

**Kazimierz Perechuda, Małgorzata Sobińska**

Wrocław University of Economics

e-mail: {kazimierz.perechuda; malgorzata.sobinska}@ue.wroc.pl

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## COMMUNICATION AND KNOWLEDGE TRANSFER MODELS IN IT OUTSOURCING RELATIONSHIP

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**Abstract:** The aim of the article is to define the communication and knowledge management role in the customer–supplier relationship with particular emphasis on IT knowledge outsourcing. Another aim is the verification of the following search hypotheses: (a) in the classical outsourcing contract there is no critical knowledge transfer (this is not the aim of an outsourcing project); (b) outsourcing should be supplemented with key knowledge transfer in both directions: from the client to the vendor and from the vendor to the client; (b) outsourcing based on key knowledge transfer is an essential instrument of creation and business development of virtual organization based on knowledge. The result of the research will be models of information and knowledge transfer in IT outsourcing relationship. The authors will show the potential areas of application IT outsourcing, IT knowledge outsourcing and the benefits of such projects in the context of knowledge management.

**Keywords:** IT outsourcing, knowledge transfer, knowledge management.

### 1. Introduction

Ongoing research in the area of IT outsourcing includes such issue like: how to achieve innovation in outsourcing; how to develop knowledge integration between cooperating parties and which factors determine efficiency of outsourcing knowledge-based services.

In IT projects, the bilateral transfer of hot and confidential knowledge is extremely important, which as a rule occurs in the delayed time (the 1st model in Figure 1), which considerably reduces the effectiveness of outsourcing cooperation.

In the case of data and information transfer the situation appears better (real-time, the 2nd model – Figure 2).

The remedy to the above formulated research problem (the 1st model in Figure 1) is the authors' suggestions provided in the 3rd model (see Figure 3) and in the perfect models: A (Figure 4) and B (Figure 5).

The aim of this paper is to analyse and model the reduction of the deployment distance between the 1st, 2nd and 3rd, 4th and 5th models.

The models presented here are simplified models, in which for the purposes of better reflection of certain ideas only one supplier (outsourcing provider) and one customer (outsourcing recipient) were presented. The OP (outsourcing provider) and the OR (outsourcing recipient) occurring in the model can in practice denote a network of suppliers or recipients.

## **2. Outsourcing of IT services as an instrument in achieving competitive advantage**

The development of IT outsourcing (and IT offshoring) results above all from the following (own work based on [Klincewicz 2008]):

- the accelerated and intensified process of global economy globalisation;
- the common use of information and communication technologies (ICT);
- the opening and very good preparation of economies of many developing countries (e.g. China, India) for globalisation processes (which is manifested in the changes in the global work supply in the IT services sector – the huge potential of highly educated specialists);
- the reduction of barriers in undertaking economic activity;
- the abolition of restrictions in foreign trade and investments – greater internationalisation of production and services.

Outsourcing is currently regarded as one of the most effective tools for increasing the organisation activity effectiveness. It is becoming a component of the strategy consisting in streamlining organisational structures in order to concentrate resources and funds on the primary activity, which decides on the organisation's competitive advantage.

Outsourcing/offshoring of IT services may considerably contribute to the improvement of the organisation's competitiveness.

The following can be counted as factors of achieving competitive advantage in such a cooperation model:

- locating the individual stages of IT processes and services in the best world locations – commissioning their provision to companies that ensure the best quality (quality improvement) at the lowest price (cost reduction);
- locating service centres at places which allow organisations to coordinate actions in the region or on the global scale;
- permitting the focus on the key activity;
- releasing resources for the purposes of other projects;
- accessing a new technology;
- accelerating the accomplishment of the assumed results and adapting to the changing needs;
- increased innovativeness.

IT services outsourcing customers are increasingly more interested in receiving ready services, so they prefer a supplier that has access to knowledge employees

(who thanks to their knowledge and experience are able to provide services at a high level) to find such employees who physically deal with computer hardware.

The properly planned and managed outsourcing cooperation should create value for shareholders, employees, suppliers and customers, which will be proved by:

- retaining key employees in the organisation;
- not deteriorating, and at best increasing the quality of services and/or products;
- improved planning, increased efficiency, optimised IT services lead time;
- increased customer service level and improved customer satisfaction;
- satisfaction of all parties affected by outsourcing;
- permanent long-term cost savings (if this was a signification ground for outsourcing) [Sobińska 2010, p. 358].

In the present economy one of the most important sources of competitive advantage is the organization ability to transfer external knowledge efficiently. IT outsourcing, which in short means contracting out IT services to the external vendor/vendors, becomes a very good tool to transfer technical and business knowledge from suppliers. Selecting high quality IT services vendors gives the possibility to transfer costly and/or hard to develop in-house knowledge.

### **3. The role of communication in the customer–IT services provider relations**

Communication in the customer–IT services provider relation is a significant aspect in terms of knowledge management in outsourcing projects. Managing cooperation of a few entities (functioning often on different continents, in different cultural and time zones) is a huge challenge, whose crucial element is an orderly communication and efficient mechanism of decision-making.

Sole documentation administration and review of reports may prove insufficient in practice. Practice shows that direct contact is key to the success of outsourcing communication (e.g. Indian IT companies understood it and started creating so-called “customer proximity centres” which are to facilitate project management oriented at main customers [Kliniewicz 2008, p. 260]). It is very important for both sides of the contract to act in agreement and not solve problems separately.

The schedule of meetings for individuals in charge of the contract, both on the customer’s and the provider’s side, should be agreed on in the phase of establishing cooperation. It is the best moment for agreeing ways of communicating and mechanisms of resolving disputes, which may occur in the course of a project.

Therefore, there are many tasks which should be carried out. The most important ones are (on the basis of [Cullen, Willcocks 2006, p. 153]):

- relation management:
  - organizing introductory meetings of key employees,
  - conducting partnership workshops,
  - introducing communication protocols;

- adaptation:
  - organizing temporary offices for temporary teams (from outsourcing),
  - organizing permanent workstations for provider's personnel, which will be located in the customer's premises;
- access:
  - organizing users' profiles and in this way providing safety to all employees from both sides, who would require access to IT systems of the second party,
  - organizing physical access for both sides, each part;
- organization:
  - creating a new organizational model,
  - recruiting new employees,
  - conducting trainings.

New relations, customer–provider relations, need to be quickly formed, and people accustomed to a certain way of operating need to operate in a completely different manner.

The choice of information and knowledge management strategy, and therefore the choice of communication channels and means in outsourcing relations, depends on many factors. Outsourcing companies, such as the Indian Infosys, focus on elaborate documentation of actions and recording experience gained in subsequent projects. Such an attitude to knowledge management is called codification and it may, because of time-consuming preparation of documents, limit the efficiency of service companies. An opposite strategy is knowledge personalisation – promoting communication and cooperation, stimulating the flow of knowledge and information independent of formal barriers [Klincewicz 2008, p. 274]. According to the author, organizations should make use of both strategies at once in order to ensure easy access to required information for both sides of the contract and, on the other hand, not to overwhelm employees with excessive formality, but stimulate their creativity and involvement in actions related to the achievement of project/outsourcing contract objectives [Sobińska 2011a, p. 245].

#### **4. Considerations of knowledge transfer in outsourcing relations**

Knowledge which is at the disposal of the organization is important only if it allows organisation's presence on the market. It is conditioned by the processes of communication and use of knowledge to the wider integration of an organisation.

It is assumed that the transfer of knowledge is the essence of creating new knowledge and maximize its value. However, the process of knowledge transfer cannot be reduced simply to relocate the resource of knowledge – it is related with the modification of the transferred knowledge for its adaptation for the use in other contexts.

Kumar and Ganesh defined knowledge transfer as activities of exchanging explicit or tacit knowledge between two agents, during which one agent receives and

applies the knowledge provided by the other agent. The agents could be an individual, team/department or an organisation [Al-Salti, Hackney, Ozkan 2012, p. 1].

B. Mikula claims that knowledge transfer is one of the fundamental knowledge-related processes, and without the performance thereof it would not be possible to gather knowledge by the human, to combine it with possessed collections and subject it to further creation, write it down or apply it in practice. Knowledge transfer constitutes the basis of the performance of the organisation learning process [Potocki (ed.) 2011, p. 62].

Transfer is regarded as any communication action within which a given individual discloses to other individuals what he/she knows. Sharing knowledge can be defined, in turn, as a bilateral interpersonal process within which individuals mutually perform knowledge transfer. Knowledge sharing is often treated in the literature as a knowledge transfer subprocess. Further categories occurring in the literature in the context of knowledge management in practice are knowledge flow and migration. Knowledge flow refers to each form of knowledge in transit (knowledge transfer, knowledge sharing, and to knowledge conversion, integration and application). Migration is considered a special form of knowledge transfer – this term refers to the movement of knowledge between different world areas, which means across borders between cultures, countries and organisations [Potocki (ed.) 2011, p. 117]. This type of knowledge transfer will be the dominant one in outsourcing and offshoring undertakings.

The following can be counted as factors affecting the knowledge transfer processes in the outsourcing provider–outsourcing recipient relations:

- strategies of cooperating organisations;
- features of the commissioned services (committed technologies, tools, quantity and qualifications of the personnel involved in an outsourcing project) – the more standard (the less complicated) the services, the easier the knowledge transfer;
- physical distance between the entities cooperating on the outsourcing basis;
- fear of the loss of the competitive position or the monopoly position in the given activity scope;
- differences in the time zones;
- cultural, language differences, etc.

The above mentioned and other (less significant) considerations most often contribute to the slowdown of knowledge sharing processes in the customer–service provider relations. In many cases quiet (hot) knowledge transfer, requiring direct contact of knowledge “suppliers” and “recipients”, is particularly impeded or even impossible.

Knowledge management in IT outsourcing relationship should enable creation and utilization of intellectual capital, which – in Willcocks opinion – should be generated through the interplay between such essential elements as:

- structural capital (which refers to the codified bodies of semipermanent knowledge that can be transferred and the tools that augment the body of knowledge by bringing relevant data or expertise to people);
- human capital (which represents the capabilities of individuals to provide solutions to customers);
- customer capital (that is linked to shared knowledge or the value of an organisation's relationships with the people with whom it does business);
- social capital (for example: trust, loyalty and reciprocity within a community – the values created from social networks), which helps bring these elements together.

Willcocks suggests also that outsourcing often disrupts and reduces social capital by disembedding people, systems, and institutional knowledge from the client organization and points out that more attention should be paid to cultivating social capital [Oshri, Kotlarsky, Willcocks 2011, pp. 111–112]. Social capital can have a considerable impact on effective knowledge transfer between outsourcing parties. It allows outsourcing partners to reduce cultural barriers, understand common goals and strengthen network stability and ties.

Knowledge transfer in an organisation can be performed in multiple ways. Factors deciding on the knowledge transfer method are above all [Potocki (ed.) 2011, p. 65]: knowledge transfer aim, type of transferred knowledge (customised public or quiet, codified or entrenched, generally available or protected), knowledge source, knowledge transfer addressees, conditions, and available tools.

The issue which seems to be crucial for the effectiveness of knowledge sharing processes in the relations of the organisation with external entities (and in the implementation of the models of information and knowledge transfer proposed in the further part hereof) is the inclination of knowledge “suppliers” to share it, as well as the ability and motivation of knowledge “recipients” to absorb it.

## **5. Models of information and knowledge transfer in the IT services outsourcing process**

Little attention in outsourcing processes is drawn to the real-time corporate knowledge transfer, restricting mainly to the “delayed” data and information flow (see Figure 1). The assumption of parallel information and knowledge flow should be adopted while negotiating and signing an outsourcing contract (see Figure 2), which allows building a learning organisation, for both the outsourcing provider (OP) and the outsourcing recipient (OR). Then, during the outsourcing cooperation, a new organisational form is created, based on joint formation of corporate knowledge based on key knowledge of the outsourcing provider (*KK(OP)*) and of the outsourcing recipient (*KK(OR)*).

Figure 3 presents a very promising anticipatory model of hot knowledge transfer, where the initiating party is OR, which allows OP to precisely determine the outsourcing services package. In addition, the time necessary for the approvals prior to the start-up of real outsourcing processes is reduced here.

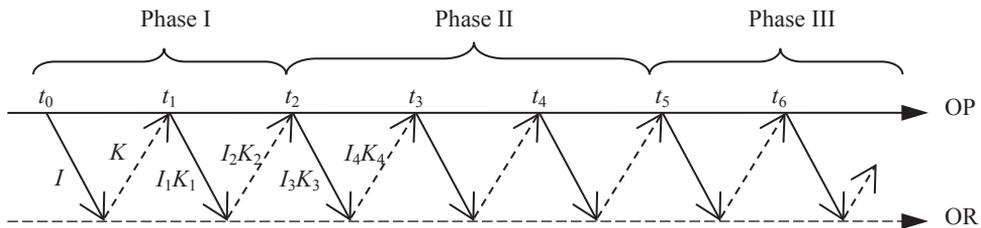
The 4th mode – A model (perfect one) is “the higher level” in the outsourcing cooperation process (see Figure 4). The cooperating parties (OR and OP) concentrate here on:

- key knowledge transfer,
- outsourcing of certain core processes.

Such a type of model occurs in high-technology sectors, during the implementation of long-term joint projects.

Figure 5 reflects the target model (B) of perfect outsourcing cooperation consisting in combining two enterprises (OP and OR) into a new organisational entity (e.g. a joint-venture company, a strategic alliance, etc.) oriented on implementing large projects in e.g. automotive, pharmaceutical, IT, biotechnology, nanotechnology sectors, etc.

The 5th model – B model is necessary in the case where the current possibilities and potentials of the classical dual outsourcing cooperation have been depleted.



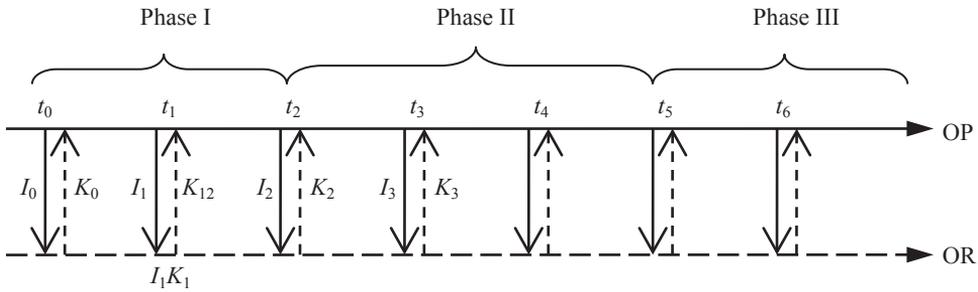
**Legend**

- $K$  – hot knowledge of OR
- $KK(OP)$  – key knowledge of OP
- $KK(OR)$  – key knowledge of OR
- > outsourcing provider’s knowledge/information flow
- - - - -> outsourcing recipient’s knowledge/information flow
- $t_0$  – time at moment 0
- $t_1$  – time at moment 1
- $t_n$  – time at moment  $n$
- $t$  – time
- $K$  – knowledge
- $I$  – information
- Phase I – IT outsourcing designing phase
- Phase II – IT outsourcing implementation/organisation phase
- Phase III – IT outsourcing implementation/deployment phase

**Figure 1.** The 1st model – delayed time model

Source: own elaboration.

Another model (see Figure 2) assumes parallel information flows of the supplier and knowledge flows of the outsourcing services customer.



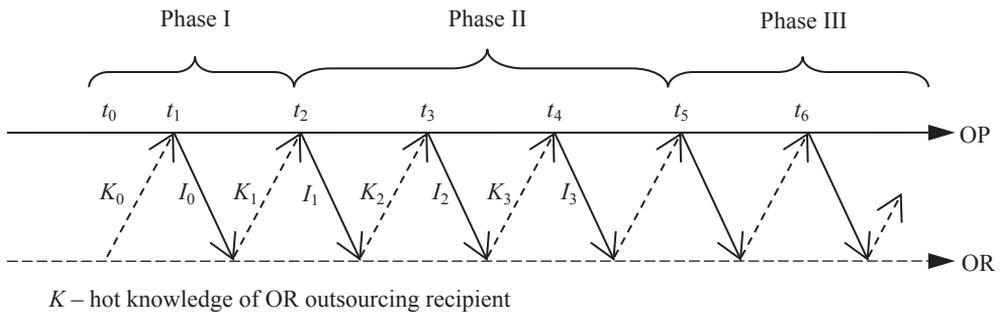
**Figure 2.** The 2nd model – real-time model: parallel information and knowledge flows

Source: own elaboration.

In the reality, parallel information and knowledge flows do not exist. They can be conventionally called parallel in the situation when the so-called “information lags” are minimised, which occurs in each information exchange system.

While discussing the 2nd model, it is worth drawing attention to the organisation learning process (learning loop). Such a state is reached by a range of meetings/interactions between the customer and the outsourcing provider where the customer is satisfied with the adopted arrangements.

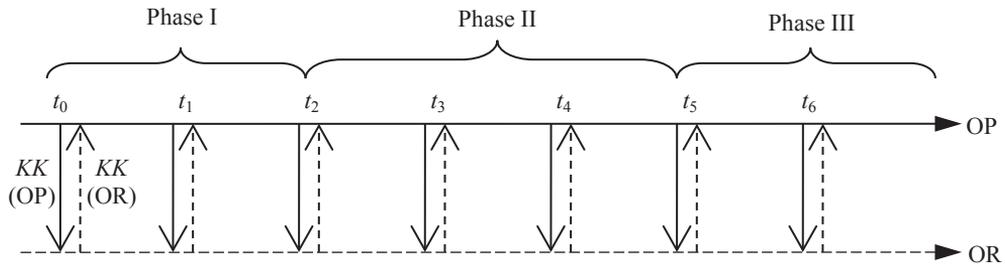
Considering various models of information and knowledge transfer in the customer–supplier relations, the following questions may be asked: What is supposed to be the aim of outsourcing? Should outsourcing facilitate gaining new knowledge, discovering hidden knowledge (or objectively hidden) or only accomplishing specific operational goals, such as IT cost minimisation?



**Figure 3.** The 3rd model – anticipatory model

Source: own elaboration.

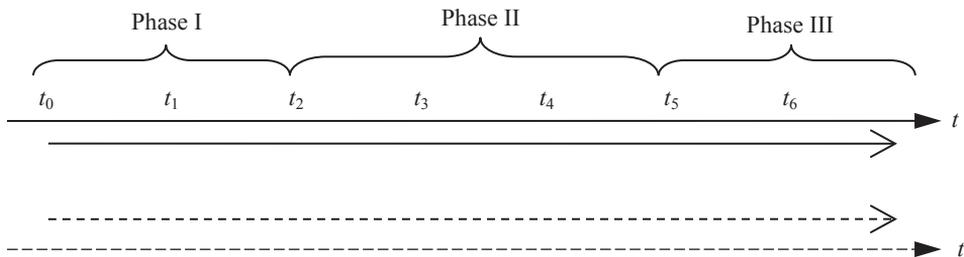
In the 3rd model, OR is the active party – the outsourcing recipient providing the hot knowledge that is transferred to the supplier, which in turn processes it and in reply communicates information and knowledge to the customer.



**Figure 4.** The 4th model – perfect model A

Source: own elaboration.

The 4th model assumes that the parallel flow of outsourcing provider’s and outsourcing recipient’s knowledge occurs in real time.



**Figure 5.** The 5th model – perfect model B

Source: own elaboration.

In the 5th model the two knowledge-based organisational entities (outsourcing provider and outsourcing recipient) are integrated. Information and knowledge chains of both companies merge.

In order to expand the models presented earlier, an attempt to assess the impact of third parties on the functioning of outsourcing configurations could be made, but this will not be the object of this paper.

The reason for creating and applying knowledge transfer models in outsourcing projects should be above all the need of comprehensive insight into the informational relations/correlations occurring in the cooperation with external service providers. Such models can be helpful in determining the principles of communication with outsourcing partners and of coordination of the performed tasks and in selecting

proper information and knowledge transfer methods between the outsourcing provider and outsourcing recipient.

Due to the fact that the phenomenon of knowledge sharing is increasingly more common – because organisations act in increasingly more expanded networks of correlations, the need to cope with the positive and negative aspects of this phenomenon is very strong and requires attention already at the preliminary stage of the preparation for outsourcing.

## 6. Reconfiguration of added value in outsourcing services

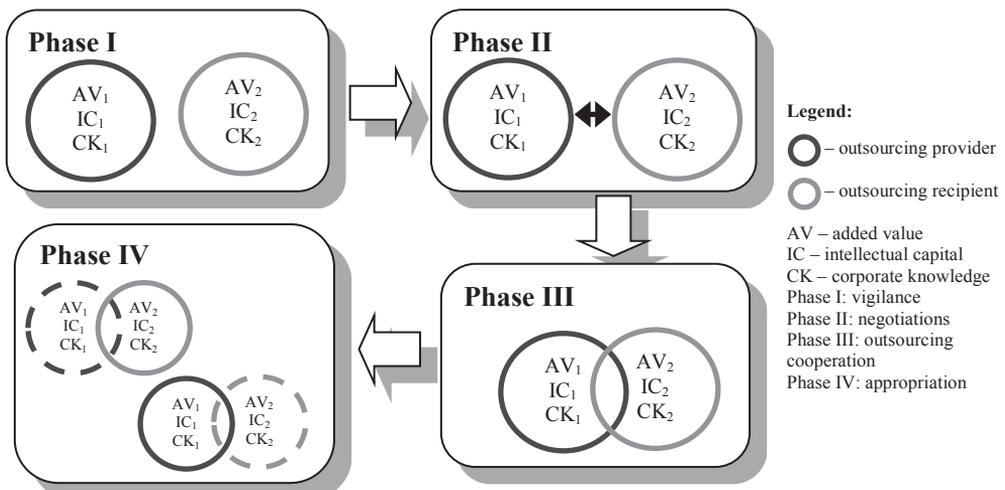
While preparing outsourcing decisions, the following analyses prevail:

- financial,
- economic,
- marketing,
- technical,
- technological.

Generally, analysis of the loss or growth of the following are omitted, in turn:

- added value (see Figure 6) of the outsourcing provider and the outsourcing recipient,
- intellectual capital,
- corporate knowledge.

The analyses of the first type (classical) are oriented on short- and medium-term optimisation, while the analyses of the added value, knowledge and intellectual capital transfer have the long-term dimension, which is reflected in Figure 6.



**Figure 6.** Phases of added value, intellectual capital and knowledge reconfiguration, in outsourcing processes

Source: own elaboration.

Implementation of knowledge transfer and knowledge development processes, both inside the organisation and in relation to other companies, requires considerable effort on the part of organization management and other actors of knowledge transfer processes. On the one hand, it is essential to secure proper information flow to the outsourcing partner and precise definition of the range of knowledge passed on to the service provider to satisfy the requirements of the client. It is also of utmost importance to protect knowledge and information vital for maintaining the organization's competitive advantage and secure the inflow of information and knowledge from the service provider in order to be able to continue operation in a given area after termination of the contract or after contractor change.

Organisational learning about the benefits and setbacks of IT outsourcing may considerably affect subsequent decisions in the field of outsourcing. Each enterprise considering IT outsourcing should therefore conduct a detailed analysis of all pros and cons so that the decision to transfer such a significant field does not result in losing key competences. Possible cooperation should be planned; proper conditions should be created for the knowledge transfer processes (also conditions for the informal contacts of the personnel of the cooperating companies) that the organisation could maximally benefit from the potential lying in outsourcing during the term of the contract [Sobińska 2011b, p. 28]. However, Oshri, Kotlarsky and Willcocks point out that most clients have not fully captured the potential of advancing learning from opportunities that outsourcing relationship gives and in most cases have trusted the management of knowledge and expertise to their vendor [Oshri, Kotlarsky, Willcocks 2011, p. 127].

## 7. Summing-up

Very rapid changes are occurring in the IT services sector. Initially, simple services related to customer service were separated and transferred to “better” (cheaper) locations. Currently very advanced and risky forms of information services outsourcing are being observed, namely transfers of research and development centres, architectural, medical, engineering Services, etc.

The development of IT services outsourcing and offshoring:

- contributes to the increased information and knowledge exchange between the concerned parties (also in the global dimension);
- leads to deepened integration between companies in the world and to increased global correlations;
- enables access to advanced technologies for developing countries (rich countries lost the monopoly for high-tech products and know-how).

At the same time, outsourcing and offshoring constitute a challenge for managing the organisation (and its intellectual capital) and its development. In extreme cases, with an improper approach to managing cooperation and to the information and knowledge transfer issues, the use of outsourcing may result in:

- the reduction of jobs and loss of valuable employees;
- limiting the local competences;
- becoming dependent on the new entity;
- increasing technical and organisational competences of the supplier (most often coming from a poorer country), becoming independent from the customer up to competing with the existing ordering parties.

Although the goals of the organisation related to outsourcing (including IT services outsourcing and offshoring) still focus on cost reduction to the greatest extent, it seems that the change of orientation on qualitative benefits and on the opportunities provided by cooperation with external partners in the context of developing organisational knowledge is inevitable. Communication, especially the direct one, plays a very important role in all phases of an outsourcing project. Establishing advantageous conditions for customer–provider communication may additionally broaden the knowledge of the organization about the cooperation, as well as increase the service competence of the IT personnel by means of different kinds of contacts with the employees of the provider’s company (on formal and informal grounds).

The models of information and knowledge transfer proposed here (the 2nd, 3rd, 4th and 5th model) show the direction in which, as claimed by the authors, learning organisations that cooperate on the outsourcing basis in the field of IT and strive for improving the effectiveness and minimising the risk, should go. They assume joint creation of corporate knowledge based on the key knowledge of the outsourcing provider and the outsourcing recipient, which in practice can occur in the case of high commitment and experience of parties, optimum communication and proper motivation of the outsourcing provider and the outsourcing recipient.

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## MODELE KOMUNIKACJI I ZARZĄDZANIA WIEDZĄ WE WSPÓŁPRACY OUTSOURCINGOWEJ Z OBSZARU IT

**Streszczenie:** Celem artykułu jest próba zdefiniowania roli zarządzania wiedzą i komunikacją w relacji klient–dostawca, ze szczególnym uwzględnieniem aspektu outsourcingu wiedzy IT. Ponadto dokonano weryfikacji następujących hipotez: (a) w klasycznej umowie outsourcingowej nie występuje transfer wiedzy kluczowej (nie jest to celem projektu outsourcingu); (b) outsourcing usług IT powinien być uzupełniony o transfer wiedzy kluczowej w obu kierunkach: od klienta do sprzedawcy i od sprzedawcy do klienta; (c) outsourcing oparty o transfer wiedzy kluczowej jest bardzo ważnym instrumentem dla tworzenia i rozwoju działalności organizacji wirtualnej opartej na wiedzy. Wynikiem podjętych rozważań będzie prezentacja modeli transferu informacji i wiedzy w relacjach outsourcingowych. Zostaną pokazane potencjalne obszary zastosowań outsourcingu IT, outsourcing wiedzy IT oraz korzyści wynikające z takich projektów w kontekście zarządzania wiedzą.

**Słowa kluczowe:** IT outsourcing, transfer wiedzy, zarządzanie wiedzą, komunikacja.