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Published in:
Journal of Strategic Information Systems

DOI:
10.1016/j.jsis.2020.101616

Published: 01/06/2020

Document Version
Publisher's PDF, also known as Version of record

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Please cite the original version:
Rossi, M., Nandhakumar, J., & Mattila, M. (2020). Balancing fluid and cemented routines in a digital workplace. *Journal of Strategic Information Systems*, *29*(2), Article 101616. https://doi.org/10.1016/j.jsis.2020.101616

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Journal of Strategic Information Systems xxx (xxxx) xxxx

Contents lists available at ScienceDirect

Journal of Strategic Information Systems

journal homepage: www.elsevier.com/locate/jsis

Balancing fluid and cemented routines in a digital workplace

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ARTICLE INFO

Keywords:
Workplace technologies
Digital transformation
Routines
ERP
Qualitative research

ABSTRACT

Advanced workplace technologies are increasingly used alongside traditional enterprise software packages (such as enterprise resource planning) in the workplace. However, we have only limited understanding of how different kinds of technologies are used to dynamically shape work routines and fluidity in a digital workplace. We conducted an in-depth six-year study of the use of enterprise resource planning (ERP) system by a large information technology service provider company. The company used the system to manage its global staffing processes. We explored how the users of this system sought to achieve the fluidity needed to do their work. Our findings show that users balance two patterns of routine performance through different technologies with varying degrees of malleability: one to generate fluidity and another to generate stability. We call this process 'generative balancing'. Our research contributes to the literature on workplace technologies and ERP use by providing insights into how the use of technologies with different degrees of malleability helps to craft digital workspaces and enables users to deal with tensions between accomplishing local-level performance and realizing corporate-level strategic intents.

Introduction

Most work practices today involve technology to some extent (Orlikowski and Scott, 2016). Technologies used in the workplace are made up of 'IT modules' – defined here as technology coupled with a particular usage practice in the context (i.e., technology-in-practice (Orlikowski, 2000)). For example, technology designed for initialising projects in a workplace becomes an 'IT module' when it is implicated in a particular routine work practice of users (technology-in-practice). Enterprise resource planning (ERP) systems are typically designed to ensure compliance with desired work practices and routines, in order to realize the corporate-level strategic intents (Volkoff et al., 2007; Davenport, 1998; Pentland and Feldman, 2008). Strategic intents and "templates" of "successful operations and routines" (Winter and Szulanski, 2001) are often "inscribed" (Pentland and Feldman, 2008) into ERP packages, with the aim of providing a relatively stable technical infrastructure that aligns local practices with enterprise goals (Berente et al., 2016, 2008). However, the high-level, bureaucratic control focus of such ERP templates has been seen as being at odds with the need for fluid work routines in the workplace (Sia and Soh, 2007; Strong and Volkoff, 2010; Subramaniam et al., 2013; Berente et al., 2016). Hence, while the capabilities provided by ERP offer the potential to realize strategic intentions, in practice their rigidity imposes limitations on generating local routines to achieve operational aims (Ignatiadis and Nandhakumar, 2007). The findings of Berente et al. (2016) indicate that adjusting routines may help with self-organization by allowing for local variations. However, the routines inscribed ('cemented') within core ERP may impose compliance and allow no room for adjustment. Hence, in order to understand the routine adjustments, research should focus on how the nature of individual IT modules can help to shape actual routines in the

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https://doi.org/10.1016/j.jsis.2020.101616

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Please cite this article as: Matti Rossi, Joe Nandhakumar and Merja Mattila, Journal of Strategic Information Systems, https://doi.org/10.1016/j.jsis.2020.101616

workplace. IT systems in the workplace are not homogeneous systems, but are rather multiple, interconnected technologies with varying degrees of malleability (Eaton et al., 2015; Kallinikos et al., 2013). Existing studies pay limited attention to the malleable nature of individual technologies and how these allow local routine variations to be created. Hence the extant research offers limited insights into how technologies are used to dynamically shape work routines and fluidity and craft workspaces. Thus, this paper seeks to address the following research question:

How are users able to use IT modules with varying degrees of malleability to perform fluid and cemented routines in a workplace over time?

Drawing on an in-depth study of the use of ERP to organize global staffing processes, conducted over six years in a large IT service provider company, this paper offers a new perspective on how actors attain the fluidity needed in the local workplace. We argue that users are able to use different IT modules to balance two patterns of routine performance: one to generate fluidity and another to generate a sense of stability. This helps to craft digital workspaces and enables users to deal with the competing goals of accomplishing local-level performance while achieving corporate-level strategic intents. The routine performance at the local level and the technologies-in-use are in a constant interplay that allows routines and technologies to co-evolve and transform. As advanced workplace technologies are increasingly used alongside the traditional enterprise system to generate disruptive workplace innovations (Vial, 2019), this bottom-up enactment of routines and technology-in-use has profound implications for strategy implementation. We argue that during this interplay, local practices gradually become inscribed into the global system, and at the same time the routines performed become part of the fabric of operations at the local level.

The remainder of the paper is organized as follows. Section 2 reviews the literature on ERP system use in workplace and routines, and discusses theoretical perspectives on organizational routines and the malleability of IT in digital work. Section 3 introduces the research design and method. In Section 4, we present and analyze our case study of the use of ERP to organize staffing processes, and in Section 5 we present how IT modules with different degrees of malleability are enacted in these processes. Finally, in Section 6 we discuss our contributions to the existing literature and the implications of our findings.

ERP in workplace and misalignment in routines

Studies of the use of ERP highlight critical challenges in accommodating ERP into organizational routines and work practices (Gosain, 2004; Levina and Vaast, 2005; Sia and Soh, 2007; Wagner et al., 2010). This challenge is exacerbated by the disruptive impact of social media and other new workplace technologies in the ERP context (Vial, 2019). In this section, we briefly review the literature on the adoption of ERP in local work practices to realize strategic intents, which we follow with a review of the theoretical perspectives on organizational routines and technologies.

Realizing strategic intents through ERP

ERP systems are often procured to ensure that local work practices are aligned with corporate strategic intents; these are inscribed within the ERP as embedded templates (defined here as “cemented routines”). A problem arises when the templates are misaligned with the actual work requirements (Sia and Soh, 2007), necessitating workarounds (Alter, 2014) or other forms of loose coupling between the elements of actual practices and the routines imposed on them by the ERP (Berente et al. 2008). When users take evasive action to avoid control, this may result in ‘drift’ (Ciborra et al., 2000; Nandhakumar et al., 2005), leading to the intentional or unintentional establishment of new routines (Pernsteiner et al., 2018; Drum et al., 2017). Hence, most studies seem to treat misalignment (Sia and Soh, 2007; Soh and Sia, 2004) as something that must be overcome, rather than as an opportunity that can enable stability to emerge from the performance of routines (Aroles and McLean, 2016) or as an occasion that can enable creation of productive workspaces[1] (Lawrence and Dover, 2015; Casey, 2003). Berente et al. (2016) posit that a stable system implementation is often achieved through dynamically adjusting routines that serve as ‘shock absorbers’ for local discretion and flexibility while still promoting enterprise level control. Carugati et al. (2018) claim that technology can highlight misalignments and can serve as a bridge that allows different stakeholder positions to emerge, thereby producing new practices. Despite these findings, we still have a very limited understanding of the role of individual IT modules in the shaping of work routines and crafting of local workspaces. Such understanding is vital if we are to address the need for rapid, localized, and often ad hoc changes to technologies in the workplace, which are often hastened by digital transformation initiatives (Agarwal et al., 2010; Singh and Hess, 2017). Organizational routines could offer “a rich and promising lens” through which to understand the usage patterns of technologies in the workplace (Goh et al., 2011: p.583).

Organizational routines and technologies

Feldman and Pentland (2003) define ‘routines’ as “repetitive, recognizable patterns of interdependent actions, carried out by multiple actors.” They explore two aspects of the mutual constitution of routines: the *ostensive* aspect, which is the “abstract, generalized idea of the routine” and the *performative* aspect, which consists of “specific actions, by specific people, in specific places and times” (see Fig. 1). Technologies such as ERP are often designed to “ensure the reproduction of particular patterns of action”

[1] Following Lawrence and Dover (2015: p374) we consider ‘space’ in terms of “abstract dimensions…. with an emphasis on understanding how these dimensions shape [and shaped by] human interaction” whereas ‘place’ as “the particulars of a location”.

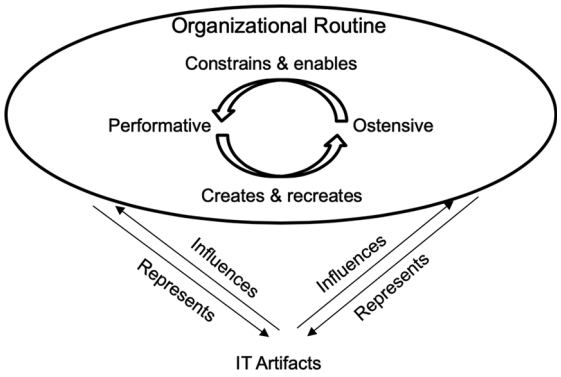


Fig. 1. Organizational routines and technological artifacts (adapted from Pentland and Feldman, 2008: p241).

(Pentland and Feldman, 2008: p241). The rules and procedures 'cemented' or 'inscribed' in the technology may reflect the ostensive aspect of routines, while the system-generated contents (e.g., transaction records) reflect their performative aspect (Pentland and Feldman, 2008). Pentland and Feldman (2008: p241) therefore see these IT artifacts as "distinct from the routine" but are "constituted through this recursive relationship" between ostensive and performative aspects of routines (see Fig. 1).

Aroles and McLean (2016) note that while routines may appear to repeat in a linear manner, this image of "repeating the same" is generated by a complex set of sub-processes that provide "different images of repetition, stability and change." Each cycle of the routine involves actions taken by actors, the abstract idea of the routine (ostensive patterns) they draw from to enact these actions, and the outcomes that they realize from these actions, which may be intended or emergent (Feldman and Orlikowski, 2011). Hence, fluidity and stability are different outcomes — or mutually constitutive dualities — of the same routine dynamic. Fluidity may be enacted in order to bring about stability, and stability may provide a condition for fluidity to emerge. This is in line with theoretical views of stability and change as a duality rather than a dualism (Farjoun, 2010; Feldman and Orlikowski, 2011; Pentland and Feldman, 2008).

Malleability of IT modules

As outlined above, IT modules embed strategic assumptions and intentions, and not only help to transfer routines but also contribute to their continuous evolution and transformation (D'Adderio, 2014; Aroles and McLean, 2016). Similar to Leonardi (2011), D'Adderio (2011) considers the affordances and constraints of IT artifacts and the interplay of human and material agencies, and argues that through "their involvement in 'performative struggles' among competing organizational agencies … artifacts and routines co-evolve" (p. 222). By bringing artifacts to the center of routines, D'Adderio (2011) offers a richer perspective on the relationship between the ostensive and performative aspects of routines "through the lens" of IT artifacts.

Information technology in the workplace can be seen as containing different IT modules with varying degrees of malleability (Subramaniam et al., 2013; Yoo et al., 2010; Kallinikos et al., 2013; Eaton et al., 2015), ranging from highly malleable 'open' IT modules to 'closed' stable infrastructural IT modules. Open IT modules can be seen as easily reprogrammable systems (Kallinikos et al., 2013) or applications with less structured data, whereas closed infrastructural IT modules can be seen as less malleable, institutionalized, integrated systems with strictly defined structures and data. Hence, open IT modules within an interconnected system potentially allow users to generate new routines.

However, the openness of the IT modules may not remain the same over time. For instance, a simple messaging app used in a work context may remain open-ended and reconfigurable and have the potential to generate new routines until it becomes integrated into infrastructural security and access rights protocols that prevent it from being reconfigured (Kallinikos et al., 2013: p362). Further, IT modules may become more stabilized in a workplace as they become absorbed into the practice of doing work (cf. Ewenstein and Whyte, 2009; Panourgias et al., 2014).

Users always have the option of generating routines by using closed IT modules in the manner designed but they may also find ways of avoiding these inscribed usages. The available possibilities for users to generate different kinds of routines through IT modules not only depend on the nature of the modules but also on the potential relation between them and the user. Openness and closedness are therefore enacted and re-enacted in everyday use (as a form of technology-in-use [Orlikowski, 2000]).

In summary, our choice of the use of ERP as an empirical context was motivated by a need to understand and theorize how users are able to use IT modules with varying degrees of malleability to perform fluid and cemented routines in a digital workplace. The existing literature pays scant attention to the malleable nature of individual technologies (Orlikowski and Iacono, 2001; Strong and Volkoff, 2010) and how these technologies allow local routine variations to be created. We extend the existing research by studying how different IT modules are employed by users to achieve their goals when the routines inscribed in some of the IT modules do not fully support everyday operations (Goh et al., 2011). We draw on the notions of technology malleability (Yoo, 2012; Kallinikos et al., 2013) and the mutual constitution of organizational routines through their ostensive and performative aspects (Pentland and Feldman, 2008; D'Adderio, 2011) to understand how different IT modules with varying degrees of malleability influence the performance of work routines and the crafting of workspaces.

Research design and methods

Case context – overview

We conducted an in-depth case study (Gerring, 2006) over six years from 2008 to 2014 to examine the use of ERP in managing dynamic staffing processes in Neon (pseudonym), a large IT service provider company. Neon had gradually grown through acquisitions, mergers, and strategic alliances, and had benefitted from a robust demand for outsourcing. During the research period, the company transformed from a locally-focused organization to a project-based, highly integrated IT service provider in Northern Europe. A newly-implemented ERP system and related workplace technologies designed to reconfigure and digitalize the staffing process were seen as critical to this digital transformation. Neon was therefore an ideal case through which to explore the use of technologies to dynamically shape work routines and fluidity in a digital workplace.

Data collection

The study focused on generating qualitative data, which consisted of transcripts from in-depth interviews at Neon, field notes from observations, and excerpts from documents. In addition to formal face-to-face interviews, we discussed some specific practices and issues with interviewees and other company personnel during lunchtimes and breaks.

The selection of the 44 interviewees is described in Appendix 1. A total of 50 interviews were conducted. Our first interviewee (#1) was responsible for the whole ERP development project and provided a comprehensive view of how the ERP packages and other workplace technologies were used in the company and how the company's tools and processes were aligned. She was our primary contact at Neon, and we interviewed her three times. She proposed that we interview a vice president (#2) who had been involved in formulating the latest corporate strategy, after which we broadened our knowledge by interviewing managers, ERP developers, and ERP users with different backgrounds at various levels of the organizational hierarchy. The selection of the interviewees was based on their position in the company and the recommendations of other interviewees, i.e., snowball or chain sampling (Patton, 2002). In order to ensure that we were constantly aware of all relevant changes in routines and system development at Neon, we interviewed some people twice during the research period.

In order to ensure that all relevant perspectives were considered, we actively looked for interviewees from different parts of the organization. We did not have time and interest to interview all who were suggested; our aim was to locate key information-rich individuals who would best inform us on certain research areas and speak openly about the research topics (Patton, 2002). This meant that we interviewed key individuals who were mentioned repeatedly but we also enlisted other interviewees from outside these circles of acquaintances. For example, in one interview we were told that 90 percent of employees were using a new ERP functionality, the competence catalogue. To confirm the reliability of this information, we sought out interviewees who had not necessarily been recommended by anyone, but whom we felt would have worthwhile contributions (#8, #20, #37 and #39). This method proved to be useful in increasing the reliability of the research data.

The lead researcher generally participated in all the interviews, while the other researchers took part less frequently. In order to gain a better understanding of how the staffing routines were structured, we classified interviewees by their main roles in the staffing process. These main work roles were sales manager, customer manager, business manager, project manager, staffing manager, line manager, HR manager, project member, controller, and ERP developer. Our interviewees were assumed to have insights into staffing routines and IT modules. The background of each interviewee is described in Appendix 2. Face-to-face interviews lasted from 40 to 80 min, and were recorded and later transcribed for subsequent analysis.

During each visit, the lead researcher spent time observing the practices of people involved in the staffing process and other unfolding events over the study period, which were recorded in the field notes. In addition to interviews and observations, the researchers also collected and reviewed key documents and other empirical material involved in the staffing process. The data collection spanned from December 2008 to May 2014, generating 50 interviews conducted by the research team in four periods. As our knowledge of the goals, routines, and systems increased over time, our interview questions were adjusted accordingly. The data collection process and research timeline are presented in Table 1.

The lead researcher had worked as an IT consultant for several years, and was familiar with the case company's history, products and services, customers, competitors, and business environment. During the first year of the research, the lead researcher had full access to the case company's intranet including all documents related to the company's ERP and other technologies, strategy, and transformation process. Thereafter, the research team had basic research access to the company.

The staffing process is one of Neon's core processes. During the project, the researchers were able to gain insights into the details

Table 1
Data collection and timeline.

Field research periods	Period 1: Dec 2008-Jun 2009	Period 2: Mar-Aug 2010	Period 3: Oct 2010-Feb 2011	Period 4: Mar-May 2014
Focused, face-to-face interviews (50 interviews)	Focused face-to-face interviews with managers, ERP designers, and ERP users from different backgrounds in both onshoring and offshoring countries, snowball sampling (see Appendix 1).			
	11 interviews	20 interviews	10 interviews	9 interviews
Observations and informal conversations	Field notes from observations of the use of the system from each visit, including 'over lunch' conversations and informal discussions, relating to how the staffing process worked at Neon.			
Other material	Extensive review of company documents, intranet and training materials, and informal discussions.			

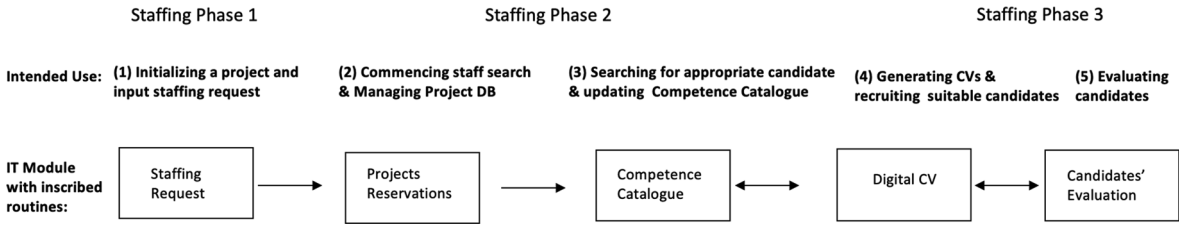


Fig. 2. IT modules intended to be used in the staffing process in the three phases.

of the staffing process, the inner workings of the systems, and the staffing assignments. Naturally, competitors would have been interested in Neon's staffing cases and the competences that were searched across the company. The non-disclosure agreement (NDA) that we negotiated with Neon required us to continuously check with our key Neon contact that business-critical information was not inadvertently being revealed; this ensured that we could focus on our research rather than on the fear that we may divulge business-critical information to Neon's competitors. The NDA therefore operated to the benefit of both the company and the research project.

Data analysis

The data analysis was a grounded, iterative process (Langley, 1999) that continued throughout the study. In the first phase of coding, we sought to identify the relevant descriptions of participants' everyday staffing routines and other practices from before and after the implementation of the newly implemented staffing process and IT modules. Since different systems were implemented at various stages, we used the IT modules as the basis for tracing the practices and routines. We mapped the relationships between the routines and IT modules and developed a case story of the staffing process (see Section 4: Figs. 2 and 3). In the second stage of coding, we separated the intentional routines and practices from those that emerged in the local context (Table 3). This provided a categorization (first-order categories) of the different IT modules (closed and open) that shaped the actual performance of routines. In the final stage of coding, we focused on conceptualizing the processes and outcomes (second-order themes) of the interplay between different IT modules and the actual performance of routines (see Fig. 3 and Table 4). This also helped us to identify trajectories of changes in the routines and IT modules, and explore how they had evolved over time (see examples in Table 4). Throughout the analysis, we drew on theories and concepts regarding IT artifacts and routines in an exploratory fashion, as sensitizing devices. Table 2 summarizes the phases of analysis.

Staffing process in Neon's workplace

In order for Neon to succeed in their project-based field of business, selecting the appropriate project members for each project was critical. This was known as the 'staffing' process, which involved a complex specification of staffing needs and requirements for each project. The core staffing process had the following three phases: (SP#1) assessing resource needs and staffing requests, (SP#2) searching for candidates, and (SP#3) evaluating candidates. An integrated ERP system was designed to help with the performance of routines throughout the three staffing phases.

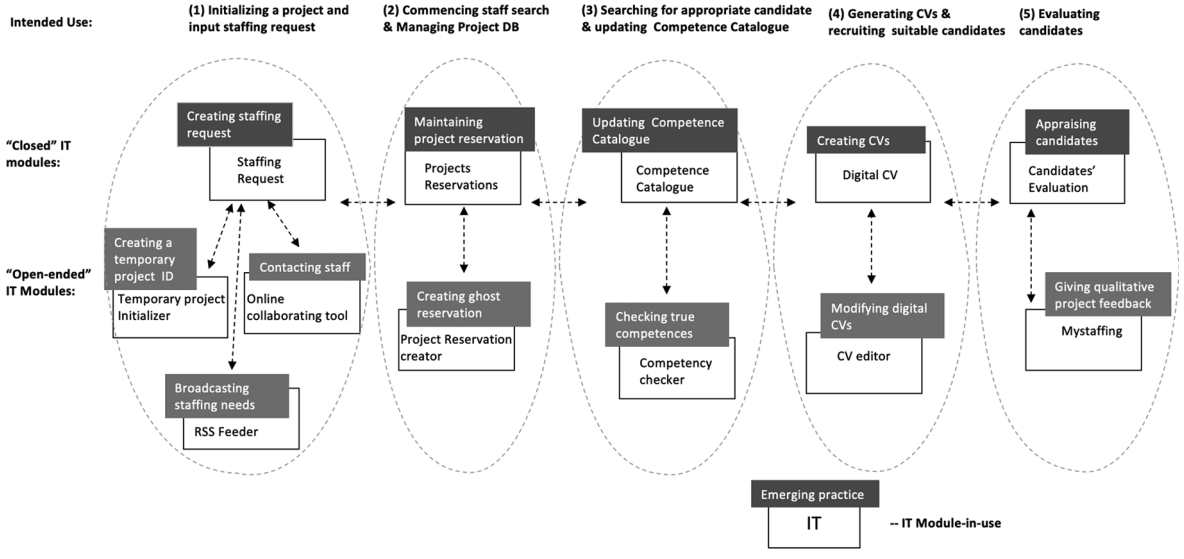


Fig. 3. IT modules-in-use enacted in emerging staffing practices.

Table 2
Stages of data analysis.

Stages	Tasks	Outputs
1. Identify staffing routines and related IT modules	(i) Identifying relevant descriptions of participants' everyday staffing routines before and after the implementation of the proposed staffing process and IT systems. (ii) Tracing the routines through each IT module.	Mapping of relationships between routines and IT modules, and development of a case story to depict the staffing process (Section 4) and the use of related IT modules (see Figs. 2 and 3).
2. Categorize intended and actual routines with IT modules	(i) Categorizing routine performance as inscribed by the IT modules and any deviations. (ii) Zooming out to the broader organizational context to identify corporate templates of inscribed routines	Categories of (i) inscribed routines (IT modules) and (ii) actual performance with 'closed' and 'open' IT modules (*first-order categories*, see Table 3).
3. Identify and conceptualize processes and outcomes of the interplay between IT artifacts and routines	(i) Further coding of categories (from stage 2) to identify the processes and outcomes of the interplay between different IT artifacts and actual performance of routines. (ii) Trajectories of change in routines and IT artifacts in light of case evidence and theories regarding IT artifacts and routines.	Themes based on outcomes, such as (i) generating stability, (ii) generating fluidity, and (iii) balancing them (*second-order themes*) via the interplay between IT artifacts and routines (see Fig. 3 and Table 4) and the conceptualization of generative balancing (see Figs. 3 and 4).

Table 3
IT modules in the staffing process, inscribed routines, and actual performance.

Staffing Phases	IT modules with inscribed routines	Inscribed routines	Actual performance of routines
#SP I	***Staffing Request:*** For project initialization and for offering an overview of a position, requested competences, timeline, and location.	A project ID should be created in the system before a staffing request could be entered. Every resource requester was expected to input a completed staffing request into the system. After evaluation, the requester was expected to close the request.	If a real project ID was unavailable in the sales phase, a resource requester often adopted the local practice of using a temporary project ID from a long-term reservation project. Other tools such as online collaboration tools were used for urgent staffing needs.
#SP II	***Project Reservations:*** For assessing candidates' availability for projects based on data gathered from the project database	Project reservations were updated automatically in the system	Maintenance of project reservations required considerable effort. Despite some improvements, the data quality of, say, reservation projects remained poor. For example, users left the staffing request open at the end of the process, leaving ghost reservations in the system to allow managers to use the system to hold talent for future projects.
#SP II	***Competence Catalogue:*** for providing an overview of a person's technical competences.	Relevant competences were entered into the system after a project was completed, or at least once a year. Employees input their competences and ratings, and line managers approved them.	Maintenance of the competence catalogue required a concerted effort by several parties and was not handled properly. Employees and line managers did not attribute the correct competences levels since they had a common interest in showing higher ratings. Line managers did not know all their subordinates and they had to make adjustments to the recorded competences. Online checking tools were often used to ensure the correctness of CVs
#SP II	***Digital CV:*** for creation of CVs based on information in the CV and My Projects databases.	The system created CVs automatically and marked some CVs as 'outdated' on a regular basis. The system ensured that CVs were sent to clients without editing.	The updating process and the quality of CVs varied in the organization according to, for example, businesses, units, technologies, and people. In practice, a requester asked an employee to update the data behind the automatically-created CV. For example, CVs were too long, and some project information was not visible. There is a need for case-specific CVs, and industry experience was not expressed in numeric values. In practice, free-form text was routinely inserted (CV editor) to address this issue, or informal channels/tools were used.
#SP III	***Candidate Evaluation:*** for providing an evaluation of candidates for projects.	Appraisal and evaluation of candidates were expected to be made in the MyStaffing tool. Candidate interviews were not included in the process. Evaluations had no data on employees' 'soft skills'. Closure of resource requests updated reservations.	Evaluation before the implementation of the MyStaffing (see Fig. 3. See below) was seen as ineffective and slow. As the data in the system were insufficient for evaluation and do not include 'human aspects', i.e., what kinds of project tasks a candidate really wanted to do, personal contacts were essential - for example, industry experience and soft skills were checked by informal tools.

Table 4
Stability and fluidity by using different IT modules.

IT modules	Generate stability	Generate fluidity
Staffing Request (closed) Creating temporary project IDs (open) Creating ghost reservations (open)	– After evaluation, staffing requesters were expected to close the staffing request – Special unit created to generate new projects with proper IDs (to comply with standards)	– Entered completed staffing requests into the system after the fact – Used online collaboration tools such as Lync (not part of the formal system) to deal with urgent staffing needs –kept staff requests open (after evaluation) to allow flexibility for change – Used a long-term 'reservation project' in the system as a dummy project
Project Reservations (closed) Reservation creating tool for ghost reservations (open)	– Automatic updating of project reservations (without new input) from project databases – Expected reliable and real-time availability of project reservation information	– Used software tools to create ghost reservations through dummy 'reservation projects' in the system in order to retain talent (e.g., reserve the right people and skills for future projects) – Kept key people's CVs incomplete (and their skills unknown) to avoid losing talent to other projects
Competence Catalogue (closed) Checking true competences (open)	– Competence Catalogue remained the comprehensive catalogue of all relevant technical competences – Managers expected to check that the CVs were updated at least once a year – Employees entered and rated their competences themselves (often inflating their own competence ratings)	– Used software tools to check the correctness of CVs (these tools were later added to the core ERP functionality) – Exploited and shared partial competence data, such as CV summaries, competence ratings, and superiors' evaluations.
Digital CV (closed) Modifying digital CV (open)	– Automatically generated (without new inputs) from the CV data stored in different systems and sent to client. – Resource requesters were unwilling to edit the automatically-generated digital CVs – Managers were forced to check CVs before annual performance reviews	– Used editing tools to manually shorten the CVs to fit offers (before forwarding to clients) – Used apps to verify that competences listed in CVs were realistic – Kept key people's CVs incomplete to avoid losing talent
Candidate Evaluation (closed) Giving qualitative feedback (open)	– Forced to rely on 'objective' facts about candidates to allow for automatic processes	– Used collaboration tools to confirm that CVs were realistic and to get trustworthy information from immediate supervisors

Over the years, the staffing function at Neon had been shaped by a succession of strategic initiatives from the top management. Initially, the company sought to establish a centralized corporate-level staffing arrangement that would deal with all staffing needs via a single globally standardized process implemented through the ERP system. Subsequently, the focus switched between the global and local arrangements as it became obvious that there were considerable variations in the process across the case company. During the last period of the study, the staffing function reflected the project-based staffing arrangement, comprising four service lines and four respective industry groups (referred to here as A, B, C and D). Since the staff in Service Line D had permanent roles, they did not use the company's staffing services.

The other three service lines (A, B and C) had their own staffing teams to meet their staffing needs. The structure of the staffing teams and everyday operating practices differed between the service lines in response to the different business logics. Service Line A had large competency centers in offshoring countries, from which staffing managers searched for staff for project assignments. The staffing team in Service Line B focused mainly on continuous services in each location, while Staffing Line C acted as a product development partner for specific customers. Despite their different business logics, the volume of projects and the nature of staffing requests, all staffing teams were expected to use the same process templates and routines.

Most of the staffing managers served Service Line A, which was also responsible for the global staffing process. Over time, the number of staffing managers decreased from approximately 50 to less than 20, while the number of staff handled by each staffing manager increased from 500 to 1000. Despite significant development in the IT systems, which was intended to reduce workloads, the workload of staffing managers was considered to be high.

Fig. 2 provides an overview of the IT system, depicting the intended use (1–5 at the top) of the IT modules by users in the staffing process over three phases.

Staffing phase 1: assessment of resource needs and staffing requests

The staffing process for clients' projects was initially triggered either directly by a customer/client or by the project sales process. At the beginning of the staffing process, a project manager seeking staff for projects created a staffing request. The staffing request described the open position, what kind of job the person would be doing, and the required competences, timeline and location; this information was stored in two separate systems. The creation of a staffing request required a project to first be formally initialized and assigned a project ID in the Project Reservation system. The project ID was then used for staff reservations.

Creating a staffing request in the system should make the staffing needs and tasks visible within the company without additional efforts. However, the formal staffing process was so rigid that the users often had to find other ways to perform the tasks. For

example, when the need was urgent, the resource requester had no time to follow the staffing process, so used online collaboration tools instead. We found that in such cases, the resource requester bypassed the system's formal practice and tried to address the situation using different workplace technologies, as one project manager described:

If it is something very urgent, I usually contact the staffing manager directly. And we try to get it solved urgently, in a way which does not follow the process and the tools. If we have more time, then we use the ERP tools (Project Manager, Service Line C, April 2014).

Further, the users often sought to promote internal mobility through self-staffing. For example, open staffing requests were broadcast through RSS feeds to all Neon employees, who were able to browse them, ask for further information, and respond to requests through the MyStaffing tools.

Another constraint of the formal staffing request system was the requirement for a project ID, irrespective that during the sales phase, a project ID was typically unavailable. In such cases, resource requesters adopted the practice of using project IDs from long-term reservation projects through the Temporary Project Initializer tool. For example, a staffing manager explained how the local office addressed this limitation:

> … the challenge is that the [system] requires a project ID before a staffing request can be created. And this is a quite stupid requirement, for example in the sales phase. Quite rarely can anyone create a project ID in that phase. And if it is a very urgent matter with, for example, a customer needing a person tomorrow, it is quite rude for staffing to say that we are not going to serve you without a staffing request. Please, create requests and fill the coupons first, and then we can discuss more. So we have solved this in the way that we use our long-term reservation projects for that. We pick up a project ID from a reservation project to a staffing request. … At the end of the day, there will be the right project and everything goes right (Staffing Manager, Service Line C, April 2014).

Staffing phase 2: searching for candidates

After the staffing request had been created in the system, the staffing manager began to recruit appropriate candidates by searching for staff in a CV database that included a Competence Catalogue and Digital CV Databases.

The codification of the Competence Catalogue and the updating of competences caused considerable maintenance work. The multidimensional structure of the database made the competence hierarchy difficult to maintain, as the same competences might be located, for example, in both the technology hierarchy and the technology vendor hierarchy. The competences in the competence catalogue formed an important part of the CV Database. Competences were updated whenever a project ended, or during annual development discussions. The CVs were generated automatically from data stored in the database. These system-generated CVs were seen as not reflecting the competences or up-to-date information relevant to potential projects, yet resource requesters were unwilling to edit these automatically-generated CVs:

> I don't like to edit or copy-paste. I know that people in sales, including me, sometimes make some cosmetic changes to a CV, or sometimes we ask a person to do that. For instance, I ask someone who has done, for example, coding for MAC Objective-C; for me, anybody who has done Objective-C knows a couple of tools and things. If only iPhone coding has been listed in the CV, I ask a person to list those other things too. CVs should be more case-specific, when the summary should concentrate on that [case-specific competences]. And the skills should also be concentrated on that too. One of our customers said "okay, it is good that this guy knows this and that, but how does it help me?" That's true. If s omebody can do Java and C++, in Java cases C++ does not make sense here. It [digital CV] should be more case-specific. I know that it is a bit painful for line managers and the people themselves to update the CV. But again, it is our business (Project Manager, Service Line C, April 2014).

The automatically generated CVs were often too long; citing, for example, every possible competence over the last 20 years. Employees were generally responsible for entering and rating their own competences in the system. A line manager checked the competences and ratings, but as both parties had an interest in showing higher ratings, these ratings were unreliable. This led to the need to verify and maintain the ratings and competences using tools such as Competency Checker and CV Editor tools.

Towards the end of the search, the availabilities of the suitable candidates' CVs were gathered from the database into which resource reservations were entered. Once the staffing manager had found appropriate candidates, their details were passed on to the resource requester. Employees' availability data in the database had to be up to date and correct for staffing purposes. In practice, the reservations data were not always updated in the systems, such that obsolete project reservations caused considerable extra work for staffing managers and decreased data quality, as one staffing manager illustrated:

> We informed that if they make reservations, project members are able to book hours into the project, even if there is no work for them in the project at the moment. If costs are collected into the project, it will motivate project managers to release project members for other projects. But where are the checks and balances that make this all work? Real life and the tools do not go at the same rate (Head of Staffing, Service Line A, March 2014).

To overcome the limitations of the ERP system, they created 'ghost' reservations in the system (i.e. kept resources booked up for non-existent projects) in order to retain critical talent for future projects.

Staffing phase 3: evaluation of the candidates

In the company's early days, the evaluation of candidates was carried out using a separate candidate evaluation system. Later, a new system called MyStaffing was used to carry out the evaluation. The use of MyStaffing greatly improved evaluation as it removed

the boundaries between countries and organizational units and provided a global view of competences. However, in practice, this system had several limitations in identifying the suitable candidates:

> The system does not tell whether a person is suitable for a project assignment. Interviews are always needed. We shouldn't staff a single person for the project, but a whole project team. The system proposes available people with certain competences, but the staffing personnel really know if they are suitable for a certain project (Director, Business Support, October 2010).

Online checking tools were often used to ensure that candidates' competences, experience, or soft skills were good enough for the assignment. Another technology used to check these was the project feedback stored in the databases; this however was eventually prohibited since it was deemed too subjective and indeed ran contrary to employment laws in some EU countries.

Often managers assigned employees to projects prior to the evaluation phase (which was theoretically not allowed). Resource requesters then were able to make staffing decisions and closed staffing requests. The closure of a staffing request automatically updated the project reservations in the system.

Summary: IT modules in the staffing process

Our analysis indicates that IT modules that were intended to be used (inscribed routines) in the staffing process (Fig. 2) facilitated global rules and practices, but also imposed several constraints on the local performance of work routines. The rules and procedures inscribed in these IT modules were broadly based on the major strategic initiatives imposed by senior management. For example, standardizing measures sought to streamline operations in every country. Project-based control relied on implementing a stringent key performance indicator (KPI) framework, that was supposed to ensure the processes adhered to the strategic staffing goals of optimally using the global workforce (e.g., to employ staff from so-called 'low cost' countries when possible).

Table 3 summarizes the key IT modules, corresponding to inscribed routines (reflecting the ostensive aspects of the routines), and actual performance (reflecting the performative aspects) at different phases of the staffing process, as described above.

While the intended use of the system was depicted in Fig. 2, the above analysis and Table 3 show that the actual performance of routines drew on both the IT modules intended to be used (relatively 'closed') and other software tools (relatively 'open-ended'). Fig. 3 depicts the IT modules-in-use enacted in emerging staffing practice. The top part of Fig. 3 shows the enactment of 'closed' IT modules in staffing process and the bottom part shows 'open' IT modules in use. We elaborate on these in Section 5.

Transformation of IT modules & routines & crafting of the digital workspaces

For the IT modules identified in the analysis above, the degree of malleability was not constant over time but continuously evolved. In this section we draw on the above analysis to offer insights into the co-evolution and transformation over time of the IT modules and work.

Transformation of routines and IT modules

As shown in Table 3, the procedure for creating a new project in the database required the creation of a unique project ID in the system. However, the system's inability to do this during a project's early phase generated new routines and the use of new technologies. The project ID was a key identifier for the entire staffing process, but it was unavailable in the early sales phase. Users therefore generated new routines to start projects through the Temporary Project Initializer and thus enacted temporary project initialization as a 'open-ended' IT module. The technology helped users to proceed with a staffing request without having to formally provide a lot of initial project data for sales bids that might not lead to a sale and would in any event quickly become obsolete. Over time, the tweaked project initialization procedures and technology in use were incorporated into the formal system to better populate projects' data for the service lines. This was an initiative by top management to take the bureaucratic burden away from project managers, while ensuring that the system's project data was properly initialized, thus making the (former) temporary project initialization a relatively 'closed' module.

In Staffing Phase II, different individual modules for cataloguing competence initially provided a relatively 'open' customizable competence cataloguing system. This was subsequently replaced by a common competence cataloguing and maintenance module, with pre-defined competences linked to the core IT infrastructure. On one hand, this meant that the Competence Catalogue became a relatively stable and 'closed' module. On the other hand, links with other emerging IT modules offered new opportunities for staff to use the Competence Catalogue database in novel ways and in different contexts (e.g., in the sales phase) and for different purposes (e.g., for competence development). In this staffing phase, the Digital CV became a closed module that was used in other processes. However, limitations of automatically generated CVs resulted in the generation of new routines through open IT modules (e.g. editing tools) at a different level.

The maintenance of project reservations was relatively easy for certain functions and businesses but on many occasions, it was difficult to predict the future work needed for a customer. In these cases, long term reservation projects were used as placeholders for reserving talented staff for future work. Eventually, this became known as Project Reservations Creation – an open module. Subsequently, this was integrated into the ERP system and became part of the infrastructure.

Staffing Phase III dealt with the evaluation of candidates. This phase was complex, and although there were several obligatory process sub-phases, the flexibility of everyday business life required the Candidates' Evaluation module to remain relatively open. In order to address this need, the MyStaffing tool was created so that a resource requester could evaluate candidates and their

competences (the module was therefore open-ended). This later became a part of the formal system.

As shown above, different IT modules (open and closed) helped with the performance of different kinds of routines (fluid and inscribed). In everyday use, some of the open IT modules became relatively stable and closed parts of the IT infrastructure. Similarly, some closed IT modules became relatively open through the pathways provided by other open modules. Along with such enactment of open and closed IT modules, changes to IT modules were also accompanied by changes to routines. Thus, both the IT modules and routines co-evolved in this process.

The above examples demonstrate how the IT modules and their usage co-evolved and transformed; the original rigid procedures inscribed in the system were less useful, but when these were augmented with less rigid tools in the digital workplace, innovative usage patterns were found and these generated new routines, some of which later became inscribed into the system.

Generating stability & fluidity through the IT modules & crafting digital spaces

The analysis above shows that actors were able to generate both fluidity and stability simultaneously (c.f. Farjoun, 2010; Feldman and Orlikowski, 2011) through use of different IT modules (such as Project Initializer, Digital CV, and so on). Table 4 summarizes the IT modules, and how they generated stability and fluidity.

As shown in Table 4, users used different IT modules to generate fluidity and perform parts of the routines cemented in infrastructural IT modules to maintain a sense of stability. Through using open and closed IT modules in the performance of local routines, the generation of stability and fluidity happened simultaneously (see Fig. 3). The open and closed natures of the IT modules were, as technologies-in-practice (see Orlikowski, 2000), enacted by routine participants. Participants could use closed IT modules in the manner designed but could also (and indeed did) avoid inscribed ways of using the IT modules (cemented routines) by using open IT modules to generate alternative routines.

The digital CV module with inscribed procedures and routines had limitations for accomplishing work in the local context, however following the procedures as inscribed generated the desired routines and stability. To work around the inscribed routines' limitations, users also enacted alternative routines through open modules, and thereby created innovative usage patterns and fluidity, as depicted in Fig. 4. Hence, CVs were produced as per the routines inscribed in the Digital CV module, while open IT modules were simultaneously used for final checking/editing and decision-making. In this way, users generated fluidity and stability in their routines through different IT modules that had varying degrees of malleability (Fig. 4).

Ongoing enactment of an open or closed IT module reinforced its nature and served as a "behavioral and interpretive template" (Barley 1988, p. 49) for routine participants' use of the module. For example, over time, the simultaneous use of Staffing Request and Temporary Project Initializer helped such usage to be seen as an acceptable pattern of the local performance of routines (for a period). This helped to craft digital workspaces where users balance two patterns of routine performance in order to accomplish the local performance goals. This behavior template, along with the enactment of open and closed IT modules, reflected the ostensive patterns (see Feldman and Pentland, 2003) of routine. However, as can be seen in the case of informal project initialization, these patterns of use continuously evolved through use of software tools, which later became part of the project initialization (closed) module, while other open IT modules were used to generate the necessary fluidity – this helped to craft the digital workspaces.

Discussion and implications

In this section, we draw on the above analysis to develop a new perspective on how different IT modules with varying degrees of malleability help users to perform fluid and cemented routines, and to create digital workspaces.

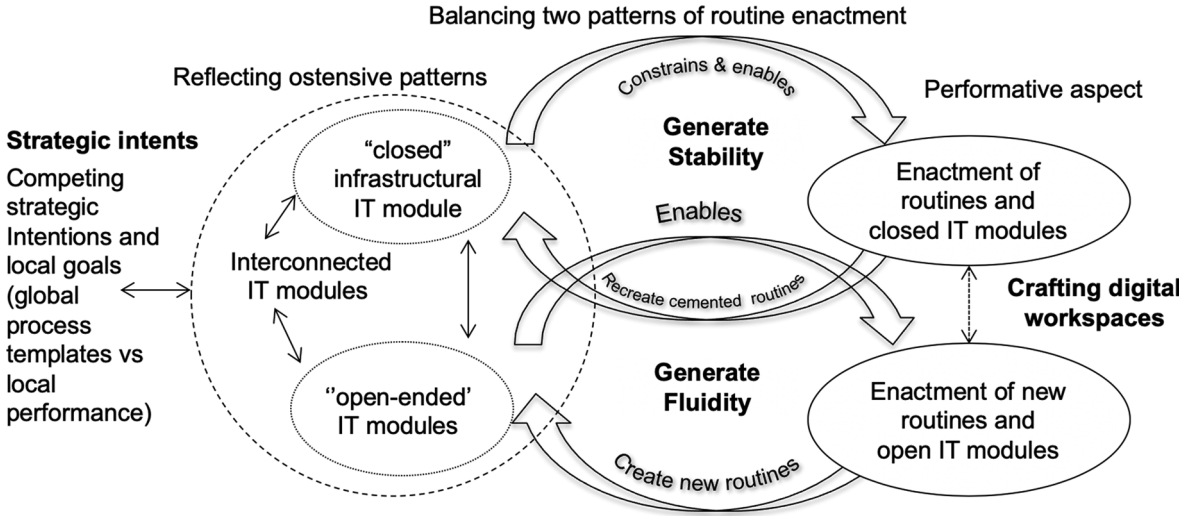


Fig. 4. Generating fluidity and stability and crafting digital workspaces.

Our empirical analysis shows that, in the early phases of the implementation of a new ERP, the rigidity of the routines inscribed in the ERP packages often conflicted with routines that were required to accomplish operational aims. In other words, implementing ERP with cemented routines disrupted the work to such a degree that some tasks could not be performed to accomplish the local goals. However, in their use of ERP, users were creative in working around the inscribed procedures and routines to complete the staffing process. The open-ended nature of some IT modules in the workplace further disrupted routines by allowing experimentation and ad hoc collaboration, as in the case of the collaborating tools for checking the correctness of CVs. Using the open-ended IT modules helped users to generate fluidity, and repeated use of those IT modules brought about a new set of ostensive patterns (see Fig. 4). At the same time, the routines and procedures cemented in the closed IT modules served as another set of ostensive patterns, reflecting high-level strategic intents and KPIs (e.g., standardizing and harmonizing operations) to help reproduce routines and generate stability. In this interplay, the IT modules used in the workplace embodied the ostensive aspects of routines while simultaneously shaping the enactment of the routines (i.e., the performative aspect of the routine). Owing to competing global and local goals, the ostensive patterns and actual routines were only partially aligned (Fig. 4) in the recurrent practices.

The open IT modules therefore played a key part in helping users to generate new fluid routines, while parts of the routines performed through closed IT modules helped to maintain a sense of stability as depicted in Fig. 4. Such 'generative balancing' helped to craft the digital workspaces and enabled users to deal with the competing goals of accomplishing local-level performance while achieving corporate-level strategic intents. The emerging digital workspace s reflected the performative aspect of the routine, facilitated by using multi-layered and interconnected IT modules with varying degree of stabilization. Closed IT modules helped users to follow the inscribed routines and, through repeated performance, helped to recreate the patterns of cemented routines, which formed the basis of digitalized operations.

Theoretical implications

The findings offer insights into how IT modules with different degrees of malleability are used to perform fluid and cemented routines simultaneously and to craft digital workspaces. These insights are important for understanding the disruptive effects of social media and other malleable workplace technologies (Vial, 2019). We found that using IT modules with varying degrees of malleability helps users to deal with the frequent disconnect between their work requirements and the global templates designed into ERP. They were therefore able to realize the corporate-level strategic intents and routines needed to perform their daily work (Strong and Volkoff, 2010; Malaurent and Avison, 2016). Previous research explores this disconnect by identifying different forms of loose coupling resulting from institutional contradictions (Berente et al., 2008), the roles of technologies in the resolution of diverse interests (Carugati et al. 2018), and different forms of workarounds (Alter, 2014; Nandhakumar et al., 2003). Our research, by shifting the focus towards the nature of the different IT modules in the workplace, offers insights into how different types of IT artifacts (Kallinikos et al., 2013) are used when balancing the pressures for fluidity and stability. Our findings indicate that research into digital work should focus more on the malleability of technologies in reconfiguring work. We argue that IT modules in the workplace are not a uniform, but instead display different degrees of malleability according to their nature, from 'open' (highly malleable) to 'closed' (system-infrastructure) (Yoo, 2012; Kallinikos et al., 2013). Because of this malleability and interconnectedness, the affordances and constraints are multi-layered and do not operate sequentially, as Leonardi (2011) implies, but rather evolve in a dialectic manner, oscillating between chaos and control, or by accommodating or imposing different types of misfit (Strong and Volkoff, 2010).

Second, this study provides detailed insights into the co-evolution of IT modules and work practices through the generative balancing of fluidity and stability. We have shown that IT modules with different degrees of malleability helped to shape the complex routines in the staffing process. Previous research (Wagner et al., 2010; Volkoff et al., 2007) has treated IT modules as akin to a black box, and there are few in-depth studies into the nature of the technology implementations that actually shape the routines through their inscriptions within IT modules, despite calls to study this reciprocity (Aroles and McLean, 2016; Gosain, 2004). Our study demonstrates that users use different IT modules with varying degrees of malleability to balance two patterns of routine performance. This helps to shape digital workspaces and enables users to deal with the competing goals of accomplishing local-level performance while achieving corporate-level strategic intents. The IT modules-in-use and daily routines are in a constant interplay that allows them to co-evolve and transform (see Fig. 5 above). This transformation process can work in two ways: either local practices become inscribed into the global system over time, or the implemented routines become part of the fabric of operations at the local level. We claim that this reciprocity is a core dynamic of digital organizing.

Third, the study offers insights into the responses to the challenges of complying with corporate-level strategic intents in the workplace in order to realize a digital transformation strategy. IT modules have the potential to embody strategic intents through inscribed routines while serving as a source for generating innovative routines and practices that contribute to the reconfiguration of work. By shifting the research focus to the malleability of IT modules, our study demonstrates that a strategy cannot simply be imposed on an organization through inscribed technologies, but that there needs to be a more balanced approach that allows for bottom-up enactment of the transformed IT modules. This is a key area to study in strategy research, as IT becomes both an enabler and a driver of the business strategy, creating differential business value (Bharadwaj et al., 2013).

Finally, by shifting the focus to artifact-embedded routines and their dynamic relationships with the use of malleable IT artifacts in practice, we have sought to illustrate the importance of materiality in routine theory (see Pentland and Feldman, 2008) and we provide novel insights into the co-evolution of IT artifacts and routines. Our findings complement D'Adderio's (2014) work on transferring templates of successful routines across sites and businesses. We have elaborated on her ideas on the role of technologies in the transfer of routines by demonstrating the process through which the malleable nature of IT artifacts is used in local contexts in both transferring successful routines and generating new routines.

Implications for practice, limitations and further research

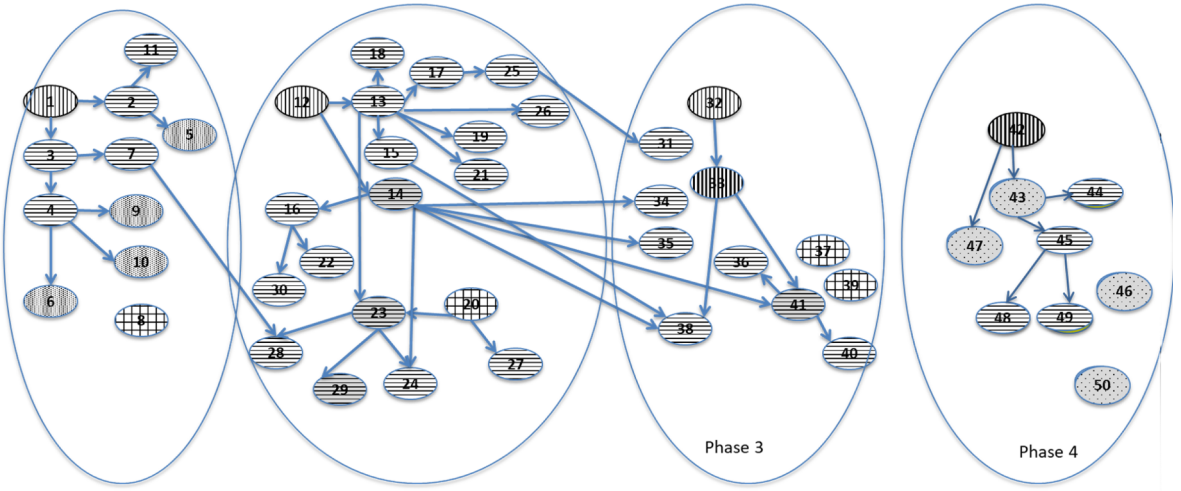
This study has several important implications for the digital workplace and the implementation of IT systems in practice. As we have shown, IT modules have a cemented core that provides global control over an enterprise's operations but must also allow for flexibility (cf. Molnar et al., 2017) at the individual user level. This view acknowledges that neither total standardization and automation nor total flexibility can possibly be the goals of ERP. Therefore, ERP implementations could be designed to provide an agreed set of core processes and data that form the infrastructural building blocks of the system. On top of these, there needs to be process layers that are more flexible, and open-ended modules and data objects that could be used to satisfy local users' needs and to craft productive workspaces.

Future research could address some of the limitations of this study. The in-depth single case design that does not allow for comparisons across contrasting contexts while the focus on company-level technologies and processes does not consider processes that span organizational boundaries. As companies move from internal ERP with closed infrastructure modules to enterprise systems in the cloud, the dynamics of the performance of local routines and the intensity and rigidity of corporate strategic intents may change significantly. Future research could enrich theorization of the dynamics of IT modules use and the reconfiguration of workplace routines by broadening the investigation to cloud-based enterprise systems.

Conclusions

Information systems researchers are still at the early stages of understanding the implications of the use of advanced workplace technologies and their impact on the reconfiguration of work. Our research contributes to the literature on workplace technologies and ERP use by offering novel insights into how the use of IT modules with different levels of malleability shapes routines in the workplace. By drawing on an in-depth study of the use of ERP to organize global staffing processes over six years, this paper has argued that users are able to use different IT modules with varying degrees of malleability to perform both fluid and cemented routines in a digital workplace. In this 'generative balancing', users generate both fluidity and stability in their performance of routines through IT modules that help to transform both the IT modules themselves and the routines, thereby crafting digital workspaces. While the rigidity of the routines inscribed in the ERP packages could often conflict with the fluid routines required to address local needs, we argue that this conflict between global and local needs should be seen as a source of innovation that can transform work practices and technology for better outcomes.

Appendix 1:. Selection of interviewees (44 individuals, 50 interviews) and project timeline



Location of interviewees:

- Nordic countries: 1–35, 42–46 and 48–50
- Offshoring countries: 36–41 and 47

Selection of interviewees for the interview:

- Interviewee was recommended for an interview by several interviewees: 5, 6, 9 and 10 (small points)
- Interviewee was recommended for an interview by people from outside circles of acquaintances: 8, 20, 37 and 39 (grid)
- Interviewee was recommended for an interview by one person: 2, 3, 4, 7 etc. (horizontal line)

Follow up interviews:

- Interviews with the first contact person: 1, 12 and 32 (vertical line)
- Interviews with the second contact person: 33 and 42 (vertical line, bold)
- Same person interviewed twice: 14 = 43, 29 = 46, 41 = 47, 23 = 50 (interviewee 50 was a replacement for 23, who was on maternity leave; points + grey color)

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Appendix 2:. Interviewees' backgrounds

Phase	#	Date	Onshore/ Offshore	Present Job Title / Line of Business	WE	CO	PO	SUB	AGE	F/M	RE	Note
P1	**1**	9-Dec-08	Onshore	Director / Business Support	30	10	3.5	20	50-59	F	-	The 1st contact person
P1	**2**	8-Jan-09	Onshore	Vice President / Business Support	25	15	8	50	50-59	M	1	
P1	**3**	15-Jan-09	Onshore	Template Owner / Business Support	25	9	2	6	40-49	M	1	
P1	**4**	30-Jan-09	Onshore	Manager / Industry	32	25	3.5	0	50-59	M	3	
P1	**5**	5-Mar-09	Onshore	Senior Consultant / Service Line	25	10	0.5	0	40-49	M	2, other	
P1	**6**	17-Mar-09	Onshore	Resource Manager / Industry	30	25	0.5	0	50-59	F	4, other	
P1	**7**	18-Mar-09	Onshore	Director / Industry	28	8	0.5	20	50-59	F	3	
P1	**8**	19-Mar-09	Onshore	Director / Industry	25	13	4	6	40-49	M	*other*	
P1	**9**	4-Jun-09	Onshore	Template Owner / Business Support	25	21	2.5	4	40-49	M	4, other	
P1	**10**	8-Jun-09	Onshore	Executive Advisor / Service Line	25	5	0.5	0	40-49	M	4, other	
P1	**11**	9-Jun-09	Onshore	Team Leader / Business Support	31	31	3.5	7	40-49	F	2	
P2	**12**	1-Mar-10	Onshore	Director / Business Support	30	10	3.5	20	50-59	F	-	The 1st contact person
P2	**13**	4-Mar-10	Onshore	Project Owner / Industry	15	13	0.1	0	30-39	F	12	
P2	**14**	9-Mar-10	Onshore	Country Staffing Manager / Service Line	21	21	1	0	40-49	F	12	#14 = #43
P2	**15**	15-Mar-10	Onshore	Head of Presales / Service Line	16	8	1	0	40-49	M	13	
P2	**16**	16-Mar-10	Onshore	Global Staffing & Competence Man / Service Line	22	3.5	1	0	40-49	F	14	
P2	**17**	22-Mar-10	Onshore	Project Director / Service Line	26	26	3.5	0	50-59	F	13	
P2	**18**	23-Mar-10	Onshore	Project Manager / Industry	30	5	5	0	40-59	F	13	
P2	**19**	24-Mar-10	Onshore	ERP Consultant / Service Line	10	10	5	0	30-39	M	13	
P2	**20**	26-Mar-10	Onshore	Lead Project Manager / Service Line	15	3.5	3.5	0	30-39	M	*other*	
P2	**21**	29-Mar-10	Onshore	Delivery Performance Manager / Service Line	4	1	0.2	0	-30	F	13	
P2	**22**	31-Mar-10	Onshore	Testing Unit Manager / Service Line	8	5	1	20	30-39	M	16	
P2	**23**	1-Apr-10	Onshore	Head of Service Unit / Service Line	12	10	3	25	30-39	F	13, 20	
P2	**24**	6-Apr-10	Onshore	Country Staffing Manager / Service Line	16	8	1.5	7/80	30-39	M	14, 23	
P2	**25**	23-Apr-10	Onshore	Head of Industry / Industry	10	8	2.5	35	30-39	M	17	
P2	**26**	27-Apr-10	Onshore	Technical Project Manager / Service Line	14	13	13	0	40-49	M	13	
P2	**27**	29-Apr-10	Onshore	Customer Manager / Industry	15	9	1	0	40-49	F	20	
P2	**28**	3-May-10	Onshore	Head of Service Line / Industry	29	16	6	15/250	50-59	F	7, 23	
P2	**29**	12-May-10	Onshore	Service Desk Manager / Service Line	15	8	1	15/50	30-39	M	23	#29 = #46
P2	**30**	17-May-10	Onshore	Service Manager / Service Line	11	3	1	0	30-40	M	16	
P2	**31**	25-Aug-10	Onshore	Head of Industry / Industry	30	9	2	44	50-59	M	25	
P3	**32**	29-Oct-10	Onshore	Director / Business Support	30	10	3.5	20	50-59	F	-	The 1st contact person
P3	**33**	10-Nov-10	Onshore	Director / Service Line	20	20	2	10	40-49	F	32	The 2nd contact person
P3	**34**	11-Jan-11	Onshore	Manager / Service Line	20	14	8	30	40-49	M	14	
P3	**35**	14-Jan-11	Onshore	Manager / Industry	27	15	2	9	50-59	F	14	
P3	**36**	2-Feb-11	Offshore	Microsoft Practice Evangelist / Service Line	20	2	0.5	0	40-49	M	41	
P3	**37**	2-Feb-11	Offshore	Line Manager / Service Line	20	4	2	23	40-49	M	*other*	
P3	**38**	2-Feb-11	Offshore	Global Staffing Manager / Service Line	19	6	3	0	40-49	M	14, 15, 33, other	
P3	**39**	2-Feb-11	Offshore	Line Manager / Service Line	11	4	1	30	30-39	M	*other*	
P3	**40**	2-Feb-11	Offshore	Microsoft Dynamics Consultant / Service Line	6	1	1	0	30-39	M	41	
P3	**41**	3-Feb-11	Offshore	Global Staffing Manager / Service Line	15	7	3	0	30-39	M	14, 33	#41 = #47
P4	**42**	3-Mar-14	Onshore	Director / Service Line	20	20	2	10	40-49	F	32	The 2nd contact person
P4	**43**	20-Mar-14	Onshore	Head of Staffing /Service Line	25	25	1	3	50-59	F	42	#43 = #14
P4	**44**	31-Mar-14	Onshore	Staffing Manager / Service Line	35	35	2	0	50-59	F	43	
P4	**45**	2-Apr-14	Onshore	Staffing Manager / Service Line	22	2	1.5	0	40-49	M	43	
P4	**46**	7-Apr-14	Onshore	Director / Service Line	19	11	1	0	40-49	M	23?	#46 = #29
P4	**47**	9-Apr-14	Offshore	Solution Manager / Business Support	19	11	1	0	40-49	M	42	#47 = #41
P4	**48**	15-Apr-14	Onshore	Senior Project Manager / Service Line	6	6	0.5	4	30-39	M	45	
P4	**49**	23-Apr-14	Onshore	Project Manager / Service Line	13	7.5	2	0	30-39	M	45	
P4	**50**	8-May-14	Onshore	Line Manager / Service Line	15	13	5	30	30-39	M	23	#50 (replacement) = #23 (on materinity leave)

WE	=	Work experience within the company (years)
CO	=	Work experience, total (years)
PO	=	Work experience in the current position (years)
SUB	=	Amount of subordinates
AGE	=	Age: under 30 years, 30-39, 40-49, 50-59, 60 or more
G	=	Gender: female / male
RE	=	Recommended by #

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