# Practices and knowing in transnational knowledge-intensive service provision

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## Abstract

How do professionals at different locations within a firm collaborate to provide services across borders? This article addresses how knowledge-intensive service provisions are coordinated across borders, time zones and expertise. Empirical material from two engineering firms providing services to a global customer base are analysed, comprising over 100 interviews and over 20 days of observation. Concepts from practice theory are used, locating questions of knowledge in the realm of practical action. Findings describe how transnational services are enacted through prefigured and emergent practices. The problem of coordinating transnational practices is considered as a matter of balanced acting between these contrasting forms of work. This is explored in terms of the forms of knowledge that are in play – nuancing practical understanding into specific notions of know-how, know-what, know-who, know-why, and know-where/when. Connecting this array of knowledge forms with balanced acting between prefigured and emergent practices, extends theorisations of transnational knowledge-intensive firms and casts new light on how the widespread problem of coordination can be addressed.

**Keywords**

Practices, Knowing, Transnational services, Collaboration, Practical understanding, Knowledge-intensive service firms

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## Introduction

Transnational knowledge-intensive service provision is known to be challenging. This paper speaks to these issues by taking knowledge perspective, grounding this in a theorisation that locates knowledge in the realm of practical action, the site where coordination is accomplished. Different facets of knowledge and knowing in organising and work practices have been described ([Rennstam and Ashcraft, 2014](#_ENREF_35); [Gherardi, 2010](#_ENREF_17); [Gherardi, 2001](#_ENREF_14)), challenges for cross-border professional work ([Boussebaa, 2009](#_ENREF_4); [Smets and Jarzabkowski, 2013](#_ENREF_43)) and knowledge-intensive work ([Alvesson, 2001](#_ENREF_1); [Løwendahl et al., 2001](#_ENREF_30); [Empson, 2001](#_ENREF_8); [Suddaby and Greenwood, 2001](#_ENREF_48)). This article explores the cross-section of these issues by focusing on transnational knowledge-intensive service provision.

Transnational knowledge-intensive firms (TKIs) include global law, accounting, engineering, and software development companies. Much research on TKIs has focused on challenges associated with coordinated service provision across borders ([Greenwood et al., 2010](#_ENREF_18); [Boussebaa, 2009](#_ENREF_4); [Faulconbridge et al., 2008](#_ENREF_10); [Boussebaa et al., 2012](#_ENREF_6); [Løwendahl, 2005](#_ENREF_29); [Løwendahl, 2000](#_ENREF_28)). Professionals work *in* different locations and *for* people in different locations ([Spence et al., 2015](#_ENREF_45); [Smets and Jarzabkowski, 2013](#_ENREF_43)). Research in this regard has tended to focus on law firms, omitting other foci where the specific demands of service provision may be different ([Malhotra and Morris, 2009](#_ENREF_31)). This paper analyses empirical material from two engineering firms. One focused on risk management, testing, inspection and certification (‘Newit’) and the other on risk management, inspection and disaster response (‘Verco’).

Providing services to customers generally ‘requires non-routine adaptation to whatever the client may require in order to solve the problem’ ([Løwendahl, 2005: 45](#_ENREF_29)). Accomplishing standard work and necessary adaptation when the professionals are situated in different localities has been termed the *coordination problem* ([Løwendahl, 2005](#_ENREF_29)). According to [Løwendahl (2005: 176-177)](#_ENREF_29), the coordination problem can be solved by exchanging information, adhering to set standards or by professionals teaming up to travel.

The coordination problem rests on how knowledge-intensive and customised local activities are coordinated into one service delivery. Therefore, knowledge is critical for both professionals and firms, but it is less studied as a key factor in a transnational context. Existing research provides only a limited explanation of how professionals actually coordinate work between locations to serve customers. Service provision is knowledge-intensive in that it involves intellectual and symbolic skills in professionals’ work ([Alvesson, 2004](#_ENREF_2); [Alvesson, 2001](#_ENREF_1)). This paper explores the accomplishment of transnational service provision in two knowledge-intensive contexts, from a knowledge in practice perspective.

Our focus is on organised activities that are shared across locations and therefore require collaboration amongst professionals ([Hannerz, 1998](#_ENREF_19)). This creates challenges not just over space but also over time, as work is performed in different time zones, with varying urgency and synchronicity. Practice theory is highly relevant to understand transnational collaboration and coordination problems because from this perspective, practices are understood as a set of organised activities that are spatially temporally dispersed, involving multiple people ([Schatzki, 2012](#_ENREF_40); [Hydle, 2015](#_ENREF_22)).

## Transnational knowledge-intensive service provision

Research on the coordination problem in TKI services is on the rise. This reflects the spread and significance of the problem, requiring empirical insights from multiple contexts and theoretical angles. In a recent study of practice transfer for global integration in a transnational knowledge-intensive firm, Klimkeit and Reihlen ([2016a](#_ENREF_25); [2016b](#_ENREF_26)) followed a management practice transfer from regional headquarters to local subsidiaries. This work points to the importance of global internal policies, systems and structures as well as informal procedures in connection with local subsidiary autonomy (2016a), while revealing differences in the way transfer between regions and localities were led and controlled (2016b). Focusing on the transnational mobility of professionals, [Spence et al. (2018)](#_ENREF_46" \o "Spence, 2018 #2118) outlined geographical, temporal and functional mobility constraints. Through a cross-national study of global accounting firms, they found that the transnational aspect shapes local practices through knowledge-sharing activities. The present study takes the examination of relationships between the local and cross-border work further, through a focus on knowledge.

Knowledge-focused accounts of transnational service work remain lacking, rendering the knowledge involved in resolving the coordination problem opaque (Flood, 2018). Several streams of research have begun to address this. [Henriksen and Seabrooke (2015)](#_ENREF_20) found that application of skills and career experience are crucial in transnational organising activities, for example to establish relationships with other professionals and organisations, define tasks, and control how issues are handled. [Spence et al. (2016)](#_ENREF_44" \o "Spence, 2016 #2120) studied ways in which knowledge and skills are used for social and economic rewards in accounting firms in five different countries, finding large differences between established and emerging markets. This affirms the relevance of a knowledge perspective, but does not fully reveal how professionals use their knowledge to provide services transnationally.

Another stream of research focuses on how global professional service firms reproduce differences between a global ‘core’ and ‘periphery’. A cultural-economic colonisation of the periphery occurs through the internal division of labour and wage differences ([Boussebaa, 2017](#_ENREF_5); [Boussebaa et al., 2012](#_ENREF_6)). Knowledge hierarchies can be neo-colonial, as professionals in core countries (largely Western English-speaking countries) can control knowledge flows to the detriment of professionals in the peripheral countries. [Hasselbalch and Seabrooke (2018)](#_ENREF_19" \o "Hasselbalch, 2018 #2121) referred to this as this leveraging. Leveraging, or controlling what knowledge is considered appropriate for professional practice, is one of three knowledge strategies found to be used by professionals in transnational projects. The second, epistemic arbitrage, is used by professionals to signal that they are well qualified and can influence what knowledge is viewed as relevant and who is viewed as knowing well. The third concerns epistemic arbiters, who ‘actively sit in judgement on what is appropriate professional knowledge and who should have jurisdiction over issues in transnational projects’ ([Hasselbalch and Seabrooke, 2018: 54](#_ENREF_19)).

The coordination problem is particularly relevant in TKI services, and knowledge is repeatedly revealed as having an important bearing on how transnational work is done. However, few studies have focused in-depth on the enactment of transnational work from a knowledge perspective. This article turns to practice theories as a valuable resource in this endeavour.

## Theorising knowledge in practice

Practice theorists typically adopt a performative concept of knowledge*,* pursuing interest in how knowledge is enacted in social practices ([Gherardi, 2006](#_ENREF_15); [Orlikowski, 2002](#_ENREF_34)). Gherardi’s ([2006](#_ENREF_15)) focus on knowing in practice emphasises accomplishment – knowledge is not held in minds or transferred between them, but rather is done, together. This locates knowledge in the realm of practical action, entwined with the doing of work rather than existing separately and being applied in work. As practitioners perform activities that form part of practices, they embody and enact knowing (Hopwood 2016).

[Gherardi (2006)](#_ENREF_15) refers to connectedness in action (what she calls the texture of practices) as the relatedness that emerges as people perform their work. As doing is entwined with knowing, connectedness in action is thus a question of how knowledge is done together. When considering transnational service work, the issue of its being knowledge-intensive can be framed in terms of what people do (enactment of knowledge-intensive work) in relation to one another (the texture of knowledge-intensive work).

Knowledge is both constitutive and characteristic of practices ([Gherardi, 2000](#_ENREF_13); [Gherardi, 2009](#_ENREF_16); [Orlikowski, 2002](#_ENREF_34); [Nicolini, 2011](#_ENREF_33)). [Orlikowski (2002)](#_ENREF_34) explains how practice and knowing are mutually constitutive – practices depend on knowing, are shaped by knowing, and also produce new ways of knowing. Knowing is embedded in doing. Nicolini ([2011](#_ENREF_33); [2007](#_ENREF_32)) emphasises how knowing transpires in and through practice. In his view, knowing is manifest through sayings and doings, the tempo of practising, the use of materials, interactions, practical concerns, accountability, division of work and changes in activities ([Nicolini, 2011](#_ENREF_33)). [Hydle and Breunig (2013)](#_ENREF_23) discuss knowing-how, enacted through doing, knowing-who, enacted through networking and knowing-what, enacted through sorting. The suggestion is that specific enactments can be linked to forms of knowing of which they are constitutive and characteristic.

This perspective prompts a focus on the ongoing practical accomplishment of knowing. Hence, we analyse activities performed in practices in order to uncover enacted knowledge. Conceptually locating knowledge in the realm of practical action makes it empirically available through the study of work activity. However, practices, as agglomerations of spatially and temporally dispersed activities cannot be observed directly. They may be empirically grasped through detection of patterns in activities and how they relate ([Schatzki, 2012](#_ENREF_40)). Thus we learn about both practices and knowledge by studying activities.

According to ([Schatzki, 2012](#_ENREF_47)), dispersed practices comprise multiple locally performed. The activity of writing a document for a project proposal to a customer, is part of, and shaped by, the practice of project initiation within a firm. Material entities, arrangements and infrastructure (such as desks and ICT) are entangled with activities and the knowledge enacted through them. Activities are organised by *practical understanding* (our key focus, see below), rules (formulations, directives, instructions), teleoaffective structures (being motived by something and moving towards an valued state of affairs) and general understanding (understandings that we rely on in our recognition of certain practices as such) ([Schatzki, 2012](#_ENREF_40)).

Practical understanding refers to the knowledge needed to carry out particular actions through basic doings and sayings ([Schatzki, 2012: 16](#_ENREF_40)). This focuses on the performance of particular tasks that arise in work and is often termed *know-how*. However, accomplishing one’s role in a transnational service context is not merely a question of being able to perform one or more specific actions. Issues of coordination arise, raising questions of the knowledge required to produce, maintain and repair connectedness in action (texture; see Hopwood, 2016).

The practical understandings implied here go beyond know-how that can easily be captured in procedures or practical rules. Schatzki explains that knowing how to go on ‘defies adequate representation in words, symbols, diagrams or pictures. This fact undermines the claim that practical understanding is being able to apply a formula’ ([1997: 299](#_ENREF_37)). The work performed by professionals in a firm cannot be understood just in terms of standards to be used, classification rules or internal routines and processes to follow. More nuanced theorisations of the knowing enacted in and required by transnational service provision (practical understandings) are required to understand how the firms address the coordination problem.

For Schatzki, people do what makes sense to them. What makes sense to someone depends on what they know. Schatzki’s practice theory proposes three sorts of knowledge: know-how, knowing that and knowledge of. First, know-how is ‘knowing how to X’, where X may relate to the actions or activities that comprise the practice in question ([Schatzki, 2017: 37](#_ENREF_41)). Second, knowing-that is propositional knowledge. ‘When one acquires knowledge that X one learns that X’ ([Schatzki, 2017: 37](#_ENREF_41)). Third, knowledge of, or acquaintance, is ‘knowing X’ or ‘familiarity with things perceived or dealt with in experience’ ([Schatzki, 2017: 38](#_ENREF_41)).

This signals that practical understanding can take on distinct forms. However, Schatzki states ‘I suspect, just like propositional knowledge, knowledge of boils down to know-how’ (2017: 39). Rather than collapsing such distinctions onto themselves, we extend the work of distilling out different forms of knowing. This is called for in understanding how the demands of transnational service provision are met in practice: simply reducing the answer to ‘know-how’ would obfuscate important features, given the known complexities and particularities of transnational work.

Two other relevant concepts are prefiguration and emergence, the latter being an effect of indeterminacy ([Schatzki, 2002](#_ENREF_38)). ‘*Prefiguration* refers to the ways in which bundles of practices and arrangements make particular courses of action easier, harder, simpler, more complicated, shorter, longer, ill-advised, promising of ruin or gain, riskier or safer, more or less feasible, and so on’ ([Hopwood, 2016: 72](#_ENREF_21)). Prefiguring gives practices patterning and stability, and is key to how practices prevail ([Manidis and Scheeres, 2013](#_ENREF_35)). Standards and procedural prescriptions relating to workflow are coming in many workplaces as means to shape what employees do. Rather than forcing people into certain actions, their judgements as to what it makes sense to do can be prefigured. In transnational knowledge-intensive service provision, multiple ICT tools, work processes, routines, standards, incentive systems and so forth prefigure different courses of action. However, this kind of work frequently requires with non-routine adaptation to specific customer needs. Here, the companion concepts of indeterminacy and emergence are relevant.

[Schatzki (2010)](#_ENREF_39) theorises activity as indeterminate. ‘Until a person acts, it remains open just what he or she will have done’ ([Schatzki, 2002: 232](#_ENREF_38)). Given that activity is indeterminate, then the practices they are part of are not totally fixed in advance by organisational structures, rules, or shared notions of what it makes sense to do: they have an emergent quality (Hopwood, 2016). Emergence is a helpful concept to understand knowledge-intensive service provision, since professionals have to customise service when non-routine adaptation to customer needs comes into play. These concepts are taken up as analytical points of departure in order to specify how transnational service provision is enacted.

It is worth making brief mention of Jarzabkowski et al.’s (2015) work on relationality, as it has some bearing on issues raised subsequently. Their work examined the market-making of reinsurers, showing that people relate the work they are doing to the work they assume others are doing on a deal. They refer to nested relationality to understand how multiple practices connect *between* firms. Transnational service provision raises questions of how people’s actions connect with what they understand others to be doing *within* a firm. We return to this idea in the discussion of know-who.

Our theoretical framework frames knowledge in the realm of practical action, taking locally performed activities as analytical windows onto larger practices of TKIs and the forms of knowledge in practice enacted. These ideas, and a distinction between prefiguration and emergence are taken up in the answering of two research questions:

*How are prefigured and emergent practices enacted in transnational service provision?*

*What kinds of knowledge are enacted in these practices?*

## Methods

### Newit

The study was conducted in two firms: Newit and Verco (both pseudonyms). Newit had approximately 500 employees at 18 offices in 11 countries across Europe, Asia and North America. Its services involved testing, inspecting and certifying electrical products, machinery, installations and systems for global market access. Customers’ products were sent to experts who tested them in accordance with regulations relevant to the target markets. These services assured, for instance, that electronic instruments used in bypass surgery did not interfere with each other, that military equipment and vehicles such as tanks were protected against interference from commercial emissions while remaining compatible with other military systems, and that in-flight conversations between the cockpit and the tower could not be interfered with by third parties.

 Each year, Newit undertook between 400 and 600 transnational service provisions. These may be exemplified by the case of a customer seeking to enter EU and US markets with a new computer monitor, and needing to comply with applicable standards specific to each market. Agreement was reached between a frontline salesperson and the manufacturer in co-operation with test engineers, then relevant documents and details were registered in Newit’s common ICT tool Express (EX), a widely used feature of the firm’s technological infrastructure.

 A test engineer physically received the monitor prototypes and tested them according to, for instance, the European standards for EMC (electromagnetic compatibility). Test results were entered into EX and transferred for verification. The verifiers were engineers with more experience than the testers and who had passed additional internal exams. Verifications were undertaken by different persons from those carrying out testing to ensure products complied with rules and testing procedures complied with standards. This verification job was passed on to another location, as was typical in the firm. The verifier inspected the test results, consulting applicable standards and documentation from the monitor manufacturer. The manufacturer could follow the progress through the EX customer site.

 Newit’s certification department was situated in Oslo, and once the verification had been performed, was assigned the job of certifying the European testing. After filling out the necessary form and re-checking the results and the documentation of the results, the certification papers were completed and uploaded to the EX customer site for the manufacturer. The monitors could then be launched on the relevant markets.

### Verco

 Verco had approximately 8500 employees representing 86 nationalities in 300 offices spread over 100 countries. Most employees provided were highly qualified engineers. Verco provided classification and consulting services to companies associated with energy, the maritime sector, health care and food. Their services helped to, for instance, minimise risks of offshore and onshore gas leakages, and facilitate emergency response services in shipping. In their globally distributed services, the aim was to ensure the same standard and expertise worldwide. Verco’s headquarters (HQ) were in Oslo, alongside supporting corporate units for their different business areas. One of the HQ’s functions was to develop and maintain learning courses, ICT systems and information as a centralised competence centre for employees worldwide. External services to customers were dependent on a well-functioning internal support service, which was under the responsibility of IT Solutions, the unit that was studied.

 A typical example of transnational service provision at Verco involved an Australian senior employee of a client firm who logged on to the workflow system and entered a status report that blocked a server, meaning that no-one could add or view information about vessels, regardless of whether they were located in Rio, Rotterdam or Melbourne. The problem was reported to the Local Help Desk, and sent to the Global Service Desk in Shanghai, in the same time zone. The request for assistance was sent using the ICT system Marval. In Shanghai, there was sufficient expertise to perform part of the request. However due to working hours restrictions, the remainder of the work was transferred directly to the Global Service Desk in Oslo at 8 a.m. Norwegian time.

 The Oslo engineer had to further transfer tasks to the expert group in charge of servers. The responder within the expert group needed to confer with her colleagues to ensure the correct handling of the database server issue. After resolving the final part of the service work, a report was sent back to the Australian user*.* On average, the Global Service Desk received 150 requests like this every 24 hours. While Global Service Desks were situated to cover 3 zones of 8 hours to be open 24 hours a day, the expert groups were only located in Oslo. This co-location in a single place reflected the need for deep specialisation and expertise in different business applications, and the need to work directly with others (a feature of more than 50% of requests).

*Structures and locations of transnational service provision: three service tiers*

In both firms, transnational service provision mapped onto three tiers, through which spatial spread was associated with particular tasks and expertise. These are outlined presently in to offer a more structural description of the firms and their transnational work, complementing the examples provided above. The first tier focused on initiation, and was present in all locations at Newit (sales desks) and in many at Verco (Local Help Desks). The second tier, site of execution work, entailed testing at Newit, distributed across multiple locations according to the type of testing). At Verco, this tier comprised the Global Help Desk in three locations, reflecting the coverage of all time zones through 8-hour shifts in three different parts of the world. The third tier (final execution and delivery) was present in limited places due to the need for specialised expertise. Verification at Newit was located in a few offices, whereas certification was only performed at the headquarters. The expert groups at Verco were only in Oslo. In both firms, location distribution was fan-shaped, with the first service tier present in many locations and the second and third tiers in progressively fewer locations. This structural patterning is important in understanding the prefigured practices discussed below.

### Data collection

The aim was to understand how services were provided transnationally and delivered to customers. Specific sections of each firm were focused on, based on the high levels of transnational work and the knowledge-intensive and transnational nature of the work performed. The core activity at Newit was studied, while data collection focused on the IT Solutions department at Verco.

Data were collected using participant observations over 23 days, investigation of written material and 104 semi-structured interviews, and 2 group interviews (see Table 1). Interviews and observation were conducted in Oslo, Helsinki, Milan, Glasgow, London, Shanghai, Hong Kong, Shenzhen, Ottawa and Dallas. This multi-sited approach enabled Hydle to identify different activities and related practices and to understand their connectedness (texture). Interviews lasted from one to two hours, and were recorded and transcribed. Observations were undertaken during visits to different locations and participation in company meetings, and secondary data sources such as company surveys and archival company documents were also used. Data were imported into NVivo for coding.

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### Data analysis

The analysis followed an iterative process involving several rounds of coding, contrasting and comparing emerging themes with existing literature and theoretical concepts. Case stories, as a thick-description mode of analysis ([Geertz, 1973](#_ENREF_12)), were presented to senior management and different groups at Verco and Newit to validate the data in terms of trustworthiness ([Lincoln and Guba, 1985](#_ENREF_27)). Data were examined in consideration of the research questions., balancing grounded (inductive) processes with those that were theoretically driven ([Srivastava and Hopwood, 2009](#_ENREF_47)). Following the research process of [Alvesson and Kärreman (2007)](#_ENREF_3), the coding steps were as follows.

The first step coded according to whether service provision was purely local or had transnational features. This enabled subsequent analysis to focus on most relevant data. Next, connections between professionals in different locations were identified in order to trace who was involved, where and during which phase, producing a map of the ‘texture’ of service provision. The next round proceeded iteratively between in-depth analysis within each firm, and comparisons across the firms. This revealed a higher frequency of transnational collaboration (often many times daily) than prior work on coordination challenges led us to expect ([Løwendahl, 2005](#_ENREF_29)). It was then possible to specify *how* the professionals provided services transnationally. This followed a Schatzkian (2012) approach, capturing multiple locally enacted activities, to construct a view of dispersed practices of which they are part.

Concepts of prefiguration and emergence were then taken as analytical points of departure to distinguish particular qualities of practices. The fan-shaped tiered structure, frequent use of shared ICT tools (EX and Marval), pricing agreements, formalised division of responsibilities and specialisation prefigured practices. Emergence was triggered by unusual problems where professionals came up against the edges of their knowledge and experience, and where rules or protocols were deemed insufficient or inappropriate to the particular task at hand. This analytical phase led to identification of activities associated with prefigured and emergent practices of transnational service provision, and these are presented in the following section as a basis for addressing the first research question.

The answer to the first question went a step further, exploring the dynamic between prefigured and emergent enactments. This fresh interpretive layer led to the notion of balanced acting as a means to capture how key tensions connected with the coordination problem are resolved in day to day work. The final step of analysis was more interpretive again, using previously identified activities and balanced acting as a basis for exploring the forms of knowledge enacted in the accomplishment of transnational service provision. This addressed the second research question.

## Findings

We first present findings explaining how prefigured and emergent practices were enacted in transnational service provision in the two firms. After describing the activities that comprise these practices, it is argued that the coordination problem is addressed locally through balanced acting, implying contextualised decisions and judgements as to whether to enact more prefigured or emergent forms of work.

### Prefigured practices

A diverse set of organisational systems, technologies, processes and support tools used locally and accessible globally within each firm shaped what it made sense for people to do in their specific activities. This led to patterns in activities that mean broader practices come into analytical view. Use of these systems followed and produced recurrent patterns of interaction, creating relatively stable textures. Connectedness in action was accomplished partly through ways of working that were regular, normatively favoured, structurally facilitated. Activities of different employees were coordinated across different sites, which when combined, accomplished transnational service provision.

At Newit, EX functioned as a workflow system that provided support from initiation to billing. It prefigured practices through which employees were able to connect with one another in action. One explained: ‘*The whole group uses EX—all the jobs are there*’; another employee reported: ‘*There is a uniform process in the group, whether the project is performed in China or here. It gives us higher quality throughout the world*.’ The work processes complied with the ISO (International Organization for Standardization) and were available in detail through the Intranet. English was the working language, and pricing was often predefined. Internal key performance indicators and goal-based management were used so that people and units cooperated as a single company, as captured in this engineer’s comment: ‘*It is irrelevant where we are located, as long as it is within Newit*’. EX strongly shaped what it made sense for employees to do, laying certain actions as possible or preferred. This in turn created a stability and consistency that supported coordination across sites.

At Verco, Marval was similarly crucial in enacting practices that were strongly prefigured. It helped to ensure that incoming requests were addressed and service support provided: ‘*Now, with Marval, the question goes more directly to the right person*’ (Local Help Desk employee) An engineer from the Global Service Desk added: ‘*We now have more consistency in terminology due to language and processes using Marval*’. A glossary of terms used in the IT sector, the ITIL, was used. It made sense for workers to enact their local work using the prescribed vocabulary so that an ‘incident’ was understood in the same way regardless of whether the person was in Rio or Kuala Lumpur. The ITIL prefigured practices through which connectedness in action was established and maintained in stable patterns.

Yearly prepaid agreements between locations and units (service level agreements) determined the opening hours, type of service work to be provided and response times. An engineer in IT Solutions commented: ‘*There is surprisingly high enthusiasm about a common system in all involved units, and people like that there is access to suggestions for solutions*’. Twenty Local Help Desks and additional super users who were being trained for IT and work processes were located regionally and were contacted by phone, by mail or in person. The Global Service Desks in Oslo, Shanghai and Houston were reached by sending information through Marval. The expert groups, located in Oslo, received everything from Marval. ‘*It is good to have a worldwide system when we work with and provide service to other countries*’ (IT Solutions engineer). What it made sense for employees to do was prefigured by ‘high enthusiasm’ for common systems, and fan-shaped structure that facilitated interaction across spatially dispersed tiers of service provision.

In both Newit and Verco multiple activities which were coordinated according to functions or expertise. At Newit, these followed the prefigured functions of service sales and testing, verification and certification. At Verco, they were divided according to the Local Help Desk, the Global Help Desk and expert groups. Arrangement of work by function and associated location in the fan-like formation created a texture that was crucial in resolving the coordination problem.

 The connections that constituted this texture were often interdependent. Each professional sent off the remaining part of the service to the next professional using the relevant ICT system. Activities were coordinated by professionals with different functions, according to the type of expertise. For Newit, the more markets the customer wanted to access with a product, the more testing and certificates were needed. For Verco, the demands of coordination depended on the complexity of the IT challenge, together with the urgency of accessing the business application. For one of the business applications regarding shipping classification, a senior engineer in the expert group explained:

*We are five people in the expert group working with support, where we are all specialised within different modules. For support, we receive about 10–20 requests a day, with about 10 for other time zones. We solve (within the expert group) about 80% of these, and 20% together with the two relevant business areas.* *All software-related tasks are performed together with Verco Software, and business-related processes are done with Verco Shipping. About 10% of the requests come from the US, 10% from Asia, the rest from Europe.*

 Before requests reached the expert group at the third tier, they passed the Local Help Desks (first tier) and the Global Service Desk (second tier). More complex service provision demanded more coordinated activities, intensifying the transnational nature of the work.

 This illustrates the activities, technologies and arrangements through which prefigured practices were enacted in transnational service provision. Systems, workflows, reference to common vocabularies and standards, and functional arrangements by tier and location all prefigured practices. They shaped what it made sense for employees to do in their local daily activities, producing dispersed practices that were held together in a stable texture. However, such ‘organisational ways of doing things’ do not fully explain how transnational services were provided: dealing with the coordination problem also required more agile and spontaneous ways of working.

### Emergent practices

Not all activities necessary in the accomplishment of transnational service provision were prefigured. Handling some situations, required activities that broke away from the prefigured norms. The practices that these activities were part of were distinctive for their emergent qualities.

Four activities were crucial enablers of emergent work: personal networking, communicating personally through phone and e-mail, social gatherings and training (formal and informal). These focused on interactions between employees, rather than on workflows, standards, or systems. In other words, they were oriented to connectedness in action, to texture. The texture in production here was more agile, assisting in necessary adaptations to non-routine problems and demands from customers. Interdependence between professionals took on a more fluid and responsive nature.

The texture straddled geographical locations and service tiers. However, activities enacting more emergent practices were driven by a need to create connections in action where prefigured arrangements, standards and commonalities were insufficient. This Verco employee in the first tier (Local Help Desk) commented: ‘*With help from second-tier colleagues, we manage to solve most problems*’ (Verco). When unable to solve problems, professionals inquired informally of the next tier to obtain assistance. ‘*EX gives us a common base, but we need more interactions to understand other countries and their services*’ (Newit). Interaction of a personal, and more spontaneous nature was crucial to provide complex services.

Although there were clear specifications, procedures and even rules for how and what to do, work was not always carried out in such a manner. Emergent practices were needed when such prescriptions were judged to be inefficient or did not fit a particular problem. Many participants described moments when what it made sense for them to do deviated from a formal rule, procedure or protocol. ‘*Sometimes I bypass the system, going directly to people I know*’, explained a Verco engineer. At Newit, failure of customers to provide the right documentation could necessitate emergent interactions between the tester and the customer. Such emergent practices performed an important restorative function – deviations from certain procedures or rules were needed in order to get other aspects of service back on track. A Newit engineer explained:

*In 15% of cases, the reports are not accepted, due to a wrong serial number or model number. The right people might not be looking at the form from the clients’ side. In safety testing, it is hard to start testing without documentation, so we start contacting the clients ourselves*.

Informal interactions that were not explicitly encouraged or favoured in ICT systems or workflows also occurred at the verification stage, through discussions between the tester and the verifier prior to verification acceptance. There were thus many interactions at Newit across tiers and locations, that broke away from formal routines, processes and systems. The same was found at Verco. Employees at the Local Help Desks often tried to solve problems by communicating with people at other Local Help Desks using instant messaging: ‘*Another trick is to ask a friendly soul you know …*’. They often followed up on requests that came in through Marval by phone to find a solution or provide feedback to their users personally. Similar interactions were found between lower tiers and the Global Service Desk expert groups.

Emergent practices were described by those involved as addressing points of interdependency that other (prefigured) practices and the systems behind them could not deal with. A Verco engineer explained: ‘*It is still dependent on people, not the system*.’ Personal networking through asynchronous (email) and synchronous (phone, instant messaging) contact between service functions was crucial to engineers in both firms: ‘*I am taking each problem on the phone*’ (Verco); ‘*I need to contact an expert at least three times a week. So, I know him*’ (Newit). Such interaction obtained prioritised assistance in urgent matters of service provision, and arose with high frequency: ‘*I am contacted with specific questions a few times a day by email*’ (Newit).

Direct and personal connections in action were enabled by social gatherings and informal and formal learning sessions. Through these, employees created a network of contactable others who could be called upon to assist them in a timely, responsive manner, outside formal structures and procedures. Familiarity and trust were important: ‘*Since on-site training, the cooperation has been very, very good. They always reply*’ (Verco).‘*I have met everyone now, from Korea, Hong Kong, the UK, and the US. We trust each other*’ (Newit). According to another Newit engineer ‘*It works a lot better once there have been people from here, out there. It helps a lot, so that not all of our contact is through the system or by email*’. The importance of face-to-face meetings in making such interactions possible was clearly conveyed by participants. A Verco engineer explained,

*Social gatherings... we learn a lot! Learn about new projects, share experiences, find out how we are working, build relations, and harmonise the way we work … the costs are easily outweighed by better working methods and easier communication.*

These events also helped employees develop knowledge of work practices and the people associated with them (which will be returned to later), as this Verco engineer noted: ‘*Social gatherings between locations are positive ways to exchange information and knowledge, for instance, expectations of what to deliver as part of the service, when to pass on problems to the next…*’. Such interactions were described as the ‘oil in the machinery’, although our analysis highlights their textural (connective) function: they form the connections that keep more prefigured aspects of work flowing smoothly. These contacts were invaluable in distributed organising when different types of expertise from different functions were required. ‘*If we do not agree, we have a discussion about it over mail. That is how we collaborate*’ (Newit).

Employees had a clear sense that agile and responsive practices were important to getting the job done. ‘*We have smooth processes that are flexible; that is why it is working so well here*’ (Newit). Why did it make sense to perform these kinds of activities? Reasons given by participants included the need to finish tasks quickly, pressure from customers or because another employee’s expertise was needed for work to continue. ‘*Sometimes they say, “Singapore had the same problem. We will ask them and come back to you”*’ (Verco).

Transnational service provision required forms of work and connections in action that broke away from those that were structurally arranged, procedurally sanctioned, or made available through ICT systems. Employees enacted emergent practices on a needs basis. Activities initiated by problems or requirements of specific tasks, customers or projects, demonstrated a patterning in their interaction focus, addressing person-to-person interdependencies that straddled national boundaries and service tiers. Although these interactions were typically at-a-distance, they were often only possible because of other face-to-face meetings that had built familiarity and trust.

### Balanced acting

Whether coordination in transnational work is accomplished through more prefigured or emergent practices is not automatic. Prefiguration does not guarantee that practices unfold in a particular way: it relies on employees making sense of a situation such that the prefigured course of action is upheld. Following established patterns and procedures is far from mindless. Similarly, emergent practices depend on decisions and judgements concerning when and how to deviate, bypass, and adapt to non-routine demands.

 The coordination problem can thus be understood as being addressed through *balanced acting*. Local activities reflect contextualised determinations of what it makes sense to do, and it is these that give rise to a dynamic balance between prefigured and emergent practices. This is not and cannot be pre-ordained, or imposed ‘from above’, nor is the emphasis on one or the other a property of geographical location, service tier, role, or the focus of work. Rather balanced acting reflects ongoing decisions, demands and opportunities that arise many times a day.

 Having revealed the provision of transnational services in terms of prefigured and emergent practices, questions of enacted knowledge become significant in new ways. Knowledge cannot be reduced to a question of knowing how to perform particular actions, but include the knowledge that is put to work in balanced acting, shifting between prefigured and emergent practices. This is taken up in the next section, which discerns different forms of knowledge, highlighting their connection with balanced acting.

## Analysis

The second research question was, ‘What kinds of knowledge are enacted in these practices?’. To answer this, we follow the premises of practice theory, re-interpreting the previously described practices as sites where knowledge is done, together. This enables us to highlight a feature of practical understanding in a Schatzkian (1997) sense: aspects of knowledge involved in this kind of work that defy representation and capture in structures, systems, procedures, workflows and protocols. Firstly, emergent practices themselves tend to happen off the radar or in the shadow. Secondly, judgements made between following prefigured or more emergent courses of action are themselves not explicitly reflected in documents and tools that represent this kind of work. As a Newit employee stated, ‘*It is on personal initiative that one calls and asks whether they have time to do it*’. Thus doing this work involved professionals’ interpretations and sense-making, judging what was necessary to do and say to perform the work. So, balanced acting is connected with practical understanding, but this does not simply boil down to know-how: there other kinds of knowledge in play. Alongside know-how, we distinguish know-what, know-who, know-where/where, and know-why.

### Know-how

As expected, know-how was enacted in transnational service provision in both firms, in the sense of knowing how to perform particular activities ([Orlikowski, 2002](#_ENREF_34); [Schatzki et al., 2001](#_ENREF_42); [Schatzki, 2017](#_ENREF_41); [Ryle, 1945](#_ENREF_36)). Every time employees recounted being able to solve a problem or parts of it, they were (implicitly) giving an account of their know-how. What was striking was that participants frequently spoke about when they reached the edges of their know-how. At Verco, an Italian IT engineer explained, ‘*The first step for the customer is to contact the Help Desk (in Italy). If I am not able to solve the problem, I send a help request to the Service Desk in Oslo*.’ Another Italian engineer explained, ‘*A typical situation is that Mateo in Help Desk Milan gets a problem, solves some of it, and then sends it to Norway. Oslo solves it*.’ Know-how is not just a question of being able to do, but of being aware of when the demands of a problem exceed what this knowledge permits. This then becomes a trigger to activities that are connective in nature – referring on to others, either through prefigured structures or flows, or through more emergent personal interactions. Balanced acting depends on know-how in accomplishing particular activities, but the question of balance is often provoked when the limits of know-how are reached.

### Know-what

Transnational service work is accomplished amid a plethora of tools, processes, procedures, and infrastructure. Participants’ accounts of their work revealed the importance of knowing what to use, not just how to use it. Know-what was enacted in both prefigured and emergent practices, and judgements based on this knowledge were sensitive to whether the practices were of one kind or another. The findings presented above showed how the tools selected for use in emergent practices (telephones, instant messenger) tended to be different from those use in more prefigured work (EX, Marval etc.). This is distinct from knowing *that* – which is propositional in nature (Schatzki, 2017; Ryle, 1945) – and from the theoretical sense of know-what associated with Polanyi (1966). Know-what here is conceived in the realm of practical action as a form of practical understanding rather than propositional or theoretical knowledge (see also Hydle and Breunig, 2013).

### Know-who

Transnational service provision cannot be accomplished by any one person acting alone. Just as there are myriad tools available, among which employees must make decisions as to what to use, so there many other people whom tasks might be passed on to, or who might be called upon for assistance. Know-who is not simply knowledge that certain others are available, but involves knowledge of those people, their skills, duties, roles, and location (both geographically, which has implications for availability in certain times of day, and in terms of the tiers of service provision). It thus has qualities that parallel aspects of familiarity or acquaintance in Schatzki’s (2017) account of ‘knowledge of’, but is not the same as this. While know-who focuses on people, it does so in view of their position, role and expertise in knowledge-intensive transnational work. This connects with Jarzabkowski et al.’s (2015) idea of relationality, but in the present analysis, is understood more performatively as a feature of practical understanding in the context of transnational work within firms, connected (below) to the accomplishment of balanced acting.

 In order to make effective judgements as to whom to ask for help, employees had to know who does what, where they do it, what their expertise and skill set are, when they are available, how they might be contacted, and so on. Many participants attributed the genesis of such knowledge to social gatherings (as described above). Being able to enact know-who also depended on the quality of relations*,* as this Verco engineer reported, ‘*We have good relations. We not only have a name but also a face, Rita! We can call directly*.’

A degree of know-who was captured and represented in systems, workflows and processes, which triaged certain problems or tasks from one tier or location to another (see Hydle and Breunig, 2013). However, know-who became most important in emergent practices, where prefigurations fell short, and employees needed to tap into personal networks in order to solve problems and progress certain pieces of work. The association of this kind of knowledge with a particular set of demands on professionals, and agentic responses to those demands is clear in Edwards’ (2010) work: ‘Knowing how to know who is key to negotiating the fleeting collaborations that are a feature of the responsive work…’ ([Edwards, 2010: 28](#_ENREF_7)). She explains know-who as an ability to look outwards, an openness and respect for the expertise of the other actors that involves spontaneous responses, rule-bending and a clear understanding of one’s own expertise.

Know-who thus has a particular significance for the accomplishment of balanced acting. Know-who informs whether and when it makes sense to pursue emergent rather than prefigured activities, and is thus central to the act of balancing between the two. It is an intensely relational form of knowing, focused on one’s own knowledge in relation to that of others, and relevant factors that have a bearing on how others’ knowledge might be accessed and enrolled in order to solve particular problems. In these respects, know-who remains firmly of the kind of knowledge that the broader notion of practical understanding connotes.

### Know-where/ when

The spacing and timing of work are crucial in transnational service provision. The coordination problem requires decisions as to when to act locally, when to cross borders, when to interact synchronously or asynchronously, when to request urgent assistance, when to act urgently in response to request from others and where in the world to send information, send requests, seek help, and so-on. The knowledge upon which decisions are made is enacted in the heat of practice, straddling both prefigured and emergent practices. Therefore, it is implicated in the accomplishment of balanced acting, and the production of a texture that connects actions in terms of people and their expertise. The fan-like structure of tiered provision brings a spatio-temporal division of labour and linked distribution of expertise. This provides a stable pattern that can prefigure where/when judgements. However, when non-routine problems arise, the demand for emergent practices, and a different set of judgements are required in order to determine what it makes sense to do.

Know-where/when is not only knowledge *that* coordinated activities occur somewhere in space and during a certain period of time ([Schatzki, 2012](#_ENREF_40)) but knowledge of the implications of spatiality and temporality for what to do next when coordination is required ([Hydle, 2015](#_ENREF_22)).

Given that know-where/when is key to what it makes sense to do, and in-the-moment acts of balancing between prefigured and emergent practices, it can be understood as a form of practical understanding. It is knowledge that is crucial for employees to be able to go on, and coordinate with others. Here connectedness in action is not necessarily right here, right now, but can be dispersed in space, interrupted or prolonged in time. The production of such a texture is both an effect and enabler of prefigured and emergent practices, and depends on know-where/when.

### Know-why

Know-why is not tied to proposition knowledge of facts, or knowing that something is the case. It pertains to reasons, and points more to questions of inference: what flows from a state of affairs, what causes it, what distinguishes some features as important or others not. Schatzki (2010) does refer to teleoaffective structures as shaping practices, acknowledging the importance of intentions and affective attachments. While these point to the idea of reasons, these are presented in his work as separate from practical understandings. In our analysis, know-why sits along other sides of knowledge that have a bearing on what it makes sense for people to do. Know-why is important in prefigured and emergent practices when providing knowledge-intensive work across borders, and in the balanced acting that is needed to overcome the coordination problem.

*Know-why* can involve knowing reasons why particular services are provided and what the customer needs. A Verco engineer explained,

*I strongly believe we are the last barrier against faults. To increase the safety. According to what I see, daily, not big, but also big accidents, loss of capacity of manufacturing to loss of lives. Big incidents, and on the top is safeguarding life, then environment, pollution, then property. It is about how to manage crisis and how to approach incidents.*

Know-why is also related to customer specifications – understanding reasons why non-routine demands might be important, or call for adaptation. The quote below shows how knowledge of reasons can be highly complex, and involve bringing together aspects that transcend particular jobs or service tiers to include wider trajectories in a particular industry:

*On a technical level, I have to understand the commercial sides and the costs of the services. The technical point when receiving a job is important; have to understand the scope of the job which is related to the client, identify the scope and provide the services. I also need the long-range view of what happens in the industry. When making an evaluation of a situation, have to assure that you have the average aspect of the industry.*

Know-why concerned the reasons why particular activities matter, why they have consequences for activities that others perform in different times and spaces, and why they matter to customers and end-users. The determination to pursue activity associated with prefigured practices, or whether to break away into a more emergent form of work, was informed by this kind of knowledge. What it makes sense to do, including how to act in a balanced way, is not ignorant of reasons. Know-why can be thus added as a further analytical distinction within the wider concept of practical understanding.

## Discussion

Our theoretical framework led to an analytical focus on locally performed activities as windows onto distinctive practices and forms of knowledge enacted in the accomplishment of transnational service provision. We found that dispersed knowledge-intensive services created demands to produce, maintain, and at times restore, a *texture –* connectedness in action (Gherardi, 2006). This texture might involve simultaneous or asynchronous actions in geographically distant locations. It needed to have both stable and responsive qualities.

 The practices where thus highly relational in nature, constantly creating connections across time and space, service tiers, and forms of expertise. They were attuned to functions in particular times and places, and to the specific demands that particular customers or projects placed on employees. These practices both held what could otherwise be disparate and disjointed activities together, while simultaneously creating the ‘oil in the machine’ that enabled them to come together smoothly. This involves balanced acting between prefigured practices, following structures, procedures and standard protocols when it makes sense to do so, but breaking away from this when necessary.

The coordination problem was overcome through the interplay between locally performed activities and the wider practices that they both uphold and are shaped by. The concept of practical understanding provides a means to connect empirical descriptions of what people performing their work activities with questions of the knowledge at play in these activities. In the two firms studied, this comprised a number of distinctive forms of knowing: knowing how to undertake specific activities, knowing what to use in doing so, knowing whom to enrol in the unfolding response to problems, knowing where and when to conduct the work, and knowing why particular things mattered, whether to the issue of coordination, to the customer, or to down-stream users.

[Spence et al. (2018)](#_ENREF_46) found that the transnational aspect shaped local work practices. Our findings suggest a more complex relation. Rather than the local being shaped by the transnational, we find the two to be more mutually related. Focusing on connectedness inaction, we see that the texture that is produced between local activities is the producer of and effect of the texture of the transnational practices. Local activities are constitutive not just of local practices, but of transnational practices, too: the latter comprise activities performed locally. To ‘see’ transnational practices, we must explore the texture that is woven by local practices and the activities they comprise. The transnational and the local are thus not understood as interconnected but rather parts of an integrated whole.

The subtleties of knowledge-intensive service provision become apparent when uncovering practices by looking at their activities. This enabled a subsequent uncovering of enacted knowledge, which, according to [Løwendahl et al. (2001)](#_ENREF_30), is key for value creation for TKIs. A focus on enacted knowledge addresses concerns about a lack of transparency ([Flood, 2018](#_ENREF_11)). The knowledge at play in transnational service provision comes under direct scrutiny under an analytical gaze through which it ceases to be opaque, but rather can be opened up through a range of distinctions, while remaining firmly in the realm of practical action. This extends the findings of [Henriksen and Seabrooke (2015)](#_ENREF_20) pertaining to professionals’ skill and experience as foundations for building relationships with others. Our analysis locates this knowledge (know-who) alongside other forms that, together, enable people to make sense of their situations, go on in their work, *with others*.

Transnational practices of knowledge-intensive service provision require dense relations between activities regardless of location, timing, and differences in expertise. Such density is not automatic or to be taken for granted (Schatzki, 2016), but is an accomplishment. Expressed in Gherardi’s (2006) terms, the texture – connectedness in action – can be tighter or looser, expansive or focused, rigid or flexible. Relational density and the qualities of texture have an important bearing on resolving the coordination problem. It is here that balanced acting becomes significant.

 Balanced acting between prefigured and emergent practices enables transnational service provision to benefit from both stability and agility. Prefiguring provides enduring connections through repeated, predictable work that in turn enables employees to become familiar with how to get things done, with locations of expertise, and connections between problems and the actions taken to solve them. Emergence takes over when adaptation to the non-routine is required, when rules and procedures fall short, and it makes sense to break away. Know-how, know-what, know-who, know-where/when and know-why are required in and shape both prefigured and emergent practices, and are crucial in contextualised determinations of whether to follow the prefigured bath or veer into emergent territory. This adds to our understanding of TKIs ([Løwendahl, 2005](#_ENREF_29)) by offering a fresh theorisation of how the coordination problem is solved.

In this account, knowledge comes to matter in different ways from those revealed by [Hasselbalch and Seabrooke (2018)](#_ENREF_19" \o "Hasselbalch, 2018 #2121). Focusing at an institutional level, they described control through leveraging, epistemic arbitrage, and epistemic arbiters. In contrast, this analysis has cast light on the forms of knowledge that are enacted as transnational work gets done. Rather than focusing on knowledge use for economic or social rewards ([Spence et al., 2016](#_ENREF_44)) or in terms of core-peripheral differences or neo-colonial effects ([Boussebaa, 2017](#_ENREF_5); [Boussebaa et al., 2012](#_ENREF_6)), we locate knowledge as an accomplishment – something that is done together, and which enables coordinated work to go on. This does not displace other analyses, but complements them by addressing questions about how work across borders is coordinated, and filling gaps relating to understanding the knowledge involved in this work. This strongly relational account also complements that of [Jarzabkowski et al. (2015)](#_ENREF_24), but adds something new by exploring relationality within rather than between firms.

## Conclusion

We have built on prior work that treats the basic problem regarding service delivery across borders as a problem of coordination ([Løwendahl, 2005](#_ENREF_29)). This article extends TKI theorising ([Boussebaa et al., 2012](#_ENREF_6); [Faulconbridge, 2008](#_ENREF_9); [Greenwood et al., 2010](#_ENREF_18); [Løwendahl, 2005](#_ENREF_29)), by looking at how the coordination problem is solved. A knowledge-focused perspective underpins a number of contributions.

Practical understanding has been examined principally in terms of know-how. Although distinctions within it have been acknowledged, [Schatzki (2017)](#_ENREF_41) argues they essentially boil down to know-how. Practical understanding refers to the knowledge that enables people are able to go on in practices, and therefore has an instrumental ‘how-like’ quality to it. However, our analysis shows that a collapse into know-how obfuscates important demands of work and important aspects of the knowledge that is enacted in meeting those demands. This follows several scholars have delved deep into different types of knowledge ([Orlikowski, 2002](#_ENREF_34); [Gherardi, 2000](#_ENREF_13); [Gherardi, 2009](#_ENREF_16); [Nicolini, 2011](#_ENREF_33); [Hydle and Breunig, 2013](#_ENREF_23); [Edwards, 2010](#_ENREF_7)). [Hydle and Breunig (2013)](#_ENREF_23) discussed know-how, know-who and know-what. This article extends their insights by also discussing know-where/when and know-why. It also takes this set of analytically distinct forms of knowing further by tracing it back to the accomplishment of transnational service provision through prefigured and emergent practices, highlighting the significance of balanced acting, and the importance of diverse knowledge forms in achieving this balance.

 The paper offers a much-needed empirical contribution in detailing transnational service provision. The focus on knowledge-intensive work in an engineering context redresses an imbalance in the literature towards law firms ([Malhotra and Morris, 2009](#_ENREF_31)). Not only is the study setting novel, but the approach to analysis breaks new ground. Prior studies have described the challenge of transnational work, explaining why it is so difficult, particularly when non-routine adaptation is required that coordination across locations, time zones, service tiers, and forms of expertise. However few have revealed how this challenge is overcome. Rather than focusing on barriers, challenges and obstacles for service provision across borders, we focused on enactment. Conceptualising how work gets done, we deployed theoretical distinctions in order to discern important differences in the kinds of practices involved. Identifying the activities that accomplish prefigured and emergent transnational practices is novel, and provides the foundation for a fresh argument about balanced acting. The coordination problem is replete with tensions between upholding standards and following prescribed courses of action, versus breaking away where systems and structures fall short. Balanced acting brings the coordinating benefits of both prefigured and emergent practices.

 This then underpins a richly expanded view of how employees manage to go on in their work, making sense of their situation and resolving problems with others. Engaging with knowledge in the realm of action. The paper expands the notion of practical understanding with a series of distinctions that better capture the complex demands of transnational work, and the knowledge that is enacted in meeting those demands. This does not displace the importance of practical understanding, but opens it up in important new ways.

For research, this analysis suggests the need to delve deeper into what prefigures practices, how alternatives emerge, and how people balance between the two. Organisational systems and cultures are not necessarily, nor universally strong in their prefiguring, or tolerant of emergent practices. Little is known about such variations in the context of knowledge-intensive work that crosses boundaries. For managers and professionals, a key lesson is that the coordination problem cannot be solved by systems, procedures, standards, and technologies alone. These are crucial, but conditions of work also need to permit and perhaps even legitimise emergent ways of working, too. This is not just a question of tolerating deviations, but of understanding the knowledge that is demanded in balanced acting, and supporting employees to develop and enact this knowledge in their everyday work.

This paper explains how transnational service provision is enacted, revealing balanced acting between prefigured and emergent practices, producing a stable but agile texture – connectedness in action – that demands know-how, know-what, know-who, know-where/when, and know-why. Herein lies the crux of this novel account of how the coordination problem is solved in practice.

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**Table 1. Empirical material from Newit and Verco**

|  |  |  |  |
| --- | --- | --- | --- |
| **Places** | **Year** | **Interviews** | **Other methods** |
| **Newit** |
| Oslo, Norway | 2003 | 8 (1 top manager, 2 regional managers, 3 senior engineers, and 2 engineers) | Guided tour, participant observations of daily work |
| Oslo, Norway | 2004 | 5 (2 engineers and 3 senior engineers) | Guided tour, observation at 2 days top management meeting, regular informal conversations with top management, and document reviews |
| Oslo, Norway  | 2005 |  | Regular informal conversations with top management, participant observation at 2-day top management meeting, and document reviews |
| Oslo, Norway | 2006 | 14 (1 CEO, 5 middle managers, 5 senior engineers, 2 engineers, and 1 salesperson) | Guided tour and different participant observations |
| Helsinki, Finland | 2003 |  | Workshop and 2 days participant observation at top management meeting |
| Milano, Italy | 2004 | 10 (1 top manager, 2 salespersons, 3 engineers, and 4 senior engineers)  | Guided tour |
| Shanghai, China | 2004 | 4 (3 salespersons and 1 senior engineer) |  |
| Shenzhen, China | 2004 | 5 (2 salespersons, 1 senior engineer, and 2 engineers)  | Guided tour |
| Hong Kong, China | 2004 | 6 (1 salesperson, 3 senior engineers, and 2 engineers) | Guided tour |
| Hong Kong, China | 2006 |  | 2 days participant observation at top management meeting |
| Ottawa, Canada | 2006 | 10 (1 manager, 1 salesperson, 1 administrative person, and 7 senior engineers) | Guided tour |
| Dallas, USA | 2006 | 9 (1 manager, 1 salesperson, 1 controller, 1 administrative person, and 5 senior engineers)  | Guided tour |
| **Total Newit** |  | **71 interviews** | **14 days of participant observations** |
| **Verco** |
| Houston, USA | 2003 | 1 (global help desk person, by phone) | Observation of video conference and training between Oslo and Houston global help desks |
| Oslo, Norway | 2003 | 6 (4 senior engineers from 4 different expert groups, 1 global help desk manager, and 1 local help desk person) | Participant observation at the global help desks and local help desks, discussions with management of the global IT department and project managers in expert groups, and document review |
| Oslo, Norway | 2004 | 2 group interviews (5 end users and administrative support, 6 end users, and senior engineers)  | 11 participants in 2 group interviews (GIs) |
| Milan, Italy | 2004 | 6 (3 local help desk engineers, 1 middle manager, 2 end users, and administrative support) | Participant observation at 2-day internal workshop with Milan local help desk |
| Glasgow, Scotland | 2004 | 4 (1 super user, 2 senior engineers and end users, 1 end user, and administrative support) |  |
| London, UK | 2004 | 5 (1 super user, 2 local help desk employees, 1 middle manager, 1 end user, and administrative support) | Participant observation at 2-day internal workshop with London local help desk |
| Shanghai, China | 2004 | 11 (2 global help desk engineers, 1 middle manager, 1 top manager, 2 super users, 3 senior engineers and end users, 1 engineer, and end user) | Participant observation at a 2-day gathering for 18 Asian global help desks and local help desk employees (from Dubai, Mumbai, Kuala Lumpur, Melbourne, Shanghai, Singapore, Yokohama), and participant observation at 2-day internal workshops with Shanghai local help desk |
| **Total Verco** |  | **33 interviews and 2 group interviews** | **9 days of participant observation** |

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**Many thanks]**

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**Note:** Any changes to an author’s institution since the time the research was carried out, along with the new email address, may be included here in the author’s biographical note, which will appear at the end of the article. **Many thanks]**

Nick confirms that he was affiliated with both institutions at the time the research was carried out.