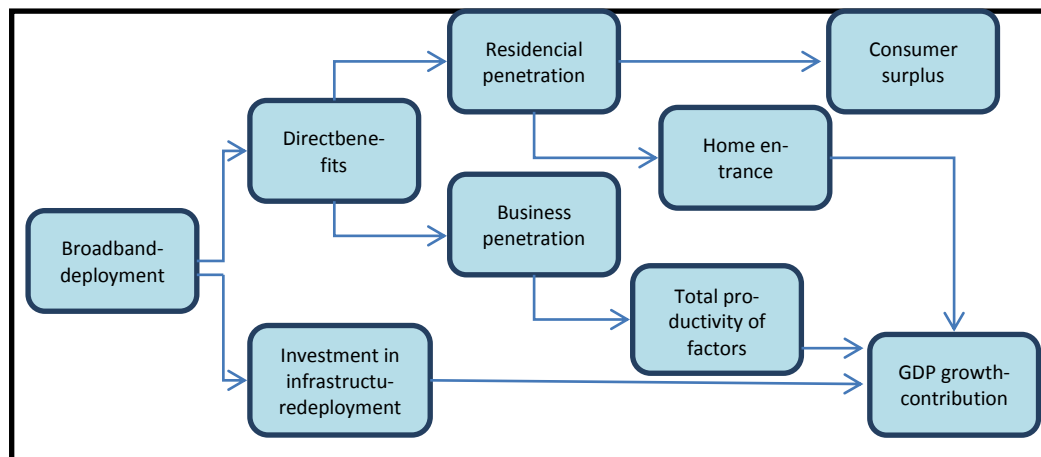
Terminology Management Systems, Translation Memories, Lexicons, Thesaurus, Taxonomies, Ontologies, Web-Dictionaries, E-mails, Video-conferencing Systems, that are intrinsic to linguistic activities. Additionally, these tools have propelled the internationalization of this industry, through reduction of communication costs and facilitating access to information. They are in many cases, even with unawareness of the producer, the entry modes to foreign markets and therefore essential part of the internationalization process of companies providing these services.

In general terms, Terminology Management Systems are probably the most common tool for technical and scientific translation activities which represent a large proportion of the language industry activities. In this sense, the research pretends to answer the following question: Which are the most common tools in the language industry in these cities in Colombia and what is their role in the development of the companies?

### 1.1 Context

The digital revolution, since its early beginnings of internet access, has been considered as a driver of economic growth, directly influencing GDP levels as pointed out by Katz (2010).

Figure I. Contribution parameters of broadband to economic



Source: Adapted from Katz, R. (2010). *La contribución de la banda ancha al desarrollo económico*. Authors' translation.

It is of our specific interest, for the purposes of this article, the contribution to economic growth sourced at the increase in business productivity.

For the service sector which has a high component of human capital, the proper management and use of information are of significant relevance for organizational operations, this explains why ICT have leveraged the growth of the sector worldwide [Javalgi & Martin, 2007]. ICT access and proper connectivity is considered imperative for the internationalization process, not only as a tool for communication with suppliers, customers and strategic partners but as an enabler of commercial processes to enter new markets through e-commerce.

In addition to the effects explained by Katz [2010] in the previous figure, the penetration of the broadband has some extra worthwhile mentioning effects, such as the improvement of education, increased possibilities for freedom of speech, increase of political conscience by accessing diverse sources of information, access to scarce products and services, etc.

In 2007, Latin America presented low levels of internet access compared to more developed countries (OCDE) and compared to the world average. The bright side is that such levels have presented patterns of growth since 1993 [López & Hilbert, 2010]. Nevertheless, it is important to keep in mind that the positive social and economic effects deriving from the access to broadband and ICT do not depend exclusively from the number of users in the region; it also depends on the quality of the service, education and training of the social actors for its appropriate use.

Colombia has been recognized for its production of primary goods. But as the service sector and knowledge intensive industries gain importance in the economy also do the technologies for information and content management. However specific tools for Knowledge Management – KM – have developed at a slow pace and have received poor attention from the private, public and academic sectors [Baquero & Schulte, 2007]. In knowledge intensive industries such as the language industry, is of high relevance the documentation of practices, techniques and employees implicit knowledge, in order for such practices to be preserved and improved by the organization to establish more effective practices. The study conducted by Baquero & Schulte [2007], presented that only 22% of the large- and medium-size enterprises in Colombia had a KM program implemented (written policies and strategies of KM) in 2007. One limitation for this study is the lack of segregation by sector since the average results may vary from the primary, secondary and tertiary sector. We could however induce, that if the largest companies in Colombia have not prioritized the information management, the situation for micro- and small-size companies is not more encouraging.

In 2009, the Ministry of Communications of the Republic of Colombia was transformed to the Ministry of Information and Communication Technologies. Its purpose is to increase the access of Colombians to ICT through the implementation of new policies and programs intended to improve social, economic and political development [MinTIC, 2014a].

The different strategies developed by the ministry and implemented with the support of local administrations, are centered in a policy named “Vive Digital” (Live Digital). Such policy looks for the creation and strengthening of a digital ecosystem based on four strategic axes: Infrastructure, services offered by operators, applications, and users; while strengthening the demand and supply of the digital market [MinTIC, 2014b]. One of the projects that captured our attention is “*Gobierno en*

*Línea*” (On-line Government), which promotes the modernization of the State and of its interactions with its citizens through ICTs. It integrates sites of information, procedures and services of the different government entities (Gobierno en Línea, ND).

Despite the slow growth in the access to internet and ICT, the country still presents lags in this subject. For diverse industries, both national and international, this represents a great barrier for the access to the Colombian market, where only 16% of the surveyed Colombians participated on e-commerce in 2012 [Ipsos MediaCT, 2012].

The service sector in Colombia is the sector that has presented the biggest growth between 1970 and 2011, according to Fedesarrollo [2011]. However, such growth has not been reflected in the Colombian exports. This presents a broad spectrum of opportunities, specially for products and services with high knowledge and technological content since in 2000 only 12.7% of Colombian exports belonged to these types [Rojas & Vargas, 2007]. For 2010, the percentage of manufactures with high and medium technology content was approximately 34% (Torres & Gilles, 2013). This sector along with services, represent then high potential to be exploited, with regional referents as Mexico 75%, Costa Rica 50% and Brazil 44%, in the same period [Ibid].

## **1.2 Terminology Management Systems**

The technic side of translation has become one of two necessary conditions that determine the professional capabilities of translation activities and other linguistic services; the level of technical capabilities is often a mandatory requirement to be competitive in a market that is more and more driven by ICTs. Covering the topic of software tools for every linguistic aspect requires a broad analysis of many of them. A common denomination that covers several tools for such services is Computer Assisted translation, which is the main focus of this article. To be more specific in tracking technologies for translation purposes in the scientific and technical domain we will focus in tools for terminology management, whose use is more widely spread.

The Terminology Management Systems, are the softwares intended to administrate terminology data [Arntz, Picht, & Mayer, 2004] which are necessary for computer assistedterminographic work and for terminology management. Since such systems were conceived at first as special data banks for translations, they allow, mostly, interactions with text processing systems. From text processing systems could be accessed terminology management systems to extract terminology data [Ibid].

The terminology management systems are computerized programs that facilitate collection, preservation and access to terminological data for reference of linguistic professionals, translators, terminologists and technical editors in specialized fields. [DíazVásquez, 2010]. By using such systems, it is possible to create terminology data bases with entries containing term-related information. In a study of Terminology Management Systems in Europe, the University of Surrey registered 60 systems by 1995 [Ahmad, Freigang, Mayer, Reinke, &Scmitz, 1995], what gives us an idea of the wide variety existing in these years of further development.

The first characteristic is related with the technical side, where factors such as the compatibility with the most popular operation systems and their updated systems (such as MS Windows 98/2000/XP/Vista/, Mac OS, Linux, etc.) In the other hand, it must be taken into account the integration with text processing systems and translation memories. Most of the terminology management systems offer nowadays these advantages. Since such characteristics are applicable to almost any kind of programs it is convenient to observe other characteristics more oriented towards the terminology management itself.

The second characteristic is related to terminology issues, which are extremely important. For instance, it is expected that the Terminology Management System responds to the terminology objective of the data base [Schmitz, 2001]. There is some bilingual software in which the terms are organized by pairs with a limited number of entries. Nonetheless, there are also multilingual systems focused on the concepts and with interfaces for several users; also, some of them include the idea of the “autonomy of the term [Ibid], so every synonym term can be documented according to the data categories.

Besides the TMS offered by private companies, there are some that can be accessed by freeware downloads, or those which are home-designed for individual use. The commercial TMS have a predetermined structure although some offer the possibility of personalizes the structuring of collections [Schmitz, 2001].

Yet, there are mixed offers between private ad free software. These gain users by allowing translators to work effectively through demos with limited functions but operational for unlimited time. This is the case of software such as Wordfast and MemoQ, in which translators can conduct small projects with no inconveniences (MemoQ is special, since its full version can be downloaded, but after one month it is converted to MemoQ4Free, a more limited version but functional for unlimited time).

The main advantage of TMS oriented to the concept is that they offer interfaces for single and multiple users, as mentioned before. Besides they may content multimedia resources, whose collection might be monolingual, bilingual or multilingual and the direction of equivalences might vary.

In general, TMS are oriented to the concept to avoid inconveniences in the management of meaning, what means that one terminology entry can be registered to correspond one concept with its synonyms or preferred forms and its equivalents in other languages. Finally, the TMS allow to freely structure and model data, this is a disadvantage since some of them do not have developed and interactive interfaces for the users.

Among the commercial TMS the most important ones are: Across , GFT Data-Term, LogiTerm , MTX, SDL MultiTerm , TermStar , WebTerm7, among others.

## **2 METHODOLOGY**

This research has an exploratory purpose. Several studies have been developed in the language industry in Europe and the United States [Kelly &DePalma, 2012;

TAUS, 2011; LTC, 2009], few research has been conducted in this topic in Latin America. This research is being conducted with a quantitative analysis of primary nominal variables obtained through a web-based survey, from a positivist epistemological consideration that allows the acquisition of new knowledge through data collection [Bryman, 2008]. Although considered as opposed positions, the constructivist epistemological consideration also plays an important role since the results might be influenced by the social actors according to cultural, social and economic conditions. Although Bryman [2008] also proposes that the logic of a quantitative research is deductive, our research, in line with its exploratory purpose is developed inductively, since there is or initial hypothesis and the theory was proposed once the results were analyzed.

The choice for this data collection method was based on the advantages and disadvantages proposed by Bryman [2008] from a variety of methods. The self-administered surveys via e-mail, allow us to reach a high number of subjects in a short term and with low costs, additionally this allows to the respondent to answer conveniently accordingly to the availability of technical information required, which offers an advantage compared to methods such as interviews. However, the same characteristic presented us with the inconvenience of a low response rate, which we tried to avoid by contacting by phone the subjects of interest, looking for their acceptance to participate in the research.

The survey was conducted with firms in the language industry in the three main cities of Colombia [Bogota, Medellin and Cali], the section of the survey that interest this article was focused on obtaining information about the use of Information and Communication Technologies (ICT) and its relevance for the growth and expansion of the firms and the impact of the policies of the Ministry of Information and Communication Technologies in the development of a National “Digital Ecosystem” [MinTIC, 2013].

Finally, secondary data was obtained to complement the understanding and analysis of primary information. The main source for such data was the Colombian Ministry of Information and Communication Technologies. An analysis of existing literature was also conducted to provide context to the results of this research in comparison to previous research.

### **3 Results**

We identified a total of 251 firms in the language industry in the three main cities of Colombia: Bogota, Medellin and Cali.

From this initial population, we discarded 29 firms in the first filter since they were mainly free-lancers, these are legally constituted firms but the owner is the only translator. From the remaining 222 firms we were only able to contact 106, from which only 30 answered our survey and only 27 answered it completely. The survey is open up to May, so the results presented here may vary in the following months.

Such low response rate hinders our ability to make inferences about the whole industry; therefore results need to be presented merely in a descriptive way rather than in a generalized one.

Table I. Results.

<b>Value</b>	<b>Co unt</b>	<b>Per- cent %</b>	<b>Statistics</b>	
Email	30	100 %	Total Res- ponses	30
Web site	25	83.3 %		
Shared web site	2	6.7%		
Social Networks	20	66.7 %		
Translation software	15	50%		
Translation memories	14	46.7 %		
Terminology Management Sys- tems	8	26.7 %		
Mobile Apps	7	23.3 %		
Other	5	16.7 %		

## 4 Discussion

Despite the great efforts of the Colombian government to increase the appropriation of ICT and the inclusion of new technologies in the productive processes of companies, a wide use of them is not perceived among the industry. This might be explained by the fact that the main target for the ICT Ministry is the education sector rather than the industry. Therefore their impact in the productive sector is expected in the long-run.

The lack of widespread use of technologies encouraging the systematization of processes is also reflected in the lack of accession to international protocols and standards. Only 8 out of 30 firms, comply with at least 1 national/international regulation.

Equally important, is the poor use of technologies for Knowledge Management, since, in line with the lack of systematization of process, it makes the firm's operations highly dependent of its employees. Consequently, if there is a change of person-

nel, much of the knowledge acquired with experience would be lost; what makes the language industry in Colombia less productive and less efficient in the long run.

It is very interesting to note how, despite of the developments of software specific for terminology management, some of these firms are still attached to tools such as Web Dictionaries. These tools, although of easy access and availability, are not reliable enough to support the translation process of technical and specialized documents.

Such findings allow us to present the language industry in Colombia, as an informal industry: there is little standardization of processes, not enough application of international standards over terminology, knowledge and content management such as ISO 26162, EN 15038, quality standards such as ISO9001 and even national standards over service supply as the NTC5808, which reflect a lack of professionalization.

This last characteristic is also reflected in the low recognition translation professionals have in the country. The study conducted by Clavijo, Duque, Franco, Mendoza & Rodriguez in 2008 reflected that in Colombia, the translation activities are, to a great extent, performed by professionals of fields different of linguistics and have empirical knowledge of other languages, but few knowledge of terminology management and its impact in the translation process. This lack of knowledge of terminology specificities, might then explain the lack of appropriation of facilitating technologies.

## 5 Conclusions

The Language Industry in these cities and it can be said for Colombia is still an industry in development which shows low levels of professionalization and standardization regarding specifically the use of ICTs. These are issues of high importance for a higher impact of this industry in the economy. For such process is necessary the accession and compliance with international standards and regulations establishing quality parameters for the service and the processes of this particular industry.

In Colombia, there is low participation of technologies in this industry what led us to conclude that firms in the language industry are highly dependent on the knowledge and expertise of their employees. The lack of appropriation of these technologies can be explained under the light of the above mentioned conditions: informality and lack of knowledge on international standards.

Although Colombia has made significant progress in terms of technology appropriation, the Ministry of Communications was even changed for a more updated and comprehensive entity: the Ministry of Information and Communication Technologies, such efforts have been mainly focused on the education sector but its impact in the productive sector is yet to be seen.

Consequently, in order to increase the appropriation of technology tools with the purpose of increasing the productivity of firms, it is required a bigger joint action by the industry, the Ministry of ICT, software providers and international standard and regulation organizations (such as ISO) to inform, promote and support the inclusion of such tools in the operation and management of firms in the language industry.



The appropriation of Terminology Management Systems, not only increases firm's efficiency and productivity but allows companies within this industry to provide higher quality services assuring coherence and standardization of the language.

## 6 Bibliography

Ahmad, K., Freigang, K.-H., Mayer, F., Reinke, U., & Scmitz, K.-D. (1995). Analysis of Terminology Management Systems in Europe <ftp://ftp.ee.surrey.ac.uk/pub/research/AI/pointer/tms.ps.gz>

Arntz, R., Picht, H., & Mayer, F. Einführung in die Terminologearbeit: Studien-Sprache und Technik (Vol. 2). Hildesheim, Germany: OLMS (2004)

Baquero, T., & Schulte, W., An Exploration of Knowledge Management in Colombia. VINE: The Journal of Information and Knowledge Management Systems, 37(3), 368-386 (2007)

Bryman, A. Social Research Methods, New York, NY, Oxford University Press (2008)

Clavijo, S. B., Duque, M. I., Franco, C. A., Mendoza, E., & Rodríguez, E. M. Babel en las empresas colombianas: Una mirada actual de la traducción (Vol. 1). Colombia: Universidad EAN (2008)

Díaz Vásquez, Juan Carlos, Aplicación de Normas Terminológicas como apoyo al Sector Exportador en Colombia. Doctoral Thesis, Universität Wien (2010)

Fedesarrollo, ¿Se está des-industrializando Colombia? (R. Steiner, Ed.) Tendencia Económica (109), 6-11 (2011)

Gobierno en Línea. (ND). Portal del Estado Colombiano, <https://www.gobiernoenlinea.gov.co/web/guest/ques-es-pec>

IpsosMediaCT. Encuesta de consumo digital en Colombia. Bogotá. Obtenido de Ministerio de Tecnologías de la Información y la Comunicación (2012)

Javalgi, R. G., & Martin, C. L. Internationalization of services: Identifying the building-blocks for future research. Journal of Services Marketing, 21(6), 391-397 (2007)

Katz, R.. La contribución de la banda ancha al desarrollo económico. V. Jordan, (2010)

H. Galperin, & W. Peres (Edits.), Acelerando la revolución digital: Banda ancha para América Latina y el Caribe (págs. 51-78). Santiago de Chile, Chile: CEPAL (2010)

Kelly, N., & DePalma, D. A.. The top 100 language service providers. C. S. Advisory, TheLanguageServiceMarket (2012)

López, P., & Hilbert, M. De la brecha en banda ancha al blanco móvil del ancho de banda. En V. Jordán, H. Galperin, & W. Péres (Edits.), Acelerando la revolución digi-

tal: Banda ancha para América Latina y el Caribe (págs. 121-142). Santiago de Chile, Chile: CEPAL (2010)

LTC. Study on the size of the language industry in the EU. Study Report, Directorate general for Translation of the European Commission, Kingston upon Thames (2009).

MinTIC. Plan de acción 2013. Bogotá

<http://www.mintic.gov.co/portal/604/w3-article-1454.html>

MinTIC, Acerca de la entidad. Recuperado el 29 de Enero de 2014, Ministerio de Tecnologías de la Información y las Comunicaciones:  
<http://www.mintic.gov.co/index.php/ministerio-tic/entidad>

MinTIC, Ecosistema Digital. 29 de Enero de 2014, Ministerio de Tecnologías de la Información y la Comunicación:

<http://www.mintic.gov.co/index.php/vive-digital-plan/ecosistema>

Rojas, A., & Vargas, O. Globalización, nueva economía y TICS: Colombia, un caso de rezago tecnológico. CENES, 47-88(2007)

Schmitz, K.-D. Criteria for evaluating terminology database management program. En S. E. Wright, & G. Budin (Edits.), Handbook of Terminology management: Basic aspects of Terminology Management, Amsterdam/Philadelphia: John Benjamins (2001)

TAUS, Lack of Interoperability Costs the Translation Industry a Fortune (2011)

Torres, D., & Gilles, E. Estructura tecnológica de las exportaciones industriales en América Latina 1990-2010. Administer(22), 96-111 (2013)