Classification of ERP System Services

Petr Sodomka, Hana Klcova

Center for inVestigations into Information Systems (CVIS)
Department of Informatics
Faculty of Business and Management
Brno University of Technology
Czech Republic

petr.sodomka@cvis.cz; hana.klcova@cvis.cz

Abstract: Today the ERP business information systems are an essential tool for organization management, regardless of size and field of activity. Their successful implementation and use is conditioned predominantly by IS/ICT knowledge and managerial skills required for directing their life cycle correctly. Defining and correct setting of the service level is a key requirement and skill, usually provided by a service provider based on an implementation and service contract, or an advisory organization, in particular when presale services concerning analyses and tender documentation processing are provided. The following paper discusses the characteristics of the individual service types and the particulars of their practical use. Moreover, it presents the selected significant results of the long-term research performed by the authors in the Center for inVestigations into Information Systems.

Keywords: ERP system, IS/ICT, pre-sales services, sales services, post-sales services, consulting services, services fee, audit, strategic analysis, process analysis, information strategy, feasibility study, target concept, version, implementation, data migration, training, testing, key-user, update, upgrade, hotline, helpdesk, Service Level Agreement (SLA), remote access, guarantees, warranties

1. Introduction

An investment in an ERP system usually consists of two parts. The first part is related to the product and covers the purchase of software licenses and the required hardware, when part of the contract. The second part includes services performed by the provider during implementation and subsequent operation. The above implies that increased attention needs to be paid to the ERP system life cycle as a whole and therefore it seems advisable to focus not only on the product itself but also on the provider and the performed services.

The provided services definitely rank among the critical factors affecting successful ERP system implementation and operation. Yet they seem to be strongly underrated in practice and their evaluation is often neglected. Frequently the organizations focus solely on their basic parameters; however, they are unable to assess them correctly in relation to Total Costs of Ownership (TCO) and to the real needs of their users.

The ERP system implementation itself requires the widest scale of provider services. Their detailed characteristics are provided for by an implementation contract or a contract for work. The most frequently mentioned critical areas include services related to training of key and end users. An insufficient level of these services has resulted in many failures of implementation projects (Gupta, 2000) or project delays and additional costs (Al-Mashari, Al-Mudimigh and Zairi, 2002) that might amount to tens of percent of the total cost of the ERP system ownership.

The need for services related to the ERP system and provider selection is one of the less discussed issues. The principal question is who should perform what services in the preparation stage of the ERP system implementation. An even more difficult issue that the organizations face is defining how the service in question should be performed, what results should it bring and how exactly these results are to facilitate processing of tender documentation. The fundamental problem lies in the fact that organizations struggle to establish correct methodology applicable to the selection process. This process is very complex and may differ considerably, depending on the needs of the organization, extent and depth of service coverage and many other aspects. Therefore there is a lack of detailed standardized, universally applicable selection procedure methodology (Araujo, Araujo, 2006).

The types of services provided as part of routine system operation are the least discussed ones. In particular, these include helpdesk, hotline, update and upgrade. These types of services may also considerably affect the benefit of the ERP system and the total cost of its operation (RTC – Run To Costs). The frequently considered services also include the speed and quality of error removal, including setting the level of performance and potential penalties (Bruckner, 2012). However, it is problematic for organizations to fully understand the details when defining the purpose and scope of the services and to specify them correctly in the Service Level Agreement.

For the above reasons this paper is focused on the set of the most significant facts in all three service areas marked according to the sales cycle as pre-sales, sales and post-sales. The authors have been investigating the whole complex and verifying it in particular ERP projects on a long term basis.

2. Research Methodology

The Center for inVestigations into Information Systems engages in annual research of the Czech business information system market, which includes compilation of case studies in the form of qualitative interviewing and projection interview with workers responsible for IS/ICT investments in the particular organization. In 2005–2015 the authors performed over 130 of such case studies in manufacturing, sales and service enterprises in the Czech and Slovak Republic.

The authors based their theoretical research methodology background on literature focused on management oriented business research (Gill, Johnson, 1991) and on using both qualitative methods and methods between qualitative and quantitative research (Pavlica, 2000). The findings presented in the book Case Study Research (Yin, 2003) were used in execution of the case studies.
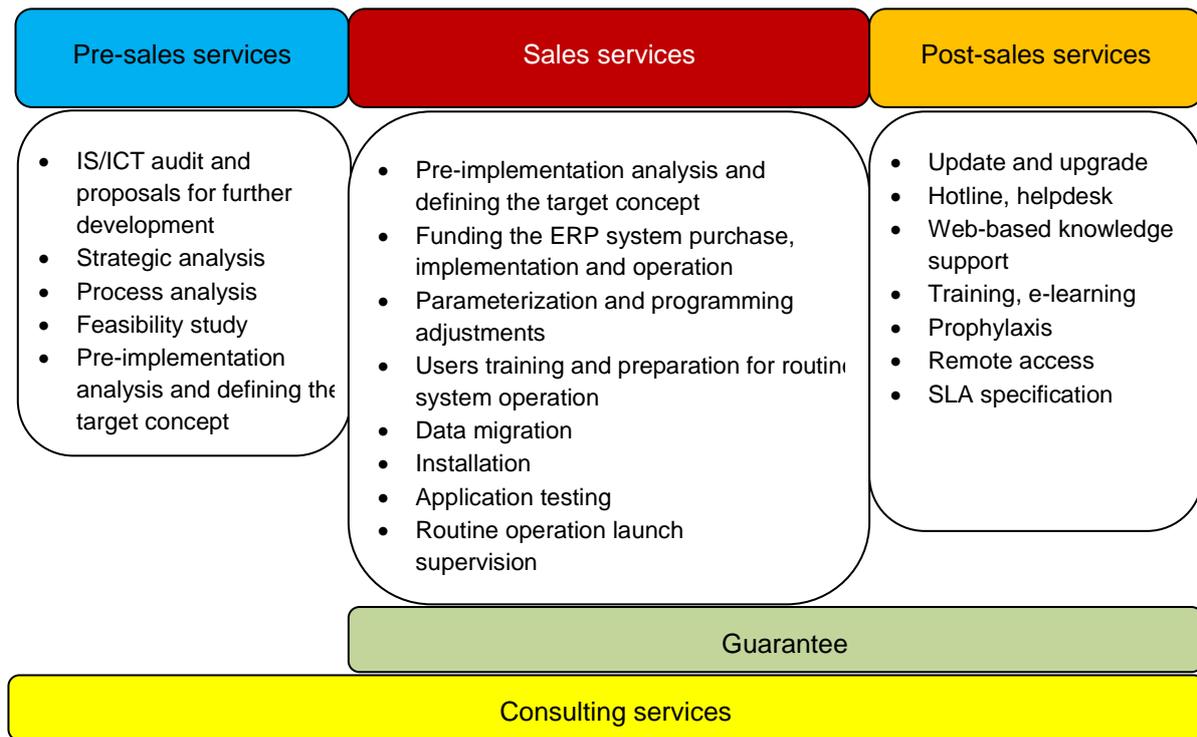
The theoretical basis for implementation project realization and evaluation reflects the extensive practical experience of the authors gained throughout several years of research as well as the analytical and consulting activities during ERP project execution. Moreover, it reflects the long-term study of expert sources focused on the sphere of system integration (Voříšek, 1997), business information systems and enterprise resource planning (Davenport, 1998; Basl, 2002; Olson, 2003; Olson, Chae, Sheu, 2005; Laudon, Laudon, 2006; Gála, Pour, Šedivá, 2009; Shaqrah, 2015), assessment of information system efficiency (Molnár, 2001), risk management (Smejkal, Rais, 2006), IT project management in general (Schwalbe, 2007) and ERP project management in particular (Gupta, 2000; Al-Mashari, Al-Mudimigh and Zairi, 2002; Mabert, Soni, Venkataramanan, 2003; Umble, Haft, Umble, 2003; Yilmaz, Ozcan, 2011).

The authors based and gained their theoretical knowledge on ERP systems and implementation projects also from empirical studies focused on their global and local perspectives (Hwang, Grant, 2016) and from studies of analytical companies focused on global (Deloitte Consuting, 2000; Hestermann, Anderson, Pang, 2009; Guay, Pang, Hestermann, Montgomery, 2015) as well as the Czech market (Accenture, 2001).

3. Services According to the Sales Cycle

As mentioned above, services performed by the provider or another contractor, e.g. an advisory company, are a continuous part of the ERP system life cycle in the organization that uses them. They are of great importance even to the providers themselves as they serve as a means to differ from the competition. In order to classify the services correctly, it is suitable to divide them according to the sales cycle of the provider or the standard procedure of industrial product service management (Kotler, Keller, 2012).

From the above perspective, the ERP system services are divided into pre-sales, sales and post-sales (see Figure 1).

Pre-sales services	Sales services	Post-sales services
• IS/ICT audit and proposals for further development • Strategic analysis • Process analysis • Feasibility study • Pre-implementation analysis and defining the target concept	• Pre-implementation analysis and defining the target concept • Funding the ERP system purchase, implementation and operation • Parameterization and programming adjustments • Users training and preparation for routine system operation • Data migration • Installation • Application testing • Routine operation launch supervision	• Update and upgrade • Hotline, helpdesk • Web-based knowledge support • Training, e-learning • Prophylaxis • Remote access • SLA specification

Guarantee

Consulting services

Figure 1 – ERP system services classification by the provider's sales cycle
(elaborated by the authors)

3.1   Pre-sales Services

The four most frequently provided and required pre-sales services include IS/ICT audit, possibly with a proposal for further IS/ICT development, strategic analysis, process analysis and feasibility study.

IS/ICT Audit should provide the organization with an evaluation of the existing IS/ICT status, in particular from the following viewpoints:

- IS/ICT benefits
- Total ownership costs
- Risks to further development of the organization

IS/ICT audit is usually extended by a **proposal for further IS/ICT development** and **defining the information strategy** of the organization. However, it is difficult to form when the strategic goals and their realization basis are unknown. If that is the case, another suitable service is the strategic analysis elaboration.

Strategic analysis should define the existing and expected status of the organization, at least in the following areas:

- Vision and mission of the organization
- Defining strategic goals and medium-term objectives
- External environment analysis (PEST)
- Internal environment analysis (7S)
- SWOT analysis of the organization and the implementation project
- Porter's five forces analysis (separate for each business sphere)
- Basis of strategic analysis to define recommendations
- Recommendations for medium and long-term changes and their schedule
- Recommended measures before implementation project initiation and their schedule

The strategic analysis will also provide a set of obligatory requirements and priorities important for the implementation project assignment. These are specified in the assignment documentation. The **assignment documentation** is a crucial set of documents the organization should prepare before initiating the selection procedure of the ERP system and its provider. It should include, among other things, the so-called process analysis.

Process analysis usually consists of two principal documents. The first one is the so-called **process roadmap** presenting transparent decomposition of the company processes down to the individual activities. The second document is a separate analysis that should incorporate the description of the existing situation, the expected state after the ERP system implementation, the expected outputs for reporting the individual processes and setting KPI (Key Performance Indicators) for processes where such definition is possible and applicable. Both documents, the process roadmap and the analysis, should form a compact whole that will provide the organization and later also the inquired ERP system providers with a detailed overview of the processes, activities and their characteristics important for compiling the quote.

It is advisable to delegate all the services mentioned above to a specialized external advisory company without any direct relationship to the particular ERP products or the organization planning its implementation. This approach can guarantee an independent perspective of experienced specialists who are detached and not engaged in the details of everyday operation that might affect their decisions. However, it is true that it is not easy to select such an independent advisory company. In this situation it is crucial to evaluate any references correctly and demand detailed presentation of sample projects carried out by the advisors. Achieving mutual understanding concerning the approach to the issue as a whole between the two cooperating companies – the advisory company and the organization planning the ERP system implementation – is a must.

Table 1 – Example of process decomposition in a process roadmap in economics and finance (elaborated by the authors)

Main process areas	ID process No.	Process name	Sub-processes, activities
Economics and finance	**0101**	**Financial accounting**	Provider invoices
	0102	**Financial accounting**	Client invoices
	0103	**Financial accounting**	Asset management
	0104	**Financial accounting**	General ledger
	0105	**Financial accounting**	Financial statements
	0106	**Financial accounting**	Taxes
	0201	**Controlling**	Reports and analyses
	0202	**Controlling**	Planning and budgeting
	0203	**Controlling**	Cost management (calculation)
	0204	**Controlling**	Cash Flow management
	0301	**Finance management**	Invoice payments
	0302	**Finance management**	Cash
	0303	**Finance management**	Banks

The required pre-sales services also include the performance of the so-called **Feasibility Study**. The Feasibility Study may be carried out by the ERP system provider, e.g. when there is no need for selection procedure for some reason (e.g. in the case of directive system implementation in subsidiaries within a holding). The aim of this study is to define the implementation scope and risks, propose a project solution and evaluation method. The Feasibility Study may sometimes be substituted by a pre-implementation analysis.

Pre-implementation analysis and defining the target concept may be included in pre-sales services if the organization decides to request such analysis in the course of the selection procedure from two or even more provider organizations for the purpose of final selection of the provider to be awarded the contract based on the analysis and a detailed quote. The common practice is that the unsuccessful applicants are paid for the analysis under a contract arranged in advance. The successful provider will subsequently use this analysis and its main output, the so-called **target solution concept** for the implementation itself and thus also for defining the subject matter of the implementation agreement or contract for work. This process may be more expensive and time consuming for the organization, if the pre-implementation analysis and the target concept is elaborated by more than one organization. The price of one such analysis amounts to over ten percent of the total cost of the ERP system purchase and implementation. This is the reason why not many organizations choose this procedure. On the other hand, this method provides a detailed comparison

of multiple approaches and project solution possibilities and as a result the subject matter of the contract concluded with the successful provider is specified very clearly. However, in most cases the pre-implementation analysis and defining the target concept takes place as a component of the sales services.

3.2   Sales Services

Sales services are almost entirely focused on the ERP system implementation, possibly on its integration with applications that need to be maintained in the organization and connected to the accounting core and other significant areas. The use of sales services is thus aimed at launching the system in routine operation while complying with all the requirements defined within the target solution concept. Table 2 below presents a list of standard sales services and their prices in CZK and EUR for an implementation project of a global ERP solution in one dislocation, aimed for 100 simultaneously working users and full functionality implementation for management of economics and finance, human resources, projects, documents, workflow, purchase, sales, electronic sales, transport and customer relations. The prices are stated without any discounts.

Table 2 – Example of sales services calculation (elaborated by the authors)

Implementation and integration services		Price excl. VAT	
Item	No. of man-days	CZK	EUR
Preliminary study draft	30	360,000.00	13,333.00
ERP system installation and parameterization	10	120,000.00	4,444.00
Custom ERP system modifications	50	600,000.00	22,222.00
Integration services (travel orders, attendance system)	10	120,000.00	4,444.00
Data conversion	10	120,000.00	4,444.00
User trainings – Total	35	420,000.00	15,556.00
Consulting services	265	3,180,000.00	117,778.00
Support of routine system operation	80	960,000.00	35,556.00
Implementation project management	46	552,000.00	20,444.00
User documentation processing	10	120,000.00	4,444.00
Implementation services – Total	**546**	**6,552,000.00**	**242,667.00**

The scope of implementation performance is based on the nature of the project. From the point of view of investments and time, **custom modifications** are the most demanding. These can be divided into programming modifications to the standards of the respective system modules and creating completely new functionalities. A typical example of custom development may be a web portal for placing orders of partner organizations that is connected to the ERP core.

Conversion or **data migration** may be carried out simultaneously with system parametrization, programming of modifications and training. Certain providers also offer assistance with data cleansing and display redefinition as a part of implementation. The migration itself may proceed as follows. First the data to be transferred from the database files are determined (order book, work orders, purchase etc.). Then the technical feasibility of the data migration is assessed and the information to be transferred without modification and with modification is defined as well as new information to be entered. Subsequently the migration mechanisms and programmes for automatic data transfer are created. The operational data are crucial as they facilitate application structuring; e.g. system reactions related to the use of certain data or to the structure of other systems. If such data are available in time, more complex testing and modelling of the system functions can be carried out.

The following stage includes **application installation and testing**, both from the functional and technical perspective. Testing and verifying can follow the scenario described in Figure 2.
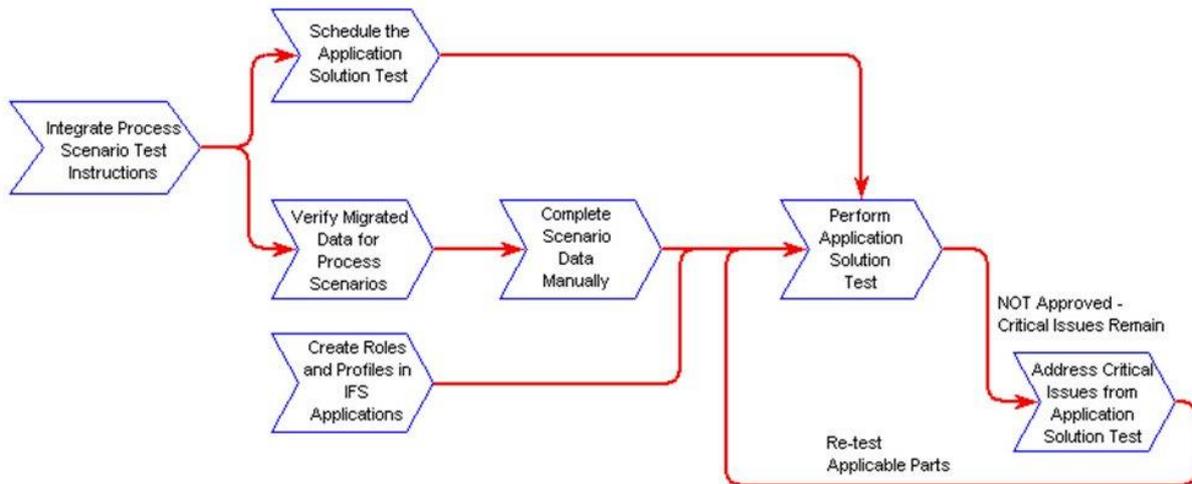
Figure 2 – Acceptance test model (AIM, 2004)

In parallel to the services mentioned above **the training** takes place, i.e. preparation of users for routine system operation. If the elimination of risks related to the human factor is emphasized during implementation, the service becomes time consuming and costly. The quality of the training and the way it is carried out plays an important role in the speed with which the users adapt to the new ERP system. Two-step training is the most frequent when the trainers of the provider first train the key users and the key users subsequently train the end users. If the provider has sufficient capacity and the project is well-planned in time, one-step training can also be proposed, always led by the respective trainers and not by the key users.

The training quality is affected mostly by appropriate incorporation in the project schedule and its execution in the application environment before launching it in routine operation. It is important that the general introduction to the user environment and system operation is followed by a detailed training of user groups according to the processes they will be operating and the modules they will be using for operation. Furthermore, the second training stage requires demonstration using real business data and the application that has already been parameterized or customized according to the target concept. This is because the modified application may include functions with different settings and different user environment when compared to the standard version, which may cause considerable problems to the users in routine operation in the case that only a general training has taken place. The training with modified application and real data may reveal any deficiencies in process settings and any errors in parameterization or programming.

The authors often face a situation when the provider tries to offer a general training only in order to save costs. The organization managers responsible for implementation are not always able to assess this "trick" correctly and tend to underestimate the situation, which may even prevent the company from launching the system in time and without problems.

Needless to say, other parameters are vital as well. The extent of the training and the numbers of persons in the groups need to be designed correctly. Comprehensible training materials need to be prepared and knowledge testing needs to be carried out (including certification – for key users responsible for specifying the process automation requirements etc.). Besides, attention should be paid to the trainers' attitude and efforts directed at eliminating emotional barriers that prevent some users from mastering the new work procedures and active system usage.

Another integral part of services aimed at users is the **compilation of user documentation**, for which the cooperation of the users with the respective expert consultants of the provider is crucial. This kind of documentation should be created for each user role to ensure that in the event of employee replacement the training of the new employee does not require a lot of time.

Users can also obtain **assistance for routine system operation**. For this reason the providers supervise the operation, either by means of a consultant who is physically present or through remote access. This may apply to specific assistance with important activities, such as salary calculation or VAT statement elaboration. The aim of such assistance is to minimize errors in the initial data entering, their correction and explanation of the correct procedure. This service is usually provided within the period of one, three or six months at the beginning of routine operation. Afterwards there is

a shift to a standard post-sales service specified in the Service Level Agreement in the form of a hotline or helpdesk or a combination of the two.

Last but not least, the implementation as a whole is completed by the **provision of consulting services**. These services may enter into the whole sales cycle, i.e. the pre-sales, sales and post-sales stage. Their scope may be very wide or quite limited. It is determined by the scope of implementation, types of processes to be covered and the nature of the project. If automation in the form of entering relatively simple transactions prevails and the system usage is limited as for the setting options, the required assistance need not be too extensive. However, if the processes in question and their operation is highly dependent on individuals and their decisions, such as in project management, the need for consulting services might exceed all the other sales services. This is the case described in Table 2.

Assistance in funding the ERP system purchase costs, implementation and operation represents a specific sales service. The authors generally recommend that the organizations request at least two alternatives incorporated in the proposal – funding by project milestones acceptance and payment in instalments over a longer period of time. The majority of providers are able to offer these solution variants; some of them use their own resources, others cooperate with financial institutions or renowned IT companies, such as IBM.

All the sales services are specified in the implementation agreement or in the contract for work; funding assistance is provided for by a special contract.

3.3   Post-sales Services

The post-sales services are related almost exclusively to the ERP system support and innovation in routine operation. They can be divided into three basic categories. Namely:

- Services covered by a regularly paid service fee
- Services not covered by a regularly paid service fee
- Guarantees and warranties

Considering that the routine ERP system operation is dependent on its ongoing innovation based on legislative changes, there is only a theoretical assumption that the user organization would not pay the service fee; all the required changes would then be added into the system by the organization itself to keep it serviceable. Therefore, apart from exceptions, it is practically necessary to enter into a service contract with the provider and use the post-sales **services covered by the regularly paid service fee** (maintenance). The quality, scope and price of the services have to be defined correctly. The same applies to specifying the **services not covered by a regularly paid service fee**. These are services available to the organization to be used and paid according to its current needs.

The last important group of post-sales services are **guarantees and warranties**. Their scope, quality and price are most often determined by the knowledge and capabilities of the user organization to define these services and negotiate with the provider. When trying to secure a significant contract, some providers offer such guarantees and warranties themselves, to improve their competitive ability. Guarantees can significantly increase the value of the whole project and the benefits of the ERP system for the user organization.

Guarantees and warranties interfere in the post-sales and sales services. However, their significance and use in routine system operation is more noticeable. For this reason the following detailed description starts with this area, even though in the introductory outline it was stated as last.
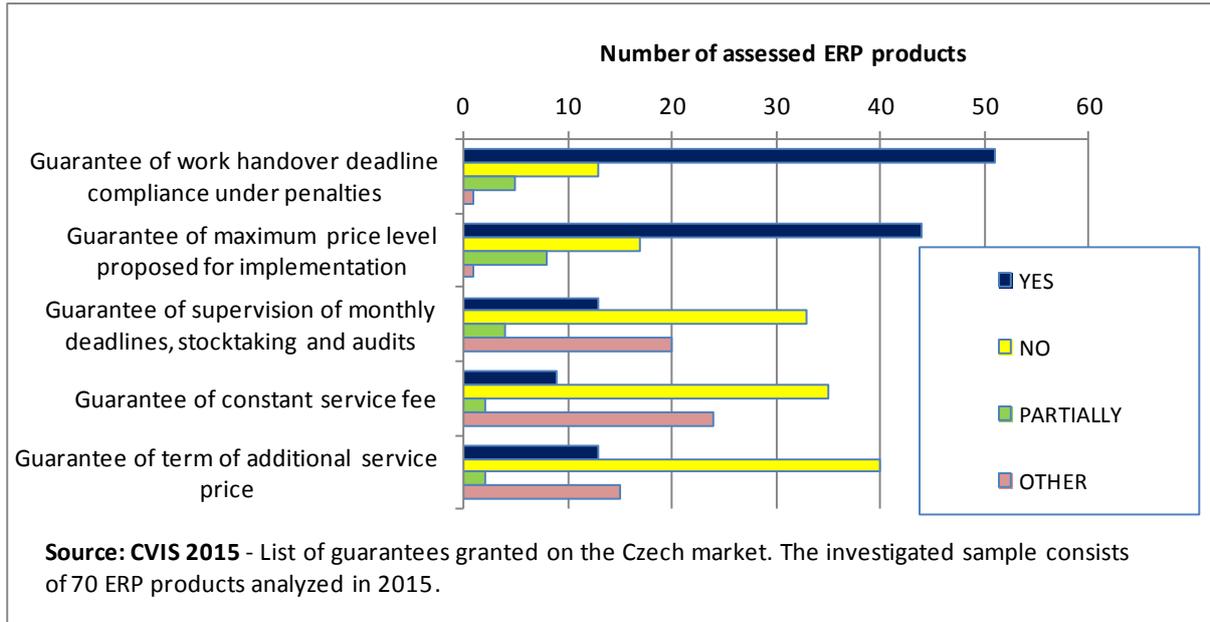
Figure 3 – Guarantees provided with ERP systems on the Czech market
(elaborated by the authors)

As shown in the chart in Figure 3, the most widely offered guarantee is compliance with the work handover deadline, including the respective penalty in case of non-compliance. Guarantee of the maximum price of implementation is also among the most frequently offered guarantees. However, in the course of their research as well as through long-term experience, the authors conclude that with many providers this is purely a theoretical proclamation that they are not able to incorporate on a contractual basis. If such an obligation is defined with the relevant penalty, there are usually numerous applicable exceptions. This attitude of the providers seems reasonable due to the fact that cooperation with the user organization is required for successful and timely project completion. Few providers are able to define such cooperation in the contracts accurately, in a way that would enable the right decision concerning responsibility for any potential deadline conflict or unexpected costs to be made. The issue of guarantees demonstrates a large number of small nuances that need to be analyzed correctly and precisely so that the respective guarantees might be set without disadvantaging any of the parties. In any case, it can be noted that if the provider is able to define, set and offer the guarantees correctly to the organizations, they represent a significant competitive advantage in assessment of quality of sales and post-sales services and the value of the contract as a whole.
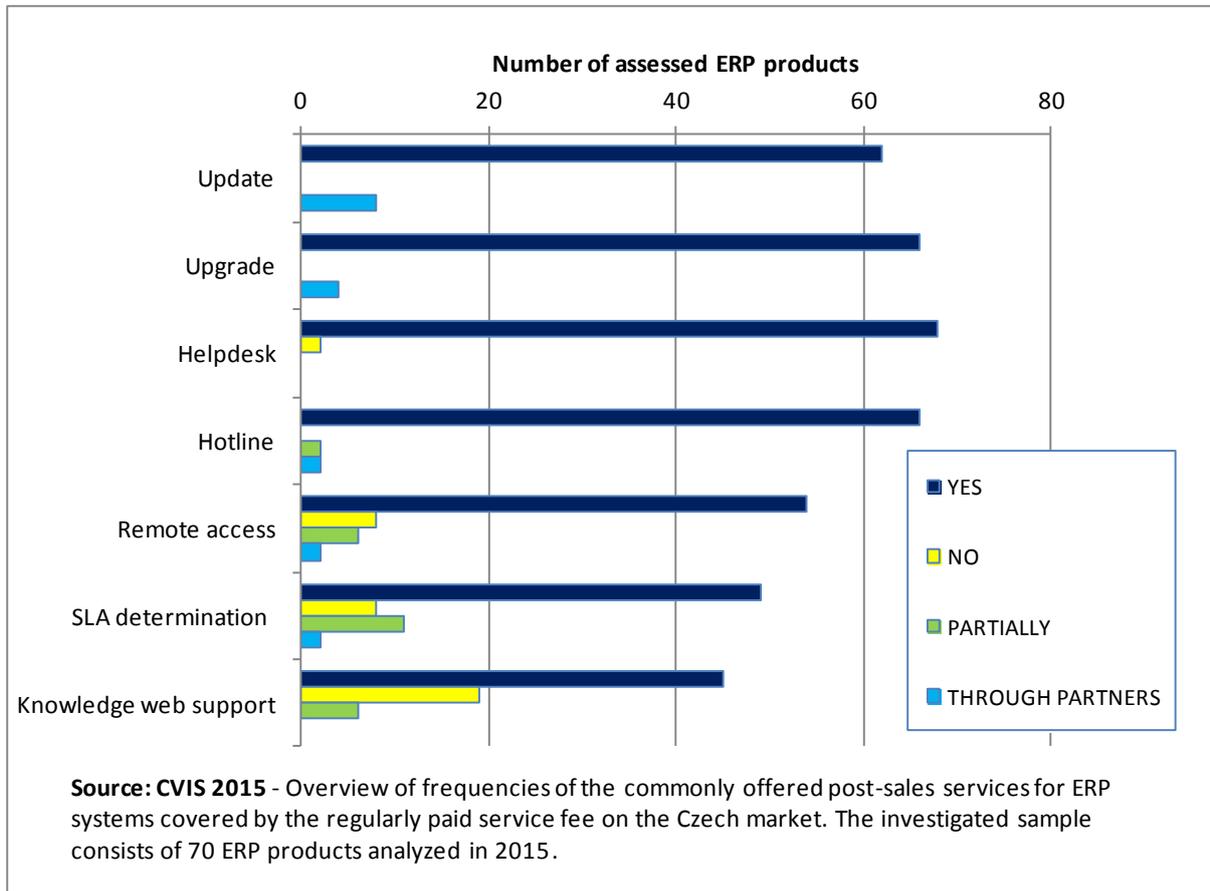
In relation to the group of services marked as guarantees and warranties, the notions of **warranty** and **warranty period** should also be clarified. These characteristics cannot be applied the ERP system in the same way as it is common for industrial products. An information system is a dynamic matter by nature and therefore the situation when the solution is duly handed over, yet the following month a significant change is required (legislation modification, company or chain process changes, etc.) is common. In the case of ERP system, warranty applies to its status and proper functionality according to the approved pre-implementation analysis at the time when it was handed over and accepted by the user organization. However, after system modification, the warranty as such becomes irrelevant. However, launching new system version or extension by newly published functionalities cannot be requested within the warranty free of charge. This is because unlike a car, for instance, the ERP system cannot operate properly without tax rate or leasing calculation update and other legislative updates.

Ambiguity of the notion of warranty is confirmed by ERP system providers who approach its role differently. Many set a standard warranty for the term of one or two years with the possibility to extend. It is usually based on the execution of the so-called Service Level Agreement and subsequently on the agreed service fee payment or technical support. The warranty provided for the ERP system within the paid service support becomes practically unlimited and blurs the difference between services that could be defined as warranty and post-warranty (Sodomka, Klčová, 2010).

With more extensive systems in particular, it is difficult to determine the real scope of the warranty. When selecting and implementing the system, it is thus nearly impossible to get familiar with it in such detail to be able to tell what is contrary to the warranty. The system description is provided in the documentation whose scope and content is determined by the manufacturer. For foreign products, it is often available in English only. The documentation analysis and consultation concerning the specification of the warranty content is inefficient for the user organization not only due to the disproportionate costs but also due to the loss of time and energy that the business needs to invest in more important areas. Any potential disagreements and clarification of different views on the warranty issue are thus mostly a question of the client's bargaining power and the attitude of the implementation partner.

Of course, the warranty also applies to work and subcontracts related to system application. Within a single project warranties are usually granted for hardware, database systems, network infrastructure, wage and attendance system etc. The issue of warranty service performance is dealt with by the above mentioned Service Level Agreement concluded between the organization and the provider (Sodomka, Klčová, 2010).

The fundamental post-sales service covered by the regularly paid service fee, essential for the ERP system operation, is update and upgrade. This is also confirmed by the chart in Figure 4 that shows that both services are always available, either directly from the provider or through partners.

Source: CVIS 2015 - Overview of frequencies of the commonly offered post-sales services for ERP systems covered by the regularly paid service fee on the Czech market. The investigated sample consists of 70 ERP products analyzed in 2015.

Figure 4 – Post-sales services covered by the paid service fee
(elaborated by the authors)

Update is an incremental information system innovation that brings legislation update and error correction. Update is carried out when necessary settings changes need to be performed with the client in compliance with applicable laws and regulations, in particular accounting and tax, or a minor innovation or error correction in the application, as the provider is contractually obliged to do. Unlike update, upgrade means a transformation to a new version of the information system that brings qualitative improvement of its properties and functions.

Upgrade represents conceptually different versions that include key changes, e.g. improved architecture, new user interface, programming environment, new system functions or technology platform. The service fee almost exclusively covers only the provision of the new system version but not the services required for putting it into operation. Having researched this issue on a long-term basis, the authors concluded that for globally provided ERP systems analysed annually by Gartner (Guay, Pang, Hestermann, Montgomery, 2015) the costs of these services usually exceed 10% of the total system purchase and implementation costs.

Another common service covered by the service fee is hotline and helpdesk. The chart in Figure 4 demonstrates that hotline is provided with all ERP systems; helpdesk is not available with two solutions. Some providers outsource the hotline service through their partners.

Hotline has the form of telephone support; sometimes the providers also offer hotline through email. The assistance provided to the system users is limited by time and is usually restricted to the business days of the provider or set directly, e.g. from 8 a.m. to 4 p.m., at the designated telephone numbers or email addresses. For more extensive implementation projects or projects in enterprises with several critical processes or continuous operation the support can be arranged for 7 days a week, 24 hours a day, including public holidays.

Helpdesk works as a service intended for user support. It operates as a point of contact that may take the form of software application for dealing with questions and requests to solve a problem or system error. Thus when necessary, the user enters the request through a pre-defined form and sends it to helpdesk. The request is passed on to a person who establishes communication with the contracting entity who also receives information on the progress of the solution being carried out. Centralized processing of the requests enables the provider to offer timely solutions to the organizations according to the set priorities or supervise compliance with the service performance level.

Helpdesk may also be used internally, in particular in large organizations where IT Department staff provides support to the employees of their own company. For faster problem solving the so-called **remote access** is provided, reaching the user's workstation. The other post-sales services offered as a standard, supporting the work of the user, include **web portal access** with information system knowledge base. The chart in Figure 4 shows that the services of remote access, knowledge support via the web and SLA determination are not generally fully available with all ERP systems and in some cases they are provided by partner organizations.
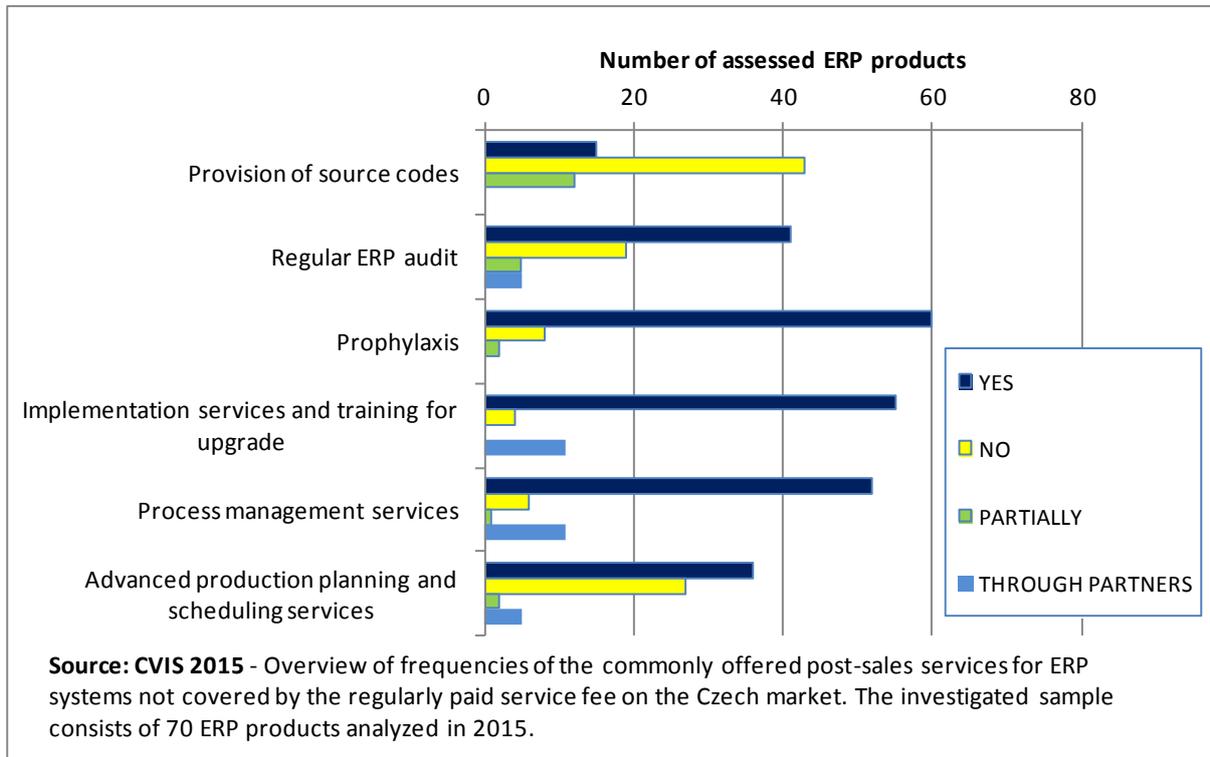
The last service usually provided and covered by the regularly paid service fee is the determination of **SLA (Service Level Agreement)** parameters. The general SLA principles include the specification of rights, obligations and penalties, if any, related to the provision of services specified for the ERP system operation for both parties. This offer can be presented either in the form of a table or an annex to the Service Level Agreement, or even a separate SLA. A sample SLA offer for dealing with defects, errors and deficiencies is presented in Table 3.

Table 3 – Sample SLA offer by a global ERP solution provider (elaborated by the authors)

Defect level and type		Response time	
Level	Defect type	Resolution initiation	Removal time
1	System failed completely or shows extensive damage	30 minutes	4 hours
2	System is partially functional, some functional areas are out of operation	1 hour	8 hours
3	System is fully operational, only some functions are restricted	3 hours	Best effort
4	System is fully operational, demonstrating a minor defect without any impact on its functions	6 hours	Best effort

If the needs of the organization require, stricter and more precisely defined SLA may be negotiated and related to the process roadmap included in the assignment documentation. Then the provider can also be contractually bound to launching the system in accordance with the respective activities and processes, in defined periods and under penalties imposed in the event that the provider fails to comply with the obligations. However, it should be noted that the more strict these requirements are, the higher service fee is to be paid by the client. Therefore an adequate level of both the services and the respective penalties should be established. The SLA significance differs among the individual enterprises and fields. For example, in food production businesses engaged in production anticipating

goods supply within hours, SLA need to be defined accurately and strictly as putting the processes in operation in the event of a breakdown may have considerable effect on the economic results of such company.

Number of assessed ERP products

Legend: YES, NO, PARTIALLY, THROUGH PARTNERS

Categories: Provision of source codes; Regular ERP audit; Prophylaxis; Implementation services and training for upgrade; Process management services; Advanced production planning and scheduling services

Source: CVIS 2015 - Overview of frequencies of the commonly offered post-sales services for ERP systems not covered by the regularly paid service fee on the Czech market. The investigated sample consists of 70 ERP products analyzed in 2015.

Figure 5 – Post-sales services not covered by the paid service fee
(elaborated by the authors)

Apart from services generally covered by the service fee, the providers also offer services on a pay-as-you-go basis. These services, sometimes referred to as additional, are outlined in the chart in Figure 5. For this type of services, it is crucial to determine their content, scope, terms of provision and prices applied to them in the course of the SLA term. As shown in the chart in Figure 5, the additional services that are offered most frequently are those that relate directly to the ERP system operation (prophylaxis, implementation services and training for upgrade, regular ERP audit), or related to process optimization (process management services). Other services are used in specific circumstances; therefore their frequency is much lower.

4.   Conclusions

ERP system services have a significant impact on the overall quality of the implemented solution throughout its life cycle period. They also considerably affect the total ownership costs. At the same time, this area is underestimated by user organizations as they lack key information and related knowledge.

The long-term research carried out by CVIS also shows that services may be an important tool for improving competitive ability of the providers in the selection procedure. If the user organization manages to specify the requirements concerning the level and price of these services correctly and is able to negotiate the scope and quality, it can significantly increase the overall ERP system value as well as the value of the whole implementation project. Some of the services mentioned above are not generally and explicitly offered by the providers, in particular as far as the guarantees and warranties are concerned, as they try to avoid undergoing a greater risk than required by the user organization. However, in a highly competitive environment, the providers are eventually willing to accept such risks and offer the respective services actively, in order to be awarded an attractive contract for ERP system implementation and operation.

For many of them, the service fee and additional service purchase may represent significant and long-term income, provided that they manage to gain loyal clients. That way provider companies become stable, especially at times of economic stagnation or recession when there is a lack of new implementation contracts. Regular income brought by services is another reason why the Czech ERP market continues to be relatively fragmented. Thus hundreds of provider companies are able to survive for many years while continually gaining only a very small number of new clients as the provision of services brings them the significant portion of their income.

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