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When the General Meets the Particular: The Practices and Challenges of Interorganizational Knowledge Reuse

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Abstract. A large literature addresses the practices and challenges surrounding knowledge reuse within organizations. Yet organizations frequently attempt to reuse knowledge from outside their boundaries, which may be even more challenging. The practice is so prevalent that an entire industry—the consulting industry—has developed to support it. Unfortunately, we understand little about how knowledge embedded in one organization is used to intervene in another and about what challenges follow from the attempt to do so. In this paper, we aim to address these questions. On the basis of an analysis of four months of ethnographic fieldwork and extensive archival data surrounding an engagement between a leading consulting firm and a multihospital healthcare system, we find that partners and senior executives created generalizations based on their experience and encouraged junior consultants and hospital employees to apply these generalizations and reuse old solutions. Yet junior consultants, who had different backgrounds and were embedded in particular contexts, struggled to reuse solutions, and they instead developed novel insights through the engagement. We argue, moreover, that the ultimate success of consulting engagements lies in this division of labor within and across firms. Our work contributes to the literatures on knowledge reuse, organizational learning, and consulting by illuminating how knowledge is (or is not) reused and how differences between junior and senior consultants, and between consultants and clients, shape both the reuse of existing solutions and the development of new ones.

Keywords: management consulting • knowledge reuse • organizational learning • organizational structure

Introduction

Knowledge is rightly considered to be the most important organizational resource, the basis on which an organization creates value and establishes sustainable competitive advantage (Anand et al. 2007, Grant 1996, Nickerson and Zenger 2004). Organizations derive knowledge from their experience and, more often, from the experience of other organizations, which usually comes embodied in the form of technologies, practices, methods, and norms (Cohen and Levinthal 1990, March 2011, Nickerson and Zenger 2004, Sturdy et al. 2009). Indeed, the experience of other organizations is so important that a whole industry has developed for the purpose of moving knowledge about in the organizational world—namely, the consulting industry. A great deal has been written about the roles consultants play, the challenges they and their clients encounter, and the kinds of relationships they establish and maintain with clients (e.g., Armbrüster 2006, McKenna 2006, Sturdy et al. 2009). However, not much attention has been paid to how knowledge is actually transferred from one organization to another, and we still poorly understand the details of what happens when a consultant with a solution in hand interacts with a client whose problems may or may not fit that solution.

The lack of attention is puzzling, as much has been written, too, about the challenges associated with knowledge transfer *within* organizations—for example, search costs, internal transaction costs, barriers to integration, barriers to action, and so on (Ancona and Caldwell 1992, Haas and Hansen 2007, Hansen 1999, Okhuysen and Eisenhardt 2002, Pfeffer and Sutton 2013, Reagans and McEvily 2003, Szulanski 2000, Tsai 2001). Obviously, knowledge transfer *between* organizations is likely to be even harder, as many other elements come into play, including cultural, political, and institutional differences—all of which affect knowledge transfer and reuse. The fundamental difficulty of consulting, then, is that consultants need to be able to reuse the knowledge they have accumulated, but they can never simply transfer knowledge from one organization to another, as new difficulties turn up every time their knowledge meets the reality of the organization they are trying to help.

In this paper, we explore the question of how consulting knowledge is used and reused, and what challenges consultants encounter as they go about doing one or the other. Our study is based on four months

of ethnographic fieldwork and extensive archival data surrounding an engagement between a leading consulting firm and a multihospital healthcare system. Our study thus includes multiple autonomous units (hospitals) of the same organization, thereby controlling for the effects of industry and governance, and enables us to explore how the consulting firm attempted to reuse knowledge across these different units and to what effect.

At the heart of our findings lies a distinction between general knowledge and situated or particular knowledge. We found that partners relied on the general knowledge they had acquired along their careers, and they tried to convey their knowledge to junior consultants, who in turn were encouraged to adopt and enact their newly acquired knowledge as they interacted with clients. Yet the junior consultants had trouble reusing general knowledge because they were embedded in particular contexts and, perhaps ironically, *because* they regularly interacted with clients. Since they could not reuse general knowledge, they ended up developing novel insights in the course of their engagement. We argue that the ultimate success of consulting engagements lies precisely in this division of labor within and across firms. Our work contributes to the literatures on knowledge reuse and organizational learning by illuminating how knowledge is (or is not) reused and how differences between junior and senior consultants, and between consultants and clients, shape both the reuse of existing solutions and the development of new ones.

Literature Review

Much has been written about knowledge transfer and reuse across organizational boundaries. For example, the literature on "solution selling" depicts a process in which firms develop a solution based on existing knowledge, create demand, and then sell and deliver the solution to other organizations (Davies et al. 2006, Nordin and Kowalkowski 2010, Storbacka 2011, Tuli et al. 2007). Likewise, scholars have paid significant attention to consulting firms, which are considered to play an important role in the diffusion of knowledge among organizations. Consulting firms have been said to be "knowledge brokers" and specialists in reusing knowledge (e.g., Anand et al. 2007, Armbrüster 2006, McKenna 2006, Sarvary 1999)—so much so that DiMaggio and Powell (1983) likened them to Johnny Appleseed, claiming that consulting firms spread organizational knowledge throughout the land, making organizations more and more similar to one another as a result.

The literatures on knowledge reuse, solution selling, and consulting have focused on several topics: the growth of the phenomenon (e.g., Nordin and Kowalkowski 2010, Tuli et al. 2007, Wise and Baumgartner 1999), the extent to which solutions are customized for a particular client (e.g., Galbraith 2002, Nordin and Kowalkowski 2010), the ways in which sellers or clients define solutions (e.g., Davies et al. 2006, Sawhney et al. 2006, Tuli et al. 2007), and the business models that firms in the business of reusing knowledge from client to client can use (e.g., Storbacka 2011). Yet the details of the seller–client interaction—most notably, the challenges that "knowledge reusers" may face as generic knowledge confronts the reality of problems that do not fit this knowledge—remain understudied. Indeed, as Nordin and Kowalkowski (2010, p. 103) conclude in their exhaustive review of the solution-selling literature, "The question of how solutions are implemented and problems thereby solved is addressed by only a few articles."

This lack of attention is unfortunate since the literature on knowledge reuse *within* organizations points to a number of potential challenges that such efforts may encounter. Haas and Hansen (2005, p. 1) summarize the situation:

> Employees may find it difficult to search for relevant knowledge (Ancona and Caldwell 1992, Cummings 2004), transfer complex knowledge across organization subunits (Reagans and McEvily 2003, Szulanski 2000), integrate knowledge in groups (Okhuysen and Eisenhardt 2002), act on acquired knowledge (Pfeffer and Sutton 2013), offer a unique value proposition by reusing knowledge (Hansen et al. 1999), or protect the firm's knowledge from imitation by competitors (McEvily and Chakravarthy 2002, Teece 1986).

Part of the challenge, as Haas and Hansen (2005, 2007) discuss, lies in the fact that knowledge is rooted in particular social contexts that render the simple "transfer" from one place to another difficult (Orlikowski 2002, Sturdy et al. 2009, Szulanski 2000). For the same reason, knowledge management systems that attempt to "commodify expertise," but ignore context, are imperfect solutions to knowledge reuse (Elkjaer et al. 1991, Haas and Hansen 2007, Markus 2001).

Moreover, there can be social and structural barriers that render knowledge reuse within organizations difficult. For example, Hansen (1999) and Tsai (2001) both focus on how network characteristics within organizations shape knowledge sharing. Hansen (1999) finds that reusing complex knowledge requires a strong tie; Tsai (2001) finds that the ability to access and use knowledge depends on how central one is in an organization. The upshot of these challenges, as Szulanski (2000, p. 9) notes, is that "intrafirm transfers of knowledge are often laborious, time consuming, and difficult."

In an interorganizational context, these challenges are likely to be even more acute. In fact, part of the justification for arranging activities within an organization in the first place is to limit some of the

difficulties that knowledge sharing across organizations is likely to encounter. For example, Arrow (1974) argues that firms have particular information channels and codes that aid in transmitting information, and Nelson and Winter (1982) argue that organizations develop routines that enable them to address knowledge search, transfer, and integration difficulties. Levitt and March (1988, p. 319), too, argue that "organizations encode, store, and retrieve the lessons of history" so that they can continue to learn from prior knowledge "despite the turnover of personnel and the passage of time" (see Kogut and Zander 1992, Nickerson and Zenger 2004). Attempts to reuse knowledge across organizations are likely to be especially challenging since crossing organizational boundaries entails crossing different organizational structures, routines, information-processing systems, social systems, and contexts.

An interorganizational context introduces still other challenges. Specifically, as Levina and Orlikowski (2009, p. 672) note in their study of consultants, interorganizational projects in which "agents negotiate a variety of interests, identities, and interpretations to engage in shared interactions" are likely to foreground power relations. They write that "when such multiparty relationships involve novelty (e.g., unknown participants, new technologies, or unfamiliar domains), power relations become even more salient." Fundamentally, the challenge is that power relations and status hierarchies from each individual organization come into contact with each other, while the novelty and thus ambiguity of the engagement opens a space for their negotiation and reconfiguration.

Sturdy et al. (2009, p. 640) discuss the role of power and politics in interorganizational knowledge-sharing relationships. They note that consultants tend to occupy an "outsider" status and that the relationship between consultants and clients is further complicated by the fact that there is a "diversity of actors and roles in and around consulting projects" (Arnaud 1998, Kipping and Armbrüster 2002). This diversity can undergird difficult power dynamics and political struggles in consulting engagements. The organizational politics are further enflamed by the fact that consultants typically are engaged by the management or owners of an organization, fueling an impression that they represent these interests and are politically aligned with them (Sturdy 1997, Sturdy et al. 2009). Thus, diversity within and between both consultants and clients fuels power and political struggles that may make knowledge reuse and the implementation of generic solutions especially challenging.

In sum, then, we know that knowledge reuse attempts within organizations are difficult, and we have reason to believe that attempts to reuse knowledge across organizations may be even *more* difficult. Yet, unfortunately, the literature pays little attention to the knowledge reuse process, particularly to how consultants encounter and manage the process. As Sturdy et al. (2009) note, "While most studies of consultancy make claims or exhibit assumptions about knowledge transfer or, more accurately, translation or flow, there has been very little research which has focused directly on this" (p. 629). They conclude that "we still do not have a good understanding of what consultants and clients do, especially what they do jointly. While there are some exceptions, Engwall and Kipping's (2002) assessment that 'the interaction process between consultants and their clients is still poorly understood' remains valid" (Sturdy et al. 2009, p. 647). Our goal, then, is to better understand how knowledge embedded in one organization is used or reused within another organization, and the challenges knowledge reuse entails.

Method

Research Setting

We investigated a large-scale consulting engagement between a leading U.S.-based management consulting firm (which we call BCF, for Big Consulting Firm) and a large hospital system (hereafter called Emperor). BCF is among the most prestigious firms in the industry, with offices in more than 60 countries. Emperor is one of the largest U.S. hospital systems; it operates 40 hospitals and has 60,000 employees. BCF was hired to advise all the hospitals in Emperor, and it did so in waves consisting of three or four hospitals at a time, each wave lasting three months. (The entire engagement lasted about three years.) The project was known as Transformational Care, and its purpose, as described in an internal Emperor newsletter, was to "improve quality of care, optimize patient flow, and develop the capabilities to sustain improvements." The BCF partners and the Emperor senior management all hoped that the BCF consultants would reuse solutions from prior BCF engagements and from previous waves of the Emperor engagement.

Examining the BCF–Emperor engagement enabled us to study an attempt at knowledge reuse across two different organizations that involved multiple autonomous units within the client organization. This feature thus controls for factors such as industry (since units were all in the healthcare industry) and governance (since all units worked under the same Emperor governance system). The engagement also involved employees with varying levels of experience, expertise, and seniority, thus enabling us to explore diversity within teams and the associated power struggles.

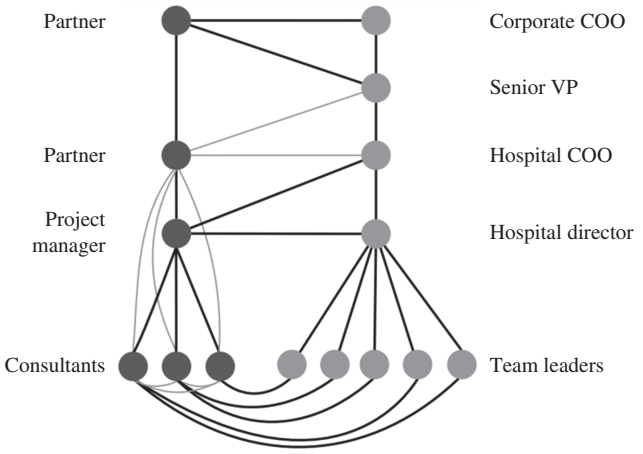
The Transformational Care project began a few weeks before the consultants arrived at the hospitals. At that juncture, hospital leaders and the two BCF partners who were to oversee the engagement agreed on

the areas of the hospital that would be transformed first (five different areas were selected). Then, the hospital director chosen to manage the project assigned a team of 10–15 hospital employees (physicians, nurses, physician assistants, and clerks) to work on each area. Once the consultants arrived at the hospital, they were assigned to work with one (or two) of the teams. The consulting teams themselves typically consisted of three or four junior consultants, one of whom served as project manager. The composition of the consulting teams varied considerably from wave to wave; for example, of the 10 consultants who participated in the third wave, only 1 had also participated in the first wave. Two partners oversaw the whole project.

The kinds of interactions that partners and junior consultants had with hospital employees differed markedly, especially with regard to the time spent at the hospitals. One partner never visited the hospitals; he was responsible for managing the relationship with Emperor's chief executive officer and chief operating officer. The other partner spent one day a week at each hospital in a given wave, interacting primarily with the consultants and with hospital leaders. The consultants worked on-site four days a week, interacting regularly with hospital team members and other hospital employees. Figure 1 illustrates these relationships.

Obviously, junior consultants and partners differed in their experience and knowledge of hospital operations. The two partners were experts in hospital operations; one had been with BCF for nine years and the other for six. By contrast, the junior consultants typically had no knowledge of hospital operations whatsoever. Hence, immediately prior to each new wave of the project, BCF held a two-day "kickoff meeting" at which the participating consultants learned about the history of the project, common problems identified at the hospitals, the solutions implemented, and the methods and techniques to be used. In other words, most of the consultants working on-site with hospital employees had acquired their knowledge about hospital operations and some of their characteristic problems and solutions only two days before beginning their work on the project.

Figure 1. Structure of the Team



Notes. Vertical placement indicates a hierarchical position. A line between two people means direct interaction. A dark line signifies interaction several times a week (via email, by telephone, or in person); a light line represents interaction once or twice a week. The lead author asked consultants, partners, and hospital employees about the frequency of their various interactions and often determined frequency via observation. COO, chief operating officer; VP, vice president.

Data

We collected both ethnographic and archival data on the BCF–Emperor engagement. The lead author spent four months (January–April 2010) on-site with a team of consultants at one of the hospitals (hereafter called WCH, for West Coast Hospital) during the third wave of the project. BCF had previously advised eight Emperor hospitals, four in the first wave of the project and four in the second.

The five areas BCF and WCH decided would be transformed first were (1) emergency department throughput, (2) emergency department registration, (3) medical determination, (4) denials, and (5) the preadmission process. The mandate of the throughput team was to address problems associated with bottlenecks in the flow of patients through the emergency department. The registration team would try to improve the accuracy of patient registration in the emergency department. The medical determination team would establish criteria for determining patients' medical status (inpatient, outpatient, observation). The denials team would explore why insurance claims were denied. The preadmission process team would improve the efficiency of presurgery procedures.

The lead author participated in team meetings and training sessions; observed the consultants as they conducted observations at the hospital; and interviewed hospital employees, managers, and executives. He also attended consultants' end-of-day meetings, at which they discussed the problems they were encountering in their respective teams. These observations resulted in 400 single-spaced pages of field notes, as well as audio recordings of meetings and interviews. Our data also include all the presentations created by the consultants and most presentations and training materials created by consultants at other hospitals and during other waves of the project.

Data Analysis

Both authors analyzed the field notes and archival documents. Our analysis proceeded as follows. First, we analyzed how senior members of BCF and Emperor expected the consulting engagement to unfold. BCF had developed a number of templates that junior consultants were expected to use in their engagement with

the client. Indeed, there were templates for every single step of the consultant–client engagement. At the end of nearly every day, after conducting meetings or observations, the consultants would retrieve a template from the BCF's knowledge management system and use it as a basis to create a presentation for a meeting they would have the following day, or a presentation outlining the progress to date or next steps. Collectively, these step-by-step templates defined a general approach to problem solving that lay at the core of BCF's client engagements. The following quote from a 2007 white paper written by four senior partners makes the approach evident:

> Distinctive problem-solving is the very heart of how we create client impact. As a Firm, therefore, we must continually reaffirm its centrality to our practice. In support of that goal, this paper sets out the "[BCF] method" of problem-solving, a structured, inductive approach that consists of four fundamental disciplines: problem definition, the problem-solving process itself, a number of "distinctiveness practices" our strongest problem solvers apply to deliver superior results to clients, and collaboration, which improves the results of our work and should lead to stronger client ownership of those results.

The first section of our findings describes this approach to problem solving and the attendant sequence of activities that senior partners expected the junior consultants to follow. This established a timeline of the engagement and a stylized model of how it would unfold.

As we discuss in our findings, a key expectation by the BCF partners and Emperor executives was that solutions would be "reused" across the various Emperor hospitals, including WCH. The next step in our analysis, therefore, focused on identifying and tracing how junior consultants learned about existing solutions, how they attempted to implement these solutions, and whether the solutions were *actually* implemented. Thus, when a junior consultant mentioned a solution, we traced backward in our field notes and archival materials to determine how and when the consultant may have learned about it. We also tracked the specific problems identified in the course of the engagement at different client sites along with the proposed solutions to these problems, and then we assessed the variance in problems and solutions over time and across sites.

As we discuss below, this interrogation of our data revealed that junior consultants rarely reused solutions unchanged, despite the preference by both BCF partners and Emperor executives that they do so. Thus, we conducted a deeper investigation of the challenges encountered in reuse and a comparison of the characteristics of the junior versus senior organization members. This analysis focused on individual traits (e.g., experience, knowledge, tenure) and on characteristics of their interactions (e.g., interaction partners, frequency), and it led us to identify three specific ways in which differences between the junior and senior organization members shaped the way in which the consulting engagement unfolded.

Findings

We first describe the step-by-step templates that informed BCF's problem-solving approach. We argue that this approach gave the *illusion* of customized, bottom-up, and client-driven solutions when, in fact, the junior consultants were encouraged to simply reuse prior solutions. Next, therefore, we discuss the generalized solutions that senior partners and executives at both BCF and Emperor preferred, along with the ways in which junior consultants attempted to reuse these solutions and their success (or lack thereof) in doing so. Finally, we discuss the differences in knowledge, tenure, and interactions between junior and senior employees that led to the particular patterns we observe.

BCF's Problem-Solving Method

BCF partners specified that consulting engagements should follow a six-step process: (1) defining a problem in a particular area, (2) describing existing work processes in that area, (3) identifying the issues in the work processes that produce the problem, (4) prioritizing issues, (5) finding and prioritizing solutions, and (6) dealing with implementation problems. The process was well established in the firm, and consultants were expected to adhere to it closely. Each step of the process took one or two team meetings to complete, and the five aforementioned teams had two weekly meetings dedicated to performing the steps. This section describes the six steps in detail, including the techniques used to perform them (see Table 1).

Meeting 1 was dedicated to creating a "team charter," a one-page document defining the problem the team would try to solve, the scope of the problem, the criteria for success, and the barriers to solving it (first step). The Emergency Department Throughput team, used herein as an example, defined the problem as, "How do we reduce the average length of stay of patients ultimately discharged from the emergency department to 120 minutes while continuing to reduce the number of patients left without being seen within the next 10 weeks?"

To solve the problem, the team had to determine how things actually worked in the emergency department (second step). Only then could the team identify what was causing the problem. At meeting 2, the consultants taught the hospital teams to create a "process map," a detailed flowchart of the steps in the relevant work processes. The throughput team described exactly what

Table 1. Overview of Meetings, Steps in the Engagement Process, and Tools and Techniques

Meeting	Step in the engagement process	Tools and techniques
1	Defining a solvable problem	Team charter
2	Describing the actual ways in which work was done	Process map
3–4	Identifying the issues that made work wasteful	Root-cause analysis Issue tree
5	Deciding which issues were most serious	Prioritization matrix (problem focused)
6–7	Finding and prioritizing the solutions to issues	Rules of brainstorming Prioritization matrix (solution focused)
8–20	Anticipating and addressing problems in the implementation of solutions	Stakeholder analysis Progress report Tactical implementation plan

happened to patients from their arrival at the emergency department until their departure (see Figure 2).

Meetings 3 and 4 were dedicated to identifying the causes (in BCF's terminology, "process breakdowns") of the problem the team was trying to solve (third step). To do so, the consultants showed team members how to perform a "root-cause analysis" by repeatedly asking why a given outcome was happening. The issues that the throughput team identified included, for example, "unclear who had to draw blood" and "inefficient communication between lab technicians and nurses." The team then organized the issues by employing an "issue tree," a treelike diagram useful for "breaking down problems into manageable pieces" and for "ensuring that all of the aspects of the problem are considered" (internal BCF publication).

The team's next task was to decide which issues contributed most decisively to the problem (fourth step). At meeting 5, the consultants introduced a technique for prioritizing issues, a "prioritization matrix," with two dimensions: "impact of occurrence" and "frequency of occurrence." Team members assigned each issue to the appropriate location on the two dimensions. They asked themselves, for instance, how often the issue "inefficient communication between lab technicians and nurses" occurred and how much the issue contributed to increasing the average length of stay of patients in the emergency department. Issues that occurred frequently and had considerable impact on occurrence of the problem would be tackled first.

Figure 2. (Color online) Throughput Process Map

The next challenge was to come up with solutions to the most pressing problems (fifth step). At meeting 6, the consultants explained the "rules of brainstorming" and guided the team through the process of generating solutions. To decide which solutions to implement first, the consultants then introduced a second prioritization matrix. On this matrix, the two dimensions were "impact of solution" and "ease of implementation." Solutions designated as relatively easy to implement and likely to have a significant impact on the solution of the issue would be implemented first.

By the end of the third week (after six meetings), all of the teams had found solutions to their most pressing problems. The fourth and fifth weeks were devoted to elaborating the solutions: precisely what would be done, when, by whom, and how. To this end, the consultants taught team members to conduct a "stakeholder analysis," a specification of who would be affected by the impending changes and how the changes should be communicated. Weeks 6–10 were dedicated to implementing the solutions; team meetings now focused on anticipating and solving problems in the implementation of solutions (sixth step). The full engagement with a particular Emperor hospital, such as WCH, spanned 10 weeks and 20 meetings.

Generalized Solutions and Implementation Attempts

As specified in the problem-solving process, one of the team's first tasks was to identify the problems besetting the various areas being transformed. Among the problems the teams identified at WCH were "no standard patient flow in the emergency department," "role of charge nurse ill-defined," "wasted time looking for charts," "delays in patients being triaged after arrival," and "delays in getting lab results." In theory, there was no reason for identical problems to recur at different hospitals. The hospitals differed in size, age, physical layout, number of beds, ratio of physicians and nurses to patients, availability of diagnostic equipment, and so on. In practice, however, at the end of the second week of the project, the teams at different hospitals arrived at very similar lists of problems. Overall, 12 problems were identified, and although each hospital found only some of the problems, as Table 2 shows,

Table 2. Twelve Problems Identified at Hospitals A–N

	Wave 1				Wave 2				Wave 3			Wave 4		
	A	B	C	D	E	F	G	H	I	J	(K)	L	M	N
Problem														
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	—		—				—	—	—		—		—	—
3	—		—	—	—		—	—	—	—	—		—	—
4	—						—		—		—	—	—	—
5	—	—	—		—							—	—	—
6	—	—	—									—		
7		—		—										
8		—		—	—	—		—		—				
9						—								
10			—			—		—		—				
11											—			
12									—	—		—		

Notes. Each column corresponds to a single hospital. Each black bar corresponds to a problem identified at the hospital. To create this table, we compiled the problems and solutions mentioned in the final presentations to the hospitals' executive teams. The ethnography was performed at Hospital K (circled).

the problems identified at the various hospitals were quite similar. Hospitals A and C in wave 1, for example, identified almost exactly the same problems: each found six problems, five of which were identical. More fundamentally, the six problems identified at hospital A encompass fully three-quarters of all the problems identified at the various hospitals.

The identification of similar problems resulted from the influence of the senior partners, who passed along knowledge of problems that would be encountered and of general solutions to these problems. Unlike the junior consultants—who, again, had little or no experience, and consequently no knowledge to reuse—the partners involved in the project were experts in hospital operations and had identified and solved hundreds of problems in healthcare over many years. Moreover, because the partners had participated in the Emperor project from the beginning, they were familiar with the problems identified and the solutions implemented at other Emperor hospitals. Indeed, the partner who spent time on-site repeatedly used his own experience as a source of general solutions that he thought should apply to WCH. Often, his advice to consultants tended to be quite general, consisting of aphorisms about how to handle people, present ideas, and project confidence: "Doctors are adrenaline junkies; they tend to confuse activity with progress"; "Take someone with you to the meeting in case it comes to a 'he said/she said' thing"; "If you use that language, you will sound like the biggest consultant shithead and they will hate your guts."

In addition, the consultants had access to all the materials created by their colleagues during previous waves of the project. At the end of wave 1, the participating consultants had compiled several presentations describing in detail what they had learned and accomplished (some of these presentations had more than 100 slides). At the beginning of each subsequent wave, consultants would study these presentations; at the end of the wave, they would append accounts of their own experiences. The presentations covered the problems encountered, the techniques used to solve them, the solutions implemented, and the results achieved. Jointly, therefore, the partners and the presentations served as receptacles of accumulated knowledge of problems and solutions.

The junior consultants tried to apply these solutions by defining the problems they encountered in ways that would allow them to reuse prior solutions, a behavior that accorded with the expectations of Emperor senior executives and BCF partners alike. One Emperor senior vice president made the expectation clear in an interview:

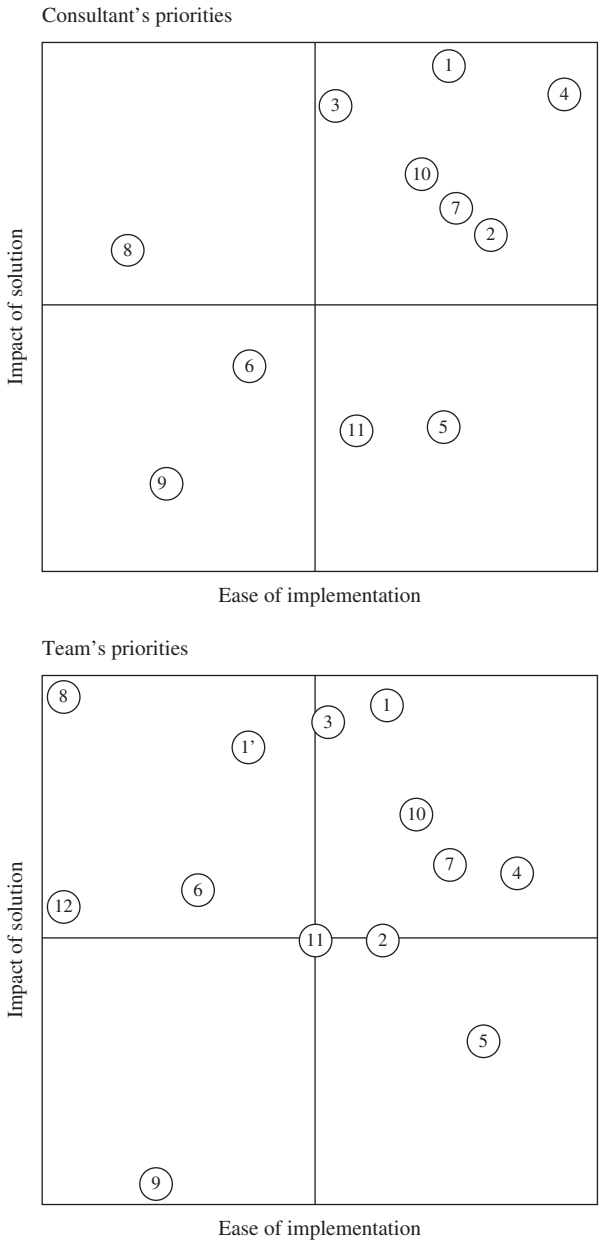
> [BCF]'s approach was not a "heavy-lean" one, in which the consultant played a pure facilitation role; it was what I would call "applied facilitation." The consultants facilitated, but they also had a solution at the back of their minds. They did not say, "OK, let's reexamine all the emergency-department processes, from start to finish." We didn't have time for that!

One of the BCF partners used the same expression, "applied facilitation," to describe the role he expected the junior consultants to play. The consultants themselves knew what they were expected to do: in an interview, one said that he would be content to let his teams "come up with the issues and solutions," but doubted the partners would agree; their task was to apply the process *and* reuse the solutions the partners had provided.

The consultants thus tried to convince hospital employees that the hospital had a general set of problems and that solutions that had worked at other hospitals would work at WCH. They used two persuasion strategies. First, they presented their own work as if it were the result of a collective effort. At several meetings, the teams ran out of time and were unable to complete a task. The consultants then completed the task themselves and presented the result at a subsequent meeting as if the result had been achieved jointly. At one meeting, for example, the team had tried to list all possible causes of a given problem but managed to compile only a short list; the consultant then finished the task after the meeting. When he circulated the considerably longer list at the next meeting, no one seemed to notice that the list had expanded.

Second, the consultants tried to anchor the teams' discussions on solutions with which they themselves were familiar. For example, before the meeting at which he was to introduce the "impact-of-solution/ease-of-implementation" matrix, one consultant created a version of the matrix that incorporated his assessment of how the team's solutions should be prioritized. During the team's discussion, he used *his* matrix as an anchor. Instead of soliciting team members' views on where a particular solution should be placed on the matrix and *then* positioning it in the white board accordingly, he *first* inserted the number corresponding to a solution and then said, "Tell me, where should [the solution] be? Lower? More to the left?" Figure 3 shows the version of the matrix that the consultant created before the meeting and the one that the team created. (The numerals represent solutions). The positions of solutions in the two diagrams are highly correlated; the solutions that occupy the critical upper right (prioritized) quadrant are nearly identical. In short, the consultants moderated their interactions with the client through templates and tools provided by partners, and they attempted to implement the general solutions provided by the same partners.

Figure 3. The Consultant's Priorities and the Team's Priorities



Reusing and Tailoring Solutions

Although the consultants hoped to reuse solutions from prior engagements, we found that the actual solutions they ended up exploring and implementing were, in fact, considerably *different* from previous ones. The junior consultants found that general solutions could not be easily reused and that individual hospitals, as complex systems situated in specific contexts, required tailored solutions.

To assess variance in solutions, we compiled the solutions implemented at the various hospitals during the first four waves of the project and classified them as reused or highly tailored (or new). Obviously, there is subjectivity in these classifications. Our interest in drawing this distinction lies in whether and how a prior solution was, in fact, applied. We thus focused on the degree to which a solution implemented in a particular hospital resembled a solution used in another (prior) hospital. Our classification further specifies solutions that were new to *both* the consulting firm and the hospital—in other words, that were "deviations" for both parties.

Table 3, a detailed comparison of the problems and solutions identified at hospitals A and C, shows specific problems and solutions and how these problems and solutions could overlap or be highly tailored (or new). Although the two hospitals identified almost identical sets of problems (5 of 7 problems overlapped),

Table 3. Problems and Solutions Identified at Hospitals A and C

Hospital A		Hospital C	
Problems	Solutions	Problems	Solutions
Lack of visual management tools	Assign roles for who should update visual management tools Increase effectiveness of First Net by leveraging all existing tools and icons Change lab order form to triplicate so lab can get order right away Create new rack system for charts Implement better flagging system for lab work	Lack of visual management tools	Implement new visual management tools and define update role
Inadequate staffing	Staff second disposition or triage nurse during peak hours	Inadequate staffing	
			Clarify responsibility for each staff member to use ED Tracker and create Tracker cheat sheet for each role
Ill-defined roles	Redefine role of charge nurse to "quarterback" responsible for flows	Ill-defined roles	Redefine role of charge nurse to focus effort on managing ED patient flow but delegate some tasks to other staff Shadow charge nurse to help transition into new role and provide feedback
Communication breakdown	Open new communication methods for staff and procedures Post important metrics daily	Communication breakdown	Open new communication channels to receive feedback from staff members for future improvement
Inadequate organization of supplies	Create central storage in old triage room or another patient room Organize supplies in a logical manner	Inadequate organization of supplies	Provide incentive for staff to use Tracker consistently
No standard patient flow	Create new regimented patient flow for patients with low acuity Midlevel provider/MD to respond to triage Create new layout to improve patient flow Assign who will restock supplies and when it will occur		
		Lack of understanding of current performance	Instill accountability of staff and managers through group and individual performance management

Note. ED, emergency department.

the table shows that the sets of solutions implemented were almost completely different (only 3 of 19 solutions overlapped). More broadly, the sets of solutions implemented at different hospitals differed dramatically; in other words, *most* solutions were different across sites. In Table 4, each of the 42 solutions implemented at 14 hospitals is represented by a black bar. For example, the second column shows that hospital B in wave 1 implemented solutions 1, 4, 6, 8, and 22. Now, if the consultants had succeeded in implementing the old solutions wholesale, Table 4 would contain no empty spaces. Instead, though some solutions recurred, new solutions continued to emerge all along.

The senior executives at Emperor expressed dismay at the lack of uniform application of generalized solutions. They had expected BCF to implement "reused" solutions across hospitals, and instead they found that each hospital was either pursuing highly tailored solutions or developing wholly new ones. One executive complained, "Every place is doing Transformational Care in its own way, which I have an issue with.... There will be some different permutation of things,

Table 4. Solutions Implemented at Hospitals A–N

	Wave 1				Wave 2				Wave 3			Wave 4		
	A	B	C	D	E	F	G	H	I	J	(K)	L	M	N
Solution														
1	—	—	—	—		—	—	—	—	—	—	—	—	—
2				—	—	—			—	—	—		—	—
3	—		—	—	—				—		—			—
4	—	—		—				—			—		—	—
5	—					—	—			—				
6	—	—		—	—									
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41														—
42														—

Notes. To create this table, we compiled the problems and solutions mentioned in the final presentations to the hospitals' executive teams. The ethnography was performed at Hospital K (circled).

but my guess is that the different Toyota plants don't have different ways of doing Lean. At least not to the same extent that we do." (It is noteworthy here that Emperor had contracted with BCF for an overall project fee, eliminating the incentive for consultants to "run up the hours" by seeking new solutions. In fact, the arrangement may have provided further incentive to reuse solutions.) Given the detailed templates and the partners' prior general knowledge available to consultants, the partners' and the clients' obvious preference for knowledge to be reused, the junior consultants' own attempts to manage the client engagement process to enable reuse, and the broader sociological lore that consultants repeatedly reuse the same solutions (e.g., DiMaggio and Powell 1983), the failure to actually implement reused solutions presents a puzzle. We next turn our attention, therefore, to three features of the engagement that made reuse unlikely to work.

The General Meets the Particular

Our analysis of the BCF–WCH engagement reveals that three characteristics of junior consultants and their interactions with clients made the implementation of general solutions challenging. First, the junior consultants were highly intelligent, yet, unlike the partners,

lacked prior knowledge about hospitals and healthcare. This led them to question the appropriateness of general solutions for their particular site. Second, because the junior consultants, unlike the partners, interacted frequently with people at the client site, they continuously confronted inconsistencies between general solutions and the particular context of WCH, and they were subject to tensions between the ground-level employees at WCH and the lofty promises of "transformation." Finally, the problem-solving process not only required junior consultants to interact with clients but also provided a means for clients' own ideas to surface and suggested that these ideas should, in fact, be taken seriously. As a consequence of these three features, BCF did not merely reuse solutions at WCH; instead, junior and senior employees at BCF and WCH engaged in a generative interaction between the "general" and the "particular," as we explain below.

Characteristic 1: "Smart Ignorant People." BCF's structure, like that of most management consulting firms, is based on the "leverage model," according to which inexperienced employees far outnumber experienced ones. The structure allows partners to delegate most of the work to inexperienced consultants, making it possible for the partner to work on several projects concurrently and thus best use his or her time (Hitt et al. 2001, Maister 2007, Nelson 1981, Sherer 1995).

We found that this model also shapes the way in which solutions are implemented. As noted earlier, the BCF partners were experts in hospital operations and had several years of experience at BCF; by contrast, the BCF project manager at WCH had less than three years of experience at BCF, and his hospital operations experience consisted solely of his participation in a previous wave of the Emperor engagement. The two junior consultants had even less experience: One was new to the firm and had a Ph.D. in entomology and behavioral science from the University of California, Berkeley. The other had a B.Sc. in engineering from Stanford and had been with BCF for almost two years, but had no experience in healthcare. Neither knew anything about hospital operations.

Indeed, inexperience and ignorance about hospital operations characterized most of the junior consultants: of the 10 consultants in wave 3, 5 had no experience whatsoever, and 4 had participated in only one previous wave of the project (hence, did not have much experience either)—a pattern that roughly repeated itself in all the waves. On average, according to a presentation used to train newcomers to the project, 44% of consultants who participated in any of the first four waves were inexperienced.

Inexperience led consultants to explore alternative perspectives and to question whether general solutions really applied to the particular case of WCH. As the historian Jacques Barzun once observed, amateurs are "Please confirm quote accuracy.less familiar with the impossible" (Barzun 1982, p. 36), an assertion that applied to the consultants we observed. They were, as one partner put it, "smart ignorant people." They also relied on their own idiosyncratic experience, introducing ideas from unrelated fields of inquiry and helping others to see old problems in new ways. The consultant with a Ph.D. in entomology, for example, drew analogies between organizations and spiders. He used to tell clients that the most difficult aspect of conducting experiments with spiders was not "to write a thorough protocol, or to set up the experiment, but to get the spider to do something." Even when an experiment seemed straightforward, he said, such as "give a spider a signal and wait until it goes right or left," the spiders "always did something unexpected: they would stand still for 12 hours, they would turn around and around, and so on." The consultant claimed that organizations behaved as unexpectedly. With the spiders, he had tried different tactics to see what worked; he did the same, he said, as a consultant.

Moreover, inexperienced consultants who naturally had not yet been thoroughly socialized often questioned guidance they were supposed to follow. For instance, some consultants (those with advanced degrees) had trouble adjusting to the prevailing lack of statistical sophistication. One marveled that, although the firm provided extensive training for new consultants, not a single session was devoted to basic statistical concepts: "Consultants never think of using a simple *t*-test to compare averages," he remarked. This particular adjustment problem seemed to be well known: one new consultant was told during the hiring process that "the Ph.D. hires always have trouble going from the 95–5 world to the 80–20 world."

Inexperienced consultants also resisted doing things "just because." One said that during his first consulting assignment a partner had asked the cost of something. The consultant conducted an analysis and reported that the cost would be between $2 million and $5 million depending on several factors, and the partner asked if he could use $3.5 million as an estimate. The consultant observed that picking a midpoint differs from recognizing two possible outcomes and that "calling it $3.5 million would not make it so." He would feel uncomfortable, he remarked, saying something just to reassure a partner; instead, he tried to do as he thought right. It is important to note that the inexperienced consultants felt they were allowed to dissent, that dissent was part of the firm's culture. Indeed, a BCF white paper that every consultant read upon being hired declared that "firm members have a responsibility for questioning or disagreeing with any firm decision they cannot accept." In turn, the consultants whom we studied interpreted this guidance as

liberty to question whether and how the general solutions offered by the partners were applicable to WCH. In this way, the junior consultants, knowingly or not, seemed to undermine the partners' claims to expertise by regularly challenging and ignoring the partners and their knowledge.

To summarize, a tension characterized the relationship between junior consultants and partners: partners had sold the project to Emperor executives on the premise that they would consistently apply their expert knowledge across multiple sites; the junior consultants, meanwhile, were inexperienced in hospital operations and explored alternative perspectives based on their idiosyncratic backgrounds and knowledge, and they repeatedly questioned the guidance provided by partners. Hence, knowledge reuse across hospital sites became problematic.

Characteristic 2: Client Interactions. The fact that junior consultants, unlike partners, regularly interacted with the client also shaped their attempts to implement general solutions. Interaction with the client made the junior consultants constantly aware of the fact that circumstances mattered and that oftentimes the advice of partners simply did not apply to the case of WCH. As partners did not participate in the day-to-day activities at the hospital, they knew very little about "circumstances." In one instance, before a presentation to WCH executives during the project, the senior partner sent some comments to a consultant. The consultant asked the project manager whether to incorporate the comments, but the project manager advised the consultant to ignore them, since "clearly" the partner "did not know what he was talking about."

The junior consultants dealt with specific problems and hence had to offer specific recommendations (unlike the partners, who relied mostly on generalizations). Whenever the junior consultants justified their recommendations by suggesting that they have been applied in other hospitals (in other words, whenever they tried to apply a generalization), they were challenged by WCH team members. WCH team members knew well the particulars of the case and would resist the implication that the case was similar to other ones. An illustrative exchange exemplifies this dynamic. One team tentatively adopted the goal of reducing the average length of stay of patients in the emergency department from 200 minutes to 120 minutes. The consultants had suggested the 120-minute goal—it had been used in previous waves of the project—but provided no evidence that the circumstances that prevailed at WCH made it achievable. The field notes describe what ensued:

> A doctor was not convinced that the 120-minute goal was realistic and said that he "would like to see how the other hospitals were actually doing." If the goal was not realistic, according to him, the effort to achieve it would simply add to the "general level of frustration." It would be like "trying to bring the percentage of 'patients left without being seen' to zero, which was both pointless and counterproductive." The doctor said that "it was frustrating to try to beat an unbeatable system." The consultant tried to move on, saying that the number was not that important, that it would only help the team to "keep track of its work." The discussion started to move on, but the doctor persisted. He said that if the tendency was "to go in the direction of evidence-based medicine" then the team should probably look for "evidence that 120 minutes was not an absurd goal."

Ultimately, the team changed the goal from 120 minutes to 140 minutes. As this episode highlights, the interaction between the consultants and the hospital employees was grounded in the particulars of the case. Thus, the consultants constantly encountered idiosyncrasies that rendered the partners' generalized advice problematic, and they had no choice but to negotiate with the hospital employees when a problem arose.

In sum, the partners and their generic suggestions were insulated against pushback, since they did not interact with the organizational complexities of the client; instead, they interacted with senior executives who themselves thought in abstract terms. By contrast, the consultants knew little about earlier cases and old solutions. Once at a hospital, however, they learned quickly and in detail about situated practices and the particular challenges involved in implementing general solutions derived from other engagements. Thus, they faced tensions not only with BCF partners but also with hospital employees who reinforced the particulars of the context. But interaction with clients (even when tense) forced the consultants to see what made the particular case special—hence, not simply another instance of a class to which the same generalized solution could be indistinctly applied.

Characteristic 3: Collaborative Problem-Solving Approach. Finally, the collaborative problem-solving method used by the consultants—and prescribed by the BCF engagement template—functioned as a mechanism for generating and selecting ideas. As junior consultants and hospital employees went through the steps of the method, they came up with innovative solutions to problems (innovative to both consultants and clients).

The fact that the consultants would employ a generic problem-solving approach was emphasized throughout the project. Likewise, employees were told that they would actively participate in the process, contributing their own solutions. In an email message to all hospital employees, the project was described as "a proven, hands-on approach that will give each of us a role and a voice in improving our workplace and the quality, compassionate care we provide." Thus, the

project was intended to be "hands-on," and employees were encouraged to make their voices heard. Moreover, as the BCF project manager repeatedly said, the consultants would "teach the method, not give the solutions"; that is, the hospital employees themselves would identify the problems and find the solutions. Of course, as noted earlier, both Emperor executives and BCF partners expected the consultants to identify the same problems found at other hospitals and implement the same solutions. In practice, however, we found that consultants were severely constrained by the method they themselves "sold" clients; instead of relying on an old solution (that is, instead of simply reusing an old solution that did not in fact suit the particular circumstances of the case), they were forced to come up with novel solutions to familiar problems.

The process was most apparent in the team meetings. Team members actively participated in the problem-identification, decision-making, and solution-design processes. As we have seen, the consultants had previous solutions in mind, but the team members had "pet problems" of their own (as one consultant put it), and they too suggested solutions that the consultants, acting in isolation, would not have considered. For example, one problem concerned the urinalysis cycle time: it took 96 minutes, on average, from the moment someone ordered a urinalysis until the results came back from the lab. (At a different hospital with a similar volume of patients, it took 68 minutes.) No other hospital had the same problem; thus the consultants had no experience with it. The field notes describe an exchange between the project manager and a doctor:

> The project manager said that "urine tests were ordered mostly for women," and, as a result, the fact that running the test took a long time "could not affect more than 50% of the patients." But one doctor said that "it was also ordered for older men," and that "there were delays in about 50% of the cases." The project manager then argued that, even if the doctor was right and there were delays in 50% of the cases (assuming that urine tests were ordered only for women and the elderly), doing something about it would not bring the length of stay down by much. The issue did not affect enough patients, according to the project manager. But the doctor persisted and gave an example of a young child who needed a test in the morning, to which the project manager replied, "OK, so maybe we should put the issue around the 50% line" [meaning that the issue did not affect many patients]. But the doctor and other team members were not convinced. The doctor said that "even if the issue affected only 25% of the patients, the fact that it could cause delays of more than an hour would have a big impact on the other patients too." The project manager ended up classifying the issue as having a "high impact" and affecting "slightly more than half the patients."

At subsequent meetings, the team worked to identify key bottlenecks in lab processes and generated "revised processes and responsibilities around urine testing and tracking." *Because* they had to follow the method, junior consultants were forced to change the way they approached the issue.

"Traffic jams" were also a problem in the emergency department. Once a patient was taken to an examining room, there was no standard sequence in which a physician, nurse, radiology technician, phlebotomist, and registration clerk would see the patient; thus, it often happened that several staff members tried to do so at the same time, causing a traffic jam. A presentation about an identical problem at a hospital in an earlier wave of the project provided a generalized solution: "Implement a standard flow of patient care in the emergency department." The actual solution the team came up with was to assign noncritical patients to chairs whose colors designated the procedures they needed to undergo. Assigning patients to red chairs would signal to the phlebotomist to draw their blood. After doing so, the phlebotomist would assign the same patients to black chairs, prompting the radiology technician to see them. They would then be directed to white chairs, signaling the registration clerk that it was her turn. Team members called the process "the diagnostic loop." As a solution to standardizing the flow of patients in an emergency department, it was new; in no other hospital had the same solution been thought of, even though the problem recurred. Not surprisingly, the solution generated much discussion, and a fair number of innovative ideas, as the team tinkered with its implementation.

When the diagnostic loop was put in place, several problems became evident. First, in about 60% of cases, the physician assistants in the triage room were unsure if a patient was noncritical (that is, well enough to proceed through the loop). The patients in turn disliked being moved from chair to chair; they complained about being "herded" and reported feeling as if they were on a "conveyor belt" or in "kindergarten." They also viewed the time they spent occupying chairs as "waiting time," which made them impatient. Furthermore, the chair area could not accommodate family members, who were asked to wait outside the department; they found the request unacceptable and complained. The radiology technicians, phlebotomists, and registration clerks complained about one another; patients, they said, were being assigned to chairs incorrectly. The nurses assigned to the patients in the chairs complained that they could not provide proper care. These difficulties highlight the collective nature of problem solving; rather than reusing an existing solution, the consultants collaborated with hospital employees to generate new solutions and to address implementation difficulties.

These examples suggest that following the steps of the collaborative problem-solving approach forced the consultants to take into account the problems and solutions that emerged in team meetings, which of course constrained the ability of consultants to simply reuse knowledge. In some cases, hospital employees convinced the consultants that a problem needed to be solved, even though the consultants had no experience with such a problem (as in the urinalysis example). In others, the team of hospital employees and consultants came up with detailed new solutions (e.g., the chair scenario). Ironically, the problem-solving process prescribed by the BCF partners forced the consultants to attend to what they were being told by clients, thereby challenging efforts to implement the partners' and Emperor executives' preferred solutions.

To summarize, the efforts to reuse knowledge were thus characterized by three features of the engagement. First, the junior consultants were inexperienced, even if sometimes knowledgeable in other domains that encouraged alternative perspectives, and empowered to question the partners' guidance. Second, their interactions with the client highlighted inconsistencies between general knowledge to be reused and particular circumstances that rendered reuse problematic. Third, the use of a collaborative problem-solving approach led to the generation of *new* solutions that, by definition, had never been used in prior engagements. Collectively, these features challenged attempts to reuse knowledge—though they may well have considerably increased the actual effectiveness of the consulting intervention.

Discussion

We began by asking how knowledge embedded in one organization is used to intervene in another organization and what challenges such an attempt encounters. Our investigation of the BCF–Emperor relationship foregrounds three processes that attempt to facilitate reuse. First, knowledge is translated into generalizations by the partners who have seen numerous examples of similar situations. Second, reuse is facilitated by templates and processes intended to enable general insights to be reused in particular situations. Although these templates and processes suggest that knowledge is customized to a context and even emerge from it, consultants attempt to direct the outcome of these templates and processes toward knowledge reuse. Third, reuse is facilitated by the presence of junior consultants themselves, who act as the channels for knowledge reuse. In fact, the consulting firm structure, similar to that of accountancies, law firms, and other service organizations, is built on the expectation that junior employees will engage in the deep day-to-day work on an engagement, applying partners' insights and experience while enabling partners themselves to work on several projects concurrently (Hitt et al. 2001, Maister 2007, Sherer 1995).

We found, however, that knowledge reuse encounters difficulties precisely *because* it is made general, wrapped in a process that suggests customization, and spread by junior employees. Generalizations, by definition, do not match the particulars of a situation, surfacing tensions between general advice and specific circumstances; a process that suggests customization surfaces tensions when participants expect it to actually enable customization; and the use of junior consultants surfaces tensions with both consulting partners and with hospital employees, as we describe below.

Compared with partners, junior consultants had little experience and thus little knowledge about the healthcare industry and even the Emperor engagement, they brought a different perspective precisely because they had little experience and related knowledge (as with the entomologist on the team we studied), and they were embedded in the context of a particular organization, seeing the organization's problems firsthand and interacting frequently with on-the-ground employees of that organization. These characteristics of junior consultants challenged their ability to simply reuse knowledge, as the partners wished and intended, by alerting them to other possibilities and to the difficulties of simply reusing prior solutions wholesale.

At the same time, the relationship between junior consultants and clients was not without tension. Junior consultants were not as knowledgeable as hospital workers about the particulars of the setting. Indeed, their lack of particular knowledge may have threatened the hospital workers' legitimacy, which was based in part on this knowledge. To hospital workers, the junior consultants appeared to have an agenda—an agenda that hospital workers deemed unrealistic precisely because the junior consultants lacked knowledge of particulars. In short, then, the junior consultants were at the heart of the attempt by the consulting firm to reuse knowledge. As they went about doing their work, the junior consultants found themselves having to manage two strained relationships, one with partners and the other with clients. The strain was directly related to the gap between the general and the particular, a gap at the core of knowledge reuse.

These findings hold multiple implications. For the consulting literature, our findings directly address calls to study the interaction process between consultants and their clients (Kipping and Engwall 2002, Sturdy et al. 2009). Thus, we show how macrolevel factors tied to the strategy and organization of a consulting firm interact with the way that knowledge is reused (or not), problems are defined (or redefined), and solutions are modified or developed.

Specifically, we highlight the importance of examining the roles played by different members of a consulting firm. Of course, other work, too, has recognized that

these firms have different kinds of employees. Maister (2007, p. 7), for example, describes how consulting firms are composed of "finders," "minders," and "grinders," referring to senior members who engage in marketing and client relations and junior members who actually carry out the work. Part of our contribution, however, lies in moving beyond this general recognition of different roles within a firm to consider how differences in tenure, experience, and client interactions shape the reuse of existing solutions and the potential development of new ones. This focus also suggests that junior employees, far from being "less valuable" than senior employees, may in fact be valuable precisely *because* of their different knowledge base and behaviors.

Thus, in our analysis, these employees actually fill different roles within the firm and its engagements. Notably, this interpretation departs from dominant views in the literature, in which junior consultants are merely "senior consultants in training." For example, Sherer (1995, p. 671) characterizes partners as the "source or repository of firm knowledge" and associates as "employees who are acquiring knowledge and performing work for partners." Although we concur with this description, we also show that juniors are not merely less knowledgeable partners, but rather have different *kinds* of knowledge as a function of their inexperience and direct client interactions. In this way, our study echoes the work of Barley and Bechky (1994), who point out that nurses are not merely "less knowledgeable" doctors and that lab technicians are not merely "less skilled" scientists; instead, these different roles enable an organization to draw on different kinds of knowledge and different levels of experience to further its overall objective.

A key outcome of these differences, we find, is that partners develop and contribute more general knowledge, while junior employees focus on the specifics of the context. In this way, the difference between junior and senior employees is akin to the distinction that both McKelvey (2006) and Van de Ven and Johnson (2006) draw between practitioners and researchers. As Van de Ven and Johnson (2006, p. 831) write, "Practitioners are typically interested in solving an immediate problem where researchers are interested in generalizable knowledge." Importantly, the client itself may actually benefit more from the junior employees' specific knowledge and interactions, even though they hire the firm for its senior partners' general knowledge. As March (1991b, p. 26) writes,

> The role of consultants in advising organizations is constrained by . . . the importance of context-specific knowledge. In most situations in most organizations the best source of intelligence for action is ordinary knowledge. Most of what matters is captured in the particularistic features of the organization . . . . In most cases a manager who wants advice would find it better from himself or his associates than from a consultant or a research study.

Putting a finer point on March's (1991b) argument, whether a person draws out particularistic knowledge to apply to an organization depends less, perhaps, on whether or not he is a consultant, period, and more on his particular position within a consulting firm.

It also is notable that the junior consultants' engagement challenged, at least in some sense, the partners' claims to expertise. The partners had expertise based on their long experience with hospitals and the generalized knowledge they had developed as a result of this experience. Yet the difficulties encountered in reusing partners' general knowledge in a particular case—and the junior consultants' willingness to challenge and ignore the partners and to work with employees at the client site to refine ideas and to generate new ones—all seemed to signal that the partners may not, in fact, have been experts for purposes of a specific engagement. Ironically, these shortcomings in expertise were foregrounded precisely because of the attempt to reuse the partners' expert general knowledge.

Our findings also contribute to the knowledge reuse literature more generally. This literature has focused particularly on the difficulties of knowledge reuse *within* organizations. By contrast, we explain why knowledge reuse *across* organizations can be even more challenging, owing to both the distinctions between junior and senior employees and the challenges of applying general knowledge to particular settings. The value proposition of attempts at knowledge reuse, such as those pursued by BCF and Emperor, is based on taking insights from one organization and applying them to another. Our study, however, shows that such attempts may not be realistic. Specifically, if knowledge is bound to a context, then effective reuse depends on finding another very similar context, thus limiting the breadth of reuse. Indeed, in theory, Emperor provided such an opportunity, since all hospitals belonged to the same system. Yet, even here, the contexts varied considerably, as we demonstrate, and reuse was challenging. Conversely, to the extent to which knowledge is made more general so that it applies to a wider array of contexts, it is less applicable to any of them and runs into reuse challenges posed by the particular features of a potential context. For these reasons, and echoing Sturdy et al. (2009), our work shows that knowledge is rarely "transferred"; Rather, it is translated, transformed, and generated as consultants and clients engage with one another. For this same reason, our study points to challenges with knowledge repositories as effective means of facilitating knowledge reuse—at least on their own and in situations where context matters (Haas and Hansen 2007, Markus 2001).

Finally, this perspective also clarifies the mechanisms and resources that organizations may draw

on to learn. Although the organizational learning literature has focused especially on the role of external networks (Mors 2010, Powell et al. 1996), internal networks (Hansen 2002, Tsai 2001), prior knowledge (Argote 2012, Cohen and Levinthal 1990), and routines (Levitt and March 1988, Nelson and Winter 1982), we build on March's (1991a) observation that turnover and a diverse mix of people within an organization—as we show, specifically with regard to their newness to the organization, their newness to the problem, and their interaction patterns—may also serve as important means for organizations to learn. Thus, turnover, inexperience, and naivety among organization members is not something to be minimized so much as celebrated—as long as it interacts with the longevity, experience, and wisdom of other organization members.

In fact, our study suggests that such interactions can be a robust way for organizations to both develop generalized insights and continually fine-tune these insights and generate new ones. In this way, our results challenge recent calls to "disrupt" the consulting industry. For example, Christensen et al. (2013) have argued that consulting firms have not changed their basic structures and approach in decades and that they need to be disrupted. By illuminating how interactions between different employees can shape knowledge reuse, implementation, and generation, however, our results suggest that one reason management consulting firms have been around for decades is *because* they have not changed their basic structure and approach, even as the problems, industries, and technologies with which they are concerned have changed dramatically. In short, the relatively unchanging structure and composition of consulting firms is what facilitates learning (Fischhoff 1980) and responsiveness in a dynamic environment. Incidentally, we found an instance of an industry that may well be better off by avoiding the temptation to disrupt itself.

Of course, our work has several limitations. First, we looked only at a management consulting firm, and only at a large one. Thus, we cannot be certain as to how our findings apply to other settings. A second limitation of our work is that we cannot offer any insight into the relative importance of the elements we discussed (e.g., inexperience versus interactions) even though there may well be differences in how each one affects the ability of an organization to particularize the general. These limitations point to the need for further grounded studies of how the work of individuals within consultancies unfolds—and how knowledge reuse attempts, and challenges, may unfold across organizations as a whole.

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References

Anand N, Gardner HK, Morris T (2007) Knowledge-based innovation: Emergence and embedding of new practice areas in management consulting firms. *Acad. Management J.* 50(2):406–428.

Ancona DG, Caldwell DF (1992) Bridging the boundary: External activity and performance in organizational teams. *Admin. Sci. Quart.* 37(4):634–665.

Argote L (2012) *Organizational Learning: Creating, Retaining and Transferring Knowledge* (Springer, New York).

Armbrüster T (2006) *The Economics and Sociology of Management Consulting* (Cambridge University Press, Cambridge, UK).

Arnaud G (1998) The obscure object of demand in consultancy: A psychoanalytic perspective. *J. Management Psych.* 13(7):469–484.

Arrow K (1974) *The Limits of Organization* (W. W. Norton & Company, New York).

Barley SR, Bechky BA (1994) In the backrooms of science: The work of technicians in science labs. *Work Occupations* 21(1):85–126.

Barzun J (1982) *Critical Questions* (University of Chicago Press, Chicago).

Christensen CM, Wang D, Van Bever D (2013) Consulting on the cusp of disruption. *Harvard Bus. Rev.* 91(10):106–114.

Cohen WM, Levinthal DA (1990) Absorptive capacity: A new perspective on learning and innovation. *Admin. Sci. Quart.* 35(1): 128–152.

Cummings JN (2004) Work groups, structural diversity, and knowledge sharing in a global organization. *Management Sci.* 50(3): 352–364.

Davies A, Brady T, Hobday M (2006) Charting a path toward integrated solutions. *MIT Sloan Management Rev.* 47(3):39–48.

DiMaggio PJ, Powell WW (1983) The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *Amer. Sociol. Rev.* 48(2):147–160.

Elkjaer B, Flensburg P, Mouritsen J, Willmott H (1991) The commodification of expertise: The case of systems development consulting. *Account. Management Inform. Tech.* 1(2):139–156.

Fischhoff B (1980) For those condemned to study the past: Reflections on historical judgment. Shweder RA, Fiske DW, eds. *New Directions for Methodology of Social and Behavioral Science*, Vol. 4 (Jossey-Bass, San Francisco), 50–64.

Galbraith JR (2002) Organizing to deliver solutions. *Organ. Dynam.* 31(2):194–207.

Grant RM (1996) Toward a knowledge-based theory of the firm. *Strategic Management J.* 17(S2):109–122.

Haas MR, Hansen MT (2005) When using knowledge can hurt performance: The value of organizational capabilities in a management consulting company. *Strategic Management J.* 26(1):1–24.

Haas MR, Hansen MT (2007) Different knowledge, different benefits: Toward a productivity perspective on knowledge sharing in organizations. *Strategic Management J.* 28(11):1133–1153.

Hansen MT (1999) The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Admin. Sci. Quart.* 44(1):82–111.

Hansen MT (2002) Knowledge networks: Explaining effective knowledge sharing in multiunit companies. *Organ. Sci.* 13(3):232–248.

Hansen MT, Nohria N, Tierney T (1999) What's your strategy for managing knowledge? *Harvard Bus. Rev.* 77(2):106–116.

Hitt MA, Biermant L, Shimizu K, Kochhar R (2001) Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Acad. Management J.* 44(1):13–28.

Kipping M, Armbrüster T (2002) The burden of otherness: Limits of consultancy interventions in historical case studies. Kipping M, Engwall L, eds. *Management Consulting: Emergence and Dynamics of a Knowledge Industry* (Oxford University Press, Oxford, UK), 203–221.

Kipping M, Engwall L, eds. (2002) *Management Consulting: Emergence and Dynamics of a Knowledge Industry* (Oxford University Press, Oxford, UK).

Kogut B, Zander U (1992) Knowledge of the firm, combinative capabilities, and the replication of technology. *Organ. Sci.* 3(3): 383–397.

Levina N, Orlikowski WJ (2009) Understanding shifting power relations within and across organizations: A critical genre analysis. *Acad. Management J.* 52(4):672–703.

Levitt B, March JG (1988) Organizational learning. *Annual Rev. Sociol.* 14:319–340.

Maister DH (2007) *Managing the Professional Service Firm* (Simon & Schuster, New York).

March JG (1991a) Exploration and exploitation in organizational learning. *Organ. Sci.* 2(1):71–87.

March JG (1991b) Organizational consultants and organizational research. *J. Appl. Comm. Res.* 19(1–2):20–31.

March JG (2011) *The Ambiguities of Experience* (Cornell University Press, Ithaca, NY).

Markus LM (2001) Toward a theory of knowledge reuse: Types of knowledge reuse situations and factors in reuse success. *J. Management Inform. Systems* 18(1):57–93.

McEvily SK, Chakravarthy B (2002) The persistence of knowledge-based advantage: An empirical test for product performance and technological knowledge. *Strategic Management J.* 23(4):285–305.

McKelvey B (2006) Van De Ven and Johnson's "engaged scholarship": Nice try, but . . . . *Acad. Management Rev.* 31(4):822–829.

McKenna C (2006) *The World's Newest Profession: Management Consulting in the Twentieth Century* (Cambridge University Press, Cambridge, UK).

Mors ML (2010) Innovation in a global consulting firm: When the problem is too much diversity. *Strategic Management J.* 31(8): 841–872.

Nelson RL (1981) Practice and privilege: Social change and the structure of large law firms. *Law Soc. Inquiry* 6(1):97–140.

Nelson RR, Winter SG (1982) *An Evolutionary Theory of Economic Change* (Harvard University Press, Cambridge, MA).

Nickerson JA, Zenger TR (2004) A knowledge-based theory of the firm—The problem-solving perspective. *Organ. Sci.* 15(6): 617–632.

Nordin F, Kowalkowski C (2010) Solutions offerings: A critical review and reconceptualisation. *J. Service Management* 21(4):441–459.

Okhuysen GA, Eisenhardt KM (2002) Integrating knowledge in groups: How formal interventions enable flexibility. *Organ. Sci.* 13(4):370–386.

Orlikowski WJ (2002) Knowing in practice: Enacting a collective capability in distributed organizing. *Organ. Sci.* 13(3):249–273.

Pfeffer J, Sutton RI (2013) *The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action* (Harvard Business Press, Cambridge, MA).

Powell WW, Koput KW, Smith-Doerr L (1996) Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Admin. Sci. Quart.* 41(1):116–145.

Reagans R, McEvily B (2003) Network structure and knowledge transfer: The effects of cohesion and range. *Admin. Sci. Quart.* 48(2):240–267.

Sarvary M (1999) Knowledge management and competition in the consulting industry. *California Management Rev.* 41(2):95–107.

Sawhney M, Wolcott RC, Arroniz I (2006) The 12 different ways for companies to innovate. *MIT Sloan Management Rev.* 47(3):75–81.

Sherer PD (1995) Leveraging human assets in law firms: Human capital structures and organizational capabilities. *ILR Rev.* 48(4):671–691.

Storbacka K (2011) A solution business model: Capabilities and management practices for integrated solutions. *Indust. Marketing Management* 40(5):699–711.

Sturdy A (1997) The consultancy process—An insecure business? *J. Management Stud.* 34(3):389–413.

Sturdy A, Clark T, Fincham R, Handley K, (2009) Between innovation and legitimation—boundaries and knowledge flow in management consultancy. *Organization* 16(5):627–653.

Szulanski G (2000) The process of knowledge transfer: A diachronic analysis of stickiness. *Organ. Behav. Human Decision Processes* 82(1):9–27.

Teece DJ (1986) Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Res. Policy* 15(6):285–305.

Tsai W (2001) Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Acad. Management J.* 44(5):996–1004.

Tuli KR, Kohli AK, Bharadwaj SG (2007) Rethinking customer solutions: From product bundles to relational processes. *J. Marketing* 71(3):1–17.

Van de Ven AH, Johnson PE (2006) Nice try, Bill, but. . . there you go again. *Acad. Management Rev.* 31(4):830–832.

Wise R, Baumgartner P (1999) Go downstream: The new profit imperative in manufacturing. *Harvard Bus. Rev.* 77(5):133–141.

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