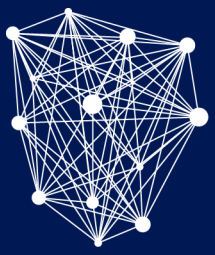

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SPECIAL ACKNOWLEDGEMENT TO REVIEWERS

With the publication of Vol. 2, Issue 3, JOD completes its second year of publishing articles on organization design. We are very proud of the 36 articles published in the first six issues of the journal, and we look forward to seeing JOD grow and expand.

We want to take this opportunity to recognize and thank the reviewers of the papers submitted to Volumes 1 and 2.

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INTRODUCTION

Organization design is a field that is concerned with both theory and practice. The theme of the Organizational Design Community's 2013 annual conference – Making Organization Design Knowledge Actionable – was chosen, however, to recognize that theory and practice do not always come together successfully. The researcher-practitioner "gap" is still a problem in our field, and organization design will not be able to realize its full potential until this gap is closed. ODC viewed its 2013 conference as an opportunity to bring together a group of individuals who are interested in making organization design knowledge actionable and to engage in a focused dialogue. The results of the annual conference are the articles published in this Special Issue.

Today, four groups interact with the field of organization design, each with a different interest. *Line managers* may not even be aware of the field's formal existence, but all are making organization design decisions on a regular basis. They must figure out how to spur growth, drive innovation, become more customer-centric, reduce costs, be more flexible – in short, they must design organizations to accomplish these goals and tasks. As more line managers become aware of the field and appreciate the value of applying a disciplined thought process to design challenges, they will be looking for tested frameworks and approaches that will improve the generation and selection of choices and speed the change process.

Internal professionals, typically human resource or organization development staff working inside large companies or institutions, are looking for tools and methods to help their line clients make better design decisions. Many HR professionals are seeking to add organization design expertise to their personal and departmental toolkits, and HR leaders are trying to build internal capability in order to reduce reliance on external consultants. Internal professionals want proven methodologies that can be applied consistently across the organization, and they want results that are seen as valuable by their business leaders.

Academics, from their base in universities, move the field forward by doing research that seeks to understand how organizations behave. Their research both describes and explains organizational behavior, but most academics do not get involved with designing and changing organizations. Their job is to observe organizations and build theoretical models of how they work.

Consultants, whether solo practitioners or as a member of one of the large professional services firms, try to turn research knowledge and insights into frameworks and tools that have practical use. Some consultants also do "clinical" or "armchair" research based on their or their firm's experience. The best consultants are those who understand the academic research and can translate it into terms that are understandable to practitioners.

While these four groups are all involved in the organizational design and change process, each group focuses on only a portion of the total process. Academics and consultants are typically the providers of organization design theory and tools. Line managers and internal practitioners can be thought of as the consumers of their outputs. The conference organizers attempted to enhance the dialogue across the different groups by incorporating three main elements into the program.

1. *Thoughtful participants*. The conference attendees were members of the Organizational Design Community, and all of them share an interest in the topic of organization design. But in addition to ODC members, the organizing committee invited several thoughtful academics and practitioners to attend. Understanding and changing large, complex organizations is a considerable challenge, and the organizers wanted the discussions to be as rich and productive as possible.

2. *A living case*. The inspirational and ideational phases of the design process can be somewhat abstract. Ultimately, however, chosen designs must be implemented. In order to see the full design process on display, the organizers chose to have a real organization as the

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focus of discussion. Ascension Health is the largest not-for-profit provider of healthcare in the United States, and it is currently undergoing a complex reorganization to come into better alignment with the future healthcare market and regulatory environment. It was an ideal case for the participants to discuss.

3. *Commentators with different perspectives*. Four individuals with different perspectives were invited to comment on the Ascension Health case. Their perceptive and insightful commentaries not only examine the design/change process used by Ascension Health but also suggest alternative perspectives and missing elements. Together, the living case and the commentaries provide an excellent exploration of the dynamic process of organization design.

As editors of the Special Issue, we are very pleased with this set of five articles on making organization design knowledge actionable. Designing and changing organizations is difficult work, and we believe that there are many valuable ideas in these articles that are worth considering.

AMY KATES

Principal
Kates Kesler Consulting
E-mail: amy@kateskesler.com

CHARLES C. SNOW

Emeritus Professor of Strategy and Organization
Penn State University
E-mail: csnow@psu.edu

BØRGE OBEL

Director, Interdisciplinary Center for Organizational Architecture
Aarhus University
E-mail: bo@asb.dk

ORGANIZING HEALTHCARE FOR CHANGING MARKETS

THE CASE OF ASCENSION HEALTH

ERIC S. ENGLER • STEPHEN L. JONES • ANDREW H. VAN DE VEN

Abstract: This case describes a Ministry Positioning process that will enable the management of Ascension Health to enact designs suitable for the rapidly changing healthcare industry. Ascension Health is the largest not-for-profit healthcare system in the United States with $21 billion in annual revenues and a presence in 24 states and the District of Columbia. Because the design of a large organization for a fast-moving environment is too complex and ambiguous to be fully planned in advance, the focus of the case is on the processes of learning while designing — that is, learning how to learn from designing organizations. The main lessons drawn from the Ministry Positioning process are discussed.

Keywords: Organization design, strategic planning, market positioning, healthcare organizations, healthcare management

The healthcare industry provides an attractive setting for advancing our knowledge of organization design in three key respects. First, it is widely recognized that the current arrangements in which healthcare is organized and delivered in the United States are not economically sustainable (Porter, 2009), and high-quality, affordable healthcare is not accessible to many Americans, especially those who are uninsured, poor, or vulnerable in some way (Schoen et al., 2012). The Affordable Care Act of 2010 was intended to address these challenges, but it continues to suffer political resistance and its viability remains unclear.

Second, healthcare organizations are situated in complex, demanding environments (Plsek & Greenhalgh, 2001) as they must try to achieve conflicting performance objectives involving patients, resource providers, employers, insurers, and regulators in different markets and communities. Healthcare markets differ greatly from one region to another, and few healthcare systems have the capabilities to serve the population of patients in their communities by themselves. Healthcare organizations must enter into cooperative relationships with other organizations to provide integrated networks of healthcare in their communities.

Third, the pace of environmental change varies in different healthcare markets and communities. This means that no single organizational form will work in all markets. Healthcare managers must be able to operate multiple organization designs, fitting them to each market as appropriate. In such turbulent environments (Emery & Trist, 1965), designs must be more flexible and improvisational than in slowly changing environments.

We present a case study of Ascension Health, the largest not-for-profit healthcare system in the United States. We describe Ascension Health's overall organization structure and a 16-month Ministry Positioning process that provides the basis for redesigning Ascension Health's 26 regional healthcare organizations. The total design process is still underway, but

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we derive the main lessons learned to date.[1]

The Ascension Health situation provides an excellent opportunity to examine the process of learning while designing organizations, and to adopt new ways of thinking about organization design. We agree with Dunbar and Starbuck (2006) who point out that future studies of organization design need to change in three ways from past studies: (1) start with a broader orientation that challenges both the design goals and design process rather than a traditional focus on alignment; (2) consider organization design as an ongoing process occurring over time rather than a one-off experience; and (3) emphasize a focus on emergent designs that are set up to expand action possibilities and create innovative responses to changing circumstances in particular environmental contexts, rather than adhering to general strategic plans that inevitably miss the mark in specific situations. This case highlights how Ascension Health's efforts to learn through the design process have generated emergent design possibilities and a continued experimentation with designs over time.

ASCENSION HEALTH

Ascension Health is the largest Catholic and largest not-for-profit healthcare provider in the United States. It provides a comprehensive array of healthcare services through 131 hospitals and more than 1,800 programs or care sites located in 24 states and the District of Columbia (see Figure 1 and Table 1). Ascension Health employs more than 150,000 associates, generates $21 billion of annual revenue, and demonstrates its primary mission by providing nearly $1.5 billion of annual healthcare for persons living in poverty and other vulnerable persons.

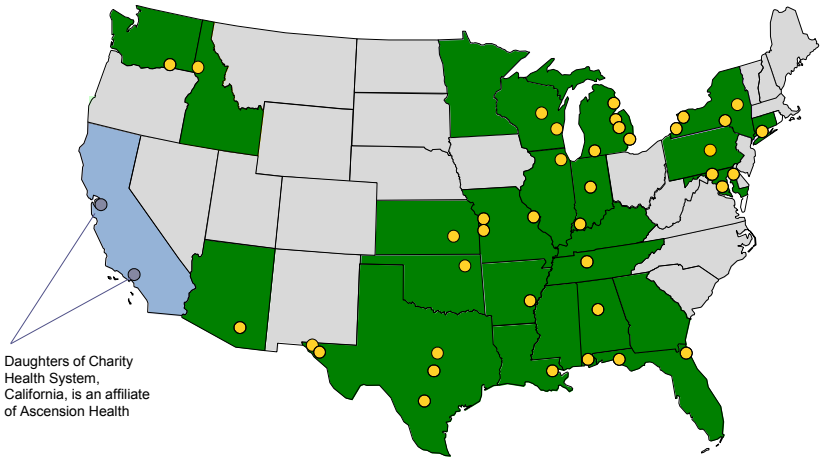

Fig. 1. Locations of Ascension Health Ministries

Ascension Health was established in 1999 and has grown through the integration of several healthcare systems sponsored by Catholic religious orders whose legacies of providing healthcare date back to the 1800s in the U.S. and centuries earlier in Europe. Ascension Health was formed by the 1999 union of the Daughters of Charity National Health System based in St. Louis, Missouri, and the Sisters of St. Joseph Health System based in Ann Arbor, Michigan. In 2002, Carondelet Health System joined Ascension Health, followed by Alexian Brothers Health System in 2012 and the Marian Health System in 2013.

In addition to this large healthcare delivery system, Ascension Health's parent organization, Ascension, owns and operates a number of organizations that provide services and solutions to Ascension Health and other healthcare providers throughout the U.S. Those organizations

1 All three authors are deeply involved in this case. Eric Engler is directing the Ministry Positioning process as Senior Vice President for Strategic Planning and Development of Ascension Health. In addition to being the Vernon Heath Professor of Organizational Innovation and Change at the Carlson School of Management at the University of Minnesota, Andrew Van de Ven is a member of the Ascension Health Board of Trustees and Chair of the Strategic Planning Committee that oversees the Ministry Positioning process. Stephen Jones is a Ph.D. candidate in the Carlson School of Management at the University of Minnesota who studies organizational learning, and he has worked closely with Van de Ven and Engler in preparing the case. Most of the data presented in the case come from Ascension Health sources.

focus on services ranging from biomedical engineering, information technology, and supply chain management to financial services in venture capital and investment management.

Table 1. Types of Ascension Health Facilities and Services

Hospitals by Type	
General Acute Care	103
Rehabilitation Hospitals	3
Psychiatric Hospitals	4
Long Term Acute Care Hospitals	3
Joint Ventured Hospitals (<50% ownership)	18

Senior Care and Living Facilities	
Long Term Care/Skilled Nursing*	34
Independent and Assisted Living*	9
Other Living (HUD, other)	4
PACE Programs/Enrollees	3

** Includes facilities part of a CCRC*

Community Services	
Mobile Clinical Services	35
Wellness Centers	20
Community and Social Programs	162
Dispensary of Hope Sites	82
Other Miscellaneous Services	123

Ambulatory Care and Diagnostics	
Ambulatory Surgery Centers	69
Occupational Health Programs	49
On-Site Employer Clinics	16
Free-standing Imaging Sites	148
Retail Lab Collection Sites	265
Primary Care Clinics	371
Retail Pharmacy Sites	42
Sleep Centers	16
Virtual Care Programs	63

Emergency Services	
Urgent Care Sites	46
Emergency Medical Services (EMS)	28

Post Acute Services	
Durable Medical Equipment	16
Home Health Services	25
Hospice Services	27
Outpatient Rehabilitation Centers	188

Ascension Health's vision is to be a strong, vibrant Catholic health ministry in the United States which will lead the transformation of the healthcare industry. Ascension Health is committed to the health and well-being of people in the communities it serves and responds to the health needs of individuals throughout their lives. It is committed to serving all persons, with special attention to those who are poor and vulnerable. Ascension Health's strategic direction for realizing this vision is to provide healthcare that is effective, safe, and leaves no one behind, for life.

Organization Structure

Ascension Health has 26 regional healthcare organizations, called Health Ministries, consisting of hospitals, physician practices, ambulatory services, long-term care and senior living, and other community-based healthcare services that are provided via an elaborate delivery model. Ascension Health's System Office, located in St. Louis, Missouri, and Ascension's service subsidiaries provide support resources and infrastructure to Health Ministries so that they can focus on determining and meeting local community needs. The Health Ministries collectively participate in setting system-level performance targets and are accountable to each other and the system as a whole for performance.

Ascension Health utilizes a model of distributed leadership that is rooted in the Catholic Social Teaching principle of subsidiary. As strategic and operational initiatives are explored, appropriate experts from across the system provide input to help shape the initiatives and how they will be implemented. Ascension Health's model of distributed leadership includes an authority matrix that specifies the roles of leaders and specialists throughout the system in making recommendations, approving actions, and implementing key decisions.

Ministry Positioning Process

In August 2012, Ascension Health launched a Ministry Positioning process as a means to assess the performance and strategic positioning of its 26 Health Ministries shown in Figure 1. The Ministry Positioning process was undertaken to address the confluence of internal and external forces that created urgency for Ascension Health to better understand the investments and partnerships needed to create sustainable organizations in each community served by a

Health Ministry. Those various forces included:

- Ascension Health's strategic shift from episodic, acute care to person-centered care that is focused on individuals' broader health and well-being needs throughout their lives
- Momentum among physicians, providers (e.g., hospital, clinic), and payers/insurers towards value-based care and away from fee-for-service care
- Continuing constraints on capital availability and pressures on operating and financial performance
- Ongoing consolidation of hospitals/health systems and physician practices
- Uncertainty about healthcare industry trends that include unsustainable costs and prices, shifting revenue sources, entry of non-traditional competitors, emergence of informed consumers, and impact of clinical and information technologies.

The Ministry Positioning process was led by the Health Ministries with strategic and financial resources provided by the Ascension Health System Office. The process relied on Ascension Health's rich and diverse data sources and advanced analytics, models, and frameworks to develop an evidence-based understanding of the current position of each Health Ministry within its geographic market. It focused on generating future scenarios, developing strategic options, and identifying each Health Ministry's primary sustainable model for its region. The process was integrated into Ascension Health's strategic, operational, and financial planning processes to inform future investments. The process was also designed to provide a system-level view of the similarities and differences in market environments of the Health Ministries, and an understanding of the possible levels and reconfigurations of resources required to achieve sustainable models of healthcare in the communities served.

The Ministry Positioning work plan, illustrated in Figure 2, unfolded in four phases to answer a set of critical strategic questions.

Phase A: Profiles of Health Ministry Markets – This phase focused on developing an enhanced understanding of each Health Ministry's current market conditions and whether they would facilitate or impede the pursuit of Ascension Health's mission, its economic vitality, and its ability to transform the delivery of healthcare services in the communities served.

Phase B: Evaluate Competitors and Develop Future Scenarios – This phase involved developing an enhanced understanding of each Health Ministry's current performance and position compared to local competitors and to regional, system, and national benchmarks. It also identified plausible future market scenarios and disruptions.

Phase C: Determine Required Positioning/Assess Capabilities and Gaps – This phase identified the primary sustainable organizational model for each Health Ministry and assessed its current state of readiness and capability for developing its sustainable model.

Phase D: Develop Future Positioning Road Map – This phase focused on identifying the required investments, partnerships, or reorganizations necessary to develop each Health Ministry's sustainable model.

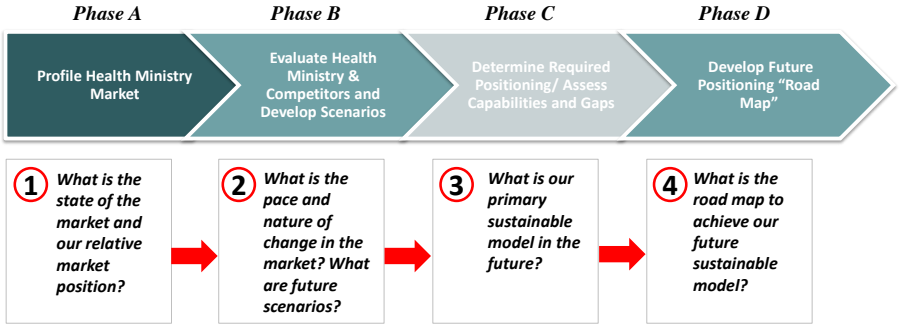

Fig. 2. Ministry Positioning Process

The Ministry Positioning process began with the selection of four Health Ministries to pilot the process. The four organizations were selected because of the rapidly changing market conditions in the communities they served as well as their diverse capabilities and market

positions. This combination of factors provided opportunities to explore a variety of potential future scenarios and sustainable healthcare delivery models under very different market conditions. Based on experiences from the pilot program, the Ministry Positioning process was rolled out in the remaining 22 Health Ministries, with the entire process scheduled to conclude by December 2013.

PRELIMINARY FINDINGS

Since the Ministry Positioning process is still playing out, we can only share certain preliminary findings on the organization design implications for Ascension Health and its 26 regional healthcare organizations. These findings concern: (a) reconceptualizing healthcare markets based on the factors considered in the Phase A market assessment, (b) identifying sustainable organizational models of future healthcare delivery, (c) networking among organizations to create the scale and scope for managing a defined population of patients, (d) responding to the pace of market change, and (e) considering organizational performance based on the J-curve framework.

Reconceptualizing the Healthcare Market

To begin Phase A of the Ministry Positioning process, strategic planning staff at Ascension Health collaborated with each Health Ministry to define a regional market to serve as the basis for assessing initial market conditions and conducting the comparative performance and positioning analyses that are part of Phase B. Historically, Health Ministries defined their markets, or primary service areas, based on the contiguous set of ZIP codes from which approximately 75-80 percent of their hospital discharges originated. This approach to defining markets is relevant in an acute care-centric model, but it has drawbacks when considering strategic positioning and sustainable organizational models in a value-based healthcare delivery system where providers are responsible for patients across a larger geographic area and for services administered outside the hospital.

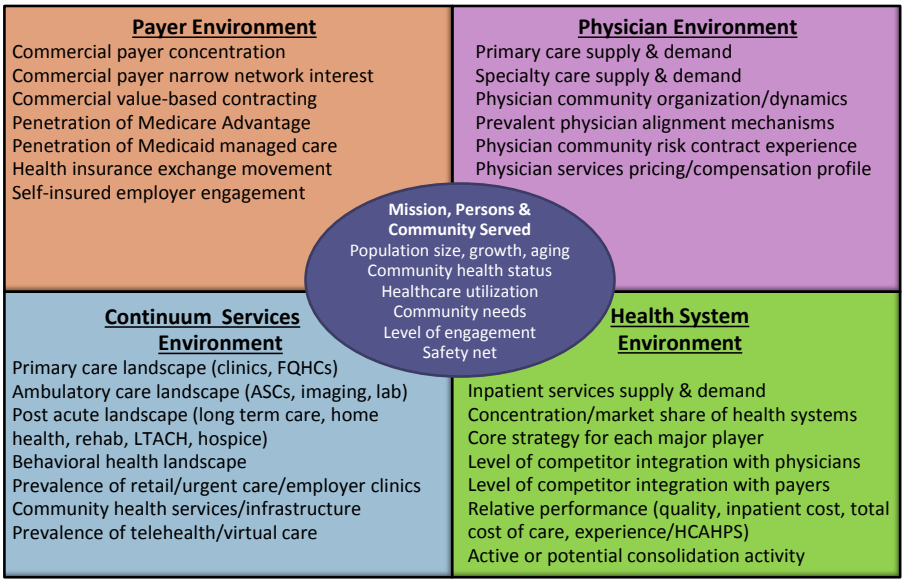

Fig. 3. U.S. Healthcare Market Conditions

Taking a regional, health-driven approach to defining markets requires consideration of not only a Health Ministry's acute care presence but also the geographic coverage provided by its physician enterprise, ambulatory network, and post-acute care services. In addition, it requires consideration of the size of the geographic area in which the critical mass of people needed to sustain the model live. When examined through this alternate market lens, certain Health Ministries do not currently have the strong regional presence required for future sustainability.

Ascension's Health Ministries, and the markets in which they operate, are complex systems that are sensitive to initial conditions. Figure 3 outlines the initial market conditions examined through the Ministry Positioning process in the communities served, including the payer environment, physician environment, hospital/health system environment and the environment for other healthcare services across the continuum of care (e.g., ambulatory care, post-acute care). As Figure 3 shows, understanding these conditions requires a great deal of sophisticated analysis. The majority of the quantitative and qualitative information that informed the analysis of each Health Ministry's initial market conditions was obtained from proprietary data sources as well as from interviews with Health Ministry leaders and board members. This analysis provided Ascension Health and its Health Ministries with an enhanced understanding of each Health Ministry's initial market conditions and potential market disruptions that could influence its abilities to transform the delivery of healthcare services in its reconceptualized market.

Sustainable Healthcare Delivery Models

Phases A and B of the Ministry Positioning process were designed to inform the third phase of identifying future sustainable models for healthcare delivery in a region and for an assessment of current readiness and gaps in organizational capabilities. The first task of Phase C was for each Health Ministry to identify its primary model for future sustainability. While most Health Ministries cannot be exclusively tied to one model – and may indeed manage several models for risk-based and fee-for-service revenue streams – it was critical to identify a Health Ministry's "center of gravity" by way of a primary sustainable model going forward. To do this, the senior leaders of each Health Ministry engaged in a dialogue facilitated by Ascension Health strategists. In these meetings, participants discussed the current roles the Health Ministry played in its regional market and identified a preliminary model that it believed would be sustainable. Figure 4 presents the four basic models for sustainable healthcare delivery that emerged from these meetings, and Figure 5 summarizes the features of each model.

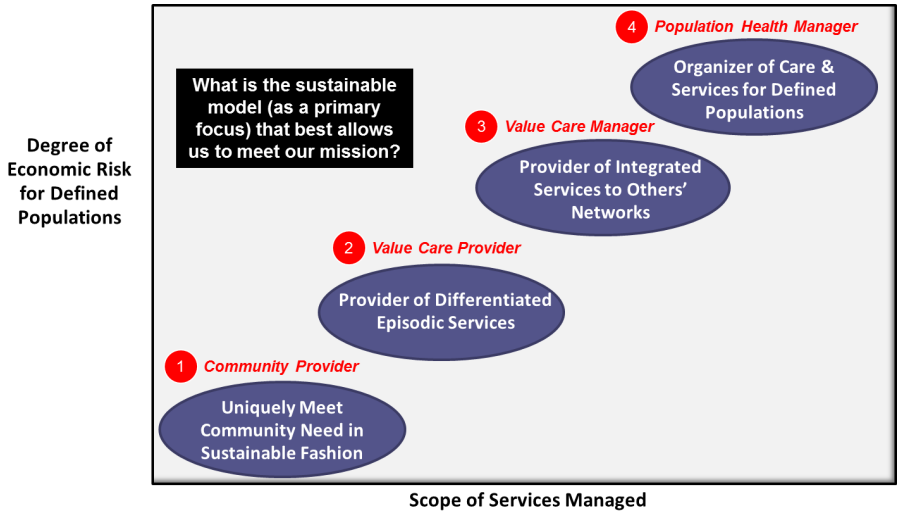

Fig. 4. Sustainable Healthcare Delivery Models

In the Community Provider model, a Health Ministry is positioned to uniquely meet one or more community needs in a sustainable fashion. Examples include being the sole provider of a key service or serving an unmet need or vulnerable population through a combination of traditional reimbursement, public subsidies, and private subsidies.

In the Value Care Provider model, a Health Ministry is positioned to provide services that are differentiated in terms of cost, quality, brand/reputation, and/or patient experience. This differentiation yields reimbursement and operating margin sufficient for ongoing sustainability. Examples include a hospital with a significant cost advantage relative to its peers, a clinical service like cancer care that is distinguished by its high-quality outcomes

and reputation, or an ambulatory care center that is recognized for convenience and customer service.

	Community Provider	**Value Care Provider**	**Value Care Manager**	**Population Health Manager**
	Uniquely Meet Community Need in Sustainable Fashion	**Provider of Differentiated Episodic Services**	**Provider of Integrated Services to Others' Networks**	**Organizer of Care & Services for Defined Populations**
Primary Revenue Sources	Fee for Service Public Subsidies Private Subsidies	Pay for Performance Fee for Service	Shared Savings Bundled Payment Fee for Service	Capitation Full Risk
Differentiation Strategies	Sole Provider of Services Meet Needs of Vulnerable Population(s)	Low Cost Provider Sole Provider of Services Regional/National Recognition for Quality	Coordinated Services Across Continuum Able to Demonstrate High Quality at Low Cost	Scale to Effectively Manage Risk Targeted Interventions for Defined Populations Demonstrate Improved Outcomes at Reduced Cost

Fig. 5. Features of Sustainable Healthcare Delivery Models

In the Value Care Manager model, the Health Ministry is a provider of an integrated set of services, while participating as part of a larger service network to attract patients and insurers. The Health Ministry's role in the network revolves around its ability to deliver high-quality, low- cost healthcare services as well as its ability to contribute to other goals of the network.

In the Population Health Manager model, the Health Ministry is the organizer of care and services for defined populations. It has the scale to effectively manage risk and target interventions for high-risk patients to demonstrate improved outcomes and reduce the total cost of care.

Through the Ministry Positioning process, many Health Ministries learned that long-term sustainability would require a shift from Models 1 and 2 (Community Provider and Value Care Provider) to Models 3 and 4 (Value Care Manager and Population Health Manager).

Networking to Create Scale and Scope

Underlying the four healthcare delivery models is the recognition that stand-alone hospitals or other isolated healthcare providers will not be sustainable over the long-term. Rather, long-term sustainability requires healthcare providers to have the scale, geographic coverage, and access points required to serve the critical mass of covered patients in a value-based healthcare environment. The importance of having a strong regional presence was accentuated through the Ministry Positioning process given: (a) the large intellectual, human, and financial capital requirements to transition from a volume-based model to a value-based model that often exceeds the resources of any single actor; (b) the shift from an independent, pluralistic view of physicians to an interdependent, integrated physician enterprise; (c) the need to reduce costs and rationalize services across healthcare delivery systems; and (d) the growing importance of creating a strong regional brand that is distinguished in the minds of payers, employers, and consumers.

Addressing these challenges requires designing organizations to respond to unique market conditions and at the proper scale. Given the diversity of markets and Health Ministry capabilities located in those markets, the Ministry Positioning process is now exploring the types of network organizations that are expected to be sustainable in providing the needed healthcare services in each market region. Designing such integrated healthcare networks blurs the boundaries between historically competing organizations and shifts the design problem to a higher level from the single organization to the collaborative network of organizations.

Pace of Market Change

One key analysis performed as part of the Ministry Positioning process was an assessment of the pace of change of the markets in which Ascension Health operates. The pace of change assesses the relative speed at which Health Ministry markets are transitioning to value-based

healthcare delivery. In other words, markets were assessed for how quickly they are expected to shift from the current volume-based, episodic reimbursement model to a model that puts providers at economic risk for delivering integrated care that produces value for purchasers (i.e., high quality and better experience with lower overall cost). Pace of market change was assessed on several qualitative and quantitative factors using state and local data, including:

- Number of people in managed-care systems or other value-based arrangements
- Accountable Care Organization development
- Health insurance exchange development
- Market consolidation
- Market-driven clinical integration
- Overall healthcare cost pressures
- Accelerating/decelerating organizational events (e.g., a recent merger of two competitive healthcare systems).

The pace of change assessments and the resulting changes in payer mix, utilization, and reimbursement provided a consistent approach to modeling the impact of health reform and local market dynamics on the future financial performance of the Health Ministries. This led to a better understanding of the significant changes expected in revenue in the coming years, whether due to lower volumes with more utilization management, governmental reimbursement cuts, commercial rate compression, shifts to health insurance exchange coverage from uninsured or employed persons, and general demographic shifts such as the aging of the population.

As part of the evolution of the reimbursement system from primarily fee-for-service to value-based payment models, healthcare providers increasingly will have a portion of their revenues at risk based on their ability to deliver against cost, quality, and patient experience targets. However, the pace at which fee-for-service payment models will erode, and what specific types of risk-based arrangements will emerge, varies significantly by market. Figure 6 illustrates on the horizontal axis the relative pace of transition toward value-based payment models in the markets served by Ascension Health compared to the vertical depiction of the proportion of the Health Ministry's revenue projected to be in risk-based contracts by 2018. As shown in Figure 6, the Ministry Positioning process helped the Health Ministry leaders and their advisory boards learn how fast their markets were changing, and they could set their strategies to respond to the pace of change.

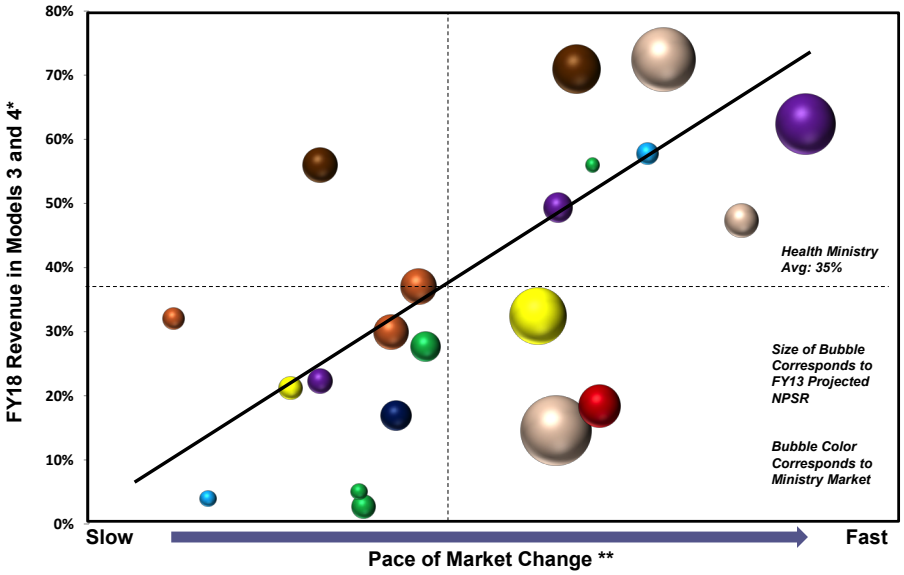

Fig. 6. Health Ministry Positioning and Pace of Market Change

For Health Ministries in faster-moving markets, the Ministry Positioning work has confirmed the need to create the organizational capabilities required to align independent and employed physicians and to capture the value created through delivering high-quality, low-cost, and

clinically appropriate care. An innovative example is MissionPoint Health Partners (see Figure 7), which has organized a diverse and comprehensive set of healthcare professionals and facilities around each member in the network. The MissionPoint Health Partners physicians are helping members define and follow individual care plans, transition from the hospital to the home or other care settings, and change behaviors. For example, pharmacists perform medication reconciliation and therapy management for the most complicated members, and nutritionists are working with members facing new lifestyle and dietary constraints. All of these services have previously been in demand by physicians but have either been too difficult to coordinate across the continuum of care or have not been traditionally reimbursed.

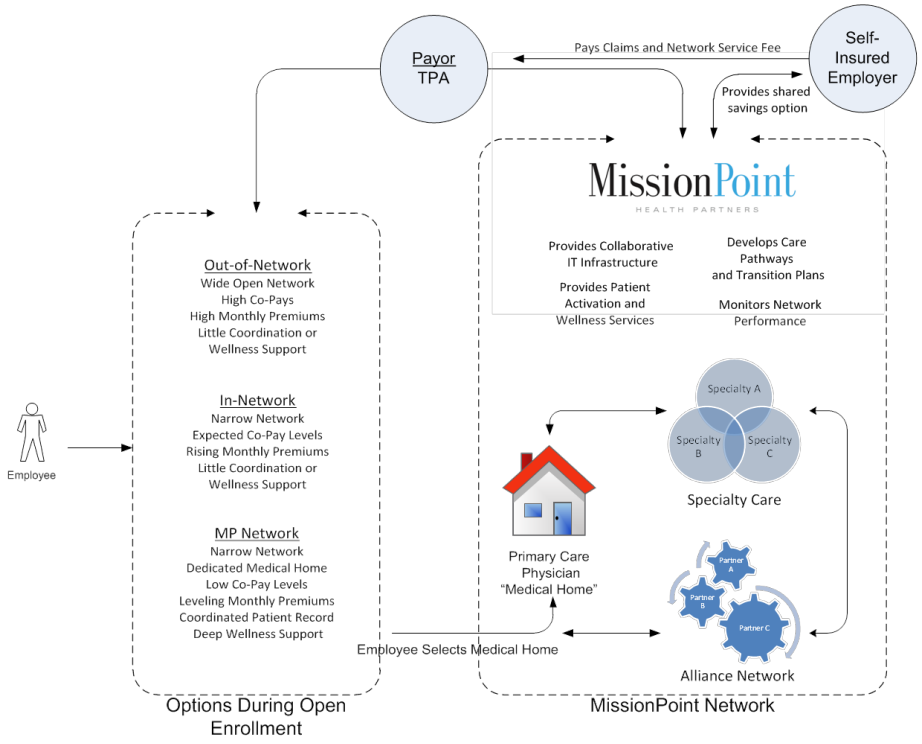

Fig. 7. MissionPoint Health Partners Structure

MissionPoint Health Partners is not an insurance carrier. Instead, it creates networks of physicians, hospitals, and other providers and supports the network through innovative capabilities to provide the highest quality care to each member. What sets MissionPoint Health Partners apart from most other clinically integrated networks, however, is that every contract with a payer or employer is based on the ability to improve healthcare quality and reduce costs. MissionPoint Health Partners is a new organization, but experience with it to date suggests that its innovative care and business models may be transferrable beyond the pilot location in Tennessee to serve other Health Ministries.

J-curve Considerations of Ministry Positioning

The J-curve shown in Figure 8 is used often in the private equity industry to illustrate the historical tendency of private equity funds to deliver negative returns in the early years due to costs incurred in starting the fund, and investment gains in the outlying years as the portfolios of companies mature and become more stable and profitable. The J-curve is also a helpful construct for thinking about the performance of organizations going through business model transformation, such as many of the Health Ministries will be doing. As healthcare systems commit to becoming value-based integrated delivery systems and assume the risks associated with managing the health outcomes and costs of defined populations, it will be necessary to invest in new capabilities and infrastructure and partner with healthcare purchasers to develop contracts that equitably reward healthcare systems for providing high-quality, low-cost care and reducing healthcare utilization. The investments that need to be made during

this phase, along with the near-term impacts of reduced utilization, will not be completely offset by value shared through the at-risk contracts (e.g., shared savings). As healthcare systems learn how to better manage population health, performance will begin to head in a positive direction buoyed by better care management systems, lower cost structures, and additional revenue derived from serving new populations.

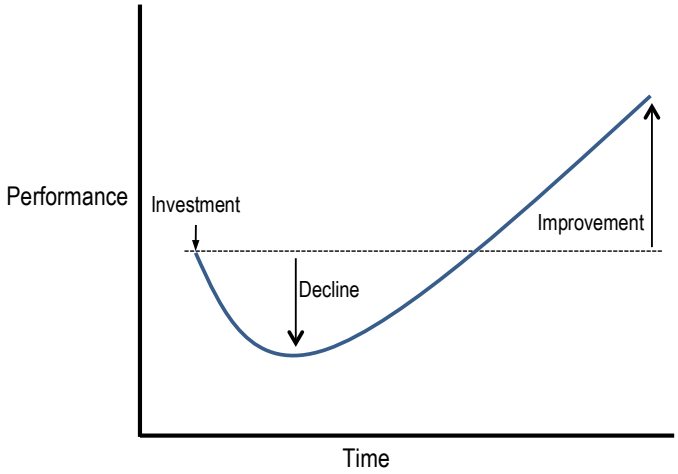

Fig. 8. Three Phases of the Performance J-curve

Depending on which Health Ministries are experiencing the J-curve at any one time, Ascension Health could experience a dip in financial performance as it transforms its business model in parts of the system. As Ascension Health seeks to sustain its financial stability through the transition to value-based healthcare delivery, it must consider means by which to flatten or narrow the shape of the J-curve. Such mitigating strategies may include but are not limited to:

- Staging investments in markets and Health Ministries to spread the impact of the J-curve over time
- Reducing population health management infrastructure investment costs (i.e., realizing the benefits of scale across Ascension Health)
- Partnering with the purchasers of healthcare to develop and deploy full-risk products that equitably reward quality improvement and total cost reduction
- Accelerating the capture of new populations and associated incremental volume through the expansion and alignment of physician/ambulatory care networks
- Securing the necessary capital to invest in population health management capabilities and infrastructure from non-traditional sources.

Ascension Health is exploring all of these approaches to manage the J-curve impact across its Health Ministry portfolio.

LEARNING FROM DESIGNING

The above findings are preliminary learning experiences gained from the Ministry Positioning process as it unfolded over the past 16 months. Although the process of redesigning the Health Ministry organizations is still underway, Ascension Health has gained a number of insights about the design process that we can share at this time.

Organizations learn about important design elements by engaging in dialogue and reflecting on their actions. Like Dunbar and Starbuck (2006), we believe that organization design theory, at its present stage of development, cannot adequately anticipate and encompass all of the complexities encountered in designing organizations. Many theories are needed to design organizations, and they become apparent as the design process evolves. Moreover, learning is accelerated when a diverse set of people are engaged and communicate their interpretations of unfolding events (Crossan, Lane, & White, 1999; Orlikowski, 2002).

A goal orientation toward learning is an important catalyst for seeking feedback that is both positive and negative. Ascension Health leaders at all levels spurred learning by constantly seeking feedback. For instance, the minutes of quarterly meetings of the Board of Trustees Strategic Planning Committee from June 2012 to September 2013 record repeated

questioning: What is being learned from the Ministry Positioning process? What learning can be transferred to other Health Ministries as they undertake the strategic positioning process? How can the process contribute to Ascension Health becoming a learning organization? Ascension Health's leaders were receptive and responded to such questions with reports of their findings in subsequent board meetings. Ascension Health leaders throughout the system pushed the organization to capture and internalize as much design knowledge as possible, clearly demonstrating a learning goal orientation (Ashford, Blatt, & VandeWalle, 2003; Dweck, 1986).

Learning is facilitated by an organizational culture that emphasizes communal participation in developing and achieving collective goals. The Ministry Positioning process was organized to include numerous meetings and workshops involving Health Ministry leaders, Ascension Health leaders, staff, and board members. Health Ministry leaders, in turn, were encouraged to involve patients, providers, and key stakeholders in their local communities in the process. These groups often interpreted the same events differently, but an open and trusting environment existed that triggered learning. Trust was fostered by the actions of Ascension Health leaders. They helped direct attention to the collective goal of advancing Ascension Health's vision to be a vibrant Catholic health ministry that serves the community, particularly the poor and vulnerable. Bunderson and Reagans (2011) stress the importance of a collective orientation among organizational leaders for learning to occur. They argue that learning roadblocks occur when leaders focus on their individual (as opposed to collective) values and goals, and when the balance of power among the parties involved is unequal. Ascension Health leaders emphasized collective goals and used their influence to create a safe environment for employees and managers to contribute.

Learning is more penetrating when it relies on evidence rather than opinion. This is not to suggest that opinions and theories are not important, for they certainly are. However, learning is more likely to occur when it is based on reliable data or evidence than when it is based solely on philosophical arguments. This is because the discussion of evidence provides a more objective means of reflecting on and arbitrating differences of opinions among parties (Briner, Denyer, & Rousseau, 2009). Data obtained through the Ministry Positioning process certainly is helping Ascension Health leaders analyze their current situation, and better understand similarities and differences with other healthcare systems in their local regions and with other Health Ministries. Ascension Health treats the specific strategies in different Health Ministry markets as "portfolios of experiments", and this allows managers to make evidence-based decisions in assessing progress along their strategic path and to make further design changes as the process unfolds. By synthesizing learnings from multiple Health Ministries in different market environments, Ascension Health can develop knowledge that is useful for Health Ministries across the system. Moreover, the roll-out of new positioning strategies is occurring at different times for different Health Ministries. This provides opportunities to transfer learning from lead Health Ministries to later Health Ministries with similar conditions.

Forging collaborative relationships is an effective way of exploring turbulent environments. The MissionPoint Health Partners network showcases the importance of developing collaborative relationships in the broader network. This collaborative network, consisting of payers, physicians, and other healthcare providers, will be critical for developing sustainable models of healthcare delivery. These relationships have the potential to continue to promote learning and adaptation as the healthcare organizations evolve in their turbulent environment (Kraatz, 1998).

Learning must keep pace with the rate of change. Although the characteristics of turbulent environments have been known for some time (Emery & Trist, 1965), their implications for designing organizations have received little attention (Dunbar & Starbuck, 2006). As shown in Figure 6 above, data from the Ministry Positioning process found a strong positive association between the pace of market change and projected revenue from integrated healthcare organizations or networks participating in value-based services. As would be expected, organizational arrangements become more temporary, flexible, and improvisational as the pace of market change increases. This implies that learning in organizations must keep pace with the speed of environmental change (Dodgson, 1993). But this relationship may also

work in reverse. The pace of market change should also increase the pace of organizational learning because it speeds up cycles for trial-and-error learning. As a result, fast-moving environments may provide the best laboratories for rapid organizational learning. Continuing study of Ascension Health and its Ministry Positioning process may shed further light on this relationship.

CONCLUSION

Healthcare organizations provide a useful setting for advancing our knowledge of organization design. The unsustainability of many current organizational arrangements, the complexity of providing healthcare, and the pace of market change render simple design paradigms unviable. The Ascension Health case offers a glimpse into one industry participant's efforts to incorporate learning into its design process. And while the knowledge that Ascension Health is gaining is idiosyncratic, the case provides broader insights about learning while designing organizations. Specifically, the case highlights the need to have broad engagement in the learning process and to create an open atmosphere for dialogue. Also, evidence-based feedback and a portfolio of design experiments are particularly valuable mechanisms for gaining design insights. Finally, important design insights come not only from within organizations; they also occur as organizations develop relationships with other relevant actors in the larger organizational domain.

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ERIC S. ENGLER

Senior Vice President, Strategic Planning and Development
Ascension Health
E-mail: eengler@ascensionhealth.org

STEPHEN L. JONES

Ph.D. Candidate
Carlson School of Management, University of Minnesota
E-mail: jone2093@umn.edu

ANDREW H. VAN DE VEN

Vernon Heath Professor of Organizational Innovation and Change
Carlson School of Management, University of Minnesota
E-mail: avandeve@umn.edu

EMERGING ASSUMPTIONS ABOUT ORGANIZATION DESIGN, KNOWLEDGE AND ACTION

ALAN MEYER

Abstract: Participants in the Organizational Design Community's 2013 Annual Conference faced the challenge of "making organization design knowledge actionable." This essay summarizes the opinions and insights participants shared during the conference. I reflect on these ideas, connect them to recent scholarly thinking about organization design, and conclude that seeking to make design knowledge actionable is nudging the community away from an assumption set based upon linearity and equilibrium, and toward a new set of assumptions based on emergence, self-organization, and non-linearity.

Keywords: Organization design, actionable knowledge, design thinking, evolutionary experimentation, non-linearity, emergence

I was one of the members of the Organizational Design Community (ODC) who attended the conference on Making Organization Design Knowledge Actionable. We grappled with a source of long-standing discontent for both practitioners and scholars: Although there is a very large body of knowledge about organizations and organizing, examples of effective applications of this knowledge in designing real organizations are few and far between.

Why is this? Some observers suggest that researchers' preoccupation with scientific rigor has meant sacrificing practical relevance (Aldag, 1997; Hambrick, 1994). Other observers say organizational scholars have grown "self-absorbed" and "self-indulgent" and, as a result, inattentive to human welfare and world affairs (Starbuck, 2003). Still others imply that we need to become better salespeople for the discipline. For example, the editor of a special issue of *Administrative Science Quarterly* on The Utilization of Organizational Research concluded:

> *The predominant use of organizational research probably occurs through gradual seepage into organizations of new ideas, metaphors, and rationales for explaining human behavior. At various times, someone uses some of these ideas to reach a decision or to take new actions. Often, people use them to justify either a decision already reached or existing activities. Inevitably, people use or distort ideas derived from organizational research to pursue their own advantage and sometimes even to harm someone else." (Beyer, 1982: 615)*

Our focus in the conference was not on determining why design knowledge has not been applied instrumentally in the past but rather on asking what ODC members might do to improve matters in the future. We started the morning by analyzing a living case that laid bare the design challenges facing Ascension Health. In the afternoon, we listened to short presentations on new design tactics, and we engaged in several rounds of small group discussions probing for fresh approaches to making organization design knowledge actionable.

My objectives in this essay are to reflect on the ideas that surfaced at the conference, consider recent scholarly writing on design, and think broadly about pathways to improving the utilization of our design knowledge. My overall assessment is that design-oriented

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organizational scholars are in the process of shifting from one integrated set of assumptions to another somewhat more amorphous set of assumptions. Specifically, I believe that an amalgam of mutually reinforcing beliefs, theories, and methods honoring the notions of linearity and equilibrium has held back the application of design knowledge, but the field shows signs of switching to a new set of assumptions that embraces non-linearity, self-organization, and emergence (Meyer, Gaba, & Colwell, 2005). For the purposes of this essay, I have organized my observations into three related sets of assumptions, focusing respectively on the essence of organization *design*, the basis of design *knowledge*, and the nature of *action* required to enact a particular design. Established and emerging versions of these assumption sets are shown below in Tables 1-3.

ASSUMPTIONS ABOUT DESIGN

Past approaches to organization design have taken it for granted that top-notch designs display "fit", "congruence", or "alignment". In practice, this means that internal alignments should be created between separate components of designs such as strategic objectives, reporting relationships, and reward systems, and external alignments should be devised to match organizational designs with environmental attributes (Nadler & Tushman, 1980). Established design templates typically consist of hierarchical configurations of nested subunits, often accompanied by repertoires of processes and routines devised to direct and control member behavior within those configurations.

Both theories of organization and prevailing research methodologies are infused with implicit and explicit assumptions of equilibrium (Meyer, et al., 2005), so it is only natural that organizational designs have sought to stabilize social structures, control members' behavior, and absorb uncertainty. The fundamental, albeit implicit, purpose of various designs has been to boost organizations' abilities to extract value from opportunities presented by their environments. Academic designers of organizations have, by and large, regarded their products as conceptual models. Organizational practitioners have, by and large, regarded them as metaphysical abstractions.

Table 1. Assumptions About Organizational Designs

Established Assumptions	Emerging Assumptions
"Fit" and "congruence" constitute fundamentals of good designs. Designers must align components of designs with each other and with environments.	Organizations face multiple environments and these environments evolve continuously. Designers should avoid rigid configurations of components and tight alignments with environmental elements.
Organization designs should be encoded in hierarchical structural configurations supported by organizational routines that program members' behavior.	Organization designs should emerge from "design thinking" by invoking principles that generate empathy with users, identify related worlds, and test new ideas via rapid prototyping.
Designs should propel organizations toward equilibrium. Designers should create structures and processes that ensure control, create stability, and absorb uncertainty.	Organization designs should propel organizations away from equilibrium for that is where self-organizing processes can occur. Designs should set in motion novel actions in pursuit of novel goals.
Designers should incorporate features into the organization that allow it to capitalize on environmental opportunities.	Designers may seek to change environments to render them more munificent for and receptive to organizations.
Designs are purely cognitive or ideational patterns constructed from abstract ideas.	Design principles can be elicited by behavioral simulations in the laboratory and discovered by acting within 3D virtual environments.

Many of those attending the conference expressed beliefs and assumptions (summarized on the right-hand side of Table 1) that challenge the conventional wisdom concerning organization design, knowledge, and action. Eric Engler, a principal architect of Ascension Health's strategy and organization, started off the conference by painting a portrait of a loosely integrated healthcare organization facing multiple regional environments that are changing at different rates. Scholars have recently recommended designing organizations that face such conditions as flexible and loosely coupled configurations (Dunbar & Starbuck, 2006) – that is, thinking of organization design not as a stable structure to achieve but as a developmental

process to keep underway or a string of evolutionary experiments (Meyer et al., 2005).

Later in the morning, Natalie Nixon challenged the established hierarchical configuration assumption, remarking that "the problem is there's not enough *design thinking* in organizational design." When asked to elaborate, she said that design thinking is a problem-solving process that begins with the question, What problem am I solving for the user? Thus, professional designers start the problem-solving process by taking an empathetic stance. Then they begin to search in "related worlds" for similar needs, experiences, and possible solutions. Lastly, as feasible solutions begin to develop, designers engage in prototyping to test and refine them. Overall, design thinking produces solutions that have a solid chance of success.

In contrast to the belief that designs ought to propel organizations toward equilibrium and keep them there, an emerging view holds that designs ought to push organizations away from equilibrium (Dunbar, Romme, & Starbuck, 2008) and harness processes of self-organization. More recent theorizing conceiving of organizations as complex adaptive systems lends support to this line of thought (Anderson, 1999). This theorizing argues that as organizations move away from equilibrium, system-level order can spontaneously arise from the action and interaction of system components, without intervention by a central designer (Chiles, Meyer, & Hench, 2004).

Jay Galbraith made a related point in the conference, remarking that in his role as a design consultant he never proposes new structures for a client to install but focuses instead on initiating lateral processes. "I never touch structure – it's all about process. You don't put structures into place unless you have the strategy down pat. How can you act intelligently if you don't know what you want to do?" In reflecting on the design challenges facing Ascension Health, Charles Snow made a similar observation:

> *We do know a lot about particular designs – what they're good for and not good for – and we can mix and match them in a modular style and get some predictable results. But until you know what the future environment will be like, what do you design for?*

One response to this question could be that in addition to designing organizations to fit their future environments, designers could expand their targeted domain by helping to enact environmental conditions that will become more auspicious for their organizational clients. Such an expanded focus might indeed help organizations become more effective, but it also pushes designers into the realms of power, politics, and ethics.

Finally, in contrast to the established understanding of organization designs as purely cognitive models, some participants in the conference reported that they were turning to members' behaviors as a source of design inspiration. Phanish Puranam described his work using laboratory simulations to demonstrate and test design principles. He said that with careful specification of the problem, it's possible to replicate real organizations in the lab. Ana Reyes' presentation showcased the use of three-dimensional virtual environments to enable participants to prototype and experiment with novel social structures and processes by assuming virtual identities in the form of avatars.

ASSUMPTIONS ABOUT KNOWLEDGE

Where does design knowledge about organizations come from? The established viewpoint is that knowledge is created by performing discrete tasks in a linear sequence. First, scholars design research studies that enable them to observe organizations and develop causal models of how they work. Then practitioners and/or consultants turn scholars' models into blueprints and implement them, leaving managers to occupy and operate the organizational structures once they are in place.

This division of labor means that research designs are invariably retrospective because scholars only study organizations that currently exist or have existed in the past. However, scholars' historical observations of individual organizations yield models that become "unrealistically complex as they develop elaborate explanations for events that are random or idiosyncratic perturbations from what is normal" (Dunbar et al., 2008: 556). Other retrospective studies use secondary data drawn from large samples to build descriptive profiles of average organizations. However, profiles of average organizations are unlikely to supply templates for designing novel or excellent organizations. "Truly innovative designs

must originate in deviant cases or fantasies rather than in statistical norms" (Nystrom & Starbuck, 1981: xvii).

Established dictums about social science theory and methodology pervade the research studies that scholars have conducted to generate organization design knowledge. Nomological nets, operational definitions, and tests of statistical significance are emblematic of the validity upon which design knowledge has been thought to depend. Valid research results, of course, are regarded as the *sine qua non* for developing credible organization design prescriptions.

Table 2. Assumptions About Design Knowledge

Established Assumptions	Emerging Assumptions
Once knowledge has been created by scholars, it may then be transferred into application by practitioners.	Knowledge is generated through the skilled translation of ideas back and forth between academic and practitioner communities.
Knowledge arises from the systematic analysis of scholars' retrospective descriptions of historical organizational structures and processes.	To be useful, knowledge must incorporate contemporary organizational phenomena like information technologies and globalization.
Credible design knowledge comes from collecting objective data from large numbers of organizations, conducting systematic analyses of these data, and calculating quantitative relationships between design attributes and outcomes.	Credible design knowledge comes from field research, open-ended conversations with practitioners, and naturalistic observations. Knowledge is valid only when outcomes are predicted a priori, designs are implemented in context, and results are observed in real time.
Design knowledge achieves validity though nomological rigor, operational definition of variables, and documentation of causal relationships between carefully measured variables, as demonstrated by statistical analyses.	Design knowledge achieves pragmatic validity through communication in clear and evocative language, should often be elucidated in narrative form, and benefits from illustration in pictorial diagrams.
Prescriptions for designing organizations ought to be deduced logically from scholars' theoretical models and show how design attributes will bring about desired outcomes.	Design prescriptions should spring from designers' interventions because the full range of possible structures often is not exhibited by existing organizations, and the full range of feasible actions often cannot be imagined by their members.

Conference participants' views on the origins of organizational knowledge moved beyond role specialization and division of labor to adopt a more collaborative posture, emphasizing the importance of engagement, conversation, and collaboration between scholars and practitioners. Andy Van de Ven presented his views on the crucial importance of early, close, and ongoing engagement between scholars and practitioners in seeking solutions to design problems – a process he calls "engaged scholarship" (Van de Ven, 2007). Ron Burt concurred, going on to argue that the value of such engagement arises not from information transfer or brokerage but from skill in "translating" information that can only flourish when members of different occupational communities interact. He went on to say:

> *Translation isn't an information retrieval mechanism. It changes who you are. You learn another language, and that means not only can you take insights out of the applied base, but you can translate them back in a way that is more compelling. I want to inoculate against the common misunderstanding that this is a way to get information. It's not. It's a way to be a different kind of person.*

In contrast to the established practice of seeking to generate design knowledge by studying organizations in large samples and in retrospect, the dialogue at the conference addressed the importance of observing organizations one-by-one, and addressing recent phenomena like information technologies, social media, and globalization – and in the case of Ascension Health, the Affordable Care Act. Both scholars and practitioners saw greater value in data gathered through field research than in secondary and archival data. Several of us opined that knowledge about the utility of a particular organizational design becomes truly credible only when the design's outcomes are predicted ahead of implementation, and when results are observed in context and as they emerge.

Instead of the conventional social scientific view of validity, a view held by many at the conference is that the pragmatic validity of knowledge about design turns upon designers' abilities to portray their templates in clear and evocative language. Compelling narrative

accounts and graphic diagrams may be more convincing and offer clearer guidance to those engaging in implementation than cleverly operationalized variables and statistically supported causal hypotheses.

An overriding theme from the conference is that action and knowledge are closely intertwined. This assumption was evident in Andy Van de Ven's remarks on engaged scholarship:

> *Organization design doesn't have neat, known, stable answers. Knowledge transfer can't close the gap between academics and practitioners. Instead, it's a problem of knowledge co-production. When you're talking about organization design knowledge, it is more useful to produce it through joint engagement.*

The entanglement of action and knowledge ran through Natalie Nixon's remarks about the importance of iterative prototyping, Jay Galbraith's call for cross-functional teams, and Alan Meyer's characterization of the design process as a series of evolutionary experiments. Dunbar, Romme, and Starbuck (2008) have argued that only by intervening in organizations can would-be designers come to understand them well enough to make useful design prescriptions. They note that pressures for conformity and respectability can impose strong constraints that prevent top managers from adopting unconventional structural configurations that might turn out to be effectual. Similarly, norms of rationality may stifle creativity and prevent organizational members from conceiving of unorthodox actions that might prove feasible and beneficial.

ASSUMPTIONS ABOUT ACTION

Most established organization design efforts are rooted in a rational model of action (March, 2006). This normative model holds that understanding should precede action, and the results of action should be measured against predetermined goals. The rational model enjoins designers to understand, act, and evaluate – in that order. This action model implies that designing is an activity that should be embarked upon periodically not continuously. Only by designing in installments can outcomes be evaluated and linked to design interventions. The rational model of action supports the division of labor discussed above: Scholars should understand organizations, consultants should translate scholars' understandings, and practitioners should take action based on understanding.

Table 3. Assumptions about Action

Established Assumptions	Emerging Assumptions
Model of action: Understand → Act → Evaluate	Model of action: Evaluate → Act → Understand
Designers must understand organizations before they attempt to change them.	Designers cannot understand organizations until and unless they try to change them.
Organization design should be undertaken in an episodic or periodic fashion.	Organization design should be an ongoing, continuous process.
Designing should be decomposed into specialized roles that are invoked sequentially. Scholars should understand, consultants should translate, and practitioners should implement.	Designing should unfold as an iterative sequence of experiments in which scholars, consultants, and practitioners collaborate in acting, evaluating, and designing.

Several participants in the conference offered support for a model of action that accumulates knowledge through feedback from experience instead of through analysis and anticipation (March, 2006). This mechanism has been termed "existential action" (Walsh, Meyer, & Schoonhoven, 2006), "experiential learning" (Greve, 2003), and "evolutionary experimentation" (Meyer et al., 2005). In this model, action becomes the basis for understanding. The model enjoins designers to begin by evaluating a focal organization's context and then to ask, What could we do here on a small scale that makes sense in the short run? Observation of the outcomes of experimental actions affords the basis for discerning principles of organization design. Andy Van de Ven put it like this: "It's the way 3M became so successful – you make a little, and you sell a little, then you make a little more, and you sell a little more."

Approaching organization design as evolutionary experimentation capitalizes on a fundamental aspect of complex adaptive systems: When agents engage in local behavior, they generate global design characteristics that feed back to alter the way the agents interact. Thus, actions not only proceed along feedback loops but can also change those loops (Anderson, 1999).

CONCLUSION

Social interactions at the conference epitomized and demonstrated many of the emerging assumptions listed in Tables 1-3. Knowledge was shared in narrative and graphic fashion, and it was created on the fly through skilled translation of ideas between academics and practitioners. "Design" thinking spilled over into "research" thinking, as analogies were drawn between designing products, software, screwdrivers, and systems to designing experiences and services such as delivering healthcare to the poor and vulnerable members of society.

I suspect that some of the academics in attendance may have realized that organization design and research design are "related worlds." Research designs, like organization designs, ought to be regarded as experimental prototypes. Both kinds of designs should be treated as renewable licenses rather than fixed constitutions. In specifying units, structures, systems, and processes, designers of both research studies and organizations "should prefer options that are temporary rather than permanent, correctable rather than correct, and discoverable rather than known" (Meyer et al., 2005: 471).

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ALAN MEYER

Lundquist Professor Emeritus
Charles H. Lundquist College of Business, University of Oregon
E-mail: ameyer@uoregon.edu

VIEWING ASCENSION HEALTH FROM A DESIGN THINKING PERSPECTIVE

NATALIE W. NIXON

Abstract: In this commentary, I discuss how the design thinking concepts of empathy, related worlds, prototyping, ethnography, and story could enhance Ascension Health's organizational design and ultimately its delivery of healthcare services. When organization design integrates a design thinking lens, more meaningful and innovative processes are developed both internally among organizational actors and externally with end users.

Keywords: Design thinking, organization design, healthcare organizations, innovation

Ascension Health presented a reflective case study of the organizational challenges the company faces in the new healthcare environment. The presentation sparked a spirited discussion of a wide range of issues. Since then, I have given thought to how some of the conversations around the Ascension Health situation may have shifted had a *design thinking* lens been applied. As director of the Strategic Design Executive MBA at Philadelphia University, I am steeped in design thinking. I thought about Ascension Health's challenges in terms of ecosystems, as opportunities for emergent leadership, and as platforms for delivering more meaningful services to actual (versus perceived) end users. I temporarily set aside the constraints Ascension Health is facing and put myself in the place of a user of the company's services – as either an employee attempting to deliver on Ascension Health's mission or as a patient at one of its hospitals. I tried to imagine Ascension Health beyond what it is and rather what it could be. In this commentary, I explore the ways that Ascension Health's collaborative design process could be aided by integrating five concepts associated with the design thinking lens.

DESIGN THINKING

Design thinking is a problem-solving process borrowed from the field of design (Beckman & Barry, 2007; Brown, 2009; Kelley, 2001; Lockwood, 2009; Martin, 2009). It distills the frameworks and tools that designers use to create or improve an object – for example, a garment or furniture – and transfers that process over to the design of services, experiences, and sociotechnical systems such as organizations. When organizations embrace design thinking, their actors develop facility with problem definition, opportunity finding, and navigating uncertainty. Design thinking expands the capacity of who can innovate using the design process:

> *The process of design is not just for designers, but for anyone whose business it is to create and lead something... anyone whose job it is to imagine something that does not yet exist and then plot the path from imagination to existence (Nelson & Stolterman, 2012).*

The tools and methodologies that a design thinking approach emphasizes include user-experience prototyping, qualitative research, observation, improvisation, customer journey mapping, and evaluating mistakes (rather than hiding them). The field of organization design has tended to go the way of other traditional business disciplines, with a focus on

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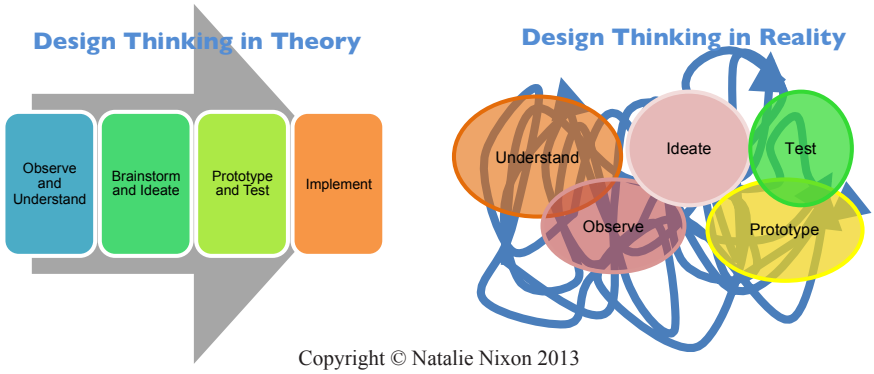
operational efficiency and hypothesis-driven scientific research. This may be part of an effort to be taken seriously in academe and to demonstrate that organization design is a rigorous field producing measurable outcomes. Organizations, however, consist of humans who are unpredictable, fallible, and inconsistent. As such, a human-centered approach such as design thinking helps us to better understand organizational dynamics and to embark on research from a perspective that will aid in the redesign of organizations for innovative outcomes.

Design thinking is an iterative, holistic problem-solving process. The two diagrams below represent design thinking in *theory* – a series of neat, linear steps moving through observing/understanding, brainstorming/ideation, prototyping/testing, and implementation – and design thinking in *practice* – the same steps embedded in structured chaos, much like the messiness of real life. There are five concepts in design thinking which could inform organization design: empathy, related worlds, prototyping, ethnography, and story. I will explore how each of these concepts could be applied to Ascension Health.



Empathy

Designers start with the question, What problem am I solving for the user? In a business context, this user-centered approach might seem a bit radical because rarely do businesses start with an empathetic stance. In the traditional paradigm, a business is beholden to its financial stakeholders to deliver a return on investment. Empathetic leadership, on the other hand, is user-centered and allows for emergent leadership among the staff. Users come from two directions: internally, they are the employees, the organization's actors; externally, they are the final consumers of the organization's product or service. A leader who adopts an empathetic stance starts by asking, How do my employees perceive their jobs and roles within the organization? followed by, How can I serve my employees by helping them to do their jobs well? The empathetic leader focuses on the needs of end users by deferring to mid-level and lower-level managers who better understand the context and are closest to those users.

The Ritz-Carlton Hotel Company is an example of a firm that operationalizes empathy and a user-centered approach throughout all levels of the organization. Staff members ranging from maids and doormen to engineers and the front-of-the-house managerial team are empowered to "wow" clients and customize service delivery in ways that have moved Ritz-Carlton beyond a hotel company to being a company that is in the business of delivering memories (Nixon & Rieple, 2010). Thus, as Ascension Health rethinks its organizational model, it might make sense for it to shift away from being in a transactions-based business to being in the relationship business and shaping its core value proposition as such. Developing an empathetic stance would actually be more "brand correct" given Ascension Health's historical mission to serve the poor and vulnerable. If Ascension Health developed fluid structures that allowed for emergent leadership and rewarded its staff (including both the physicians and the venture capitalists) for exploring and implementing user-centered approaches, then it would begin to cultivate an organization driven by empathy. Such an orientation would foster emergent leadership throughout the organization, where organizational actors are compelled to anticipate the needs of customers and develop creative solutions without fear of reprimand. Organizations which have fluid structures – those that allow for a dynamic of order and randomness – thrive the most in cultivating a culture of empathy (Nixon, 2012).

Related Worlds

Related worlds is having the analytical skill set to connect the dots between seemingly disparate realms. When attempting to innovate an organization's design, it is useful to go beyond the obvious and regular resources for insight and look into industries that might not typically be acknowledged as sources of inspiration. Ask, Where else are there similar user experiences and relationships of the type we are trying to develop? For example, Gawande (2012) has written about what hospitals can learn from the Cheesecake Factory restaurant to innovate their service delivery. His point is that the Cheesecake Factory manages to execute consistent food and service delivery in the midst of a chaotic kitchen environment, paralleling how work is done in hospital emergency rooms.

Similarly, researching examples of relationship-based organizations that successfully serve the needs of the poor might yield some applicable insights for Ascension Health. For example, Warby Parker is an eyewear company that bridges the gap between people and profits. Its social mission is "Buy a pair, give a pair." For every pair of eyeglasses sold, Warby Parker gives away a pair. So while the company views itself as a fashion firm, in 2011 it donated over 100,000 pairs of prescription eyeglasses. Tom's Shoes is another example. On one level, it is a social mission company which happens to sell shoes. This company has galvanized millions of people around the world to buy into health consciousness not just footwear. It leads with comfortable shoes, but ultimately purchases of Tom's shoes mean better access to education and jobs for the communities which crafted and manufactured the shoes. This is because a significant portion of profits goes back to the sourcing communities, thus boosting their local economy and helping them to improve their access to healthcare and education.

Another related worlds exercise would encourage Ascension Health to examine the business model of Zipcar whose value proposition is based less on low-priced rental cars than on a shared platform in which potentially usable cars are underutilized – for most of us, our cars operate below capacity for approximately 80 percent of the day (Gansky, 2011). A series of possibilities arises if Ascension Health were to analyze where in its system there are underutilized resources of physical space, human capital, and social capital, and consider how it might leverage those resources.

Prototyping

A prototype is a conceptual or mocked-up version of what *could* be. It should be imperfect, in rough draft form, and cause people to poke at it and ask questions that the organization would never arrive at by remaining within known confines and constraints. A prototype's purpose is to reveal mistakes, gaps in thinking, and inefficiencies. When a prototype is shown to potential users and they interact with it, all sorts of new insights may result. Typically, we think of prototypes in physical form – rough-hewn versions of potential garments, mobile devices, or buildings. However, services and experiences can also be prototyped. One example is a pop-up shop, where one might not only test a new product but also a new in-store experience or a new hospital service delivery. Another way of prototyping services is through role play. An organization's staff could video record a service scenario and ask potential users to respond to the recording. Another example: If Ascension Health prototyped a new healthcare service delivery by adapting a mobile food truck as a mock-up of a medical office, and drove it through the communities it serves, this could test a new service delivery that would later be implemented. Engaging in such a process might seem quirky at first but ultimately would be hugely symbolic for the way it would require Ascension Health to go to the people it serves. Such a "med-truck" would also be a cheaper way to test responses to new technology that doctors might adopt, or a new user experience of the waiting room, prior to investing millions of dollars in new hires or new market launches.

One of the most important outcomes of developing prototypes is to critically and constructively embrace failure and mistakes. Organizations that develop cultures where learning from mistakes is encouraged are well on their way to becoming organizations where trust is at the core of management. Once again, Ritz-Carlton is an example of a company whose organizational design epitomizes this. There are daily meetings for each department

where a moment in the agenda is reserved for employees to share mistakes and inefficiencies in an attempt to serve customers, thereby sharing their experiences with colleagues and engaging in collaborative problem-solving (Nixon, 2012). Ritz-Carlton has even built a reward system for employees who reveal mistakes and then problem solve around them. Such opportunities to embrace failures and learn from mistakes would be especially important to organizations like Ascension Health which operate in high-reliability environments (Roberts et al., 2005). When an organization accepts a high degree of variability in the execution of an idea, this removes the onus of "making perfection the enemy of good." Organizational actors at Ascension Health would be motivated to test new approaches and net more creative solutions and insights.

Ethnography

Ethnography, the study and systematic recording of human cultures, is a user-centered research methodology used by anthropologists and organizational researchers to identify latent needs that influence behavior (Denzin & Lincoln, 2005). Ethnographers may use a combination of techniques including direct observation, interviewing, and participant observation. They collect "deep" data and analyze this data using visual mapping techniques. Ethnography is valuable in studying organizational behavior because it goes beyond the data obtained through surveys, focus groups, and other superficial methods to gain insight into latent, unarticulated needs.

Organizations which value deep contextual inquiry develop longer timelines and larger budgets that may be more expensive in the short term but ultimately yield longer-lasting solutions. If Ascension Health were to adopt such approaches it would need to expand its hiring and management practices. For example, SAP, which uses design thinking concepts, has employed anthropologists on staff and is therefore able to stay ahead of competitors by tapping into a very different source of data than what is obtained from quantitative research methods. Ascension Health might consider expanding its organizational capacity by hiring ethnographic researchers who would frame different types of questions and provide alternative data to yield new insights regarding customer service, diversification, or resource allocation.

Story

Design thinking values story because story is a vehicle that connects the organization to the user in a meaningful way. The story mode in the organization gives a new understanding of the organic, spontaneous, and improvisational nature of experiential service design. Storytelling organizations allow for iteration in the firm's growth and development. Weick and Roberts (1993: 368) have extolled the virtue of organizational members developing storytelling skills because "stories organize know-how, tacit knowledge, nuance, sequence, multiple causation, means-end relations, and consequences into a memorable plot."

Story helps organizational actors understand how to navigate ambiguous situations and to know which qualities will be necessary in decision making, relationship building, and carrying out an activity (Fleming, 2001). Stories give a sense of Where are we? and Where are we headed? They are recursive in that they help organizations make sense of their own narrative. Boje (2008) has refined explanations of storytelling organizations by distinguishing between a narrative mode and a story mode of sense-making. Narrative is a centering force of order and control, linear in sequence, with one plot changing little over time. Narrative's challenge is that it does not reflect shifts in the environment or changes caused by innovation. It is static in nature. In contrast, where narrative is centripetal, story is centrifugal, unravelling coherence and asserting differences.

Ascension Health already has a compelling story where links to the Catholic Church reveal its inception as a mission-based organization. Unfortunately, the feedback loop between that mission and regular daily practices is sometimes stretched thin. Story is a tool that could integrate what is currently a fragmented platform at Ascension Health. Getting collective buy-in internally on the organization's story about being mission-driven and serving the poor and vulnerable gets diluted in the daily grind of meeting financial goals and building new

services and cost centers. Story could help Ascension Health's administrators and physicians to more meaningfully deliver their services. Both internal and external users want to understand, Who were the people who started Ascension Health? Why did they start such an organization? How does this relate to the work I do? For example, creating personas is one way that Ascension Health could develop cues for its organizational actors to reference the core story. Personas also are important for developing distinct customer psychographic hubs. In this way, Ascension Health could better connect the doctors on staff who are currently outsourced and help them to integrate more fully into the organization. In turn, patients would feel more integrated and have a compelling reason to continue using Ascension Health's services. Persona-building is the reason that Chanel, Disney World, Nike, and Proctor & Gamble are able to authenticate their service offerings to their core customers.

CONCLUSION

When holistically adopted by all tiers of an organization, the design thinking process is a helpful lens for organizational development. It is a catalyst for creativity and integrative approaches, and it challenges organizational actors to be self-reflective in ways that cultivate grit and meaningful connections to customers. Essentially, effectual rather than causal reasoning (Brooks, 2012) is developed, in which an improvisational stance exists due to the fluid structures that the organization designs for internal iteration and external execution. The design thinking perspective presents a useful framework that focuses on users and emphasizes prototyping as a means of adapting to a rapidly changing regulatory and market environment. Agility is key for Ascension Health, and the design thinking process is critical to that end.

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NATALIE W. NIXON

Associate Professor
Director, Strategic Design Executive MBA
Philadelphia University
E-mail: nixonn@philau.edu

MAKING KNOWLEDGE ACTIONABLE

THREE KEY TRANSLATION MOMENTS

JOHN R. AUSTIN

Abstract: Leaders regularly experience pressure to move innovation and change initiatives through their organizations. They face the challenge of transforming organizational changes and innovations from ideas into sustained behavior. In this commentary, I argue that successful implementation requires leaders to engage in a translation process that contains three key translation "moments". The challenges presented by these translation moments are magnified by the difficulty leaders often have in shifting from one moment to the next. Techniques for handling each translation moment are discussed.

Keywords: Organization design, actionable knowledge, strategic thinking, organizational change, innovation

The process of implementing new initiatives, including organizational design and change, is inherently an active translation process. Leaders do not simply apply design knowledge and make it actionable; they transform that knowledge via a translation process to make the knowledge useful for their situation. In the process of making knowledge actionable, the knowledge itself is transformed. In this commentary, I describe the characteristics of these translation "moments", and I introduce three specific translation moments which must be addressed if knowledge is to not only become actionable but also lead to sustainable organizational behaviors. The process used at Ascension Health to adjust to the complex and changing healthcare environment illustrates the value of considering these translation moments during a design process.

A translation framework poses a challenge to the conventional divide between idea generation and idea execution that is pervasive in theories of organization and management. A translation framework suggests you cannot separate knowledge generation from knowledge application (Czarniawska & Joerges, 1996). For knowledge to become accepted as actionable, it must be linked to the receiver's conception of what is relevant and useful.

The act of translation changes the idea. While this may seem obvious, many approaches to product and organization design, strategic planning, and innovation ignore the translation process or downplay its significance. The act of generating the idea is given priority. Making the idea actionable is simply viewed as a question of execution. However, the act of execution transforms the idea. Translation suggests that it is absurd to consider an initiative a good initiative without considering the context within which it will be executed. Requirements for execution become part of the idea creation process.

I describe three translation moments that leaders need to navigate as they work to make insights, ideas, and knowledge actionable within their organizations. These translation moments have different characteristics and require different skill sets, but what they all have in common is they involve translating a general idea into context-specific action. The first translation moment is the merging of an idea with one or more local institutional logics. The end result of this translation will either be a shifting of one existing mindset to another existing mindset or the creation of an entirely new mindset. The second translation moment is the conversion of organizationally specific knowledge into sustained behavioral change.

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The key transformation in this moment is between ideas and routines. The third translation moment is the application of an innovation, such as a new organization design, in a different context. The new context may be an adjacent context (e.g., applying a process change in a different department or region), or it may be an entirely new one (e.g., applying a process change in a structurally separate organization or country).

Making knowledge actionable and sustainable requires a design planning team to help the organization navigate all three translation moments. Most conceptual frameworks and facilitation techniques focus on only one of the translation moments, but fortunately there are separate techniques for handling each translation moment. A skilled practitioner is able to shift from technique to technique as the translation process unfolds. Key features of each of the translation moments are shown in Table 1.

Table 1. Features of Key Translation Moments

	First Moment: Creating a New Mindset	Second Moment: Transforming Ideas into Sustained Action	Third Moment: Shifting Contexts
Characteristics	Eureka moment Paradoxical thinking Post-moment clarity	Extended commitment of time and resources Conversations with stakeholders Flexible implementation	Current state assessment Unique perspective seeking Potential pain-point identification
Barriers to Overcome	Overconfidence Limited frames of reference Fear of failure Binary traps	Entrenched routines Lack of entrainment Conflicting interests	Confirmation bias Insular culture Idea championing
Techniques for Handling	Uncertainty tracking Scenario planning Creativity and innovation techniques	Influence and persuasion Stakeholder mapping Team building Project management	Situational assessment Interest mapping Project pre-mortem Actor pain-points
Main Challenge	Confronting dominant logics	Maintaining momentum over an extended period of time	Resisting overconfidence caused by success of previous implementation

FIRST TRANSLATION MOMENT: CREATING A NEW MINDSET

The first translation moment is one that is familiar to most of us. Many innovation and strategic planning tools are designed to address the first translation moment, the creation of a new or different mindset. This moment is often memorable and exciting to participants as they experience seeing something in a new way. This is the translation that creates Eureka moments or flashes of insight. The Eureka moment generates excitement and a sense of breakthrough. The moment itself often happens quickly, though it may be preceded by a rigorous and structured process. The work at creating this moment comes in making sure the right people are involved, having a process that challenges current mindsets, and devoting time to the critical conversations that need to occur in order to make a breakthrough possible. The shared experience creates a sense of momentum and enthusiasm that can motivate the group towards advocating the organization to adopt the new mindset.

The creation of a new mindset often involves paradox. Paradox is when contradictory yet interrelated elements exist simultaneously and persist over time (Lewis, 2000; Smith & Lewis, 2011). Paradoxical thinking involves holding two seemingly incompatible ideas at the same time and generating insight through their unexpected synthesis. It is through the tension between the ideas that the insight forms. The first translation moment enables a new framing of issues that may also include ways to resolve them.

Barriers to Overcome

In my work facilitating the first translation moment, I've observed several dynamics that can derail the process.

Overconfidence. Overconfidence is a bias that makes the examination of multiple perspectives not only difficult but personally threatening to the participant's self-identity. Overconfidence leads people to believe they know more than they really know, to downplay the possibility of failure, and to reject alternative perspectives as misguided (Lovallo & Kahneman, 1993). It is difficult for leaders to look for new mindsets when they are convinced that their current framing of a situation is correct. This becomes even more difficult if the leader has already invested his or her reputation in the previous choices that led to the current shared perspective (Arkes & Ayton, 1998). The curiosity needed to create a new mindset emerges from recognition that the team does not know everything it needs to know about the situation.

Limited frames of reference. Exposure to different frames is necessary to enable the translation process. Examining multiple frames can help a leader recognize which frames have the most value for the situation. Unfortunately, individuals are not always aware of their frames of reference. All frames have blind spots, and participants in the process need to actively seek out different perspectives if they are to recognize a different path forward (Bazerman & Tenbrunsel, 2011). Without a process for exploring multiple frames and recognizing the blind spots of their current frame, a design team will struggle to find the time or discipline needed to make this translation.

Fear of failure. Stepping outside of conventional mindsets comes with risks. As tempting as it is to say leaders need to be courageous and explore different mindsets, the reality is that such action can potentially put the individual's livelihood at risk. Advocating a new mindset invites public ownership of the idea. If the idea does not work, it will be easy to blame the advocate. When operating out of current mindsets, participants experience less personal risk. They are simply doing what is expected of them.

Binary traps. The binary trap is a well-known dynamic in decision science. It is the tendency to only see two options. For example, a common binary trap is to assume something is an either-or issue. Another binary trap is to view decisions with an "us vs. them" lens. Binary traps tend to reduce decision quality (Nutt, 1993) as well as short-circuit conversations about creative options. If individuals find themselves within the us vs. them dynamic, any attempt to break out of the conventional mindset (the "us" mindset) opens the individuals to the criticism that they are advocating the "them" mindset. This binary trap makes it difficult to even see alternate mindsets in the first place.

Techniques for Handling the First Translation Moment

Techniques that challenge managers to push beyond their existing mindset and confront the uncertainty in their environment can help structure this translation moment. Examining high-impact uncertainties in a structured manner is an excellent first step to break out of an existing mindset. The focus on uncertainties, rather than trends, can push a group to debate the unknown rather than confirm the known. This approach directly challenges overconfidence and opens up questions about data integrity. Scenario planning (Schoemaker, 1995) takes this process further and provides a means of triggering innovative perspectives and strategies. The speculative nature of scenario generation reduces participants' tendency to discount realistic but lower probability future states. Debating alternative scenarios and relevant data can stimulate the development of new locally relevant mindsets. Uncertainty analysis and scenarios can also inform the creation of strategy tables that link mindsets and specific initiatives. If the initiative is customer-based, blue ocean strategy (Kim & Mauborgne, 2004) can play a similar role as scenario planning. Blue ocean strategy forces participants to examine their firm's products and markets from a customer perspective. It can lead to a new mindset about the purpose of the business, value of products, or investment priorities.

Ascension Health's Ministry Positioning process illustrates how the first translation moment can set the tone for the next two translations. Ascension Health has successfully completed the first translation moment, and three things about its process were instrumental in setting the stage for, not just the first translation, but for the second and third ones as well. First, Ascension Health planners started with the assumption of difference between ministries rather than the assumption of similarity. This framed the task as one of designing multiple

solutions to fit the regional contexts rather than designing a single solution that would be adjusted at the edges. Second, Ascension Health has a vision to be a strong, vibrant Catholic health ministry in the United States which will lead the transformation of the healthcare industry. Such a vision is a powerful way to drive leaders to fight through the discomfort of confronting conventional frames. Third, the Ascension Health process started with "outside-in" planning techniques (scenario planning and options generation) which were explicitly linked to an evidence-based understanding of each health ministry. This planning approach helped the organization develop a mindset of creating customized strategies and organizations for heterogeneous regional environments.

SECOND TRANSLATION MOMENT: MOVING FROM IDEAS TO ACTION

The second translation moment is the transformation of new knowledge and ideas into sustained action. The manager experiences the second translation moment in a very different way than the first translation moment. Unlike the quick Eureka-type experience of a mindset shift, the movement of an idea to action requires a long-term commitment. It requires a continual infusion of energy, re-commitment to the work, extended project management, and the balancing of stakeholder interests.

The second translation requires patience, flexibility, and engagement with a wide range of people. An organization's work routines have developed over a lengthy period of time, and they cannot be changed easily or quickly. New routines need time to be designed, practiced, and institutionalized before this translation is complete (Feldman & Pentland, 2003; Howard-Grenville, 2005). The long-term nature of the second translation makes it problematic in organizations where results are expected immediately. In addition, because this translation occurs over an extended period of time, it is inevitable that the context itself shifts during the implementation process. A significant part of the translation process is matching new ideas with existing stakeholder interests and perspectives. Conversation and communication is the dominant activity during the second translation given its long-term, multi-stakeholder nature.

Barriers to Overcome

The second translation moment can be derailed during the transition period that occurs during a handoff to an implementation team. The energy generated during the first translation does not always carry over to the implementation team. Leaders of the change initiative may sense a loss of momentum because they underestimate the level of work needed to change behaviors. Failure of an initiative during the second translation can often be traced to one of three barriers.

Entrenched routines. The second translation moment is all about changing behavior. This means changing work routines. The more established the routines, the greater the risk the new design will be rejected. Also, previous experience with failed changes can create cynicism about the initiative and contribute to entrenched routines. The hard work of changing routines requires commitment to the idea, goal clarity, and continual supportive engagement with organization members.

Lack of entrainment. Entrainment refers to the alignment of time cycles within an organization (Ancona & Chong, 1996). Within any organization, there are time patterns that repeat themselves (e.g., quarterly financial reporting, annual performance reviews, 3-5 year strategic planning cycles). The second translation moment requires awareness of these entrainment cycles while working to translate the idea to fit the cycles. All too often, long-term design changes fall by the wayside as short-term pressures or misaligned reward systems create headwinds that the initiative is unable to overcome. Understanding the different types of work cycles and managing the tensions between them is a daily challenge for managers (Daugherty et al., 2013), and awareness of these cycles is crucial as leaders work within the second translation moment.

Conflicting interests. Aligning stakeholder interests is at the core of strategic change. The translation work involves finding ways to frame issues so that stakeholders understand the problems the organization is trying to solve. However, it can be the case that certain

stakeholder interests cannot be aligned. Some change frameworks imply that there is always a way around this barrier. In my experience, this is not always the case, and divergent interests simply make this translation moment intractable. Stakeholder planning prior to initiating action can catch this trap before significant resources are committed.

Techniques for Handling the Second Translation Moment

The inability to maintain momentum and focus are common process derailers during the second translation moment. Frameworks for change management and strategic execution offer guidance for how to put new design ideas into practice. Training in influence and persuasion, stakeholder mapping and engagement, team leadership, and project management all provide the types of capabilities that can enable managers to successfully complete this translation. Given the long-term nature of this translation moment, the management of stakeholders, the monitoring of member motivation and enthusiasm, and committed leadership are the driving forces. Tools that can focus managers on these needs are most valuable.

My interviews with change leaders across a range of organizations reveal that lack of appropriate expertise and poorly timed stakeholder engagements are frequent causes of second translation failure. Proactive use of team expertise assessments and stakeholder mapping/engagement tools can ease a team through this translation moment. Early use of the TAP team expertise tool (Task-Ability-Person), when combined with scheduled times to adjust team composition as the process evolves, can be invaluable to ensure that expertise is effectively deployed. Likewise, stakeholder-based change models can be effective when applied early in the process.

The second translation moment has been largely completed at Ascension Health through the work done with the four pilot ministries. Given the long-term nature of the change initiative, leaders in these four ministries will need to continue monitoring progress and adjusting actions, so it would be premature to say the second translation moment has been successfully navigated. Ascension Health's design of this initiative illustrates how to manage this translation moment. A phase to make explicit the investments, partnerships, or reorganizations necessary to develop each health ministry's healthcare delivery model was built into the initial project design. By including this phase prior to setting implementation schedules, Ascension Health avoided the trap of separating the idea generation and the implementation process. In addition, Ascension Health carefully selected the four pilot locations to maximize learning by identifying organizations facing different environments. It is often tempting to select pilot organizations based on convenience (e.g., near corporate offices), enthusiasm (e.g., leaders are on the design team), or perceived likelihood of success. Obviously, learning from such choices would be limited since the pilot organizations would not fully reflect the conditions faced by the other organizations. Ascension Health avoided this trap as well.

THIRD TRANSLATION MOMENT: SHIFTING CONTEXTS

The third translation moment, shifting contexts, comes when it is time to take a successfully implemented initiative and apply it to another part of the organization. The image that often comes to mind amongst managers is that of replicating. The goal is to replicate the success of the initiative in a new location. The image of replicating, however, may be part of the problem since shifting contexts is not a replication but a translation. The design idea that was transformed into action through the first and second translation moments may not be the same idea in a new context. In order for the third translation to be successful, the idea needs to be retranslated into a relevant concept for the new context.

Barriers to Overcome

The third translation can be derailed by the very success of the second translation. An initiative's success in a pilot, or in a limited part of the organization, can lead leaders to expect similar experiences when the initiative is transferred to other contexts. This risk can be amplified if the implementation team selected a pilot context specifically because it

would increase the odds of changes being successful. When shifting and scaling an initiative, leaders must vigilantly monitor the process in order to recognize barriers that are unique to the new context.

Confirmation bias. Research has shown that individuals actively prioritize information that suggests they are correct (Hart et al., 2009). Confirmation bias prompts people to look for evidence that their plan will work and discount evidence that their plan will not work. When it comes to applying new ideas and initiatives in a new context, the confirmation bias research warns us that we will look for the similarities between the contexts and use those as an argument that the idea will work. At the same time, we may discount differences between the contexts. This can lead to an almost automatic application of the idea and subsequent surprise when the idea does not work as well in the new context. Because of this tendency, if the initiative fails in the new context it is tempting to blame the execution. Since the idea worked in the first context, execution is an easy scapegoat.

An insular culture. Good global marketers know that it is a mistake to try to sell a product designed for one market in another market without attempting to understand the characteristics of the customers in the new market (Day, 2010). In much the same way, shifting a design idea to a new part of an organization requires an understanding of the characteristics of that part of the organization. Unfortunately, structural and process changes are often designed within the central corporate culture of an organization and are imposed on the peripheral units, which may view such changes as "externally" conceived. Questioning the initiative or challenging its implementation may be viewed as resistance to change and not taken seriously (Piderit, 2000).

Idea championing. Much as the sudden transformation that occurs during the first translation can lead to unrealistic expectations of the time needed for the second translation, the need for an idea champion to maintain momentum and energy throughout the second translation can become an impediment during the third translation. The success experienced by an idea champion in transforming ideas into action can lead to overconfidence that makes it difficult for the champion to see potential blind spots when the context is shifted. The previous success at overcoming barriers can lead to a misinterpretation of the idea's fit with the new context. Also, Nutt (2005) found that ideas that were championed by an individual were faster to decision but less likely to be implemented than were initiatives that were decided through a shared bargaining process. When shifting an initiative to a new context, the previous success may limit the use of bargaining as part of the process, and thus the engagement of stakeholders may not be as rigorous. Once again, misalignment may be seen as resistance to change.

Techniques for Handling the Third Translation Moment

Common process derailers of the third translation moment include inappropriate application of learning from the pilot and overconfidence tied to the pilot's success. Revisiting tools used as part of the earlier translation moments for the given initiative can help leaders focus on how this context is different. These tools may include re-prioritizing uncertainties, revisiting stakeholder maps, and examining needed expertise. The project pre-mortem exercise (Klein, 2007) is another tool that works well to identify the unique needs of the context. In the pre-mortem process, the team assumes the project was a failure and considers what could have caused the failure. The pre-mortem conversation identifies ways the current design plan may not be aligned with the reality of the new context. Finally, applying techniques for customer-centricity and understanding of customer pain-points can be used in a similar way when examining how things will work internally within an organization. The aim of these customer-centric tools is to understand how people actually behave, how their expectations and behaviors are different from others, and what it would take to motivate them to engage with the initiative.

The third translation moment is underway at Ascension Health. The company's focus on starting with measureable data and benchmarks for each new context places the implementation teams in a good position to succeed as the initiative is rolled out across all 26 regional healthcare organizations. The main risks Ascension Health must now be aware of

are (a) succumbing to the temptation to replicate actions taken at a previous ministry rather than following the roadmap of data collection and verification of current state and needs; (b) relying too heavily on the experience of the champions of the pilot program such that new implementation teams grow overconfident or learn the wrong lessons from the pilots; and (c) accepting the outcomes of the initial scenario and option exercises as set in stone rather than reviewing them and asking how the world has changed since the scenarios were created.

IMPLICATIONS

Throughout this commentary, I have noted the actions managers can take to enable successful navigation of the three translation moments. To these I add the broader implication of anticipating the challenges that occur due to the very different characteristics of the three translations. Including key stakeholders from across the organization in an effort to create a new organization-specific mindset, as Ascension Health did, can smooth the transitions and inevitable challenges that will confront leaders during the later translation moments. Academic researchers can also use the translation framework to make the knowledge they create more actionable. Below are three specific recommendations I offer for researchers:

1. *Do research on translation moments*. The question of how managers translate between general and local mindsets is important to answer in order to learn more about how knowledge becomes actionable. The dynamics of these translation moments are not well understood. Identifying patterns is problematic when the focus of attention is on how knowledge becomes contextualized. Many approaches to research privilege general knowledge. This should be expected since the primary goal of much academic research is generalizable insight and frameworks. A good starting point is asking the question of how and why the translation is done in the first place. Acknowledging that this translation takes place is a good first step. Attempts to generalize without recognizing that managers modify frameworks each time they use them can lead to spurious results.

As one of example of this, consider the difference between those who write about organizational change and those who work to implement organizational change. The most successful change practitioners recognize that no existing model completely fits the situation they are working in. The change manager's job is to modify models of change to make them fit the situation. Many academic approaches to change seek to describe and validate a framework of change (Austin & Bartunek, 2003). It is difficult if not impossible to develop strong empirical evidence that a change framework works in practice because the change framework itself will be subtly, or not so subtly, modified each time it is implemented. Thus, we are left with empirical studies of change that are essentially a series of case studies. Perhaps a more valuable area of scholarly inquiry would seek to understand how practitioners translate the models rather than testing the models themselves.

2. *Emphasize holistic solutions*. Each of the three translation moments can be successfully navigated using well-developed and proven facilitation techniques. Unfortunately, each of these techniques comes from a different area of management education. The first translation moment is addressed using outside-in strategy tools, innovation frameworks, decision-making approaches, and critical thinking. The second translation moment is addressed using the tools of organizational change, negotiation and persuasion, and large-scale project management. The third translation moment is addressed using the tools of situational awareness, customer-centricity, and external issue framing. Leadership development programs that are designed to bring together capabilities from the fields of strategy, organizational development and change, negotiation and decision making, and marketing strategy can effectively encourage managers to recognize the need for a wide range of skills in the design/redesign process. Efforts to bring these skills together into coherent leadership training could potentially alleviate some of the challenges managers experience when shifting from one translation moment to the next.

3. *Understand your own mindset*. Researchers, just like managers, operate from a dominant mindset. The work of the first translation moment is to break out of an existing mindset in order to create a new mindset. Researchers are trained to look at problems from different angles, but few ever carefully examine their own basic mindset. Doing so could help identify

blind spots, challenge assumptions, or understand a prevailing managerial mindset in a particular organization. Such active reflection could lead to new research directions. Current mindsets can be confronted and questioned in order to generate truly unique insights. Though we teach critical thinking, we sometimes forget that we are prone to the same limiting frames that hinder managerial success.

CONCLUSION

These three translation moments – creating a new mindset, transforming ideas into action, and shifting contexts and scaling an idea – are necessary for innovation and organizational change to become sustainable within an organization. Because the three translation moments are so different in character, completion of one moment does not necessarily make completion of the next moment easier. In fact, it may be the opposite due to risks of overconfidence and momentum loss. The Ascension Health case illustrates the importance of designing a change process in a manner that accounts for all three translation moments. By carefully considering going beyond existing mindsets, selecting the right pilots, and gathering situational data during shifts in context, Ascension Health has designed a process that should help its change leaders effectively traverse these three translation moments.

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JOHN R. AUSTIN

Principal
Decision Strategies International
E-mail: john.austin814@gmail.com

HOW CAN WE CREATE COLLABORATIVE DESIGN KNOWLEDGE IN POLITICIZED CONTEXTS?

JONE L. PEARCE

Abstract: This commentary notes that the authors of the Special Issue propose that organization design knowledge will be more actionable if it is created in collaboration with the organization's members. I draw attention to a risk in the co-creation of design knowledge: increasing the politicization of the already politically fraught process of organizational design. The reasons why collaborative design-knowledge creation may increase politicking are discussed, and ideas for managing it are suggested.

Keywords: Organization design, organizational politics, ambiguity, actionable knowledge, collaboration

How do we make organization design knowledge actionable? The articles in this Special Issue address that challenge by emphasizing that those seeking to take action on organizational design and redesign need to discover and generate more accurate information in collaboration with the focal organization's members. John Austin says that ideas and knowledge become actionable through a collaborative translation process that fits them to the local context. Eric Engler, Stephen Jones, and Andrew Van de Ven emphasize the need for collaboration in design decisions in the extraordinarily complex challenges facing healthcare organizations. They describe Ascension Health as just one example of the myriad markets, stakeholder demands, and uncertainties facing large organizations today. Traditional assumptions about technological and market uncertainty are difficult to apply when organizations use many technologies, operate in many distinct markets, and have to cope with disruptive changes that no one fully understands. In the face of such complexity, many organizations feel like all they can do is act, gather feedback and adjust, and hope that the adjustments will happen quickly enough for the organization to survive.

However, I am not sure that a lack of situation-specific knowledge is the most important challenge currently facing those who seek to redesign and change their organizations. Rather, I want to suggest that an even bigger challenge is the political barriers that must be overcome in order to achieve effective organizational change and adaptation. If I am correct, then this critical challenge to actionable design knowledge is made more difficult to overcome when design experts are advised to privilege local, contextualized information over their own expert design knowledge.

Alan Meyer provides an excellent summary of the shift in scholarly attention to organization design from the abstract early normative theories to the present concern with developing highly specific knowledge about a particular organization's circumstances. Certainly, organization design scholars began by developing abstract general theories. Recall that Fayol's (1916) principles of management made no provision for task or industrial context, and even the contingency theories pioneered by Woodward (1965) and Lawrence and Lorsch (1967) contained difficult-to-measure contingencies such as technology and environmental uncertainty. As Meyer notes, "My assessment is that design-oriented organizational scholars

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are in the process of shifting from one integrated set of assumptions to another somewhat more amorphous set of assumptions." The field of organization design seems to be shifting from a normative, rational model of action to one that is focused on creating situation-specific knowledge through feedback from experience.

I have no doubt that these authors are correct in their claims that collaboration will generate more useful information that can make design knowledge more actionable for a particular organization's situation and resources. My concern is that I am not sure the most important barrier to making design knowledge actionable is a lack of knowledge about what is appropriate for a particular organization's circumstances. Rather, I believe the biggest challenge in creating effective designs is that some organization members will lose and some will gain from any proposed organizational change. In other words, the process of organization design and redesign is contentious and politicized (Pfeffer, 1981). Organizational politicking increases ambiguity, and ambiguity provides more space for participants to pursue their preferred outcomes. If design experts suggest that participants' own views are necessary to build actionable knowledge this creates more ambiguity, and it may increase politicking relative to the search for good designs. The creation of knowledge in collaboration with organization members increases the potential of turf warriors to distort and even block design initiatives. Rational normative models of organizational design may not be more accurate, but they may well be more useful in helping organizations adapt their designs to changing environmental conditions.

While knowledge created in collaboration with organization members will be more fine-grained and localized, the collaborative process itself gives organization members the opportunity to pursue their own self-interests. That organizational changes are contentious and politicized has long been known. Cohen, March, and Olsen's (1972) famous "garbage can model" of change proposed that astute managers will seize the opportunity to argue that their own preferred organizational structure is an exemplar of what the organization design seeks to accomplish. Reorganizations are the perfect issue for various organization members to lobby for their preferred solutions. Different designs empower different people, and we can expect that organization members will use all of the persuasive powers, threats, bargains, facts, and figures they can muster to influence the design of their organizations.

If we assume that design changes are politicized, contentious events, then local managers cannot be assumed to be impartial, disinterested bearers of design information. Their careers and jobs may be at stake in a redesign process, and it is unrealistic to expect them to behave objectively when working collaboratively on new or alternative designs. When design-oriented organizational scholars shift from an integrated set of assumptions to more amorphous ones they expect to modify in collaboration with local managers, this alters the political environment in which actual design work is performed. If design knowledge is to be co-created, and local managers are told they will be full partners in the co-creation process, design experts have ceded their expert power (Mintzberg, 1983). If organizations cannot fully benefit from more than one hundred years of accumulated design knowledge, will they be able to adapt to today's complex, dynamic environments?

I am not proposing that organization design experts with their evidence-based knowledge should dictate design solutions to others. Nor am I suggesting that organization members should not participate in the process of knowledge interpretation and application. I simply wish to point out that organizational politics is part of the process of collaboration. I suspect there already is a lot of knowledge about how to manage politicking during design development and implementation, and that sharing this knowledge would be useful to those seeking to make design knowledge more actionable. For example, local collaborators could address political issues in an open forum, and all participants could have a chance to listen to those who would argue for an alternative. Relevant, specific stories and examples about managing politicking during design interventions would be invaluable. Even better would be systematic research on how to manage collaborative organizational design when the participants have conflicting goals.

My commentary is intended to call greater attention to the political context in which real organizations are designed. Effective change can occur if all parties recognize that organization members have a real stake in the outcome and may have conflicting goals. To

produce actionable design knowledge, we need a better understanding of how to collaborate in politicized environments.

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JONE L. PEARCE

Dean's Professor of Leadership
University of California, Irvine and
London School of Economics and Political Science
E-mail: jlpearce@uci.edu

HOW DECISIONS CAN BE ORGANIZED – AND WHY IT MATTERS

MICHAEL CHRISTENSEN • THORBJØRN KNUDSEN

Abstract: Recent theoretical advances allow organizational designers and managers to better understand how decision processes can be improved. These advances allow managers to address a number of critical questions about the structure and process of decision making, issues that are relevant for any kind of organization be it social, political, or economic. Can we add another employee somewhere in the decision process to increase economic performance? Can we add or eliminate a channel of communication to raise the quality of decisions? What level of skill is worth paying for when we hire a decision maker? Is it a good idea to push decision makers beyond their current capacity if doing so increases their error rate by five percent? Where does the injection of inexperienced decision makers hurt the least? We describe an organizational design approach that provides answers to such questions, and we offer specific guidelines that managers can use to improve decision making in their organizations.

Keywords: Organization design, decision making, organizational performance, decision aggregation, decision delegation, decision rights, decision evaluation

Members of organizations must repeatedly make strategic and tactical decisions, and occasionally mistakes happen. The processes by which decisions are made and implemented are clear and well-documented in some environments, but in other environments decision processes are less obvious. Regardless of whether the process is deliberately structured or has a more emergent character, the mechanics of organizational decision processes have a significant effect on the overall quality of the decisions that managers make. This observation naturally raises interest in how organizational decisions may be improved.

The purpose of this article is to present recent advances (Christensen & Knudsen, 2010) that allow organizational designers to better understand how decision processes can be improved. Our approach builds on the information processing perspective in economics (Marschak & Radner, 1972) and engineering (Moore & Shannon, 1956a; 1956b). We directly extend prior work by Sah and Stiglitz (1985, 1986) to show how the organization of decision making matters for the overall performance of the organization. Analysis of decision flows – their properties and possible weaknesses – is the core of our approach. We analyze the sequential flows of decisions through the organization as it evaluates the quality of investing in alternative projects and eventually decides to accept or reject them. The decisions are made by delegating decision rights to agents whose abilities are incorporated in a screening function that maps the project information (indicators of project quality) onto a distribution of outcomes.

In the following sections, we first describe, and illustrate with examples, how organizational decisions can be visually represented. Second, we characterize the abilities of individual human actors, as we explain how sources of error may compromise performance even if actions are well intended. We draw on experiments with real human subjects to situate our framework in a realistic context. Third, we show how fundamental properties of organizational decisions can be derived from visual representations. This provides a method

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for extracting performance measures that can be used as a basis for addressing important questions regarding organizational design. In conclusion, we offer advice for practitioners based on our approach. The predictions derived from our theoretical framework, combined with empirics relating to the nature of screening abilities, offer a set of guidelines for the organizational designer. Those guidelines include a new method to analyze organizational performance comprised of four steps: visualize, enumerate, aggregate, and compare.

VISUALIZATION OF ORGANIZATIONAL DECISIONS

To grasp the basic elements of our approach, it is helpful to consider the stylized approach of Sah and Stiglitz (1986). In their approach, a decision-making organization is referred to as an e*valuation structure*, and the task of such an organization is to accept or reject a set of proposed projects according to a given criterion. In evaluation structures, *individual agents* screen each project and the organization then aggregates their opinions to form a final decision (verdict) whether to accept or reject the proposed project. The concept of a *project* is very broad. It can include investing in a joint venture, the development of a new product, hiring new employees, or choosing a particular medical treatment for an ailing patient.

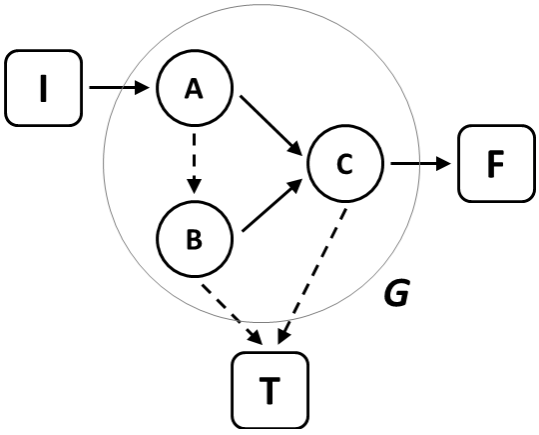

Fig. 1. Example of an evaluation structure with three agents

The flow of decisions in an organization can be visually represented as a graph of nodes and edges. For example, consider the decision-making organization shown as the circle G in Figure 1. The organization has three agents, denoted A, B, and C. Projects arrive at the organization from an input source (I), and they flow through the organization until they are either terminated (T) or followed through (F). Termination is the act of forgoing the project while following through is the act of investing resources in the project. The solid lines in Figure 1 symbolize acceptance of a project; the dashed lines symbolize rejection. The example shown could be a business unit prospecting for the acquisition of patents, a credit evaluation team in a bank, or an academic journal's board of editors and reviewers who consider accepting or rejecting a submitted paper. Agent A represents the initial reviewer or dispatcher; B the specialist or second opinion; and C the verifier or controller. Consider the case of deciding whether to acquire a patent or provide a bank loan. The first decision maker is Allen (A), who is only given the right to accept certain types of easily identifiable proposals aligned with the core business. If the project falls outside the domain in which he has decision rights, or if he is in doubt, then he must pass the project to Bill (B), who is a specialist in assessing unusual or problematic cases. No matter whether it is Allen or Bill who accepts the project, it must still move on to Carol (C), who checks that procedures have been properly followed, checks for project consistency with the core business, runs a background check, and finally approves (or rejects) the project for implementation. Note how Allen and Carol help to balance the workload as they aid the specialist Bill in focusing on time-consuming analyses on a smaller and more difficult set of projects. Note also the delegation of decision rights in this organization. No agent can singlehandedly accept a project. Either A and C or B and C must agree to implement the project. Both B and C have the power to reject a project on behalf of the organization, although in B's case only if asked by A. In contrast, A does not

have rejection powers.

The outcome of this exercise (Figure 1) is a visual representation of the roles, project flows, and decision modes in this organization (evaluation structure). Once such a representation has been made, the abilities of the individual human actors must be considered.

AGENTS AND THEIR ABILITIES

Human agents sometimes fail at making good decisions. We use the term agent to characterize individual human actors as well as groups or entire departments embedded in the organization. Such agents may fail because:

1. The task environment is noisy – that is, the outcome of the project is uncertain.
2. The agent is noisy – that is, his or her behavior is not consistent.
3. The agent is biased – that is, particular alternatives are favored by the agent over equally valid alternatives.

In noisy task environments, a common approach is to simplify the decision process by selecting projects that are perceived to clearly produce positive earnings in terms of expected net economic value. If the underlying project distribution contains a long tail of projects with rare but unbearable consequences, then a safety margin must be included. This would be the case for critical decisions in nuclear power plants and other high-reliability organizations.

Agents may be noisy and exhibit inconsistent behavior for several reasons. A composite agent consisting of a specialized team of individual actors – each having different preferences, motives, or abilities – may dispatch incoming projects to its members on an availability basis. The outcome of the decision will then depend on the random appointment of actors engaged in the assessment. Random behavior can also be an inherent property of individual human actors. In the weak form, the individual may fail to discriminate between proposals of minor quality differences with consequences to bear for the marginally beneficial projects. In the strong form, the individual may fail to make consistent decisions regardless of the quality of the proposals.

In addition to noise in evaluation processes, cognitive biases are potential sources of error in decision processes. A biased agent will tend to prefer particular alternatives over equally valid alternatives. Biases commonly occur because of motivational problems associated with poorly aligned incentives. Examples include favoritism towards some types of projects, personal prestige, and obsession. Other biases appear when human agents are challenged with creating mental representations from complex data and/or abstracting from irrelevant information. In contrast to the noise of the environment, it is important to note that biases are internal to the organization. They are not random, but rather they systematically affect the extent to which the agent satisfies the organization's objectives.

SCREENING FUNCTIONS

The abilities of individual agents are captured by an agent *screening function*. A screening function describes the relation between the observable properties of a project, x, and the probability that the agent will accept such a project, $f(x)$. The concept of an agent screening function and the mathematical mapping it represents is grounded in empirical evidence. The agent screening function can be measured by submitting agents to laboratory tests or by recording, observing, and analyzing their daily work. The agent's task is to accept (reject) projects with a quality above (below) a given reservation level (which can be set to zero). The perfect evaluator never fails to meet the reservation level, resulting in a screening function that is a step function: the probability of accepting "bad" projects is zero, and "good" projects are accepted with a probability of one. The level of imperfection in agents can therefore be measured as the degree of deviation from this desired behavior. With perfect agents, the organization is, of course, superfluous. Yet, drawing on case studies and laboratory experiments, agent perfection is not the usual case.

In a case study (Christensen & Knudsen, 2009) of credit evaluation in a bank, 209 "fake" credit applications (each with a face value of approximately $1 million) were constructed from the bank's recent history and fed through the bank's credit evaluation process. The objective of the bank was to accept as many applications as possible while keeping the

default rate below a certain threshold (0.5 percent). The fake applications had a mixture of 12 commonly used indicators of quality and (historically) well-known quality distributions. This setup was designed so that the screening functions from 40 randomly chosen employees could be extracted. These screening functions had a sigmoid shape and deviated notably from the perfect screening function that defined the ideal of perfect credit assessment. The shape of these empirical screening functions demonstrated that credit evaluation is a very challenging task associated with a strong form of bounded rationality. No matter how attractive the proposed project (i.e., probability of default lower than 0.5 percent), the project could still be rejected (and vice versa at the other end of the spectrum). As a consequence, these agents were positioned in a conservative evaluation structure (roughly a four-level hierarchy) favoring rejection for all but a small portion of the "best-looking" applications. While this approach eliminates a lot of Type II errors (acceptance of a bad project), it does so at the expense of increasing the frequency of Type I errors (rejection of a good project), thereby robbing the bank of business opportunities.

A laboratory experiment, performed at Lab@SDU on students from the University of Southern Denmark, extracted screening functions from 36 persons of mixed gender, nationality, and line of academic study.[1] The task was to categorize visual displays of simple geometric figures characterized by two independent parameters (position and size). The figures were randomly generated and defined as good or bad according to a simple geometric rule. The screening functions that were extracted from the subjects had a sigmoid shape. The shape of these empirical screening functions demonstrated that categorization of the chosen geometric figures is a moderately difficult task associated with a weak form of bounded rationality. Only projects of marginal value were subject to very noisy decisions, while projects with marked positive (negative) value were accepted (rejected) with a probability close to one.

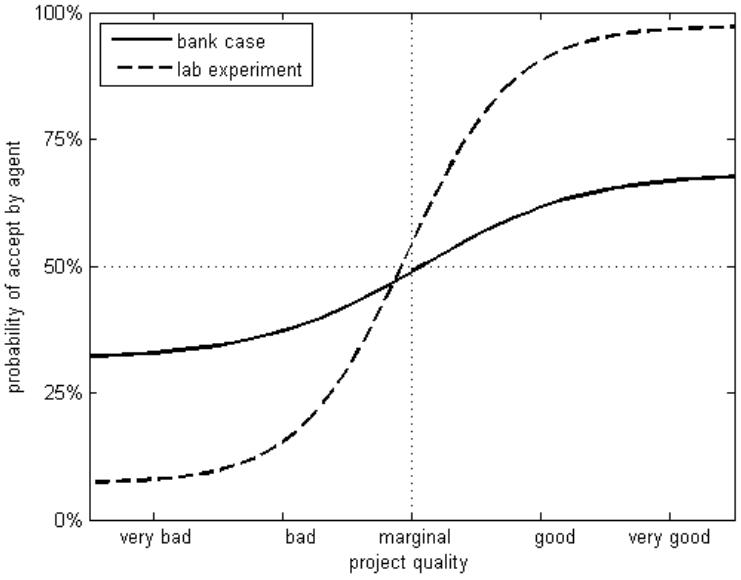

Fig. 2. Average agent screening functions

Figure 2 illustrates the average agent screening functions in the above two cases. They both fit a generic sigmoid curve (known as the hyperbolic tangent) with very little unexplained variance (< 0.5 percent). While neither function displays any significant bias, both exhibit the notable difficulty with which human agents assess quality in the "gray" area where project quality is marginally positive or negative.

1 The experiments, conducted in collaboration with Massimo Warglien of the University of Venice, are part of a larger research project "COPE – Change, Organizational Plasticity, and Evolution" under the Sapere Aude program of the Danish Council for Independent Research.

FROM AGENTS TO ORGANIZATION

The properties of the organization are not just the sum of the properties of its members. The emergence of properties at the macro level of organized departments, business units, and enterprises is determined not only by the micro level properties of the individual agents. The exact network that connects organizational units, especially the delegation of decision rights on behalf of the organization, plays a crucial role in determining the overall screening function of the organization, the time required to make a decision, the costs of remunerating employees for making decisions, and more. Considering all the factors that influence the organizational decision process, it appears that organization design is perhaps even more important than the abilities of the employees as a determinant of the overall success or failure of the enterprise. Indeed, the work of Christensen and Knudsen (2010) shows that under certain sets of conditions (e.g., that agents are not entirely incapable), arbitrarily accurate decisions may be obtained by fine-tuning the organization. This result leaves only three excuses for making poor decisions in an organization: (1) complete lack of knowledge in the problem domain, (2) the cost of the decision process, and (3) poor organizational design. The critical issue is how different organizational forms aggregate micro-level properties, such as individual abilities, into macro-level properties, such as error rates, risk, and profitability. The generic method for extracting the macro properties starts with the previously created visualization of the evaluation structure (Figure 1) and proceeds to an *enumeration* and *aggregation* scheme.

First, enumerate all possible paths through the network. Each path must represent who is involved along the path, the exact sequence of accepts/rejects, and the ultimate decision regarding the project. This procedure creates a valid representation of the decision structure (or network) and the flows of projects through this structure. Second, develop a representation of the aggregate screening function of the entire decision structure. This is done in the following way. Under the assumption that the agents are (conditionally) independent, produce a symbolic representation of the probability that each path will realize (i.e., a project will flow to the end of the path). For every agent Z that accepts the project along the path, inject the agent screening as a factor, fZ, in the probability of the path, and for every agent Z that rejects the project along the path, inject a factor, 1-fZ, in the probability of the path. Carrying out the above procedure for the example in Figure 1 gives the results shown in Table 1. The enumeration of decision paths through the organization reveals five possible ways in which a project can be realized. Each path is listed in Table 1 along with the probability that a project will be realized through it. The plus/minus superscripts on the agent labels indicate accept and reject, respectively. The aggregate organizational properties regarding the screening process can be calculated from the expressions in Table 1.

Table 1. Decision paths through the organization derived from Figure 1

Destination of Path	Path Label	Probability	Evaluations
F (follow through, acceptance)	A^+C^+	$f_A f_C$	2
	$A^-B^+C^+$	$(1-f_A) f_B f_C$	3
T (termination, rejection)	A^+C^-	$f_A (1-f_C)$	2
	$A^-B^+C^-$	$(1-f_A) f_B (1-f_C)$	3
	A^-B^-	$(1-f_A) (1-f_B)$	2

The probability that the organization as a whole will accept a project and thereby commit to its implementation and consequences is denoted the *graph screening function*. It is derived by weighting the indicator function for final acceptance of each path (1 if ending at F, 0 if ending at T) with the probability for the same path to realize (i.e., it is the sum of the two first paths in Table 1). The graph screening function represents the aggregate decision quality of the entire organization. It is important because it can help achieve desired improvements by a comparative analysis of the status quo and any changes relating to the abilities of employees, decision rights, and organizational redesign.

Another example of organizational properties is the number of evaluations required to reach a decision regardless of outcome, since this quantity is an indicator of the time and cost

of making the decision. This is obtained by weighting the number of agents on the path with the probabilities of the paths.

A serious objection to the above compounding method is that the agent screenings may depend on the position or role of the agent. Employees may engage in "games", the bias of satisfying personal over organizational objectives. Evidence from case studies and laboratory experiments indicates, however, that alignment of incentives can be achieved when the task environment is fairly stable. Add the fact that limited abilities (or limited information) on the part of the agent can also impact the agent's ability to play such games. Considering these empirical factors, it seems rather unlikely that (slightly) misaligned incentives will completely negate the effects of the organization. Unfortunately, however, we know comparatively little about the adaptive behavior of agents engaged in decision processes in changing environments. We will return to the matter of "changing environments" in the section on guidelines for practitioners.

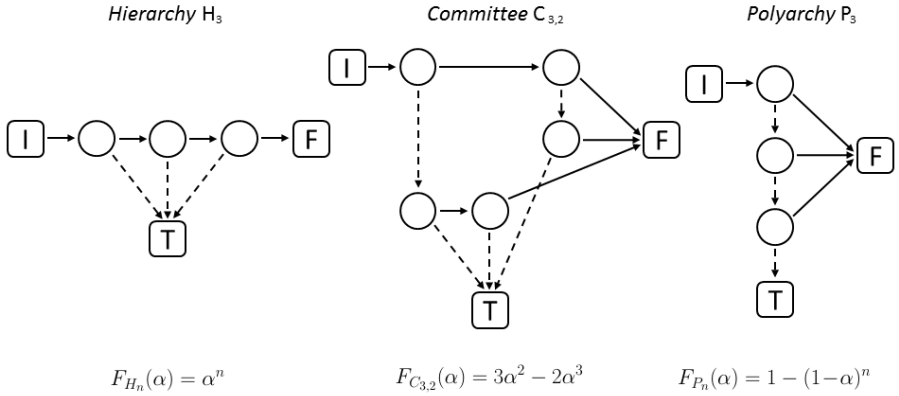

Fig. 3. A hierarchy, a majority rule committee, and a polyarchy

When agents, for all practical purposes, are identical or homogenous, the expression of the graph screening function can be considerably simplified. For example, this would be the case when employees participate in job rotation or for other reasons have similar experience. In that case, all agents are treated as if they have an identical screening function, f(x). The graph screening function then reduces to a polynomial of the common agent screening function, $\alpha=f(x)$. As an example, the organization G of Figure 1 has a *reduced* graph screening function, $FG(\alpha)=\alpha^2(2-\alpha)$. The reduced graph screening should be compared to the agent screening $F_A(\alpha)=\alpha$ of the average agent A. If $F_G<F_A$ for $\alpha<\alpha_0$, the value of the agent screen at the reservation level (e.g. zero quality), then the organization G makes fewer Type II errors than the individual. Alternatively, if $F_G>F_A$ for $\alpha>\alpha_0$, then the organization makes fewer Type I errors. The decision structures that serve as fundamental building blocks are illustrated in Figure 3, along with their reduced screening polynomial. The structure on the left is a hierarchy with three members (Sah & Stiglitz, 1985, 1986); the structure on the right is a polyarchy with three members (Sah & Stiglitz, 1985, 1986); and in the middle is the smallest symmetric organization that is more discriminating than the single agent (denoted $C_{3,2}$). The decision structure shown in the middle of Figure 3 is a stylized representation of the three-member committee of consensus two (i.e., if at least two out of three members agree, their decision is carried). It is the most discriminating structure that applies no more than three evaluations for each decision, and it plays a special role because it always increases the discriminating ability of decision teams. The hierarchy is the most rejecting structure (reducing Type II errors at the expense of increasing Type I errors) with maximal evaluation count of three. The polyarchy is the most accepting structure (reducing Type I errors at the expense of increasing Type II errors) with maximal evaluation count of three.

ORGANIZING TO COMPENSATE FOR INDIVIDUAL MISTAKES

Organizations can be designed to remove some consequences of the fallibility of its members, but what are the limits of this approach? Just how much of the individual fallibility can be countered by good organization design? According to Christensen and Knudsen (2010), organization design can substantially counter individual fallibility, but the cost is an increasingly elaborate decision process. Whether the decision structure under consideration is to be responsible for purchasing equipment, hiring employees, making acquisitions, forging alliances, or even for (re)designing the organization, it is paramount that the designer balances error rates against the costs of increasing organizational performance. Which decision makers should be involved? How should they communicate? How should the decision flow be structured? How should decision rights be delegated? Again, the work of Christensen and Knudsen (2010) provides constructive approaches to counter different types of mistakes made by members of the organization. Polyarchies and hierarchies, and networks composed of these structures, can potentially remove any inherent biases that appear in individual screening functions. The special structure $C_{3,2}$ can be used to increase overall discriminating ability and reduce the stochastic behavior of the decision structure. And, by nesting combinations of the various structures within each other, it is possible to simultaneously reduce both Type I and Type II errors to an arbitrary level.

The specific choice of a decision-making structure depends on the screening abilities of organization members, the distribution of projects, and the value of projects. Let us illustrate by revisiting the bank example. The empirical agent screening function is plotted in Figure 4 along with the extremely conservative four-member hierarchy that this bank used to assess credit applications. As indicated in Figure 4, the agents have a fairly low ability to discriminate (i.e., the slope of the agent screening function around the mid-point is not very steep). The agents are also noisy (i.e., they accept one-third of the most risky loan applications and reject one-third of the most promising ones). The bank's choice of a hierarchical structure (H_4) is a testimony to the importance of avoiding risky loans in the form of Type II errors.

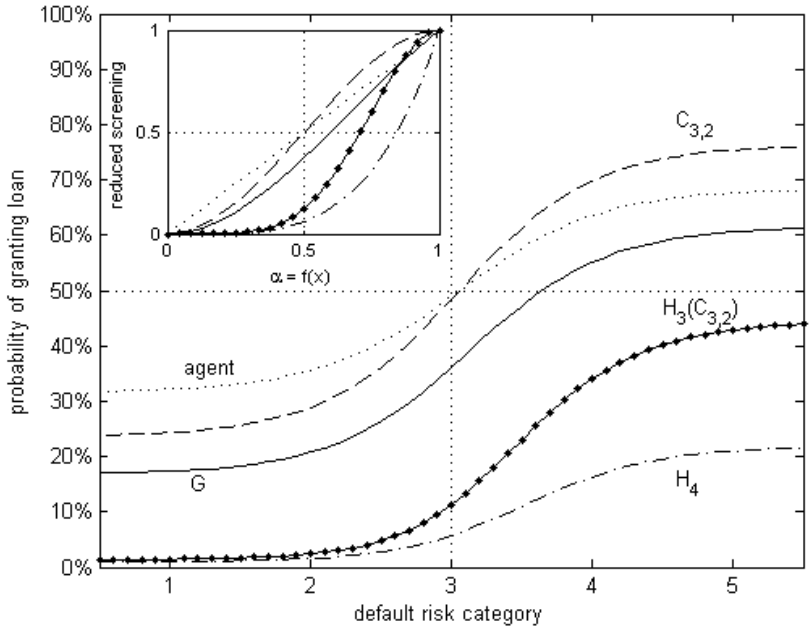

Fig. 4. Agent and organization screening abilities from the bank case

An organization designer might experiment with alternative structures to see if other forms of organization could increase performance. Clearly, the three-member majority rule ($C_{3,2}$) is more discriminating and reduces the noise at the extremes from one-third to one-fourth. However, the use of $C_{3,2}$ would lead to a notable incidence of Type II errors. Our previous example G from Figure 1 is also more discriminating than the individual agent and more

conservative than $C_{3,2}$. Even so, the use of G would result in too many Type II errors (one-sixth). Only when combining a smaller version H_3 of the current structure with the special structure $C_{3,2}$ does the venture start to look promising. The net effect is a significant relative gain in the volume of profitable loan applications that get accepted (of course, the cost of extra evaluations must be subtracted). In case some of the uncertainty stems from uncontrollable processes in the environment, the larger volume will also serve to reduce fluctuations from the mean (i.e., reduce risk).

GUIDELINES FOR PRACTITIONERS

The framework and tools we have presented comprise a design approach to improve the quality of the decision process in organizations. Our proposed approach consists of four steps:

1. *Visualize* the decision process as a graph.
2. *Enumerate* all the decision paths.
3. *Aggregate* the relevant properties.
4. *Compare* alternative designs.

Application of Steps 1-3 provides insight into the intricate workings of the decision process under consideration. The value of Step 4, however, hinges on the available information regarding projects and agents. The more accurate the data are on those factors, the more elaborate and detailed are the design questions that can be addressed. If little is known regarding the properties of agents and the project distributions they evaluate, more generic properties relating to the incidence of Type I and Type II errors can still be assessed.

At the other end of the spectrum, where detailed knowledge is available regarding the project distribution and the agent abilities, accurate measures of success regarding economic performance and error rates can be calculated to guide the fine-tuning of the organization (evaluation structure). In this case, the Christensen and Knudsen (2010) framework provides a systematic approach to the design of the decision-making process. The collection of such detailed historical information is only relevant if it is indicative of the future. Thus, accuracy depends on the environment to be relatively stable, to change continuously, or to change so rapidly that much of the noise averages out. We provide below a set of guidelines that practitioners can use under the assumption of gradual or slow environmental change:

- Set design objectives. This requires a valid assessment of the organization's task environment with respect to error rates, economic value, and risk.
- Map out the decision process. Any decision structure, no matter how complex, can be mapped. A visible structure is more likely to be reliably followed, and it supports more direct and detailed analysis. Be sure to include relevant decision paths that emerge from the informal organization. Are undesirable decision outcomes (forgetfulness, delays, missed deadlines, etc.) included, and are they occurring at acceptable levels?
- Collect data on organizational performance. Are there any indications that the organization has surprising or undesired properties? To some extent, deviations from expected performance can be used to identify weak spots in the decision process. For example, if the employees we hire tend to disappoint, is it because the hiring committee uses a different rule than we gave them?
- Set objectives at the individual level. It is particularly important to design incentives that eliminate organizational games that could systematically misalign objectives and bias screenings.
- Collect data on individual performance. What are the characteristics of the projects that are considered? How do individuals perform (error rates, economic returns on projects, risk estimates, etc.)? Are corrections needed?
- Seek to eliminate correlation between evaluations. Correlations undermine the effect of organization design because they tend to make evaluations superfluous. Useful procedures that might help in this respect are: separate evaluations and decisions, use anonymous voting, submit evaluations prior to discussions, and do not disclose information relating to the progress of the decision.
- While, empirically, humans are good at meeting targets on average, their performance

often varies more than is desired. Seek to reduce this variation by setting up small teams organized as majority rule committees. Let two individuals take a look, and if they disagree, include a third person to break the tie.

- In situations where the consequences of a faulty commission (omission) are highly problematic, consider organizing the evaluators in a small hierarchy (polyarchy) such that all must agree to accept (reject) in order for the final organizational decision to follow.
- Consider the use of teams *of* decision teams, since nesting decision structures allows for the reduction of both types of errors (omission and commission) at the same time.
- Consider the cost of the evaluation itself. Can the improved decision quality uphold the extra man-hours spent? If fast decisions are crucial, most evaluators should work simultaneously even if some are redundant.

Changes in project distributions or agent abilities can have a substantial impact on performance. Monitoring decision-making organizations is therefore an important task of the organizational designer, since it allows detection of and proper response to new market conditions, improved workforces, new technologies, or society's conjunctures in general. The designer's job is not necessarily to pick the best-performing structure but rather to pick a robust structure that performs well under varying conditions. As the frequency of change increases, the focus shifts from the design of fixed structures to the design of reconfigurable structures and perhaps even to the design of the very mechanisms of organizational change.

CONCLUSION

Our conceptual framework provides tools for the design of decision processes. We introduced a four-step method of visualization, enumeration, aggregation, and comparison. Based on this four-step method, we developed managerial guidelines for the design and redesign of evaluation structures. Our method moves the design process into the quantitative arena by relating structural and procedural changes directly to performance measures. The organization designer can use these tools and guidelines to examine the consequences of both *structural* design, where the connections among organization members are rewired, and *capability* design, where the impact of altering the members' abilities is analyzed. It is our hope that we have inspired practitioners and researchers to further consider how decisions can be organized and why it matters.

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MICHAEL CHRISTENSEN

Associate Professor of Organization Design
Strategic Organization Design Unit, Department of Marketing and Management
Danish Institute for Advanced Studies, University of Southern Denmark
E-mail: chm@sod.dias.sdu.dk

THORBJØRN KNUDSEN

Professor of Organization Design
Strategic Organization Design Unit, Department of Marketing and Management
Danish Institute for Advanced Studies, University of Southern Denmark
E-mail: tok@sod.dias.sdu.dk

NAVIGATING THE POSSIBLE LEGAL PITFALLS OF VIRTUAL TEAMS

CAROLYN M. PLUMP • DAVID J. KETCHEN, JR.

Abstract: Virtual teams are an increasingly popular element of organizational designs. While virtual teams offer important advantages – including increased collaboration, greater flexibility, and cost savings – they may also create legal issues. Specifically, using virtual teams may lead executives to unwittingly violate labor and personnel laws. The results can be costly, including the loss of key personnel, damage to a company's reputation, and financial harm. Viewing virtual teams from a legal point of view, we identify pitfalls that virtual teams may encounter and offer ways to avoid them.

Keywords: Virtual teams, legal challenges, employment laws, intellectual property

A virtual team is a group of individuals who are situated in different geographical locations that collaborate on tasks using various forms of communication and decision-making technologies (Lipnack & Stamps, 2000; Martins, Gilson & Maynard, 2004; Powell, Piccoli & Ives, 2004; Riemer & Vehring, 2012). Members of some virtual teams may all belong to one organization, while the membership of other teams may span multiple organizations. Virtual teams enhance organizational agility and are increasingly a part of organizational designs (Alberts, 2012). Indeed, a recent estimate suggests that 1.3 billion business professionals worldwide will participate in virtual teams over the next few years (Johns & Gratton, 2013). Virtual teams owe their popularity to the creativity, flexibility, and cost savings they often produce (Siebdrat, Hoegl & Ernst, 2009; Townsend, DeMarie & Hendrickson, 1998). Research has shown that global virtual teams generate more innovative solutions than traditional co-located teams (Zakaria, Amelinckx & Wilemon, 2004). Virtual interaction can reduce interpersonal problems within teams, as team members are more concerned with the content of the work than with the individuals performing it. A virtual team may be a good solution for the handicapped, disabled, senior citizens, introverts, single parents, and others whose work will benefit if they are able to work from home. Virtual teams can lower costs by connecting interdependent workers without incurring travel expenses. And they allow companies to access talent from around the world without consideration of their place of residence, thereby saving relocation fees.

Despite their advantages, virtual teams can be a legal landmine for organizations. Most of the federal laws that govern labor and personnel issues are grounded in traditional, highly structured work arrangements. One implication is that the creation and operation of virtual teams can lead executives to unwittingly violate laws. Accordingly, we seek to increase the awareness of designers and executives to the potential legal problems of virtual teams and how these problems can be avoided. Our focus here will be on U.S. laws, but other countries have similar applicable laws.

POSSIBLE LEGAL PITFALLS OF VIRTUAL TEAMS

Legal issues may be overlooked by companies when using virtual teams as an organizational design tool, but this can be a risky omission. Without careful attention to the nuances of how people behave and interact within virtual teams, companies can run afoul of the law in

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areas such as discrimination; wages and hours; disability, leaves, and accommodation; and intellectual property rights. Table 1 summarizes the relevant laws, how the use of virtual teams can lead an organization to run afoul of these laws, and how to avoid such problems.

Table 1. Avoiding the Legal Pitfalls of Virtual Teams

Statute	Source of Confusion About the Law When Using Virtual Teams	Best Practices for Avoiding Breaking the Law
Title VII of the Civil Rights Act of 1964 prohibits employment discrimination on the basis of race, color, religion, sex (including pregnancy), or national origin.	Companies face much stronger liability for harassment by a supervisor than they do for the actions of a co-worker. But within virtual teams, it is often unclear who is and who is not a supervisor.	Identify which team members can be considered supervisors and provide them with special training about workplace harassment.
The Fair Labor Standards Act of 1938 establishes minimum wage and overtime standards for workers.	Companies must comply with all relevant wages and hours laws (e.g., state and federal). On virtual teams, members can receive conflicting directives regarding work hours and overtime approval from virtual supervisors and in-person supervisors.	Identify which supervisor is responsible for setting work hours for all virtual team members. Similarly, designate which supervisor is responsible for approving overtime hours for non exempt employees.
The Family and Medical Leave Act of 1993 allows certain employees to take unpaid, job-protected leave for certain family and medical reasons.	In certain situations, companies are required to provide leave for their employees. On virtual teams, it can be unclear whether an office or company is an employer (or joint employer) and, therefore, responsible for providing, verifying, and monitoring leave.	Determine which office or company is the legal employer for each virtual team member. Advise such office or company regarding this determination before work begins so any confusion or disagreement regarding leave obligations can be addressed.
The Americans with Disabilities Act of 1990 prohibits discrimination against individuals with actual disabilities or perceived disabilities, and against individuals because of their association with someone who is disabled (such as via marriage).	Companies that are employers or joint employers of virtual team members may have to provide certain members with reasonable accommodations to allow them to perform their essential job duties.	Ensure that virtual team supervisors oversee requests for reasonable accommodations, engage in interactive discussions with individuals regarding requests, and monitor whether and how such requests are handled.
Intellectual property laws (including patents, copyrights, trademarks, and trade secrets) prohibit or limit the manner in which individuals may use another person's or company's information.	When virtual teams are comprised of members from different locations within a company or different companies, team members may have different obligations or views regarding their right to use, discuss, claim, or receive money for team materials.	Before beginning work, require virtual team members to disclose any prior non-compete agreements and to sign new confidentiality and non-compete agreements for the virtual projects.

Workplace Harassment

Title VII of the Civil Rights Act of 1964 (Title VII) prohibits employment discrimination on the basis of race, color, religion, sex (including pregnancy), or national origin (Title VII, 1964, § 2000e).[1] Discrimination may include, among other things, harassment in the workplace. Under Title VII, an employer's liability for harassment depends on whether the alleged harasser is a "supervisor" or a "co-worker" of the individual. In general, companies are vicariously liable for the harassing actions of a supervisor but liable only for the actions of a co-worker if the company is negligent in discovering the harassment and taking action to end it. Therefore, whether an employee overseeing a virtual team is considered a "supervisor" or a "co-worker" has a significant effect on whether the company could ultimately be liable for certain alleged wrongful conduct.

In Vance v. Ball State University (2013), the United States Supreme Court clarified the definition of "supervisor" for purposes of employer liability under Title VII. The Supreme

1 To be subject to liability under Title VII, employers must have 15 or more employees for each working day in 20 or more calendar weeks in the current or preceding calendar year. For purposes of Title VII, an employer includes private employers, state and local governments, educational institutions, private and public employment agencies, labor organizations, and joint labor-management committees controlling apprenticeship and training.

Court said a supervisor is one who is empowered to take tangible employment action against the alleged victim of workplace harassment. According to the Court, a tangible employment action is one that imposes a significant change in employment status, such as hiring, firing, failing to promote, and reassigning an employee with a significant change in job responsibilities or benefits.

When a company staffs a virtual team (either with individuals within the same company or from different companies), it should identify those employees who have the ability to create vicarious liability on behalf of the company and target those supervisors for special training regarding workplace harassment. Failure to do so could expose the company to additional liability.

Wage and Hour Requirements

Virtual team members also have to navigate different work demands and expectations from different sets of managers – their managers in the virtual world and their managers at their work locations. To avoid conflicting directives and to ensure compliance with the Fair Labor Standards Act of 1938 (FLSA), companies should determine who is responsible for establishing work hours and approving overtime. The FLSA establishes minimum wage and overtime standards for workers (FLSA, 1938, § 201). These standards require employers with one or more employees to pay non-exempt employees for all hours they are required or allowed to work. This includes work performed away from work premises (e.g., work performed at home) and work that employers know of or have reason to know of (e.g., mandatory conference calls at night to accommodate different time zones). Further, employers have to provide non-exempt employees overtime pay for any hours worked over 40 hours in a workweek. If a company is considered an employer of its virtual team members, it must ensure compliance with the FLSA and the appropriate state wage and hour laws.

Disability, Leave, and Accommodation Issues

Companies must consider whether they have any leave or accommodation obligations to virtual team members under the Family and Medical Leave Act (FMLA) of 1993[2] or the Americans with Disabilities Act (ADA) of 1990.[3] The FMLA allows eligible employees – employees who have worked for their employer for at least 12 months and worked at least 1,250 hours of service for the employer during the 12-month period immediately preceding the leave – to take unpaid, job-protected leave for certain family and medical reasons. The ADA prohibits discrimination against individuals with actual disabilities or perceived disabilities, and against individuals because of their association with someone who is disabled (such as via marriage). The ADA requires an employer to provide reasonable accommodations to qualified individuals with disabilities who are employees or applicants for employment, unless to do so would cause undue hardship. Generally, an accommodation is any change in the work environment or in the way work is customarily done that enables an individual with a disability to enjoy equal employment opportunities (ADA, 1990).

One question that may arise on a virtual team made up of employees from various companies is whether the company that hired them for the virtual team project is considered an "employer" or "joint employer" for purposes of the FMLA and/or ADA. If so, the company has certain responsibilities under these laws. Under the FMLA, the company would have to provide the employee with up to 12 weeks of unpaid leave each 12-month period (FMLA, 1993). Depending on the reasons for the leave, such leave could be taken in one continuous 12-week block of time, in various intermittent blocks of different lengths of time totaling 12 weeks, or in a uniform, recurring block of time each week (e.g., 10 hours of leave per week) totaling 12 weeks. This creates an additional oversight responsibility for managers. Under the ADA, a covered company must provide a virtual team member who has a disability with a reasonable accommodation to perform his or her job unless to do so would

2 To be covered under the FMLA, a private sector entity must employ 50 or more employees in 20 or more workweeks in the current or preceding calendar year. Employers also include any person acting, directly or indirectly, in the interest of a covered employer to any of the employees of the employer, any successor in interest of a covered employer, and any public agency.

3 To be covered under the ADA, an organization must have 15 or more employees.

be an undue burden. Permitting the use of accrued paid leave, or unpaid leave, is a form of reasonable accommodation when necessitated by an employee's disability. Thus, managers must be aware of any FMLA and ADA obligations so they can handle disability, leave, or accommodation requests in a lawful manner.

Intellectual Property Rights

A final legal issue companies should be aware of that may involve virtual teams is intellectual property rights. Consideration of such rights before a virtual team begins work ensures everyone understands his or her rights and obligations. Intellectual property can take various forms, including patents, copyrights, trademarks, and trade secrets. Rights to these assets can be granted to certain individuals or companies. Companies must determine in advance what, if any, rights individual team members or members from other companies have to the knowledge and information generated by the virtual team. This can be particularly important when dealing with individuals from different countries, each of which has its own intellectual property laws.

On a related note, a company hiring individuals from different companies to work together on a virtual team project should determine if any members are subject to non-compete or confidentiality agreements that prohibit them from taking part in the group project. Similarly, such a company should consider whether it wants to require its virtual team members to enter into a non-compete or confidentiality agreement regarding the project so vital information developed and shared is not released unintentionally to other individuals or companies.

CONCLUSION

Looking to the future, our view is that two trends related to virtual teams are likely to continue. First, as information technology continues to become cheaper, faster, and more effective, the trend of incorporating virtual teams into organizational designs may even accelerate. Second, the litigiousness of U.S. society is unlikely to abate and may in fact increase. To the extent that these trends are realized, executives need to take careful steps to avoid the legal pitfalls of virtual teams. More generally, executives need to realize that any complex organizational design can unintentionally violate one or more laws. It is therefore wise to thoroughly examine potential legal ramifications of any organizational design decision before that decision is implemented.

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CAROLYN M. PLUMP

Assistant Professor of Management and Leadership
School of Business, La Salle University
E-mail: plump@lasalle.edu

DAVID J. KETCHEN, JR.

Lowder Eminent Scholar and Professor of Management
Raymond J. Harbert College of Business, Auburn University
E-mail: ketchda@auburn.edu