Innovation

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Changing the Work of Innovation:
A Systems Approach

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SUMMARY
To achieve faster organic growth, firms need to change their prevailing narrative about innovation from growth denying to growth enabling. This requires changing the system through which the work of innovation gets done. This article describes the work systems model of organizational change and shows how a leadership team can select the most influential elements of the system to make a desired narrative a reality. Four elements of the work system are especially effective at encouraging a growth-affirming narrative: leadership commitment to innovation talent, prudent risk-taking, customer-centric innovation, and aligning metrics and incentives.

KEYWORDS: innovation management, innovation systems, leadership, organizational change, workplace design

The work of innovation occurs within an organizational setting that can either help or hinder the necessary activities. The essence of this setting is revealed by the narrative within an organization[1] about the centrality of innovation to the organic growth strategy, evidence of leadership commitment to innovation, the ability of the organization to innovate, and stories of past successes and failures. These narratives are compelling storylines that members of an organization use to interpret the past, explain the current situation, and make inferences about future prospects for growth fueled by innovation. Firms with lagging rates of organic growth suffer from a growth-denying narrative about innovation, whereas growth leaders have a coherent growth-enabling narrative in place.

To grow faster,[2] many elements of the system through which innovation work gets done have to be changed to induce a more supportive innovation narrative. Our objective here is to describe and apply the work systems change model to the development of a growth-enabling narrative, to start an organization on a path to growing faster than rivals. We will first illustrate this change model as it

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was applied by Whirlpool and then provide a theoretical rationale and guidelines for application by any firm seeking to improve its organic growth rate.

The work systems change model focuses on aligning the systems within which the work of innovation is done. This goal is achieved through the redesign of work systems to elicit the behaviors that bring innovation narratives to life. This approach to change is purposeful and iterative, starting with a desired end state that is captured in a narrative that can communicate and inspire.

How Whirlpool Changed the Work of Innovation[3]

When then Chairman and CEO of the company, David Whitwam, looked ahead in 1999, he anticipated a possible stalemate in the major appliance industry, with shrinking differentiation, downward price pressures, and anemic organic growth. To address the underlying "ocean-of-white" syndrome (the mass of confusingly similar boxes confronting a prospective buyer entering an appliance store), he and his leadership team committed to escaping this "commodity trap" by developing a new set of capabilities for continuously innovating Whirlpool products. He began the change process with the expectation it would take at least five years and require a change to "every job and every process."

The Whirlpool innovation model had historically relied upon engineering and marketing to generate and evaluate their new product concepts and feature innovations. To overcome this siloed approach, Whitwam aimed to equip as many employees as possible with the tools for identifying latent customer needs and emerging technologies, and then combine them into innovative new offerings. Ideas were solicited from all of Whirlpool's 61,000 employees so that innovation would "generate from everywhere and everyone." This was a central feature of the narrative they wanted to achieve.

Whirlpool created a set of metrics that were distributed around the company and included an emphasis on the innovation goal of a $1 billion addition to revenue within three years. Every employee's annual performance review was tied to short- and long-term success at meeting these goals and to the quality of the business plans and implementation work that went with them.

For senior leaders, the financial incentives were high; a third of their pay was directly linked to what came out of the innovation pipeline. For rank-and-file employees, the rewards were team based and designed to be mostly intrinsic. "The reward," Whirlpool explained, "is recognition by your peers." Learning Officer Nancy Snyder explained that Whirlpool employees were excited by the challenge: "We had no idea how motivating this would be . . . People at the bottom were saying, 'Finally someone gets it!'" The desired narrative was starting to take hold.

But having a lot of fresh ideas was only the start. As Snyder put it,

> Our CEO would go out and talk to thousands of people and say "we are going to have innovation from everywhere and everyone. If you have a concept, put it forward." But we didn't have the systems in place to react to this.

To develop these capabilities, Whirlpool trained nearly 600 "I-mentors" (the "I" stands for innovation), who Snyder described as being

> like Six Sigma black belts. They have real jobs, but they also had special training in how to facilitate innovation projects and help people with their idea. It's very likely that in your location or the department next to you there's an I-mentor who you can talk to.

These I-mentors trained other employees, ensured the quality of projects, and accelerated the progress of project implementation. By creating this special function. Whirlpool enhanced the I-mentors skills through training. Today, all employees are expected to complete innovation training and to be certified at the basic level of proficiency in innovation. Whirlpool also built a knowledge management system designed to capture innovation ideas and interests so that employees with similar interests could find one another.

A persistent barrier to innovation was Whirlpool's extremely conservative budget control process that helped control costs but tended to place a stranglehold on new ideas. To fund innovation, Whirlpool needed to change this overly bureaucratic process. As with most organizations of that era, budgeting was done annually, and once the process was completed, the budget was locked in. This meant that if someone came up with a great idea, there was no money to fund it. To create flexible funding, Whitwam initially had each region set up a seed fund for innovation and told the senior team that they had to fund all of the ideas that came forward, with no exceptions. If they turned someone down, the CEO told employees to come directly to him. This "end run" created an informal organization structure, alongside the formal organization structure.

As Whitwam accelerated these changes, resistance came from Whirlpool's senior leadership, so he decided to put executives through an innovation champions program and assigned senior leaders as sponsors for innovation projects. The company also set up I-Boards throughout the company with responsibility for nurturing and funding innovation ideas. Finally, innovation seed funds were freed from the traditional budget cycle, and Whirlpool placed authority over this funding in the hands of those lower down the organizational ladder.

In just two years, Whirlpool's "innovation pipeline" went from $1.3 billion to $3.3 billion. By 2005, seven years after launch, Whirlpool's share price was at an all-time high, and the company was posting record results. Roughly $3.6 billion of the $19 billion in revenue in 2011 came from their innovation areas. This has been an enduring change. In 2018, Whirlpool's annual report announced the launching of 100 new products, and in early 2019, the company

reported 16 International Forum Design awards and five Consumer Electronic Show awards.

Although he may not have fully appreciated the underlying changes to the innovation practices he set in motion throughout Whirlpool, Whitwam's evolving approach led him to deploy each of the elements of the work systems change model.

The Work Systems Change Model

Change models abound[4] and vary widely in their focus. Some focus on individual-level change, some on team change, and some on organizational change overall or even community or societal change. Some focus on the change agent, some on the target of change (i.e., the people who will be asked to change how they do what they do), and some on the sponsor or the leader of change. Some focus on an organizational imperative such as improving market position, efficiency, or innovation prowess. Some view change as purposeful and others as improvisational. Some advocate visioning and others clearly do not.

The work systems approach is broadly consonant with the findings of Robertson, Roberts, and Porras.[5] Their meta-study led them to recommend that "change agents should focus on systematic changes in work settings as the starting point in change efforts, and individual behavior change as a key mediator associated with organizational outcome change." They defined "work settings" broadly to include organizing arrangements (such as structures and rewards), social factors (such as patterns of interaction), technology (such as workflow design and job design), and physical setting (such as characteristics of the physical space in which the organizational activity occurred).

The work systems approach is also compatible with systems theory,[6] which holds that all systems involve a web of interrelating elements. Other characteristics of system theory include holistic thinking; the interaction and mutual influence of part and whole; the common process of input, throughput, and output; and interactions of the system with the environment. The notions of thinking of a system as a whole along with the power of the combined influence of the components are especially pertinent to the work of innovation.

The work systems model draws on sociotechnical theory, which in turn rests on systems theory. Sociotechnical theory distinguishes the technological system from the social structure and considers different types of technological systems and their relationship to the social life of work groups.[7] Sociotechnical interventions "typically involve the restructuring of work methods, rearrangement of technology, or the redesign of social structures" in the service of joint optimization of the relationship between human (social) systems and technology, to increase output, better satisfy employee needs, and enable organizational adaptation to change.[8]

The complexity of sociotechnical theory makes crisp, concrete definitions of key variables elusive.[9] For example, what do concepts such as "technology" and

"social system" mean? How do technical and social systems interact? What is the connection (if any) between organizational effectiveness and the consonance of the technical and social systems?[10] What's a practitioner supposed to do? How should he or she approach change?

Systems theory combined with sociotechnical theory provides broad guidance on designing systems to produce desired behaviors:

- Think system and subsystem. Don't presume that changing one part of a complicated system will change how the system (and those in it) will respond.
- Concentrate on both the technical hardware and the human software. Behavior at work has multiple influences.
- Attend to the interaction of subsystems and influences acting upon people at work. Seek consonance among these influences and avoid conflict between system components.

This guidance seems relevant and useful but has been underutilized to guide organizational changes. Among the reasons for the absence of applications are the following:

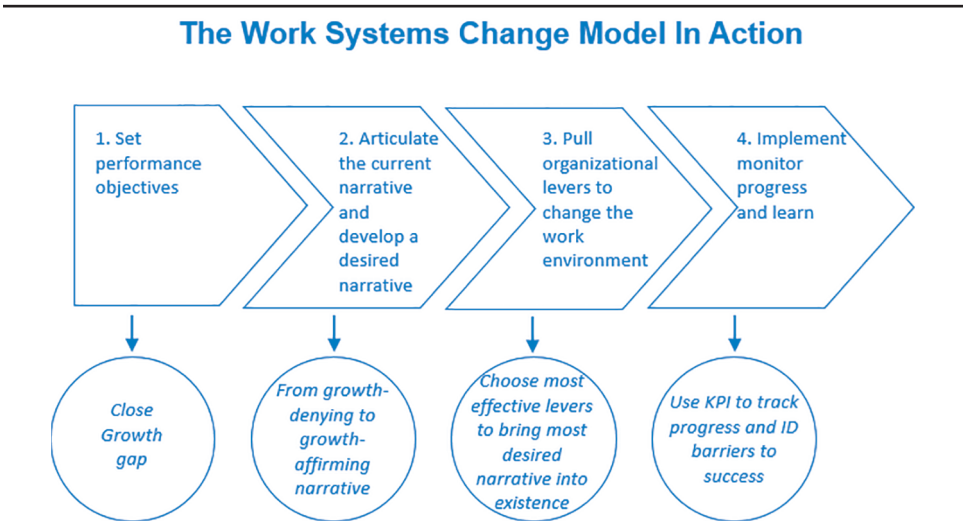
- The language can be arcane to the point of being impenetrable;
- A checklist of concrete action steps is lacking to guide specific activities;
- The focus on manufacturing has limited the experience base; and
- Sociotechnical thinking has influenced subsequent generations of change models and been partially replaced by them.[11]

The Work Systems Model[12] makes the systems and sociotechnical approaches more applicable by practicing managers and executives, and by providing concrete language and clear action steps.

The essence of the work systems change model is captured in two basic tenets: first focus on the behaviors you want from people by generating an innovation narrative, and then foster those behaviors by aligning the work systems that involve people's work environment. These tenets are embedded within a four-stage change process that starts with a situation assessment and the choice of performance objectives for improvement and ends with the implementation of the change program. This is an iterative and on-going process as shown in Figure 1, where the monitoring of improvement against key performance indicators (KPIs) is used to learn what has "worked" versus what has not achieved the change that was expected or desired. This process is not a "one and done" undertaking, but a multiyear learning and improvement journey.

The starting and ending stages of this change process, of setting the strategy direction and objectives, and then measuring progress toward these objectives will be very familiar. The two middle stages make this process very different from more familiar strategy making and change processes. These two stages require

FIGURE 1. The work systems change model in action.



surfacing the prevailing narrative, developing a desired narrative, and then deciding which aspects of the organizational environment the leadership needs to pull to change the work environment and realize the desired narrative. These two middle stages are elaborated next and then applied to the specific challenge of improving the work of innovation to increase the organic growth rate relative to rivals. In Figure 1, the stylized flow chart in the top panel describes the four stages of the generic change process, and the panel below highlights how they are adapted to improving innovation activities to achieve faster organic growth.

Stage Two: Developing the Desired Narrative

Change processes should offer a desired end state of change. Lack of a clear direction leads to false starts and wasted resources. What is the desired future narrative? Can leaders even specify how it would look? Would they know it if they saw it? Can they portray the destination, so those who will have to produce it and live it can see it? Absent such clarity, key choices are unrecognized, communication is frustratingly vague, inspiration is scarce, and action planning faulty. How can one design an organization (or a change effort to produce it) without knowing the behaviors it should produce?

The narrative of the desired future state should be no less specific and textured than the current organizational narrative. People work using information, technology, and protocols. They interact with others in person, telephonically, and digitally. What do they do and say and with and to whom? The future narrative (or portfolio of narratives) should present a detailed embodiment of the stories of innovation that organizational leaders want to tell. These stories or narratives serve not as scripts to be followed but rather as realities to be created; realities that become more or less likely to occur based on the stimuli from the overall work environment.

TABLE 1. The Eight Levers of Environment at Work.

Lever	Definition
1. Organization	Structure (vertical chain of command and horizontal means of interconnection); the organizational chart; also task forces, project groups, and committees
2. Workplace design	Layout of physical and virtual space; also available work tools and technology
3. Task	Work processes, protocols, and pathways
4. People	Selection, skills, learning, and orientation of the focal organizational, business unit, department, or work unit members
5. Rewards	Rewards and punishments of every sort germane to the desired behavior or scene; compensation; intrinsic and extrinsic rewards
6. Measurement	Metrics; scorecard of performance
7. Information distribution	Who knows what, when, and how (means and manner of being informed—for example, push or pull)
8. Decision allocation	Who participates when, in what way, in which decisions

Merely listing the attributes of a desired system seems mechanical and incomplete when compared with a story (or stories) portraying the living reality of today or the reality desired for tomorrow. Thus, the approach advocated here draws on the ability of narratives to deliver focus, meaning, and inspiration. Stories that are rich in detail, animated by human interaction, and fueled by emotions convey how things actually work (or not). They offer a vision in operation, the future realized. In this case, the story is a narrative about a desired future. The work systems approach has the leaders constructing two narratives: one to develop detailed understanding of the current state, and another to outline a vision of the desired state.[13]

Stage Three: The System of Work to Be Changed

Once the narrative of the desired future has been envisioned—capturing how people should behave—the work systems change model pulls a combination of eight organizational levers to realize that narrative. The aim is to create a work environment where the desired behaviors can fit and flourish. The organization of work entails the arrangement of tasks and resources (including people) to convert individual effort and energy into a desired outcome, such as superior innovation outcomes. The eight levers shaping the work environment are shown in Table 1.[14]

The work systems change model helps leadership teams find the best moves to embed the desired behaviors within the organization. The eight levers define the work environment that organizational members adapt to over time. Changing multiple levers in a coherent, coordinated fashion changes the environment surrounding people as they go about their daily work. People then adapt, changing their behavior to fit the new environment.

The work systems change model serves as a framework for assembling diverse streams of research into a coherent mid-range theory. Consider the work by Ancona and Bresman[15] on "how to build teams that lead, innovate, and succeed." The narrative for these teams is that of a self-conscious, rapidly moving, highly disciplined, and psychologically safe group focusing both on its own processes and the evolving nature of its various key stakeholders. One can read their work as clarifying the nature of a team narrative. The implications fall comfortably under the eight levers of the work systems model:

- *Organization*—Access to top management, along with flexible membership and leadership. This lever includes structural factors such as task forces, project teams, and committees.
- *Workplace Design*—Resources to enable easy team member access to one another, including face-to-face meetings, remote working capabilities, and platforms such as Slack for sharing and collaborating within teams and across functions.
- *Task*—Detailed work processes, protocols, and practices, including timelines and technology maps.
- *People*—Careful selection of talent based on competencies and process skills (e.g., stakeholder mapping), as well as key stakeholder ties and training in group processes, including leadership, crucial conversations, feedback, negotiation, norm setting, and debriefing.
- *Rewards*—Recognition and financial incentives, including promotion, and task-related developmental assignments.
- *Measurement*—Clear outcomes and benchmarks based on input, throughput, and outcome metrics in a dashboard.
- *Information Distribution*—Ready access to information and expertise (external), and easy, comprehensive information sharing capabilities within the group.
- *Decision Allocation*—Encouragement to roam broadly in pursuit of information and resources, construction of precise group charters, regular member role clarification, and clear, participative decision processes.

A validation of the applicability of the work systems model is the mapping of the Whirlpool change program onto the eight levers of change as shown in Table 2. The work systems model helps explain Whirlpool's innovation success, but can that usefulness be generalized beyond the Whirlpool case?

Applying the Work Systems Change Model to Innovation

Declaring an intention to become a faster growing organization may be a sensible aspiration, but says little about what people should do or how they should act. Realizing the aspiration takes clear leadership commitment to an objective of faster organic growth (backed up with allocations of innovation

TABLE 2. How Whirlpool Deployed the Change Levers.

Lever	Whirlpool Example
1. Organization	Senior leaders assigned as sponsors, I-boards to fund ideas, seed funds
2. Workplace design	Online resource "Innovation E-Space" to develop a business idea, attract mentors, win resources
3. Task	Revised budgeting process, criteria for innovation projects, process for innovative ideas
4. People	600 I-Mentors trained, facilitated innovation projects, 61,000 employees trained, proficiency certification
5. Rewards	10%-20% of capital budget devoted to innovation projects, one third executive pay tied to innovation pipeline profits, annual performance reviews
6. Measurement	New metrics, annual innovation revenue goals, tracking each idea through innovation pipeline
7. Information distribution	Support of Innovation E-Space
8. Decision allocation	Budget authority to I-boards, open channel to CEO for approval, access to mentors throughout company

resources and a clear pathway into the market), the development of a growth-enabling narrative that communicates a clear vision of success, and the design of a work system to foster the desired behaviors.

Passing or fluctuating focus will yield episodic or sporadic innovation. No leader should, however, confuse "making innovation routine" with routinizing innovation. Routinizing innovation does not work. Strict application of standard lean or Six Sigma processes to innovation constrains and eventually reduces innovation.[16] To make innovation routine, on the contrary, means developing the organization as innovation incubator and embedding a supportive work system within the DNA of the organization. The next sections follow the stages of the process map in Figure 1 for applying the work system change model.

Stage One: Set Performance Objectives that Will Close the Growth Gap

Innovation is a means to an end, which is to improve long-run top-line and earnings growth. This growth objective has been widely adopted, because it is a strong contributor to increasing shareholder equity. The target for growth in revenue and operating profits emerges from an iterative and often emotional dialogue. The negotiations begin with the leadership team setting growth targets that will achieve stakeholder goals. Shareholders'[17] insistence on getting a superior rate of return requires growing the firm faster than rivals. This growth in revenue and profits can come from some combination of inorganic growth (from acquisitions and external ventures) and organic growth achieved with the firm's innovation capability and work system. We will follow the approach of previous research and concentrate our attention on organic revenue growth. This will

serve as the dependent variable in the research we conducted to find the most effective determinants of the innovation work system.

A pertinent question is whether the usual measure of "rate of organic growth relative to competitors in the past five years" is an adequate indicator of future growth potential. There are many reasons why past superior growth performance is difficult to sustain, which reduces its value as the sole basis of the dependent variable. Penrose[18] argued that since resources are rate limiting, past growth does not assure future growth because of the drag from adjustment costs. Other reasons have since been proposed: the "incumbent's curse," whereby success breeds arrogance and complacency; the commitments and priorities of the leadership team change, due to a pressing need for short-term profits and cash flow, and/or a change in ownership following an acquisition; and the continuing risk of new competitors entering, current competitors leapfrogging, or a disruptive change in technology causes a loss of competitive advantage. More generally, because the dynamic capabilities needed to enable continuous adaptation are hard to routinize, they are also easier to forget than ordinary capabilities and tend to dissipate over time.

Stage Two: Surface the Current Innovation Narrative and Develop the Desired Narrative

An innovation narrative is a story told about innovation and how it occurs (or doesn't) within an organization. It illustrates the governing beliefs in operation, manifesting how well or poorly the firm is able to innovate and helps explain past performance. These beliefs become the elements of the stories that people tell. The stories can prove acutely diagnostic. Executives in slow growth firms are remarkably frank about the reasons for their plodding performance. Executives from growth leaders tell very different narratives.

While each firm has its own growth narrative, their emphasis is generally either growth enabling or growth denying. Some of the profound differences we have uncovered in narratives about innovation are captured and compared in Table 3. Each narrative reflects different beliefs and behaviors about their exercise of *discipline* and their *ability* to innovate as an organization. Taken together, these story elements represent the overall innovation prowess of the firm and this contributes to the innovation activity relative to others in the industry and serves to guide interventions to enhance that innovation and induce organic growth.

The narrative from Bevco illustrates one approach we have used to identify elements of the prevailing narrative (see Table 4). Another productive approach is to ask the leadership team, "Why is there a lack of confidence that the innovation goals can be reached?" Of course, no narrative should be taken at face value. Whether it is innovation enabling, innovation denying, or includes parts of both, it is crucial to understand what is really being said: Are the key people justifying, rationalizing, or diagnosing the past growth performance? Are they trying to blame other factors or forces outside their control? This will shape the approach to the next stage.

TABLE 3. Comparing Growth-Denying and Growth-Enabling Innovation Narratives.

Growth-Denying Narratives:
(A) About Strategic Discipline:
• Immediate needs absorb most of our innovation resources.
• We have too many choices and no way to make them.
• We start with what is possible with our technology. . .not with what our customers need.
• Resource allocations are based mainly on financial projections.
(B) About Innovation Ability:
• We put our best people on our big, established brands.
• There are no carrots—only sticks—when it comes to innovation.
• Our culture became even more risk averse after the financial downturn.
• We're uncomfortable with activities we don't own . . . we don't play well with others.
• Leadership spends most of their time responding to crises . . . the really big discussions about growth strategy keep getting postponed.
• Little or no time is spent on learning from postmortems of disappointments.
• Innovation initiatives are usually added to our operating responsibilities.
Growth-Enabling Narratives
(A) About Strategic Discipline
• Everyone knows our growth strategy.
• We are very willing to cannibalize sales of our current products to improve sales of new products.
• Our innovation mantra is: THINK BIG . . . start small . . . celebrate early wins . . . scale carefully.
• We believe in share to gain.
(B) About Innovation Ability
• If you want to get ahead, build a new business.
• We aim to hire people who don't need support, and then support them.
• Responsibilities for innovation activities are clearly defined.
• Well-intentioned failures are learning opportunities.
• If you innovate and it's not something the customer benefits from, then it's not innovation.

Note: These illustrations are extracted from longer narratives for the purpose of illustrating the scope of an innovation narrative.

Stage Three: Pull the Organizational Levers to Change the Work Environment and Foster Those Scenes or Narratives that Characterize a Desired Innovative Future

This step draws on the work systems model, but it rests upon how leadership regards the work from Stage Two, namely, the narratives and especially the

TABLE 4. The Growth Defeating Innovation Narrative in Bevco.

The vice president of development couldn't fathom why she was having so much difficulty getting senior management to accept aggressive proposals for developing and launching new beverage products. She viewed them as vital to the long-run health of the company, and was concerned that their biggest rival was preempting them in emerging segments and investing more heavily in technologies for formulating new product types.
To clarify the picture she worked with her about innovation staff to identify the prevailing behavior, beliefs, and assumptions that seemed to be shaping the narratives. A list of 37 items was grouped into categories. The main elements of the narrative were:
1. Market Behavior and Market Research
• The market is tired of new products
• The acceptable taste spectrum is in a narrow band
• Research is more a justification tool than a learning tool
2. Competition
• If competition does it, it must be good
• First in the market with a meaningful proposition wins
• All competitors will match each other's moves
3. Strategic Priorities
• We prefer acquisition to retention strategies
• Cannibalization is bad
• We have too many Stock Keeping Units (SKUs)
• We cannot effectively micro-market
• Our emphasis is on safe products with minimal impact on operations
4. Organization
• "Quick Return on Investment (ROI) or walk away." Once the product is launched it is too late to fix mistakes
• Lack of success is deemed a failure, not a learning experience
• Leadership is expected to come from the top

gap that they expose between "what is" and "what is desired." For example, the leadership team of Bevco initially rejected the constrained picture of a defensive, play-it-safe firm, which was so contrary to their avowed growth strategy and aspirational growth goals. After being persuaded that the prevailing narrative was at the root of their lagging growth performance, they sought an affirmative narrative.

The question for any leadership team in such a situation comes down to this: if our organization acted according to a growth-enabling narrative, then what work behaviors would characterize the organization? Who would be doing what, in which situation, time after time? What would the story board of the "the

way things actually work around here" look like? The leaders of innovative organizations have answers to these questions. They know how to seed the clouds to produce the rain that encourages an innovation enabling narrative.

Innovation laggards and average performers aspiring to grow faster have to construct growth-enabling narratives in order to identify and then address the obstacles impeding innovation. The methods of idealized design can be used here to help create a narrative about a successful future where the firm has achieved innovation leadership.[19] These narratives can serve to clarify and to inspire. They also enable a more informed consideration of levers in the work systems model most in need of altering to create an environment that will produce the desired change in behavior.

"Commitment" for our purposes means consciously committing to the hard work of creating the work systems to drive the innovative behaviors identified in the desired narrative. The eight primary organizational levers can be pulled in almost any combination to foster the desired behaviors: Organization, Workplace Design, Task (work processes), People (skills and orientation), Rewards, Measurement (metrics), Information Distribution, and Decision Allocation. These levers drive behaviors at work, including whether and how people set about innovating. The narrative depicts the way things should work. The work system provides the form to produce it.

To bring to life the desired narrative, some combinations of levers will work much better than others. Some will most likely bring one type of narrative to life but not another. It takes informed judgment to choose the best levers in the right combination. This choice is especially challenging in the innovation domain because of a profusion of prescriptions for improvement. These range from change the incentives, listen to the "voice of the customers," reorganize to become ambidextrous, learn to think like a startup, adopt a lean development process, become more open to working with external partners, and many more. We undertook a thorough survey of industry best practices and canvassed the literature[20] to identify 18 different prescriptions for innovation drivers. While most are sketchy on the details of implementation, each could translate into one or more levers of change presented in the work system. But, which are the most effective? Can the work systems model help mobilize leadership action on these possible levers to induce innovation that increases the organic growth rate?

A leadership team cannot possibly pursue 18 innovation drivers without diluting effort and causing delay and confusion throughout the organization. The challenge is to select the most influential drivers and then translate them into coordinated and focused action in pursuit of the desired innovation narrative. In short, leadership needs to find innovation drivers with the greatest potential leverage and then exploit that leverage. To identify these drivers, we treated each of the 18 possible drivers as a hypothesis to be tested for its ability to explain differences in organic growth rates (relative to their industry peers) in a sample of 192 companies in diverse industries. We needed variance in the measures of the key constructs, which is difficult to achieve in single-industry studies even when

a significant portion of industry players are surveyed. Surveys of senior innovation leaders are well suited to this research question, as most of the constructs do not have objective and accessible referents. Further details of the methodology we used can be found in the appendix: "About the Research."

We found four innovation drivers—and their associated behaviors—strongly associated with the relative rate of organic growth in our sample of 192 companies. They significantly distinguished growth leaders from growth laggards and average performers. Each driver corresponds to one of the levers of the work systems model. These four drivers should form the backbone of any change initiative aiming to change the innovation narrative and increase the organic growth rate.[21]

- Invest in innovation talent (the People lever)—especially hiring and training, as well as the Reward and Measurement levers—such as intentional recognition of innovation talent acting innovatively. The leadership team signals a strong commitment to innovation through investments of resources and time to recruit, develop, and retain innovation talent.
- Encourage prudent risk-taking (Task and Decision-Making levers, involving clear and compact task protocols and decision-making roles). Innovative firms foster a tolerance for risk throughout the organization by encouraging learning from innovation disappointments.
- Adopt an outside-in innovation process (the Task lever as the Information lever, that is, deep and readily accessible information about customers). Growth leaders start with deep insights into their present and potential customers to anticipate emergent needs and likely responses to innovation.
- Align metrics and incentives with innovation activity (the Reward, Measurement, and Information levers). An innovation dashboard creates a credible and transparent link to rewards and recognition for innovation accomplishments.

Innovation driver 1: Invest in innovation talent acquisition and development. This was the most important driver of innovation because it was the best at explaining differences in relative organic growth rates. Hence, to grow faster, the most effective action is to invest heavily to acquire, develop, and retain people talented in innovation activities. This begs the question of how to get and retain this talent. Innovative outsiders won't want to join an uncreative and unimaginative firm, and potentially innovative insiders won't want to stay in an unsupportive organization. In brief, innovative people love innovating. They enjoy the creative process and don't want to waste their time just talking about innovation and creativity. Like most professionals, they want to do what they do best. That is what brings them satisfaction. That is what attracts them and keeps them.

What to do? Policy declarations and leadership pronouncements can help in recruiting and retaining innovative people, but sustained commitments of resources and leadership time send a much stronger signal about the importance

of innovation throughout the organization. Careful construction of change narratives and redesign of systems will manifest such a visible commitment. Set out to build an innovative environment, not to acquire innovators. Hire (and where possible promote) the architects of innovation: the project leaders, program managers, and innovation directors. Build credible reward and measurement systems. Redo decision-making protocols. In short, construct the systems that will support the innovators who do not *need* support. In the end, innovators will go where they are welcome. Demonstrate the welcome and use that to develop and hire innovators. Innovators will attract more innovative talent and they will further develop and refine the work systems necessary for sustained innovation.

What people do you pursue and develop? Promote or hire the hardest-to-develop skills first and develop the remaining skills subsequently. One technology company gathered critical incident questions such as "What was your biggest success—and your greatest failure—and how did each come about?" and posed them to their high potential innovators to identify the critical competencies that set them apart. Competencies that were deemed hard to develop, such as conceptual thinking and an outside-in orientation to innovation, became the basis for recruiting or promoting talent. Competencies that were known to be easier to develop, including technical knowledge and presentation skills, were incorporated in training programs.

Innovation drivers 2 and 3: An outside-in culture. Leaders need to drive the implementation of desired behaviors so that they become and stay embedded throughout the organization. These predictable, recurring patterns of behavior are the stuff of culture. Culture, like change, boils down to behaviors:

> Before we even start to think about culture, we need to 1) have a clear definition of the operational problem or issue that started the change process, and to 2) formulate specific behavioral goals. . .it is therefore very important . . . to identify the actual behaviors that the client wants to change.[22]

This is not to say that leadership behavior does not matter. It is rather to say that leadership behavior uncoupled from or misaligned with the day-to-day messages from the work systems model can seem as incongruous or irrelevant. Long after the balloons from the big culture change launch have deflated, people still look up from their desks into a world dominated by the eight levers of the work systems model. Long after the impassioned speech about the importance of innovation has faded from memory, those structural elements define the environment that people adapt to as they go about their work.

Those behaviors and the underlying values will, in turn, define culture. They are the proper target of cultural change efforts. Those behaviors derive, however, from adaptation to the environment created by leaders at work. To change those behavioral adaptations, leaders need to change the structural environment within which people work. For instance, effectively signaling that prudent risk-taking is encouraged and treating disappointments as learning opportunities does

not come down to words. Rather, effective signaling involves actions such as effective protocols or approaches to the task of planning for risk and debriefing failure, to training people to analyze risk and to debrief both success and failure, to measuring and rewarding risks well taken, to providing easy access to information necessary to analyze risk and to manage projects, to clarifying decision making (including when it is joint), and to organizing around innovation.

Similarly, with an outside-in innovation process, does the system support or hinder listening closely to the voice of the customer and being more supportive of external collaboration? Do people know what behaviors produce empathic listening and encourage collaboration? Can leadership envision the types of scenes or stories that should unfold daily indicating that the organization does not just listen to customers but understands their world, their needs, and not just their specific requests?

Innovation driver 4: Link rewards and recognition to innovation effectiveness and results. This driver, may seem self-evident but there are important nuances. First, rewards come in many sorts, including individual and group compensation and being recognized (by higher-ups, peers, and outside professionals), doing work one loves to do, and contributing to a mission or purpose deemed consequential by the person doing the work. Reward individual performance and one gets more individual performance; reward group performance and one gets a focus on collective activity.[23] Reward the organization as a whole and one may get more cooperation across the organization, or little at all if there is a sense that one's own effort and even those of one's team matter little. In short, knowing what one wishes to engender and which narratives involving which players need to be motivated will help to operationalize this driver. If the key collaboration is between product management and research, then measure them together and reward them together.

"Linking" requires measurement. How does the organization define "innovation effectiveness"? What results does the organization deem to matter? Is it the percent of sales from new products or services launched in the past three years? Is it the successful launch of a product or service into the market, or is it pursuing a reasonable opportunity and then thoughtfully ending the initiative before taking it to market? Few companies track and reward intermediate measures such as process effectiveness or satisfaction with concepts. As Deming famously said, "We treasure what we measure." We treasure it for its own sake and especially if that measure is associated with a reward, either intrinsic or extrinsic.

In addition, leaders should link rewards and measures with other aspects of the work systems model to secure innovative behaviors and thereby innovation. The organization structure should facilitate the pursuit of measured outcomes and stated rewards. Lines and boxes and regular meetings and online forums should facilitate pursuit of measures and rewards. Workspace design and sharing tools should foster key interactions and protocols for how to do the necessary tasks or work. People should have the appropriate skills or receive training necessary to

acquire them, be they technical skills or how to listen actively. They should have the required information readily available and be pushed or pulled as deemed most useful. Finally, decision making should reflect measures and rewards. The people most critical to the innovation initiatives should stand to benefit the most from them and should participate in making the key strategic decisions.

Integrate the innovation drivers. When Google says, "hire people who don't need support and then support them," it is saying innovation driver 1 is secured by drivers 2 and 3 through creation of driver 4. The Work Systems Model organizes those connections and guides the actions of executives who lead innovative organizations that deliver superior organic growth.

Change Is an On-Going Process: Stage Four and Beyond

To accelerate innovation, a leadership team must commit to the interventions they believe will have an outsized impact on their innovation prowess. Launching too many poorly coordinated change initiatives dilutes resources, precipitates organizational indigestion, and may lead to disillusionment. Implementation of a serious effort to increase the organic growth rate begins with the narratives, which identify behaviors that need to occur and so aid in identifying and focusing changes in the work systems.

Superior organic growth enabled by innovation is (to employ a useful cliché) a continuous journey and not a destination. The leadership team that successfully embarks on the first three stages of the work system change process should continuously monitor progress on their key performance indicators. True long-run success—the accomplishment of an industry-leading track record of organic growth—will take their continuous commitment as well as a willingness to keep learning and improving their innovation work system, while at the same time avoiding complacency.

Appendix

About the Research

We used a nonsystematic sampling approach to get the benefits from gaining the full cooperation of highly placed and well-informed respondents, versus a representative sampling frame with low response rates. One difficulty in recruiting senior executives who are knowledgeable about the innovation strategies, practices, and performance of their firm (or autonomous business unit) is that even if they do agree to participate, they will frequently have a subordinate complete the survey.

Three sources were used to recruit respondents. The first source (which yielded 60% of all respondents) was a senior executive education program on innovation and strategy. Participants were prequalified as knowledgeable before their responses were accepted. The second source (20% of respondents) was participants in invitation-only innovation conferences targeting the C-Suite. The

third source of a further 20% of respondents was senior leaders of companies that were partners of two major university-based research institutes. We used a combination of soft and hard copy (Qualtrics) versions of the survey as appropriate to the recruitment method. As an incentive to participate, respondents were given a chance to benchmark their company scores on all questions compared with growth leaders, laggards, and average performers.

Item development began by asking four authorities on innovation to identify potential constructs and then eliminate redundancies and ambiguities. This left 18 hypothesized drivers, which were developed into questions that were indicators of these constructs and measured on 7-point Likert (*strongly agree* to *strongly disagree*) scales. Ten of the items were reversed to minimize the biasing halo effects when all items are worded either positively or negatively. The final step in the measure development stage was to conduct two pretests of the draft survey with a total of 20 respondents. We looked for questions that elicited too many "don't know" responses and then interviewed the respondents for the purpose of clarifying the questions and eliminating any ambiguity in their wording.

The data from the 192 respondents to the survey were analyzed using bivariate correlations to assess the ability of each of the 18 hypothesized variables to explain the variance in a dependent variable measuring the organic growth rate of each company, relative to their industry peers. This dependent variable was estimated as the optimum linear correlation of three measures: past performance as measured by the average annual rate of organic growth of revenues in the past five years, relative to competitors; present spending on innovation relative to competitors; and confidence of the management team that the organic growth targets in the coming three years could be achieved. There was some ecological correlation among the 18 hypothesized drivers due to the halo effect that besets all surveys, and we judged that combining the innovation drivers in multivariate regressions would obscure specific tests of our 18 hypotheses.

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Notes

1. Discussions of the strategic value of narratives are found in Mark Bonchek, "How to Build a Strategic Narrative," *Harvard Business Review* Digital Articles, March 25, 2016, https://hbr.org/2016/03/how-to-build-a-strategic-narrative; S. Kaplan and W. Orlikowski, "Beyond Forecasting: Creating New Strategic Narratives," *MIT Sloan Management Review*, 56/1 (Fall 2014): 23-28. More general sources on the analysis of narratives in discourse-oriented organization studies are T. B. Lawrence and R. Suddaby, "Institutions and Institutional Work," in *The SAGE Handbook of Organization Studies*, ed. S. R. Clegg, C. Hardy, T. B. Lawrence, and W. R. Nord (London, England: Sage, 2006), pp. 215-254; J. Allan, G. Fairtlough, and B. Heizen, *The Power of the Tale* (Chichester, UK: John Wiley, 2002). Further recent evidence of the

power of narratives is found in R. J. Shillen, *Narrative Economics: How Stories Go Viral and Drive Major Economic Events* (Princeton, NJ: Princeton University Press, 2019).

2. The contribution of innovation in products, services, and business models to organic growth has been central to the field of strategy since the seminal work by E. Penrose (*The Theory of the Growth of the Firm* [Oxford, UK: Blackwell, 1959]) through to the latest thinking on dynamic capabilities (P. J. H. Schoemaker, S. Heaton, and D. Teece, "Innovation, Dynamic Capabilities, and Leadership" *California Management Review*, 61/1 [Fall 2018]: 15-42). See also P. A. Geroski, "Understanding the Implications of Empirical Work in Corporate Growth Rates," *Managerial and Decision Economics*, 26 (2005): 129-138.
3. The Whirlpool change process is described in J. W. Rivkin, D. Leonard, and G. Hamel, "Change at Whirlpool Corporation (B)," Harvard Business School Case 9-705-463, March 2006; N. T. Snyder and Dr. L. Duarte, *Unleashing Innovation: How Whirlpool Transformed an Industry* (San Francisco, CA: Jossey-Bass, 2008); G. Hamel and N. Tennant, "The 5 Requirements of a Truly Innovative Company," *Harvard Business Review* Digital Articles, April 27, 2015, https://hbr.org/2015/04/the-5-requirements-of-a-truly-innovative-company; D. Crosswhite and J. Rufat-Latre, "Systematically Innovate! What Sounds Like an Oxymoron Is Actually a Recipe for Dependable Results," *Business Strategy Series*, 10/2 (2009): 79-85, doi:10.1108/17515630910942197.
4. Holman, Devane, and Cady note that the first edition of their book *The Change Handbook* included 18 change methods while their second edition described more than 60 methods. Peggy Holman, Tom Devane, and Steven Cady, *The Change Handbook* (San Francisco, CA: Berrett-Koehler, 2007).
5. P. J. Robertson, D. R. Roberts, and J. I. Porras, "Dynamics of Planned Organizational Change: Assessing Empirical Support for a Theoretical Model," *Academy of Management Journal*, 36/3 (June 1993): 619-634.
6. Systems theory arose during the middle of the twentieth century, from multiple disciplines within both natural sciences (L. Von Bertalanffy, "The Science of Open Systems in Physics and Biology," *Science*, 111/2872 [January 1950]: 23-29; W. R. Ashby, "Requisite Variety and Its Implications for the Control of Complex Systems," *Cybernetica*, 1/2 [1958]: 83-99) and social sciences (Talcott Parsons, *Structure and Process in Modern Societies* [New York, NY: The Free Press, 1960]; J. G. Miller, *Living Systems* [New York, NY: McGraw-Hill, 1978]). Its development has continued, underpinning and being popularized in P. Senge's, *The Fifth Discipline* ([New York, NY: Doubleday, 1990] and further into this century (e.g., N. Luhmann, *Introduction to Systems Theory* [Cambridge, UK: Polity Press, 2013]).
7. E. L. Trist and K.W. Bamforth, "Some Social and Psychological Consequences of the Longwall Method of Coal Getting," *Human Relations*, 4/1 (February 1951): 3-38; F. E. Emery, "Characteristics of Socio-Technical Systems," in *The Social Engagement of Social Science*, A Tavistock Anthology, ed. E. L. Trist and H. Murray, vol. 2 (Philadelphia, PA: University of Pennsylvania Press, 1993), pp. 157-186; F. E. Emery and E. L. Trist, "The Causal Texture of Organizational Environment," *Human Relations*, 18/1 (February 1965): 21-32.
8. E. L. Trist, "The Evolution of Socio-Technical Systems as a Conceptual Framework and as an Action Research Program," in *Perspectives on Organization Design and Behavior*, ed. A. H. Van de Ven and W. F. Joyce (New York, NY: Wiley, 1981), pp. 19-75; W. Pasmore, *Designing Effective Organization: The Sociotechnical Systems* (New York, NY: Wiley, 1989).
9. T. Cummings, "Sociotechnical Experimentation: A Review of Sixteen Studies" in *Sociotechnical Systems: A Sourcebook*, ed. W. Pasmore and J. Sherwood (La Jolla, CA: University Associates, 1978), pp. 259-270.
10. M. McCuddy, "Sociotechnical Systems: Some Suggestions for Future Research," in *Sociotechnical Systems: A Sourcebook*, ed. W. Pasmore and J. Sherwood (La Jolla, CA: University Associates, 1978), pp. 302-312.
11. See, for example, D. Nadler and M. Tushman, *Competing by Design* (Oxford, UK: Oxford University Press, 1997); P. Senge, "Transforming the Practice of Management," *Human Resource Development Quarterly*, 4/1 (Spring 1993): 5-32; R. Konigsweiser and M. Hilldebrandt, *Systemic Consultancy in Organizations* (Heidelberg, Germany: Carl Auer International, 2005).
12. G. P. Shea and C. A. Solomon, *Leading Successful Change: 8 Keys to Making Change Work* (Philadelphia, PA: Wharton School Press, 2020).
13. This approach to narratives draws on multiple traditions, including R. A. Ackoff's idealized design (R. L. Ackoff, J. Magidson, and H. J. Addison, *Idealized Design: Creating an Organization's Future* [Upper Saddle River, NJ: Wharton School Publishing, Pearson Education, 2006]); narrative therapy (M. White and D. Epston, *Narrative Means to Therapeutic Ends* [New York,

NY: W.W. Norton, 1990]; Senge's, op. cit.; M. Weisbord and S. Janoff's, *Future Search* [San Francisco, CA: Berrett-Koehler, 2010]; H. H. Owen's, *Open Space Technology* [San Francisco, CA: Berrett-Koehler, 2008]); backcasting (J. Robinson, "Future Subjunctive: Backcasting as Social Learning," *Futures*, 35/8 [October 2003]: 839-856); history of the future; and appreciative inquiry (D. Cooperrider, D. Whitney, and J. Stavros, *Appreciative Inquiry Handbook: For Leaders of Change* [Brunswick, OH: Crown Custom Publishing, 2008]). Each of these approaches provides guidance on how to construct a narrative of the future, including a narrative of a desired future.

14. Shea and Solomon, op. cit.
15. D. Ancona and H. Bresman, *X-Teams: How to Build Teams that Lead, Innovate and Succeed* (Boston, MA: Harvard Business Review Press, 2007).
16. A. Canato, D. Ravisi, and N. Philips, "Coerced Practice Implementation in Cases of Low Cultural Fit: Cultural Change and Practice Adaptation During the Implementation of Six Sigma at 3M," *Academy of Management Journal*, 56/6 (December 2013): 1724-1753.
17. See F. Nagji and G. Tuff, "Managing Your Innovation Portfolio," *Harvard Business Review*, 90/5 (May 2012): 67-74; G. Day, *Innovation Prowess Leadership Strategies for Accelerating Growth* (Philadelphia, PA: Wharton Digital Press, 2013).
18. Penrose, op. cit.
19. R. L. Ackoff, J. Magidson, and H. J. Addison, *Idealized Design: How to Dissolve Tomorrow's Crisis. . .Today* (New York, NY: FT Press, 2006).
20. An illustrative sampling of the sources we examined include the following: E. D. Hess, *Smarter Growth: Building an Enduring Business by Managing the Risks of Growth* (New York, NY: Columbia Business School Publishing, 2010); V. Govindarajan and C. Trimble, *Ten Rules for Strategic Innovators: From Idea to Execution* (Boston, MA: Harvard Business School Press, 2005); M. L. Tushman and C. A. O'Reilly, *Winning Through Innovation: A Practical Guide to Leading Organizational Change and Renewal* (Boston, MA: Harvard Business School Press, 1997); C. M. Christensen and M. E. Raynor, *The Innovator's Solution: Creating and Sustaining Successful Growth* (Boston, MA: Harvard Business School Press, 2003); M. Schrage, *The Innovator's Hypothesis: How Cheap Experiments Are Worth More than Good Ideas* (Cambridge, MA: The MIT Press, 2014); E. Ries, *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses* (New York, NY: Crown Business, 2011); Hamel and Tennant, op. cit.
21. See G. S. Day and G. P. Shea, "Grow Faster by Changing the Innovation Narrative," *MIT Sloan Management Review*, 60/2 (Winter 2019): 1-9.
22. F. Schein, *Organizational Culture and Leadership* (San Francisco, CA: Jossey-Bass, 2010), p. 307.
23. G. Shea and R. Guzzo, "Group Effectiveness: What Really Matters?" *MIT Sloan Management Review*, 28/3 (Spring 1987): 25-31; G. Shea and R. Guzzo, "Groups as Human Resources," in *Research in Personnel and Human Resources Management*, ed. Kendrith M. Rowland and Gerald R. Ferris, vol. 5 (Bingley, UK: JAI Press, 1987), pp. 323-356.