



LOCALIZATION OF SOFTWARE IN LOGISTICS

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ABSTRACT. The author presents the problems connected with localization of logistic software. The following factors affecting the process of localization are discussed: information and its role, globalization, internationality and the command of foreign languages. Three types of localization depending on the type of interaction are taken into consideration. The main emphasis is put on the efficiency decrease, which is observed in the case of logistic software as a result of communication distortions. SAP R/3 logistic software was used as an example illustrating the localization problems. Three situations have been presented namely: lack of localization, partial localization and deficient complete localization, which is hard to understand for the users. The author concludes that even high-quality software in the case of the lack of or partial localization becomes less efficient and effective than in the case of complete localization. But the lack of localization finds its justification in the age of globalization.

Key words: information, information system, IT system, software localization.

INTRODUCTION

The increased role of information may be observed not only in Poland but also all over the world. Information affects all manifestations of human activities. Information here is understood as strictly specified data having some meaning. In an economic activity it encompasses all data streams within and between enterprises and between enterprises and external centers such as customers, suppliers and governmental agencies. [Jabłoński 2003]

Information is a factor, which enriches people with knowledge about the surrounding world. Information is commonly observed both in daily and professional lives. It can be noticed in procurement processes (supplying materials and components), production, distribution, sales and services. Information is equally valuable as specific products or physical stocks. Such a treatment of information has led to vital changes in practice. For instance, such strategies as Just-in-Time or Quick Response use logistic information for the purpose of cutting delivery costs. All those strategies assume that information is a physical resource. It should be reliable, accurate and true. It must reflect the current market situation and allow for making forecasts. As a consequence, the information source should be localized as close to the final recipient as possible. Moreover, the form of information transmission must be fast (thus, the information transmission methods such as EDI - Electronic Data Interchange are used), high quality and secure. Such information fulfills the rule of 6Rs (right quantity, right condition, right time, right place, right cost, right customer), may be subject to trade and, as a consequence, may generate some specific economic benefits. It is one of the most important (apart from people and capital) assets for enterprises.

The second factor clearly affecting the problems connected with software localization in logistics is a trend of constant broadening of the territory of enterprises' economic activities. A typical symptom of that trend is the creation of multinational or even global companies. A multinational company is an organizational entirety composed of autonomous units. They conduct business activities in different countries and are usually well adjusted to the conditions of a specific territory. A global company, on the other hand interferes strongly into its business activities putting emphasis on the interrelations between specific countries. The company adopts the strategy of co-ordination. There are no national-market oriented strategies present. The existence of such organization forms affects the management style. Thus, one may distinguish here cross-cultural management. In that case it is necessary, however, to take into account cultural differences between specific countries on the territory of which the business is conducted. Cultural differences affect intercultural communication. One must take it into consideration, as it is a vital factor ensuring the success of negotiations, business talks and business contacts. Each ethnic group, each nationality reacts differently to some specific environment. Americans put emphasis on an individual. Everyone must be able to take care of himself. Japanese, on the other hand, concentrate on the long-lasting clan culture. They identify themselves with society. What is more, aliens are discriminated against. Therefore, one must know cultural factors affecting business activities in order to avoid unnecessary disturbances and distortions. [Koźmiński 1995]

The third factor visibly affecting logistic software localization is the problem of the command of foreign languages in Poland. According to the recent survey carried out by CBOS (Polish public opinion poll agency) 55 per cent of Poles do not speak any language. People aged 18-24 are most willing to learn languages. 77 per cent in that group stated that they know foreign languages. When taking into consideration the education the situation is the following: 83 per cent of people who graduated from higher education institutions can communicate in a foreign language. 56 per cent of people with secondary education can communicate in a foreign language. 34 per cent of people who have graduated from vocational schools and 28 per cent of people who graduated from primary school can communicate in a foreign language. The survey was carried out from 2 to 5 November 2006, and a random group of 979 adult Poles was asked about their command of foreign languages.

The fourth factor is related with the software. Right now, it is impossible to live in information society and conduct business without a proper hardware and software. Moreover, in order to be efficient the software must be localized properly that is adjusted to the market. Localization is a long and complex process. It encompasses the following issues: terminology specific for a given language, translation strategy, and content-related verification. The text, which appears on a computer screen, must be translated including help, guidelines and manuals. Localization consists in adjusting the software to Polish regulations and standards. Additionally, it should be a process of software adjustment to the needs of users conducted as a result of a co-operation of a translator and a computer scientist.

INTERACTION-CONDITIONED TYPES OF LOCALIZATION

When analyzing the software localization in logistics one may enumerate three basic interaction models:

- dominance model,
- co-existence model, and
- co-operation model.

As far the implementation is concerned the model of dominance is the best one. The implementation process is short (in comparison with other models). In the course of the implementation process the management style of the mother company is imposed on all daughter companies, and sometimes even business partners and co-operators. Other management styles characteristic of specific cultures are ignored or even discriminated against. In that case one may usually observe complete lack of software localization.

The co-existence model requires more time, money and engagement of specialist who must be at the company's disposal. It is based on the search for compromise. The compromise is connected with looking for solutions acceptable for all parties. It is more expensive than the first model as it requires conducting research. However in the long run it may turn out to be more profitable (as it generates fewer problems and does not pose so many threats and risks in the system operation). It is based on taking advantage of the existing similarities. In that case one has to face partial software localization.

The co-operation model is based on the so-called cultural co-operation. It is a process during which strategies, operations and behaviour models are created on the basis of cultural patterns characteristics of process co-participants. Moreover, the final product strives at taking advantage of the best patterns and minimizing the influence of negative phenomena. This model has been created as a result of long-lasting observations the direct result of which is taking advantage of both similarities and differences between existing solutions. The effectiveness of its operation depends on the cultural diversity. It is the cultural diversity, which is treated as a resource, which must be used in order to provide satisfactory development of the company and to hold the advantage over competitors. The co-operation model processes are time-consuming, expensive and laborious but the final product generates additional benefits in comparison with two above discussed models. It allows for eliminating risky situations and reduces dangerous situations to a minimum. In that case the software localization should be complete. In fact, one may unfortunately often encounter deficient software localization.

SELECTED PROBLEMS CONNECTED WITH LOCALIZATION

The author has analyzed SAP R/3 software supporting management in MRP II organizations. SAP provides a comprehensive range of enterprise software applications and business solutions, which encompass all managerial functions (planning, organizing, motivating, monitoring and supervising). They also encompass all managerial levels: manufacturing, controlling, finance, accounting, raw materials' procurement, quality management, projects, sales and distribution, personnel, remunerations, redecorations, tangible and intangible assets, investments, etc. Those software enable manage the company in all spheres of its operation. They help to satisfy the needs and expectations of customers.

SAP R/3 software enables data transmission not only via data export/import but also by the on-line data exchange. They have efficient input-output interface, well-developed data-bases (the core of the system), advanced information retrieval structures and management informing and monitoring tools. The choice of the software was conditioned by its popularity on the Polish market. SAP has about 800 customers in Poland. According to the IDC, SAP had 32.65 per cent share on the Polish market.

Lack of software localization

The lack of logistic software localization is quite a popular situation in Poland despite the Act on the Polish Language. It is a typical example of a dominance model. It occurs when one global enterprise composed of one mother and many daughter companies located in many parts of the world is made to use software (e.g. SAP R/3) in English-language version. The culture of a mother company is imposed on daughter companies. Other culture-models are discriminated against. The problem of the lack of localization was observed in a Polish daughter company where the SAP R/3 software was implemented and used. In that case it was subject to standardization procedures and algorithms designed to enable efficient management previously implemented in other cultural environments of different daughter companies.

The threats usually appear in many fields: planning, production, sales, scheduling production plans, demand management, material requirements' planning, or production capacity planning. They refer among others to transaction systems, information retrieval systems and management informing, monitoring, databases' management. I have divided all those threats into two categories:

- dominance imposing one language within one multinational company, and
- dominance imposing one settlement period within one multinational company.

The first type of distortion results from a different intuitive and habitual usage of commas and full stops (e.g. 238.428 in English equals 238,428 in Polish; 238,428 in English equals 238 428 in Polish). Many problems were spotted due to not adjusting the software to Polish norms concerning the usage of commas and full stops. It made it impossible for users to assess the real situation. They decreased the efficiency by prolonging the reaction time to the asked questions and in some cases even led to the system operation suspension. Such a situation took place as a result of implementing IT procedures automatically verifying the correctness of data. They additionally created distortions within the sphere of interactions with past activities. The existing statistics was distorted and it contributed to regrouping of physical data structures. Moreover, a different intuitive usage of commas and full stops generated serious errors in settlements and discrepancies of existing warehouse stock levels. As a result, the company had to incur extra costs e.g. due to the need to carry out additional stock inventories.

The next observed problem referred to the information retrieval system and management informing system. The disturbances in system operation were generated by errors caused by misunderstanding abbreviations and names used in English language version of SAP R/3 (e.g. Dd - Delivery date, Ed - Execution date). As a consequence there were problems connected with deliveries to specific consignees for over 6 weeks. It resulted from incorrect marking of the date of delivery on delivery documents. Instead of the delivery date there was the date of document issuing. A direct consequence of such a state of facts was a distorted picture of a real situation on the market and the creation of excessive stock levels of one product and lack of other products. Moreover, due to the lack of reaction of the management (improper management informing procedures e.g. by generating reports inconsistent with the truth) the previously worked-out system of customer service broke down and additional costs had to be incurred to maintain the order portfolio.

The next issue concerns the operation of monitoring systems the main aim of which was to inform the management as fast as possible about the threats and make them intervene before the losses would occur. It is a basic component of SAP R/3. One of such components is HACCP (defined by the Codex Alimentarius as the Hazard Analysis and Critical Control Point). Its main function is to analyze and prevent the creation of microbiological, technological, chemical and/or physical hazard; to reduce and prevent possible intensification by not allowing product contamination. What is more, HACCP is to minimize risk. In that case the source of distortion was of language character. Due to misunderstanding the manual (the help was written in English) and abbreviations (Ed Expiry date, Bi Batch index) workers incorrectly fed the production data and batch number into the system. Additionally, there were not sufficient relations in the SAP R/3 system between the batch number and expiry date. As a result the management did not have proper data at their disposal and could not make proper decision.

Dominance consisting in imposing on the whole multinational organization one method of accounting period settlement was a source of incorrect time-period settlements. Insufficient understanding of information concerning the beginning of the accounting year resulted in the creation of unnecessary disturbances in the company's functioning. Those problems were directly connected with the monitoring and transaction systems. In the past the accounting year was the calendar year and thus it started on 1 January and ended on 31 December. When SAP R/3 software was implemented the accounting year started on 1 July and ended on the last day of June next year. Moreover, a new system of short-term settlements was introduced. The new settlement period is composed of four up to five weeks depending on the month. Additionally, the beginning of the period does not start at the beginning of the month (e.g. July 2006 is composed of five weeks which started on 2 July and end on 5 August, August is composed of four weeks which start on 6 August and end on 2 September, etc.). Consequently, many discrepancies appeared as a result of the system stock levels and physical warehouse stock levels. The need to clarify the discrepancies occurred - it was necessary to carry out inventories (within 6 months three extra inventories had to be taken).

Partial software localization

The co-existence model is connected with partial software localization. It is a way of finding a compromise between business partners' cultures. The emphasis is put on looking for solutions acceptable to all interested parties. In order to achieve it one must carry out research on the basis of which the acceptable model, which may be implemented and effectively used, is worked out. SAP R/3 software was in that case implemented in a Polish language version. However, some undesirable distortions occurred. For instance the language of SAP R/3 software was contaminated with direct borrowings from English including English abbreviations. Among such direct borrowings users had to face the following: *Service level, Out of stocks, Glossary, Easy Access user menu, Feedback, ZSD_OOS - SD, BMBC - Batch Information Cockpit*. As a consequence, the users had problems when using transaction systems, information retrieval systems and databases. The time necessary for conducting rudimentary operations was prolonged. The physical operations such as delivery acceptance, order submission, order acceptance, transport dispatch etc, were also prolonged. The errors were made more frequently e.g. in the case of inaccurate assessment of stocks of spices, condiments and aromas at the company's disposal. As a result the monitoring system operated inefficiently. Due to those unnecessary disturbances appeared and additional costs were incurred but it must be stressed that in the majority of cases especially in the first period (the process of staff training and learning) they referred mostly to the personnel of lower job qualifications. Moreover, they were connected with the input-output interface and language barrier, which generated additional tension and stress. As a consequence, workers stopped reading communiqués and messages. The routine of work appeared fast. Employees started working as automats deprived of human intelligence, binary machines which generate a question every time a problem appears. Unfortunately, in the majority of cases the questions were not addressed to proper addressees. Such a situation, on the one hand, leads to the communication channels' jamming, and, on the other hand, to unnecessary burdening of high-quality specialist (among others consultants responsible for system implementation or computer science department staff), management, or even top executives.

Deficient software localization

As I have just mentioned before, the co-operation model occurs in the case of complete localization without errors. However, when investigating software localization problems I have encountered deficient software localization examples. The first problem is connected with a so-called professional pidgin. It is a sort of professional jargon, which is shaped and created in a specific environment within a specific community. It may also be encountered within IT systems. The term mandant is one of professional pidgin examples. It is defined as a legally and organizationally independent unit of the highest level within the system. It is an organizational unit of the highest level, which constitutes a logical entirety for specific economic units. Using such terms and expressions hampers IT system usage (especially in the first period of system's operation), introduces unnecessary disturbances and generates errors. Not knowing available *mandants* (such as test performance copies, training copies, or others) leads to making errors and as a consequence makes the work within the company ineffective and inefficient and furthermore leads to unnecessary burdening of personnel with extra work. It prolongs the time necessary for conducting rudimentary operations (such as delivery acceptance, creation of a new material position) and indirectly contributes to the creation of unfavourable work routines.

The second problem is connected with a help desk system, which is available in Polish language version in SAP R/3 software. This basic element of information retrieval may operate in an interactive way. The user is not always satisfied with the first answer he gets, and thus, the system asks more detailed questions and/or generates some additional hints. The scope of the operation of such systems is very wide and it is restricted only by the contents of the database and the scope of the user's powers as far as the system usage is concerned. Such a situation takes place in the case of a complete properly conducted software localization. Unfortunately, when investigating the software I have found out that

although the software is supposed to be in Polish language version, the help desk is in English (e.g. 'The user menu contains only those items - such as transactions, reports, and Web addresses - you need to perform your daily tasks. If a user has been defined by your system administrator, it appears when you log on to the system.'). One may use it effectively only when he/she knows English sufficiently (a good command of English is necessary). This fact generates additional complications. On the one hand, the software user must know a foreign language at the level enabling understanding the guidelines incorporated into the system, and on the other hand there is a need to prepare guidelines in Polish (in analogue or electronic form). Furthermore, SAP R/3 software in Polish language version differs to some extent from the English language version, which poses some difficulties as far as effective usage is concerned.

The third example is connected with dates. In the analyzed SAP R/3 version the dates were used incorrectly because in two different transactions there were fields with different names with the same meaning. Two synonyms appeared namely: '*Data dostępności*' and '*Data przydatności*' (Expiry Date or Best Before Date). As a result unnecessary errors were made, additional questions were generated and the need to create additional guidelines occurred. The company had to incur extra costs again.

CONCLUSIONS

The complete lack of software localization has many negative features such as work cycle disturbances' creation within the whole company and within specific departments or smaller organizational units. But it must be stressed that it also brings some additional positive benefits. The implementation of the software without its localization eliminates the problem of data conversion within a global enterprise. It enables a far-fetched standardization of used documents and reports. Moreover, it simplifies the internal communication within the entire global enterprise.

The most desirable situation in all respects out of the three presented in this article is the co-operation model. It is the co-operation model in logistics, which enables most efficient usage of software in specific, determined circumstances. It gives a chance to achieve success understood as taking advantage of all opportunities and capabilities, which are related with the personnel at the enterprise's disposal. According to the commonly known laws and rules of management the best capital is not money, time or unlimited access to state-of-the-art technologies but people. People create a unique atmosphere necessary for learning, development, and achieving set goals. But they must be equipped with proper tools, which will be intuitively understandable for them. The problem of localization is connected with it. Localization should take into consideration both linguistic and cultural factors. It is a prerequisite for localization to be compliant with the language and intuitively understandable for users who operate within that culture.

When choosing a translator to do translation part of the software localization project, one should follow a specific algorithm. The following criteria should be met:

- high professional qualifications (including the knowledge of IT systems),
- specialized linguistic knowledge,
- software knowledge enabling using it,
- teamwork skills.

One should realize that such large projects as software localization must be carried out by teams of people who co-operate and who are high-class specialists.

The existence of synonyms within the software is unacceptable and thus should be eliminated at any cost because it may lead to:

- information processes' distortions,
- unnecessary multiplication of information,
- prolongation of rudimentary information operations,

- jamming the existing information channels.

As a result, the information system may become completely ineffective and jammed. Furthermore, the premises will be created that the system must have better information flow capacity and consequently the costs will be incurred on newer and more efficient hardware and finding solutions for their implementation, including new organizational methods.

Starting the process of software implementation (localized or not) one must always adjust them to the existing information system. It is hard to imagine a situation in which SAP R/3 software does not co-operate with the existing information system. It must efficiently support the system and create conditions for the most effective operation of the company. It should create new development opportunities and indicate where it is possible to generate new financial benefits connected with operation time and speed.

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LOKALIZACJA SOFTWARE'U W LOGISTYCE

STRESZCZENIE. Autor przedstawił problemy związane z lokalizacją logistycznego oprogramowania komputerowego. Przedyskutowano następujące czynniki wpływające na ten proces: informacja i jej rola, globalizacja, internacjonalizm, znajomość języków obcych. Przedstawiono trzy typy lokalizacji w zależności od typu zależności. Główny nacisk położono

na zjawisko obniżenia efektywności w wyniku zakłóceń w komunikacji. Problemy te pokazano na przykładzie oprogramowania SAP R/3. Przedstawiono trzy sytuacje: brak lokalizacji, częściowa lokalizacja oraz nieprawidłowa lokalizacja, niezrozumiała dla użytkowników. Autor udowodnił, że nawet wysokiej jakości oprogramowanie może być mniej efektywne w przypadku niepełnej lokalizacji aniżeli w przypadku kompletnej lokalizacji. Niemniej jednak brak lokalizacji jest uzasadnione w epoce globalizacji.

Słowa kluczowe: informacja, system informacyjny, system informatyczny, lokalizacja oprogramowania.

SOFTWARE-LOKALISIERUNG IN DER LOGISTIK

ZUSAMMENFASSUNG. Der Autor stellt in diesem Beitrag Probleme der Lokalisierung der Logistiksoftware dar. Es werden Implikationsfragen, wie die Bedeutung der Information, Internationalisierung und Globalisierung der Unternehmen oder Fremdsprachen-Kenntnisse erörtert. Es wurden auch Typen der Lokalisierung hinsichtlich der aufgetretenen Interaktionen beschrieben. Der Schwerpunkt liegt auf der Verminderung der Effizienz, die im Falle von IT Systemen infolge der Kommunikationsstörungen am Beispiel des SAP R 3 sichtbar ist. Es wurden drei Situationen dargestellt: völliges Fehlen der Software-Lokalisierung, deren partielle Lokalisierung und Probleme, die im bei einer Lokalisierung auftreten, die für den Anwender nicht verständlich ist. Der Autor beweist, dass die Effizienz einer hochqualitativen Software beim Fehlen oder partiellem Fehlen der Lokalisierung abschwächt. Zugleich wird die Effizienz die Leistung der Anwender kleiner als bei den richtig lokalisierten Systemen. Der Autor weist auch auf bestimmte positive Folgen des Fehlens der Lokalisierung im Zeitalter der Globalisierung hin.

Codewörter: Information, Informationssystem, IT Systeme, Software-Lokalisierung.

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