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INFORMATION SYSTEMS OFFSHORING: RESULTS OF A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

An increasing amount of IS offshoring research has been published during the last four years. This paper presents a comprehensive view of the field of study from a managerial point of view. It provides a consolidated view of the field of study between 2010 and 2013 based on a manual search comprising 69 selected journals and 9 conferences, as well as a search using 6 journal databases. The literature review ensures continuity of research by connecting to a comprehensive literature analysis covering the years 1999 to 2009. This way it consolidates and critically reflects the state of the research of the last 14 years. Overall, we compiled 95 relevant publications originating from leading IS journals and IS conference proceedings. The results indicate that IS offshoring research is largely non-theory based, using almost entirely empirical data and interpretive research methods and - to a smaller extent - positivist research designs. The ISO research of the last 14 years focuses on the implementation stages "how" and "outcome" while the pre-implementation-stages “why”, “what”, and “which” are comparatively sparsely researched. Future studies should apply a more theory-driven approach with a greater attention on pre-implementation aspects of information systems offshoring. In addition, future research should investigate the special nature of near- and onshoring, captive offshoring as well as agile (project) management techniques suitable for ISO.

Keywords: Offshoring, Nearshoring, Information systems, Information technology, Literature review, State of the art analysis

INTRODUCTION

Information Systems (IS) offshoring is the transfer of IS services to a service provider outside the service consumer’s home country. The offshore provision of IS services is an intensively researched phenomenon in the IS field in recent years (Davis et al. [40]; King and Torkzadeh [88]). IS offshoring is a global phenomenon which brings along benefits such as cost savings, concentration on core competences, and access to IS skills (e.g., Dhar and Balakrishnan [44]; Gonzalez et al. [56]; Klimpke et al. [90]; Westner and Strahringer [169]). According to the market research company Gartner [53], the global top three most commonly used locations for sourcing offshore services by region are: Mexico, Brazil, and Argentina for the Americas region; India, China, and Malaysia for the Asia-Pacific region; Poland, Russia, and South Africa for the EMEA region (Europe, the Middle East and Africa).

The IS offshoring trend appears to continue and influences practitioners and academics. Various consulting

firms and analysts promote the relocation of different IS services to low-cost locations to gain a competitive advantage over competing companies (Berlecon Research [20]; Jorek et al. [83]). More than 50% of Fortune 500 organizations follow this trend and have already offshored software projects (Avison and Torkzadeh [8]; Chadee et al. [29]). In accordance, Lacity et al. [95] predict a double-digit growth rate for offshore outsourcing (a specific manifestation of IS offshoring) for the next five years based on reports from the market research companies Everest, Gartner, IDC, and NASSCOM.

Analogous to this high practical relevance, IS offshoring research has been growing continuously. The increasing amount of IS offshoring publications over the last years confirm this (Dedrick et al. [41]; Gonzalez et al. [55]; Wiener et al. [177]). In 2005, IS researchers examined IS offshoring's impact on their discipline and soon realized that "the field has to come to grips with the fact that offshoring is not a passing fad and that this has significant implications for the discipline" (Hirschheim et al. [77, p. 1017]). In the same year, Mertens et al. [111] called for a consolidated view on a current state of the IS offshoring research and its results. A few years later, authors followed these requests and published comprehensive literature analyses (e.g., King and Torkzadeh [88]; Westner [166]; Wiener et al. [177]). The most recent literature analysis by Wiener et al. [177] indicates that prior literature reviews on IS offshoring have either focused on a descriptive meta-analysis (Westner [166]), limited to one specific journal (issue) (King and Torkzadeh [88]), or focused on economic implications for different stakeholder groups (Niederman et al. [117]). To address this research gap, Wiener et al. [177] provide a detailed overview of the IS offshoring research field from an IS managerial point of view. Their literature search covers literature published between 1999 and 2009, concentrates on 23 journals and 5 conferences, and includes 96 articles.

Currently, a consolidated view of the IS offshoring research over the last four years is lacking. The increasing amount of IS offshoring publications available suggest that many research findings published in the last four years have thus far been disregarded. Furthermore, there is an absence of a broader consideration of leading journals and conferences within the IS offshoring research field. The comprehensive IS offshoring literature review by Wiener et al. [177] already used a pre-selection of high-quality sources, yet it encompasses only 23 journals and 5 conferences. This paper presents a literature review that intends to provide a more comprehensive understanding of the field of study which addresses this deficit in current research. We will give a consolidated view of the field of study covering the years 2010 to 2013 including a search comprising 69 selected journals and 9 conferences, as well as a search using 6 databases (cf. Table 4, p. 77; Table 5, p. 78 and Table 6, p. 78). Additionally, this literature review ensures continuity of research by connecting to Wiener et al. [177] analysis and critically reflecting the state of the research over the last 14 years. Based upon these aspects, this research attempts to answer the following research questions: (1) what is a relevant definition of the term IS offshoring?, (2) what is the state of knowledge in IS offshoring research?, (3) what changes in research can be identified over the last four years?, and (4) what are potential areas for future research in IS offshoring?

This paper is structured as follows: In chapter 2 we describe our review approach, including the review scope, the topic conceptualization, the literature search process, as well as the literature analysis and synthesis framework. Chapter 3 categorizes and presents the literature items along five IS offshoring stages, compares it with Wiener et al. [177] findings and examines content-wise topics for further research. In chapter 4, we finally summarize the overall information systems offshoring (ISO) results and give implications and directions for future research.

REVIEW METHODOLOGY

Vom Brocke et al. [161] propose a five-step framework for conducting IS literature reviews. The first step comprises the definition of the review scope. For this purpose vom Brocke et al. [161] propose to draw on a taxonomy of literature reviews developed by Cooper [38] as well as Cooper and Hedges [37]. The second step specifies and describes relevant working definitions in order to have a common understanding of the terms being used. The third step comprises the actual literature search process. This search process involves definition of sources (i.e., journals, conferences, and databases), definition of approach (i.e., keyword, backward and forward search), as well as the continuous literature evaluation itself. In the fourth step the research findings are analyzed and synthesized. For analysis and synthesis purposes, we apply a framework drawing on Dibbern et al. [45] as well as Wiener et al. [177] and describe the findings along the IS offshoring stages why, what, which, how, and outcome. The fifth process step encompasses the summary of key findings and the setup of the research agenda. Figure 1 illustrates vom Brocke et al. [161] literature review framework and relates its steps to the respective chapters of our literature review.

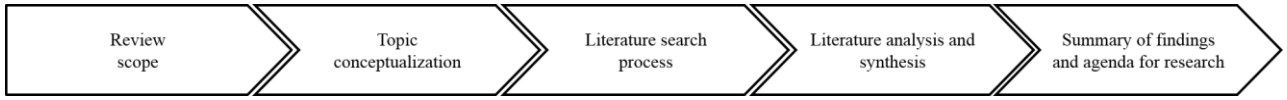

Figure 1: Literature review framework (cf. vom Brocke et al. [161])

Review scope

To illustrate its review scope, the paper at hand follows a literature review taxonomy originally developed by Cooper and Hedges [37]. Cooper's taxonomy captures six categories to describe literature reviews: focus, goal, perspective, coverage, organization, and audience. Each category contains two to four characteristics.

Regarding focus, the literature review at hand concentrates on research findings, research methods, theories used, and practices or applications. Such a wide focus appears to be necessary for a sound analysis of the current research status-quo.

Regarding goals, this literature review pursues multiple goals which are closely linked together. The first goal is integration of past literature within a certain time frame, relevant to the research topic. This integration includes a summary of core statements of the research findings and practices or applications respectively the identification and classification of research methods and theories. The second goal is the identification of central issues which may include main questions that have given rise to past research or stimulate future work. A further goal is to identify different problems (e.g., methodological or conceptualization ones) that have impeded progress within the selected research field.

The literature review's chosen perspective is a neutral representation of the findings in an "attempt to present all arguments or evidence for and against various interpretations of the problem" (Cooper and Hedges [37, p. 5]). However, while this perspective does not encompass complete neutrality, it still allows the researcher to take a strong position based on the cumulative evidence.

Regarding coverage, this literature review is exhaustive in nature enabling conclusions and discussions on a comprehensive information base.

Furthermore, the literature review's organization falls into the characteristic conceptual with publications relating to one or more offshoring stages appearing together (c.f. section literature analysis and synthesis along IS offshoring stages, p. 84).

Finally, the review at hand is academic in nature and therefore its audience is specialized and general scholars, i.e., scholars who conduct research in IS or closely related fields.

Table 1 illustrates the previously described categories. The gray highlighted characteristics represent the previously described review scope.

Table 1: Taxonomy of the literature (cf. Cooper and Hedges [37])

Categories	Characteristics			
Focus	Research findings	Research methods	Theories	Practices or applications
Goal	Integration	Criticism	Identification of central issues	
Perspective	Neutral representation		Espousal of position	
Coverage	Exhaustive	Exhaustive with selective citation	Representative	Central or pivotal
Organization	Historical	Conceptual	Methodological	
Audience	Specialized scholars	General scholars	Practitioners or policy makers	General public

Topic conceptualization

Topic conceptualization at the beginning of a literature review is important in order to have "a broad conception of what is known about the topic and potential areas where knowledge may be needed" (Torraco [157, p. 359]). Therefore, it is necessary to formulate working definitions of the key terms being used (Zorn [187]). The term "offshoring" is used differently in theory and practice and is not specific to the IS domain. Table 2 provides an overview of selected definitions of the term "offshoring" from IS research.

Table 2: Overview of selected IS offshoring definitions

Definition	Source
"Offshore outsourcing of information services is a relatively recent business phenomenon (Willcocks & Lacity, 2006), whereby IT services production shifts to lower-wage, remote locations to supply markets in the industrialised economies."	Abbott and Jones [2, p. 529]
"[…] ‘offshoring‘ and ‘offshore outsourcing‘ are both including the client’s contracting of ISD activities with an IT-supplier located in a low-cost country."	Bergkvist and Fredriksson [19, p. 5]
"The term “offshore sourcing” includes both offshore outsourcing to a third-party provider as well as offshore insourcing to an internal group within a global corporation."	Carmel and Agarwal [28, p. 65]
"Offshoring is defined as the provision of organizational products and services from locations in other countries, whether they are actually overseas or not. This may be accomplished in one of two ways. First, an organization may outsource some of its activities to service providers in other countries. [...] Second, the organization may set up service operations in the other countries."	Davis et al. [40, p. 771]
"Offshore information systems (IS) outsourcing is a contractual arrangement involving transferring IS development and related services to overseas vendors."	Deng et al. [43, p. 10]
"Offshore software development […] occurs when the contracting parties are in different countries and the software is developed in the developer’s country, and then shipped to the buyer’s organization."	Gopal et al. [60, p. 1671]
"Global offshore outsourcing (or simply offshoring) is a relatively new phenomenon [...] offering access to knowledge-worker skills often at reduced costs. IT offshoring refers to the migration of all or part of the development, maintenance and delivery of IT services to a vendor located in a country different from that of the client."	Hirschheim et al. [77, p. 1003]
"We define ‘‘offshoring’’ to encompass activities both internal and external to the firm for the purposes of serving home country or global markets. Offshoring an activity to a firm’s own affiliates located outside its home country constitutes internal or captive offshoring. Offshoring to unaffiliated parties constitutes offshore outsourcing."	Kenney et al. [86, p. 3]
"[…] [Offshoring] is inter-country outsourcing […] [or] a form of outsourcing performed outside the client organization’s home country."	King and Torkzadeh [88, p. 207]
"Offshore outsourcing, the international version of traditional/domestic outsourcing, involves transfer of business activities and/or processes by clients to specialized overseas providers primarily with the motivation of reducing operating costs [...]."	Lahiri and Kedia [96, p. 254]
"Offshore outsourcing (offshoring) is the practice of distributing work, particularly in the area of information technology (IT) services and development, to workers outside the national borders of the host country."	Niederman et al. [117, p. 52]

Definition	Source
"Offshore Outsourcing, or offshoring (international outsourcing), refers to external cross-border supply, with business support services supplied by an external supplier (outsourcing), or suppliers, located in other countries (offshore). Internal offshoring, or offshore insourcing (international insourcing), refers to internal cross-border supply, with internal business support services activities (insourcing) located in another country (offshore). In this model, a company creates its own offshore software development center (subsidiary) to supply its internal demand."	Prikladnicki and Audy [137, p. 217]
"Offshore development of software occurs when the supplier is from a different country than the company outsourcing its development."	Rajkumar and Mani [139, p. 63]
"IS offshoring comprises the partial or entire provision of an IS function such as ISD by an offshore partner to an onshore partner within or outside the same company while the partners reside far away from each other, i.e. typically on different continents."	Spohrer et al. [151, p. 2]
"IS offshoring describes the transfer of IS services to an offshoring service provider (OSP) in a near or distant country. The OSP can be an internal subsidiary (so-called captive offshoring), a partially owned unit, or an external service provider (so-called offshore outsourcing). The services themselves are partially or totally transferred."	Westner and Strahringer [169, p. 291]

The definitions above resemble each other by describing the term IS offshoring using one or more categories. These categories are (1) distance, (2) ownership, (3) function, and (4) degree (e.g., Amberg and Wiener [4]; Dibbern et al. [45]; Wiener et al. [177]). Table 3 illustrates these four categories and their corresponding characteristics.

Table 3: Characteristics of the term offshoring

Categories	Characteristics		
Distance	Near	Far	
Ownership	Internal	Partial	External
Function	Infrastructure services	Application development services	Business process services
Degree	Selective	Total	

The first category is distance. Almost all selected definitions imply the aspect of distance and, e.g., define the performance of services "outside the client organization's home country" (King and Torkzadeh [88, p. 207]) or "to overseas vendors" (Deng et al. [43, p. 10]). Some authors specify the relocated countries as "lower wage" (Abbott and Jones [2, p. 529]) or "low-cost" (Bergkvist and Fredriksson [19, p. 5]) locations. Only few distinguish between "near" and "far" distance (Davis et al. [40, p. 771]; Westner and Strahringer [169, p. 291]). Other studies emphasize "nearsourcing" or "nearshoring" as a special form of offshore outsourcing (Gregory [62, p. 2]) that is relatively close in distance or time zone (or both) (Carmel and Abbott [27, p. 44]).

The second category is ownership. This category defines how IS services can be transferred externally "to a third-party provider as well as [...] to an internal group within a global corporation" (Carmel and Agarwal [28, p. 65]). Furthermore, "the organization may set up service operations in the other countries" (Davis et al. [40, p. 771]), so that "the offshore service provider can be a partially owned unit" (Westner and Strahringer [169, p. 291]). However, the distinction between these three ownerships is sometimes unclear with some definitions only differentiating between "internal and external arrangements" (Spohrer et al. [151, p. 2]). Even more ambiguous, Prikladnicki and Audy [137, p. 217] entitle in their definition for an external cross-border supply the

term "offshore outsourcing", or abbreviated "offshore", and for an internal cross-border supply the term "internal offshoring", or "offshore insourcing".

Regarding the third category, functions, it has become apparent that most studies do not specify which kind of IS services are transferred. Terms such as "ISD [Information System Development] activities" (Bergkvist and Fredriksson [19, p. 5]), "information services" (Abbott and Jones [2, p. 529]), "IS functions" (Spohrer et al. [151, p. 2]) or "internal and external activities" (Kenney et al. [86, p. 3]) are used. Few studies focus on special kinds of service(s) like "Offshore software development" (Gopal et al. [60, p. 1671]; Rajkumar and Mani [139, p. 63]) or "development, maintenance and delivery of IT services" (Hirschheim et al. [77, p. 1003]). Furthermore, business functions are referred to as "business activities and/or processes" (Lahiri and Kedia [96, p. 254]) or "business support services" (Prikladnicki and Audy [137, p. 217]). All identified activities, functions, and services can be grouped by the categories application development services, infrastructure services, and business process services (Westner and Strahringer [168]; Wiener et al. [177]). Application development services comprise the development of applications or the extension, migration, and maintenance of existing software systems. Infrastructure services include the provision and maintenance of hardware and software components (network and server management) while, e.g., user help desk and call center processes, belong to the category business process services.

The fourth category encompasses the degree of the transferred services. Some studies distinguish between the relocation of all or parts of IS services (Hirschheim et al. [77, p. 1003]; Spohrer et al. [151, p. 2]; Westner and Strahringer [169, p. 291]) and further draw a distinction between "total offshoring" and "selective offshoring". It is debatable whether total offshoring exists and is actually being practiced. Alternatively, the degree of the transferred services could be differentiated into a small and a large share.

Drawing on the categories above and considering the circumstances that no commonly accepted definition of the term exists (Bednarzik [16]; BITKOM [23]), the literature review at hand uses the following definition of the term IS offshoring:

> *IS offshoring encompasses the partial or total transfer of IS services (application development, infrastructure, and business processes) to an internal, partially-owned or external offshoring service provider organization in a near or far away country different to that of the client organization.*

This definition includes the four categories and their corresponding characteristics in order to ensure a complete and comprehensive definition of the term IS offshoring. However, the definitions illustrated in Table 2 indicate, that some authors use different variations with other terms or focus on specific characteristics of IS offshoring. Several definitions use a variation with the term "outsourcing", like "offshore outsourcing" (Abbott and Jones [2, p. 529]), "global offshore outsourcing" (Hirschheim et al. [77, p. 1003]), "international outsourcing" (Prikladnicki and Audy [137, p. 217]), or "offshore information systems outsourcing" (Deng et al. [43, p. 10]). IS outsourcing per se encompasses a contracting relationship with third party (IS) suppliers (Dibbern et al. [45]). Therefore, this composite terms could suggest that IS offshoring is a variation of IS outsourcing and includes exclusively "external" arrangements in the dimension "organization" (Westner and Strahringer [168]). As a result of this, we follow the intention of Erber and Sayed-Ahmed [49] as well as Westner and Strahringer [168] and recognize such composite terms like "IS offshore outsourcing" not as variation of IS offshoring, but as combination of both terms.

It is noticeable that new terms have evolved, which are based on specific characteristics such as distance, functions, or ownership of IS offshoring. "Offshore software development" (Gopal et al. [60, p. 1671]; Wiener [174, p. 157]) is an example of such composite terms between "IS offshoring" and the specific function "application development". Several studies distinguish between "offshore outsourcing" (the client's contracting with an unaffiliated IT-supplier located in a low-cost country) and "offshore insourcing" (the client's contracting with an affiliated IT supplier located in a foreign country) and separate it conceptually (Bergkvist and Fredriksson [19, p. 5]; Carmel and Agarwal [28, p. 65]; Prikladnicki and Audy [137, p. 217]). Drawing on the characteristic distance of transferring IS services, Gregory [62, p. 2] mentions that the special form of offshore outsourcing is called "nearsourcing" or "nearshoring". A detailed definition of the term "nearshoring" is provided by Carmel and Abbott [27, p. 44]: "[...] sourcing service work to a foreign, lower-wage country that is relatively close in distance or time zone (or both). The customer expects to benefit from one or more of the following constructs of proximity: geographic, temporal, cultural, linguistic, economic, political, and historical linkages." Another term regarding the geographical distance is called "onshoring" and encompasses the activity of subcontracting a provider in the same country where the client is located (Hendel et al. [73]). It is noticeable that this term has a close resemblance to domestic outsourcing whereby onshoring focus-

es primarily on taking advantage of lower labor costs within national borders (Bagchi et al. [10]).

The different usage of the term IS offshoring and the evolvement of terms based on variations or specific characteristic leads to a variety of different terminologies that impede a clear understanding of IS offshoring and its different characteristics. To create a common terminology and a common understanding we propose to use a template (cf. Figure 2) based on the essential categories identified above.

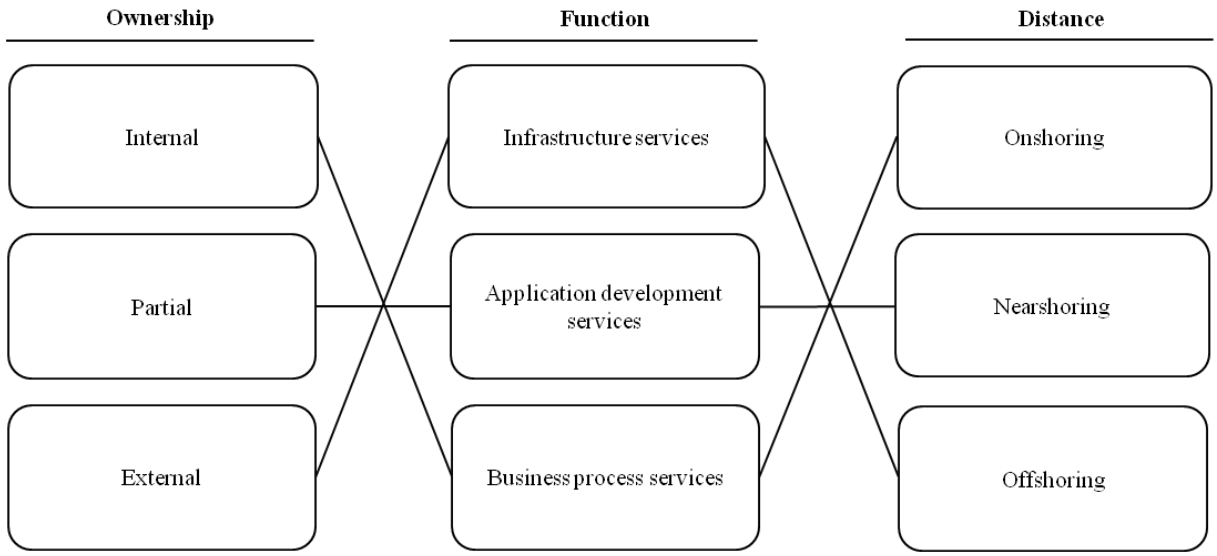

Figure 2: Template for the term IS offshoring

The template includes the categories ownership, function, and distance and their corresponding characteristics. The first category is separated into internal, partial or external ownership. Internal ownership encompasses transferring IS services within a cooperation, while a partial one comprises offshoring to a partially owned unit. An external ownership contains selecting a third party service provider. The second category consists of the IS functions infrastructure services, application development services, and business process services. Infrastructure services include the provision and maintenance of hardware and software components (network and server management). Application development services comprises the development of software systems or the extension, migration, and maintenance of existing applications. Business processes are services such as user help desk and call center processes. The third category is split into onshoring, nearshoring, and offshoring. Onshoring means subcontracting a provider in the same country where the client is located. If the provider is not situated within the client's country but still close to his border, it is classified as nearshoring. A greater distance to the client's country characterizes offshoring.

The fourth category "degree" is consciously not included as a differentiation between partially and totally offshoring appears less relevant given that companies usually offshore selective IS services and utilize partial offshoring (according to Wiener et al. [177, p. 479] and our literature review findings, cf. p. 117). The template can be used to classify and construct IS offshoring termy by (1) selecting one characteristic from each category and (2) connecting the three characteristics together. The resulting terms, like "internal software development nearshoring" or "external infrastructure offshoring" provide a common understanding of the special form of IS offshoring terms. Thus, our working definition describes the term IS offshoring in general, while the template focuses on terms describing the specialized IS offshoring phenomenon.

Literature search process

The literature search process comprises the selection of (1) journals and conferences, (2) databases, (3) relevant search keywords, and (4) forward and backward search (vom Brocke et al. [161]).

(1) We focus on top-tier journals and ranked conferences (Webster and Watson [163]). Our selection of

relevant journals is based on the IS Senior Scholars Basket of Journals (Association for Information Systems [5]), and the MIS Journal Ranking (Average Point <=30) from the Association for Information Systems [6]. Furthermore, we decide to include the A-Journals of the WI-Journal-List (Frank et al. [51]) to consider the view of the German-speaking business informatics community. For IS conferences, we follow the recommendation of Bandara et al. [12] and include renowned academic conferences addressing this research's topic and target scope. The selection comprises sponsored and affiliated conferences by the AIS. Finally, we enlarge the selection with well-established IS conferences in the German language area. Figure 3 illustrates this selection approach.

The journals and conferences according to the selection in Figure 3 are summarized in Table 4 and Table 5.

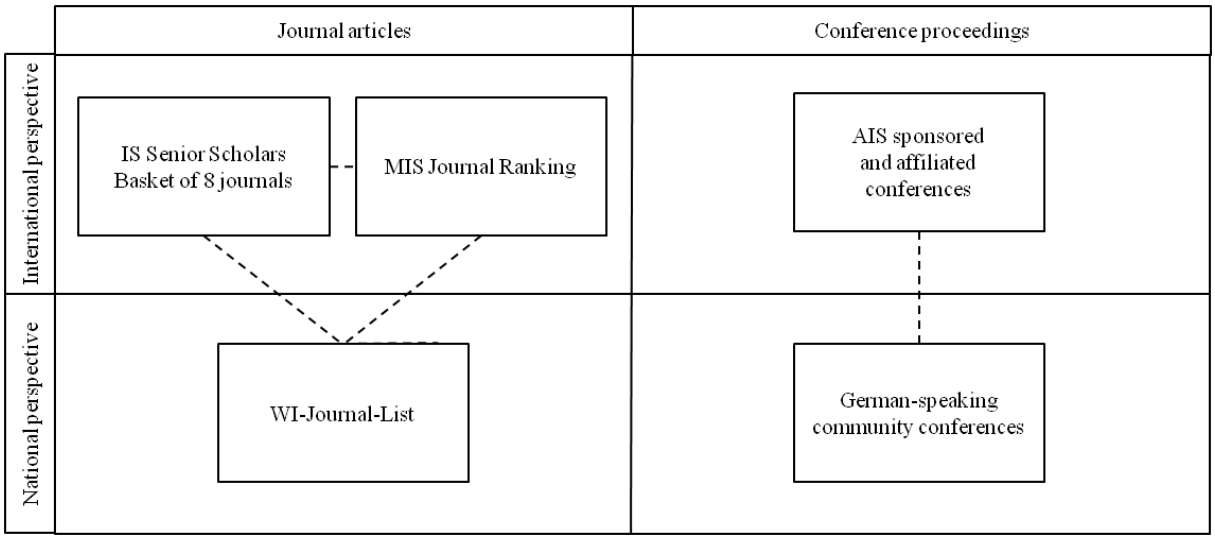

Figure 3: Selection of conferences and journals

Table 4: Overview of chosen journals

Journals	
Academy of Management Journal	Information Systems Research
Academy of Management Review	Information Technology and Management
ACM Computing Surveys	Information Technology and People
ACM Special Interest Group Publications	Informing Science Journal
ACM Transactions on Database Systems	Infosystems
ACM Transactions on Information Systems	Interfaces
Administrative Science Quarterly	International Journal of Electronic Commerce
Artificial Intelligence Magazin	International Journal of Human-Computer Studies
Business Horizons	International Journal of Information Management
California Management Review	Journal of Computer and System Sciences
Communications of the ACM	Journal of Computer Information Systems
Communications of the AIS	Journal of Database Administration
Computer Decisions	Journal of Database Management
Computers and Operations Research	Journal of Global Information Management

Journals	
Decision Sciences	Journal of Global Information Technology Manangement
Decision Support Systems	Journal of Information Technology
Electronic Markets	Journal of Information Technology Theory and Application
European Journal of Information Systems	Journal of Management Information Systems
Expert Systems with Applications	Journal of Management Systems
Harvard Business Review	Journal of Strategic Information Systems
Human-Computer Interaction	Journal of Systems and Software
IBM Systems Journal	Journal of the ACM
IEEE Computer	Journal of the AIS
IEEE Software	Journal on Computing
IEEE Transactions on Computers	Knowledge Based Systems
IEEE Transactions on Knowledge and Data Engineering	Management Information Systems Quarterly
IEEE Transactions on Software Engineering	Management Science
IEEE Transactions on Systems, Man, and Cybernetics	MISQ Discovery
Information & Management	Omega
Information and Organization	Operations Research
Information and Organization	Organization Science
Information Systems	Sloan Management Review
Information Systems Frontiers	The Data Base for Advances in Information Systems
Information Systems Journal	Wirtschaftsinformatik
Information Systems Management	

Table 5: Overview of chosen conferences

Conferences	
Americas Conference on Information Systems	Pacific Asia Conference on Information Systems
International Conference on Information Systems	Hawaii International Conference on System Sciences
Australasian Conference on Information Systems	Multikonferenz Wirtschaftsinformatik
European Conference on Information System	Wirtschaftsinformatik
Mediterranean Conference on Information Systems	

(2) The next step contains the identification of relevant databases. Vom Brocke et al. [161] recommend searching databases that provide access to the identified (and leading) IS journals (cf. Table 4). The listed databases in Table 6 meet these requirements.

Table 6: Databases used for searching literature

Databases	Sources
AIS electronic library (AISel)	aisel.aisnet.org
EBSCOhost (Business Source Complete)	search.ebscohost.com
Emerald	www.emeraldinsight.com
IEEE Xplore	ieeexplore.ieee.org
ProQuest ABI/INFORM	search.proquest.com
ScienceDirect	www.sciencedirect.com

However, the previous databases do not contain all journals considered to be relevant in step (1). Consequently, those remaining journals (ACM Special Interest Group Publications, Informing Science Journal, MISQ Discovery, and Wirtschaftsinformatik) are searched manually.

(3) The databases above are queried using a keyword-based search. First, we limit the time frame for searching literature from the 1st January 2010 to 31st December 2013. This comparatively short time frame is chosen with respect to the exhaustive literature review by Wiener et al. [177] who use a time frame from 1999 until end of 2009. In order to build upon their findings, to avoid overlaps, and to ensure research continuity we deliberately cover the four year period from 2010 to 2013. The following search string was utilized for the literature review: "offshor* OR off-shor* OR nearshor* OR near-shor* OR (global AND outsourc*) OR (international* AND outsourc*)". The use of wildcards ("*") ensures that different variations of the terms can be discovered. Additionally, the last two search terms aim at identifying publications that do not explicitly use the terms "offshoring" or "nearshoring" and their variations. Further settings include a boolean/phrase search mode, choosing the search field "title, keyword, abstract" and focusing on scholarly peer-reviewed articles (Levy and Ellis [99]) with more than four pages in length (Westner [166]). We use a subject (thesaurus) filter and classification codes in some databases in order to exclude content-wise not relevant research such as offshore power generation or offshore oil exploration. Table 7 illustrates those subject filters with the respective database.

Table 7: Subject filters and classification codes used

Databases	Subject filters/classification codes
EBSCOhost	Information technology
	Offshore outsourcing
	Management
ProQuest ABI/INFORM	8302 - Software & computer services industry
	8651 - Computer industry
	5220 - Information technology management
	5200 - Communications & information management
ScienceDirect	Business, management and accounting
	Computer science

(4) The forward and backward search approach originates from Webster and Watson [163]. They describe this approach as follows: "Go backward by reviewing the citations for the articles [...] to determine prior articles you should consider. Go forward by using the Web of Science [the electronic version of the Social Sciences Citation lndex] to identify articles citing the key articles identified in the previous steps. Determine which of these articles should be included in the review" (Webster and Watson [163, p. 16]). This last activity completes the literature search and aims at collecting an exhaustive set of relevant publications.

An evaluation of sources ensures that only relevant research articles are included (vom Brocke et al. [161]). The above-mentioned process steps (1) to (4) result in a total of 232 literature items, consisting of 179 journal articles and 53 conference contributions (cf. Figure 4): To focus the later content analysis of the publications, we exclude obviously irrelevant research with respect to this literature review. Following Westner [166], the exclusion criteria are:

- non-IS context
- non IS managerial or business-oriented research focus
- conference proceedings that resulted in a journal article
- non original content (such as research proposals and announcements or forewords)

The decision to exclude an individual publication due to the criteria above is based on a content analysis of each publication's title, abstract, or full text. As a result, 95 articles are included in our literature analysis. These include 64 journal articles and 31 conference papers.

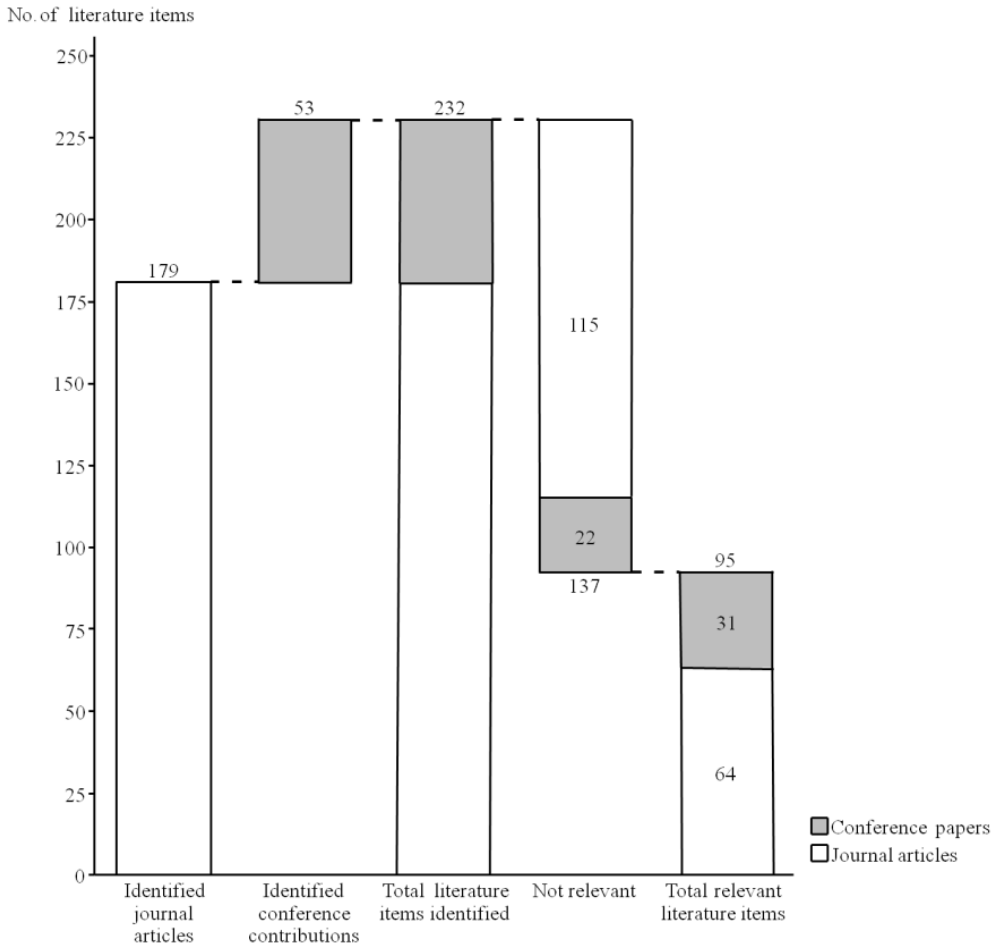

Figure 4: Selection of relevant literature

Literature analysis and synthesis framework

In the fourth process step the relevant literature has to be analyzed and synthesized (vom Brocke et al. [161]). Therefore, we use a systematic research framework following Dibbern et al. [45] and Wiener et al. [177]. The multi-perspective research framework is composed of three perspectives: reference theory, research approach, and research focus, as Figure 5 illustrates.

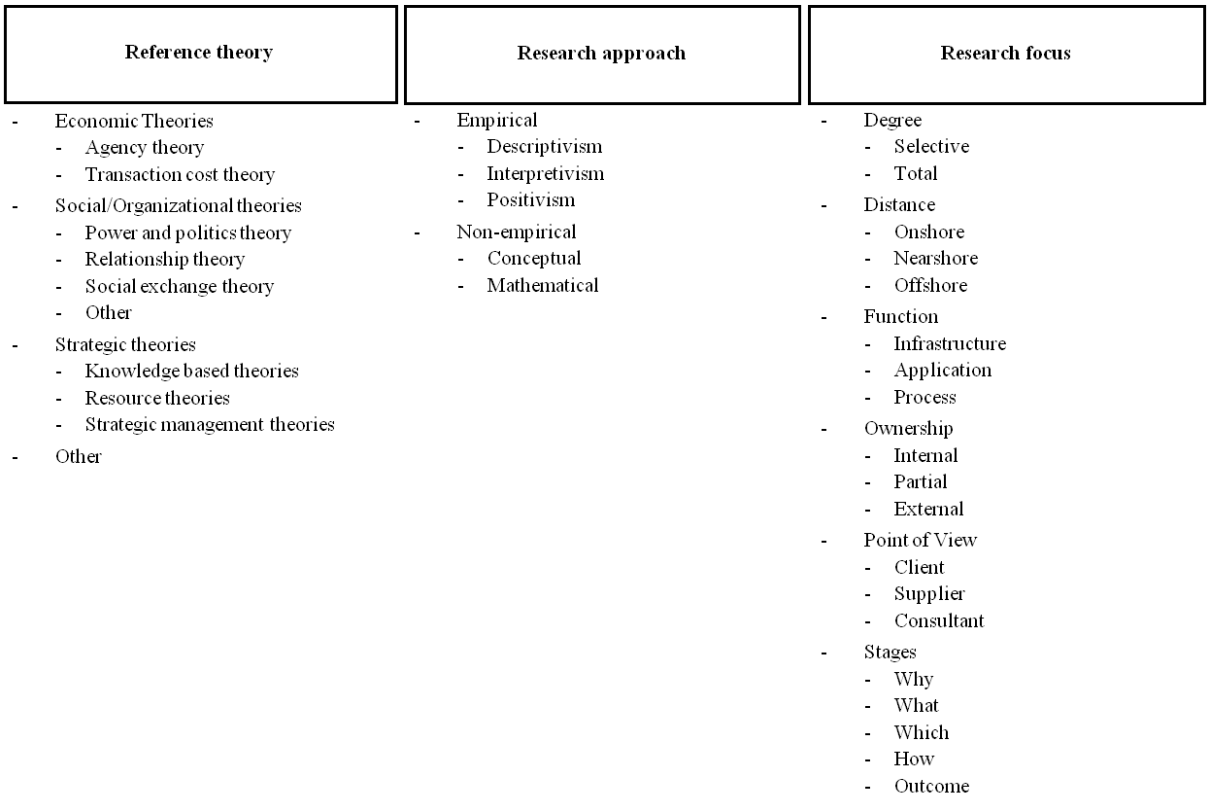

Figure 5: Literature categorization framework (cf. Wiener et al. [177])

(1) Reference theory: The first perspective comprises numerous theories, which researchers use as theoretical foundations for their studies. The relevant research theories are grouped by the following three categories (cf. Table 8). "Strategic theories focus on how firms develop and implement strategies to achieve a chosen performance goal. Economic theories focus on the coordination and governance of economic agents regarding their transactions with one another. Social/organizational theories [...] concentrate on the relationships that exist between individuals, groups, and organizations (Dibbern et al. [45, p. 17]).

Table 8: Overview of theoretical foundations (cf. Dibbern et al. [45, p. 18])

Theories	Level of analysis	Basic assumptions	Main variables	Key authors
Economic theories				
Agency theory	Organizational	Asymmetry of information, differences in perceptions of risk, uncertainty	Agent costs, optimal contractual relationships	Jensen and Meckling [82]
Transaction cost theory	Transaction	Limited rationality, opportunism	Transaction costs, production costs	Coase [36]; Williamson [180]; Williamson [181]; Williamson [182]

Table 9 (cont.)

Social/organizational theories				
Power and Politics theories	Individual, organizational	Power, idiosyncratic interests, and politics play major roles in organizational decision-making	Different degrees of power, organizational politics	Markus [104]; Pfeffer [127]; Pfeffer [128]
Relationship theories	Organizational	Parties in the relationship assume that the outcome of a relationship is greater than that achieved by individual parties separately	Cooperation, interactions, social and economic exchanges	Kern [87]; Klepper [89]
Social exchange theory	Individual, organizational	Participation in exchange occurs with the assumption of rewards and obligation to return rewards	Exchange of activities, benefits/costs, reciprocity, balance, cohesion, and power in exchanges	Blau [24]; Emerson [48]; Homans [78]
Strategic theories				
Knowledge mana-gement theories	Organizational	Organizations need and possess knowledge, and need to manage this knowledge effective-ly	Explicit knowledge and tacit knowledge	Davenport and Prusak [39]; Grant [61]; Hedlund [72]; Kogut and Zander [91]; Nonaka [118]
Resource theories	Organizational	A firm is a collection of resources, and resources are central to a firm's strategy	Internal resources, resources in the task environment	Barney [13]; Penrose [125]; Pfeffer and Salancik [129]; Thompson [156]
Strategic management theories	Organizational	Firms have long-term goals, and they plan and allocate resources to achieve these goals	Strategic advantage, strategies, choice of individuals	Chandler [31]; Miles [112]; Porter [133]; Quinn [138]

(2) Research approach: The second perspective includes the research approach, i.e., a generic or overarching way to conduct research. We adopt Dibbern et al. [45] view and distinguish between research method and its type of epistemology. First, we categorize the research items into empirical and non-empirical research approaches. Empirical research generates knowledge based upon analyzing empirical data from observation. Non-empirical research is not based on specific data (is more abstract and intangible in nature) and generates knowledge through conceptual or quantitative analytical reasoning (Dibbern et al. [45]).

Second, we divide empirical research into the epistemology types descriptivism, interpretivism, and positivism, and non-empirical research into conceptual and mathematical types of epistemology. Descriptive studies are not theoretically grounded and do not have the intention to interpret a phenomenon. Rather, descriptive research attempts to be objective and factual to present the phenomenon unbiased (Orlikowski and Baroudi [121]). Interpretive studies seek to increase the understanding of a phenomenon. Researchers adopt a non-deterministic perspective and study the phenomenon of interest in detail in its natural environment. In order to do this, interpretive research uses idiographic methods, like case studies or action research. Positivist studies test priori-fixed relationships using controlled observation and deduction with the aid of structured scientific instruments. Positivist research allows the use of experimental methods, such as laboratory and field experiments and non-experimental methods, e.g., surveys and field studies. Conceptual studies sort out unstructured thoughts and try to develop frameworks, e.g., for further research or guidelines for management. They are usually illustrative in nature and describe recommendations, steps, and procedures based on the experience of the author. Mathematical studies use numeric models and analyses. They are based on a set of restrictive assumptions and the rationality of the actor's involved (Dibbern et al. [45]).

(3) Research focus: The third perspective consists of six categories which group the research findings. The first four categories deal with degree, distance, function, and ownership of the IS offshoring arrangement (described in section topic conceptualization, p. 73 ff.). The fifth category comprises the point of view. A research paper can focus on the client offshoring IS services to a supplier, or take the viewpoint of the vendor providing IS services from offshore for the onsite client. Furthermore, the client or the supplier may need (external) support from a consulting firm. The consulting perspective comprises the third point of view (Wiener [174]). The sixth dimension is stage. Dibbern et al. [45] adapted the decision-making model of Simon [147] and developed a five-stage IS outsourcing model. Westner and Strahringer [168] as well as Wiener et al. [177] also use the classification into these stages in their comprehensive literature reviews. To ensure research continuity, this literature review also adopts Dibbern et al. [45] approach. The following five stages are used (Westner [167]):

- Stage 1 - why to consider offshoring: examines the determinants or antecedents that lead to the consideration of offshore IS services. Research in this category tries to understand the advantages and disadvantages or risks and benefits associated with IS offshoring.
- Stage 2 - what to offshore: is concerned with functional and structural aspects and looks at the different offshoreable IS functions, as well as regarding the degree and ownership of IS offshoring arrangements.
- Stage 3 - which decision to make: this question deals with the decision to offshore or not and investigates the procedures, guidelines, and stakeholders involved to evaluate the actual selection and to make a final decision.
- Stage 4 - how to offshore: focuses on the structure or conceptualization of the implementation, but does not deal with the (project) outcomes. This stage takes into account, e.g., the selecting of an offshore service provider or managing the offshore arrangement.
- Stage 5 - outcome of offshoring: relates to the results of the implementation of offshoring. This includes experiences and best practice approaches as well as determinants for IS offshoring success.

The first three stages consider the decision process, while stages four and five refer to implementation aspects.

In the next chapter we consolidate the publications' findings along the previously described five IS offshoring stages and synthesize them based on the characteristics of the research framework (cf. section literature analysis and synthesis along IS offshoring stages, p. 84 ff.). After that, we process the overall results and show directions for future research (cf. section summary of findings and implications for future research, p. 114 ff.).

LITERATURE ANALYSIS AND SYNTHESIS ALONG IS OFFSHORING STAGES

We summarize the key findings of our analysis consisting of 95 articles along the stages why (p. 84 ff.), what (p. 87 ff.), which (p. 89 ff.), how (p. 91 ff.), and outcome (p. 106 ff.). For continuity reasons the structure of each stage-chapter follows Wiener et al. [177, pp. 462–478] and contains "a brief overview of the main topics and concepts researched (research focus), the applied research methods and epistemologies (research approach), as well as the used theoretical foundations (reference theory) within the respective stage" (Wiener et al. [177, p. 462]). Each stage is structured by main topics and we try to fit all findings into the same or similar categories as Wiener et al. [177]. Each main topic includes a textual and tabular summary of the respective findings. In the tabular summary, we consolidate the cited constructs by their focus and specify – if applicable – their kind of qualitative (qual) or quantitative (quan) support. After each topic chapter within the stages, we refer to Wiener et al. [177] findings and critically reflect them with regard to our own results. At the end of each stage-chapter, we make critical reference to Wiener et al. [177] prediction of major topics for future research. Finally, a detailed summary of each paper's main aspects, i.e., chosen research method, sample size, and key findings, is annexed (cf. Annotated Bibliography, p. 140 ff.).

Why

In the why-stage researchers examine the (1) benefits and risks associated with IS offshoring and analyze (2) determinants for consideration of IS offshoring as a sourcing option. Papers in this stage seem to focus on benefits and risks of external application and infrastructure offshoring to farshore destinations from the client point of view, and on determinants for consideration of external business process offshoring from the client and supplier perspective. "Why" papers are mainly empirical (seven of eight), are not grounded in theory (six of eight), and focus on external offshoring (five of eight) from the client point of view (six of eight).

(1) Benefits and risks: The findings indicate that benefits arise from cost savings (e.g., Klimpke et al. [90]; Peslak [126]) and different strategic aspects, e.g., access to talent and markets (Dedrick et al. [41]; Gonzalez et al. [56]) as well as more flexibility and speed (Gonzalez et al. [56]; Klimpke et al. [90]). In contrast, IS offshoring is associated with numerous local risks, e.g., different culture and mentality as well as language problems (Gonzalez et al. [56]; Klimpke et al. [90]). On a global level, an increased national unemployment rate and a poor infrastructure in the providers country are risks of IS offshoring initiatives (Gonzalez et al. [56]). Further managerial risks could lead to higher costs, lower quality, and more overhead (Gonzalez et al. [56]; Klimpke et al. [90]). All these risks relate to clients. We identify only one study, which considers risks from an IT service provider perspective (Mathew and Das Aundhe [108]). They identify four service delivery risks, for example, multivendor conflict, and one relationship specific risk, referred to as pricing issues. The identified benefits and risks, grouped by financial and strategic benefits, respectively global, local, managerial, and provider risks are summarized in Table 10.

Comparison to Wiener et al. [177]: Wiener et al. [177] realize that researchers focus on the advantages and disadvantages of application and business process offshoring to farshore destinations. Regarding destination, we find that current research focuses on farshore destinations as well (all of them). However, our results reveal that there has been no research work on business process offshoring recently. Instead, research deals solely with application (two publications) and infrastructure (one publication) offshoring. Furthermore, research focuses on clients' points of view (four of five) and external relationships (three of five, while the remaining are not determined) with a third party vendor. Only one study, Mathew and Das Aundhe [108], takes on the view of the provider and examines risks from the provider's point of view. The remaining ISO benefits and risks are partially similar to those of Wiener et al. [177], e.g., cost savings (Dedrick et al. [41]; Klimpke et al. [90]; Peslak [126]) and cultural differences (Gonzalez et al. [56]; Klimpke et al. [90]). Thus, we are able to sort research findings with respect to benefits and risks into the same categories as Wiener et al. [177].

Table 10: IS offshoring benefits and risks

Focus	Construct	Reference	Support
Financial client benefits	Cost savings	Dedrick et al. [41] Klimpke et al. [90] Peslak [126]	Qual
	Improved cost/benefit ratio	Gonzalez et al. [56]	Qual
Strategic client benefits	Access to talents and markets	Dedrick et al. [41] Gonzalez et al. [56]	Qual
	Concentrate on core competencies	Peslak [126]	Quan
	More flexibility and speed	Gonzalez et al. [56] Klimpke et al. [90]	Qual
	Technical feasibility	Gonzalez et al. [56]	Qual
Global client risks	Increased national unemployment rate	Gonzalez et al. [56]	Qual
	Poor infrastructures at the provider's country		
Local client risks	Different culture and mentality	Gonzalez et al. [56] Klimpke et al. [90]	Qual
	Different time zones		
	Language problems		
	Knowledge transfer	Klimpke et al. [90]	Qual
	Missing domain knowledge		
	Spatial distance		
	Political and legal problems	Gonzalez et al. [56]	Qual
Managerial client risks	Higher hidden costs	Gonzalez et al. [56]	Qual
	Lower quality		
	Additional work/extra costs	Klimpke et al. [90]	Qual
	Communication overhead		
Provider risks	Estimation under uncertainty	Mathew and Das Aundhe [108]	Qual
	Human error		
	Multivendor conflict		
	Pricing issues		
	Technology related risks		

(2) Determinants for consideration: The identified determinants which lead to the consideration of ISO as a sourcing option are grouped by client and supplier institutional and organizational factors. Institutional factors relate to forces that lie outside of the firm's boundary, whereas organizational factors refer to forces that act from within the firm (Lahiri and Kedia [96]). Institutional and organizational factors that drive clients to outsource functions to offshore providers are, e.g., greater cost escalation and existing international experience (Lahiri and Kedia [96]; Whitaker et al. [173]). From a provider's perspective, e.g., greater industry maturity and greater expertise enhancement are institutional and organizational determinants which affect the decision to serve offshore clients (Lahiri and Kedia [96]). Table 11 shows an overview of the determinants for consideration of IS offshoring as a sourcing option.

Table 11: Determinants for consideration of ISO as a sourcing option

Focus	Construct	Influence on (type)	Reference	Support
Institutional factors (client)	Greater advancing ICT	Decision to outsource to offshore provider (+)	Lahiri and Kedia [96]	Qual
	Greater escalating costs			
	Greater intensifying competition			
	Greater skills shortage			
	Greater degree of information technology standardization	BPO offshore outsourcing Intensity (no prove)	Kalaignanam and Varadarajan [84]	-
	Greater intensity of competition in an industry			
	Greater propensity among managers to seek legitimacy for their actions with stakeholders by engaging in conformable behaviors			
	Greater technological intensity			
Institutional factors (provider)	Greater industry maturity	Decision to serve offshore clients (+)	Lahiri and Kedia [96]	Qual
	Greater institutional reforms			
	Greater regulatory assistance			
	Greater talent pool emergence			
Organizational factors (client)	Organizations engaged in onshore ITO	Onshore and offshore BPO (+)	Whitaker et al. [173]	Quan
	Organizations with process capabilities related to codification			
	Organizations with systems capabilities related to IT coordination applications			
	Organizations with international experience	Offshore BPO (+)		
	Large size of the enterprise	Offshore outsourcing (+)	Peslak [126]	Quan
	Specific motivations and risks associated with offshore outsourcing		Gonzalez et al. [56]	Quan
	Organizations that view IT as a competitive advantage or core competency	Offshore outsourcing (-)	Peslak [126]	Quan
	Greater competence retention	Decision to outsource to offshore providers (+)	Lahiri and Kedia [96]	Qual
	Greater experience utilization			
	Greater operating cost reduction			
	Greater talent source accession			
	Businesses that are primarily producers of intangibles-dominant products	Higher BPO offshore outsourcing intensity (no prove)	Kalaignanam and Varadarajan [84]	-
	Businesses with a market-based culture			
	Greater business' investment in self-service technologies			
	Greater customer equity of a business			
	Greater degree of demand cyclicality of the product			
	Greater degree of outcome measurability of a CRM task			
	Greater degree of task programmability in a business			
Organizational factors (provider)	Greater continuous innovation	Decision to serve offshore clients (+)	Lahiri and Kedia [96]	Qual
	Greater experiential sophistication			
	Greater relational learning utilization			
	Greater skills/expertise enhancement			

Comparison to Wiener et al. [177]: Wiener et al. [177] find one article dealing with determinants for consideration of onshore and offshore BPO (Whitaker et al. [172]). This article indicates four major determinants for the consideration of offshore BPO: (1) organizations with a stronger IT infrastructure, (2) organizations with a greater business process knowledge, (3) firm's cost reduction strategy, and (4) its focus on IT innovation (Whitaker et al. [172]). We identify three comprehensive articles focusing on external BPO, two from the client (Kalaignanam and Varadarajan [84]; Whitaker et al. [173]) and one from the supplier perspective (Lahiri and Kedia [96]). These publications show results related to institutional factors from client and provider side, e.g., competitive intensity and industry maturity (Kalaignanam and Varadarajan [84]; Lahiri and Kedia [96]) as well as organizational factors from client and providers point of view, e.g., process capabilities and continuous innovation (Lahiri and Kedia [96]; Whitaker et al. [173]). Further on, we identify two studies which provide additional organizational determinants from clients perspective (outside of the BPO focus), e.g., size of the enterprise and specific motivations and risks associated with offshoring (Gonzalez et al. [56]; Peslak [126]). Overall, these findings include a range of institutional and organizational factors from client and providers perspective extending the identified determinants for consideration of Wiener et al. [177].

Major topics for future research: Wiener et al. [177] stress that most studies have examined demand-side aspects, especially offshoring to farshore destinations. There is a lack of studies focusing on the supply-side and on nearshore sourcing relationships which suggests opportunities for future research. Our literature analysis indicates that two (of eight) studies (Lahiri and Kedia [96]; Mathew and Das Aundhe [108]) examine the supply-side from an offshore destination perspective. Similarly, two further studies from Klimpke et al. [90] and Whitaker et al. [173] consider nearshore and offshore arrangements. The remaining studies focus on the client-side in an offshore setting. Hence, there is still a lack of research focusing on the supply-side, especially to consider providers risks. In addition, future research should investigate nearshore arrangements, particularly to examine specific determinants for nearshore consideration including benefits and risks of nearshoring in comparison to offshoring.

What

Research in the what-stage deals with factors determining the degree of firm's offshoring initiatives and it deals with constructs constituting client-supplier distance. Papers in the "what"-stage are all empirical (with different epistemology types), are not grounded in theory (two of three), and focus on software development and BPO (two and one of three) to farshore destinations (all of them).

Degree and distance dimensions: Only three studies examine the degree of ISO. For example, Luo et al. [102] argue that when knowledge specialization is high, firms tend to choose a joint venture investment. In addition, if process quality is more measureable and modifiable, firms prefer an independent vendor mode. Moreover, challenges related to internal offshoring and offshore outsourcing are similar (Prikladnicki and Audy [137]). This means, that both models face challenges in accordance with, e.g., the organizational structure as well as policies and standards within distributed projects. Regarding distance of ISO, Klimpke et al. [90] identify that German SMEs prefer vendors located in nearshoring countries. The degree and distance dimensions are summarized in Table 12.

Table 12: Degree and distance dimensions of an ISO initiative

Focus	Construct	Influence on (type)	Reference	Support
Degree	Knowledge specialization high	Joint venture (+)	Luo et al. [102]	Quan
	Information security becomes more important	Foreign captive (+)		
	Integration between client and vendor is high			
	SMEs		Klimpke et al. [90]	Qual
	Needed integration within provider is high	Third party vendor (+)	Luo et al. [102]	Quan
	Process quality ist more measurable and codifiability			
	SMEs		Klimpke et al. [90]	Qual
	Collaboration among distributed teams	Offshore outsourcing and internal offshoring (+)	Prikladnicki and Audy [137]	Qual
	Cultural differences in the distributed project(s)			
	Development methodology			
	Levels of dispersion in the distributed project(s)			
	Measurement of distributed software development			
	Nature of the distributed project(s)			
	Organizational structure in the distributed project(s)			
	Perveived distance			
	Policies and standards in the distributed project(s)			
	Project allocation at distributed sites			
	Project management techniques and leadership style			
	Trust acquisition in distributed projects			
Distance	SMEs	Nearshoring (+)	Klimpke et al. [90]	Qual

Comparison to Wiener et al. [177]: In the what-stage, Wiener et al. [177] find papers applying theoretical lenses from various theories which tend to be non-empirical and conceptual. By contrast, our findings are mainly empirical with different epistemology types and not grounded in theory. This suggests that in the last four years more research has been conducted based on theory. In addition, Wiener et al. [177] identify 11 degree and 13 distance constructs. They find different degree determinants which influence the choice about ISO mode positively, e.g., cultural similarity and trust (Chen and Kishore [34]) or negatively, e.g., process modularity and functional system complexity (Chen and Kishore [34]; Li et al. [100]; Tanriverdi et al. [155]). Furthermore, they list a number of distance dimensions that differentiate nearshoring from offshoring (Carmel and Abbott [27]; Vogt et al. [160]). Our analysis results in a range of additional degree determinants which influence the sourcing mode, e.g., knowledge specialization (Luo et al. [102]) as well as level of dispersion (Prikladnicki and Audy [137]) and only one distance construct related to the size of the company (Klimpke et al. [90]). Thus firm's decisions about internal (captive), partial, or external offshoring have been explored more extensively in the last four years than their location-choices. While some degree determinants closely resemble Wiener et al. [177] constructs, such as culture or trust (Prikladnicki and Audy [137]), others extend their findings. On top of that, Wiener et al. [177] identify two studies which address the offshoreable IS functions and services. The first one finds that offshoreability depends on the importance of organization-owned intellectual property and the extent of organizational specificity of the applications being developed or maintained (Murthy [113]). The second one reveals that offshored projects tend to deal with new client-server management information systems applications, developed

on mid-range computers using traditional programming languages like C/C++ (Bagchi et al. [10]). We did not find any research regarding this topic. This is likely due to the fact that suitable IS services are already sufficiently explored. In conclusion, Wiener et al. [177] identify different sourcing models, like "multisourcing" or "two-stage offshoring". We did not find research regarding emerging sourcing models related to the "what"-stage but recognize a few studies that investigate multisourcing arrangements in the "how"-stage (e.g., Beck et al. [15]; Schott [142]).

Major topics for future research: One area meriting future research concerning degree of firm's offshoring initiative is diagnosing possible links between BPO client strategic goals and (captive, independent, or joint venture) mode choices (Luo et al. [102]). According to Prikladnicki and Audy [137], another further research is needed to analyze difficulties faced by companies in different offshoring models and, in particular, the evolution of offshoring software development practices in the internal offshoring model. Overall, we can confirm this need for research relating to the degree of firms' offshoring initiatives and agree with further in-depth investigations which examine factors determining a firm's degree of ISO, especially concerning different sourcing models.

In terms of the distance between client and supplier, Wiener et al. [177, p. 466] literature findings indicate that further research "is needed to examine the overlaps and the differences between client-supplier distance in near- as opposed to farshoring in order to identify the factors that constitute the special nature of respective ISO [information systems offshoring] projects (Chen and Kishore [34]; Vogt et al. [160])". Furthermore, future research should also study the impact of additional firm-level characteristics, such as the extent of global operations, and environment-level trends on the client's risk related behavior along the ISO distance dimension (Hahn et al. [66]). These perceived research gaps still hold true: our analysis reveals no specific research that deals with these topics. We found only one study from Klimpke et al. [90] which addresses the distance dimension.

Finally, Wiener et al. [177] identify research regarding different sourcing models. One study argues that the evolution of two-stage information systems offshoring to multi-stage offshoring requires further research (Olsson et al. [120]). Another one suggests, that researchers should study the impact of different company sizes and management philosophies on the value of a multisourcing strategy (Levina and Su [98]). Again, we did not find any research of different sourcing models referring to the "what"-stage, but found corresponding research in the "how"-stage (e.g., Beck et al. [15]; Schott [142]). We argue, that this topic requires further research in the future and agree with Wiener et al. [177] who argue that such models (like two-stage offshoring) might heavily change existing business models of offshore vendors and create additional management challenges for clients.

Which

The main issues researched in the which-stage refer to factors which affect the decision an organization makes regarding whether to offshore or not as well as processes and models supporting decision-making. Which-research is almost entirely not grounded in theory (five of six) applying empirical research (all of them). Furthermore, research in this stage focuses on application offshoring (five of six) to farshore destinations (all of them).

Various factors influence the sourcing decision, e.g., the ability to manage a firm's own resources and that of its vendors (Dedrick et al. [41]), risk differentials involving relatively high skill services (Hahn et al. [65]) as well as individual heterogeneity (Shi et al. [145]). Based on the identified factors, Dedrick et al. [41] as well as Shi et al. [145] develop models to understand the drivers and processes of offshore sourcing, respectively to support decisions about what to offshore. Another finding suggests, that the level of endogenous and exogenous uncertainty surrounding IS offshoring determines which offshoring mode a client firm adopts (Ahsan et al. [3]). Finally, few studies analyze the decisions to offshore IS development to describe a decision-making process including different stages (Previtali [134]; Šmite et al. [149]). These findings are summarized in Table 13.

Table 13: Decision-making factors, processes, and models

Focus	Construct	Influence on (type)	Reference	Support
Decision-making-model	Behavioral risk scoring model (including heterogeneity) yields real benefits in terms of risk reduction, forgone benefits saving and profits improving	-	Shi et al. [145]	Quan/Qual
	Experience and the criteria used for selecting vendors are the key drivers of heterogeneity			
	Ability to manage a firm's own resources and that of its vendors	Sourcing decision (+)	Dedrick et al. [41]	Qual
	Ability to think strategically and develop principles to guide their offshore sourcing decisions and efforts			
	Access to skills not easily available at home			
	Analyzing all activities in a project for their potential to be offshored			
	Codified and standardized knowledge			
	Documentation practices are applied			
	High extend of government incentives or other policies			
	High labor costs			
	Individual change agents and formal advocacy teams promote offshoring			
	Knowledge transfer practices			
	More mature and modular activities			
	Need for customer contact			
	Risk assessment is a key capability			
	using IT-tools			
Decision-making-process	Each offshore insourcing decision consists of deciding what, where, when, how, and why to insource	-	Šmite et al. [149]	Qual
	Particular decision points can be interrelated and it is essential to align the what, where, when, how to the why			
	Decision making includes the why, what, which, how, and outcome stage	-	Previtali [134]	Qual
	Decision not to resort to consultants			
	Decisions in terms of ideal in house/onsite/offshore ratio			
	Types and sizes of projects best suited for offshore			
Location decision factors	Discounted wages involving relatively lower skill services	Decision for offshore location (+)	Hahn et al. [65]	Quan
	Host countries that have wages			
	Increased productivity on the part of the host country			
	Risk differentials involving relatively higher skill services			
	Risk profile of the host improves relative to that of the firm's home country			
	Greater cultural differences	Decision for offshore location (-)		
	Discounted wages and relative risk differentials have weaker influence on the attractiveness of services offshore project locations that are nearshore than for those further from the home market	-		
Uncertainty and firm's sourcing decision	Operating in host countries with high endogenous and high exogenous uncertainty	Decision for a captive offshoring model (+)	Ahsan et al. [3]	Qual
	Operating in host countries with high endogenous and low exogenous uncertainty	Decision for a joint venture offshoring model (+)		
	Operating in host countries with low endogenous and high exogenous uncertainty	Decision for a third party offshoring model (+)		
	Operating in host countries with low endogenous and low exogenous uncertainty	Decision for an onsite captive offshoring model and changing after a time (+)		

Comparison to Wiener et al. [177]: Wiener et al. [177] decide to consider the "which"-stage as a part of the "how"-stage, due to the difficult content-wise separation between the decision process and its implementation. As a result of our literature search, we were able to identify research primarily addressing the decision making process per se, so that, in contrast to Wiener et al. [177], a clear distinction between the "which"- and the "how"-stage is possible. Hence, we examine those stages separately and describe the research results related to the decision making process along the "which"-stage. Extending Wiener et al. [177] findings, we identify further factors which influence the sourcing decision, e.g., complexity, labor cost, and uncertainty (Ahsan et al. [3]; Dedrick et al. [41]). Furthermore, we find additional research concerning decision-making. Two publications describe a decision making process model based on five similar interrogatives for offshoring IS functions (Previtali [134]; Šmite et al. [149]). Furthermore, we find one publication from Hahn et al. [65] addressing the location decision and examine different factors that impact offshore or nearshore location decisions, e.g., discounted wages and relative risk differentials.

Major topics for future research: According to Wiener et al. [177], future research needs to examine vendors' decisions to subcontract work packages to suppliers (two-stage offshoring). From our perspective, this research gap still exists: the research we find focuses exclusively on client firms and does not incorporate vendor aspects. Another area meriting future research is the impact of uncertainties on the IS offshoring model decision in various regions and the issue of clients' evaluations of endogenous and exogenous uncertainty and how they manage the uncertainty (Ahsan et al. [3]). Furthermore, it would be interesting to examine further firm-level factors relevant to the decision to choose nearshoring or offshoring. In this context, the firms decision to transfer work to nearshore could be an additional future research topic (Hahn et al. [65]).

How

Research in the "how"-stage comprises (1) transfer and management of knowledge, (2) ISO project management challenges and (3) approaches, (4) governance and control, (5) relationship management, (6) location selection as well as (7) team organization and management of globally distributed project teams. "How"-papers are mainly not grounded in theory (37 of 50). If they are grounded in theory, the most frequently applied theories are social and organizational ones: researchers rely on social exchange theory (seven findings) as well as social identity, inter-personal conflict, configuration, and organizational mindfulness theory (one finding each). The research in this stage is dominated by empirical research (48 of 50) using mainly interpretive case studies (39 of 50). Finally, how-research is mainly focusing on offshoring (47 of 50) of software development services (43 of 50) to an external third party supplier (39 of 50).

(1) Transfer and management of knowledge: This section is divided into the subgroups knowledge transfer factors, knowledge processes and roles, as well as knowledge and learning activities. The key findings are summarized in Table 14 to Table 16.

Knowledge transfer factors: A range of studies examine the knowledge transfer process between client and vendor and identify factors which influence it positively or negatively. For example, Huong et al. [79] argue that good impressions and willingness to cooperate facilitate the knowledge transfer process between Japanese and Vietnamese software companies, while communication barriers and cultural differences hinder it. Additionally, only one study examines the knowledge transfer between multiple globally distributed vendors and identifies influencing factors, for example, the structure of knowledge being transferred (Schott [142]).

Knowledge processes and roles: Regarding knowledge processes, studies emphasize different types of knowledge being transferred and propose process models explaining how knowledge is delivered (Chen and McQueen [33]; Feng et al. [50]; Schott [142]). To bridge boundaries effectively, Wang et al. [162] develop a process of boundary formation and spanning activities. In addition to that, they describe the role of "boundary spanners" who engage in navigating and negotiating boundaries. A second role of the "Bridge system engineer" has a similar area of responsibility. This role is supposed to close the communication and cultural gap and thus improving the business relationship between the source and the recipient of the knowledge transfer process (Huong et al. [79]).

Table 14: Factors influencing knowledge transfer

Construct	Influence on (type)	Reference	Support
Knowledge receiver's level of knowledge	Inter-organizational knowledge transfer (+)	Schott [142]	Qual
Knowledge receiver's mindset			
Organizational characteristics			
Structure of the knowledge to be transferred			
Good impressions	Knowledge transfer process (+)	Huong et al. [79]	Qual
Willingness to cooperate			
Communication barriers	Knowledge transfer process (-)		
Cultural differences			
Lack of common rules			
Lack of equivalence in individual competence			
Available and capable or trained receiving resources	Easiness of transfer (+)	Smite and Wohlin [148]	Qual
Available support from the sending site			
Clear and communicated vision			
Clear vision of the end state			
Competent and available receiving resources			
Competent and motivated sending resources			
Competent, available, and active receiving resources			
Deliberate and discussed decision			
Easily maintainable product architecture			
Independent, decoupled product			
Long product life cycle			
Low market pressure			
Mature product			
Mature receiving organization			
Simple or small product			
Small number of customers			
Stepwise transfer			
Sufficient documentation			
Sufficient transfer time			
Well-established transfer process			
Avoid rushed and ad hoc execution	Software transfer (+)		
Ensure efficiency			
Ensure product maintainability			
Ensure resource availability, capability, and motivation			
Establish the transfer process			
Evaluate the product-specific feasibility			
Evaluate transfer readiness			
Codified knowledge through formal training	Client-vendor knowledge transfer (+)	Williams [179]	Quan
Tacit knowledge through embedment within the client			
Client support	Learning from client (+) Learning about client (+)	Deng and Mao [42]	Quan
Knowledge articulation			
Organizational size and labour market conditions has an influence on identifying KM initiatives	-	Mathrani et al. [110]	Qual
Communication inception includes: media selection, introduction	-	Wende et al. [165]	Qual
Effective knowledge transfer encompasses explicit and embedded information transferred			
Key aspects of an OOSD transition phase are: communication inception, effective knowledge transfer, knowledge discourse, and project environment			
Knowledge discourse contains: interaction and communication between knowledge source and recipient			
Project environment consists of the elements: scope, distance, cultural differences, tech. resources, control, competencies, and capabilities			
Code of conduct set by the client and vendor	Privacy preservation of the offshored data (+)	Nath and Bejou [116]	Qual
Strength of privacy preservation law in vendors' country			

Table 15: Knowledge processes and roles

Focus	Construct	Reference	Support
Knowledge transfer process	Transferring syntactic knowledge	Feng et al. [50]	Qual
	Transforming pragmatic knowledge		
	Translating semantic knowledge		
	Joint cross-vendor learning based on implementation experiences	Schott [142]	Qual
	Knowledge multiplication across the global delivery network		
	Transfer of practical design and implementation knowledge		
	Transfer of the fundamental technological concepts		
	Structured transfer stages: initiation, implementation, ramp-up, and integration	Chen and McQueen [33]	Qual
	Structured transfer stages were utilized by novices to transfer embrained and encoded knowledge		
	The lower the level of recipient absorptive and retentive capacity, the more difficulty the recipient will have in acquiring tacit and complex types of knowledge, and the more formal structured knowledge transfer approach the recipient will need to adopt		
	The transfer types "unstructured adaption" and "unstructured fusion" were preferred by recipients at the competence respectively proficiency level to transfer embodied and embedded knowledge		
	The transfer type "unstructured copy" was used by advanced beginners to transfer encoded and embodied knowledge		
	Unstructured KT processes: unstructured copy, unstructured adaption, and unstructured fusion		
Organizational role	Bridge system engineer	Huong et al. [79]	Qual
	Boundary spanners	Wang et al. [162]	Qual
Process of boundary formation and spanning activities	Knowledge boundary: idiosyncratic and confidential knowledge, protection policy, knowledge gap	Wang et al. [162]	Qual
	Structural boundary: differences in functionality, self-centric attitude, high-level conflicts		
	Subculture boundary: subculture differences, countercultural subcultures		

Table 16: Knowledge and learning activities

Focus	Construct	Reference	Support
Knowledge management activities/ initiatives	Audits (internal/international)	Mathrani et al. [110]	Qual
	Common meeting places		
	Cultural similarity		
	Deployment of employees		
	Documentation		
	Domain skills		
	Formal methods (version control)		
	Groupware tools		
	Incentives		
	Informal change management practices		
	Informal meetings		
	Mentoring		
	Online social networks		
	Peer reviews		
	Portals		
	Project management		
	Quality management		
	Rewards		
	White papers		
	For knowledge application activity, the focus is towards improving quality of services provided and always trying to meet customers' preferences	Hamzah et al. [67]	Qual
	For knowledge storage activity, the knowledge developed is external and informal		
	Group discussions, e-mails and intranet are normally used to disseminate knowledge		
	Informal and formal sharing knowledge within group stimulate knowledge innovation		
	Knowledge acquisition activity focuses on extracting knowledge from internal and external resources		
Learning activities	Benefits from learning tasks depend on the cognitive load imposed on the learner	Krancher and Dibbern [93]	Quan and Qual
	Cognitive load is driven by the expertise of the onsite coordinator		
	Cognitive load is driven by the use of three load regulation strategies: choosing tasks with lower or higher intrinsic complexity, specification, and supportive information		
	use of learning tasks positively related with learning		

Knowledge and learning activities: To understand how organizations manage their knowledge resources, several studies determine organizations' knowledge and learning activities. Mathrani et al. [110] identify 19 tacit and explicit knowledge-based activities and show how they interact with each other to extend the organizational knowledge repository that is shared across distributed sites. Hamzah et al. [67] explain knowledge acquisition, knowledge application, knowledge dissemination, knowledge innovation, and knowledge storage activities of an offshore outsourcing company. Finally, the findings of Krancher and Dibbern [93] demonstrate that indi-

vidual learning activities are important for a successful knowledge transfer. The results indicate how learning activities can be effectively combined in the transition phase of software maintenance offshoring projects.

Comparison to Wiener et al. [177]: Wiener et al. [177] identify six journal articles and conference proceedings dealing with different aspects of knowledge transfer, e.g., managerial mechanism for effective knowledge transfer between client and vendor or organizational practices that facilitate knowledge sharing. One publication by Gregory et al. [63] shows that stimulating the motivation at the individual level and the right balance between formal and informal mechanism facilitate effective knowledge transfer. Research by Ghosh and Scott [54] indicate organizational practices, e.g., vendor mentoring and joint quarterly training sessions which facilitate knowledge sharing. Overall, we find 13 articles published during the last 4 years focusing on knowledge transfer and management aspects. This finding indicates a sharp increase of research in this topic. Our analysis results in a range of factors influencing knowledge transfer between client and vendor as well as between vendors, e.g., formal training and client embedment and also knowledge receiver's level of knowledge. This clearly extends Wiener et al. [177] findings. Furthermore, we find similar and additional (organizational) practices enabling knowledge transfer, e.g., mentoring and deployment of employees. In addition to this, we identify two new organizational roles, the "Bridge System Engineer" (Huong et al. [79]), acting as coordinator mediates and enhances the relationship between client and service provider as well as the "boundary spanner" (Wang et al. [162]) as an agent to bridge boundaries. In conclusion, our analysis reveals that there are new findings regarding processes of knowledge transfer, explaining how knowledge is delivered, as well as highlighting the important role of learning activities for successful knowledge transfer.

(2) ISO (project) management challenges: ISO (project) management challenges can be divided into three subgroups: challenges related to cultural differences, distance-induced challenges, and challenges arising from psychological contracts between client and vendor (cf. Table 17). A range of studies identify culture-related factors, e.g., different perception between quality of work (van Marrewijk [158]), intolerance (towards foreigners) and directness (Stetten et al. [153]), and fear of mistakes (Beimborn and Wolf [17]). Another challenge is distance which impacts the level of effort (Aubert et al. [7]). Finally, the psychological contract in global software development collaborations represents another challenge. This includes challenges related to organizations` readiness for method use and the mindset for IT activities (Aydin et al. [9]) as well as individual heterogeneity in managers' risk perceptions (Shi et al. [145]).

Comparison to Wiener et al. [177]: With respect to ISO (project) management challenges, Wiener et al. [177] identify aspects which focus on cultural distance, geographic distance, and psychological contract. Our findings confirm that these topic areas are still subjects of research (e.g., Aubert et al. [7]; Aydin et al. [9]; van Marrewijk [158]). In particular, cultural differences encompass a major challenge for offshoring cooperation as, for instance, Stetten et al. [153] mention. In addition to Wiener et al. [177] results, we find research examining different distance factors like perceived distance as a key antecedent of effort. Further on, we identify psychological aspects, i.e., action readiness and mindset for IS offshoring as well as managers' risk perceptions and their individual heterogeneity.

(3) ISO (project) management approaches: To meet (project) management challenges, a variety of approaches exists (cf. Table 18). These include different relationship management actions to reduce the negative impact of geographical and temporal distance as well as culture and language challenges on the relationship quality (Beimborn and Wolf [17]). Furthermore, Jain et al. [80] identify six project management activities that client managers need to approach to effectively manage IT offshore outsourcing testing projects. To respond to the challenge of solving problems in offshore IS development projects, Bellah et al. [18] argue that organizations use different strategies that require critical thinking and creative problem solving. Moreover, Jain et al. [81] identify mechanisms for mitigating vendor silence about project related-issues in offshore client-vendor relationships. According to Wende and Philip [164], instant messaging can contribute to mitigate cultural differences. In a multivendor context, Beck et al. [15] determine mindful management practices to manage vendor portfolios effectively. Another finding of Li [101] illustrates the process of building improvisation and how it can lead to an increase in innovation. Finally, Prifling [135] indicates, that the balanced use of collaborative and directive leadership is complementary and helps in overcoming quality expectation problems between client and vendor.

Table 17: ISO (project) management challenges

Focus	Construct	Reference	Support
Cultural differences	Ability of planning and reaching deadlines	Van Marrewijk [158]	Qual
	Different perception between quality of work		
	Handling of conflicts in superior-subordinate relationships		
	Language paradox (understanding each other's English)		
	Paradox of global project success (misgiving that more high-end jobs will be outsourced if successful)		
	Perceived ability to have direct contact with clients		
	Cognitive flexibility influence the relationship between social identity and interpersonal conflict	Vogt et al. [159]	No
	Differences in social identities at the national, organizational and professional level give rise to inter-personal conflict in IT offshore outsourcing relationships		
	Informality and looseness leads to insufficient formal communication which affects control and cost risk	Stetten et al. [153]	Qual
	Intolerance (towards foreigners) and directness leads to emotionally-laden communication which affects personnel, transaction cost, and time risk		
	Low sense of responsibility, indirectness, over-self-esteem and resistance to criticism leads to insufficiently open communication which affects quality as well as production and transaction cost risk		
	Cultural distances	Beimborn and Wolf [17]	Qual
	Language barriers		
	Peruvians avoid communication of disagreement		
	Peruvians fear mistakes		
Distance	Cultural distance, geographic distance and the need for formalization impact the level of effort	Aubert et al. [7]	Qual
	Effort is influenced by cultural and geographical distance and the length of relationship history		
	IT affects the effort to manage an offshore activity by moderating the impact of geographic distance on the effort required		
	Perceived distance		
Psychological contract	Organizations have achieved readiness for method use and the mindset for IT activities	Aydin et al. [9]	Qual
	Pace of improvement and overall learning in the organizations is small		
	Readiness for flexible working, tracking of requirements change, efficient division of work, and systematic communication is still inadequate		
	The mindset for dealing with cultural difference has increased		
	Individual heterogeneity exist and is one ingredient of managers' risk perceptions	Shi et al. [144]	Quan

Table 18: ISO (project) management approaches

Focus	Construct	Influence on (type)	Reference	Support
Communication technology	High usage of instant messaging	Mitigating cultural differences (+)	Wende and Philip [164]	Qual
Improvisation	Improvisation is associated with good or poor innovation performance	-	Li [101]	Qual
	Improvisation is developed in relation to culture			
	The formation of improvisation consists of two processes: building structural ties and building relational ties			
	Uncertainty levels and time pressure are not sufficient conditions for the emergence of improvisation			
Leadership capabilities	Technical IT expertise and background is important for effective leadership	-	Prifling [135]	Qual
	use and right balance of different leadership styles	Overcoming quality expectation problems (+)		
Multivendor management practices	Cross-organizational trial-and-error learning processes should be leveraged early in the project	-	Beck et al. [15]	Qual
	Inter-vendor power relations should be determined on the basis of expertise			
	Multichannel communication should be structured around the context			
	Relational knowledge should be viewed as an enabler but not as a standard recipe for inter-firm cooperation			
Project management activities	Developing project estimates	-	Jain et al. [80]	Qual
	Investing in vendor capabilities			
	Managing collocated inter-organizational project team			
	Managing distributed inter-organizational project team			
	Receiving project status updates			
	Sharing project knowledge in a multivendor environment			
Process framework and mechanism to mitigate vendor silence	Client management philosophy and realizing the presence of vendor silence	-	Jain et al. [81]	Qual
	Client manager characteristics and identifying mechanisms to mitigate vendor silence			
	Identifying mechanisms to mitigate vendor silence and consequences of using silence mitigation mechanisms			
	Identifying mechanisms to mitigate vendor silence and vendor manager characteristics			
	Realizing the presence of vendor silence and identifying mechanisms to mitigate vendor silence			
	Vendor manager characteristics and realizing the presence of vendor silence			
	Cultural adaptation	Vendor silence mitigation (+)		
	Social mechanisms	Structural mechanisms and cultural adaptation (+)		
	Structural mechanism	Cultural adaption (+)		
Relationship management actions	Documentation as much as possible	Reduce the negative impact of geographical/temporal distance on the relationship quality (+)	Beimborn and Wolf [17]	Qual
	Knowledge exchange/trainings			
	More personal treatment			
	Personal contact/Face-to-face meetings			
	Smooth communication			
	Technology fosters communication			
	using Scrum promotes communication			
	Awareness of cultural behavior	Reduce the negative impact of culture challenges on the relationship quality (+)		
	Bridging staff			
	Personal contact/Face-to-face meetings			
	Language courses	Reduce the negative impact of language challenges on the relationship quality (+)		
Respond to challenges	Organizations use different strategies to respond to the challenge of solving problems that require critical thinking and creative problem solving	-	Bellah et al. [18]	Qual
	People-focused strategy: training employees to act as consultants			
	Task-focused strategy: tightly-controlled processes, project management structure and overlapping roles and responsibilities			

Comparison to Wiener et al. [177]: We find new research addressing different (project) management actions to meet (project) management challenges, e.g., the use and right balance of different leadership styles (Prifling [135]) and coping strategies that client managers have to employ effectively to deal with changing project management activities (Jain et al. [80]). These diverse activities, practices, strategies, etc. represent first approaches in handling IS offshoring initiatives.

(4) Governance and control: In terms of governance and control, the research findings can be divided into the (amount of) control modes, control dynamics, and the inter-play of project control and inter-organizational learning (cf. Table 19). The majority of publications focus on the (amount of) control modes and identify factors behind changes in variety and intensity of control mechanisms (Hartmann et al. [70]; Hartmann et al. [71]; Remus and Wiener [141]). Regarding control dynamics, Gregory et al. [64] indicate different control configuration and explain how offshoring project managers make adjustments to the control configuration periodically. Finally, Beck and Schott [14] argue that the inter-play between control mechanisms and organizational learning helps in mitigating cultural differences.

Comparison to Wiener et al. [177]: In terms of governance and control, Wiener et al. [177] research findings encompass the use and the dynamics of coordination mechanisms, the evolution and dynamics of control portfolios, and different forms of controls. The literature in our analysis mainly focuses on control modes (five publications) and the amount of control modes (four articles). Different studies, for example, Heumann et al. [74] examine factors that impact clients' choices of control modes and investigate the interaction effects of different control mechanisms. Furthermore, there are new research findings with regard to organizational learning (Beck and Schott [14]; Krancher and Slaughter [94]). These studies examine the interplay of control and organizational learning, which supports the mitigation of cultural differences as well as controls, to enforce learning activities against barriers to knowledge sharing.

(5) Relationship management: This section is divided into the subgroups relationship management factors, relationship management practices and strategies, as well as client and supplier middle management capabilities and roles. The key findings are summarized in Table 19 to Table 21.

Relationship management factors: From a vendor's perspective, Palvia et al. [124] identify a set of 21 critical issues which influence the relationship quality negatively. In addition, Søderberg et al. [150] identify important aspects, for example, a commitment of senior management and strong employee identification, which are essential for the establishment and execution of a strategic partnership to an European client. Moreover, Bharadwaj et al. [22] examine important relationship factors from a client's perspective and argue that a client's focus is more on BPO outcome than on the service provider's competencies for building a successful relationship.

Relationship management practices and strategies: Referring to relationship management practices, Abbott et al. [1] develop a framework which enriches the understanding of complex cross-cultural practices and processes. Furthermore, Boden et al. [25] analyze the impact of different practices like intense face-to-face contacts on single- and double-loop learning and ascertain that organizational learning can be challenging for offshore relationships. Moreover, the results of Zimmermann [186] suggest that negative offshoring attitudes are in some cases associated with, e.g., a lack of shared team identity and blockages of communication. In terms of relationship management strategies, Mathew [106] identify different strategies to mitigate ex post risks, for example, risk and benefit sharing mitigate shirking risks.

Client and supplier middle management capabilities and roles: The study of Willcocks and Griffiths [178] identifies client and supplier middle management capabilities and roles ensuring the relationship chemistry and adaptability needed for effective delivery of IS services.

Table 19: Use of control modes and changing control amounts

Focus	Construct	Influence on (type)	Reference	Support
(Amount of) control modes	High monochronicity	Behavior control (+)	Heumann et al. [74]	Quan
	High power distance	Clan control (+)		
	Low power distance	Self control (+)		
	Intensive testing	Amount of formal control (+)	Hartmann et al. [70]	Qual
	Quality problems of project deliverables in early projects			
	High communication intensity in the systems development phase	Amount of clan control (+)		
	Quality problems during the project	usage of new control mechanisms (+)		
	Good quality of deliverables	Amount of control (-)		
	Long project duration	Amount of control (+)	Hartmann et al. [71]	Qual
	Clients with offshoring experience often adopt the proposed control best practices of own (internal) projects	-		
	Clients without offshore experience often adopt the proposed control best practices of their vendor			
	Informal control is often introduced due to the client or the vendor project managers' experience			
	High offshore team involvement	Amount of formal and informal control (+)	Remus and Wiener [141] Hartmann et al. [70]	Qual
	Quality problems during the project	Amount of formal control (+)		
	High level of trust between client an OSD provider	Amount of formal control (-) Amount of informal control (+)		
	Clients with high offshoring experience	Amount of formal behavior control (+)	Remus and Wiener [141] Hartmann et al. [71]	
	Increasing offshore team size	Amount of control (+)		
	Increasing project volume			
	High project complexity	Amount of formal control and informal clan control (+)		
	Strategically important project	Amount of formal outcome control (+)		
	Formal and clan control are needed to enforce learning activities against barriers to knowledge sharing	-	Krancher and Slaughter [94]	Qual
	Learning activities can take place, when the knowledge barriers are overcome, expertise and trust increases and allows for more self-control			
	Self-control is central to learning			
	Self-control may be hampered by low level of expertise and trust			
Control dynamics	Control configuration decisions need to be made including the dimensions control type, control degree, and control style	-	Gregory et al. [64]	Qual
	Fulfilled expectations trigger the use of trust-based control			
	Gaps in client-vendor shared understanding trigger the use of coordinated control			
	Unfulfilled expectations trigger the use of authoritative control			
Inter-play of project control and inter-organizational learning	Influence of informal control and inter-organizational learning on formal control changes over time	-	Beck and Schott [14]	Qual
	Inter-play between control mechanisms and organizational learning helps in mitigating cultural differences in global multisource ISD outsourcing projects			

Table 20: Factors impacting effective relationship management

Focus	Construct	Influence on (type)	Reference	Support
Factors influencing relationship	Clients' focus is more on BPO outcome than on the service providers' competencies for building a successful relationship	-	Bharadwaj et al. [22]	Quan
	Attrition of company's staff by the client before completion of knowledge transfer	Relationship quality (-)	Palvia et al. [124]	Qual
	Attrition of the client's staff before completion of knowledge transfer			
	Availability of experts on the client's processes (or systems) during knowledge transfer			
	Client's readiness to reengineer process before outsourcing			
	Client's short term objective focused only on cost savings (rather than long-term benefits)			
	Gathering data to make a compelling proposal to the client			
	Inadequate staffing at the client end			
	Lack of communication with the client during critical phases of designing the processes			
	Lack of documentation of client's existing processes (or systems)			
	Lack of involvement from the client's top management team			
	Language differences between our employees and the client's employees			
	Legal and regulatory concerns			
	National culture differences between our country and the client's country			
	Organizational culture differences between our company and the client			
	Poorly designed network infrastructure at our own offshore site			
	Poorly designed network infrastructure at the client site			
	Reaching agreement with the client on the ROI (Return on Investment)			
	Resistance from client's employees to outsourcing			
	Time differences between our country and the client's country			
	Unclear communication channels with the client			
	Unclear roles and responsibilities of the client's employees			
	Cross-cultural understanding and sensitivity	Establishing strategic partnership (+)	Søderberg et al. [150]	Qual
	Mutual trust and transparency			
	Senior management commitment and employee identification with the projects			

Table 21: Relationship management practices and strategies

Focus	Construct	Influence on (type)	Reference	Support
Cross-cultural practices and processes	Creolization embodies the interactive, contentious and creative processes of network expansion, mutual sensemaking, cultural hybridity and identity multiplicity	-	Abbott et al. [1]	Qual
	The creolization practices describe the complexity of cross-cultural practices in offshore collaborations			
Offshoring attitudes and resulting behaviors	Negative offshoring attitudes	Communication (-) Knowhow transfer (-) National subgroup divides (+) Shared team identity (-) Task transfer (-)	Zimmermann [186]	Qual
Operational and strategic learning	Articulation work was demanding for both teams and differences related to the applied practices	-	Boden et al. [25]	Qual
	Intense face-to-face contacts, broad participation in meetings, and alignment of efforts were important factors for the teams			
	Organizational learning can be challenging for offshore relationships			
Relationship management strategies to mitigate ex post risks	Dependence balancing and relationship-specific investments	Risk of service provider lock-in (-)	Mathew [106]	Qual
	Risk and benefit sharing as a (client) relationship management strategy	Shirking risks (-)		
	Trustworthiness of vendors, consisting of vendor's credibility and benevolence	Risk of loss of control over information assets (-)		

Table 22: Client and supplier middle management capabilities and roles

Focus	Construct	Reference	Support
Client middle management capabilities	Architecture planning	Willcocks and Griffiths [178]	Qual
	Business systems thinking		
	Contract facilitation		
	Contract monitoring		
	Informed buying		
	Leadership		
	Making IT and process work		
	Relationship building		
	Vendor development		
Client middle management roles	Architecture planner and designer		
	Business systems thinker		
	Contract facilitator		
	Contract monitor		
	Informed buyer		
	Leader		
	Relationship builder		
	Technical fixer		
	Vendor developer		
Supplier middle management capabilities	Behavior management		
	Business management		
	Customer development		
	Domain expertise		
	Governance		
	Leadership		
	Organizational design		
	Planning and contracting		
	Process improvement.		
	Program management		
	Sourcing		
	Technology exploitation		
Supplier middle management roles	Behavior manager		
	Business manager		
	Customer developer		
	Domain expert		
	Governance specialist		
	Leader		
	Organization designer		
	Planner and contractor		
	Process engineer		
	Program manager		
	Sourcing specialist		
	Technology exploiter		

Comparison to Wiener et al. [177]: The research findings of Wiener et al. [177] mainly include challenges of offshore relationships, how clients can mitigate risk posed by these challenges as well as factors for a successful relationship. Our findings extend Wiener et al. [177] results with additional aspects relating to the aforementioned subgroups. We find a range of new factors, which impact the effective (strategic) relationship, e.g., lack of communication with the client during critical phases (Palvia et al. [124]) as well as senior management commitment and employee identification with the projects (Søderberg et al. [150]). Furthermore, we identify client and supplier middle management capabilities and roles helping to ensure relationship quality (Willcocks and Griffiths [178]) as well as strategies to mitigate ex-post risks (Mathew [106]). Additionally, research findings include cross-cultural and organizational learning practices, e.g., four interactive creolization processes (Abbott et al. [1]) and different articulation work practices as well as their impact on single- and double-loop learning (Boden et al. [25]). Finally, we find offshoring attitudes and resulting behaviors influencing relationship management of offshoring initiatives (Zimmermann [186]).

(6) Location selection: Two studies deal with nearshore location choice (cf. Table 23). The first study results in a range of characteristics which impact nearshore location decisions (Abbott and Jones [2]) while the second publication determines a number of factors which may downplay the advantages of a shorter client-supplier distance (Markov et al. [103]).

Table 23: Location selection

Focus	Construct	Influence on (type)	Reference	Support
Nearshore location characteristics	Economic weakness leading to dependence on foreign influences	Nearshore location decision (+)	Abbott and Jones [2]	Qual
	Existence of local well-educated workforce			
	Familiarity with American business culture and use of English			
	Favorable government policies			
	Former British colonial heritage			
	Geographic proximity, similar time zones and travel accessibility			
	Government incentives			
	Government technology policies			
	Lack of local software market			
	Lack of suitably trained human resources			
	Location attractiveness			
	Lower wage costs			
	Quality of infrastructure and access to international airports			
	Touristic allure leading to client perception problems			
Factors mitigating distance advantages	High task standardization	Physical advantages (no prove)	Markov et al. [103]	-
	Labor cost differences			
	Decreasing linguistic adaptation requirement	Linguistic advantages (no prove)		
	Language proficiency requirement			
	Native speaker support			
	Limited supplier experience	Resource-based advantages (no prove)		
	Small size and availability of labor force			
	24-hour knowledge factories	Temporal advantages (no prove)		
	Availability			
	Historical proximity of farshoring countries	Cultural advantages (no prove)		
	Increasing international awareness			
	Similarity of IT cultures			
	Exchange rate volatility	Political/economical advantages (no prove)		

Comparison to Wiener et al. [177]: Wiener et al. [177] identify only ISO supplier selection criteria referring to firm and location characteristics. We did not find any research addressing firm level characteristics but have identified a number of location characteristics, e.g., location attractiveness (Abbott and Jones [2]) and, in addition to Wiener et al. [177] result, factors which may mitigate distance advantages of IS nearshoring over offshoring, for example, high task standardization (Markov et al. [103]).

(7) Team organization and management: The findings include different aspects of team organization and management. These contain two publications that deal with team configurations (Chakraborty et al. [30]; Maruping and Ahuja [105]) as well as two articles (Shah et al. [143]; Sidhu and Volberda [146]) addressing (coordination) practices (the first one was available online in 2013, but published in 2014). The resulting studies of Oshri [122] and Mathrani and Mathrani [109] focus on organizational aspects, i.a., the evolution process of captive centers and profiling strategies of IT offshore provider organizations

Table 24: Organization and team management

Focus	Construct	Influence on (type)	Reference	Support
Evolutionary path of captive centers	Ability to support the growth and guide their evolution from basic to hybrid and shared models to divestment	-	Oshri [122]	Qual
Global software testing practices	Giving excessive importance to numbers and ignoring task complexity	Quality of testing tasks at offshore sites (-)	Shah et al. [143]	Qual
	High motivation and appreciation	High-quality testing (+)		
	Team structure	Pressure (+) Quality (-)		
Onshore-offshore task coordination	Horizontal communication	Onshore–offshore task coordination (+)	Sidhu and Volberda [146]	Qual
	Joint onshore-offshore performance evaluation			
	Proper timing of an offshore team's involvement			
	Senior management emphasis			
	Shared-identity programs	Onshore–offshore task coordination (-)		
	Work-context standardization programs			
	Effective task coordination emanates bottom-up	-		
Profiling strategies of vendor organizations	IT providers' strategies depend on ownership status by clients or third parties, their organizational size, and cultural differences between client and provider nations.	-	Mathrani and Mathrani [109]	Qual
Team structure	Project managers attach importance to contract provisions when determining how project teams should be assembled	-	Maruping and Ahuja [105]	Quan
	Social and technical subsystem risks impact contract enforcement as well as future demand			
	The role of contract en-forcement provisions shape the level of tem-poral dispersion of IS project teams			
Vendor's team configurations	Configurations differ in size of the sub-teams and nature of the ISD-related tasks	-	Chakraborty et al. [30]	Qual
	In situations of high volatility of environment and low offshoreability of work, the "ideal type" is the thick-at-client configuration			
	In situations with low volatility of environment and high offshoreability of work, the "ideal type" is the thin-at-client configuration			
	Offshoring vendor organizations deploy three different types of configurations: thin-at-client, thick-at-client, and hybrid			

Comparison to Wiener et al. [177]: The research findings of Wiener et al. [177] include different aspects related to team organization and management, e.g., collaboration models for global virtual teams, factors influencing performance of global virtual teams, or the contribution of social ties and knowledge sharing for successful collaboration. Our findings indicate further research addressing organizational and team management issues, i.e., IS project team structures and configurations (Chakraborty et al. [30]; Maruping and Ahuja [105]), (coordination) practices (Shah et al. [143]; Sidhu and Volberda [146]) as well as strategic aspects of organizations (Mathrani and Mathrani [109]; Oshri [122]). It is noticeable, that half of the studies examine the vendor perspective (three of six publications), while only one publication focus on client point of view (the remaining deal with the client and vendor side). Relating to Wiener et al. [177] findings, this suggest that research on vendor-specific aspects, e.g., vendors' team configurations (Chakraborty et al. [30]) or profiling strategies of vendor organizations (Mathrani and Mathrani [109]), has been increasing during the last four years. Furthermore, Wiener et al. [177] identify a set of determinants which influence ISO contract choice. They differentiate them into client (for example, company size), project (for example, project duration), and vendor aspects (for example, availability of trained personnel). Our literature analysis does not indicate studies dealing with this topic at this stage.

Major topics for future research: The following paragraphs outline topics for future studies along the described "how"-subcategories (1) transfer and management of knowledge, (2) ISO (project) management challenges and (3) approaches, (4) governance and control, (5) relationship management, (6) location selection, as well as (7) team organization and management.

(1) Transfer and management of knowledge: Schott [142] conducts one of the first studies to examine coordination amongst vendors in IS multisourcing arrangements. She states that future research is needed to identify further factors which influence the vendor-vendor knowledge transfer. Further studies should also deal with developing guidelines and finding feasible solutions to improve the knowledge transfer process in OSD projects (Wende et al. [165]). We can confirm that these topics are currently underexplored, so there is potential for future studies to address this lack of research. Another issue of interest is the role of coordinators involved in international knowledge transfer processes. In this context, future studies could examine the performance of these coordinators in offshoring projects (Huong et al. [79]). Moreover, Krancher and Dibbern [93] examine how learning activities impact learning effectiveness. They identify further ideas for future research, e.g., to investigate dynamic aspects of learning during transition to explain how sequences in the combination of learning activities impact learning effectiveness. In addition, future studies should examine whether or under what conditions supportive information (such as extensive documentation) can substitute for expertise. An additional research direction in the context of learning is the exploration of the antecedents of learning from client and learning about client and their effects on the relationship between the client and vendor in offshoring arrangements (Deng and Mao [42]). Addressing some of the areas for potential research that Wiener et al. [177] describe, we could identify knowledge processes and roles as well as KM initiatives (cf. Table 15 and Table 16) which impact the effective transfer of different types of knowledge and contribute to a better understanding of the relationships in globally distributed teams. In summary, we find 13 articles related to the topic of knowledge transfer. This sharp increase of publications actually closes some research gaps but also identifies further important research areas.

(2) and (3) ISO (project) management challenges and approaches: Vogt et al. [159] suggest that the evaluation of culture-related differences between offshore and nearshore projects would be a topic for valuable research. In this context, there is also a need for further research examining the impact of cultural differences on nearshoring risks (Stetten et al. [153]). Wiener et al. [177] find that further research is needed in order to explore the dynamics of cultural influences at different levels respectively case contexts. Among the challenges of cultural differences, it would be interesting to clarify the notion of distance in offshore relationships (Aubert et al. [7]). Topics for valuable research in this context are the role of perceived distance, how it influences effort as well as its connection to quality of relationship and outsourcing success. To bridge distance, future research may explore how media can be proactively selected to facilitate the communication process (Wende and Philip [164]). Furthermore, Jain et al. [80] suggest that client managers' responsibilities change in an offshore environment. These changing responsibilities, the contextual factors that influence them, and coping strategies to manage offshore projects could be further examined in future studies. In a second publication of Jain et al. [81], they propose to explore other constructs which possibly offer alternate explanations for how structural and social mechanisms facilitate vendor silence mitigation. Another potential research topic is, according to Wiener et al. [177] findings, to understand and assess the effectiveness of multishoring and how this sourcing paradigm will cause organizations to adapt their project methodologies and practices (Gannon and Wilson [52]). We

could identify a small number of research findings addressing aspects of multishoring (Beck et al. [15]; Beck and Schott [14]; Jain et al. [80]) and confirm therefore that this topic is an interesting path for future studies. Finally, further research needs to investigate the development of agile (project) management techniques suitable for ISO (Aydin et al. [9]; Wiener et al. [177]).

(4) Governance and control: Hartmann et al. [70] state that there is a need for further research in future to analyze differences between off- and nearshoring with regard to control choices and amounts within specific projects. In addition, Remus and Wiener [141] expand this future direction point on the impact of the controller's and controllee's national culture on the selection of control modes. Referring to Wiener et al. [177] findings, a further promising route for future studies is to investigate the influence of cross-cultural factors and flexibility on control modes (Prifling et al. [136]; Yadav et al. [185]). We already found initial studies which conducted research related to this topic (Heumann et al. [74]; Heumann et al. [75]; Heumann et al. [76]). Regarding control modes, future studies should explore the role and amount of self-control in IS projects and focusing on successfully exercised control mechanisms, i.e., realized controls (Remus and Wiener [141]). Moreover, further research needs to investigate the interplay of formal and informal management mechanisms and learning in multisource OSD projects (Beck and Schott [14]).

(5) Relationship management: The interaction between capability maturity model (CMM) level and the type of sourcing engagement (i.e., operational, strategic, or tactical) is an interesting topic for future exploration (Palvia et al. [124]). To provide a deeper understanding of strategic partnerships, Søderberg et al. [150] suggest an investigation on how power relations between European clients and multinational vendor's from India are enacted in the daily collaborative practices.

(6) Location selection: Abbott and Jones [2] suggest that future work needs to understand the characteristics of (new) offshore and nearshore locations and to explore if and how they contribute to the success of off- and nearshoring projects. Furthermore, future research should examine the ambiguity in research related to the influence of distance, i.e., whether distance matters in offshore arrangements and whether nearshoring relationships face similar challenges as offshoring relationships (Markov et al. [103]).

(7) Team organization and management: Future studies should research inter-organizational team structures, e.g., to find out which team structure reduces the pressure and facilitating practices that produce high-quality products as well as to examine alternative methods (other than quantitative ones) for measuring aspects such as productivity and quality (Shah et al. [143]). In this context, Chakraborty et al. [30] propose further investigation to identify and evaluate distributed OSD configurations based on further parameters other than flexibility. Reflecting to Wiener et al. [177] findings, the development of a coordination framework for globally distributed teams is a topic for future work (Kotlarsky et al. [92]). In addition, Sidhu and Volberda [146] suggest that future research may examine the dynamics of onshore-offshore teams and discover further structural and process-related variables influencing task coordination mechanisms.

Outcome

Research in the "outcome"-stage examines (1) ISO best practices for ISO implementation and (2) determinants for project performance and project success or failure. "Outcome"-papers are dominated by empirical research (32 publications) and are positivist (20 publications). The research in this stage is mainly not grounded in theory (21 of 34 publications). If theories are applied, the most frequently are social exchange theory (six articles), resource theory (five articles), and transaction cost theory (five articles). The research findings focus on external ownership (26 ones) to offshore destinations (31 ones).

(1) ISO best practices: ISO best practices consist of guidelines taking into account middle management capabilities and roles (Willcocks and Griffiths [178]), lessons learned regarding economic, organizational, personal, and strategic relational issues (Haried and Ramamurthy [69]), management practices which moderate the negative impact of cultural and social distance and affect the ISD offshoring outcomes (Spohrer et al. [151]), a method for requirements validation in OSD (Wiener and Stephan [176]), as well as an offshoring process including the phases development, planning, steady management, and transition (Candiotto and Gandini [26]). Table 25 summarizes ISO best practices.

Table 25: ISO best practices

Focus	Construct	Reference	Support
Guidelines for taking account of the middle management capabilities and roles	Assess the most crucial supplier middle management competencies	Willcocks and Griffiths [178]	Qual
	Invest in ways to help suppliers develop middle management capabilities		
	Retain core client middle management capabilities		
	Reward client and supplier adaptability		
Lessons learned aspects	24x7 (follow the sun) work cycle may not always be justified or realized	Haried and Ramamurthy [69]	Qual
	Be aware of the potential mismatch of client and vendor expectations		
	Change management is critical to offshoring		
	Cultural homogeneity is important for effective communication		
	Impart education on the hidden costs of IT offshoring		
	Importance of face-to-face communication continues		
	Offshore vendor personnel on the client's site are generally home bound for career opportunities		
	Offshoring facilitates long lasting impact on thinking horizon of individuals		
	Offshoring is a gateway for strategic opportunities		
	Offshoring is a necessity for survival in today's competitive global environment		
	True partnership is not necessarily an equivalent goal of both parties involved		
	Utilize creative ways for effective communication		
Management practices	Boundary spanning and offshore partner empowerment moderates the negative influence of social and cultural distance and affects ISD offshoring outcomes	Spohrer et al. [151]	Qual
Method for requirements engineering	RPM facilitates the transfer of knowledge and is suitable for offshore context	Wiener and Stephan [176]	Qual
	RPM has a positive impact on the inter-organizational interaction and control		
Offshoring process	Four phases of an IT offshoring project are: Planning, transition, steady management, and development described with activities, resources involved, and goals	Candiotto and Gandini [26]	Qual

Comparison to Wiener et al. [177]: In terms of ISO best practices, Wiener et al. [177] identify ten findings dealing with capability, cultural, process, project and supplier management practices as well as practices for agile processes, candidate evaluation, and knowledge transfer. Our research findings (5 papers) expand these practices relating to capability (Willcocks and Griffiths [178]), cultural (Spohrer et al. [151]), knowledge (Wiener and Stephan [176]), and process management aspects (Candiotto and Gandini [26]). Furthermore, we find a new aspect in comparison to Wiener et al. [177]. This includes general lessons learned aspects regarding economic, organizational, personal, and strategic relational issues which address different practices and contribute to IS offshoring success (Haried and Ramamurthy [69]).

(2) Determinants for performance/success: Hereinafter, we divide determinants for performance/success into (1) client, (2) client-vendor, and (3) vendor aspects. Table 26 to Table 28 give an overview of ISO performance determinants from these perspectives.

Client-aspects: The findings from a client's point of view focus on factors which influence costs (Handley

and Benton [68]; Whitaker et al. [171]) as well as quality and time outcomes (Whitaker et al. [171]). Furthermore, a range of studies identify factors which directly affect IS success or performance (Chauhan et al. [32]; Kalaignanam and Varadarajan [84]; Mathew and Chen [107]; Westner and Strahringer [169]; Wiener et al. [175]).

Table 26: ISO client performance determinants

Focus	Construct	Influence on (type)	Reference	Support
Client aspect	Greater geographic distance	Control cost (+) Coordination cost (+)	Handley and Benton [68]	Quan
	Greater scale of the service			
	Breadth of tasks	Control cost (+)		
	Wider geographic dispersion			
	High degree of service customization	Control cost (-)		
	Greater cultural distance	Control cost (-) Coordination cost (-)		
	Offshore outsourcing IT	Higher returns (no prove)	Peslak [126]	Quan
	use of quality performance measurements for BPO	Quality benefits (+)	Whitaker et al. [171]	Qual
	Quality benefits from BPO	Cost benefits (+)		
	use of cost performance measurements for BPO			
	Quality benefits from BPO	Time benefits (+)		
	use of time performance measurements for BPO			
	Good customer interaction skills	Success of offshoring ERP implementations (+)	Chauhan et al. [32]	Qual
	Good ERP package skills			
	Good project management skills			
	High business process skills			
	High degree of scalability			
	Meaningful personnel split between onsite/offshore			
	Proficient language level			
	Right choice of work to be offshored			
	Offshoring expertise	Project suitability (+) Knowledge transfer (+) Liaison quality (+) Offshore project success (no prove)	Westner and Strahringer [169]	Quan
	Trust in OSP	Knowledge transfer (+) Liaison quality (+) Offshore project success (+)		
	Knowledge transfer	Offshore project success (+)		
	Liaison quality			
	Project suitability			
	Outcome control	Offshore project performance (+)	Wiener et al. [175]	Quan
	Outcome control strengthens the extent to which clan control enhances…			
	Misappropriation of information assets	OSD success (-)	Mathew and Chen [107]	Quan
	Shirking			
	Norm of solidarity and flexibility reduce the negative impact of shirking risk on…	OSD success (+)		
	CRM offshore outsourcing intensity	Customer relationship performance (no prove) Financial performance (no prove)	Kalaignanam and Varadarajan [84]	-

Client-vendor aspects: In terms of research focusing on client and vendor related aspects, the studies are concerned with factors influencing success (Sudhakar [154]) and failure (Philip et al. [130]; Philip et al. [132]; Philip and Wende [131]) of OSD projects. Furthermore, one study determines factors which affect transition performance critically (Beulen et al. [21]) while another one focuses on contract types and their impact on service quality and vendor profit margins (Gopal and Koka [59]).

Table 27: ISO client-vendor performance determinants

Focus	Construct	Influence on (type)	Reference	Support
Client vendor aspect	Knowledge transfer	Transition performance (+)	Beulen et al. [21]	Qual
	Transition governance			
	Communication difficulties between onsite and offshore team members	Failure in OSD projects (+)	Philip et al. [130]	Qual
	Consecutive failures to meet deadlines			
	Ineffective schedule planning and/or management			
	Issues not resolved in a reasonable time			
	Lack of communication between clients and vendors			
	Lack of documented requirements			
	Lack of top management support and commitment to the project			
	Lack of transparency and openness to discuss about problems/delays			
	Misunderstanding of requirements by the offshore team			
	No change control process in the project			
	No quality assurance procedures in place			
	No questions asked by vendor team members			
	Onsite coordinator cannot communicate effectively with offshore team members			
	Project manager cannot effectively lead the offshore team and communicate with clients			
	Project scope changes constantly			
	Project team members do not have required business knowledge			
	Project team members do not have required technical skills			
	Serious quality issues in deliverable items			
	Stakeholder involvement and participation are missing			
	Unclear and ambiguous business specifications			
	Unclear roles and responsibilities			
	Awareness of shared work context		Philip et al. [132]	Qual
	Collaboration between teams			
	Common project execution structures			
	Onshore-offshore team coordination capabilities			

Focus	Construct	Influence on (type)	Reference	Support
	Project team building efforts			
	Team member competencies			
	Assuring normality or continuity		Philip and Wende [131]	Qual
	Client concerns ignored			
	Hands-off approach			
	Inadequate onshore-offshore project experience			
	Inadequate onshore-offshore project experience			
	Keep future business projects intact			
	Lack of intensive collaboration between clients and vendors			
	Lack of intensive collaboration between vendor onsite and offshore teams			
	Late intervention			
	Missing onshore-offshore project experience			
	Missing risk monitoring mechanism			
	Optimism to deliver			
	Tight schedule			
	Trusting the reputed vendor			
	Underestimation of offshore project context			
	Waterfall methodology			
	Contract types	OSD project success (+)	Sudhakar [154]	No
	Good cultural understanding			
	Efficient communication			
	Efficient knowledge transfer			
	Good relationship between client and vendor			
	High level of trust			
	FP contracts	Higher service quality (+)	Gopal and Koka [59]	Quan
	FP contracts and higher quality	Higher vendor profit margins (+)		

Vendor aspects: From a vendor's point of view, the studies focus primarily on factors which influence software quality (Deng et al. [43]; Deng and Mao [42]; Gopal et al. [57]; Gopal and Gosain [58]; Kannabiran and Sankaran [85]; Palvia et al. [123]; Srivastava and Teo [152]) or cost aspects (Deng and Mao [42]; Srivastava and Teo [152]). Furthermore, a range of studies concentrate on factors influencing OSD or BPO project success as well as performance (Heumann et al. [76]; Lahiri et al. [97]; Narayanan et al. [114]; Narayanan et al. [115]; Raman et al. [140]; Xu and Yao [184]). Finally, further research identifies factors which have an effect on user satisfaction (Bairi and Manohar [11]; Palvia et al. [123]; Wreford et al. [183]).

Table 28: ISO vendor performance determinants

Focus	Construct	Influence on (type)	Reference	Support
Vendor aspects	Communication and control	Reliability (+) usability (+)	Kannabiran and Sankaran [85]	Quan
	Higher level of process maturity	Functionality (+) Reliability (+) Maintainability (+)		
	Higher requirements uncertainty	Functionality (-) Reliability (-)		

Focus	Construct	Influence on (type)	Reference	Support
		Maintainability (-) usability (-) Performance (-)		
	Knowledge transfer and integration	Functionality (+)		
	Technical infrastructure facilities	Reliability (+)		
	Trained personnel available for the project	Functionality (+) Reliability (+) Performance (+)		
	Effectiveness of e-communication channel	OSD project success (+)	Xu and Yao [184]	Quan
	Extent of knowledge sharing			
	Knowledge sharing has a mediating effect on the relationship between use of methodology and …			
	use of software development methodology			
	Client communication barriers (due to interorganizational differences) and client coordination	Software quality (-)	Gopal et al. [57]	Quan
	Client (external) coordination	Software quality (+) Development speed (-)		
	Vendor team (internal) coordination			
	Increases team size	Development speed (+)		
	Increased team size (interaction with vendor team coordination)	Development speed (-)		
	Temporal boundaries	Software quality (-) Development speed (+)		
	Avoid damaging customer relationships	user satisfaction for the client (+) Competitive advantage and customer retention (+)	Bairi and Manohar [11]	Qual
	Improve domain skills			
	Improve service management skills			
	Keep and win customers			
	Captive centers offer advantages which support opaque indifference leading to…	Customer satisfaction and BPO success (+)	Wreford et al. [183]	Qual
	Communication effectiveness	Project performance (+) Customer satisfaction (+)	Narayanan et al. [114]	Quan
	Project planning			
	Team stability			
	Impact of project planning is lower in maintenance and development projects than in testing projects	Project performance (+)		
	Impact of team stability is higher in testing projects than in maintenance and development projects			
	Positive effect of communication effectiveness is stronger in maintenance and development projects than in testing projects			
	Project planning, communication effectiveness and team stability have positive interaction effects			
	High team stability, the influence of communication on	Project performance (-)		
	Impact of team stability is stronger in mature projects than in new ones	Customer satisfaction (+)		
	Human capital	Firm performance (+)	Lahiri et al. [97]	Quan
	Management capability moderates the relationship between human capital, organizational capital, as well as partnership quality and…			
	Organizational capital			

Focus	Construct	Influence on (type)	Reference	Support
	Partnership quality			
	Client-specific capabilities	Relational service quality (+)	Deng et al. [43]	Quan
	Project management capabilities			
	Trust			
	High power distance	IS offshoring project performance (-)	Heumann et al. [76]	Quan
	High power distance moderates the relationship between self-control and…	IS offshoring project performance (+)		
	Contract management capability	Partnership quality (+) Service quality (+) Deliverable quality (+)	Palvia et al. [123]	Quan
	IT-management capability			
	Relationship management capability			
	Partnership quality	Operational performance (+)		
	Deliverable quality	Strategic performance (+) Satisfaction (+)		
	Service quality	Satisfaction (+)		
	Mechanistic governance moderates the relationship between…	Contract specificity and quality performance (+)	Srivastava and Teo [152]	Quan
		Contract specificity and cost performance (+)		
		Relational governance and cost performance (-)		
	External process integration	BPO performance (+)	Narayanan et al. [115]	Quan
	Internal and external process integration mediate the effect of end customer orientation and IT capability on…			
	Internal process integration			
	Internal process integration mediates the impact of task complexity on…			
	Boundary spanning activities	Formal contols (+)	Gopal and Gosain [58]	Quan
	Higher collaborative culture-based clan control	Project quality (+) Project efficiency (-)		
	Higher outcome control efficiency	Project efficiency (+)		
	Higher outcome control quality	Project quality (+) Project efficiency (-)		
	Higher software process control	Project efficiency (+)		
	Global mindset	Performance of OSP's (+)	Raman et al. [140]	Quan
	Partnership quality			
	Partnership quality mediates the association between global mindset as well as talent management and …			
	Partnership quality mediates the association between talent management and			
	Talent management			
	Client support	Vendor's learning from client (+) Vendor's leaming about client (+)	Deng and Mao [42]	Quan
	Knowledge articulation is more important than interaction experience in knowledge transfer	-		
	Learning about client	Cost control (+)		
	Learning from client	Project quality (+)		
	Level of client support and leaming about client in the direct model is higher than in the mediated model	-		

Comparison to Wiener et al. [177]: Regarding determinants of success, Wiener et al. [177] categorize their findings along aspects essential to client (six items), client-vendor (seven items), and vendor (four items). Furthermore, they classify one research finding into the category project aspects. Our literature analysis shows that this categorization still applies and we find a range of research (8 publications related to client-aspects, 5 to client-vendor-aspects, and 14 to vendor-aspects) extending Wiener et al. [177] results in the aforementioned three main categories. We find client-aspects which are similar to Wiener et al. [177], e.g., continuous controlling or measurement of project outcomes and the use of project management techniques. In contrast, our analysis reveals further aspects which influence ISO performance. These are, e.g., project suitability and liaison quality (Westner and Strahringer [169]) as well as norm of solidarity and flexibility (Mathew and Chen [107]). Regarding client-vendor aspects, we recognize a number of determinants which Wiener et al. [177] already identified. These include, amongst others, misunderstanding of requirements and the lack of change control process in the project (Philip et al. [130]), as well as trust and culture (Sudhakar [154]). The study of Sudhakar [154] includes a comprehensive literature review to gather critical success factors and orders it based on their number of citations. Despite it being solely literature-based, we include the author's findings due to the comprehensiveness of his work. Furthermore, we note that three of five from the client-vendor related publications focus on determinants of failure (Philip et al. [130]; Philip et al. [132]; Philip and Wende [131]). Research related to vendor aspects has been increasing considerably in the last four years. Therefore, we find a lot of studies examining factors which influence project performance (e.g., Heumann et al. [76]; Xu and Yao [184]) and customer satisfaction (e.g., Narayanan et al. [114]; Wreford et al. [183]) from the vendor's point of view.

Major topics for future research: Due to the quantity of findings concerning future research topics, we decided to cluster them into the following topics belonging together: (1) culture and control, (2) economic benefits, (3) quality and satisfaction, (4) success and failure, and (5) vendor aspects.

(1) Culture and control: The cultural effects on the control-performance relationship, specifically how to avoid or mitigate negative effects, is an interesting future research topic according to Heumann et al. [76]. Further research is also needed to analyze the link between control choices and performance as well as the impact of boundary spanning on control and performance (Gopal and Gosain [58]). Wiener et al. [175] suggest that further studies should examine joint control effects on project performance. Additional studies may investigate the use of mechanistic governance as an explicit control mechanism for contract implementation and efficient contract performance (Srivastava and Teo [152]). However, Handley and Benton [68] state that future studies should examine how a specific dimension of culture influences management of inter-organizational relationships. In Addition, they argue that further research is needed to analyze development practices which firms can employ to mitigate control and coordination difficulties. Focusing on BPO performance, Narayanan et al. [115] suggest to examine the role of administrative, relational, and structural governance mechanisms for improving BPO performance in future. Whitaker et al. [171] confirm the need for future research in BPO, particularly to study performance outcomes of onshore and offshore BPO.

(2) Economic benefits: We find only studies which focus on cost aspects in an offshoring context (e.g., Srivastava and Teo [152]; Whitaker et al. [171]). An investigation of cost benefits in a nearshore-arrangement is an interesting future research topic. Based on Wiener et al. [177] findings, another interesting topic is to examine whether a smaller client-vendor distance, for example in nearshore projects compared to offshore projects, leads to lower extra costs (Dibbern et al. [46]).

(3) Quality and satisfaction: Gopal and Koka [59, p. 512] highlight "[…] the need for researchers to shift their focus from cost of quality to examine the returns to quality [...] [and to] examine the interrelationship between contracts, quality, and margins in the offshore domain [...]". Palvia et al. [123] find that partnership quality is not associated with satisfaction. They state that this issue needs to be investigated further in future. They also suggest that there is a need for future research to explicitly examine the relationship between client and vendor satisfaction. According to Wiener et al. [177] findings, a positive relationship between ISO and (end) customer satisfaction exist, hence the influence of different ISO functions and ownership models on customer satisfaction should be examined in further studies (Whitaker et al. [170]).

(4) Success and failure: Sudhakar [154, p. 294] find that further research should be "based on the impact of offshore project leader and client manager, their skills, behavior and competencies and their relationship to offshore software project success." With regard to project failure, Philip and Wende [131] state that more analysis considering both sides (client and vendor) of failure are necessary to shed more light on the processes that lead to failure.

(5) Vendor aspects: Lahiri et al. [97] propose four future research directions in relation to how vendors

resources and capabilities influence firm performance: (1) comprehend how successful and failed vendor firms grew or declined since their founding, (2) determine the influence of valuable assets on firm performance when the offshore vendor increases their business or product scope, (3) examine various performance implications of vendor's resources and capabilities as industry rivalry increases, and (4) investigate how management capability influences external and internal process integration. In addition to firm performance, Deng et al. [43] state that future research studies may analyze how to retain relational performance (i.e., difference between a vendor's performance with a particular client and that with its average client base) and how to divide it between partners. In a second publication, Deng and Mao [42] examine the linkage between knowledge transfer and performance. Accordingly, future research should investigate the antecedents of learning from the client and learning about the client and their effects on the relationship between the client and vendor as well as performance. Further on, Beulen et al. [21] suggest that future studies could study transition performance in scenarios with multiple service providers.

SUMMARY OF FINDINGS AND IMPLICATIONS FOR FUTURE RESEARCH

Research by source and year

Wiener et al. [177] find a steady increasing number of publications per year, which confirm the rising attention of ISO. They identify 96 articles published in the time period 1999 to 2009. Most of those articles were published in the last three years (65 articles from 2007 to 2009). From 2010 to 2013, we find a total of 95 articles (cf. Table 29). We included one article that was available online in 2013 but was published in print at the beginning of 2014. However, most of the results are published in 2011 (38 ones). The amount of publications over the time-period of four years confirms the continuously increasing attention of ISO as a research area.

Most articles (64) were published in journals. Journals which regularly publish ISO articles are: (1) Journal of Global Information Management (JGIM) with four publications, (2) Institute of Electrical and Electronics Engineers Transaction on Engineering Management (IEEE-TEM) with three publications, (3) Journal of Information Technology Case and Application Research (JITCAR) with three publications, and (4) Journal of Management Information Systems (JMIS) with three publications. The remaining 51 articles where published in 37 different journals. These results indicate that ISO is a well-established and distinct research field by now. One third of the publications were published in conference proceedings (31 papers). Two conferences with a U.S. focus (AMCIS, HICSS), one from the European region (ECIS), and one including the Asia Pacific region (PACIS) continuously contained ISO papers. In comparison to Wiener et al. [177], significantly more articles were published at ECIS (six papers), while more Germany-specific conferences published only two ISO papers (WI conference). These results imply an increasing ISO research attention from a European point of view.

Table 29: ISO publications by source and year

Category	Source	2010	2011	2012	2013	2014	∑
Journals	Academy of Information & Management Sciences Journal (AIMSJ)	1					1
	Business & Information Systems Engineering (BISE)	1		1			2
	Communications of the Association for Information Systems (CAIS)		1				1
	Decision Sciences (DS)	2					2
	Economia Aziendale Online 2000 Web (EA2000)	1					1
	European Journal of Information Systems (EJIS)	1		1			2
	Expert Systems with Applications (ESWA)		1				1
	IEEE Transactions on Engineering Management (IEEE-TEM)		3				3
	Information & Management (I&M)	1					1
	Information and Software Technology (INFSOF)		1			1	2
	Information Systems Journal (ISJ)		1				1
	Information Systems Management (ISM)	1		1			2
	Information Systems Research (ISR)	1					1
	Information Technology & People (ITP)	1					1
	Institute of Electrical and Electronics Engineers Software (IEEE Software)	1	1				2
	International Business Review (IBR)		2				2
	International Journal of Business and Social Science (IJBSS)		1				1
	International Journal of Information Management (IJIM)				1		1
	Journal of Enterprise Information Management (JEIM)	1	1				2
	Journal of Global Information Management (JGIM)		2	2			4
	Journal of Global Information Technology Management (JGITM)				1		1
	Journal of Information Technology (JIT)		1				1
	Journal of Information Technology Case & Application Research (JITCAR)	1	1		1		3
	Journal of International Management (JIM)				2		2
	Journal of Management Information Systems (JMIS)		2	1			3
	Journal of Operations Management (JOM)		1		1		2
	Journal of Systems and Software (JSS)				1		1
	Journal of the Academy of Marketing Science (JAMS)			1			1
	Journal of Universal Computer Science (JUCS)			1			1
	Journal of World Business (JWB)			1	1		2
	Management Information Systems Quarterly (MISQ)				1		1
	Management Information Systems Quarterly (MRR)			1			1
	Management Information Systems Quarterly Executive (MISQE)	1			1		2
	Management International Review (MIR)		1				1
	Organizacija				1		1
	Production and Operations Management (POM)		1				1
	Scandinavian Journal of Information Systems (SJIS)		1				1
	Scandinavian Journal of Management (SJM)	1					1
	Strategic Outsourcing: An International Journal (SOIJ)		2				2
	Systems Research and Behavioral Science (SRBS)			1			1
	The Journal of Strategic Information Systems (JSIS)				2		2
Conferences	Americas Conference on Information Systems (AMCIS)	1	2	2	1		6
	Australasian Conference on Information Systems (ACIS)		2				2
	European Conference on Information Systems (ECIS)	1	2	1	2		6
	Hawaii International Conference on System Sciences (HICSS)	1	4		2		7
	International Conference on Information Systems (ICIS)			2	1		3
	Mediterranean Conference on Information Systems (MCIS)		1				1
	Pacific Asia Conference on Information Systems (PACIS)	2	1		1		4
	Wirtschaftsinformatik (WI)		2				2
∑	-	**20**	**38**	**16**	**20**	**1**	**95**

Reference theory

Regarding reference theories used (cf. Table 30), it is clear that most papers (71 items) lack a clear theoretical foundation. If they have a theoretical foundation, social and organizational theories are dominating. The most commonly used theory in this category is control theory (seven items). Further important theories include agency theory and transaction cost theory (economic, each four items), as well as resource and knowledge-based theories (strategic, six and four items). Our results are similar to Wiener et al. [177] and confirm, that ISO publications of the last four years still lack a clear theoretical foundation. This observation is to some extent unexpected. After all, the ISO research field has established itself and is not at an early stage of research anymore. Thus, one could have expected more theory-driven positivist research by now which is not the case. Future research should address this gap and try to extend the ISO body of knowledge by applying more theory-reliant research approaches.

Table 30: Reference theories of relevant ISO publications

		Strategic theories			Economic theories		Sozial/organizational theories				Other	N/a
Stage	∑	Resource theories	Strategic management theories	Knowledge-based theories	Agency theory	Transaction cost theory	Social exchange theory	Power and politics theory	Relationship theory	Other	Other theories	N/a
Why	8	1		1	1	1	1					6
What	3					1	1					2
Which	6									1	1	5
How	50			3	1	1	7			3	1	37
Outcome	34	5			2	5	6			1		21
∑	**101**[1]	**6**	**0**	**4**	**4**	**8**	**15**	**0**	**0**	**5**	**2**	**71**

Research approach

Almost all reviewed ISO publications (96 of 101 items) make use of empirical research methods (cf. Table 31). Consistent with Dibbern et al. [45] literature review in IS outsourcing and Wiener et al. [177] literature review in ISO, our results confirm that interpretive research (58 items) still dominates the ISO research field, followed by positivist research (34 items). Interpretive research is used more often (compared to positivist research) across the stages why, what, which, and how. Only papers in the outcome stage employ positivist methods more frequently than interpretive ones. Wiener et al. [177] and our findings thus contradict the general dominance of positivist research in the IS domain (Chen and Hirschheim [35]; Orlikowski and Baroudi [121]) and suggest an increasing acceptance of interpretive research in the IS research field. Descriptive and conceptual research is rarely used and none of our findings employ a mathematical epistemology type.

[1] We identified six articles, which belongs to two stages. Hence, 95 articles assigned to 101 stages. Subsequent these six items are separated by stages.

Table 31: Research approaches of relevant ISO publications

		Approach		Epistemology				
Stage	∑	Empirical	Non empirical	Interpretivism	Positivism	Descriptivism	Conceptual	Mathematical
Why	8	7	1	4	2	1	1	
What	3	3		1	1	1		
Which	6	6		3	1	2		
How	50	48	2	39	10	2	2	
Outcome	34	32	2	11	20	1	2	
∑	**101**	**96**	**5**	**58**	**34**	**7**	**5**	**0**

Research focus

Hereinafter, we describe the research foci with regard to stage, function, degree, ownership, distance, and point of view.

Stage: Our findings indicate that the focus of research is on the implementation phase of ISO, composed of the how (50 items) and the outcome stage (34 items). Overall, 84 items deal with how to offshore and the outcome of offshoring (cf. Table 32). The remaining 17 items refer to the pre-implementation stages of ISO concerning researching why to consider offshoring (eight items), what to offshore (three items), and which decision to make (six items). Hence, according to Wiener et al. [177] results and our findings, the ISO research of the last fourteen years primarily focuses on implementation aspects while the pre-implementation stages of ISO (what, why and which) are sparsely researched. Accordingly, future research should increasingly address the pre-implementation stages of ISO.

Table 32: Research foci of relevant ISO publications

		Function				Degree			Ownership				Distance				Point of view		
Stage	∑	Infrastructure	Application	Business process	N/a	Total	Selective	N/a	Internal	Partial	External	N/a	Offshore	Nearshore	Onshore	N/a	Client	Supplier	Consultant
Why	8	1	2	3	2		8		1	1	5	3	8	2	2		6	2	
What	3		2	1			2	1	3	2	3		3	1			2	1	
Which	6	2	5				6		3		1	2	6	2	1		6		
How	50	3	43	9	4	2	44	6	15	5	39	4	47	13	3		30	34	1
Outcome	34	4	25	8	4		28	6	5	3	26	8	31	2	4	3	20	23	
∑	**101**	**10**	**77**	**21**	**10**	**2**	**88**	**13**	**27**	**11**	**74**	**17**	**95**	**20**	**10**	**3**	**64**	**60**	**1**

Function: Approximately three quarters of the studies (77 of 101) concentrate on software application offshoring. Over all stages (except for why) the scope of research is on application development services over infrastructure or process services. This observation confirms that the previous (Wiener et al. [177]) and recent (our literature review) ISO research primarily considers application development services. Presumably because this ISO function comes with the highest potential for savings due to its labor intensity. Similarly, business process offshoring is

increasingly being researched: While Wiener et al. [177] find only 4 BPO-publications (2 in the why-stage, 1 each concerning what and outcome, and none in the how-stage), we identify 21 papers of which the most ones are belong to the how- (9 articles) and outcome-stage (8 articles).

Degree: Our analysis shows that ISO research concentrates on selective offshoring (88 publications). Only two papers include total offshoring aspects. This finding leads to the conclusion that only a small number of firms relocate their entire IS functions and most opt for offshoring particular IS functions or parts of these functions. These results confirm that a differentiation between partially and totally offshoring appears less relevant (cf. our rationale on p. 76).

Ownership: The vast majority of ISO publications focus on external arrangements with a third party provider (74 items). However, research regarding internal or partial ownership increases: While Wiener et al. [177] identify 19 articles (from 96) dealing with internal and partial ownerships over a 10 years period, we find 38 ones in the last 4 years. This result suggests that these sourcing modes are increasingly being explored over the last years.

Distance: Regarding distance of transferred IS services the focus is unambiguously on offshoring (95 items). Although we find 20 articles regarding nearshoring and 10 regarding onshoring, only 3 of them solely concentrate on nearshoring and none of them exclusively on onshoring. A range of 16 articles concentrate on several distance dimensions. These results illustrate that the specific nature of nearshoring and onshoring is sparsely researched despite the fact that several studies indicate nearshoring having substantially different characteristics compared to offshoring (Abbott and Jones [2]; Carmel and Abbott [27]). Hence, the research deficit regarding nearshoring should be explored in future studies. Apart from that, Wiener et al. [177] stress that a large number of publications consider ISO in general and do not specific the client's country nor the supplier's country. We cannot confirm this with regard to the research of the last four years. Only three articles inaccurately describe the research context with regard to distance. However, we realize that the terminology used varies widely which sometimes makes it difficult to uniquely determine the correct research context. Hence, we propose to use a template to define a clear term as suggested at the beginning of this literature review (cf. Figure 2, p. 76).

Point of view: ISO research is rather balanced with regard to the applied point of view. 35 articles deal solely with the client side, while 37 take exclusively the view of the supplier. The majority of research from the client's side takes the view from the European perspective (21 articles), especially from Germany (9 articles), relocating IS services primarily to Indian (14) or European (6) vendors (multiple response allowed). Furthermore, 12 articles focus on an U.S. viewpoint, mainly offshoring to India (8). These findings indicate an increasing amount of research from European perspective, in particular from Germany. Other countries, e.g., Switzerland (3), UK (2), Spain (2), and Netherland (2) are sparsely researched. From a U.S. point of view, the focus is unambiguously on offshoring to India while other offshoring destinations like Europe (2) and U.S. (2) are sparsely researched. We agree with Wiener et al. [177], and still see a need for ISO research from a European perspective. While Wiener et al. [177] realize that ISO research across all stages primarily concentrates on clients' perspectives, our findings show that ISO research of the last four years incorporates multiple points of view. Research from vendor's side has increased sharply over the last four years, especially from an Indian viewpoint (23) cooperating exclusively with European and U.S. clients (8 each[2]). In addition, we identify more research from Chinese side (8), primarily working with clients from Asian regions (3) or the U.S. (2). Hence, we suggest further research from a vendor's point of view including U.S. and European vendors. The remaining publications (16 items) focus on the client and vendor perspective. These articles deal exclusively with cooperation between European clients and Indian vendors (11) as well as U.S. clients and Indian vendors (5). Future studies should investigate further constellations, e.g., European clients with European vendors or U.S. clients with Chinese vendors.

CONCLUSION

The literature review at hand presents a consolidated view of the current IS offshoring field of study and ensures continuity of research in connection to the comprehensive literature review of Wiener et al. [177]. As a result, we compile 95 publications of the last four years and critically reflect the state of research over the last fourteen years with regard to Wiener et al. [177] findings.

The main results of our study indicate that ISO research still focuses on the implementation stages how to offshore and the outcome of offshoring. Furthermore, the majority of ISO papers makes use of empirical research methods, is not grounded in theory and still concentrates on software application offshoring to external suppliers. However, the findings suggest that research regarding special aspects of BPO, captive offshoring models as well as near- and onshoring increases. In addition, recent ISO research does not focus exclusively on the clients' point of view but

[2] The remaining seven publications not specified the location of the client(s).

approximately half of the identified articles consider offshoring from the suppliers' perspectives as well.

With respect to unambiguity, future studies should clearly indicate their research context to facilitate future consolidation of findings. For this purpose, researchers could use the multi-perspective framework of Dibbern et al. [45] and Wiener et al. [177] to describe the context of study as well as our template to define a term characterizing the specialized IS offshoring phenomenon. Whereas the distinct use of empirical research methods can be identified within almost all reviewed ISO publications, the focus on theory building is less marked. Therefore it could prove beneficial to combine the separate findings within a conceptual theoretical framework. Future studies should address the lack of a clear theoretical foundation and try to extent the ISO body of knowledge by applying more theory-reliant approaches which would be the next step towards a broader and more mature field of research. As a result researchers should apply existing theories towards the field of off-, near-, and onshoring instead of focusing primarly on explorative methods as it is now the case.

Although almost all reviewed ISO publications make use of empirical research methods, the majority of them lack a clear theoretical foundation. Future studies should address this gap and try to extend the ISO body of knowledge by applying more theory-reliant approaches.

Due to the fact that the focus of research is still on the implementation phase of ISO, future research needs to pay particular attention on the pre-implementation stages. Regarding research focus, further studies should investigate specific characteristics of offshoring, like on- and nearshoring, BPO, multishoring, and captive cooperation models. Furthermore, future research needs to study agile methods in an IS offshoring setting. While the majority of ISO publications of the last 14 years focus on the client side and thereby especially on offshoring from U.S. to India, further research is needed to examine from European perspective by including European vendors' perspectives.

There are limitations to acknowledge in this study. Despite of multiple and thorough validity checks, it is possible, that the taken search approach missed relevant publications. An expansion of the conducted search could yield additional results. Another limitation is inherent to the methodological approach taken. We rely on an existing literature review to cover the research period from 1999 to 2009. Thus, flaws potentially inherent to Wiener et al. [177] literature analysis would also be pertinent to our analysis.

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APPENDICES

Nr.	Author(s)	Year	Source	1. Reference Theory											2. Research Approach							3. Research focus																						
				Strategic theories			Economic theories		Sozial / organizational theories				other	n/a	Approach		Epistemology					Function				Degree			Ownership				Distance				Point of View			stages				
				Resource theories	Strategic management theories	knowledge-based-theories	Agency theory	Transaction cost theory	Social exchange theory	Power and politics theory	Relationship theory	other	other theory	n/a	empirical	non empirical	interpretivism	positivism	descriptivism	conceptual	mathematical	Infrastructure	Application	Process	n/a	Total	Selective	n/a	Internal	Partial	External	n/a	Offshore/Farshore	Nearshore	Onshore / Onsite	n/a	Client	Supplier	Consultant	why	what	which	how	outcome
1	Abbott & Jones	2012	EJIS											X	X		X						X				X				X			X				X					X	
2	Abbott, Zheng, Du, & Willcocks	2013	JSIS											X	X		X						X	X				X	X	X			X					X					X	
3	Ahsan, Haried, & Musteen	2010	AIMSJ									X	X		X		X					X					X		X				X	X	X		X					X		
4	Aubert, Rivard, & Templier	2011	IEEE-TEM											X	X		X						X	X			X		X		X		X	X				X					X	
5	Aydin, de Groot, & van Hillegersberg	2010	JEIM											X	X		X						X				X				X		X				X						X	
6	Bairi & Manohar	2011	JEIM											X	X		X					X	X	X			X				X		X		X		X							X
7	Beck & Schott	2012	BISE											X	X		X						X				X				X		X	X	X		X						X	
8	Beck, Schott, & Gregory	2011	SJIS									X			X		X						X				X				X		X	X	X		X						X	
9	Beimborn & Wolf	2013	AMCIS											X	X		X						X				X				X		X				X	X					X	
10	Bellah, Burns, & Cassidy	2013	JITCAR											X	X		X						X				X				X		X				X	X					X	
11	Beulen, Tiwari, & van Heck	2011	SOIJ											X	X		X						X				X				X		X		X		X	X						X
12	Bharadwaj, Saxena, & Halemane	2010	EJIS											X	X			X						X			X					X	X				X						X	
13	Boden, Nett, & Wulf	2010	IEEE											X	X		X						X				X				X		X				X	X					X	
14	Candiotto & Gandini	2011	MCIS											X	X				X						X			X				X	X					X						X
15	Chakraborty, Sarker, Rai, Sarker, & Nadadhur	2011	JGIM									X			X		X						X				X				X		X					X					X	
16	Chauhan, Dwivedi, & Sherry	2012	AMCIS											X	X		X						X				X				X		X				X							X
17	Chen & McQueen	2010	ITP											X	X		X							X				X			X		X					X					X	
18	Dedrick, Carmel, & Kraemer	2011	JIT											X	X		X						X				X					X	X				X			X		X		
19	Deng & Mao	2012	JGIM											X	X			X					X				X				X		X					X					X	X
20	Deng, Mao, & Wang	2013	IJIM	X											X			X							X			X				X			X		X						X
21	Feng, Ye, & Pan	2010	PACIS											X	X		X						X				X				X		X	X	X		X						X	
22	Gonzalez, Gasco, & Llopis	2010	ISM											X	X		X								X		X				X		X		X		X			X				
23	Gopal & Gosain	2010	ISR						X						X			X					X				X					X			X			X						X
24	Gopal & Koka	2010	DS					X							X			X					X				X				X		X					X						X
25	Gopal, Espinosa, Gosain, & Darcy	2011	IEEE-TEM											X	X			X					X				X				X		X					X						X
26	Gregory, Beck, & Keil	2013	MISQ											X	X		X						X				X				X		X				X	X					X	
27	Hahn, Bunyaratavej, & Doh	2011	MIR											X	X			X				X	X				X		X				X	X			X					X		
28	Hamzah, Aman, Maelah, & Amirudin	2011	IJBSS											X	X		X							X			X		X				X					X					X	
29	Handley & Benton	2013	JOM					X							X			X							X			X			X		X	X	X		X							X
30	Haried & Ramamurthy	2010	JITCAR	X			X	X							X		X					X	X				X				X		X				X	X						X
31	Hartmann, Wiener, & Remus	2011	WI						X						X		X	X					X				X		X		X		X	X			X						X	
32	Hartmann, Wiener, & Remus	2011	HICSS						X						X		X	X					X				X		X		X		X	X			X						X	
33	Heumann, Wiener, & Remus	2011	WI						X						X			X				X	X				X		X	X	X		X				X						X	
34	Heumann, Wiener, & Remus	2012	ICIS						X						X			X				X	X				X		X	X	X		X				X	X						X
35	Huong, Katsuhiro, & Chi	2011	JGIM											X	X				X				X	X			X		X	X	X		X					X					X	
36	Jain, Poston, & Simon	2011	IEEE-TEM											X	X		X						X				X				X		X				X						X	
37	Jain, Simon, & Poston	2011	JMIS											X	X		X						X				X				X		X				X						X	
38	Kalaignanam & Varadarajan	2012	JAMS	X			X	X	X							X				X				X			X				X		X				X			X				X
39	Kannabiran & Sankaran	2011	INFSOF											X	X			X					X				X				X		X					X						X
40	Klimpke, Kramer, Betz, & Nordheimer	2011	ECIS											X	X				X				X				X		X	X	X		X				X			X	X			
41	Krancher & Dibbern	2012	ICIS			X									X			X					X				X				X		X				X	X					X	
42	Krancher & Slaughter	2013	HICSS			X			X						X		X						X				X				X		X				X						X	
43	Lahiri & Kedia	2011	IBR											X	X		X							X			X				X		X					X		X				
44	Lahiri, Kedia, & Mukherjee	2012	JWB	X											X			X						X			X				X				X			X						X
45	Li	2013	PACIS											X	X		X						X				X				X		X					X					X	
46	Luo, Wang, Jayaraman, & Zheng	2013	JWB					X	X						X			X						X				X	X	X	X		X					X			X			
47	Markov, Wiener, & Amberg	2011	AMCIS											X		X				X					X			X			X			X			X						X	
48	Maruping & Ahuja	2012	ICIS											X	X			X					X				X				X		X				X	X					X	
49	Mathew	2011	SOIJ				X	X					X		X		X						X				X		X		X		X				X	X					X	
50	Mathew & Chen	2013	JSIS											X	X			X					X				X				X		X				X							X
51	Mathew & Das Aundhe	2011	JITCAR											X	X		X					X					X				X		X					X		X				
52	Mathrani & Mathrani	2011	ACIS											X	X		X						X			X	X		X	X	X		X	X				X					X	
53	Mathrani, Parsons, & Mathrani	2012	JUCS											X	X		X						X			X	X		X		X		X					X					X	
54	Narayanan, Balasubramanian, & Swaminathan	2011	POM											X	X			X					X				X				X		X					X						X
55	Narayanan, Jayaraman, Luo, & Swaminathan	2011	JOM									X			X			X						X			X				X		X					X						X
56	Nath & Bejou	2012	AMCIS						X						X			X							X		X				X		X				X	X					X	
57	Oshri	2013	MISQE											X	X		X						X	X			X		X				X				X						X	
58	Palvia, King, Xia, & Palvia	2010	DS	X					X						X			X				X	X	X				X			X		X					X						X
59	Palvia, Palvia, Weidong Xia, & King	2011	CAIS											X	X		X					X	X	X			X				X		X					X					X	
60	Peslak	2012	MRR											X	X			X							X		X					X	X				X			X				X
61	Philip & Wende	2013	ECIS											X	X		X						X				X				X		X				X	X						X
62	Philip, Schwabe, & Wende	2010	AMCIS											X	X		X						X				X				X		X				X	X						X
63	Philip, Wende, & Schwabe	2013	ECIS											X	X		X						X				X				X		X				X	X						X
64	Previtali	2010	EA2000											X	X				X				X				X				X		X				X					X		
65	Prifling	2010	PACIS											X	X		X						X				X				X		X					X					X	
66	Prikladnicki & Audy	2012	ISM											X	X		X						X				X		X		X		X				X				X			
67	Raman, Chadee, Roxas, & Michailova	2013	JIM											X	X			X					X					X				X	X					X						X
68	Remus & Wiener	2012	JGIM						X						X		X	X					X				X		X		X		X	X			X						X	
69	Schott	2011	PACIS											X	X		X						X				X				X		X	X				X					X	
70	Shah, Harrold, & Sinha	2014	IST											X	X		X						X				X				X		X					X					X	
71	Shi, Tsuji, & Zhang	2011	ESWA											X	X				X				X				X				X		X				X						X	
72	Shi, Tsuji, & Zhang	2012	SRBS											X	X				X				X				X					X	X				X					X		
73	Sidhu & Volberda	2011	IBR											X	X		X						X				X		X				X				X	X					X	
74	Smite & Wohlin	2011	IEEE											X	X		X						X				X		X				X				X	X					X	
75	Šmite, Wohlin, Aurum, Jabangwe, & Numminen	2013	JSS											X	X		X						X				X		X				X				X					X		
76	Søderberg, Krishna, & Bjørn	2013	JIM											X	X		X						X				X				X		X					X					X	
77	Spohrer, Heinzl, & Yan Li	2011	HICSS					X							X		X						X				X		X	X	X		X				X							X
78	Srivastava & Teo	2012	JMIS						X						X			X					X				X				X		X					X						X
79	Stetten, Beimborn, Kuznetsova, & Moos	2010	HICSS											X	X		X								X			X				X		X				X	X				X	
80	Sudhakar	2013	Organizacija											X		X				X			X				X		X		X		X				X	X						X
81	van Marrewijk	2010	SJM											X	X		X					X	X				X		X				X					X					X	
82	Vogt, Beck, & Gregory	2010	ECIS									X				X				X					X			X				X	X	X			X	X					X	
83	Wang, Chen, Pan, & Wu	2011	HICSS											X	X		X						X				X				X		X					X					X	
84	Wende & Philip	2011	HICSS											X	X		X						X				X				X		X				X	X					X	
85	Wende, Schwabe, Philip, & King	2013	HICSS											X	X		X						X				X				X		X				X	X					X	
86	Westner & Strahringer	2010	I&M											X	X			X					X				X					X	X				X							X
87	Whitaker, Kumar, & Krishnan	2011	AMCIS											X	X			X						X			X					X	X		X		X							X
88	Whitaker, Mithas, & Krishnan	2011	JMIS			X									X			X						X			X					X	X	X	X		X			X				
89	Wiener & Stephan	2010	BISE											X	X		X						X				X				X		X				X							X
90	Wiener, Remus, & Mähring	2012	ECIS						X						X			X					X				X		X	X	X		X				X							X
91	Willcocks & Griffiths	2010	MISQE											X	X		X						X	X				X				X	X				X	X					X	X
92	Williams	2011	ISJ			X									X			X					X				X				X		X					X					X	
93	Wreford, Penter, Pervan, & Davidson	2011	ACIS											X	X		X							X			X		X		X		X				X	X						X
94	Xu & Yao	2013	JGITM											X	X			X					X				X				X		X	X				X						X
95	Zimmermann	2011	ECIS						X						X		X						X				X			X			X				X						X	

ANNOTATED BIBLIOGRAPHY

Why stage

Benefits and risk: Dedrick et al. [41] use a multiple case study approach and interview 14 senior executives of five firms. They examine main beneficial factors influencing sourcing decisions and create a dynamic conceptual model of offshore software development that includes (1) economic factors, (2) nature of development activity, and (3) managerial capabilities and practices. They determine that cost and access to talent and markets are the primary beneficial drivers for the decision to offshore software development.

In their exploratory field survey of large Spanish firms, Gonzalez et al. [56] investigate the perceived motivations and risks of IT offshore outsourcing. The results are based on 54 firms using IT offshore outsourcing. The most important IT offshore outsourcing motivations are (1) technical feasibility, i.e., the fact that the technology is available to establish international connections, (2) improved cost/benefit ratio, and (3) more flexibility and speed. They mention (1) cultural, language, political, and legal problems, (2) different time-zones, and (3) hidden costs, including among other things costs of the transfer of know-how to the provider and costs of uncertainty about fluctuations in exchange rates as the most important IT offshore outsourcing risk factors.

In the context of German small and medium-sized enterprises (SMEs), Klimpke et al. [90] conduct a multiple-case study with eight interviewees working for different SMEs. They authors analyze the reasons to offshore software development, respectively the obstacles that occur in those projects. Their findings suggest that flexibility (defined as the ability to respond to market demands in a short period of time) is the main driver for the decision closely followed by cost savings. The main obstacles which SMEs have to manage are different culture/mentality, communication overhead, missing domain knowledge, and language problems.

Mathew and Das Aundhe [108] use the case study method and choose five Indian IT service provider firms to investigate the risks in offshore outsourced infrastructure management services from an IT service provider perspective. They identify four service delivery risks (estimation under uncertainty, human error, multivendor conflict, and technology related risks) and one relationship specific risk (pricing issues). Furthermore, they compare the risk characteristics to application development services. They find a close relationship of service delivery and relationship specific risks to similar risks in application development.

Peslak [126] analyze a large sample set of secondary data (708 items) obtained from a survey of Financial Executives International (FEI) and review top corporate financial executives incentive for IT offshore outsourcing. They find that the major motivations supporting the decision to pursue IT offshore outsourcing are possible significant cost reduction and the view that IT is not a core competency of the own organization.

Determinants for consideration: Gonzalez et al. [56] examine the motivations and risks of IT offshore outsourcing and develop a typology of firms which are involved in offshore arrangements. They identify two typologies of firms based on the specific motivations and risks associated with IT offshore outsourcing, termed (1) optimistic though disinformed and (2) realistic about IT offshore outsourcing. The first typology encompasses enterprises that pay not so much attention to risks and assign more importance to cost and expansion motivations. The second typology includes firms considering all risk factors in general very relevant. Furthermore, this enterprises assign more importance to motivations that contribute most to the improved IS services, e.g., technical feasibility as well as flexibility and speed. Both typologies have some connections (and differences) to the group of firms that Carmel and Agarwal [28] called offshore bystanders and proactive strategy focus.

Building on scholarly insights from existing literature, Kalaignanam and Varadarajan [84] develop a conceptual model including the drivers of customer relationship management (CRM) IT offshore outsourcing intensity. They identify eleven characteristics grouped by the firm product and task, industry, and macro business environment.

Lahiri and Kedia [96] interviewed 43 Indian business process offshoring (BPO) providers to examine institutional and organizational factors that drive clients and providers to engage in IT offshore outsourcing. From the client perspective, they identify institutional (advancing ICT, escalating costs, intensifying competition, skills shortage) and organizational (competence retention, experience utilization, operating cost reduction, talent source accession) factors that drive clients to outsource functions to offshore providers. From the providers point of view, they find that institutional (industry maturity, institutional reforms, regulatory assistance, talent pool emergence) and organizational (continuous innovation, experiential sophistication, relational learning utilization, skills/expertise enhancement) factors lead offshore providers to engage in IT offshore outsourcing arrangements.

Peslak [126] explore the views of top corporate financial executives, who are not directly responsible for IT activities and examine the usage of outsourcing and IT offshore outsourcing. The findings illustrate that the size of a company influences IT offshoring intensity, i.e., larger IT companies offshore more IT than smaller companies. Furthermore, they find that a company's perception of its IT as an advantage or as a core competency influences offshore intensity. Organizations that view IT as a competitive advantage or core competency are less likely to offshore IT.

Whitaker et al. [173] study uses data from InformationWeek 500 survey with responses of 255 firms, employing the perspective of organizational learning and capabilities. They identify and analyze firm-level characteristics that facilitate the adoption of onshore and offshore BPO. The empirical findings indicate that firms engaged in onshore information technology offshoring (ITO) are more likely to engage in onshore and offshore BPO. Firm's with systems capabilities related to IT coordination applications or with process capabilities related to codification are also more likely to engage in on- and offshore BPO. The study also shows that past international sourcing experience is positively associated with offshore BPO.

What stage

Degree and distance dimensions: The multiple-case study of Klimpke et al. [90] comprises eight interviewees working for different SMEs. They investigate the location and organizational structure choice for offshoring of German SMEs. The results show that German SMEs prefer sourcing to third party vendors. Establishing a subsidiary in low-cost countries constitutes a feasible solution for half of the examined enterprises. Further on, they also analyze suitable locations for software development outsourcing of SMEs. Their findings indicate that German SMEs prefer vendors located in nearshoring countries (Eastern Europe and European Union).

Drawing on transaction cost economics and organizational control perspective, Luo et al. [102] analyze 308 global BPO vendors in India and China and examine the effect of transactional properties (information security, knowledge specialization, and process codifiability) and process integration requirements (global client or subcontractor, integration with provider) to BPO governance modes (foreign captive, independent vendor, and joint venture). The results show that when knowledge specialization is high, firms tend to choose a joint venture investment. If information security is more important and/or the integration between client and vendor is high, firms prefer a foreign captive to a joint venture or independent vendor ownership. Furthermore, when process quality is more measurable and codifiable and/or the integration within provider is high, firms prefer an independent vendor mode to a third party provider.

Prikladnicki and Audy [137] use a qualitative case study research conducted at five multinational organizations which employing the two ISO models (1) internal offshoring of software development and (2) IT offshore outsourcing. They intend to identify different challenges and evolution patterns in each model. As a result, they are able to identify a range of challenges and pattern in organizational (such as policies and standards), contextual (such as cultural differences), and technical categories (such as development methodology) for each offshoring model.

Which-stage

Decision-making factors, processes and models: Ahsan et al. [3] perform a case study at one single client firm and examine how endogenous and exogenous uncertainty affects the IT offshoring decision and strategy. They argue that the level of endogenous and exogenous uncertainty surrounding IT offshoring determines which offshoring strategy (captive, joint-venture, onsite captive and third party offshoring model) a client firm adopts and use their case study as supporting evidence.

Dedrick et al. [41] examine the decision to source software development from offshore. For this purpose, they create a dynamic conceptual model including decision-influencing factors and their interdependence. The authors use a multiple case study approach, interview 14 senior executives of five firms and examine offshore software development work by large us companies. They confirm the validity of factors that influence the sourcing decision found in previous research and identify a set of (new) proactive management practices to facilitate and promote offshoring. Their dynamic model includes offshoring (driving) factors, management practices, and sourcing decisions. The model shows that over time causal relationships go in both directions through feedback loops.

Hahn et al. [65] use data from the foreign direct investment markets global database with a sample size of 2.370 projects and examine service offshoring decisions from European and us firms. They identify factors that influence firms' choices of transferring (information) services to near- or offshore locations. These factors are in general wages, risk, cultural distance, skill, and productivity issues. In the nearshoring context, they find that discounted wages and relative risk differentials have a weak-

er influence on the attractiveness of nearshore project locations than for those further away.

Previtali [134] utilizes a single case study consisting of interviews with 20 IT specialists. He analyzes the decision making process of an Italian Bank offshoring parts of IS development to service suppliers in India. The author describes the results of the case study through a five stage model of decision making including the why, what, which, how, and outcome stage. Further on, he explains lessons learned from the IT offshore outsourcing experience of the Italian banking group and offers insights into important differences to other research findings, i.e., the decision of the Bank not to resort to consultants, the decision about the degree, and the best suited sizes of the offshore initiative.

Applying conjoint analysis, Shi et al. [145] adopt a questionnaire survey approach and handed it out to 175 managers. They examine the heterogeneity of managers' attitudes towards behavioral risk scoring for software service offshoring. The first result, based on an optimist-pessimist categorization of managerial attitudes towards risk, indicates that experience and the criteria used for selecting vendors are main drivers of heterogeneity. Furthermore, they introduce a knowledge spiral system model that based on the framework of Nonaka and Takeuchi [119] socialization, externalization, combination and internalization model. This model supports decisions about what to offshore and yields benefits relating to profit improving, risk reduction and forgone benefits saving.

In their field study at one industrial partner, Šmite et al. [149] examine and analyze internal offshore (called "insourcing") decisions in software development projects and develop a structured decision-making process. They state that an insourcing decision includes five main decision points (why, what, when, where, and how to insource) with decision options which offer different ways of forming offshore insourcing strategies. Their decision-making process comprises the aforementioned aspects and is supposed to support managers in their decision-making regarding offshore insourcing.

How-stage

Knowledge transfer factors: Deng and Mao [42] investigate in their survey consisting of 119 questionnaires, knowledge transfer to vendors from their clients in offshore IS outsourcing projects. The authors discover that client support and knowledge articulation impact these types of knowledge transfers positively: (1) learning about client, and (2) learning from client.

Huong et al. [79] conduct 30 interviews within the context of their single case study research and examine factors which influence the knowledge transfer process in IT offshore outsourcing projects of Japanese and Vietnamese software companies. Their results confirm that the two factors (1) good impressions (of Vietnamese from Japanese clients) and (2) willingness to cooperate facilitate the knowledge transfer process. Furthermore, they realize that communication barriers, cultural differences, the lack of equivalence, and the lack of common rules have a negative impact on the knowledge transfer process. They suggest and describe a new organizational role, the "Bridge System Engineer", acting as coordinator between client and service provider. This new role is supposed to close the communication and cultural gap and thus improving the outsourcing relationship.

The case study research of Mathrani et al. [110] is based on ten interviews in the Asia Pacific region. They examine knowledge management (KM) initiatives enabling knowledge transfer in offshore software development projects from an Indian and New Zealand vendor provider perspective. The study reveals that circumstance such as organizational size and labor market conditions impact KM influences.

Nath and Bejou [116] conduct within their case study six interviews and investigate factors (from client and vendor organizations point of view) that affect the privacy preservation of various sensitive and proprietary offshored data being transferred to service providers in different countries as part of the offshore relationship. The results indicate that the code of conduct set by both client and offshore vendor organizations and the strength of privacy preservation law in the vendor's country play the most important role and significantly influence the privacy preservation of the offshored data.

using a single case-study research, Schott [142] conducts 23 interviews and examines the vendor-vendor knowledge transfer in a OSD project initiated by a large German bank with multiple globally distributed vendors. The goal is to analyze how the knowledge transfer between vendors is performed and which factors influence it. She identifies four factors influencing the shaping of the previously described knowledge transfer process: (1) knowledge receiver's level of knowledge, (2) knowledge receiver's mindset, (3) organizational characteristics, and (4) structure of the knowledge to be transferred.

Smite and Wohlin [148] use a single case study to investigate software product transfers through insourcing projects of one company. They aim to identify critical success factors and strategies in software transfers. They find that certain products and activities make a transfer easier. Furthermore, they identify a set of factors organized by product, personnel, and process characteristics facilitating success in transferring software work. In addi-

tion, they put the factors into context and develop seven strategies for addressing unfavorable circumstances in transferring software work.

Wende et al. [165] analyze two case studies (using interviews and documents) and examine knowledge transfer problems in the transition phase and how the project set-up of this phase impacts knowledge transfer in offshore software development projects. The findings show six key problems which are grouped using the categories communication, cultural differences, and knowledge. Furthermore, the authors develop a model which includes key elements for setting-up effective knowledge transfer in the transition phase. The model consists of four stages: communication inception, effective knowledge transfer, knowledge discourse, and project environment. They define each stage and show relevant feedback loops.

Williams [179] uses a survey of 140 respondents and explores client-vendor knowledge transfer in IS offshore development projects from Indian software engineers' perspectives. He draws on the principle of absorptive capacity and defines knowledge transfer in this setting in terms of (1) understanding of the client and (2) utilizing knowledge for the benefit of the client. The author determines that client-vendor knowledge transfer is positively associated with formal training and client embedment.

Knowledge processes and roles: Chen and McQueen [33] conduct a case study research using three techniques for data collection: document review, participant observation, and interviews of 19 key participants. From the viewpoint of an offshore technical support center in China, they examine the knowledge transfer process from a us-based organization to an offshore support center in China. The authors divide the knowledge transfer process between the us and China into a structured (consisting of four stages: implementation, initiation, integration, and ramp-up) and an unstructured (distinguishing the three types: unstructured adaption, unstructured copy, and unstructured fusion) knowledge transfer process. Furthermore, they consider four types of knowledge being transferred (embedded, embodied, embrained, and encoded knowledge) and subdivide (adapting Dreyfus and Dreyfus [47]) four different levels of knowledge (advanced beginner, competence, novice, and proficiency). The results illustrate that "the lower the level of recipient absorptive and retentive capacity, the more difficulty the recipient will have in acquiring tacit and complex types of knowledge, and the more formal structured knowledge transfer approach the recipient will need to adopt" (Chen and McQueen [33, p. 54]). In addition, the findings indicate that structured transfer stages were utilized by novices to transfer embrained and encoded knowledge. The transfer type "unstructured copy" was used by advanced beginners to transfer encoded and embodied knowledge. Finally, "unstructured adaption" and "unstructured fusion" were preferred by recipients at the competence respectively proficiency level to transfer embodied and embedded knowledge.

Feng et al. [50] conduct an interpretive single case study using 16 interviews. They analyze the knowledge delivery lifecycle of a multinational bank offshore project and propose a process model explaining how knowledge is delivered from onshore to offshore teams. This model includes three phases (transfer syntactic knowledge, transform pragmatic knowledge, and translate semantic knowledge) with respective process steps. The model's aim is to understand and create own knowledge delivery mechanisms in IT offshore outsourcing projects.

Huong et al. [79] further on suggest and describe a new organizational role, the "Bridge System Engineer" acting as coordinator between client and service provider. This new role is supposed to close the communication and cultural gap and thus improving the outsourcing relationship.

Additionally to the identified factors influencing knowledge transfer, Schott [142] suggests a four stage-model of vendor-vendor knowledge transfer in global information systems development outsourcing projects with multiple vendors: (1) joint cross-vendor learning based on implementation experiences, (2) knowledge multiplication across the global delivery network, (3) transfer of the fundamental technological concepts, and (4) transfer of practical design & implementation knowledge.

In a single case study research, Wang et al. [162] conduct 26 interviews and investigate the antecedents of boundary formation, the interrelationships within these antecedents and how to bridge boundaries effectively at an IT offshore outsourcing organization from India. They develop a process of boundary formation and spanning activities which to promote knowledge management system (KMS) initiatives. The evolutionary process is decomposed into three steps: knowledge, structural, and subcultural boundaries. A second model extends the previous one with boundary objects and the role of boundary spanners to bridge boundaries.

Knowledge and learning activities: Hamzah et al. [67] conduct a case study and interview ten key employees of an offshoring outsourcing support center in Malaysia to determine how the company manages its knowledge resources. The findings show that knowledge acquisition activity is externally (e.g., from customers, suppliers, etc.) and internally (for example, training organized in-house) focused. Furthermore, the knowledge ac-

quisition activity of the company is directed towards the search for customer satisfaction ensuring that its services are in line with customer's requirements. The process of choosing a repository of knowledge once it is acquired, called knowledge storage, is external and informal using general decision guidelines and training manuals. The company does not put emphasis on developing individual knowledge and provides not much opportunity to its employees to increase skills and knowledge.

Krancher and Dibbern [93] use a multiple case study approach and analyze five cases of software maintenance offshoring (SMO) transitions to Indian vendor employees. The results suggest that individual learning is particularly important for successful knowledge transfer in SMO transitions. using cognitive load theory, they study the combination of learning activities and their impact on learning effectiveness in the transition phase of SMO projects. The findings suggest that the use of learning tasks positively influences learning effectiveness. In addition, the authors determine that the benefits from learning tasks are most effective when imposing a medium (instead of low or high) cognitive load. Furthermore, their results show that cognitive load is affected by the onsite coordinator's expertise and by the use of so-called load regulation strategies: intrinsic task complexity, specification of the learning task, and supportive information. The findings indicate how learning activities can be effectively combined in the transition phase of SMO projects.

Mathrani et al. [110] furthermore describe 19 identified tacit and explicit KM initiatives and how they interact with each other. As already mentioned above they align their research with the socialization, externalization, combination, and internalization (SECI) model according to Nonaka and Takeuchi [119].

ISO (project) management challenges: Aubert et al. [7] use a field study and interview 19 individuals working in twelve organizations. They explore how distance, information, and IT influence the effort to manage offshore activities. They develop a model based on literature and the analysis of interviews conducted with offshore IT service providers at different locations. The model posits that perceived distance is a key antecedent of effort. Effort is furthermore influenced by cultural and geographical distance and the length of relationship history. The results show that cultural distance, geographic distance, and the need for formalization in the information exchange impacts the level of effort. Furthermore, the model proposes that also IT affects the effort to manage offshore activities and plays a facilitating role.

Using a process research approach, Aydin et al. [9] examine the degree of changes in action readiness (the state, condition, or quality of being ready) and mindset (habits, opinions, or perceptions which affect a person's attitudes) of Dutch finance and insurance organizations for IT offshoring. They conduct an exploratory longitudinal study in two phases. In the first phase they use a questionnaire including interviews (unspecified number) of business and IT managers of twelve Dutch organizations based on constructs from the proposed model. In the second phase they enrich the questionnaire used in the first round and conduct an in-depth analysis of three IT offshoring projects with two Indian offshore and one Romanian nearshore supplier in detail. The findings indicate that the overall readiness and mindset between the assessment in 2004 and 2006 was about equal. Based on these findings, the authors infer that the pace of improvement and overall learning in the considered organizations is small. Furthermore, the results show that organizations have achieved readiness for method use and mindset for IT activities to a greater extent. While the mindset for coping with cultural difference has increased, the readiness for flexible working, tracking of requirements change, efficient division of work, and systematic communication is still insufficient.

In three case studies, Beimborn and Wolf [17] interview five project managers and business analysts to examine the challenges and problems which Peruvian providers and Anglo-American clients face in software development of IT offshore outsourcing relationships. The results show that most challenges relate to communication quality aspects, e.g., lack of language skills, and remain even more silent about problems or mistakes.

Shi et al. [144] use a questionnaire surveying approach, consult 175 managers to explore individual heterogeneity (and make it explicit) among experts in risk perception of software IT offshore outsourcing. The findings indicate that individual heterogeneity exists and is one ingredient of managers' risk perceptions.

Stetten et al. [153] focus on which and how cultural differences influence IT nearshoring risks. They conduct eleven interviews with consultants from a German firm and managers from different vendor companies in nearshore countries. Based on the interviews results, they develop a causal model including risk factors relating to communication aspects from different cultural dimensions and link them to IT nearshoring risks. For example, informality and looseness leads to insufficient formal communication which affects control and transaction cost risks.

Van Marrewijk [158] conducts a case study including 90 interviews. He examines the cultural differences in global IT projects at four multinational IT service providers with Dutch front and Indian back offices. The six key findings relate to the construction of cultural dif-

ferences between Dutch and Indian employees. They are: (1) ability of planning and reaching deadlines, (2) different perception between quality of work, (3) handling of conflicts in superior-subordinate relationships, (4) language problems, (5) paradox of global project success (misgiving that more high-end jobs will be outsourced if successful), and (6) perceived ability to have direct contact with clients. Furthermore, the study confirms that cultural differences (in terms of communication, different perceptions of time, and superior-subordinate relationships) are rooted in the different national cultures and can be used as a strategic source to gain specific goals in global IT projects.

Vogt et al. [159] review extant literature and develop a conceptual model that describes the relationship between social identity and inter-personal conflict in global IS outsourcing relationships. They suppose that different social identities at the organizational, national, and professional level give rise to inter-personnel conflicts. Furthermore, they expect that cognitive flexibility moderates the relationship between (different) social identities and inter-personnel conflict. The model offers a new perspective for analyzing social or cultural differences in global IS offshore outsourcing and provides an approach to conceptualize the relationship between culture and conflict in IS outsourcing relationships.

ISO (project) management approaches: using an exploratory case study with 25 interviews, Beck et al. [15] examine management practices of global multivendor software development outsourcing projects. They identify four practices with important characteristics of the organizational mindfulness theory: (1) allowing for context-driven multichannel communication, (2) consciously leveraging cross-organizational trial and error, (3) expertise-driven reorganization of inter-vendor power relations, and (4) viewing relational knowledge as an enabler but not as a recipe.

Additionally to the previously identified challenges, Beimborn and Wolf [17] suggest different management actions, like knowledge exchange/trainings or language courses to reduce the negative impact of the these challenges on the relationship quality and thus on project success.

Bellah et al. [18] conduct in their case study 29 interviews and examine how organizations respond to the challenge of solving problems in offshore IS development projects. The results indicate that organizations use different strategies to respond to the challenges involved in critical thinking and creative problem-solving. Each organization uses one of the two following categorized strategies more than the other: (1) people-focused, training employees to act as consultants, and (2) task-focused; applies resources to processes, characterized by tightly-controlled processes, project management structure, and overlapping roles and responsibilities.

Jain et al. [80] explore in their case study (22 interviews) the circumstances that client managers face in managing IT offshore outsourcing software testing projects with Indian IT vendors. They identify six project management activities that client managers need to approach in such projects: (1) developing project estimates, (2) investing in vendor capabilities, (3) managing collocated inter-organizational project team, (4) managing distributed inter-organizational project team, (5) receiving project status updates, and (6) sharing project knowledge in a multivendor environment. Furthermore, they define and describe coping strategies to deal with changing project management activities. In a second publication of Jain et al. [81] they use the same research method and sample size to investigate vendor silence (about project-related issues) in offshore client-vendor relationships. They develop a process framework which includes several mechanisms for mitigating vendor silence. Furthermore, they conceptualize three propositions for organizational action toward mitigating vendor silence: (1) Structural mechanism are likely to improve cultural adaption, (2) social mechanisms are likely to strengthen the relationship between structural mechanisms and cultural adaptation, and (3) cultural adaptation is likely to be positively related to vendor silence mitigation.

Li [101] uses a multiple case study and conducts 67 interview to investigate the improvisation of offshore IT outsourcing in the context of high-velocity environments, i.e., environments in which there is rapid and discontinuous change in demand, competitors, etc. The results suggest that improvisation is developed in relation to culture. Furthermore, she finds out that uncertainty levels and time pressure are not sufficient conditions for the emergence of improvisation. The formation of improvisation is composed of two processes: building relational and structural ties. Additionally, the author supposes that improvisation is associated with good or poor innovation performance. The overall result is a framework of improvisation of offshore IT outsourcing in high velocity environments.

Prifling [135] uses field research including 15 interviews. He analyzes how specific leadership styles of IT project managers contribute to the successful management of large IT offshore software development projects. The author determines that the balanced use of collaborative and directive leadership is complementary and helps in overcoming quality expectation problems between client and vendor. He also shows that technical IT expertise and background is important to execute these collaborative

and directive leadership styles. Both findings contribute to the successful management of IT offshore software development projects.

The case study of Wende and Philip [164] includes eleven interviews in the context of German-Indian offshore software development projects and analyzes the usage of instant messaging (IM). The authors assume that IM can facilitate communication and bridge culturally based power distance. They analyze the data through different theoretical concepts and ascertain that IM facilitates the exchange of information between developers and can serve as a bridge to mitigate cultural differences.

Governance and control: In their exploratory case study with 25 interviews, Beck and Schott [14] analyze how control mechanisms and inter-organizational learning interact and contribute to the mitigation of cultural differences in global multisource information systems development outsourcing projects. The initial finding is that the influence of informal control and inter-organizational learning on formal control changes over time. The second finding shows that the interplay between control mechanisms and organizational learning helps in mitigating cultural differences in such projects.

Based on a longitudinal case study including 56 interviews complemented with observations and informal face-to-face discussions, Gregory et al. [64] analyze the management and control of an IS offshoring project between a German bank and an offshoring supplier in India. By analyzing different control balancing decisions, they indicate that the type of control is only one dimension on which control configurations decisions should be taken. The other two dimensions are degree of control and style of control. Further on, they identify three control configurations referred to as: (1) authoritative control, with clear boundaries between client and vendor, (2) coordinated control, whereas client and vendor work toward shared goals, and (3) trust-based control which ground in shared understanding. In addition, they determine that gaps in client-vendor shared understanding trigger the use of coordinated control, while unfulfilled expectations trigger the use of authoritative control. Furthermore, they state that fulfilled expectations trigger the use of trust-based control. These findings result in a process model of control balancing explaining how offshoring project managers make adjustment to the control configuration periodically.

In a comparative case study including nine OSD cases, Hartmann et al. [70]; Hartmann et al. [71] and Remus and Wiener [141] investigate the factors behind changes in variety and intensity of control mechanisms in OSD projects. Among other things, they discover that intensive testing and quality problems during the project increase the amount of formal control. Furthermore, they identify higher levels of control in strategically important projects and captive offshore projects. They integrate their empirical findings in a conceptual model. In contrast to prior studies, the authors' results do not find evidence that the amount of control is directly related to project success.

Heumann et al. [74] use a survey with 94 respondents to empirically examine the impact of suppliers' national cultures on the clients' choices of control modes in IS offshoring projects. The results show that the higher the controllee's power distance the greater the exercise of clan-control. In addition, the lower the controllee's power distance the greater the exercise of self-control. Finally, they find out that if the controllee's monochronic time perception is high, the exercise of behavior control is high, too.

Krancher and Slaughter [94] choose a longitudinal multiple-case study approach to investigate the interaction of governance and individual learning in the transition phase of four software maintenance IT offshore outsourcing projects. They conduct 28 interviews, observe ten knowledge transfer sessions and analyze 48 documents. They find out that self-control is central to learning but requires a high level of expertise and trust and may be hampered if the level of trust and/or expertise is low. To enforce learning activities against knowledge barriers, the findings suggest that clients initially need to use high amounts of formal and clan-control. If the knowledge barriers are then overcome, learning activities can take place, expertise and trust increases, and, toward the end of the transition, allows for more self-control.

Relationship management factors: Bharadwaj et al. [22] conduct an exploratory study using a questionnaire with a sample size of 65 to identify important factors for building successful relationships between service providers and clients in business process IT offshore outsourcing. The results show that the client's focus for building a successful relationship is more on BPO outcome delivery than on the service provider's competencies.

Palvia et al. [124] focus on the vendor perspective and use a critical issues instrument (called "key IS issues") to examine 21 critical issues of IT vendors from India. The results of the survey (120 responses) show that cultural, language, and time zone difference issues are least important. More important critical issues deal with relationships and work arrangements with the client and issues related to the readiness and capabilities for offshoring.

From a vendor perspective, Søderberg et al. [150] use a case study including 24 interviewees to investigate two long-term relationships between a European client and an Indian vendor involved in two large and

complex global software development projects. They ascertain that the Indian vendor could establish a strategic partnership to the European client through their long-term engagement. The authors describe three important aspects which are essential for the establishment and execution of a strategic partnership: (1) a commitment of senior management and strong employee identification with the project, (2) cultural understanding and sensitivity, and (3) mutual trust and transparency in the development processes.

Relationship management practices and strategies: Abbott et al. [1] adopt an exploratory approach and interview 20 participants of 13 local and multi-national companies. They argue that concepts like "boundary spanning" are limited in theorizing the complexities of cross-cultural collaborations in IT offshore outsourcing processes. Based on a study of practices reported by software and service suppliers, they develop a framework named "creolization" which conceptually represents the complexities from a supplier's perspective. The creolization framework encompasses the four interactive processes "cultural hybridity", "identity multiplicity", "mutual sense-making", and "network expansion", which enriches the understanding of complexity cross-cultural practices and processes in offshore outsourcing.

Boden et al. [25] choose a case study with two companies including 13 interviews with managers and developers of small German software enterprises. They examine the challenges in organizational learning among these two enterprises engaging in software offshoring to Russia. The results indicate that articulation work was demanding for both enterprises. They use practices like intense face-to-face contacts, broad participation in meetings, and alignment of efforts. However, there were also differences. While one company intensified personal visits and introduced workshops, the other company reduced this work by increasing formalization and specialization. They analyze the impact of these practices on single- and double-loop learning and ascertain that organizational learning can be challenging for offshore relationships.

Drawing on transaction cost theory, agency theory, and relational contract theory, Mathew [106] focuses on mitigating ex-post risks, i.e., risks after the contract is signed, due to service provider behavior in the context of OSD projects. This multiple case study includes 24 interviewees. In the first step the author identifies three major categories of ex-post risks: (1) loss of control over information assets, (2) service provider lock-in, and (3) shirking, i.e., vendor delivering less quality work while claiming full payment. After that, he identifies relationship variables that can mitigate these risks. The first two findings suggest that risk and benefit sharing as a relationship management strategy can mitigate shirking risks, while trustworthiness of vendors (consisting of vendor's credibility and benevolence) can mitigate the risk of loss of control over information assets. The mitigation of the second ex-post risk, the risk of service provider lock-in, can be ensured by dependence balancing and relationship-specific investments.

In her study, Zimmermann [186] interviews 30 German IT developers to examine how their offshoring attitudes affect the relational behavior toward their Indian offshore colleagues. The result of her field study suggests two contrasting department cultures, described as an "countercultural" and an "enhancing" subculture with regard to offshoring attitudes and relational behaviors. Furthermore, "[...] negative offshoring attitudes were in some cases associated with a lack of shared team identity, blockages of communication, know-how transfer, and task transfer, and even with pinpointing of mistakes. Negative offshoring attitudes clearly reinforced national subgroup divides [....]"Zimmermann [186, p. 10]. The last-mentioned attitudes happen in particular when German IT developers treat their Indian colleagues merely as suppliers instead of team members. The results further indicate that offshoring attitudes as well as associated relational behavior are important to achieve offshoring success.

Client and supplier middle management capabilities and roles: Willcocks and Griffiths [178] examine the crucial role of middle management in (offshore) outsourcing arrangements. Based on their database of more than 100 case studies of offshore IT and BPO projects they identify nine client and twelve supplier core middle management capabilities and describe them in detail. Furthermore, they introduce the needed client and supplier middle management roles and specify the skills which are necessary to perform the respective role.

Location selection: Abbott and Jones [2] conduct case studies with two nearshore software development ventures in the Caribbean to explore how nearshore service providers select locations for software development and to determine how important these characteristics are for the sustainability of their ventures. The findings show that location choice by these two ventures is based on place and space-based logics. The authors develop three categories to distinguish types of location characteristics: (1) espoused, e.g., lower wage costs, quality of infrastructure, and access to international airports, (2) unanticipated, e.g., location attractiveness and former British colonial heritage, and (3) remediable, e.g., lack of local software market and lack of suitably trained human resources. These characteristics impact nearshore location decisions and illustrate that location attractiveness may vary significantly within countries.

Markov et al. [103] review and analyze previous literature, which indicated that nearshoring brings a number of advantages compared to offshoring (which the authors refer to as farshoring). They analyze the shorter client-supplier distance advantages (like physical or cultural advantages) in nearshoring projects and identify 13 factors which may downplay these advantages. The result of the non-empirical study is a conceptual framework including these factors and their suggested propositions to six distance advantages of IS nearshoring. The developed model can be used for the evaluation of near- and farshore alternatives. They suggest follow-up empirical studies to examine the influence of the mitigating factors on the different distance advantages of IS nearshoring.

Team organization and management: Chakraborty et al. [30] conduct an exploratory case study collecting data from one Indian IT vendor organization (twelve interviews). They examine offshore team configurations in global software development projects. The results indicate that the vendor organization uses three different types of configurations in global offshoring projects: (1) "hybrid", (2) "thick-at-client", and (3) "thin-at-client". These configuration types differ in size of the subteams and nature of the software development related tasks. A comparison between these types with regard to process- and resource-related flexibilities clarifies that the "thick-at-client configuration" offers superior flexibility. However, they state that two contingent factors (extent of offshoreability of work and volatility of environment) may influence the appropriateness of the team configuration in addition to flexibility.

Maruping and Ahuja [105] use a survey with a size of 87 usable observations to examine how IS project risks shape the contract provisions and indirectly affect the offshore project team structure in terms of team temporal dispersion (number of time zones spanned by the IS project team) and client participation. They focus on environmental risks, mainly on social and technical subsystem risk, and find out that these risks influence contract enforcement as well as future demand. This result indicates that clients take these risks into account in developing contract provisions. Furthermore, the findings show that project managers attach importance to contract provisions when determining how project teams should be assembled. In addition, the authors find partial support for the role of contract enforcement provisions shaping the level of temporal dispersion of IS project teams.

In their case study, Mathrani and Mathrani [109] conduct 50 interviews to examine profiling strategies of IT offshore provider organizations located in India and New Zealand. The results indicate that IT providers' strategies depend on ownership arrangements with clients or third parties, organizational size, and cultural differences between client and provider countries.

Oshri [122] examines the strategic role of captive centers and their evolutionary paths using a multi-case-study approach with three Fortune 500 firms conducting 23 interviews. The findings indicate that a key success factor for evolving offshore captive centers is the ability to support the growth and guide their evolution from a basic to a hybrid, shared, and possible divested captive center model.

In an ethnographically-informed study, Shah et al. [143] investigate three global software testing (GST) teams from the offshore provider perspective, conducting 29 interviews, to understand GST practice. They validate that cultural differences influence GST practice and discover the important role of motivation and appreciation in ensuring high-quality testing. Furthermore, the results show that team structure influences the degree of pressure and affects quality. They identify and describe some reasons for the quality-dilemma in pressure situations, for example, giving excessive importance to numbers and ignoring task complexity in order to finish the assigned tasks with compromised quality on time, or not completing the task in a timely manner and under maintaining quality standards.

Using a single-case study conducting 101 interviews, Sidhu and Volberda [146] investigate the coordination of globally distributed teams in software development projects. In the context of captive-offshoring, the authors identify factors that influence the coordination practice of distributed onshore and offshore teams. The findings suggest that effective task coordination emanates from the bottom-up. Furthermore, they identify and highlight the following factors and develop propositions to test their influence on onshore-offshore task coordination in future research: "horizontal communication", "joint performance evaluation", "properly timing the involvement of offshore team members", "reward system", and "senior management emphasis".

Outcome-stage

ISO best practices: Candiotto and Gandini [26] analyze the processes of three providers working with an Indian partner in the ISO market to define best practices for an IT offshoring process. The analysis, based on interviews and case-analysis of three companies (sample size not defined), identifies four phases: (1) development, (2) planning, (3) steady management, and (4) transition. Each phase is specified in detail with associated activities, resources involved, and goals.

Haried and Ramamurthy [69] examine IT offshoring experiences and challenges of client and vendor firms to identify aspects of lessons learned. As key findings of their study the authors present twelve aspects of lessons learned regarding economic, organizational, personal, and strategic relational issues which contribute to IS offshoring success.

Drawing on transaction cost economics and practice theory, Spohrer et al. [151] apply a multiple-case study approach conducting six interviews. They examine the relationship between ISD offshoring outcomes and social, cultural, and asset-related characteristics of offshored ISD projects to Chinese and Indian partners. Furthermore, they explore the social and cultural differences between these two countries. The authors identify two management practices, "boundary spanning" and "offshore partner empowerment", moderating the negative impact of cultural and social distance and affecting the ISD offshoring outcomes.

Wiener and Stephan [176] present and refine a method, named "reverse presentations", for requirement validation in OSD. The Reverse Presentation Method (RPM) is focused on the client perspective, combines the advantages of face-to-face and globally distributed requirements engineering (RE), and considers social aspects of OSD. Furthermore, the method provides cross-phase support and includes an iterative validation process. Case studies with six interviews conducted at German-speaking client companies illustrate that the developed RPM fits well with the OSD context and positively influences the inter-organizational interaction and control of OSD projects.

Based on an extensive database comprised of 112 case studies, Willcocks and Griffiths [178] investigate the crucial role of middle management in (offshore) outsourcing arrangements. They identify and describe client and supplier core middle management capabilities and provide four guidelines for IT leaders in outsourcing client firms: (1) assess the most crucial supplier middle management competencies, (2) invest in ways to help suppliers develop middle management, (3) retain core client middle management capabilities, and (4) reward client and supplier adaptability.

Determinants for project success (client aspects): Chauhan et al. [32] take an exploratory approach that entails twelve interviews with enterprise resource planning (ERP) and offshoring experts. They examine CSF for offshoring ERP implementations from a Swiss client's perspective. The authors find hard skill CSFs like "business process skills", "ERP package skills", and "project management" as well as soft skill CSF like "cultural compatibility", "customer interaction skills", and "language". Furthermore they identify the macro factor "scalability" and the micro factors "choice of work to be offshored" as well as "personnel split between onsite and offshore".

In their online-survey study, Handley and Benton [68] use dyadic data on 102 outsourcing relationships to consider how task- and location-specific complexity (constructed by "breadth of tasks", "cultural distance", "geographic dispersion", geographic distance", "scale of service", and "service customization") of outsourced services influence the "degree of control" and "coordination costs". The results show that the geographic distance and the scale of service amplify control and coordination costs. Control costs increase with task breadth and geographic dispersion and decrease with the degree of service customization. Contrary to their hypotheses and numerous prior studies, the results indicate that greater cultural distance between client and provider are associated with lower control and coordination cost. However, IT as an outsourced activity function encompasses only 31% of the sample size while outsourcing of logistic/supply chain processes and other business processes representing the sample's remaining 69%. This aspect needs to be taken into account when drawing conclusions from the research results for the domain of IT offshoring.

Build on scholarly insights from existing literature, Kalaignanam and Varadarajan [84] develop a conceptual model containing antecedents and consequences of CRM IT offshore outsourcing. They propose a relationship between CRM IT offshore outsourcing intensity of a business and customer relationship performance as well as financial performance of the firm.

Mathew and Chen [107] conduct a survey with 40 responses to examine the moderating effects of three relational norms (information exchange, flexibility, and solidarity) on the relationship between two types of opportunistic behavior (misappropriation of information assets and shirking) and OSD success. They find out that both types of opportunistic behavior have a negative impact on OSD performance. Furthermore, they show that the norm of solidarity and flexibility reduces the negative impact of shirking risk on OSD outcome, while the norms of information exchange does not mitigating both types of opportunistic behaviors in OSD activities.

Peslak [126] furthermore examining the actual experience with IT offshore outsourcing from the view of corporate financial executives. While executives' satisfaction with IT offshore outsourcing initiatives is high, the study cannot find a correlation between IT offshore outsourcing and higher companies' returns on IT expenditures.

Westner and Strahringer [169] quantitatively examine success determinants in 304 IS offshoring projects conducted by German companies. The research model includes exogenous (offshoring expertise and trust in offshore service provider) and endogenous (knowledge transfer, liaison quality, and project suitability) determinants. The results illustrate that offshoring expertise has a positive impact on knowledge transfer, liaison quality, and project suitability, but did not have a significant direct impact on offshore project success. The second exogenous determinant, trust in offshore service provider, has a positive impact on knowledge transfer as well as liaison quality, and a direct positive impact on offshore project success. According to the findings, offshoring expertise seems to play a minor role, while trust in offshore service providers plays a major role as a determinant for offshore project success. The three studied endogenous determinants show a positive influence on offshore project success.

Whitaker et al. [171] consider cost, quality, and time outcomes of onshore and offshore BPO. They develop a conceptual model based on literature from performance measurement, operations management, and vendor management and validate it by performing an empirical study (based on data from the 2005 BPO survey conducted by InformationWeek magazine) with 47 firms located in the usThey find that both, BPO clients and vendors should focus on quality first. The authors point out that quality benefits from BPO lead to cost and time benefits. Another result suggests that a firm's performance measurement focus and strategy determine whether the firm reaches benefits regarding cost, quality, and/or time from a BPO arrangement.

Wiener et al. [175] conduct a quantitative study (survey) with data from 46 projects to explore the relationship between informal clan-control and IS offshoring project performance. Furthermore, they examine the moderating effect of formal control modes (behavior and outcome control) on the relationship above. The results clarify that clan-control alone has no direct impact on project performance. While the formal behavior control didn't show an impact between clan-control and project performance, the formal outcome control enhances project performance directly and influences the relationship between clan-control and IS offshoring project performance.

Determinants for project success (client-vendor aspects): Beulen et al. [21] utilize a single, in-depth case study involving 25 interviews. They determine and detail factors influencing the transition performance in IT offshore outsourcing relationships. They present a transition performance framework including the factors: (1) knowledge transfer, (2) retained organization, (3) transition governance, and (4) transition planning. The authors find that "knowledge transfer" and "transition governance" are more critical for transition performance than the other two factors.

Gopal and Koka [59] use a questionnaire survey including 100 software projects completed by Indian offshore vendors. They investigate the role of time and material (T&M) and fixed price contracts on service quality and returns to quality (margins) in OSD projects. The results indicate that the contract type affects service quality and the quality-margin relationship. The researchers assume that vendor-provided quality is higher in fixed priced projects. For fixed priced contracts, the higher vendor-provided quality results in higher profit margins for the vendor.

Philip et al. [130] examine early warning signs (EWS) of failure in offshore outsourced software development (OOSD) projects. using a Delphi survey questioning 23 panel experts, the author's rank 21 most important EWS of failure and classify them into four categories: (1) "communication-related", (2) "formal output-related", (3) "formal process-related", and (4) "people-related" EWS. The results indicate that 6 of 21 EWS's of failure are specific to OSD projects and were all communication-related, e.g., the lack of transparency, openness to discuss problems, or communicating problems between onsite and offshore team members. The most frequently identified EWS (16 out of 21) are non-specific offshore-EWS and people-related (for example, stakeholder involvement and participation are missing), formal output-related (for example, unclear and ambiguous business specifications), or formal process-related (for example, project scope changes constantly) EWS. In a second, later, publication Philip et al. [132] conduct 19 interviews. They paired early warning issues with their EWS and describe them with regard to awareness of shared work context, collaboration between teams, common project execution structures, onshore-offshore team coordination capabilities, project team building efforts, and team member competencies. Furthermore, they develop a causal offshore-outsourced software development project failure model to understand the process of project failure in such projects. In a subsequent publication, Philip and Wende [131] investigate 19 failed OOSD projects using semi-structured interviews to find out why project managers fail to act on EWS of failure. They developed a cyclic four-stage model for the management of EWS. The four stages are: issue acknowledgement, issue addressing, issue detection and monitoring. In the further course of the study, the authors explore the reasons, i.e., failure factors, behind the inability of the project managers to act upon EWS, categorize the reasons according to the stages and describe it in detail. The study

shows that experience and the understanding of offshore-onshore projects are important for project managers. The use of waterfall methodology, however, represents a hindrance to manage EWS in OOSD projects properly.

Sudhakar [154] conducts a study based on a comprehensive literature review to identify critical success factors for OSD projects. He identifies six critical success factors in order of importance (based on their number of citations in literature): trust, efficient communication, cultural understanding, relationship between client and vendor, contract type, and efficient knowledge transfer. The author categorizes the identified critical success factors into four categories: cultural factors, environmental factors, organizational factors (client and vendor), and project factors.

Determinants for project success (vendor aspects): Bairi and Manohar [11] conduct an exploratory case study including twelve interviews to identify critical success factors (CSF) in gaining user customer satisfaction in on- and offshored IT services. They find four CSF: (1) avoid damaging customer relationships, (2) improve domain skills, (3) improve service management skills, and (4) keep and win customers". These factors lead to two outcomes: (1) increased user customer satisfaction for the client" and (2) competitive advantage and customer retention for the service provider".

Deng and Mao [42] apply a survey with a total of 119 questionnaires from 17 vendors to examine the impact of knowledge transfer in terms of learning from the client and learning about the client on project performance measured by project quality and cost control. The results indicate that knowledge articulation is more important than interaction experience in knowledge transfer. Furthermore, client support to its vendor and learning mechanisms have a positive impact on the vendor's learning from and about client. Due to the fact that the level of learning about client and client support is higher in the direct offshoring model, they argue that partners will act in a more cooperative way under a partnership environment. In case of high level of interaction experience, learning from the client influences project quality and learning about the client impacts cost control. In a second publication using the same sample size, Deng et al. [43] adopt a relational view of offshore IS outsourcing from a vendor's point of view to explore the source of relational performance. The results clarify that client-specific and project management capabilities as well as trust are significant and thus important for vendor's relational performance in terms of service quality.

From a vendor's perspective of nine Indian software firms and 83 projects, Gopal et al. [57] conduct a survey and examine how coordination influences performance (in terms of development speed and software quality) in OSD projects. The results show that client (external) coordination and vendor team (internal) coordination has a positive influence on software quality and a negative impact on development speed. Another finding illustrates that temporal boundaries (imposed by differences in time zones) have a positive effect on development speed and a negative effect on software quality. Furthermore, the interaction between client coordination and client communication barriers on software quality indicates that when interorganizational differences affect the quality of communication with the client they reduce the effectiveness of coordination with regard to quality. Finally, the authors discover that team size has a direct positive impact on development speed, but its interaction with vendor team (internal) coordination on development speed is negative. This finding suggests that increased team size makes vendor coordination less effective. Overall, they state that coordination mechanisms can contribute to achieving high quality but simultaneously may lead to overhead which is detrimental to development speed.

Drawing on organizational control theory, Gopal and Gosain [58] use a questionnaire survey with a sample size of 96 projects from ten firms. They research the effect of organizational controls and boundary spanning on OSD project performance in terms of software quality and project efficiency (measured as the project's overruns on actual schedule, person-month effort, and cost overruns). The results indicate that higher level of software process control results in higher levels of project efficiency. Higher outcome control-quality leads to higher project quality and lower project efficiency, while higher outcome control efficiency is associated with higher project efficiency. Further on, higher collaborative culture-based clan-control enhances project quality and reduces project efficiency. Additionally, the authors demonstrate that boundary-spanning activities between client and vendor improve the effectiveness of formal controls in OSD projects.

Heumann et al. [76] adopt a survey-based approach and analyze data from 57 client-vendor matched pairs. They study the impact of vendor managers' power distance orientations (a cultural construct that reflects beliefs about status, authority, and power in organizations) to project performance in IS offshoring projects. They identify that high power distance orientation directly influences IS offshoring project's performance negatively. As an indirect factor, power distance orientation positively moderates the relationship between self-control and performance.

Kannabiran and Sankaran [85] use a survey with responses from 70 project managers/project leaders to identify and empirically evaluate key determinants of

software quality in OSD projects. According to the international organization for standardization 9126, they use five attributes to determine software quality: (1) "functionality", (2) "maintainability", (3) "performance", (4) "reliability", and (5) "usability". The results illustrate that requirement uncertainty associated with all quality attributes represents a key success factor for OSD projects. Process maturity and trained personnel have moderate association on software quality attributes, while communication and control, knowledge transfer and technical infrastructure have a relatively low association with the six software quality attributes for offshore software development projects.

Lahiri et al. [97] use a questionnaire survey with a response rate of 105 Indian BPO service provider firms to examine how their resources and capabilities predict their performance. The empirical results reveal that three resource factors positively influence firm performance: human capital, organizational learning, and partnership quality. Another result shows that management capability positively moderates the relationship between the three mentioned resource factors and firm performance.

Narayanan et al. [115] use survey data gathered from 205 Indian BPO service providers. They draw upon information processing theory and examine the antecedents (end customer orientation of the client, IT capability, task complexity, and task security) of external and internal process integration in BPO service operations and its impact on firm performance from a BPO Indian service provider point of view. The results show that internal and external process integration drive BPO firm performance. Furthermore, internal process integration mediates the impact of task complexity on BPO performance. Another finding indicates that both BPO process integration types significantly mediate the effect of end customer orientation and IT capability on BPO firm performance.

Narayanan et al. [114] conduct a survey with 822 customer observations to investigate the drivers that influence project performance and customer satisfaction in OSD projects from an India-based software vendor's point of view. They find out that effective communication, project planning, and team stability have a positive impact on project performance and customer satisfaction. Furthermore, they demonstrate that these antecedents iteratively affect project performance, e.g., when project planning capabilities are high, the positive influence of communication effectiveness and team stability on project performance is even higher. However, the influence of communication on project performance is muted when team stability is high. In addition, the authors illustrate that the impact of communication effectiveness, project planning, and team stability on project performance varies with the kind of software task (maintenance and development vs. testing projects). Finally they determine that the influence of team stability on satisfaction is stronger in mature projects compared to new ones.

In their empirical study including 188 vendor firms from India and China, Palvia et al. [123] examine the factors that influence vendor performance in IS offshoring relationships. They construct a research model from the vendor's perspective and design a three level capability-quality-performance (CQP) framework to examine the factors that affect vendor outcomes. The results show that three vendor capabilities (contract management, information technology management, and relationship management) influence all three aspects of quality (deliverable, partnership and service quality). According to these results, vendor capabilities are important for improving the process-quality measures which in turn affect vendor performance. Partnership quality supports only the operational performance while deliverable quality influences strategic performance and satisfaction. Service quality also impacts satisfaction positively. The findings have implications for vendor companies, for example, to concentrate on the quality of partnership to improve higher performance, and implications for client companies, for example, to find a potential vendor company.

Raman et al. [140] conduct a questionnaire with a sample of 68 responses. The authors investigate the effects of the three factors (1) global mindset, (2) partnership quality, and (3) talent on performance of offshore service providers (OSP) in India. The results indicate that those factors contribute to performance of OSPs. In addition, the findings show that partnership quality is a key mechanism through which talent management and global mindset enhance the performance of Indian service providers.

Srivastava and Teo [152] conduct a field study comprising 160 offshore ISD projects to investigate the mechanistic governance in offshore ISD projects executed by Indian vendors. Particularly, they examine the moderating influence of mechanistic governance on the relationships of contract specificity and relational governance with ISD quality and cost performance. The findings reveal that mechanistic governance strengthens the relationship between contract specificity and both performance variables. Another result shows that mechanistic governance weakens the relationship between rational governance and cost performance and has no influence on the effect of relational governance and quality performance.

Wreford et al. [183] introduce the concept of opaque indifference, i.e., that the end-user is indifferent to the location of the service and its impact on successful BPO. They propose a model and examine it through four

case studies using interviews with six client firms and five service providers. The authors determine that captive centers offer advantages (arising from higher level of relationship quality, trust and collaboration, and from facilitating knowledge capture and transfer) for higher order offshore BPO. These advantages support opaque indifference which contributes to offshore BPO success and end customer satisfaction.

From the vendor's point of view, Xu and Yao [184] use a survey method with 30 returned questionnaires to investigate the role of knowledge sharing on OSD project success. The results indicate that the effectiveness of e-communication channels, the extent of knowledge sharing, and the use of software development methodology influence OSD project success. Furthermore, knowledge sharing has a mediating effect on the positive relationship between use of methodology and OSD project success. The findings confirm the assumption that knowledge sharing contributes to the success of OSD projects, particularly regarding process efficiency and less regarding product quality