Exploring Storytelling as a Knowledge Transfer Technique in Offshore Outsourcing

Completed Research Paper

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Abstract

Effective communication between partners and successful knowledge transfer are critical success factors in offshore-outsourced projects. They are also a significant challenge. Cultural distance between partners and a lack of common frames of reference inhibits a common interpretation of information in ways that can be difficult for message senders to foresee. When a message is liable to be misunderstood, perhaps the most effective strategy is contextualization. A known technique for contextualizing information, which is being used increasingly in business contexts, is storytelling. Over recent years, storytelling has gained prominence as a technique for intra-organizational knowledge management. The potential of storytelling in offshore outsourcing is largely uninvestigated. We adopt an action research approach to investigate storytelling as a potential knowledge transfer technique in offshore-outsourced software development projects. Findings suggest that storytelling can be an effective form of communication in the early stages of projects and can improve knowledge transfer outcomes.

Keywords: Storytelling, software development, knowledge transfer, offshoring, communication

Introduction

As many organizations that have implemented a global sourcing strategy have discovered, outsourcing complex projects is not straightforward (Carmel 1999; Casey and Richardson 2008; Prikladniki et al. 2003). Compared to other sourcing models, the offshore-outsourcing setting is distinctive in a number of ways, including its geographical distribution, the implications of organizational boundaries, and the impact of national and cultural differences between teams (Cummings et al. 2009; Espinosa et al. 2003; Espinosa et al. 2007; Levina and Vaast 2005).

Achieving successful knowledge transfer has been highlighted as a key challenge and critical success factor for such projects (Beulen et al. 2009; Carmel and Tija; Tiwari 2009). Knowledge transfer can be defined as communication between the client and service provider for the purpose of transmitting the information and understanding required for the service provider to complete its intended tasks. The failure to achieve effective communication (and therefore successful knowledge transfer) between partners remains a major cause of delay or failure of offshore projects (Argote and Ingram 2000; Dibbern et al. 2008; Szulanski 1996).
Cross-cultural communication is characterized by high communication complexity, which comprises a combination of cognitive and affective distances and is often problematic (Te’eni 2001). Moreover, different reactions to misunderstandings may intensify the impact of those misunderstandings, which can impede communication further (Pettigrew and Martin 1989) (Te’eni 2001). Working across large cultural and semantic distances increases the likelihood that messages are misunderstood or misinterpreted (Chua and PAN 2008; Herbsleb 2007). A lack of common frames of reference between remote partners inhibits a common interpretation of information in ways that can be difficult for message senders to foresee (Cramton 2001).

Communication theories, such as the cognitive–affective model of organizational communication, tell us that contextualizing the message is perhaps the most effective strategy when communication complexity is high (Te’eni 2001). The practice of building context into a message decreases the likelihood of misunderstanding and thereby increases the probability of thinking collectively (Te’eni 2001).

A known technique for contextualizing information, which is increasingly being used in business contexts, is storytelling (Schreyogg 2005). Stories combine events, facts (or pseudofacts) and experiences within the context of specific situations, which can make information more accessible and memorable (Oaks 1996). Because of this, there has been a renewed interest in recent years in the use of storytelling for encoding knowledge in subject areas that are traditionally considered to be technical in nature (Hayne 2009). In particular, storytelling has gained prominence as a technique for intra-organizational knowledge management (Schreyogg 2005).

Previous work in the offshore-outsourcing setting has highlighted the importance of externalizing knowledge by embedding it within artifacts such as application manuals, descriptions of systems architectures, functionalities and presentation slides (Chua and Pan 2008; Leonard and Bailey 2008; Vaast and Levina 2006; Vlaar et al. 2008). However, the potential of storytelling in this context, or inter-organizational communication in general, has largely been uninvestigated. Moreover, research work into practical experiences concerning the use of stories is rare (Erlach 2003).

In this paper, we adopted two research objectives: To investigate whether and how storytelling can be used in offshore-outsourced projects to improve communication and knowledge transfer outcomes, and to examine the applicability of the cognitive affective model of organizational communication (Te’eni 2001) to the offshore-outsourced context by instantiating it in offshore-outsourced projects.

We addressed these research objectives through an action research approach. We observed stories being adopted in two real offshore-outsourced software development projects that were being investigated as part of another research project.

**Knowledge transfer in offshore-outsourced projects**

Previous research has widely recognized that, while knowledge transfer within units in the same country can be challenging, the challenge elevates within a geographically and culturally dispersed setting (Bresman et al. 1999).

Knowledge transfer in complex offshore-outsourced projects, such as software development, is characterized by high communication complexity. It is cognitively complex because offshored projects frequently comprise ad-hoc teams of individuals who do not share a common set of norms, values or experiences (Vlaar et al. 2008). The resulting multiplicity of views held by the communicators increases the plausibility that the message is understood in a different context than intended (Boland 1994). Furthermore, the intensity of the information exchanged and potential asymmetries in expertise between the client and the service provider (Carmel 1999) can increase the probability of misunderstanding (Straus and McGrath 1994).

Knowledge transfer in offshored projects is dynamically complex because the knowledge transfer process is inevitably subject to project time constraints and unfamiliarity between the client and the service provider can reduce the predictability of the other’s behavior. Dynamic complexity increases the likelihood of the service provider misunderstanding the required action (Diehl 1995). Knowledge transfer in offshore-outsourced settings is also affectively complex because the physical and cultural distance between the client and the service provider means that relationships between partners may be difficult to
establish. Affective complexity is typified by relational-oriented obstacles, such as mistrust and affective disruptions (Salazar 1995; Te’eni 2001).

Overcoming high complexity is central to successful communication (Te’eni 2001). In offshore outsourcing, knowledge transfer problems often emerge from a failure to recognize and adjust to this complexity. Too often, the implementation of an outsourcing or offshoring strategy has been seen as simply the replication of strategies that have been implemented for collocated software development (Carmel 1999; Prikladnicki 2003). Clients sometimes attempt to transfer knowledge in much the same way that they would manage an in-house or locally outsourced project (Goles et al. 2008; Wende 2013).

A particular, and often overlooked, challenge is the transfer of implicit knowledge. Implicit knowledge refers to the background and contextual information needed to understand explicit communications and interpret them correctly. This knowledge can be considered equally important as explicit knowledge for successful knowledge transmission (Hsu et al. 2012; Spohrer et al. 2012). By definition, implicit knowledge is not directly expressed or readily apparent, making it generally more difficult to articulate and more challenging to transfer than explicit knowledge (Blumenberg et al. 2009; Nonaka 1994). In particular, diverse, distributed teams face difficulties developing systems to support the transfer of contextual and implicit knowledge (Oshri et al. 2008). The hidden nature of implicit knowledge makes it difficult to identify what is to be transferred, as well as how.

Uncovering and addressing knowledge needs require effective interaction between the client and service provider, as well as the establishment of relationships (Yuan et al. 2010). Communication is more effective when trust and commitment are high (Te’eni 2001). Establishing these kinds of strong communication ties and personal relationships is difficult with globally outsourced teams. There is commonly much less communication and less effective communication than in collocated scenarios (Herbsleb 2007). There are many reasons for this difference (Holmstrom 2006). For example, a strong internal hierarchy – which is common in many Asian service provider teams – can particularly influence the level of interaction between operational team members. When the internal hierarchy is strong, junior team members are less likely to participate actively in communication and, in some cases, all interaction will be mediated through the service provider project manager (Wende 2013). Research has found that such communication problems often arise at the outset of projects. Thus, the success of distributed teams often depends on how processes develop at initial meetings (Kennedy et al. 2010).

A further challenge to both relationship development and communication itself is the reliance on communications media for all interactions. Poor media selection is sometimes associated with projects in offshore-outsourced projects with failed or ineffective communication (Goles et al. 2008). For example, adopting video conferences as a substitute for an initial face-to-face meeting between partners creates a pressurized interaction, which can be detrimental to establishing effective communication (Wende 2013). Furthermore, the cognitive workload in videoconference meetings is higher than in face-to-face meetings (O’Connaill 1993), which risks information overload and communication breakdown.

In the following section, we describe where media and other factors fit into the communication process by describing the cognitive–affective model of organizational communication.

Cognitive-affective model of organizational communication

The cognitive–affective model of organizational communication sets out the fundamental elements of the communication process: its inputs and outputs. The inputs to the communication process include the task (“Characteristics of the task situation: analyzability, variety, and temporal demands”), distance (“The relative situations of sender and receiver: cognitive and affective”), and values and norms (“Cultural values are stocks of knowledge that guide behavior of communicators belonging to that culture: independence–interdependence”). The communication process itself comprises goals (“The sender’s intended impact of communication on the receiver”), addressed by strategies (“Methods of coping with communication complexity to achieve communication goals”), facilitated by the form (“Characteristics of the information communicated”) and medium (“Characteristics of the physical medium on which the message is transmitted: channel capacity, interactivity and adaptiveness”). Interactivity is the potential for immediate feedback from the receiver. It is manifested by simultaneous, synchronous and continuous exchange of information (Zack 1993). Channel capacity is the potential to transmit a large variety of cues
and languages (Daft 1984). Adaptiveness is the potential to adapt (personalize) a message to a particular receiver (Daft 1984; Te’eni 2001).

The communication strategies described in the model that are particularly relevant to this research are contextualization, affectivity and attention focusing. Contextualization may be described as the provision of an explicit context in a message. It requires the sender to build an explicit interpretation of the issue, as opposed to noting only the desired reaction or core message. Affectivity may be seen as the inclusion of affective components in the message that describe emotions and moods (Schwarz 1990). In attention focusing (also known as “flagging” or “contextualization cues”), the sender attempts to direct or even manipulate the receivers’ processing of the message (Te’eni 2001).

The outcomes from the communication process are mutual understanding (“The communicative act is judged to be comprehensible and true”) and relationships (“The communicative act is judged to be trustworthy and appropriate”).

In Te’eni’s review of the cognitive–affective model of organizational communication, he puts forward a number of propositions pertaining to the communication strategies in the model. We list those of Te’eni’s propositions that are relevant to this research here, which we will refer to in later sections.

Proposition 2A: Contextualization is selected for communication goals that are characterized by high cognitive complexity.

Proposition 2B: Affectivity is selected for communication goals that are characterized by high affective complexity.

Proposition 3B: For contextualization, high, rather than low, channel capacity is more effective.

Proposition 3C: For affectivity, high, rather than low, channel capacity is more effective.

Proposition 5B: For contextualization, high, rather than low, message organization is more effective.

Proposition 5D: For affectivity, low, rather than high, formality is more effective.

Proposition 5F: For contextualization, low, rather than high, formality is usually more effective (Te'eni 2001).

As noted, storytelling is a communication form that is well suited to contextualization. In the following section, we provide some background on storytelling and its use in work contexts.

**Storytelling**

Due to its roots in literary research and its multiple applications across various other disciplines, no binding definition of a narrative exists (Meyer et al. 2005). LeBlanc and Hogg (2006) propose that storytelling can be broadly defined as the communication of ideas, beliefs, personal histories and life-
In software development specifically, several narrative forms have been adopted for communicating emotional tone in the mind of the listener performed convincingly. The non-performance of the story may be as important as

Some researchers characterize storytelling as fundamentally an oral phenomenon and experiencing in reality (Sole and Wilson 2002). Furthermore, stories allow the audience to comprehend new experiences and to create impressions about the storyteller’s attitudes and beliefs (Adaval and Wyer 1998), which can add meaning to the information and improve the emotional connection between the storyteller and listener.

There has seemingly been recognition that stories can be adopted for communicative functions that other means cannot achieve well (Hayne 2009). Narrative methods focus on experiences and implicit knowledge, which are not only difficult to access, but can hardly be disclosed and conveyed by listing facts alone (Erlach 2003). By transmitting context-laden knowledge, stories can be seen as a bridge between implicit and explicit knowledge that helps to unmask some implicit components (Meyer et al. 2005). More and more people believe that the strategic use of stories may open up a new way to make implicit knowledge more manageable (Erlach 2003). By helping to exchange implicit meanings, narratives aid in establishing shared meaning structures, which are needed to interpret all other forms of knowledge (Meyer et al.). Thus, narratives may be seen as a means to cohere meaning structures amongst people. Those shared frames of reference then build the prerequisites for effective knowledge exchange (Meyer et al. 2005). Some claim that stories can complement or even outperform codified knowledge in modern organizational settings (Schreyogg 2005).

It is believed that narratives fulfill multiple functions in knowledge management – they help to improve problem-solving competencies and generate “thick descriptions” of contexts, thereby providing actors with an adequate understanding of the complex nature of practical situations, while setting up the basis for practical understanding (Schreyogg 2005). The roles of stories mentioned in the business and organizational literature include: the creation and description of social constructs in organizations, the preservation and conveyance of organizational culture and the transferring and saving of (implicit) knowledge (Erlach 2003). Denning’s (2001) “Springboard Stories” are intended to achieve changes in the listeners’ comprehension; they are “stories that are able to provoke a mental spring in the listener’s understanding of a change-process” (Denning 2001; Erlach). The spring represents the transfer of a story’s contents and messages to the listeners’ own contexts. The aim is to introduce complex new ideas, such as a strategic reorientation (Erlach 2003). Orr (1990) suggests calling narratives that focus on challenging problems and workable solutions “war stories” (Orr 1990). They report on mastering problematic situations, failures and flops (Schreyogg 2005).

The format and structure of a story are thought to be fundamental to its success. Escalas and Batman (2000) and McGregor and Holmes (1999) note that memories are more easily stored and retrieved in story form, particularly when they encompass a goal, action and some kind of resolution (Escalas 2000; McGregor 1999). Sole (2002) contends that good knowledge-sharing stories offer a streamlined, surrogate experience, in the sense that the story depicts a situation that the reader/listener can imagine experiencing in reality (Sole and Wilson 2002).

Some researchers characterize storytelling as fundamentally an oral phenomenon and state that the performance of the story may be as important as the content. Denning (2006) asserts that crafting the right story is only half the battle: “The most perfectly crafted story will be totally ineffective if it isn’t performed convincingly. The non-verbal aspects of performance are critical – the tone of voice, the facial expression and the accompanying gestures. The way a story is performed can radically change its emotional tone in the mind of the listener” (Denning 2006).

In software development specifically, several narrative forms have been adopted for communicating requirements and specifications to developers. A use case is a sequence of actions that describes how a generic actor or user (e.g., the customer) interacts with a system. Use cases are typically a list of short,
written steps in numbered or bullet point form. A usage scenario, or scenario for short, describes a real-world example of how one or more people or organizations interact with a system. It describes the steps, events, and/or actions that occur during the interaction. Usage scenarios can be very detailed, indicating exactly how someone works with the user interface, or include reasonably high-level descriptions of the critical business actions, without indicating how they are performed. Scenarios are often presented as a sequence of listed steps, but may also be a short prose. They are generally used in combination with personas – descriptions of archetypical users such as John Smith or Sally Jones – to explore a system’s requirements. Our use of “storytelling” differs somewhat from use cases and scenarios. We will describe this further in the following sections (Ambler 2014).

**Methodology**

In this research, we collaborated with an IT company based in Germany to investigate the adoption of storytelling as a communication form in new offshore-outsourced software development projects, in an effort to improve communication and knowledge transfer. Action research is a collaborative research paradigm in which practitioners and researchers work together (Coghlan 2005) to improve a process or resolve a problem, while also contributing understanding that could have wider significance (Saunders et al. 2006). It was therefore well suited to the practical contribution that we sought to deliver through our first research objective. Furthermore, the practical research approach was logical for our second research objective to instantiate the cognitive–affective model of organizational communication in an inter-organizational context.

Action research is typically cyclic. Later cycles are used to challenge and refine the results of earlier cycles (Dick 2013). The action research spiral commences within a specific context and with a clear purpose (Robson 2002). A diagnosis is undertaken to enable planning and decisions about the actions to be taken. They are then taken, and the actions are evaluated (cycle 1). Subsequent cycles involve further diagnosis, taking into account previous evaluations, the planning of further actions, taking these actions and evaluating them (Saunders et al. 2006).

![Figure 2. Research Process (adapted from Saunders 2007, p. 141)](image-url)
This investigation’s context was defined by the literature review and by the experiences of the German IT company. The investigation comprised two cycles involving real offshore-outsourced software development projects, which were assessed qualitatively and quantitatively. Both projects had the same German client (albeit for different individuals) and separate service providers. Project 1 involved a service provider in India, and Project 2 involved a Vietnamese service provider. All of the companies were SMEs.

Both projects that comprised the first collaboration between the client and service provider were small-scale pilot projects. The team composition was (on the client side) the client project manager and business analyst; and (on the service provider side) the service provider project manager, senior developer and developer. Face-to-face contact between the client and service provider was not possible at any stage of the project.

We (the researchers) were located with the client teams for the duration of the projects, so we were able to observe the progress of the projects on a daily basis. We worked together with the client in diagnosing, planning and evaluating projects. The evaluation was primarily informed by observations and interviews with the client and service provider team members during and following the projects. The interviews were semi-structured, reflecting the exploratory nature of the research (Saunders et al. 2006).

**Cycle 1**

**Diagnosing**

To diagnose the challenge of communication and knowledge transfer in offshore outsourcing, we analyzed some of the generic phenomena described in the Knowledge transfer in offshore-outsourced projects section, with respect to the cognitive–affective model of organizational communication.

We first considered the communication inputs (task, distance, values and norms) of offshore-outsourced software development projects. Software development is technically demanding, and communication tasks are characterized by the transfer of complex information. The time available for the knowledge transfer phase is typically limited by project deadline demands. The relative distance (physical, cognitive and affective) between the message sender and receiver are, or may be, significant due to their differing locations, perspectives and experiences. Furthermore, values and norms are likely to vary significantly due to organizational divides and differing cultures.

As we saw, a common problem in offshored projects with ineffective communication is that clients attempt to manage communication in much the same way that they would for a locally outsourced project. The model implies that, in this instance, project managers are failing to take the communication inputs, distance, values and norms into account. This failure is then reflected in the adoption of a communication strategy, medium or form (or some combination of these) that is inappropriate for the context. Inappropriate planning decisions such as these (or perhaps simply a lack of planning) then results in poor communication outcomes, in terms of low levels of mutual understanding and poor relationship development.

**Planning**

From our knowledge of the context, and in collaboration with the client, we planned goals, strategies, the form and the medium for the communication process in cycle 1 of the research. We defined two communication goals: to describe the project’s purpose and end-user requirements and to encourage collaborative behavior. With respect to the first goal, we defined the contextualization and attention-focusing strategies.

Contextualization was chosen because of the high cognitive complexity of the communication task and was influenced by Te’eni’s proposition 2A (Contextualization is selected for communication goals characterized by high cognitive complexity). We posited that contextual and implicit information would be particularly important for the key communication task of describing the project’s purpose from an end-user perspective. The communication aimed to contextualize the end-users’ requirements by describing their perspective. The communication form was a story. We determined that the story should offer a streamlined surrogate experience (Sole and Wilson 2002) of the end users’ point of view, thereby focusing attention on the project’s core purpose. Furthermore, we determined that the story should encompass a
goal, action and some kind of resolution, which are believed to make the information more memorable (Escalas 2000; McGregor 1999).

With respect to our second communication goal, we defined the strategies as contextualization and affectivity. As well as high cognitive complexity, the communication process was characterized by high affective complexity due to the unfamiliarity and distance between the team members. This was relevant to Te’eni’s proposition 2B (Affectivity is selected for communication goals characterized by high affective complexity). This story was aimed to fulfill the purpose of Orr’s “war stories” (Orr 1990), in that it should recount a previous problematic project and focus attention on how things should be done differently.

With respect to media selection, we chose to transmit the stories in a text document, via email. A medium with low interactivity was selected because of the potential problems associated with highly interactive media, as noted earlier. Furthermore, we wanted to examine the effectiveness of transmitting stories by text document because this is the primary medium used in other narrative forms, such as use cases and usage scenarios. The primary difference between the stories and use cases, or usage scenarios, was the scope of the content. Whereas use cases and scenarios typically focus on the usage of a particular software function or set of functions, stories have a wider focus and contain more contextual details. Story 1 is similar to a usage scenario and was written as prose, combined with a persona. However, usage scenarios are carefully designed based on information that is known to be relevant to the software functionality in question. Conversely, the intention of the stories was to provide a broader range of information pertaining to the project, in the hope that relevant, implicit knowledge might also be transmitted. Furthermore, the stories contain emotional cues relating to the characters’ feelings and attitudes, which would be unusual in a usage scenario.

Based on the understanding that the success of distributed teams often depends on how processes develop at initial meetings (Kennedy et al. 2010), we planned to use stories at the outset of the projects, as the first instances of communication between the partners. The stories were conceived to address the two intended communication outcomes according to the model: mutual understanding and relationship.

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<th>Table 1. Cycle 1 stories</th>
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<td>Goal</td>
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<tr>
<td>Story 1</td>
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<td>Story 2</td>
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**Action and evaluation**

The project involved a German client and an Indian service provider based in Bangalore. The core task that the client outsourced to the service provider was to refactor an existing Web application, and then extend the application with several new features. Refactoring involves restructuring an existing body of code, which necessitates gaining a thorough understanding of the software and its requirements. As such, successful knowledge transfer, as well as establishing effective collaboration between the client and the service provider, was fundamentally important to the project. The Web application in question was the shop system of an online pharmacy, and the project focused on upgrading its product search functionality. For the service provider to adequately upgrade the software, it was essential that the developer and senior developer gained detailed knowledge relating to how the end users (pharmacy customers) would use the website. Much of this knowledge is contextually/culturally specific. Consider, for example, a customer wishing to buy aspirin. The service provider may not be aware of the breadth of the product range, including the various delivery methods such as tablets, effervescent tablets, granules and powder; the differing strengths and package sizes; the various additional active ingredients and flavorings; and its differing functions, such as pain or fever relief, inflammation reduction, and heart attack or blood clot prevention. Further insights into common customer user interactions were also vital for the client. For
instance, many customers are highly brand-loyal when purchasing pharmaceuticals and often recognize their preferred products as much by the packaging as by the product name.

We planned and prepared the stories together with the client, taking into account the project’s requirements and the type of background understanding needed to undertake the work. Furthermore, we were careful to make the language friendly and informal. This was motivated by Te’eni’s propositions 5B, 5D and 5F (For contextualization, high, rather than low message organization is more effective. For affectivity, low, rather than high, formality is more effective. For contextualization, low, rather than high, formality is usually more effective.)

Story 1 took the perspective of a fictitious end-user and described his use of the software. In doing so, the software’s intended functions (and therein the core purpose of the project) were transferred to the service provider in a manner that communicated contextual information such as typical end-user actions, expectations and motivations (Story 1 is included as an appendix). Story 2 recounted a real previous offshore-outsourced software development project that the client project manager experienced, in which team interaction was stalled and ineffective, thereby focusing attention on problem areas (e.g., the tendency for operational team members to not interrupt seniors in order to ask for clarification when they do not understand something). The client project manager hoped that the story would thereby highlight behaviors to be avoided, as well as solutions to problems.

The two stories were sent within the first three days of the project, before there had been any direct interaction between the operational team members (the client project manager had previously been in contact with the service provider project manager by telephone).

The feedback about the perceived value of the stories themselves was mixed and somewhat contradictory, particularly in relation to Story 1. The service provider project manager indicated that Story 1 was helpful in conveying the key project requirements, stating that, “Through the story, we knew exactly what the priorities of the project were, and we were able to work accordingly...” However, the developer reported that the story’s utility would have been greater if it had contained more information about the project’s context. Moreover, the client project manager indicated that Story 1 was not as beneficial for the operational team members as was hoped, stating that, “From the developer’s understanding of the fundamentals of the project, it didn’t appear that he had read the story very thoroughly, or he forgot it quickly..” Story 1 therefore appeared to have had only limited value, with respect to the communication goal (to describe the project context and communicate the end-user requirements).

The observations and feedback from the deployment of Story 2 were also mixed. It appeared that the story had a somewhat positive influence on service provider behavior by encouraging the operational team members to interact directly with the client. There were several instances in the knowledge transfer process when the service provider operational team members asked clarifying questions when they were unclear on a certain point (as the story suggested they should). The client project manager commented that “the offshore team took on-board the message of the second story pretty well... I think it was significant that their project manager did not try to control the communication from their side..” However, the client project manager reported that the developer and senior developer were not particularly willing communication participants from the outset. He reported that, “No team cohesiveness developed until much later [in the knowledge transfer process], and was probably down to dialogue between staff, rather than the stories themselves..”

The interview responses from both the client and service provider following the project corroborated our observations of the projects. Adopting storytelling showed no clear benefits to establishing communication in the project. Indeed, the client project manager was skeptical that the narrative nature of the content had contributed to either of the communication goals. Nevertheless, he believed that exploring alternatives to the standard kick-off meeting had merit. He said “Not having a kick-off meeting was a bit unusual, but it avoided any serious [comprehension/communication] problems at the beginning of the collaboration. I think it’s worth exploring the possibilities further..”
Cycle 2

Diagnosing and planning

Based on the observations and feedback from Project 1, we sought to adapt aspects of the technique and then re-deploy it in a different offshore-outsourced software development project. For the second cycle, we altered the medium from a text document to a recorded video. In doing so, the medium remained non-interactive (which was found to be beneficial for the first contact), but gained much more channel capacity, in the sense that it could transmit a large variety of cues and languages (Daft and Lengel 1984). This change was also motivated by Te’eni’s propositions 3B and 3C (For contextualization, high, rather than low, channel capacity is more effective. For affectivity, high, rather than low, channel capacity is more effective).

It was hoped that this increased social presence would make the information in the stories more engaging and memorable (in response to the feedback from Story 1 that the developer may have not read the story thoroughly, or forgot it quickly). Furthermore, in response to the client project manager’s comments about team cohesiveness, we wanted to investigate whether sending stories via a medium with high social presence would have a positive influence on team development. A further motivation for testing a medium with high channel capacity was Denning’s (2006) assertion that the way a story is performed can radically change its emotional tone in the mind of the listener (Denning 2006). As noted, the non-verbal aspects of performance are critical: the tone of voice, the facial expression and the accompanying gestures.

In stories 3 and 4, we maintained the same goals and strategies as those adopted in stories 1 and 2.

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<th>Table 2. Cycle 2 Stories</th>
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<tr>
<td>Goal</td>
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<td>Story 3</td>
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<td>Story 4</td>
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Action and evaluation

Project 2 was an offshore-outsourced software development project with the same German client company working with a Vietnamese service provider based in Ho Chi Minh City. The project comprised a refactoring task that was similar in complexity to the first project. As in the first project, the two stories were sent within the first three days of the project, before there had been any direct interaction between the operational team members. The stories were in the form of recorded videos, which (at some point) featured each member of the client team. They were intentionally unscripted in order to provide a natural conversational quality. They included spoken information, as well as an on-screen demonstration of Web content. The client project manager initially had reservations about the idea of recording videos, which she thought would be difficult and time consuming. However, the client project manager later commented that preparing the videos was relatively straightforward. With a standard video application downloaded to her computer, she was able to record herself on the built-in camera and microphone. In addition, the application allowed her to demonstrate software components easily by showing her screen, including her mouse movements and typing, which were highlighted to make them easy to follow. After recording the videos, she was able to review and edit them within the same application, including blending or magnifying elements to highlight key points. Producing each video took approximately 30 minutes and was reportedly straightforward and convenient.

Corresponding with Project 1, Story 3 took the perspective of a fictitious end-user to describe his use of the software, as well as his expectations and motivations. Story 4 recounted a real previous offshore-
outsourced software development project, in which team interaction was stalled and ineffective, thereby focusing attention on problem areas.

The initial response to the video stories from the service provider was a pleasant surprise, with the service provider project manager reporting that “The developers were pleased and surprised by the video clips.” Story 3 was valued by the developer and senior developer as a source of knowledge for the project, with the service provider project manager reporting that “They have viewed the video at least 5 times and have taken notes...” This indicates that the reprocessability of the videos was key to their utility value and suggests they would not have been as effective if they were transmitted via an interactive mode such as videoconference. The client project manager believed that the narrative description of the typical user interactions with the Web application was particularly effective, commenting that “This is an area that the video was really good. It would have been almost impossible to describe the [web application] user interactions in a document... and it worked, the developer appeared to understand the required functionality very well.” During a group videoconference several days after the videos had been sent, the client project manager undertook a spontaneous re-briefing exercise, whereby she asked the developer and senior developer to report back what they had learned. The client project manager was impressed with the amount and accuracy of information recall, again reporting that this was as good as or better than she would expect with a locally outsourced provider.

From a team development point of view, the service provider again found it unusual to not have any form of inception meeting, but indicated that it was potentially beneficial for the project, with the service provider project manager stating that “often kick-off meetings are not very good... people often don't understand each other very well, and team members can be too shy to talk.” The client project manager also believed that introducing the project and client team to the operational members of the service provider team via a non-interactive form of communication was beneficial, stating, “I think the videos really helped engage the service provider team in the project... when we did Skype calls later on, [the developer and senior developer] seemed to be very interested and proactive, even compared with locally outsourced projects that I've worked on.” Significantly, the narrative nature of the content appeared to assist in communicating the client’s expectations to the service provider. In an interview following the project, the developer said that it was useful to hear about the client’s experience with a previous project (Story 4), as this helped clarify what was expected of him. We observed none of the problems that arise in inter-cultural offshore-outsourced software development projects, such as misunderstandings, uncommunicative staff and interaction between operational team members being inhibited by strong management hierarchy. In this respect it appeared that Story 4 was effective in encouraging collaborative behavior.

In an interview after the project, the client project manager remarked that she would use video storytelling at the beginning of future offshore projects. She said that it provided a good alternative to trying to explain the project background, context and purpose via written documentation (which, from her experience, was often not very effective). She felt that using video stories enabled her to focus attention better and emphasize the most important information. Moreover, she believed that recorded video had advantages over text document in terms of ensuring that the service provider engaged adequately with the material. She commented, “...you can’t skim read a video”.

**Discussion and Conclusions**

This research is rare, as it investigates storytelling in the context of inter-organizational communication (Erlach 2003), and is almost unique in investigating storytelling as a knowledge transfer tool for offshore outsourcing. Furthermore, we believe that this is the first research to investigate storytelling via recorded video in this context. Whilst this is a small-scale study, we have found some interesting indicative results, which can build a sound basis for further research in the area of video storytelling as a means of exchanging knowledge in distributed work settings.

With respect to our first research objective (To investigate whether and how storytelling can be used in offshore-outsourced projects to improve communication and knowledge transfer outcomes), we can cautiously conclude that storytelling via recorded video can be successfully adopted for knowledge transfer tasks at the outset of projects. Our findings suggest that storytelling in business contexts may have a utility beyond the intra-organizational knowledge management functions for which it has gained...
prominence (Schreyogg 2005). The use of video stories appeared to be a successful means of contextualizing complex information, and contributed to overcoming the high communication complexity in the tested context (Te’eni 2001). That two types of stories were tested, and that both were found to be largely effective, suggests storytelling has potential to fulfill a range of functions in offshore-outsourced projects.

The practical contribution of this research is that it suggests storytelling as a potentially effective means of initiating knowledge transfer for offshore projects. Adopting storytelling appeared, for Project 2 in particular, to alleviate the challenge of establishing effective communication between partners (Argote and Ingram 2000; Dibbern et al. 2008; Szulanski 1996). The successful knowledge uptake by the client team in Project 2 suggests that the stories were effective in building common frames of reference, which are often lacking between offshore partners (Cramton 2001). The research suggests that, as a source of context-rich information, stories can contribute to resolving the difficulties that diverse, distributed teams face in developing systems to support the transfer of contextual and implicit knowledge (Oshri et al. 2008). Moreover, the lack of serious misunderstandings or misinterpretations in either project, despite the large cultural and semantic distances between the partners (Chua and PAN 2008; Herbsleb 2007), suggests that stories can effectively transfer the knowledge needed for service providers to complete their work. The research offers an additional approach towards knowledge transfer, which may assist clients in avoiding attempts to transfer knowledge in much the same way that they would manage an in-house or locally outsourced project (Goles et al. 2008; Wende 2013).

Projects 1 and 2 were undertaken with different people in significantly different contexts (India and Vietnam). As such, the differing capabilities, characteristics and dispositions of the individuals involved no doubt influenced the findings. Therefore, drawing firm conclusions based on a comparison between the projects would be inappropriate. Nevertheless, there could be a correlation between the channel capacity of the medium and the effectiveness of the storytelling, suggesting that the manner in which the story is “performed” is indeed significant (Denning 2006). Further research is needed to verify this finding, but the combination of high channel capacity, low interactivity and narrative content appeared to be an effective way of initiating an offshore-outsourced project.

Following from our second research objective (To examine the applicability of the cognitive–affective model of organizational communication to the offshore-outsourced context by instantiating it in offshore-outsourced projects), the main theoretical contribution of the paper is the instantiation of the model in real projects within an offshore-outsourced setting. The model is at a high level of abstraction, yet through our practical adoption in this research, we have shown it to be highly applicable to real-world projects. Moreover, we found it to be relevant to an inter-organizational communication context.

The model’s components closely reflect the issues and challenges that we identified as being commonly associated with offshore-outsourced projects. The communication inputs in the model (task, distance and values and norms) enable an accurate description of the offshore outsourcing context, which is characterized by complex communication tasks, significant distance between individuals and significantly differing values and norms, due to organizational and cultural boundaries. The model’s communication outcomes (mutual understanding and relationships) closely match the areas that are commonly deficient in problematic or failed offshore-outsourced projects.

Our practical instantiation of the model’s communication process was found to be applicable to the context. The goal-driven communication process, comprising interconnected communication strategies, forms and media, proved to be a practicable framework for planning and deploying communication in real offshore-outsourced projects. Moreover, the project findings tended to support the model’ propositions put forward by Te’eni, particularly propositions 2A and 3B (Contextualization is selected for communication goals characterized by high cognitive complexity. For contextualization, high, rather than low, channel capacity is more effective) (Te’eni 2001).

**Limitations and future research directions**

This research has several obvious limitations. It is based on an investigation of storytelling in only two projects and contexts: German–Indian and German-Vietnamese offshore-outsourced software development partnerships. Furthermore, only two stories were used in each project. Further research is planned to verify this study’s findings and to more accurately investigate the causal connections between
the actions and observed phenomena. Additional research might also investigate the potential of video storytelling in other cultural settings and industries, as well as the limitations of storytelling and the use of storytelling at other stages in the project cycle.

Appendix

Story 1

Max is 50 years old and lives in Leipzig, Germany. Max’s health is not very good, and he has to take an aspirin pill every day for a long-term heart condition. When Max’s pills run out, he goes to his local pharmacy and buys a new box.

He has been going to the same shop for years, and it is easy for him to find the pills that he needs: They are always located on the first shelf of the left aisle. The box he needs is a blue one with “Aspirin” written in large, red letters. He always buys the same size box because then he knows he has a 4-week supply of pills. If he cannot find what he needs right away, he just asks the person at the counter.

However, Max’s health has unfortunately gotten worse recently, and it is difficult for him to leave the house on some days. Because of this, he has started to do more things online, whenever possible. He uses Amazon.de quite regularly to buy books and DVDs, and he sometimes does grocery shopping online as well.

He once tried to use an online pharmacy to buy his pills, but it didn’t go very well. He found it very difficult to search for what he needed. He first typed “aspirin” into the search box and clicked “search,” but he got a message that there were no matches. He then realized that he had spelled it wrong, so he typed in “aspirin” correctly instead. This time, he had the opposite problem. There were so many products to choose from. It seemed that there were hundreds of different products displayed on the page. There were pills, capsules, effervescent tablets, chewable tablets and even some with flavors. Some said they were for headaches, some for muscle pain and some for blood-clot prevention. Some had other additives like vitamin C or other chemicals that he had never heard of.

Overall, Max was quite confused and frustrated. There seemed to be products from a wide range of different brands. Some of the products had a small picture with them, but others had no picture at all. He saw some boxes that looked sort of like his brand, but he wasn’t really sure if it was the right one, so he decided not to buy anything and got the pills from his local pharmacy, as usual.

The next time that Max was at the pharmacy to buy his pills, he picked up a leaflet on the counter, which said that the pharmacy had launched its own online store. He decided to give it a try the next time he needed to buy his pills.

He was pleasantly surprised with the new website. When he started to type “aspirin” into the search box, he noticed that several suggestions appeared after he had written “as,” so he was able to click on “aspirin” without having to write anything else. Instead of finding hundreds of different products, the page only displayed about 40 products. It seemed to be about the same number of aspirin products that were on the shelf at his local pharmacy. Max noticed that there were several filters on the left side of the page, so that he could reduce the selection further. In the “product type” filter, he checked the “Pills” box and clicked the “Refine search” button. This filtered out all of the other types of products, like capsules or chewable tablets.

What Max liked best was that every product was displayed with a large, high-quality image. Because of this, he was easily able to find his product in the blue box. Also, because the pictures had a 3D perspective, rather than just an image of the front, he could see how large the boxes were. This helped him choose his usual 4-week supply. He also liked that there was not too much information about each product, just one or two brief information points, the price and a “Buy now” button. Overall, Max was very happy with the website. He realized that finding the right pills was just as easy as finding them in the local pharmacy.
References


