

# Organizational Ambidexterity in Action: HOW MANAGERS EXPLORE AND EXPLOIT

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**T**he life span of the average American is 79. Japanese can expect to live to age 83, Liberians to only 46. The average age of a large company is much less than any of these. Research has shown that only a tiny fraction of firms founded in the U.S. are likely to make it to age 40, probably less than 0.1 percent.<sup>1</sup> In this study, for firms founded in 1976, only 10% survived 10 years later, leading the authors to conclude that “Despite their size, their vast financial and human resources, average large firms do not ‘live’ as long as ordinary Americans.”<sup>2</sup> While this is partly understandable because of the high mortality rates among newly founded companies, other research has estimated that even large, well-established companies can only expect to live, on average, between another 6 to 15 years.<sup>3</sup> Ormerod, in a study of firm failure, noted that “Over 10 percent of all companies in the U.S., the largest and most-successful economy in the history of the world, fail every single year.”<sup>4</sup> In a study of the world’s largest companies between 1912 and 1995, Hannah reported that only 20 firms remained on her list for the entire period—and many of those were in industries like natural resources without disruptive change. In her study, the modal large firm failed.<sup>5</sup> Why this should be is a puzzle, since when firms are doing well they have all the resources (financial, physical, and intellectual) to continue to be successful. Yet the evidence is that most organizations do not survive for long periods of time.

In addressing this conundrum, James March notes that central to the ability of a firm to survive over time is its ability to exploit existing assets and positions in a profit-producing way and simultaneously to explore new technologies and markets—to configure and reconfigure organizational resources to capture existing as well as new opportunities. In March’s terms, this is the fundamental tension at the heart of an enterprise’s long-run survival. “The basic problem confronting an organization is to engage in sufficient exploitation to ensure its

current viability and, at the same time, devote enough energy to exploration to ensure its future viability.”<sup>6</sup> March also notes that this requires not the blind variation-selection-retention process of biological evolution but what he refers to as “evolutionary engineering” in which organizational experience and memory are used to strengthen exploitation and exploration processes and adapt to changed environmental conditions.<sup>7</sup> Hannah, struggling to explain the survival of a comparatively small number of the world’s largest companies, suggests that a plausible explanation for the survivors is that “they had some distinctive architecture which enabled them—but not others—to constantly replicate their early success [and that] such corporate architectures must be complex and difficult to identify, describe and copy, for, if that were not the case, their value would be competed down by emulators.”<sup>8</sup>

In the past decade, a growing body of research has examined how organizations can both explore and exploit.<sup>9</sup> One promising stream of research has focused on how *dynamic capabilities* may underpin the ability of firms to sense, seize, and reconfigure organizational assets to adapt to changed environmental conditions.<sup>10</sup> With dynamic capabilities, sustained competitive advantage comes from the firm’s ability to leverage and reconfigure its existing competencies and assets in ways that are valuable to the customer but difficult for competitors to imitate. In this view, dynamic capabilities are embedded in organizational processes or routines around coordination, learning, and transformation and allow a firm to sense opportunities and then to seize them by successfully allocating resources, often by adjusting existing competencies or developing new ones. These capabilities underpin the organization’s ability to maintain ecological fitness and, when necessary, to reconfigure existing assets and develop the new skills needed to address emerging threats and opportunities

## The Roots of Organizational Ambidexterity

O’Reilly and Tushman argue that the ability of a firm to be ambidextrous is at the core of dynamic capabilities. Ambidexterity requires senior managers to accomplish two critical tasks.<sup>11</sup> First, they must be able to accurately *sense*

changes in their competitive environment, including potential shifts in technology, competition, customers, and regulation. Second, they must be able to act on these opportunities and threats; to be able to *seize* them by reconfiguring both tangible and intangible assets to meet new challenges.<sup>12</sup> As a dynamic capability, ambidexterity embodies a complex set of routines including decentralization, differentiation, tar-

geted integration, and the ability of senior leadership to orchestrate the complex trade-offs that the simultaneous pursuit of exploration and exploitation requires. Developing these dynamic capabilities is a central task of executive leadership.

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Although theoretically compelling, research on dynamic capabilities and ambidexterity is still at an early stage. Conceptually, the need for organizations to both explore and exploit is convincing, but how do managers and firms actually do this? At an operating level, how do the challenges of ambidexterity present themselves—and what differentiates the more successful attempts at ambidexterity from the less successful? To develop a more granular sense for the managerial challenges presented by ambidexterity, consider the following three examples.

### ***Mike Lawrie at Misys***

In 2007, Mike Lawrie was appointed CEO of Misys, a \$1B FTSE 100 global supplier of software and services to banking and health care customers. Although Misys had been a star performer earlier in its history, by 2006 the firm was in trouble with margins and growth rates far below their competitors. It had grown through acquisitions and was a loose federation of 34 separate business units with 6,000 employees spread across 79 countries.

Part of Lawrie's turnaround strategy was straightforward: to install common practices across the business units to reduce costs and drive productivity. As a 27-year veteran of IBM and former CEO of Siebel Systems, Lawrie knew how to do this. More problematic was the potential disruptive challenge posed by open source software, which threatened the proprietary products from which Misys derived most of its current revenue. However, given the poor financial position of the company, Lawrie's senior team was focused on cutting costs and getting through the immediate crisis. With their legacy business and their powerful business unit managers under cost, quality, and growth pressures, open source experiments were seen as a needless distraction and a \$300M cost. They questioned whether the company should divert scarce resources to fund an uncertain new initiative that, if successful, could undermine their current business model? In addition, if they were to do this, how should the new venture be organized and led?

### ***Ganesh Natarajan at Zensar Technologies***

Zensar Technologies is one of India's top 25 business process outsourcing companies providing services to 300 of the *Fortune 500* firms. In 2005, its business was growing but Ganesh Natarajan, the CEO, saw the opportunity to implement a potentially radical software process innovation (Solution Blue Prints or SBP). SBP was a revolutionary way to do software development that, if implemented, would require a more collaborative relationship with clients, a different product development framework, and a different sales process.

Zensar's existing customers, its top team, its sales force and its product development staff were not enthusiastic about SBP. Like Mike Lawrie's team at Misys, Natarajan's senior team and business unit leaders were preoccupied with their current business and saw little need to explore an approach that would require them to alter their current business model. When pressed by Natarajan to explore the new approach to software development, several senior managers

suggested that SBP simply be integrated into their existing units. Others wanted SBP to be spun out as a new venture. In contrast, the leader of the SBP project wanted to have his own business unit reporting directly to the CEO. As Natarajan reflected on the challenge, he was sure that the company should pursue SBP but was unsure how to structure the new initiative to best ensure its success.

### *Caroline White at Defense Corp*

Defense Corp (pseudonym) is a major U.S. defense contractor with long-term relationships with customers in the military. Caroline White, a vice president and general manager of a division, saw an attractive opportunity for growth in the new Homeland Security market but was frustrated in her efforts to develop this area. Her mission, approved by the President, was to create a franchise in this business equivalent to those it enjoyed in other defense markets. In spite of this high-level approval, Caroline found funding difficult, with the business development funds budgeted by supporting units never available in the amounts promised. Instead, these seem to be siphoned off to support more near-term opportunities with existing clients.

When Caroline pressed her colleagues in other business units about this, she heard complaints about her new initiative. They saw her mission as less tangible and immediate than theirs, with a smaller payoff to investment, and labeled her effort as a “think tank” as opposed to a real business. They also complained that her project lacked clarity around deliverables and metrics. Making matters more difficult, line of business leaders were under significant pressure to deliver revenues and questioned the viability of Caroline’s efforts. In the face of these obstacles, Caroline was resolved to ask the CEO to intercede. The question, however, was what she wanted him to do to ensure the viability of her exploratory effort? Given the resistance, she knew that it would require more than just funding to ensure the success of the new initiative.

Mike Lawrie, Ganesh Natarajan and Caroline White each face the classic explore-exploit dilemma. What specifically can they do? At a high level of abstraction, ambidexterity requires a willingness of senior managers to commit resources to exploratory projects and the establishment of separate structural units for exploitation and exploration. Most research on ambidexterity begins with the acceptance of these general characteristics.<sup>13</sup> However, while there is general agreement about the elements of ambidexterity, O’Reilly and Tushman have noted that what is missing is a clear articulation of those specific management actions that facilitate the simultaneous pursuit of exploitation and exploration. What has been missing from the research on ambidexterity is insight into the core leadership mechanisms that underlie how dynamic capabilities operate in practice.

Thus, while directionally correct, the research is not granular enough to be of much use to an operating manager facing the problems described above. To be practically useful, what is needed is greater insight into the specific micro-mechanisms required for a manager to implement and operate an ambidextrous strategy. This article reports the results of interviews and qualitative case studies

of leaders in 15 organizations that were confronted with the need to simultaneously explore and exploit. We use these data to induce how managers actually dealt with the challenges of ambidexterity. In doing this, we also explored those activities that discriminated between those more- versus less-successful attempts at implementing ambidextrous designs.

## Leading the Ambidextrous Organization

In an attempt to characterize the specific elements of ambidexterity, we offer five propositions that are necessary for leaders to be successful at managing ambidexterity.<sup>14</sup> These are specific mechanisms that enable firms to successfully manage separate “explore-and-exploit” subunits and to leverage common assets in ways that permit the firm to adapt to new opportunities and threats. It is the presence of these characteristics that permits leaders to reconfigure existing competencies and assets to explore new opportunities even as the organization continues to compete in mature markets. Absent these elements, inertial forces keep the firm focused on the exploitative part of the business.<sup>15</sup> Thus, we propose that ambidexterity is more likely to be successful in the presence of the following five conditions:

- A compelling strategic intent that intellectually justifies the importance of both exploration and exploitation.
- An articulation of a common vision and values that provide for a common identity across the exploitative and exploratory units.
- A senior team that explicitly owns the unit’s strategy of exploration and exploitation; there is a common-fate reward system; and the strategy is communicated relentlessly.
- Separate but aligned organizational architectures (business models, structure, incentives, metrics, and cultures) for the exploratory and exploitative units and targeted integration at both senior and tactical levels to properly leverage organizational assets.
- The ability of the senior leadership to tolerate and resolve the tensions arising from separate alignments.

To appreciate the logic of these, consider the effects on ambidexterity if these elements were *not* present. First, without an intellectually compelling strategic intent to justify the ambidextrous form, there will be no rationale for why profitable exploit units, especially those under pressure, should give up resources to fund small, uncertain explore efforts. As previous research has shown, managers routinely discount future threats and focus on short-term gains at the expense of less certain long-term returns.<sup>16</sup> Second, absent a common vision and values, there will be no common identity to promote trust, cooperation, and a long-term perspective.<sup>17</sup> Third, if the senior team lacks a consensus about the importance of ambidexterity, those who are uncommitted will be encouraged to resist the effort, diminishing cooperation, increasing competition for resources, and slowing down execution.<sup>18</sup> The absence

of a common-fate reward system and a lack of relentless communication of the ambidextrous strategy can further undermine cooperation and encourage unproductive conflict.<sup>19</sup> Fourth, without separate alignments for explore and exploit units and targeted integration to leverage common assets, there will be inefficient use of resources and poor coordination across the units.<sup>20</sup> Finally, if the leadership is unable to manage the conflicts and trade-offs required by ambidexterity, the necessary decision processes will be compromised and end up in confusion and conflict.<sup>21</sup>

## Method and Results

To assess whether these five propositions are veridical descriptions of ambidexterity in practice, we conducted semi-structured interviews with senior managers at fifteen firms that were attempting to manage both exploratory and exploitative units. Eight of the 15 cases were either successes or qualified successes as reflected in increased growth or profits, three were clear failures, and four firms were underperforming before learning how to be ambidextrous and deemed successful afterwards. Table 1 lists these companies and the challenge each faced.

Senior managers and key informants in each firm were interviewed and asked to describe in detail how they attempted to simultaneously explore and exploit.<sup>22</sup> They were probed about the nature of their leadership challenges, what actions they had taken, an assessment of their progress to date, and to identify those elements that they believed were helping or hindering them in accomplishing their task of exploration and exploitation. The focus in these interviews was on understanding in some detail what actions had been taken and how these had been implemented. The goal of these interviews was to specify in a granular way what leadership actions were associated with the organization's ability to reconfigure existing assets and develop the new capabilities needed for exploration.<sup>23</sup> Table 2 provides a summary of the comparative results across the fifteen organizations studied. These results suggest that there are themes associated with the leadership of more- versus less-successful ambidextrous designs.

The first proposition offered by O'Reilly and Tushman suggests that ambidexterity is facilitated when there is a compelling strategic intent that intellectually justifies the explore and exploit strategy. In each of the 15 cases investigated here, there was a clear strategic intent on the part of the organization to pursue an exploratory venture (this obviously reflects our sample selection where cases were chosen based on their attempt to be ambidextrous). While each of the 15 firms articulated a strategic intent, only ten were able to actually execute such an aspiration. The articulation of a clear strategic intent clearly does not discriminate between more- versus less-successful attempts to implement ambidextrous designs. Other research has documented the transformation of firms occurring without an explicit ambidexterity strategy.<sup>24</sup> These results suggest that while

**TABLE I.** Sample Description (*continued on next page*)

<p><b>IBM Life Sciences (Success)</b></p> <p>In 2000, IBM began a programmatic effort, (termed the Emerging Business Organization or EBO), to identify and develop cross-IBM business that could provide \$1B in revenue within a 5-year time frame. In April of that year, Carol Kovac, an IBM R&amp;D manager, was asked to establish a new Life Science business that would capitalize on the increased demand for computing being generated by the genomic revolution. Between its founding and 2006, Carol grew the business to \$5B in revenue.</p>	<p><b>IBM Middleware (Success)</b></p> <p>In 1998, IBM's software division was in turmoil. There were conflicting pressures to continue to develop and service software for their existing installed base that relied heavily on mainframe computers and to develop radically new products based on the emerging World Wide Web. Resolving this required that their senior managers exploit existing programming languages and customers and to explore new languages and markets. They accomplished this by systematically establishing different units and carefully integrating them at senior levels.</p>
<p><b>Cisco TelePresence (Success)</b></p> <p>Cisco Systems is a \$22B company that sells plumbing for the internet. It has grown at 12-17% annually and currently has a dominant market share in its main businesses. As a part of his effort to continue Cisco Systems growth, John Chambers, the CEO, has launched an ambitious initiative to identify 30 new potential \$1B businesses. His aim is to generate 25% of the firm's revenues from these new ventures within 5-10 years. In October 2006, one of these efforts (TelePresence) was launched as an internal venture to develop high-end video conferencing. Since then the business has grown from two internal entrepreneurs and a sheet of paper to more than 100 people and \$200M in revenue.</p>	<p><b>Misys Corporation (Success)</b></p> <p>Misys is a \$1B software firm selling service and systems to health care and banking clients. As a part of a turnaround effort commenced in 2007, the new CEO initiated a cost-cutting effort in the mature business and proposed a new open source approach to replace the existing proprietary platform. To ensure the success of this disruptive approach, he set up a new exploratory unit and replaced several members of his senior team who were resisting the new approach. By 2010, the new open source platform had opened up new markets and attracted a significant number of new customers.</p>
<p><b>DaVita Rx (Success)</b></p> <p>DaVita is a \$6B business that derives the bulk of its revenues from operating kidney dialysis centers. In 2004, Kent Thiry, the CEO, formed a team to identify new business opportunities that would match DaVita's clinical skills with economic opportunities. One opportunity identified was to provide prescription drugs to chronic kidney patients. Begun in 2004, DaVita Rx was an internal start-up with a different business model, metrics, and margins than the larger DaVita. By 2010, this new business was generating \$220M in revenue with 400 employees.</p>	<p><b>Defense Corp (Success)</b></p> <p>Defense Corp is a \$6B provider of hardware and systems to the U.S. military establishment. In 2005, in an attempt to broaden their customer base the company initiated an effort to sell technology to the newly established Homeland Security Agency. Although the initiative was approved by the CEO, development funding and cooperation from main lines of business were slow in coming until a separate unit was established with a clear charter, appropriate metrics, and an aligned senior team. The new unit recently won a \$13M contract.</p>
<p><b>Ciba Vision (Success)</b></p> <p>In the early 1990s, Ciba Vision, a maker of soft contact lenses and lens solutions, was losing ground to their larger competitors, J&amp;J and Bausch and Lomb. In a bold move, Glenn Bradley, the President, halted all incremental innovation and placed six bets on revolutionary new products such as extended wear lenses and daily disposables. These new units were encouraged to establish their own alignments (people, structure, culture) as they pursued their breakthrough innovation. With the success of several of these, revenues tripled over the next decade.</p>	<p><b>Zensar Technologies (Success)</b></p> <p>In 2002, Zensar Technologies, a mid-sized Indian IT services firm was losing market share and key talent. There was substantial tension between a potentially promising new technology platform and the existing geographical business units. A new CEO shifted Zensar to a product-focused firm but kept the new technology venture as a business unit reporting to his office. In 2008, after the entrepreneurial unit's technology and business model was validated this unit and its innovative business model was integrated into the product units. Over the five-year period, Zensar was able to build its core business even as it brought to the market a fundamentally new technology.</p>

**TABLE I.** Sample Description (continued from previous page)

<p><b>SAP Business-by-Design (Failure)</b></p> <p>In 2006, the CEO of SAP declared that future revenue growth for the company was in the Small and Medium Business market and selling software on demand. This software-as-a-service product (Business-by-Design or ByD) was developed but no separate unit was established. Although this market has grown substantially, SAP has failed to successfully market their offering. In 2010, the CEO, Leo Apotheker, was fired for failing to implement Business-by-Design.</p>	<p><b>HP Scanner (Declining to Success)</b></p> <p>Beginning in 1991, HP's scanner division had begun to develop a portable scanner to complement their flatbed product. For five years they had failed to commercialize any of their inventions. In 1996, a new division GM separated out the handheld business into an ambidextrous unit that was physically separated from the flatbed business and had its own people, systems, incentives, and culture. Two years later, this business was successful enough to be spun-out as its own division.</p>
<p><b>Printing Company (Failure)</b></p> <p>In 2007, faced with increased competition and declining customer satisfaction and usage of their core legal research products, the senior managers of the business decided to reinvent their business as a web-based publisher based on a new open source architecture. In spite of a clear vision of the future, heavy investment in the new technology, and a promise to "rescue the company", the new product has failed to reignite growth. The new unit has faced continual resistance from the more mature part of the business.</p>	<p><b>Turner Technologies (Declining to Success)</b></p> <p>The Advanced IC Division of Turner had issues of growth in new products as well as quality in its existing product line. While the division's strategic intent was clear, it could not get traction on either performance issue until it split out the innovative strategic agenda from its existing product line. Energized by two new managers reporting the divisional GM and a rearticulated identity for the division, Turner was able to both effectively explore and exploit.</p>
<p><b>Software Company (Failure)</b></p> <p>Under pressure from corporate executives, the general manager of Software Company articulated a strategic intent to both build on its struggling extant product line and initiate a remarkable set of new software solutions. This general manager built a separate unit, reporting directly to him, to focus on innovation. Over a three-year period, he did not, however, staff or fund this innovative unit. The unit underperformed in its existing as well as its innovative product line.</p>	<p><b>IBM Network Technologies (Declining to Success)</b></p> <p>A highly entrepreneurial general manager articulated a strategic intent to exploit her existing chip line even as she promised to explore into fundamentally new chips. Yet her zeal for exploration led her to build a business unit only focused on exploration. Her extant product line suffered. Under pressure from corporate staff and client dissatisfaction, the general manager rebuilt her senior team and her business unit to focus attention on both her current product as well as her new product lines.</p>
<p><b>USA Today (Declining to Success)</b></p> <p>In the late 1990s, USA Today, like most U.S. newspapers, began to see a decline in both circulation and advertising revenues as web-based news began to supplant print. In response to this trend, Tom Curley, the paper's publisher, adopted a "network strategy" which emphasized the delivery of news content across three platforms, print, the web, and TV. Between 1999 and 2002, he was successful at managing this transition and simultaneously delivering news content across the three platforms-with the result that earnings increased by 50 percent.</p>	

**TABLE 2.** Interview Results (continued on next page)

	<b>Proposition 1</b> Strategic intent that intellectually justifies ambidextrous form	<b>Proposition 2</b> Vision and values that promote a common identity but separate cultures	<b>Proposition 3</b> Senior team that explicitly owns the ambidextrous strategy (common-fate rewards, communication)	<b>Proposition 4</b> Separate units with aligned architectures and targeted integration (senior level and tactical)	<b>Proposition 5</b> Ambidextrous Leadership (conflict resolution, resource allocation)	<b>Overall Performance</b>
<b>Success:</b>						
IBM Life Sciences	Yes	Yes	Yes 100% of bonus for senior executives	Yes EBO structure	Yes	Success—\$5B in revenue in 6 years
Cisco TelePresence	Yes	Yes	Yes 70% of bonus	Yes Council/Board structure	Yes	Success—\$200M in revenue in 4 years
DaVita Rx	Yes	Yes	Yes But some initial disputes over autonomy	Yes Geographically separate	Yes But some conflict over metrics and rewards	Success—\$220M in revenue in 6 years
Ciba Vision	Yes	Yes “Healthy eyes for life”	Yes	Yes Geographically separate Explore report to senior team	Yes Senior leader integrates	Success—tripled sales in 10 years
IBM Middleware	Yes	Yes “Beat BEA”	Yes Senior leaders agree on a new structure	Yes Geographically separate units	Yes Senior leaders integration	Success—old and new products combined
Zensar Technologies	Yes	Yes “Among the top Indian IT Services Firms”	Yes	Yes Distinct unit for new platform	Yes Tension held at top	Both profit and growth doubled from 2005-2010
Misys	Yes	Yes Drive productivity and innovate	Yes Replaced old team with new one	Yes Open source reports to CEO	Yes CEO drove the new effort	Success—developed new platform with new customers

**TABLE 2.** Interview Results (continued from previous page, continued on next page)

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Defense Corp	Yes	No But did set new explore culture	Yes After initial resistance	Yes Unit reports to President	Yes Used consultant to mediate conflict	Success— Won \$13M in new contracts
<b>Failure:</b>						
SAP Business-by-Design	Yes	No	No Disputes over revenue recognition	No clear ambidextrous unit or leader	No Continued conflicts over who owns the customer	Failure— lack of penetration in targeted markets
Printing Company	Yes But the strategy does not fit well with current one	Yes “Save the company”	No Short-term revenue still dominates	No Explore unit not protected	No Ambidextrous unit not represented	Failure—no new growth
Software Co	Yes	No	No	Yes	No	Poor Innovation Performance
<b>Transition to Success:</b>						
USA Today	Yes	Yes “Network, not a newspaper”	No to Yes	Yes Separate units with targeted integration	No to Yes Resource allocation to web-based business	Stalled to Success— increased earnings 50% in 3 years
H-P Scanner	Yes	No	No then Yes Senior team bonus based on overall performance	No then Yes Physically separate units	No to Yes Senior leader integrates	Stalled to Success— then innovation unit spun out

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Turner Technologies	Yes	Yes	No to Yes	No to Yes	No to Yes	Declining to improving
IBM Network Technologies	Yes	No to Yes	Yes	No to Yes	No to Yes	Declining to Improving

possibly helpful, a clear strategic intent may not be a necessary condition for executing ambidextrous designs.

The second proposition suggested the importance of a common vision and values as necessary to promote a common identity across explore and exploit units. Here the evidence is largely consistent with proposition two. Six of the eight consistently high-performing firms had a clear over-arching vision and common values. In contrast, two of the three poor performing firms did not have such clarity. Printing Company (pseudonym) had a senior team that both articulated a clear strategic intent as well as an overarching vision and identity. This senior team could not, however, execute against this clear strategy and overarching identity. Moreover, three of the four firms that learned how to be ambidextrous had or developed a well-defined vision. For example, at USA Today there was an explicit strategy to “be a network, not a newspaper.” The over-arching aspiration was to be “the local paper for the global village.” This strategy and vision, and a common set of values around fairness, accuracy, and trust, helped knit together a highly differentiated organization. Of the twelve firms able to execute ambidextrous designs, only HP Scanner and Misys were able to implement the ambidextrous design without an overarching identity. Thus, while not definitive, the evidence suggests that a common vision is an important discriminator of more- versus less-successful ambidextrous designs, but not necessarily a sufficient one.

The third proposition argued for the importance of a consensus in the senior team about the ambidextrous strategy and a common-fate reward system within the team to promote this. Our data supports this proposition. In each of the three instances of failure, there was a lack of consensus within the senior team about the relative importance of ambidexterity and there was no

common-fate reward system for the senior team. Interviews suggested that the existing reward systems that were based on sub-unit or functional performance were a major cause of the inability of the organization to leverage common assets. In the case of SAP, these disputes played out in the unwillingness of the sales force to promote lower-margin new products and disputes among senior managers about revenue recognition. In the printing company case, short-term financial pressures and the lack of any common-fate reward for the senior team resulted in a focus on achieving short-term revenue targets through the older but higher-margin products. Similarly, at Defense Corp, White's Homeland Security initiative was initially opposed by other members of the senior team because of its inability to generate short-term revenue. The uncertainty of a long sales-cycle associated with a new government customer was overwhelmed by the short-term metrics of revenue and gross margin. The senior team's systems for evaluating performance lacked the capacity to evaluate a business at a more immature phase of development.

In contrast, in the most-successful ambidextrous efforts, the senior team was heavily incented to promote both explore and exploit businesses. In the Cisco TelePresence case, members of the governance team (Boards and Councils) had a significant portion of their bonus contingent on the success of both units. In the successful DaVita Rx case, there were initial disputes within the senior team about metrics and margins that were only resolved after a common-fate reward system was installed. At Misys, senior team resistance was overcome only after Lawrie replaced the opposing managers. Importantly, in three of the four cases where the firms learned how to be ambidextrous, there was a shift from a lack of consensus ownership about the importance of the exploratory effort to a fully committed senior team. This shift in top team ownership of the ambidextrous strategy involved the creation of common-fate incentive systems, a shift in leadership behaviors of the senior manager, and, in several cases, turnover within the senior team.

The fourth condition proposed as necessary for successful ambidexterity was the presence of separate aligned architectures for the explore and exploit units coupled with targeted integration to ensure that common resources were leveraged across units. In all three instances of failure, these distinct alignments were conspicuously missing. In the case of SAP, responsibility for the exploratory venture (software-as-a-service) was split between two functional heads with the result that effective coordination never occurred and decisions were made slowly. At Software Company (pseudonym), a separate exploratory unit was established on paper but never staffed. In each of these ambidextrous failures, the locus of integration between the needs of the exploratory and exploitative activities was either too low in the firm or was ambiguous.

In contrast, in each successful case there were always separate explore and exploit units with senior-level integration to ensure that resources were allocated. At IBM this was done either through their EBO process (e.g., in Life Sciences)<sup>25</sup> or, in the Middleware case, through the establishment of distinct units focused on different time horizons; that is, mature, growth, and emerging

products. At Cisco this was done through a Boards and Councils process where there was a clear allocation of responsibilities, resources, and structures. In all successful cases, the exploratory units were initially physically separated from the exploit parts of the business. Similarly, for three of the four firms that learned how to be ambidextrous, there was a switch in organization design from an integrated approach (e.g., project teams) to the establishment of separate units for explore and exploit businesses.

The final core mechanism proposed as important for successful ambidexterity was the ability of the ambidextrous leader to resolve the inevitable conflicts and resource allocation decisions that this organization design entails. This too is an important discriminator between more- versus less-successful ambidextrous designs. In each failure case this capability was lacking. At SAP there were continual disputes about resources and responsibilities across the participating functions without a clear mechanism or clear leadership for resolution. In the printing firm, although there was a separate explore unit with a responsible manager, he reported to an exploit manager who was held responsible for margins and short-term revenues. The exploratory unit manager was not represented on the senior team with the result that his voice was not heard when critical resource decisions were made.

In contrast, in each successful case, there was a clear, identifiable leader and forum to resolve conflicts and make definitive resource allocation decisions. For example, at Zensar, even though there were substantial conflicts between the existing business units and the new integrative software platform, the CEO saw to it that his team actually dealt with these conflicts and made the appropriate resource allocation shifts between the existing units. At Misys, Mike Lawrie ensured that resources needed for the new open source effort were allocated in a timely manner. Similarly, in each of the four units that learned how to be ambidextrous, the general manager changed the senior team composition and processes to resolve conflicts associated with exploration and exploitation. For instance, at USA Today, only after Curley replaced several members of his team was his firm able to excel at both print and web-based content delivery. Similarly, only after the division general manager changed her leadership style at IBM's Network Technology Division was her team able to balance resource allocation and decision making between her explore and exploit business lines.

## The Management of Ambidexterity

One of the key features of ambidexterity is the ability of the organization to reallocate assets and capabilities to address new threats and opportunities. Practically speaking, this means that leaders within the organization are able to make the difficult choices required to reconfigure assets to promote exploratory ventures. The results from these fifteen case studies suggest that there are identifiable core mechanisms that discriminate between more- versus less-successful ambidextrous designs in action. The most-successful ambidextrous designs had leaders who developed a clear vision and common identity (Proposition 2),

built senior teams that were committed to the ambidextrous strategy and were incented to both explore and exploit (Proposition 3), employed distinct and aligned subunits to focus on either exploration or exploitation (Proposition 4), and built teams that could deal with the resource allocations and conflicts associated with exploration and exploitation (Proposition 5). Those less-successful attempts at ambidexterity did not employ these core mechanisms. Although useful, the articulation of a clear strategic intent (Proposition 1) and, to a lesser extent, the provision of an overarching vision (Proposition 2) did not discriminate between the more- versus less-successful attempts to build an ambidextrous organization. This suggests that articulating *why* ambidexterity is important is not the same as *how* it is implemented.

In the implementation of an ambidextrous design, execution appears to trump strategy. The first two propositions (articulating a strategy and overarching vision for the ambidextrous form) are the easy part for senior managers. The next three propositions are about strategic execution. These require hard choices about resource allocation, leader behavior, senior team composition (or replacement), and the balancing of contradictory organizational architectures. The most-successful ambidextrous designs had more of these components from the beginning. In contrast, those firms that learned how to be ambidextrous struggled with at least two of these core components and only after resolving these were they to effectively implement an ambidextrous design.

These results suggest that effective ambidextrous designs are based on a set of interrelated choices made by the leader. Any subset of the core mechanisms is associated with underperformance. As such, executing ambidextrous designs can be seen as a complex senior leadership task that requires an integrated set of strategic, structural, incentive, and top team process decisions. Clearly, successful ambidextrous designs require more than the simple organizational structural decision in which the exploratory and exploitative subunits are separated. The critical elements, and perhaps the more difficult elements, are the processes by which these units are integrated in a value enhancing way.

## Discussion

These results are largely consistent with Teece's observation that "dynamic capabilities reside in large measure with the enterprise's top management team."<sup>26</sup> Concretely, it appears that ambidexterity as a dynamic capability rests on the ability of leaders not only to articulate a strategic intent and vision that justifies exploration and exploitation, but—more importantly—to manage the inherent tensions associated with incompatible organizational architectures. These results also extend previous research that has linked transformational leadership to successful ambidexterity by explicating some of the core processes that underpin the transformational leadership construct.<sup>27</sup> These mechanisms are largely consistent with earlier research. For example, our findings that senior team consensus is an important ingredient in the implementation of ambidexterity is consistent with previous research showing that the behavioral integration

of the senior team is a precursor to successful ambidexterity.<sup>28</sup> Similarly, the importance of targeted integration and clear incentives documented here has also been suggested in previous studies.<sup>29</sup> The critical aspect of resource allocation illustrated here has also been seen in previous studies, especially in research showing that failed efforts at renewal stem not from a lack of technology or resources but the inability of senior managers to allocate those resources effectively to the exploratory effort.<sup>30</sup> Finally, while each component characteristic of ambidextrous designs is important, it appears that it is the set of components interacting together that define the dynamic capabilities that drive effective ambidextrous designs.<sup>31</sup>

These patterns suggest concrete yet integrated sets of actions that leaders can take to execute strategies that encompass both exploration and exploitation. At Misys, Mike Lawrie articulated his strategic intent for open source software solutions at a senior team offsite. He kept Misys Open Source as a separate unit reporting to his office. He also emphasized the need for cost and quality progress in his existing business units even as he encouraged disciplined experimentation in the open source unit. As a leader, Lawrie was able to tolerate the competition between Misys Open Source and other platforms and was willing to risk short-term revenue to help create longer-term options with a potentially disruptive technology. He has seen his strategy pay dividends. The healthcare business unit revenues grew more than 30% in 2009 with Misys Open Source as the basis for important new contracts with hospitals, physicians, and insurers. At the same time, Open Source has triggered innovation into other Misys units—a new banking product has large open source components, and the Misys website is completely open source.

To realize the potential of SBP at Zensar, Ganesh Natarajan made the decision to keep SBP separate from the other units. He clarified his strategic and emotional rationale for exploration and exploitation with his senior team and, for the next two years, relentlessly emphasized both exploration and exploitation. By 2008, SBP had almost doubled its number of clients as well as profits. Having demonstrated its success technically and in the market, SBP was then reintegrated within the main business in 2008. Finally, at Defense Corp, Caroline White received approval to separate her homeland security exploration unit and built a new management system and metrics for gauging progress of this business. She also changed the incentives of her top team so that they were all accountable for both short-term results as well as longer-term results. By 2010, the exploratory unit proved its value, winning a \$13M contract with the Transport Security Agency for improving perimeter security at U.S. airports.

## Conclusion

There is now convincing evidence suggesting that for organizations to survive in the face of change, they need to be able to successfully exploit their existing businesses and to explore into new spaces by reconfiguring existing resources and developing new capabilities.<sup>32</sup> While the evidence for the benefits

of ambidexterity is accumulating, there exists a gap in understanding *how* ambidexterity is actually managed within organizations. This article has explored how leaders within organizations actually implement ambidexterity. The actions, behaviors, and design choices made by the senior leader comprise the dynamic capabilities that enable firms to simultaneously explore and exploit and emphasize the key role of strategic leadership in adapting, integrating, and reconfiguring organizational skills and resources to match changing environments.

## Notes

1. Charles I. Stubbart and Michael B. Knight, "The Case of the Disappearing Firms: Empirical Evidence and Implications," *Journal of Organizational Behavior*, 27/1 (February 2006): 79-100.
2. *Ibid.*, p. 96.
3. Rajshree Agarwal and Michael Gort, "The Evolution of Markets and Entry, Exit, and Survival of Firms," *Review of Economics and Statistics*, 78/3 (August 1996): 489-498.
4. Paul Ormerod, *Why Most Things Fail* (New York, NY: Pantheon Books, 2005), p. 18.
5. Leslie Hannah, "Marshall's Trees and the Global Forest: Were Giant Redwoods Different?" Center for Economic Performance, Discussion Paper #318, 1997.
6. See James G. March, "Exploration and Exploitation in Organizational Learning," *Organization Science*, 2/1 (February 1991): 71-87; James G. March, "The Evolution of Evolution," in J. Baum and J. Singh, eds., *Evolutionary Dynamics of Organizations* (New York, NY: Oxford University Press, 1994), pp. 39-52.
7. For interesting examples of how biological evolution might apply to organizations, see Tim Harford, *Adapt: Why Success Always Starts With Failure* (New York, NY: Farrar, Straus and Giroux, 2011); Martin A. Nowak and Roger Highfield, *Supercooperators: Altruism, Evolution and Why We Need Each Other to Succeed* (New York, NY: Free Press, 2011); Charles A. O'Reilly, J. Bruce Harreld, and Michael L. Tushman, "Organizational Ambidexterity: IBM and Emerging Business Opportunities," *California Management Review*, 51/4 (Summer 2009): 75-99; Ormerod, *op. cit.*
8. Hannah, *op. cit.*, p. 19.
9. See, for example, Ze-Lin He and Poh-Kam Wong, "Exploration vs. Exploitation: An Empirical Test of Ambidexterity," *Organization Science*, 15/4 (July/August 2004): 481-494; Sebastian Raisch, Julian Birkinshaw, Gilbert Probst, and Michael L. Tushman, "Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance," *Organization Science*, 20/4 (July/August 2009): 685-695; Michael L. Tushman and Charles A. O'Reilly, "The Ambidextrous Organization: Managing Evolutionary and Revolutionary Change," *California Management Review*, 38/4 (Summer 1996): 8-30.
10. For a review of the growing literature on dynamic capabilities, see V. Ambrosini and C. Bowman, "What Are Dynamic Capabilities and Are They a Useful Construct in Strategic Management?" *International Journal of Management Reviews*, 11/1 (March 2009): 29-49; Kathleen M. Eisenhardt and Jeffrey A. Martin, "Dynamic Capabilities: What Are They?" *Strategic Management Journal*, 21/10-11 (October/November 2000): 1105-1121; J. Bruce Harreld, Charles A. O'Reilly, and Michael L. Tushman, "Dynamic Capabilities at IBM: Driving Strategy into Action," *California Management Review*, 49/4 (Summer 2007): 21-43; Constance E. Helfat, Sydney Finkelstein, Will Mitchell, Margaret A. Peteraf, Harbir Singh, David J. Teece, and Sidney G. Winter, *Dynamic Capabilities: Understanding Strategic Change in Organizations* (Malden, MA: Blackwell Publishing, 2007); David J. Teece, Gary Pisano, and Amy Shuen, "Dynamic Capabilities and Strategic Management," *Strategic Management Journal*, 18/7 (August 1997): 509-533.
11. C. O'Reilly and M. Tushman, "Ambidexterity as a Dynamic Capability: Resolving the Innovator's Dilemma," *Research in Organizational Behavior*, 28 (2008): 190.
12. Harreld et al. (2007), *op. cit.*; David J. Teece, "Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance," *Strategic Management Journal*, 28 (December 2007): 1319-1350.
13. See, for example, Vijay Govindarajan and Chris Trimble, "Building Breakthrough Businesses within Established Organizations," *Harvard Business Review*, 83/5 (May 2005): 58-68; Justin P. Jansen, Frans A. Tempelaar, Frans A. Van den Bosch, and Henk W. Volberda, "Structural

- Differentiation and Ambidexterity: The Mediating Role of Integration Mechanisms," *Organization Science*, 20/4 (July/August 2009): 797-811; Michael H. Lubatkin, Zeki Simsek, Yan Ling, and John F. Veiga, "Ambidexterity and Performance in Small- to Medium-Sized Firms: The Pivotal Role of TMT Behavioral Integration," *Journal of Management*, 32/5 (2006): 646-672; Tom J. Mom, Frans A. Van den Bosch, and Henk W. Volberda, "Understanding Variation in Managers' Ambidexterity: Investigating Direct and Interaction Effects of Formal Structural and Personal Coordination Mechanisms," *Organization Science*, 20/4 (July/August 2009): 812-828; Sebastian Raisch and Julian Birkinshaw, "Organizational Ambidexterity: Antecedents, Outcomes, and Moderators," *Journal of Management*, 34/3 (June 2008): 375-409; Michael L. Tushman, Wendy K. Smith, Robert C. Wood, George Westerman, and Charles A. O'Reilly, "Organizational Designs and Innovation Streams," *Industrial and Corporate Change*, 19/5 (October 2010): 1331-1366.
14. O'Reilly and Tushman (2008), op cit.
  15. Clay M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Boston, MA: Harvard Business School Press, 1997); Erwin Danneels, "The Dynamics of Product Innovation and Firm Competences," *Strategic Management Journal*, 23/12 (December 2002): 1095-1121; March (1991), op. cit.; Mary Tripsas and Giovanni Gavetti, "Capabilities, Cognition, and Inertia: Evidence from Digital Imaging," *Strategic Management Journal*, 21/10-11 (October/November 2000): 1147-1161.
  16. Max Bazerman and Michael Watkins, *Predictable Surprises* (Boston, MA: Harvard Business School Press, 2004); Mary J. Benner and Michael L. Tushman, "Exploitation, Exploration and Process Management: The Productivity Dilemma Revisited," *Academy of Management Review*, 28/2 (April 2003): 238-256; March (1991), op. cit.
  17. Justin J. Jansen, Dusya Vera, and Mary Crossan, "Strategic Leadership for Exploration and Exploitation: The Moderating Role of Environmental Dynamism," *Leadership Quarterly*, 20/1 (February 2009): 5-18; R. Scott Livengood and Rhonda K. Reger, "That's Our Turf! Identity Domains and Competitive Dynamics," *Academy of Management Review*, 35/1 (January 2010): 48-66; Louise A. Nemanich and Dusya Vera, "Transformational Leadership and Ambidexterity in the Context of an Acquisition," *Leadership Quarterly*, 20/1 (February 2009): 19-33.
  18. Lubatkin, Simsek, Ling, and Veiga, op. cit.; Jatinder Sidhu, Henk Volberda, and Harry Commandeur, "Exploring Exploration Orientation and Its Determinants: Some Empirical Evidence," *Journal of Management Studies*, 41/6 (September 2004): 913-932.
  19. Christine M. Beckman, "The Influence of Founding Team Company Affiliations on Firm Behavior," *Academy of Management Journal*, 49/4 (August 2006): 741-758; J. Jansen, G. George, F. Van den Bosch, and H. Volberda, "Senior Team Attributes and Organizational Ambidexterity: The Moderating Role of Transformational Leadership," *Journal of Management Studies*, 45/5 (July 2008): 982-1007.
  20. Charles A. O'Reilly and Michael L. Tushman, "The Ambidextrous Organization," *Harvard Business Review*, 82/4 (April 2004): 74-83; Nicolaj Siggelkow and Daniel Levinthal, "Temporarily Divide to Conquer: Centralized, Decentralized, and Reintegrated Organizational Approaches to Exploration and Adaptation," *Organization Science*, 14/6 (November/December 2003): 650-669.
  21. Clark Gilbert, "Unbundling the Structure of Inertia: Resource versus Routine Rigidity," *Academy of Management Journal*, 48/5 (October 2005): 741-763; Mom, Van den Bosch, and Volberda, op. cit.; Charles A. O'Reilly, David F. Caldwell, Jennifer A. Chatman, Margaret Lapiz, and William Self, "How Leadership Matters: The Effects of Leaders' Alignment on Strategy Implementation," *Leadership Quarterly*, 21/1 (February 2010): 104-113; Wendy K. Smith and Michael L. Tushman, "Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams," *Organization Science*, 16/5 (September/October 2005): 522-536.
  22. V.J. Gilchrest, "Key Informant Interviews," in B.F. Crabtree and W.L. Miller, eds., *Doing Qualitative Research* (London: Sage, 1992).
  23. This research used a multi-case design in which cases were written for each of the fifteen ambidexterity efforts (e.g., Eisenhardt, 1989). These cases were then used to generate insights into those actions that were more or less likely to be associated with the successful implementation of an ambidextrous form. Each of the 15 cases was compared to the five propositions suggested by O'Reilly and Tushman (2008). Given the exploratory and qualitative nature of this investigation and the nature of our convenience sample, any results are necessarily tentative.

24. Govindarajan and Trimble, op. cit.; Charles H. House and Raymond L. Price, *The HP Phenomenon: Innovation and Business Transformation* (Stanford, CA: Stanford University Press, 2009); Richard S. Rosenbloom, "Leadership, Capabilities, and Technological Change: The Transformation of NCR in the Electronic Era," *Strategic Management Journal*, 21/10-11 (October/November 2000): 1083-1103.
25. O'Reilly, Harreld, and Tushman, (2009) op cit.
26. Teece (2007), op cit., p. 146.
27. Jansen, George, Van den Bosch, and Volberda, op. cit.; Jansen, Vera, and Crossan, op. cit.; Nemanich and Vera, op. cit.; Smith and Tushman, op. cit.
28. For example, see Beckman (2006), op. cit.; Lubatkin, Simsek, Ling, and Veiga, op. cit.; Alva Taylor and Constance E. Helfat, "Organizational Linkages for Surviving Technological Change: Complementary Assets, Middle Management, and Ambidexterity," *Organization Science*, 20/4 (July/August 2009): 718-739.
29. See Jansen, Tempelaar, Van den Bosch, and Volberda, op. cit.; O'Reilly and Tushman (2004), op. cit.; Wendy K. Smith, "Managing Strategic Ambidexterity: Top Management Teams and Cognitive Processes to Explore and Exploit Simultaneously," paper presented at the 25<sup>th</sup> EGOS Colloquium, Barcelona, July 3, 2009; Tushman, Smith, Wood, Westerman, and O'Reilly, op. cit.
30. For example, see Gilbert, op. cit.; Robert Sobel, *When Giants Stumble: Classic Business Blunders and How to Avoid Them* (Paramus, NJ: Prentice Hall, 1999); Donald N. Sull, "The Dynamics of Standing Still: Firestone Tire and Rubber and the Radial Revolution," *Business History Review*, 73/3 (Autumn 1999): 430-464; Tripsas and Gavetti, op. cit.
31. Harreld, O'Reilly, and Tushman (2007), op. cit.; Jan Rivkin and Nicolaj Siggelkow, "Balancing Search and Stability: Interdependencies among Elements of Organizational Design," *Management Science*, 49/3 (March 2003): 290-311; Richard Wittington, Andrew Pettigrew, Simon Peck, Evelyn Penton, and Martin Conyon, "Change and Complementarities in the New Competitive Landscape," *Organization Science*, 10/5 (September/October 1999): 583-600.
32. Matthew S. Olson and Derek Van Bever, *Stall Points* (New Haven, CT: Yale University Press, 2008); Raisch and Birkinshaw (2008), op. cit.; Juha Uotila, Markku Maula, and Thomas Keil, and Shaker A. Zhara, "Exploration, Exploitation and Financial Performance: Analysis of S&P 500 Corporations," *Strategic Management Journal*, 30/2 (February 2009): 221-231.