

Corporate Renewal through Internal Innovation:
The Four 'R's of Corporate Bricolage

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Abstract

I explain the elements of bricolage—creating solutions with what is at hand—as they apply to innovation in large firms. First, managers can enumerate existing *resources* through architectural and historical analysis to uncover valuable assets. Second, managers can encourage employees to alter their *routines* by changing how people interact across internal boundaries; either promoting boundary-spanners, restructuring, or destructuring. Third, managers can *recognize* new market opportunities by asking employees, customers, and others already in the firm's network to engage in analogical thinking or interact with existing artifacts, such as products. Fourth, to enable the ideas generated through any of the first three steps to come to fruition, managers can *relax* mechanisms for selection by choosing more organic, decentralized structures. The corporate bricolage approach is recommended when alternative means of innovation would take too much time or money. This approach illustrates the benefits of strategy process for further development of the resource-based view of the firm.

Scholars from multiple perspectives have developed theories about how firms can build competitive advantage through innovation (e.g., Danneels, 2002; Grant, 1991; Teece, 1986). In many industries, continuous innovation is required to stay ahead of competition and respond quickly to changes in the environment. Partly as a result of this challenge, innovation usually takes place under great uncertainty (Dasgupta and Stiglitz, 1980). Even with good intentions and reasonable investments, a firm can experience poor performance and need to drastically alter its strategy. One method of generating corporate renewal is to bring in new leaders (e.g., Harrigan and Wing, 2019), who often focus on divesting old resources and procuring new ones through acquisitions or alliances to fit known market conditions. However, such restructuring may not be feasible because the failing firm lacks the time and financial stability to pursue major deals. Also, changing top management can be risky. Existing leadership, with deep knowledge of the organization and the trust of employees, may be in the best position to implement internal changes (Chakravarthy and Gargiulo, 1998; Floyd and Lane, 2000). Thankfully, the literature on innovation suggests several possible steps to re-invigorate a struggling firm, even under resource constraints. In this paper, I do not claim that an approach focused on internal resources is always preferable to other approaches to corporate renewal (Chakravarthy and Doz, 1992). Rather, the research question is: Lacking the time or funds to acquire new resources in factor markets, how can firms in need of turnaround innovate successfully using existing resources?

Renewal of the firm's competitiveness through resource allocation (Bower, 1970) is a major theme of "strategy process research" which "is at the heart of all research in strategic management" and "focuses on how a general manager can influence the quality of the firm's position through the use of appropriate decision processes and administrative systems" (Chakravarthy and Doz, 1992: 5). A recent systematic review of the literature on strategic renewal

(Schmitt, Raisch, and Volberda, 2018) identifies points of tension regarding the antecedents, process, and outcomes of renewal. For each point, some evidence suggests either of two alternatives would be appropriate in a given situation. Regarding antecedents, does renewal come primarily through organizational learning of new knowledge, or through transforming and recombining existing resources? Second, is the process of renewal induced by top management, or does it emerge from autonomous, lower-level initiatives? Third, is the desired outcome to adapt to a changing environment or to influence the environment proactively? The situation of corporate turnaround suggests certain answers to these questions. A once-profitable firm now in distress lacks the time and slack necessary to embark on a new, long-term R&D effort to learn and develop knowledge and capabilities. Thus, an approach focusing on existing people, products, and intellectual property is more feasible. Under pressure, top managers are likely to exercise a strong hand in directing efforts to change. However, rather than taking over the roles of internal innovators, they can create conditions for innovation in an interplay between top-down and bottom-up initiatives. Finally, shaping the environment sounds like a risky strategy for a firm under constraints, but if markets are incomplete (Denrell, Fang, and Winter, 2003), introducing whatever new product can be put together internally may meet previously unanticipated demand.

Therefore, for many struggling firms, a path to corporate renewal may come through attention to *resource* recombination (Kogut and Zander, 1992; Helfat et al., 2007; Morrow, et al., 2007; Sirmon, et al., 2011); changing *routines* in the practice of innovation (e.g., Burgelman, 1983; Danneels, 2002; Dougherty, 1992; Parmigiani and Howard-Grenville, 2011); *recognizing* new uses for existing solutions (Andriani, Ali, and Mastrogiorgio, 2017; Mastrogiorgio and Gilsing, 2016), and *relaxing* internal selection mechanisms (Burns and Stalker, 1961; Sah and

Stiglitz, 1985, 1986). These steps reflect elements of the entrepreneurial process known as bricolage, defined by Baker and Nelson (2005:333) as “making do by applying combinations of the resources at hand to new problems and opportunities” (Duymedjian and Rüling, 2010; Garud and Karnoe, 2003). Along with large firms struggling due to competitive pressures, this process might be especially useful for middle-market firms or private firms facing resource constraints. When we understand how such actions by managers transform the firm’s resource base (Sirmon, Hitt, and Ireland, 2007), we gain clarity on the links between theories of competitive advantage (e.g., Barney, 1991) and theories of resource allocation and strategic investment (e.g., Burgelman, 1983), fundamental theoretical issues in “Generation 2.0” of the field of Strategic Management (Leiblein and Reuer, 2020: 7).

Within the tradition of resource-based and evolutionary economic theory in Strategic Management (e.g., Barney, 1991; Nelson and Winter, 1982; Penrose, 1959), recent authors converge on a broad theory of innovation: that managerial cognition (Eggers and Kaplan, 2009; Helfat and Peteraf, 2015; Holcomb, Holmes, and Connelly, 2009; Nayak, Chia, and Canales, 2019) frames the uses of complex sets of heterogeneous resources under the assumption of incomplete markets, i.e., environments that cannot be fully described as an opportunity landscape (Adegbesan, 2009; Denrell, et al., 2003; Felin, et al., 2014). In the case of corporate renewal, this theory suggests that deliberate experimentation with new resource combinations, alteration of routines for product development, and using existing ties to identify market opportunities may yield sufficient innovation to create the desired turnaround. Bricolage represents a decision to engage in local search (March, 1991). Nevertheless, I contend that large firms contain unexplored variety in their resources, routines, and knowledge of markets (Ceipek et al., 2019), and innovation is an inherently behavioral, path-dependent process (Eggers and Kaul, 2018; Furr

and Eggers, 2019). Knowledge elements with combination potential may have been historically kept separate by structures designed to facilitate other goals besides innovation (e.g., Miller, Fern, and Cardinal, 2007), making it difficult for managers to learn how to extract different services from them (Penrose, 1959). To decide whether to focus on Resources, Routines, Recognizing new markets, or Relaxing internal constraints (first), managers should consider the diversity of the firm's existing knowledge, the rigidity and centralization of its past organization structure, and the exposure of its existing personnel to a variety of industries. I identify how the top manager's role in renewal is similar to the task of the entrepreneur as actually practiced; in so doing, I emphasize that managerial cognition is at the heart of dynamic capabilities and explain the process of how specific managerial cognitive capabilities (Helfat and Peteraf, 2015) are applied to solve a common business problem. Overall, this paper's internal view provides a complement to theory on how environmental conditions (e.g., scarcity; Schmitt, et al., 2016) affect renewal (Agarwal and Helfat, 2009), and explicates the probability and process of resource redeployment (Sakhartov and Folta, 2014).

CORPORATE BRICOLAGE FOR INNOVATION IN LARGE FIRMS

The entrepreneurship literature draws the concept of bricolage from anthropologist Levi-Strauss (1967), who described how societies combine existing elements of mythology with things at hand to create new myths. Central to bricolage is that actors refuse to “enact limitations” (Baker and Nelson, 2005: 335). Limitations are rules, boundaries, divisions of labor, or mental maps that prevent using resources other than how they have been used before. Because such limitations are socially created or “enacted” (Weick, 1979), avoiding them is not just a matter of breaking the rules set by others, but also of not contributing to the creation of such limitations in the first place. In their groundbreaking article, Baker and Nelson (2005) examined

the behavior of entrepreneurs and identified four common elements among those people who “made do” rather than seeking new resources. First, the bricoleur had access to a diverse resource trove. For example, an auto repair shop had barns full of used parts, a construction services company gave four times as much space to tools and parts as to the workshop, and a farmer recognized that the waste methane seeping from a former mine under his land could be used to generate electricity. Second, the bricoleur had broad, self-taught skills. Aside from formal training or access to manuals, the person had developed idiosyncratic routines and had learned skills through experience such as electrical wiring, or delved into knowledge areas that were not conventional for their business, like software development. Third, some bricolage activity involved multiplex ties: numerous people gathering together, often informally, including “volunteers” who pursued whatever interested them. Customers became employees, suppliers, and friends. The first three elements of the bricolage process are illustrated in the development of a local, innovative cuisine (Petruzzelli and Savino, 2014). A trained chef who understands the foundational methods of cooking develops her own style through trial-and-error, then applies that style to whatever ingredients are fresh and historically accurate to the region, developing dishes in concert with a full staff and avid tasters. Gourmands refer to such culinary art as the “rediscovery” or “celebration” of a traditional ingredient (Guerrero, 2009) which supports local agriculture, as the chef fully explores its flavor and texture. The fourth element of bricolage as observed by Baker and Nelson (2005) is a lax institutional or regulatory environment. Some bricoleurs tested or ignored the constraints of legal rules or standards.

Similarly, large, established firms contain diverse ingredients gathered over long periods of time. Those resources may have become so familiar that they are only associated with stodgy business “recipes.” However, assessment of existing resources may be done with greater

accuracy and less cost than acquisition of new resources (Alchian and Demsetz, 1972).

Innovation can come from looking at the full range of resources and their uses, encouraging people to examine and break out of existing routines, and drawing on their experience in other settings to recognize how an existing product or component can solve an additional need. While I do not suggest large firms violate legal limits or impose undue burdens on society, creating looser mechanisms for *internal* selection of resources or regulation of routines can allow more bottom-up innovation. Table 1 provides an overview of the 4 ‘R’ framework for corporate bricolage: a summary of each element, illustrations of each principle outside the management context, business examples, and when the element should be emphasized.

Enumerating Resources for Recombination

The resource-based view of the firm is a dominant perspective for strategic management (Barney, 1991; Peteraf, 1993; Prahalad and Hamel, 1990; Wernerfelt, 1984). We understand how to classify resources (e.g., Amit and Schoemaker, 1993) and determine whether they are valuable, rare, costly to imitate, easily substitutable, and aligned with the firm’s strategy (Barney, 1991). A given resource can have innumerable uses, and resources can be combined in myriad ways (Penrose, 1959). The purpose of enumerating resources in the trove is to enable deliberate experimentation with new resource combinations (Kogut and Zander, 1992). Sirmon, et al. (2007) explain that bundling resources or capabilities takes place through the activities of stabilizing, enriching, and pioneering. Stabilizing involves making small investments and improvements to maintain a capability, such as through ongoing training of new personnel or maintenance of equipment. Stabilizing may be useful for corporate renewal if continued attention to past resources is necessary to keep them at a level that warrants recombination. Enriching can occur through learning new skills, or through adding an existing resource to a bundle to improve

the capability. Customizing the resources to fit together well in a system is also part of enriching. Pioneering is the exploratory process of incorporating newly acquired resources into novel capabilities. As such, pioneering falls outside the scope of this paper, which assumes that firms in need of turnaround do not have access to external factor markets. Instead, the current focus is on the activity of coordinating or *configuring* resources after they have been enumerated (Danneels, 2002; Helfat et al., 2007; Sirmon et al., 2011). To “integrate the capabilities into effective configurations” (Sirmon et al., 2007: 285) requires managerial relational skills to build social capital that facilitates sharing of explicit and tacit knowledge, usually through a technology infrastructure. Not only top managers, but middle managers also, are involved in this resource orchestration (Chadwick, Super, and Kwon, 2015; Wooldridge, Schmid, and Floyd, 2008). However, managers may not realize the full breadth of the resources already within the firm. Two types of analysis—architectural and historical—can uncover resources that people had forgotten were available.

Architectural Analysis

The architecture of a modular system establishes the interfaces between components and the required functionality of the overall system. Among the most complex systems designed today are software programs. To build and manage a software system, the architect uses “abstraction” and “information hiding” (Leo, Miller, and Mahoney, 2019), terms which can be applied to computer hardware or any architecture. Abstraction is the process of describing a component of the system with less than complete information, often by focusing on how the component functions within the system, rather than how it is made. The architect represents a modular system as a set of components and linkages, with names such as “power supply” or “conduit.” So long as the component acts as expected, its other features, such as its color or

incorporation of recycled material, are not essential to the original design, but may represent opportunities for further differentiation, such as a “green” computer in one sense or another. Information hiding allows the developer of one component to meet the performance and interface specifications without having to understand how another component works. In software, protocols prevent developers working on one component from changing another part of the code; e.g., object-oriented programming depends on the data and functions in an object being encapsulated as a whole. Similarly, a hardware system may be designed to physically hide a component from the end user, to avoid having to make it visually appealing or expose it to accidental damage. Thus, the process of developing an architecture, and using a resource in one combination, obscures the resource’s full range of uses, and possibly even its existence, from many in the firm. In terms of organizational architecture, such “structural secrecy” may prevent managers from understanding how a unit within the firm creates value (Martens, Matthyssens, and Vandenbempt, 2012).

Therefore, a good step to uncover hidden resources is to decompose a system into its constituent parts. However, the investigation should not stop at existing interfaces. Mining a diverse resource trove means less focus on why something was put into the system, and more focus on simply what is there. For a manufactured physical object, along with the object itself, there may be raw materials used in its creation, tools used to make or mine it, and waste products created through the use of those tools. As an example,¹ Verizon realized it owned thousands of properties, some of which were a century old, in locations chosen as ideal wiring hubs. Yet newer generations of telecommunications equipment took up less physical space than earlier generations, leaving the buildings mostly empty. Verizon’s Senior VP of Real Estate sold some

¹ “John Vazquez finds new life in old buildings for Verizon.” Dec. 12, 2015, by Melissa Anders for *American Builder’s Quarterly*. Accessible at <https://americanbuildersquarterly.com/2015/12/15/verizon/>.

buildings, but oversaw the process to turn others into apartments, retail space, and even a business incubator, while keeping the telecom operations in a small part of each structure. Verizon needed to view each location in terms of the zoning and culture of its current neighborhood rather than in terms of how it fit into the telecom grid. They found that some buildings, originally in industrial districts, were now part of vibrant residential areas, and that the charm of the older buildings added to their value.

Zook (2007) notes that large companies that need to find a new “core business” often find a basis for it in “hidden assets.” The three main types of neglected resources are undervalued business platforms, untapped insights into customers, and underexploited capabilities. He concludes that, to reinvent the corporation, “The surest route is not to venture far afield, but to mine new value close to home; assets already in hand but peripheral to the core offer up the richest new cores” (2007: 68). Separating a resource from its role in an architecture can also lead to new combinations with other resources. Miller, et al. (2007) explain that large firms often create an organizational architecture around efficiency in production or marketing. Then, product development groups and R&D centers structured to serve different markets will pursue distinct trajectories, and not often share their knowledge with each other. Thus, when these “silos” do communicate with each other, they may recognize that a solution has been waiting in another subsidiary for a problem they have struggled to solve. Using patents, Miller, et al. (2007) show that drawing on knowledge from different divisions inside a diversified firm can yield as much distant search and fruitful recombination as drawing on knowledge from outside the firm. Banerjee and Campbell (2009) examine similar processes at the level of the inventor. Zook (2007) clarifies that an underexploited capability can only drive growth when it is combined with other capabilities in a unique configuration—a new architecture. Thus, decomposition of an

existing architecture is necessary for understanding of the potential value of resources and capabilities in new combinations.

Historical Analysis

A second means of enumerating resources on hand is to investigate history. Biologists use the term “ontogeny” to refer to the change in an organism through its life span, as opposed to evolution that occurs in genetic material and is selected by the environment (Felin, et al., 2014). Each organism has a unique path of development. In a business, current activities and products are the result of numerous small decisions along the way (e.g. Barney, 1995; Schoemaker, 1993). Historical analysis reveals the paths *not* taken, and the external forces that directed the path which *was* taken. Another aspect of historical analysis is noting persistent forms that re-occur, signaling that they are either essential parts of the whole, or at least are not limiting the viability of the entity. Biologists note that since organisms contain subsystems, patterns and features can develop that have some initial function (or none), but can contribute to survival after the environment changes by serving a different function. Thus, the most complex and important adaptations may come through *exaptations* (Barve and Wagner, 2013; Gould and Vrba, 1982).² Exaptations are changes in the genetic code that may be random, do not detract from viability in the short run, and create a distinct advantage in the long run (Cattani, 2006). A famous example is that feathers evolved in dinosaurs for a purpose other than flight (perhaps warmth, weather protection, or display), but then were available in the organism that was selected in the evolution

² The term “exaptation” refers to the trait itself, not the new use to which it is put. Thus, it is equivalent to “pre-adaptation,” Cattani’s (2006) preferred term. Scientists also refer to such traits as “non-adaptive” in their original development. A related term in the management literature is “speciation”—when a technology developed in one industry branches off and develops further in a different industry (Levinthal, 1998; Cattani, 2006), which relates to the punctuated equilibrium model of biological evolution. Latent functions can also be understood as “shadow options” for future growth (Cattani, 2006) or “affordances” (Felin et al., 2016).

of the modern bird, for which feathers predominantly serve the function of flight. In like manner, corporations may contain resources whose usefulness has changed over time.

The behavioral theory of the firm emphasizes history as it considers path development and subsystems in how a firm balances specialization (i.e., “differentiation”) of knowledge, skills, and resources over time with integration of those resources into value-creating activities (March and Simon, 1958). Allowing individuals, teams, and divisions to develop and hold differentiated knowledge is essential to efficient operation; and maintaining differentiation in the face of pressures to build “common ground” takes managerial effort (Barley, Treem, and Kuhn, 2018; Tsoukas, 2009). Therefore, recurring patterns can illuminate the unique, intangible expertise of people in subsystems. Also, a prevalent tangible resource which was not selected from the top down could reveal something about how the firm has informally accessed resources in the past or areas of munificence in its environment. At a higher level, recurring patterns could represent an emergent culture (e.g., Schein, 1985), itself a valuable resource for gaining employee commitment, facilitating communication, and improving the speed of decisions. The culture can convey these advantages even if the company were to switch to a new product.

Most large firms have systems in place to keep track of resources, including knowledge. However, resources may become disguised not only when they are incorporated into an architecture, but even when they are supposed to be recorded in a central inventory (Tippmann, Scott, and Mangematin, 2014). Employees will make decisions about whether to record something based not only on the cost of the resource, or its importance in use, but also based on their judgement of whether anyone else would ever want to use the resource and whether they are willing to share it with others. Hoarding is a rational response to past outages or supply uncertainty (e.g., in centrally planned economies; Kornia, 1979; Uhlenbruck, Meyer, and Hitt,

2003), so employees may purposely not record the resource in the central inventory. Omission errors can also occur due to understaffing (e.g., in inventory management; Chuang and Oliva, 2015) or because employees are simply fatigued by the drudgery of recording everything. To be recorded, the resource must be summarized and categorized. If it is entered into the system under one code, and stored away from open view, its other uses will be hidden.

When someone else encounters a problem, and searches for solutions in the central knowledge repository, resources will appear already codified and in combination. Yet it is difficult for people adding to such a repository to understand how their codified knowledge is usable by others in different situations (Huysman and de Wit, 2004; McDermott, 1999). Another problem with knowledge management systems is that they can record so many knowledge elements, with no clear distinction of quality, that potential users are overwhelmed, and stop using them as a resource (Barley, et al., 2018; Garud and Kumaraswamy, 2005). In contrast, the lack of such a repository encourages problem-solvers to search by interacting with a variety of people, giving opportunity to develop a new configuration of resources (Tippmann, et al., 2014). Technology for workplace communication and collaboration (e.g., Slack) creates another type of repository of past conversations, documenting work flow.³ However, sifting through such big data is costly, and may be seen as invasive. For these reasons, the solution to identifying hidden resources is not to create an even more comprehensive central inventory.

Instead, an effective way to find hidden resources is for someone to visit a unit that is across an architectural boundary, and engage in dialogue to make explicit the tools and knowledge this other person or team has. Rather than an “investigator” or “accountant,” this visitor could be described as a “historian.” For instance, when I took on an administrative role as

³ Thanks to Dan Wang, Columbia Business School, for this insight.

an associate dean, I scheduled individual meetings with each staff member in the program. Asking them about their duties and weekly routines was informative, but I also found it helpful to ask them to explain the history of the department, their position, and the tasks they and others performed. By talking about what they did and why at different points in the past, they could reflect on examples without worrying about my judgement of their current performance, and I could better identify their skills independent of their current duties.⁴ The historian should ask whether the past actions were constrained by external rules, norms, individual habits, time pressures, or limited knowledge (at the time) of outcomes or interactions between resources. Given the intrusive nature of such deep analysis, especially when the firm is struggling, employees may not trust the historian or want to reveal their history. One way to build off existing trust would be to train people from several subsystems in the analytical method, then have them analyze each other's subsystems. Each subsystem would contain at least one person who is acting as a historian in other parts of the business, while being subject to similar analysis in her own unit. If the organization has "old timers" (Dougherty and Hardy, 1996)—experienced senior professionals who are not in top management—they can conduct such investigations in a way that conveys unity and a desire to value, not criticize, how things have been done in the past, while looking for new links between resources and subsystems.⁵

⁴ The key questions, "What did you do and why" are central to the job of the historian of the theatrical world, the "dramaturg" (Burke, 1945; Shearer, 2004). To help the director create an innovative production of even a classical play, the dramaturg seeks to understand the meaning of actions, which requires reflective thought by the people involved in the performance. Assessing each aspect of scenery, costuming, and blocking, as well as actors' movements and intonation in past productions generates insights into what else could be done with the same material. Likewise, activities in a business setting are public "performances," not necessarily attempts to shape perceptions (e.g., Goffman, 1959), but coordinated actions that are given meaning by their setting and observers, as well as the actors' intent. The dramaturgical approach has been used by researchers to describe how a policy-setting body deliberates (Hajer, 2005) and how consultants work with managers (Clark and Salaman, 1998).

⁵ Of course, "old-timers" are also notorious for enforcing the heavy hand of history in terms of "we've always done it this way." Selection of individuals to serve as historians could weed out those most averse

Knowledge and Knowing

One caveat to the preceding discussion of firm resources is that firms often access resources that are not clearly within their boundaries. Many organizations have networks of partnerships, key suppliers, joint ventures, or other alliances which share operations and create their own capabilities (Dyer and Singh, 1998). Bricolage includes accessing resources that are available cheaply as well as for free (Garud and Karnoe, 2003). Some of these resources may not be cataloged in a single firm's repository, and enumerating them may require new cooperative efforts.

Moreover, the discussion so far has treated resources, including knowledge, as objective entities. Another approach is to recognize that knowledge cannot be separated from the knower or situation. The emphasis moves from knowledge to *knowing*, "an ongoing social accomplishment, constituted and reconstituted in everyday practice" (Orlikowski, 2002: 252). In theater, the equivalent would be the role of the acting coach who helps the performer become more improvisational. Rather than focusing on creating a "back story" about the particular character (i.e., objective knowledge), certain acting methods stress techniques for the actor to delve into her own emotions for motivation, which contributes to the ability to improvise with a team of other performers. To teach improvisation, the coach will place the actor in different scenes, with a variety of other actors, and with a core emotion or style in mind. Some plays or films are even developed by allowing actors to improvise scenes over and over, and then recording the emergent dialogue or actions that best reflect the intended dramatic intent of the scene. Similarly, organizational improvisation can occur through individual or group action (Moorman and Miner, 1998). Variation in routines arises from interaction (Goh and Pentland,

to change, but other steps to relax traditional criteria, as discussed below, can also help. Thanks to Ted Baker, Rutgers Business School, for this insight and other helpful notes on the paper.

2018), rather than cognitive reflection. The practice-based theory of routines suggests altering interactions between individuals to innovate, which is the next element of bricolage.

Altering routines developed through practice

The second element of bricolage (Table 1) in entrepreneurial firms is broad, self-taught skills. For the small business operator, learning can take place at the individual level. In larger organizations, learning through practice leads to the development of routines (Zollo and Winter, 2002). Routines are sets of interrelated actions performed by multiple people, involving tacit knowledge (Nelson and Winter, 1982; Parmigiani and Howard-Grenville, 2011). There are routines for innovation, and giving opportunity for people to perform those routines could result in new innovation, even with existing teams and resources. There are also routines that create limitations on innovation. The practice perspective on new product development (Burgelman, 1983; Feldman, 2016) describes three such routines (Dougherty, 1992a). First, routines for interdepartmental relations prescribe what people see as their work and what is other departments' work, which affect both what people know and how they learn. Second, routines to define the relationship between technology and market create limits on knowledge search. Third, routines to ensure satisfaction of standards impose criteria for quality, financial returns, and capacity utilization that work against the approval of new product ideas. These routines emphasize exploitation over exploration (March, 1991) and work against organizational learning (Crossan and Berdrow, 2003).

Ongoing interaction among multiple people contains processes both to reinforce a routine as well as to change it (Albert, Kreutzer, and Lechner, 2015; Farjoun, 2010); “stability and change are different outcomes of the same dynamic, rather than different dynamics” (Feldman and Orlikowski, 2011: 6). On one hand, repeating the same actions in a sequence develops

habits, learning curve efficiencies, and an awareness that a successful routine can apply across situations, encouraging persistence of the routine. On the other hand, lags in response time from one person to another, avoidance of boredom, and adjustments based on individual application of the routine to a given situation can generate variety (e.g., Turner and Rindova, 2018). The *ostensive* aspect of a routine is the generalized, shared mental model of the routine, while the *performative* aspect is how it is practiced by specific people in a specific situation (Feldman and Pentland, 2003). In a thoughtful, abductive process (Dunne and Dougherty, 2016), participants or managers could recognize variation in the performative aspect and seek to add a change to the ostensive aspect (Obstfeld, 2012). Or, in a tacit process, employing the routine with different people can generate the variation, and so long as no one is enforcing the ostensive aspect, the changes can survive into future performance of the routine (Moorman and Miner, 1998). Therefore, the practice perspective suggests that managers can facilitate innovation using available personnel through changing routines. Managers can restructure the organization to change barriers and boundaries, thereby putting the same people in new settings, and introducing new people into the group that performs the routine (Dougherty, 2017). Organizations develop structure to achieve goals. The dominant goal may not be innovation. For example, a firm that organizes for efficiency may create divisions for manufacture and distribution of a physical good along functional or geographic lines, which actually create barriers to information flowing back from customers to designers. Such structural boundaries may be legacies from the process of growth through acquisitions. Structure may also be designed to handle complexity (Weigelt and Miller, 2013), creating an architecture of hierarchy and subsystems. Then, routines are local, and their effect on other parts of the organization only comes through an established interface. When people separated by internal boundaries have limited understanding of what others do, a “blame

culture” can develop “in which every failure was the responsibility of someone else in the organization” (Macpherson and Jones, 2008: 191). Some large firms may have a structure built to encourage innovation, but tailored to past product categories. As explained by Dougherty and Hardy (1996: 1122):

“...for a mature organization to develop the capacity for sustained innovation, it must successfully make these innovation-to-organization connections in three key areas: (1) make resources available for new products, (2) provide collaborative structures and processes to solve problems creatively and connect innovations with existing businesses, and (3) incorporate innovation as a meaningful component of the organization's strategy.”

Altering organizational structure to change routines

There are three methods to change a firm’s routines by altering its organizational structure. First, the firm can encourage the development of boundary-spanners to cross structural boundaries (Cross, Cross, and Parker, 2004). As an example of how boundaries persist in organizations, consider Bechky’s (2003) account of “handoffs” of responsibility in the process of making semiconductor production equipment, specifically the shift from engineering to prototyping, and then to manufacturing assembly. While the prototypers were the official link between design and assembly, it was also often necessary for engineers and assemblers to meet to discuss tangible objects (pieces of the machine) to improve the buildability of the design. This situation involved two factors that reinforced boundaries. First, each “occupational community” (Bechky, 2003: 313) used different language to communicate. Engineers labeled schematics for each part with a technical name based on its function, whereas assemblers ignored those labels and thought of each part in terms of its features, such as whether it physically slides or swings. Each language was useful in its own stage. Second, while prototyping took place in a lab, final assembly was in a clean room, and engineers were not willing to don hot, bulky clean suits to visit the assembly room. The boundary spanners were technicians in the prototyping shop who

learned the terminology of both the engineers and assemblers, bridging drawings to machines. In such situations, boundary-spanners can create informal networks of people who interact regularly even though they are not precisely overlaid on the formal divisions of the firm. To become a boundary spanner-in-practice requires an individual to become a peripheral or full participant in both areas, become a legitimate negotiator on behalf of both areas, and have a willingness to act as the boundary-spanner (Levina and Vaast, 2005). Under time and resource constraints, a firm in need of renewal may be unable to wait for people to develop such skills and roles, but could certainly value and promote those boundary-spanners who are already in place.

Second, a firm could restructure by eliminating old structures and creating new ones. In what Dougherty (2008) explains as the “social constraint” approach to organization design, existing structures can limit experimentation. For ongoing innovation, the social constraints approach recommends segmenting innovation routines from “regular work.” Solving “the innovator’s dilemma” (Christensen, 1997; Christensen and Raynor, 2003) by creating skunkworks, spinning off new ventures, and separating R&D from operations that serve current customers are examples. Within R&D, firms pursuing a few technological trajectories will tend to have separate R&D facilities, while firms with high technological diversity will tend to have centralized R&D offices to facilitate combinations (Argyres, 1996) and alleviate conflict over allocations (Cardinal and Opler, 1995). “Therefore, fluidity arises mostly by shifting the boundaries: managers directly force change by creating new units and roles, and by breaking up old ones” (Dougherty, 2008: 421). This top-down approach creates new teams who must adjust their routines to accommodate new members and new goals. For instance, Obstfeld studies a car company executive’s attempt to change the routine for prototype parts purchasing by bringing together like-minded individuals from different departments and levels into a new core group.

The creative project core group's collaboration constituted a novel combination, because it was discrete from any familiar, repetitive forms of interdependent action within the organization. At the same time, the novelty of this effort was moderated by the fact that several of the core group members already knew each other and had collaborated in the past, if only sporadically, in the pursuit of changing some aspect of the company's operating processes. (Obstfeld, 2012: 1585)

This process will not be easy. If a firm has never implemented cross-functional teams for new product development, the point of crisis may not be too late for that tried-and-true method to work. There are always tradeoffs in organizational change. If managers decide to move scientists together into the same building, assigning offices to mix up previous departments, the new structure may encourage cross-fertilization in basic science; but at the expense of removing the scientists further from the marketing experts. Or, if managers reorganize activities from country-centric offices to divisions based on specific brands, they may find efficiencies in distribution, but at the cost of losing employees with the deepest knowledge of a particular country. For new innovation, the goal of restructuring is to get people working together and adjusting to each other, not simply re-engineer a process (Hammer, 1990) to be simpler or incorporate information technology.

The third method to alter structure for innovation is to deconstruct. Dougherty (2008) describes the "social action" approach to organization design as grouping work around emergent flows with minimal structures. Managers primarily break down barriers. They allow employees at all levels to build new ones, if necessary. For instance, Brown and Duguid (1991) describe how "maverick communities" of practice can emerge without formal training. Flat, "organic" structures are common in project-oriented businesses and those that seek continuous change in high-velocity industries (Burns and Stalker, 1961; Radner, 1993). For instance, the software firm Valve's handbook tells employees, "You were not hired to fill a specific job description. You were hired to constantly be looking around for the most valuable work you could be doing" (as

quoted by Felin and Powell, 2016: 78). Even so, in large organizations, “semisttructures” are necessary to guide emergent evolution (Brown and Eisenhardt, 1997). Removing barriers will only lead to new routines if people are encouraged and enabled to form new internal networks and experiment with new sequences of actions, what Volberda, Baden-Fuller, and van den Bosch (2001) call “facilitated renewal.”

As summarized by Eggers and Kaplan (2013: 303), “Scholars have identified three behavioral mechanisms that are likely to affect the encoding of experiences into routines—the degree of success, familiarity, and regularity of experiences.” Therefore, to help the formation of new routines, managers can give self-organizing employees feedback on proximate milestones, encourage them to start with what they already do, and facilitate repeated interaction with specific new contacts. Then, at some point, management will need to “integrate” the entire organization (Dougherty, 2008)—stating a strategy to go to market based on a particular set of new routines or innovations, rather than allowing successful ideas to fizzle out (Floyd and Lane, 2000), or unproductive segmentation to calcify (Clark and Fujimoto, 1990; Kanter, 1983).

Recognition of market opportunities through analogies and artifacts

The third element of bricolage is involving people in multiplex ties. While input from a larger group of people can be beneficial to innovation, the key to multiplex ties is the blurring of specific roles, such that anyone has the right to comment on any aspect of the discussion. This license is especially important to incorporate people’s idiosyncratic knowledge of how they or others use the business’s products. Keeping with the theme of this paper, firms in need of renewal may not have time or money to build new connections to market experts or lead users. Instead, managers can enable existing personnel and customers to break out of their assigned roles and share or speculate about market opportunities. Two methods of identifying market

opportunities are (a) to use analogic reasoning to transfer “a solution from a known field to a new one” (Mastrogiorgio and Gilsing, 2016: 1422), and (b) to circulate artifacts to encourage users to imagine new uses for existing products (Andriani, et al., 2017; Chatterji and Fabrizio, 2014; Dougherty, 1992b; Felin et al., 2016).

Analogical reasoning

To reason by analogy (Gentner, 1983; Gick and Holyoak, 1980), an individual creates a mental representation of a problem at hand, and then searches experience and knowledge bases to identify other settings that are similar. The individual then considers the solution to the similar problem, to see if it would suffice in the current situation. Analogies are central to the process of business strategy (Gavetti, Levinthal, and Rivkin, 2005). Innovators may import solutions from other firms or industries to solve present problems. Or, managers may identify commonalities between markets and pursue related diversification through exporting their existing solutions to new customers. The emphasis on analogy in bricolage follows this latter, outward-oriented process. An organization is, among other things, a collection of “solutions looking for issues to which they might be the answer” (Cohen, March, and Olsen, 1972: 2). By involving multiple people, regardless of prior role, the bricoleur learns how each person views the solution, and what problems it can solve.⁶ The term *recognition* of market opportunities is apt because seeing the existing solution from a new perspective is literally a case of “re-cognition”—a change in thinking. Identifying exaptations—new uses for existing solutions—through analogy involves the cognitive process of reframing how observers see the existing solution or trait.

Mastrogiorgio and Gilsing (2016) document that inventors’ prior experience with patents

⁶ Bricolage can also involve drawing on existing networks to access resources, such as an entrepreneur asking friends and family for startup capital, or founding a company in one’s parents’ garage (Baker, Miner, and Eesley, 2003). For large firms, market knowledge and analogical capabilities could therefore be considered resources which are accessed through “network bricolage.”

in the main class of either a focal patent or the patents that are cited by the focal patent relates to a greater likelihood that the focal patent will cite patents that are not in that main class. They interpret this result to indicate that inventors with deep knowledge in a domain have an analogical ability: they can envision how knowledge from one domain applies in another domain. Notably, Mastrogiorgio and Gilsing (2016) do not find support for a moderating effect of analogical ability on the relationship between technological complexity and exaptation, which suggests “the prior knowledge owned by inventors is positively correlated to exaptive innovation, but not because it helps them to arrive at a richer representation of the architecture of the inventive problem” (Mastrogiorgio and Gilsing, 2016: 1433). More generally, this finding implies experienced employees can develop new uses for existing artifacts (e.g., solutions, products, or tools) without redesigning those artifacts. These authors propose three measures for firms to encourage exaptation through analogy-making: cherish mavericks, systematically hire from other industries, and engage in inter-sectoral collaboration. Thus, a firm attempting innovation for corporate renewal should bring to the forefront its employees’ experience in different industries or technological areas. Someone who doesn’t fit the firm’s or industry’s usual profile may be precisely the person to help the firm turnaround. Someone who has recognized a new use for an existing item may have the ability to do so again. This ability may be catalyzed by putting people together who have deep experience in different domains, not to develop new routines, but to compare notes on how they see people possibly putting a product to use. Analogy can even apply to organizational forms: Powell and Sandholtz (2012) use the term “transposition” to explain how “amphibious” entrepreneurs—people comfortable in both basic science labs and the world of VC-backed startups—brought organizational forms (e.g., elements of open innovation) to the pharmaceutical industry.

Examination of artifacts

Drawing on the analogical reasoning of people outside the firm may work best by giving them some artifact to examine. Dougherty (1992b) calls this “visceralization.” The (potential) user needs to be able to handle and experiment with the artifact. A similar approach is followed in IDEO’s famous “design thinking” framework (designthinking.ideo.com), which includes empathy (listening to the customer), ideation (imagining a design), and experimentation (building fast and frequent prototypes to let customers handle them). A family-run business in my area made products using standard components: formed steel rods, plastic pieces made by injection molding, and other adornments. Hoping to develop a new business that he could run under the family umbrella, one enterprising scion would carry around steel rods and plastic pieces, or ask people to imagine they were holding them, to ask, “How would you use something that looks like this in your daily life?” Such pieces reminded me of curtain rods, a mop, a soccer goal, a toy, a desk, and other products. As an example from a larger business, Lego benefitted in the mid-1990s from listening to “Adult Fans of Lego,” learning not only of demand for new kits that could be made using existing pieces (e.g., the Architecture series), but also that the building blocks could be the center of regional meetings and online discussion groups, which then stimulated further sales (Rivkin, Thomke, and Beyersdorfer, 2012).

The pharmaceutical industry in the US is structured to facilitate exaptation through visceralization. A drug is approved by the FDA to treat a specific ailment, but once it is available, doctors can observe its effects and try it on patients with other conditions. Andriani et al. (2017) show that additional uses emerge for many drugs, an average of 2.2 uses outside the drug’s original disease classification, with some having dozens of additional uses, and about 10% in their sample qualifying as radical innovations. In other industries, producers may not

have so many research-oriented users, or patent protection that would allow the producers to profit from additional uses. On the other hand, finding new uses for an existing drug can take years, whereas, in other industries, sending product samples to existing customers may lead to new insights quickly. Users do not need to have technological knowledge to share their market knowledge with the firm (Danneels, 2002).

Relaxation of selection mechanisms

The fourth element of bricolage is a lax regulatory environment; specifically, an internal corporate environment that allows ideas to move forward without being subject to traditional criteria. Managers can help reconfigurations of resources, changes to routines, and recognition of new uses for existing artifacts “stick” through creating looser selection mechanisms (Felin and Powell, 2016). For example, Valve applies the “rule of three” in which “one or two people acting alone could not move a project forward, but a group of three could receive a green light (Felin and Powell, 2016: 85-6). While this rule acts as a check on individual biases, it is not so stringent that every idea has to gain approval from layers of management. Silicon Valley firms like Valve are famous for embracing flat, organic, decentralized organization design, allowing social action to drive innovation (Burns and Stalker, 1961; Teece, 1996). In that same region, the Oakland A’s baseball team led the Moneyball (Lewis, 2004) revolution. The statistical tools to find hidden value in resources had been available in the industry, but the team’s managers had to remove player evaluation from the traditional realm of the scouts and allow one or two people with a spreadsheet to affect their player acquisition (Baker, Pollock, and Sapienza, 2013). Another example of departing from traditional criteria occurred at the company iCyt, founded in 2005. The intended product, and ultimate source of its success, was high-tech flow cytometry equipment for biotech cell sorting and analysis. At one point when the company was cash-poor, a

customer described a simple, sturdy container they could not find on the market. iCyt's founder could have stuck to the plan to only produce million-dollar equipment, but realized he had enough access to materials, machine tools, and people to make the container for the customer, so he did. Relaxed selection criteria allow bottom-up innovation after deconstruction of internal boundaries, complementary to the top-down approach of restructuring boundaries.

Managers can also make exceptions to usual processes of selecting among competing ideas. For instance, selection decision rights might be removed from a committee or hierarchy and granted to a "czar" to enact rapid change, even an "innovation czar" (Hamel, 1996: 3). Baker and Nelson (2005) observed another way in which small businesses empowered individuals. Managers would sometimes make a "request" that came with inherent "permission" to ignore standard procedure. The request might take advantage of an employee's broad, self-taught skills, which others in the business couldn't be expected to understand. Thus,

"...supervisors requested that one or more employees take on new challenges or solve substantial problems without spending any money, to allow the firm to concentrate limited resources elsewhere. All of the supervisors involved agreed that in addition to their requests, they were—implicitly or explicitly—providing what we labeled "permissions" (Baker and Nelson, 2005: 350).

Recognizing that people have previously unrecognized useful characteristics is key to "human capital bricolage" (Banerjee and Campbell, 2009: 484). However, managers making selective exceptions is still a partially top-down approach.

Information processing economics (Sah and Stiglitz, 1986; Christensen and Knudsen, 2010; Csaszar, 2013; Csaszar and Eggers, 2013) clarifies how flatter organizational structure and delegation of decision-making help firms generate innovation. The behavioral assumption underlying this approach is that individuals' abilities to gather and absorb information are limited; thus, the selection of new ideas within an organization is subject to individuals'

judgment errors (Sah and Stiglitz, 1985). The first type of judgment error is rejecting ideas that should have been accepted, while the second judgment error is when individuals accept ideas that should have been rejected, called type I (omission error) and type II (commission error), respectively (Csaszar, 2013; Sah and Stiglitz, 1986). Sah and Stiglitz (1986) further reason that the occurrence of each type of judgment error depends on how decision makers are arranged. In a hierarchical structure, where a new idea or project must go through a series of screening processes, there is a higher incidence of type I error as the project is evaluated in multiple stages. In comparison, with a polyarchical structure (i.e., power distributed to many people), screening decisions are parallel to each other, resulting in a higher incidence of type II error. The Sah and Stiglitz (1986) theory predicts that a longer sequence of decision-making results in fewer projects being accepted, but they are of better quality on average than projects accepted through a parallel decision-making structure. Csaszar (2013) extends Sah and Stiglitz (1986) by computing the probability that an organization will make omission errors (type I) or commission errors (type II) and links those judgment errors with decision rules. To support these propositions, both Sah and Stiglitz (1986) and Csaszar (2013) employ computational modeling. Among other results, Csaszar (2013) concludes that adding new individuals to the decision-making process will result in fewer omission errors as well as commission errors; and that decision rules (e.g. majority rule by committee) influence the probability of both errors. Therefore, using a “rule of three” or encouraging “mavericks” is likely to yield a higher rate of errors of commission; but this is a tradeoff struggling firms should make. Especially when a firm has had stringent, centralized innovation management in the past, it has probably made many omission errors—not pursuing opportunities that could have worked out. Bringing in new leadership could simply replace the old top-down system with a new one, burying further those

unique resources and routines that hold undiscovered value. Instead, firms seeking turnaround through innovation should adopt more organic structures to empower individuals (Turner and Makhija, 2012). As stated by Schoemaker, Heaton, and Teece (2018: 35):

Leaders essentially define what an organization sees and how it makes sense. They also determine which voices are heard or ignored. Leadership at various levels open the organization to weak signals from the environment—especially its extended networks of suppliers, partners, and customers. It also matters whether signals from inside the firm are surfaced or shut out.

Situational emphasis and implications

The choice of which element of bricolage to emphasize, or at least where to start, should also take into account firm characteristics, as summarized in Table 1. Resource enumeration and recombination will be most productive when the firm has diverse knowledge (Ceipek et al., 2019), but the elements have been separated because organizational architectures followed product offerings or people were supposed to record the elements in centralized repositories. Altered routines will have the greatest chance to generate innovation when past organizational structure has been rigid and designed to maximize efficiency, rather than exploration. In that case, people may have unexplored skills and abilities, and releasing them to express variation in routines can bring innovation to the fore. Recognition of new uses of artifacts will have the most promise when employees, customers, and other existing members of the firm's network have cross-industry experience, and thereby analogical capability. Finally, relaxation of the criteria for selection of new solutions is necessary for each of the other processes to occur, and is especially important if the firm has a history of hierarchical decision-making or insistence on consensus.

Resource redeployment

Bricolage has been shown to produce innovation in small firms (Senyard, et al., 2013) and high-tech firms (Ciborra, 1996). The elements of bricolage can also lead to innovation in

large firms, generating products or processes that may be relevant to new markets (Sohl and Folta, 2019). In some cases, managers may choose to exit historical markets to enter new ones (Helfat and Eisenhardt, 2004). The decision to devote existing resources, including people, to a new market and exit an old one is termed “resource redeployment” (Sakhartov and Folta, 2014, 2015; Lieberman, Lee, and Folta, 2017). Indeed, the possibility of finding new uses for existing resources is part of what gives resources their value (Sakhartov, 2018). A firm that leverages its resources by moving through lines of business over time is creating intertemporal economies of scope (Helfat and Eisenhardt, 2004), distinct from the intratemporal economies of scope that may occur as diversified firms operate multiple businesses at once (Panzar and Willig, 1977; Wernerfelt, 1984). Yet redeploying resources is costly (Sakhartov and Feldman, 2019; Sakhartov and Folta, 2014).

When would a firm need to exit one line of business to enter another? First, if resources are recombined, they may no longer be available to be used in prior configurations. Some resources, such as brand name or technological know-how, are scale-free: they can be leveraged through multiple uses without running into constraints. But other resources enumerated through in-depth architectural or historical analysis have limits to capacity (Levinthal and Wu, 2010). Second, as routines change, participants may not even realize that their actions no longer serve a past goal efficiently. Shifting or removing structures breaks ties, as well as forms new ones. Further, managerial attention is non-scale free (Ocasio, 1997; Wu, 2013). To succeed in a new opportunity may require managers to set aside old routines. Thus, the more a firm relies on finding innovation from within using resource reconfiguration or alteration of routines, the more likely it will exit some activities when it embarks on new ones (Vidal, 2019). In contrast, using multiplex ties to identify exaptations does not require changing the existing artifact or the

processes that produced it. The new use for an existing solution may be more lucrative than staying in the old line of business, but nothing prevents the firm from continuing to offer the solution in both markets. Therefore, managers may want to try recognizing new opportunities through analogy and visceralization first, before rushing into major organizational change.

A warning to managers

The stress of failure can produce the “fight, flight, or freeze” response even for CEOs. It can be tempting to fight through a period of poor performance by doubling down on past strategies and methods. Thus, the bricolage approach could be used to justify attention to sunk costs, make unsustainable promises to personnel, resist external advice, or implement restructuring that suits the manager’s personality rather than the economic realities. Effective use of the four ‘R’s would instead de-emphasize past valuations of resources, alert employees to the need for reconsidering even the most embedded aspects of their daily activities, invite insight from customers and others outside the firm, and encourage mavericks to move forward with their ideas without seeking permission. Bricolage may not be a path to breakthrough innovation, but “buying time” when the firm has no slack to purchase other resources, it may enable company survival. With a deeper understanding of its resources and more flexible structure, the firm can then move into new opportunities and invest in longer-term (e.g., R&D alliances) or more drastic (e.g., exit through sale) measures to create value.

CONCLUSION

A corporation in trouble may need to ‘make do’ with what it has on hand. The process of bricolage involves four ‘R’s: Resources, Routines, Recognition, and Relaxation, which are common in many entrepreneurial firms. Applying these elements to large, established firms, I have explained methods to enumerate resources for recombination through architectural and

historical analysis, alter routines through changing how people interact, recognize new market opportunities through analogies and sharing of artifacts, and relax internal selection mechanisms through reducing hierarchical structure. I draw on the vast and varied literature regarding innovation, and contribute to this literature by explaining how the elements fit together to support turnaround through internal innovation.

The boundary conditions of this theory include alternative ways to innovate, such as forming new strategic alliances, hiring new employees, or acquiring entire companies. Restructuring, downsizing, and divestitures may also help the firm to focus on internal innovation or dedicate resources to new opportunities that arise through bricolage. Other papers in this special issue consider these alternatives in greater detail.

Further research on the process of corporate renewal using a bricolage lens could examine the relative importance of operational resources and capabilities vis-à-vis dynamic capabilities that transform those resources. If it is possible for a CEO of a struggling firm to employ bricolage practices to uncover new value in existing resources, does that imply that managerial cognition is a more important aspect of dynamic capabilities (Helfat and Peteraf, 2015) is than team-based organizational learning (e.g., Bingham, et al., 2015)? Does the fact that bricolage can build a strategy out of whatever is at hand imply that the dynamic capability is more important than the inherent characteristics of the resources themselves? Empirical evidence from turnarounds, perhaps gathered through ethnographic methods, would shed light on the contingencies under which economic rents and competitive advantage are built through activities in factor markets or through activities within the firm (e.g., Makadok, 2001).

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Table 1. The four ‘R’s of corporate bricolage and their strategic emphasis

<i>Element of bricolage</i>	<i>Summary</i>	<i>Illustrations</i>	<i>Examples</i>	<i>Emphasis</i>
Resources	Enumerate the rich trove of what is at hand through architectural and historical analysis.	Software architecture Ontogeny in biology	Repurposing of old buildings Identifying hidden assets	When the firm had strict product-driven architectures or centralized repositories of knowledge, and also has diverse knowledge
Routines	Change behavior by forming new combinations of people engaged in familiar activities.	Improvisation in theater	Prototyping machinery Purchasing	When rigid organizational structure designed to maximize efficiency has created knowledge silos and people have hidden skills
Recognition	Identify new markets or applications for existing products through analogy and visceralization.	Exaptations in biology	Off-label uses in medicine “Design Thinking”	When employees, customers, and other members of the firm’s network have cross-industry experience
Relaxation	Loosen internal selection criteria to allow for more innovation.	Moneyball in baseball	The “rule of three” Requests and permissions	When the firm has a history of hierarchical decision-making or insistence on consensus