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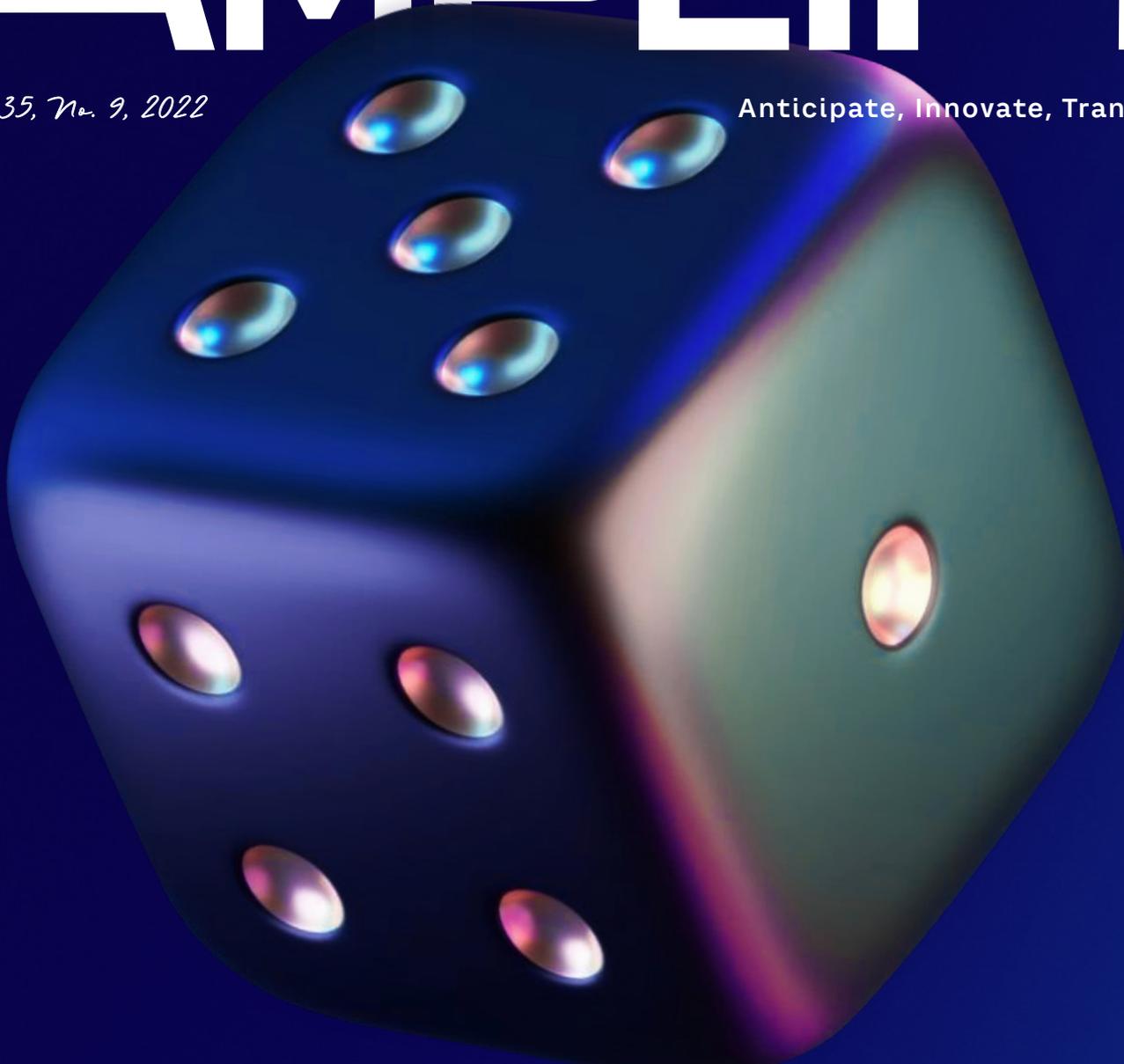
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Anticipate, Innovate, Transform



**High Risk, High Stakes
Decision Making in
Turbulent Times**

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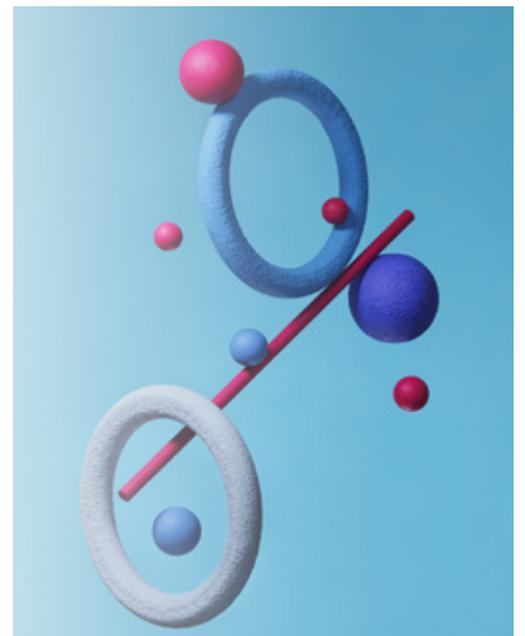
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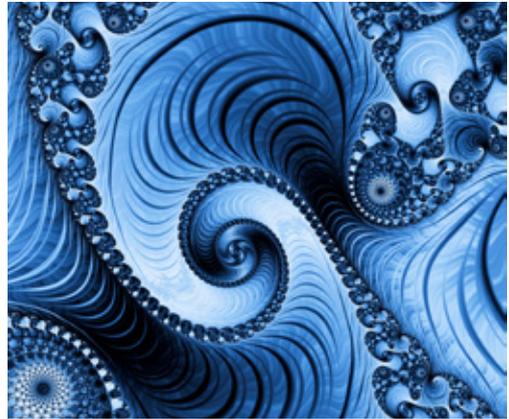
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OPENING STATEMENT

BY MICHAEL ROBERTO, GUEST EDITOR

Leaders have more data at their fingertips than ever as they try to make critical decisions, but considerable ambiguity and uncertainty remain. Dynamic markets and nimble competitors make it difficult to make accurate predictions and forecasts, even about near-term conditions. Some leaders struggle to overcome indecisiveness and become bogged down in analysis paralysis. Others find it challenging to evaluate ambiguous risks and threats to their business. Nevertheless, leaders must make crucial decisions that involve committing substantial resources, and they must do so in a timely manner to thrive in competitive markets.

The best leaders recognize that they don't have all the answers. They acknowledge the limits of their expertise and understand the need to marshal the collective intellect of their teams. As Peter Drucker once said, "The most common source of mistakes in management decisions is the emphasis on finding the right answer rather than the right question." So what can leaders do to gather input from a diverse array of sources? How can they generate and critically evaluate options? What does it take to uncover and assess hidden risks? In this issue of *Amplify*, we explore these questions in depth.

Several strategies form the foundation of sound decision making in turbulent environments. These strategies involve creating a culture of candor, encouraging constructive conflict, fostering disciplined experimentation, and making systematic reflection a habit in the organization.

A safe climate is the foundation of all good decision making. Too often, we discover organizational cultures in which middle managers and front-line employees are afraid to speak up. As a result, leaders do not hear concerns, fresh ideas, or dissenting views. Employees refrain from sharing bad news for fear of being blamed

for the mistake or failure. As former US Secretary of State Colin Powell commented, "Bad news isn't wine. It doesn't improve with age." The most effective leaders seek to build a climate in which people feel safe asking questions, challenging the conventional wisdom, and talking candidly about failures.

Building psychological safety is more than saying, "My door is always open." Bad news is not likely to walk through that door. People self-censor for many reasons. They might worry about a shoot-the-messenger reaction from superiors, or they may simply be trying to find a plausible solution before informing others about a serious problem. Thus, leaders must become problem *finders*, not just problems *solvers*. They must be proactive in the hunt for hidden risks and alternative points of view. Asking for help and acknowledging what you don't know is crucial. Team members will respond positively if leaders stress what they would like to learn from others and how others can assist them in building better situational awareness.

Building a climate of candor means that conflict will occur. Leaders should not shy away from rigorous dialogue and debate. Conflict avoidance

only leads to larger problems down the road. However, teams must keep that conflict constructive. For instance, many leaders have found that assigning one or more devil's advocates can be a powerful technique for enhancing critical thinking about tough issues. However, teams often struggle with dysfunctional interpersonal dynamics that emerge as contrarians point out flaws and risks. Personalities clash, tempers flare, and polarization occurs. Some devil's advocates become like a broken record — people stop listening, and these chronic naysayers become marginalized. More effective teams rotate the role of the devil's advocate. Moreover, the best devil's advocates ask thought-provoking questions, rather than delivering stern lectures about the flaws in existing proposals. They also help the group generate alternative solutions, instead of only pointing out problems.

Sometimes, no amount of analysis or deliberation can resolve sufficient uncertainty surrounding a decision. The situation is simply too novel; historical data seems unhelpful. In these situations, leaders must encourage disciplined testing, prototyping, and experimentation. They must shift the team into learning-by-doing mode. We know that many organizations have a culture of perfection. People are reluctant to test out a new idea unless it has been refined carefully over many months. Consequently, they refrain from conducting useful experiments because they fear failure. In contrast, some teams do plenty of testing, but the activity resembles pure trial and error, rather than disciplined experimentation. Other teams test to validate and never really test to learn. In other words, they develop prototypes and seek to confirm what they already believe, rather than being open to discovering that their beliefs and assumptions might be invalid or outdated.

The most effective leaders build the capability to engage in thoughtful, carefully constructed experiments that generate learning quickly. Then they listen and adapt, rather than stubbornly remaining attached to preexisting positions. Rather than throwing good money after bad, they are willing to discard ideas that do not test well.

Finally, effective decision makers learn from both their mistakes and their successes. Leaders must develop the capability to reflect and learn systematically after each major decision, regardless

of the outcome. We often hear people say that we learn more from our mistakes than our successes, but that's not entirely true. We learn most effectively when we can compare and contrast decisions with varying results.

For after-action reviews to be valuable, leaders must avoid assigning blame. We must move beyond an exclusively individualistic explanation of failures. In other words, don't just look for the bad apple that must be thrown out of the bunch when a failure occurs. Instead, we must think systemically about the underlying causes of poor performance. If we reflect and learn appropriately, we can improve our decision making over time. In this installment of *Amplify*, we examine specifically how to evaluate risks, cope with ambiguity, and make key decisions in a timely manner.

THE MOST EFFECTIVE LEADERS BUILD THE CAPABILITY TO ENGAGE IN THOUGHTFUL, CAREFULLY CONSTRUCTED EXPERIMENTS THAT GENERATE LEARNING QUICKLY

IN THIS ISSUE

In our first article, Cutter Fellow Noah Barsky outlines 10 unconventional rules for helping us identify critical risks. He argues that we should not relegate risk management to our compliance or legal departments. On the contrary, we need to transform the mindset that says risk management and mitigation are the responsibility of specialists within specific functional areas. Instead, it must become everyone's responsibility. Many risks remain stubbornly hidden in organizations. Barsky closes his article by suggesting, quite astutely, that we need to "listen to the kids" in our enterprises. Why reach out

to young people to uncover problems and risks? Because they are often more attuned to new consumer and technological trends, as Barsky suggests, and they can identify key weaknesses in a company's existing strategy and product offering. Senior leaders have much to learn from younger generations. Barsky argues that an additional benefit emerges from these conversations. Younger employees become more engaged, and senior leaders build trust. Talent retention becomes easier when trust and engagement are high.

TODAY'S TURBULENT BUSINESS ENVIRONMENT CALLS FOR A STRATEGY SHIFT

Next, Lori Silverman says we need to rethink our focus on data analytics. She points out that many enterprises are not achieving the ROI that they would like from their data science and analytics efforts. Silverman argues that we need to think more broadly about optimizing the decision-making processes throughout our organizations, rather than continuing to pour resources into hardware, software, and human resources in hopes of better data-driven insights. She explains how to design an end-to-end process that helps people throughout the enterprise define key questions, mine data for crucial insights, and develop recommendations based on those insights. Finally, she describes how we can communicate our conclusions to others much more effectively through narrative storytelling. In the end, we must do more than make the right choice. We must be able to persuade others so that we can build buy-in for our recommendations.

Cutter Expert Paul Clermont's article helps us understand how and why capable, experienced people often make poor choices. He describes familiar pathologies like confirmation bias, groupthink, and the tendency to double down on failing courses of action in which we have invested heavily. Clermont argues that challenging market conditions sometimes exacerbate our tendency to make these types of mistakes, rather than bringing out the best in us. He provides four guidelines for enhanced critical thinking, arguing that leaders need to be more inquisitive, humble, diligent, and skeptical. We must revisit the conventional wisdom and be willing to update our beliefs as conditions change and new data emerges. We cannot surround ourselves only with people who look, think, and reason like us, and we most certainly must avoid hiring sycophants.

Finally, Dave Martin, Tony Ponton, and Kim Ballestrin explain that humans crave certainty, and we desperately want to be right the first time. They argue that trying to be "right" can lead us astray in highly complex environments. Thus, we must become comfortable with ambiguity, especially with the notion of arriving at a partially correct decision. Next, we need to select the appropriate measures to track our progress. Are we on the right track or not? Once we have additional information, we can adapt our decision and refine our course of action. This iterative process serves us well in complex situations for which our predictive powers are simply far too limited.

Today's turbulent business environment calls for a strategy shift, one that recognizes leaders are unlikely to ever have the certainty they once did. In the face of the unknown, they must encourage their peers and staff to be candid (and listen to their ideas), encourage constructive conflict, foster disciplined experimentation, and open the door to systematic, organization-wide reflection.

About the guest editor

MICHAEL ROBERTO

Michael Roberto is a Cutter Fellow, Trustee Professor of Management at Bryant University, and a member of Arthur D. Little's AMP open consulting network. Previously, he served on the faculty at Harvard Business School (HBS) and has been a Visiting Associate Professor at New York University's Stern School of Business. Prof. Roberto is the author of *Unlocking Creativity: How to Solve Any Problem, Make the Best Decisions by Shifting Creative Mindsets, Know What You Don't Know*, and *Why Great Leaders Don't Take Yes for an Answer*. His blog has been named one of the top 50 business professor blogs in the world, and he is a popular Cutter Summit presenter. Prof. Roberto's research focuses on strategic decision-making processes, senior management teams, and the dynamics of organizational failures. His research and teaching have earned several major awards. Prof. Roberto has taught in leadership development programs and consulted at a number of firms, including Target, Apple, Disney, Mars, FedEx, Morgan Stanley, Coca-Cola, Walmart, Novartis, Siemens, The Home Depot, and Bank of New York Mellon, and he has presented at several government organizations. In recent years, Prof. Roberto has served on the faculty at the Nomura School of Advanced Management in Tokyo, Japan, where he teaches in an executive education program each summer. Previously, he worked as a financial analyst at General Dynamics, where he evaluated the firm's performance on nuclear submarine programs. Prof. Roberto also worked as a project manager at Staples, where he played a role in the firm's acquisition integration efforts. He earned a bachelor of arts degree with honors from Harvard College; an MBA with High Distinction from HBS, graduating as a George F. Baker Scholar; and a DBA from HBS. He can be reached at experts@cutter.com.

10 REWIRED RISK RULES FOR THE DIGITAL ERA



Author

Noah Barsky

Digital era opportunities and dangers challenge traditional approaches to risk management. For decades, organizations vested risk oversight in legal, compliance, and HR functions. Despite the fact that tech-driven business models demand far more dynamic and adaptive approaches, entrenched corporate behaviors, incentives, and bureaucracy often stall strategy and thwart innovation.

Ten unconventional “rules” can shatter that inertia and help senior leaders identify, assess, and manage digital era risk. At a minimum, each rule sparks the type of candid conversation that boards and C-suites must have to thrive. At best, they shift risk management’s focus from *what could go wrong* to *what must go right*.

Statisticians often refer to such choices as the tradeoffs between Type I (false positive) and Type II (false negative) errors. This is similar to medical diagnoses that result in over-testing (inefficiency) or missed maladies (ineffectiveness). Digital transformation fits this analogy well, as a company’s viability rests on its success.

RULE #1: ESTABLISH AN ANTI-VISION

Too often, leaders agonize over wordsmithing vision and mission statements, only to learn they rarely anchor and guide employee actions. Hollow rhetoric results in unfulfilled aspirations, weakened competitive position, customer disengagement, workplace churn, and diminished financial performance.

Executives would be better served by mulling the strategic consequences of inaction. Fear of demise can be a great change motivator. What might the future hold if the company does not adapt and transform? Can key stakeholders truly accept and afford rigidity’s downside?

A discussion of the cost of inaction raises many unsettling questions. To start, if digital transformation achieves all of its operating goals for the next three years, will the company be strategically relevant at that time? Are budgets and targets credible? Is operational obsession placing the enterprise in strategic jeopardy? Do employees spend scarce time chasing reports, managing metrics, and sacrificing long-term viability? Have leaders occupied their time with daily activities and abandoned their fundamental responsibilities as mindful stewards?

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Like all strategic ventures, digital transformation requires capable oversight and meaningful accountability. Metrics must drive value-capturing outcomes, rather than memorializing measurable outputs. With meaningful executive leadership and credible performance goals, companies can sharply raise employee engagement and success odds. Otherwise, digital aims devolve into yet another change management project with a predictable ending.



RULE #2: SEPARATE DIGITAL STRATEGY FROM OPERATIONAL TECHNOLOGY

Executives are struggling to maintain operational excellence while accelerating digital strategy. Ultimately, strategic competitiveness will not be determined by how well or poorly companies upgrade their systems, but by how well they reimagine their digital futures.¹ That's why C-suites can never afford to use operational readiness to filter strategic initiatives.

Frequently, as tactical projects flounder, falter, and fail, digital strategy is easily deferred, derailed, or ignored. To remain competitive, executives must focus on the urgency of digital strategy over commoditized tech improvements.

Rather than focusing on project management checklists, backlogs, and resource gaps, senior leaders must ask if the company has a deep stable of professionals who can deliver operational excellence and strategize — separately. Leadership must let tacticians maintain and upgrade infrastructure while equipping true strategists to shape the company's future.

That imperative fails when executives are themselves incrementalists or legacy functional leaders who lack the experience, foresight, and creativity to execute strategy. That flaw is magnified in rapid, competitive markets that demand candor and insight, unencumbered by daily operational goals, needs, and barriers.

Companies serious about the digital era must recognize the fundamental difficulty in prioritizing strategy acceleration and be bold enough to act differently.

RULE #3: OUTLAW ENTRENCHED REVENUE DRIVERS

Overreliance on flawed, rigid, entrenched revenue forecasting is another widespread corporate problem. Grandiose strategic ambition and promises should never displace business fundamentals.

In efficient enterprises, revenue variances are well anticipated and addressed. New and existing customer-buying behavior, when analyzed thoroughly, predicts future top-line growth and likely returns on marketing investment. When C-suites truly understand why customers stay or switch, there are few "surprise" results.

Lofty strategic visions often lose sight of basic customer spend metrics: what, why, how, and how much customers buy and the likelihood of future loyalty. Many simplistic valuation methods focus on total revenue growth rates, but customer-based corporate valuation (CBCV) focuses on customer-unit economics, including acquisition costs, retention rates, purchase frequency, and average transaction measures.² Most C-suites have ample data to rethink forecasting.

Solutions can start with three overlooked, data-driven business stewardship questions: (1) what value would investors or lenders assign to revenue projections? (2) do customer-unit economics match strategic vision aspirations? and (3) which signals warn of potential revenue decline? Weighing transaction-level revenue streams against the aggregate costs to acquire and retain customers provides the critical cash-flow estimates investors seek.

From a C-suite perspective, such predictive analytics mitigate costly customer churn and reveal whether strategy aims will meet tomorrow's market targets.

RULE #4: QUESTION ANALYTICS

In many organizations, analytics groups are becoming the administrative functions they purported to usurp. Companies can no longer afford to limit database use to transaction processing, history referencing, periodic reporting, and validating intuitive expectations.

Organizations need data tools that are predictive and drive proactive actions and preventative defenses. That requires staffing, culture, and commitment to evidence-based decision making that can shatter project-protective norms in addition to massive, high-hurdle-rate program investments.³

Too often, analytics groups founder not from longstanding data-modeling limitations (i.e., clean, comprehensive, validated data), but from scarcity of the right mix of strategists, technologists, and statisticians (in that order) who challenge the orthodoxy and increase competitiveness long before reporting quagmires feast on swelling data pools.

Truly strategic leaders proactively mine data in novel ways to drive future results. Unfortunately, too many data analytics initiatives are funded on the allure of "what could go right," without adequate plans for "what could go wrong." Analytics claim to make companies smarter, swifter, and stronger, but is that real or digital era rhetoric? Encumbered progress, diluted results, and cash burn tell the story.

IN MANY ORGANIZATIONS, ANALYTICS GROUPS ARE BECOMING THE ADMINISTRATIVE FUNCTIONS THEY PURPORTED TO USURP

RULE #5: DON'T EXCUSE TECHNOLOGICAL GLITCHES

Recent cybersecurity scares, emerging regulations, and heightened audit scrutiny motivated boards to rethink digital risk. Executives fear system breaches, asset theft, and data hijacks that tarnish reputations and derail strategy.

Although downside risk often grabs boardroom attention, strong IT controls serve a second valuable and underappreciated purpose: helping businesses run smoothly. CFOs and CIOs must go beyond loss prevention to ensure that system designs do not impede what must go right for key stakeholders. Such unforced errors can be damaging to a company's strategy, reputation, and bottom line.

This summer, for the second time in less than five years, American Airlines reported that a scheduling platform glitch left thousands of flights without pilots.⁴ The underlying problem of this example and others is that many C-suites tolerate the term “glitch” as a comfortable excuse for lax management oversight. Too often, system designers and software engineers lack fundamental business process insights; in turn, their operations peers conveniently blame “systems” for mistakes.

As companies aim to digitize workflows, tech leaders must thoroughly understand routine business activities, critical resource paths, and risk points. Cross-functional leadership teams must regularly ask these three questions:

1. Do system designers understand how digitized business processes speed throughput and improve revenue generation?
2. Do decision tools connect operating decision quality to financial consequences?
3. Do credible plans exist to deploy and use automated analytics to proactively identify, diagnose, and curb transaction variances?

The (non-) responses reveal much about digital era readiness.

RULE #6: PROMOTE BUSINESS ACUMEN, NOT DIGITAL TRANSFORMATION

Digital transformation is the hottest trend and spend in technology circles these days. *But how can employees possibly transform a business they don't fully understand?*

Companies may have ample tech skills, but functional experts often fall short when asked to be strategic difference makers. That's the major problem with most grand-scale initiatives — technology alone cannot transform a business.

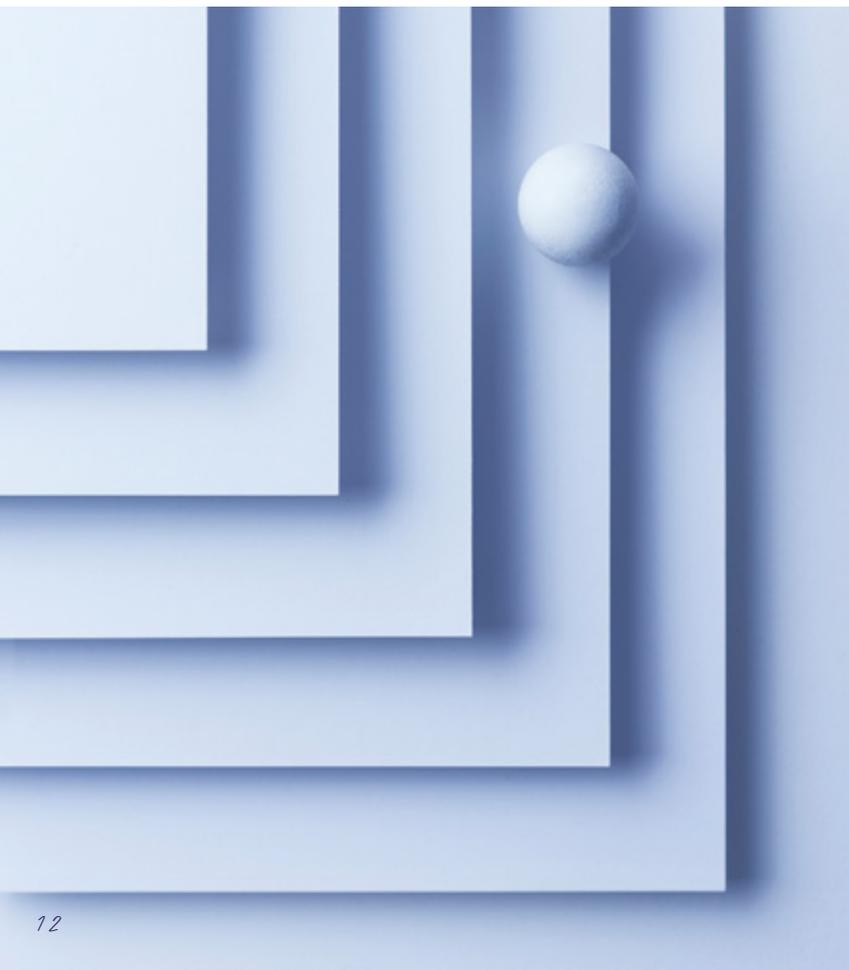
Digital transformation risks becoming the latest IT project remembered for inflated promises, cost overruns, and few results. Executives and tech leaders can rewrite that narrative by realizing that success depends far more on how they develop people than how they deploy technology.

Technology is an overpriced, underutilized tool in the hands of employees who either don't know or don't care enough about the business. Strategy has low success odds when employees can explain what they do but not why they do it.

Employee acumen requires far more than mandatory training sessions. Are employees aware of key financial indicators like revenue growth, expense ratios, and balance sheet health? Which three IT metrics drive financial outcomes? Do IT teams understand how transformation decisions affect planning, budgeting, and results? Unless technology connects correctly to strategy, there could be nothing left to transform.

RULE #7: MAKE EVERYONE RISK RESPONSIBLE

By nature, businesses are risk-seeking enterprises that navigate in treacherous environments, even in stable and growing economic times. Proactive business risk management, distinct from urgent and finite crisis management, offers the greatest potential for lasting competitive advantage.



However, most risk surveys commonly show that executives rank regulatory oversight and economic conditions highest. Such views often underweight strategic risk and result in static, simplistic risk methods aimed at dodging what could go wrong while neglecting relentless pursuit of what must go right.

Strong controls and compliance adherence are necessary, but they are insufficient for meaningful strategic differentiation. Embracing the concept that all employees are risk responsible requires a fundamental shift in leadership and several visible actions. First, executives must clearly and concisely communicate purpose. Second, risk management must be considered a core competency of every job and workplace expectation at every stage of decision making.

Such thinking is not merely a semantic change, it's a transformation in mindset. Risk management has the potential to be a source of competitive advantage and a differentiator but is often overlooked and relegated to avoidance, control, compliance, and mitigation efforts. Those who truly "know" risk are most apt to "know" reward.⁵

RULE #8: SHARE BAD NEWS

Despite our best efforts, breaches occur. What's important is how, when, and how fast they are handled. For instance, in 2021, the US Securities and Exchange Commission (SEC) cited real estate title insurance company First American Financial for "disclosure controls and procedures violations" related to a cybersecurity vulnerability that exposed more than 800 million images of highly sensitive customer data.⁶ The SEC concluded that ensuing company disclosures *preceded* executives' knowledge of unaddressed, months-old IT security reports. That's truly every C-suite's worst nightmare and likely not an uncommon event.

STRONG CONTROLS AND COMPLIANCE ADHERENCE ARE NECESSARY, BUT THEY ARE INSUFFICIENT FOR MEANINGFUL STRATEGIC DIFFERENTIATION

Reporting enforcement actions are common, but the SEC took new aim in this case by targeting inadequate internal management communication and delivered a stern warning to boards, C-suites, and tech leaders, writing:

As a result of First American's deficient disclosure controls, senior management was completely unaware of this vulnerability and the company's failure to remediate it. Issuers must ensure that information important to investors is reported up the corporate ladder to those responsible for disclosures.

In 2022, identity security firm Okta was breached and fell victim to a common leadership mistake: sacrificing customer trust for overestimated legal risk. When hacker group Lapsus\$ infiltrated an Okta contractor's computer, Okta relied on its vendor's initial forensics and opted not to disclose the brief attack. The breach was eventually made public in March via a series of hacker posts. Okta's attempts to minimize that bad news soon escalated into a public relations nightmare, stock downgrades, senior leader apologies, and a class-action lawsuit.⁷

These cyber-crisis spirals exemplify why companies must proactively prioritize what-must-go-right customer trust over what-could-go-wrong legal fears. These examples are a clarion call to all businesses to shatter workplace resistance to bad news.

RULE #9: RESOLVE TECHNICAL DEBT

A major lurking source of competitive disadvantage is technical debt: outdated technology, flawed software, disconnected systems, and manual processes. No company wants to chase rivals, lose customers, frustrate suppliers, or battle regulators. To close these gaps, executives should try a different approach — ask what due diligence a potential merger partner or acquirer would perform.

An M&A approach assigns a value to each company division and quickly reveals the flaws that impair the company's overall valuation. Similar to how a home buyer might hire an inspector to identify and quantify structural issues in need of remediation, astute due diligence experts scrutinize companies for hidden cashflow needs and strategic challenges. The findings recast IT needs in terms of two valuation tests that M&A specialists conduct regularly: estimating asset impairment and contingent liabilities.

Underfunded technology investments are similar to impaired assets like poorly performing subsidiaries, expiring patents, and obsolete factories. Aging servers, noncompliant software, and non-secure user devices likewise impede customer experience and employee effectiveness. Unfunded technology initiatives are comparable to contingent liabilities like litigation payments, environmental remediation, and warranty claims. Costly unaddressed technology issues result in uninsured cyber breaches, service failures, and downtime.

Once measurable, understandable, and actionable, the odds of reducing gaps improve dramatically. Most importantly, a due diligence approach shifts the central technology funding question from "How much money?" to "Can we strategically afford the consequences of not investing?" That's strategic.

RULE #10: LISTEN TO THE KIDS

Digital transformation timelines will be short. The next half decade will include massive shifts in the economic order, industry power, and strategic alliances. Technology will fuel much of that change. How organizations employ such tools for lasting strategic differentiation and sustainability profitability depends on the foresight, courage, and acumen of board members and key executives. People will be the transformative force that fuels competitive advantage or the hidden-in-plain-view bug that derails even the best digital transformation plans.

For instance, technology is a priority to Walmart. It structures its board to draw on the most recent significant tech experience, not the longest. Nearly half (five of 11) of its directors have technology or e-commerce experience. The board is clearly composed of digital generation leadership: four members are under age 50, and only three are older than 60. Although age is an imperfect measure of board qualification, it's an important start.

Executives can benefit greatly from speaking directly to younger employees about their consumer technology experiences. That vantage point can be incredibly valuable and relatively costless, helping companies avoid investing massive sums in interfaces that fare poorly with users. Such participation builds trust, promotes employee participation, and unearths new ideas — all hallmarks of excellence.

CONCLUSION

The pandemic exposed every company's weaknesses. Resiliency failures were seeded long ago in functional silos, operational efficiency goals, and risk management designed to avoid what could go wrong. Workplace meetings became mired in discussions about messaging and how things might look; indeed, they should have focused on the need to relentlessly pursue what must go right.

When asked publicly about top risks, C-suite executives routinely cite the economy, regulation, and cybersecurity — safe, logical choices. Off the record, many wonder if they have the right people. Strategy has little chance of success when employees cannot explain why they do what they do. It's time to rewire organizational thinking and mindsets — these 10 rules can help.

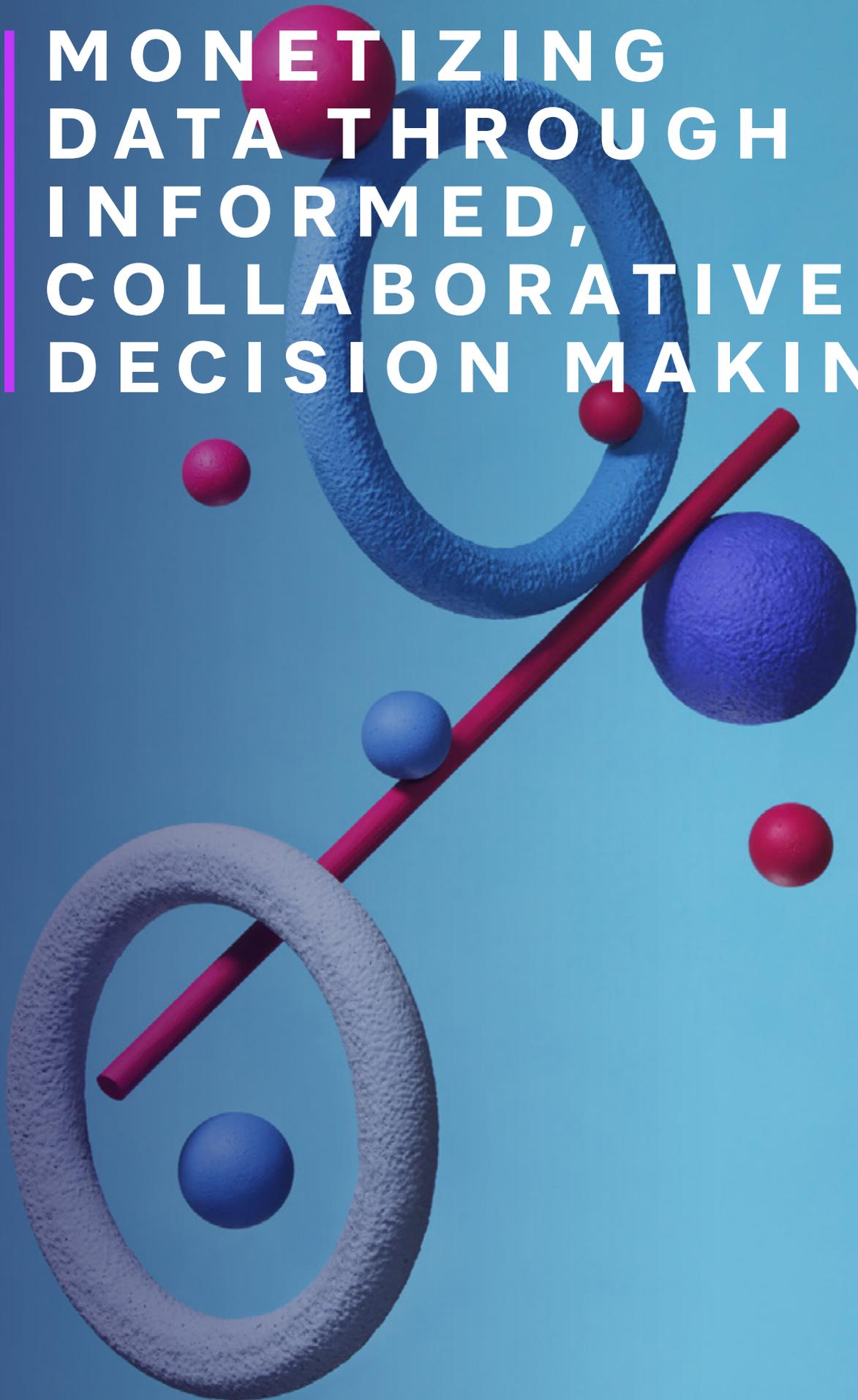
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MONETIZING DATA THROUGH INFORMED, COLLABORATIVE DECISION MAKING



Author

Lori Silverman

In the foreword to NewVantage Partners' 10th annual "Data and AI Leadership Executive Survey," Thomas Davenport and Randy Bean wonder when there'll be good news about data-driven cultures in organizations. The reason? In 2021, only about a quarter of the enterprises reported creating a data-driven organization, down from 2020/2019. The survey also reported a decrease in those organizations establishing a data culture.¹

Personally, I have yet to find a study that demonstrates that analytics efforts are consistently producing actionable results. How can this be? Collectively, enterprises have sunk billions of dollars into hiring, orienting, and training full-time analytics/data science staff and procuring a variety of technologies.

What is missing? Davenport and Bean point to two interrelated points (emphasis added):²

1. "Senior executives need to *promote data-driven decision making* and to hire and promote those who practice it."
2. "More organizations need to hire data and AI executives with *backgrounds and experience in organizational change* rather than just technology and analytics."

IS A MINDSET SHIFT NEEDED?

To date, the approaches used to create data-driven organizations have centered on one or more of the following:

- Throwing money, time, and energy at their data, trying to govern, strategize, capture, clean, warehouse, analyze, and/or visualize it. A 2020 Anaconda survey found that data scientists spend two-thirds of their time on data-preparation tasks like loading and cleaning (45%) and data visualization (21%).³
- Throwing money, time, and energy into procuring and learning to use analytics platforms, cloud solutions, and analytics software, all of which hone in on data.

- Insisting that people are the problem. For example, "Our staff needs data literacy training (on setting up dashboards, ensuring data quality, analyzing data, or visualizing data)." Or, "Analytics professionals do not understand the needs of the business." Or, "Our leaders are not fully supporting our analytics efforts."

Humor me for a moment: What if being data-centric is not the lens through which to create a data-driven enterprise or culture? What if the right mindset is this: how do we optimize decision making throughout the enterprise?

Think about it. Data serves decision making; decisioning does not serve data. Data is one of several inputs to the decision-making process. Data, in and of itself, is meaningless; it holds no intrinsic value (unless intentionally harvested, aggregated, and monetized as an asset; for example, via licensing, bartering, or trading).⁴ Face it. We will never have enough data, or all the right data, or trusted single sources of truth for all data to make timely decisions in an unpredictable world imbued with risk.

The same is true of technology and analytics platforms. They are meant to be in service to the decision-making process. Are people truly the cause of not having a data culture or a data-driven organization? Teaching people data literacy as outlined above has not shifted the needle to date.

So why do we think more of the same will? Every employee should already know the needs of the business to perform their jobs. Maybe leaders are not supporting analytics efforts because they are not getting actionable results!

Collectively, this leads me to one conclusion — the need to reframe. Nevertheless, we keep directing resources to the data side of the decision-making equation rather than optimizing the entire decision process and implementing this approach organization-wide. It is time for this to change.

WE NEED AN EXPANSIVE DECISION-MAKING APPROACH

Every time I deliver a keynote, host a workshop, or do a webcast on collaborative, data-informed decision making, I ask audience members if their enterprises have a documented methodology for this that's been introduced to all functions in their organization. Not one person has answered affirmatively since I began querying in 2015.

A few say that their data scientists know the OSEMN steps (obtain, scrub, explore/visualize, model, and iNterpret). Another handful say they personally try to follow the scientific method, if time allows. That is:

1. Define a question to investigate.
2. Make predictions; come up with a hypothesis to test (some background research might occur before this).
3. Gather data; test hypothesis by doing an experiment.
4. Analyze the data.
5. Draw conclusions.

One problem is that neither method ensures the business will benefit. There is no inherent connection to the enterprise's mission, vision, or business strategies or to driving meaningful business value and results.

Another problem is that these methods assume all data is measurable and quantifiable, even qualitative data — but some data is inherently unknown and unknowable. A decision-making process must take this into account. Intuition is not commonly viewed as data; indeed, intuition and emotions are usually considered inappropriate in a decision-making context. This is not always the case: intuition (i.e., gut feeling) can be a data source to be factored into the decision-making process.⁵ In fact, research has shown that

emotions are required in making a decision.⁶ This suggests that decision making should only be *informed* by data, not driven by it.⁷

Finally, OSEMN and the scientific method are geared toward ascertaining knowledge — a sense-making act. What organizations need instead are actionable insights that spark meaning-making and action in people.

The following distinction is crucial to getting tangible results and analytics adoption:⁸

- **Data.** When people are presented with data, they think or say, "Oh, I see."
- **Sense-making.** When people are presented with an analysis of the data, they think or say, "I understand" or "That's interesting."
- **Meaning-making.** When people are presented with a well-constructed narrative story about an actionable insight, they think or say, "I get it! This is how this data relates to me. I now know what to do."

MAKING SMARTER DECISIONS WITH DATA

Karen Dietz, PhD, and I designed Making SMARTER™ Decisions with Data, a collaborative data-informed decision-making approach to incorporate tangible business value, unknown and unknowable data, intuition, human emotions, actionable insights, and meaning-making. SMARTER stands for **S**eek context, **M**anage the data, **A**ssure confidence, **R**eveal insights, **T**ake a stand, **E**xecute decision, and **R**elay results. The framework is particularly useful in uncertain, fast-changing, turbulent times — our business climate for the foreseeable future (see Figure 1).

Table 1 identifies the key outcome of each stage and the primary question being addressed. This framework does not presuppose in-depth training for employees and leaders on capturing/organizing data, addressing data quality, and analyzing and visualizing data, but experts with these skills must be available for collaboration. As staff and leaders become seasoned users of the SMARTER framework, they learn to hone these skills (outside of complex work that a data scientist or machine learning/artificial intelligence professional performs).

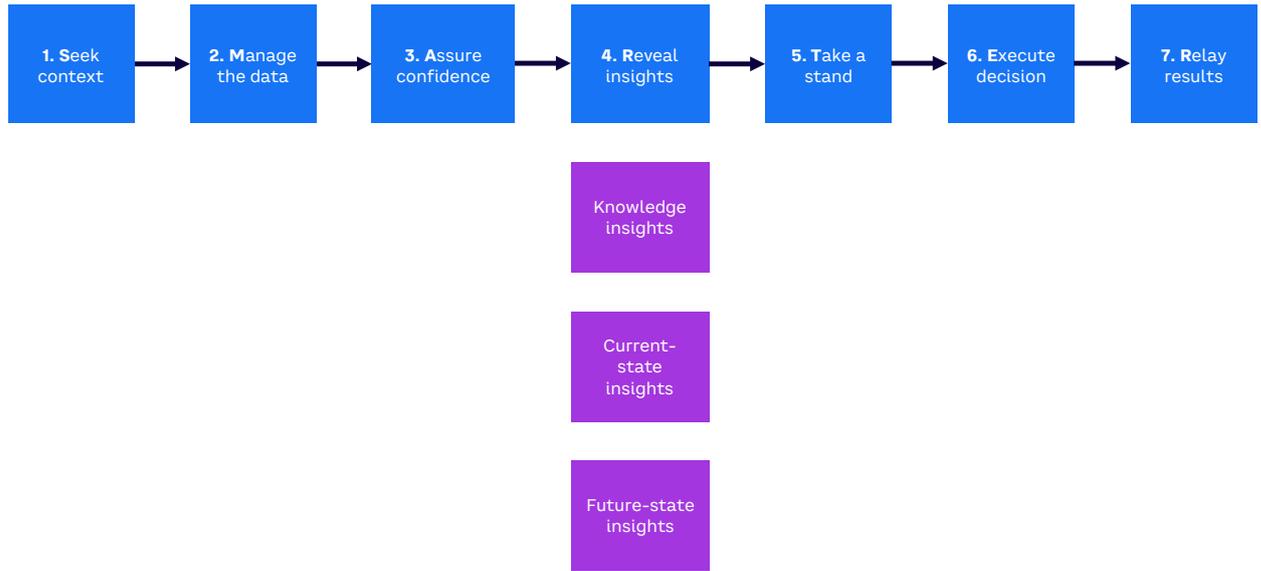
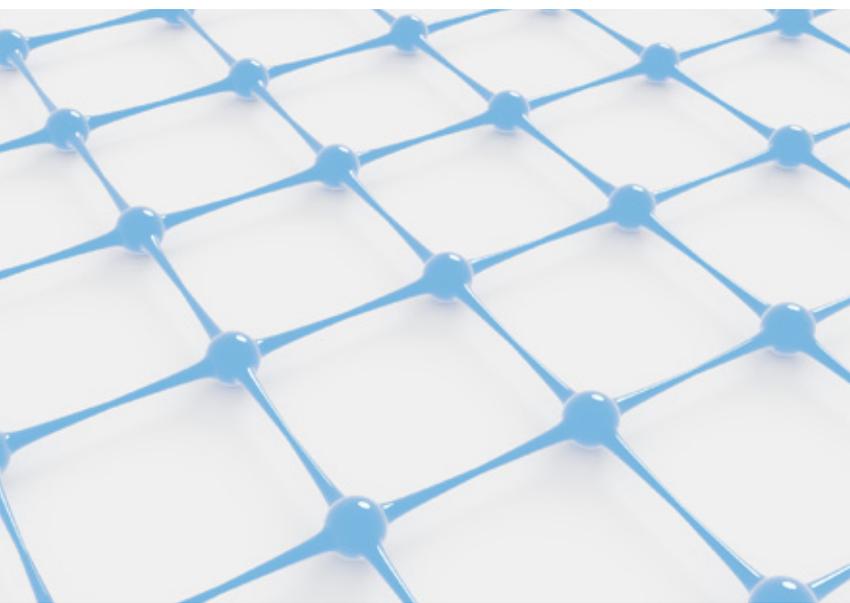


Figure 1. The 7 stages of the Making SMARTER Decisions with Data framework

SMARTER STAGE	PRIMARY OUTCOME	PRIMARY QUESTION
1. Seek context	Detail the context.	What is the business value?
2. Manage the data	Collect and organize data.	Do we have the right data?
3. Assure confidence	Trust the data <i>and</i> those who give it to you.	Is this data valid and reliable, considering the source?
4. Reveal insights	<i>Knowledge</i> — make sense of the data (what we know). <i>Current state</i> — what we need to take action on today. <i>Future state</i> — what we might innovate on in the future.	Is this logical and reasonable? What can we improve related to the decision? What can we transform in the business related to the decision?
5. Take a stand	Alignment around a decision.	What is the most important decision that needs to be made right now?
6. Execute decision	Action and delivery.	How are we going to make this happen?
7. Relay results	Forward movement.	Are we finished? What do we say about it?

Table 1. Primary outcome and primary question for each SMARTER stage

One might assume that high-risk, high-stakes decisions (the focus of this *Amplify* issue) occur only in the strategic realm. However, in my 34 years of consulting, I have witnessed seemingly routine frontline team decisions involving work process performance, technology procurement, equipment maintenance, expense management, and the like, that had far-reaching implications. Thus, for the SMARTER methodology to consistently produce actionable results, it must be embedded into an organization's DNA (i.e., culture, values) and used across all functions.



This is not how data strategy is currently framed. Organizations are encouraged to identify use cases aligned with business strategy and then to prioritize them for analytics work.⁹ Even though the SMARTER approach works well here, this method “projectizes” and compartmentalizes data-informed decision making. Then we wonder why leaders and staff are not routinely using data to improve decision making and why establishing a data culture is elusive.

Organizations are a bundle of three interconnected work processes/flows: daily work, cross-functional work, and strategic work. All processes have decisions attached to them, some simple (e.g., go/no go and if this, do that), others with higher risk (e.g., implementing the right marketing campaigns, selecting the right offerings for each customer segment) and decisions involving process standardization, continual improvement,

problem solving, or innovation (e.g., fixing broken supply chains, accelerating new product development).

What if leaders and staff used the SMARTER approach to optimize these non-simple work process decisions, too? This would ensure alignment to both mission and vision enterprise-wide. The following is a high-level overview of the topics in each stage of the SMARTER framework.

STAGE 1: SEEK CONTEXT

For business value to be realized, the elements of this stage are crucial. They force clarity and provide the foundation for meaningful, actionable (versus interesting) insights to reveal themselves. The key here is articulating the decision needing to be made in action words. For example:

- **Starting question.** How can we improve productivity and sales at the same time?
- **More specific question (non-actionable).** What is the key variable causing a delay in the closing of new digital marketing campaign contracts for existing A-list clients?
- **The business value question (actionable).** What is the most impactful change/action to take to accelerate the closing of new digital marketing campaign contracts for existing A-list clients? (Note the need to operationally define words such as impactful, accelerate, and so on.)

Documenting which work process(es) the business value question impacts and articulating the results being sought are important, too.

Next, flesh out whether decision stakeholders already have an answer in mind and merely seek to confirm it (this scenario is not conducive to using the SMARTER framework) or whether they are truly open to learning. You also will want to: (1) ascertain the level of pain and urgency to make and implement the decision, (2) set a timeline for the decision-making process, (3) agree on acceptable risk tolerance, and (4) outline assumptions to be examined, tested, and validated.

Critical thinking is insufficient here. Supplement the work in this stage with strategic thinking. Be conceptual, imaginative, expansive, and opportunistic, and use dialogue rather than debate.

STAGE 2: MANAGE THE DATA

The main question to answer is, “What data is relevant to the decision question?” Activities commonly associated with collecting, organizing, and initial data prep are encompassed here.

This stage does not assume that all the data required to make the decision is readily available or is in a usable form. This is where options for addressing critical unknown and/or unknowable data should be explored and where intuitions should be articulated and factored in as data. These may impact the level of risk and the timeline outlined previously. They may also reveal biases, which could cause a return to Stage 1.

STAGE 3: ASSURE CONFIDENCE

Confidence has two dimensions. The first is ensuring data integrity (i.e., accuracy, consistence, validity, reliability, and trust). A risk question like, “Is ‘good enough’ enough, given that ‘perfect’ may not be achievable time-wise?” requires discussion. Again, this conversation may spark a return to Stages 1 and 2. Be careful this does not spark Stage 1/Stage 2/Stage 3 loops that slow or stall progress.

The second dimension revolves around decision stakeholders’ confidence and trust in the source(s) — that is, the people involved in managing the data, ensuring its integrity, and analyzing it. I suspect we could all cite examples of how this can stall or halt work at Stage 5 (Take a stand) or Stage 6 (Execute the decision). Thus, its importance cannot be overlooked.

STAGE 4: REVEAL INSIGHTS

In this stage, data is analyzed, interpreted, and visualized, with the goal of getting to insight. A major challenge here is a natural human process called “dominance structuring,” which locks us into premature decisions and freezes us in perpetual analysis and reevaluation thinking.¹⁰

Before proceeding, we must distinguish “insight” from “intuition.” One helpful study defines intuition as “an experienced-based process resulting in a spontaneous tendency toward a hunch or a hypothesis ... [which happens on] the fringe of human consciousness.” Whereas insight “refer[s] to the sudden and unexpected understanding of a previously incomprehensible problem or concept ... that comes with ease ... and confidence in the truth of the solution.”¹¹ In short, insight is an aha moment.

More importantly is what insight is not (see Table 2). Too often, a summary of findings or series of data visualizations is called an insight, when it actually just provides an alternate way of looking at the data.

In her book *Strategic Thinking and the New Science*, strategic thinking expert T. Irene Sanders cites three sources that state that even though insight “comes after intense preparation or study of the problem to which it responds, it comes in ‘flash’ while conscious thought is focused elsewhere.”¹² That explains why we get insights while sleeping, bathing, or exercising — not in structured meetings!

INSIGHT COULD BE ...*	INSIGHT IS NOT ...
An unknown fundamental truth about people, things, or the world at large	A summary of findings
An overturning of a status quo assumption, belief, or behavior	An observation or group of observations
A deeper reflection that ties together incongruent or dissimilar findings	Data, some aggregation of it, or a data visualization
A new discovery	A wish or desire
A novel viewpoint that has not been entertained before	The original business value question or need

*Source (left column): Sanders, T. Irene. *Strategic Thinking and the New Science*. The Free Press, 1998.

Table 2. What insight is and is not

Dietz and I contend that three kinds of insights can emerge here. We derived them from various permutations and discussions on the DIKW Pyramid¹³ (which has now evolved to data, information, knowledge, *understanding*, wisdom¹⁴). These insights are:

- **Knowledge insights** — a discovery about the reason, purpose, or cause of something. They are akin to sense-making (what we know). Be wary of accepting this type of insight as the be-all and end-all. These insights are not actionable.
- **Current-state insights** — an interpretation that results in a fresh, yet recognizable, perspective. In other words, what we need to take action on today.
- **Future-state insights** — a new way of viewing the world that causes us to reexamine existing conventions and challenges the status quo. For example, what we might innovate on in the future, and, as such, contain potential for action.

CRAFT A NARRATIVE STORY THAT ILLUMINATES THE INSIGHTS, GETS STAKEHOLDERS TO IMMEDIATELY MAKE A DECISION, AND MOVES THEM TO QUICKLY WANT TO IMPLEMENT IT

Without a clear, specific business value question, the foundation for identifying a meaningful, actionable current- or future-state insight is missing. At best, you might get new knowledge (rarely sufficient to spark action). If we return to the non-actionable question and learn that the key variable causing a delay in closing new contracts for existing A-list clients is legal contract review time, this does not reveal why or how to effectively shorten it. If the business value question is too general, you will likely get interesting insights that lack relevancy to the real business value question begging to be addressed.

STAGE 5: TAKE A STAND

Now that we have insights from Stage 4, we must decide on the most important insight(s) to be shared right now based on the business value question and how best to communicate them to decision stakeholders.

“Pre-suasion” (i.e., approaching decision stakeholders individually about receptivity to a message before encountering it directly) is useful here.¹⁵ Floating conjectures about the insight(s) will help you gauge stakeholder receptivity. Capture feedback, ideas for crafting a story about the insight(s), and input on decision timing based on business priorities and constraints.

Key to designing a story that effectively relays the insight(s) is knowing how the brain receives data and makes decisions. A summary of this research is in my previous *Amplify* article, “The Increasingly Vital Role of Business Storytelling in Leadership.”¹⁶

What do these studies tell us about how to communicate insights? Unfortunately, data storytelling methods that advocate providing data, dashboards, or data visualizations to decision makers will land flat (see sidebar). Instead of getting a decision and action, these approaches often spark debate, blaming, and questioning of earlier stages, including requests to revisit work completed in Stages 2, 3, and 4.

Instead, craft a *narrative* story that illuminates the insights, gets stakeholders to immediately make a decision, and moves them to quickly want to implement it.¹⁷

STAGE 6: EXECUTE DECISION

This is where the rubber meets the road — the first chance to realize tangible business value through leveraging data.

This stage is about *action*: deploying and implementing the decision. Conversations here include outlining what impact the decision will have on the broader organization; who needs to be involved and what story they need to hear; who owns deployment and implementation; and creating action plans, obtaining the necessary resources, and determining how to collect data on the results.

HOW DO YOU GET PEOPLE TO DONATE? TELL A STORY.

Have you ever wanted to know the secret to getting people to grab their wallet, open it up, and give you money? Deborah Small, a researcher at the University of Pennsylvania, teamed with colleagues to conduct experiments on this.

Participants were divided into three groups. The first group was given lots of data about a nonprofit: how long they'd been in existence, the size of their annual budget and staff, their program spending, information about their constituents, and the like.

The second group heard a story about a young girl lacking food, clothing, housing, and education and how difficult it was for her to live each day — and how services she received from the nonprofit made a significant difference.

The third group heard both the story about the young girl and the nonprofit data given to the first group.

Everyone was handed five \$1 bills and asked, "Please donate." Guess what? Everyone gave. The first group, which received only the data, gave a small amount. The second group, which heard the story, gave more than twice as much.

How much money do you think people in Group 3 gave (those that heard both the story and the data)? Do you think they gave more than those who heard only the story? If so, guess again! They gave the exact same *tiny amount* as the group that only heard the data. Oh my! How can this be? It feels counterintuitive!

What do you think caused these results? What Deborah and her colleagues learned is, "You need to 'free the story from the data.'" Data and information on their own don't create empathy for an organization or those it serves. When a well-constructed narrative story is shared, significant empathy is produced, and people willingly give more.

When data accompanies a story, it completely undermines any empathy the story created, leaving people with a lack of emotional connection that Group 1 experienced. That's why Group 3 gave the same tiny amount as the first group.

Now that you know this secret, you need to "free your story from the data."

Adapted with permission from: Dietz, Karen, and Lori L. Silverman. Business Storytelling for Dummies. Wiley, 2013.

STAGE 7: RELAY RESULTS

This final stage focuses on wrapping up implementation and determining what results need to be communicated and to whom. This includes what was learned during adoption and outlining next steps, if needed.

THE ROLE OF BUSINESS STORYTELLING

Business storytelling has numerous applications within the SMARTER framework, as outlined in Table 3. Using these techniques accelerates communications and heightens understanding and acceptance. My previously mentioned *Amplify* article discusses how to construct story prompts.¹⁸

CONCLUSION

How do we increase the number of organizations whose leaders and employees routinely use data to make decisions? How do we integrate this into organizational cultures so it is warmly embraced by all business functions?

We need to stop focusing exclusively on data and utilize a comprehensive decision-making methodology to make better, faster, more accurate decisions that we are confident in. It is through decision intelligence that we create more intelligent enterprises.

Acknowledgement: the author would like to acknowledge Karen Dietz, PhD, for her co-development of the Making SMARTER™ Decisions with Data framework.

SMARTER	BUSINESS STORYTELLING TECHNIQUES
Seek context	<ul style="list-style-type: none"> • Use story prompts instead of questions to flesh out the decision environment and associated factors. • If there is a business use case, craft it as a story.
Manage the data	<ul style="list-style-type: none"> • Use stories to relay the context surrounding the decision to those involved in collecting and organizing the data.
Assure confidence	<ul style="list-style-type: none"> • Convey stories that help decision stakeholders to trust the data and the people working with it.
Reveal insights	<ul style="list-style-type: none"> • With those involved in analyzing data and uncovering insights, use stories to relay the context surrounding the decision and what may have been revealed in managing the data and assuring confidence.
Take a stand	<ul style="list-style-type: none"> • Craft and tell stories about the insights: <ul style="list-style-type: none"> ◦ <i>Knowledge</i>. Story is about “how” things came to be the way they are. ◦ <i>Current state</i>. Story is about “actions to take given the current reality.” ◦ <i>Future state</i>. Story is about “transformation,” the new opportunity that leads us into a future state: <ul style="list-style-type: none"> ▪ “I see a new market.” ▪ “I see a new offering/innovation.” ▪ “I see a way we can disrupt the marketplace.”
Execute decision	<ul style="list-style-type: none"> • Use story prompts to generate ideas about how to get the decision implemented successfully. • Use stories about dissatisfaction with the status quo, the vision of the change (including anticipated results), and first steps (e.g., priorities, steps to take, time frames)
Relay results	<ul style="list-style-type: none"> • Share stories about the results, the people who were involved, and the obstacles they overcame.

Table 3. The role of business storytelling techniques in decision making

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About the author

Lori Silverman is Shift Strategist and CEO of Partners for Progress, where she has helped enterprises from 16 to 1 million in size strategize about their future; navigate messy, complex changes; make smarter decisions with data; and lead with story. Since 1991, Ms. Silverman has worked in 25 industries, with such enterprises as Chevron, McDonalds, Target, American Family Insurance, Wells Fargo, Phillips North America, and the US Air Force. She has inspired thousands to take action through hundreds of keynotes and workshops. Ms. Silverman has authored five books, including bestsellers *Wake Me Up When the Data Is Over* and *Business Storytelling for Dummies*. She is an adjunct professor for Golden Gate University's Industrial and Organizational Psychology Master's Program. Ms. Silverman earned a master's of science degree in counseling and guidance from the University of Wisconsin-Madison and an MBA from Edgewood College. She can be reached at lori@partnersforprogress.com.

NAVIGATING BUSINESS THROUGH TURBULENT WATERS

Author

Paul Clermont

Those of us who have been around for a while are prone to dismissing younger people's concerns about "unprecedented" levels of turbulence. We point to the existential fears of the Cold War decades; the violent protests, assassinations, and burning cities of the late 1960s; stagflation and gas lines in the 1970s; the tech booms and busts; 9/11; and the near meltdown of the financial system in 2007-2008, reminding others that we weathered these storms and sometimes came out stronger.

But this time really does seem different. It's as though the high winds and waves are coming at us from every direction at once. There's the poisonous polarized politics, not limited to the US, and the sclerotic, unresponsive, ineffective governance it leads to. There's the reappearance of brutal autocrats with nukes in Russia and China, threatening and invading their neighbors. There's the near-daily news of record-breaking weather "events" around the world that have become impossible to attribute to anything other than human activities baked into our everyday lives, economies, and cultures. Inflation is rearing its head again. Global supply chains have been broken, with critical materials like rare-earth elements needed in electronics controlled by unreliable or potentially hostile governments. As though all that weren't enough, we're in our third year of a global pandemic caused by a rapidly shape-shifting virus.

But we still have to sail our boats. It's just different and harder. More decisions are required, even as the bases for making them can shift in a moment, meaning we need flexibility and nimbleness as never before. We need leaders with more than just knowledge, insight, and skills; they need the temperament to remain calm and collected as they apply analysis and judgment to high-stakes decisions.

This article starts by defining the critical ingredients of good decisions and moves to the roles IT can play in decision making. It draws extensively on an article I wrote for *Cutter IT Journal* (renamed *Amplify*) back in 2014.¹ (Unless you were Ukrainian, that was not an especially turbulent time.) That piece recommended thorough analyses that this

article summarizes. Pushing that further, we focus more deeply on risk reduction through hedging our bets. The article enumerates classic mistakes in turbulent times: approaches and behaviors that are easily fallen into but must be avoided, then it gets more specific about what to do instead.

We're used to glorifying clever people who make good things happen. But behind the scenes are equally clever people who figure out how to keep bad things from happening — or how to minimize the damage when they do.

INGREDIENTS OF GOOD DECISIONS

The objective of any decision in times placid or turbulent is to achieve the best possible outcome based on what we can reasonably be expected to have known and understood at the time we made the decision. Getting to a good decision requires a mix of science and art with a touch of alchemy. Let's deal with the science part first:

- **Facts**, obviously, but they must be carefully distinguished from opinions, beliefs, assumptions, conventional wisdom, and hopes. Not that those aren't sometimes useful, but we need to recognize them for what they are and treat them accordingly. Specific facts we need include the situation, our options, risks, rewards, and constraints, as well as urgency and the consequences of inaction.
- **Insights** developed from personal and organizational experience and knowledge of historical analogues and precedents.

- **Logic and reasoning** are essential in making sense of how the things we know and believe and assume interrelate and apply to the situation at hand. Game theory, a branch of mathematics, can be helpful in some cases where several options are available and you want to, for example, minimize how bad the worst case would be, which is rarely the same as maximizing how good the best case would be.

DECISION MAKING IN PRACTICE IS NOT JUST ABOUT DOING THINGS RIGHT, IT'S ABOUT AVOIDING COMMON WAYS OF GOING WRONG

These ingredients are necessary but not sufficient for good decision making, and this is where *art* gets into the mix. Emotions matter, our own and those of others. There's a reason Captain Kirk was in charge of the *Enterprise* rather than Mr. Spock. Some art ingredients to consider:

- **We need to know ourselves** — our tendencies, style, biases, self-image, and the image we want to project, plus our own culture's beliefs, norms, and expectations and how those factors may affect our decisions for good or ill.
- **We need to understand our environment** — the *people* whom our decision will affect, the *cultures* in which those people live and work, and the *politics* (i.e., stakeholders who may or may not be willing to influence people and nudge culture).
- **We need to learn that judgment is what good decision makers use** — to bring all these ingredients (calling them "tools" suggests they're more mechanistic than they really are) together in the right proportion. The critical element is pragmatism, which comprises both science and art. Inquisitiveness and healthy skepticism are essential in making judgments. Like art, which it is, good decision making is hard to teach. Some fortunate people are naturals at it; others can learn from mentors, examples, and mistakes; still others never quite get the knack.

HOW DECISION MAKING GOES WRONG

Decision making in practice is not just about doing things right, it's about avoiding common ways of going wrong. The following are typical pitfalls:

- **Failure to verify supposedly factual information — garbage input to decision making, garbage decisions out.** Just because IT can make information look highly authoritative, replete with clever graphics, doesn't make that information any more intrinsically reliable than a scribble on the back of an envelope.
- **Failure to challenge received opinions, assumptions, and beliefs — our own or those of others.** This could fill several books, and has, but here are a few examples: the weapons of mass destruction that weren't in Iraq, Microsoft failing to recognize the central importance of the Internet even as late as 1995,² and the reliance on "blue wall" states coming through for US presidential candidate Hillary Clinton in 2016.
- **Confirmation bias, meaning subconsciously screening out information that doesn't agree with what we believe to be true.** This is a particularly insidious form of the previous pitfall, because we're typically not even aware of doing it. No one is immune; the only counter is constant examination and reflection to sort what we really know from what we or others thought true.
- **Closing off options by deciding prematurely (or tardily).** Decisive people fear tardiness much more than the opposite, making prematurity their more likely pitfall. We've all done things that have gone wrong and then said, "If only I'd known." Too often, we could have known but did not want to take the time to learn more, or perhaps we at some level didn't want to learn something that would dissuade us from making the decision we wanted to make — a conscious form of confirmation bias. (It could even be because the meeting called to decide ran out of time before it ran out of arguments.) Iraq comes to mind, where the haste to have the war over before the brutal Iraqi summer caused the premature cessation of the United Nations inspection, which had up to then revealed no weapons of mass destruction, as in reality none existed. Robert Rubin did not get to run Goldman Sachs or become US Treasury Secretary by being indecisive, but he always avoided making decisions before he had to.³

- **Failure to learn from history and overlearning from history.** “This time it’ll be different” and “This time it’s just the same” are two sentences rarely heard from good decision makers. This time is this time. Nuances matter.
- **Machismo, meaning making decisions quickly to demonstrate strength and cojones.** Bullying and browbeating are often involved as someone exercises political clout to force his or her will, declaring that “failure is not an option.”
- **Groupthink, in which participants get caught up in mutually reinforcing enthusiasm,** drowning out questions and voices of caution.
- **Doubling down; there’s a saying that when you find yourself at the bottom of a hole, stop digging.** Too often, we switch to a bigger shovel (e.g., adding staff to a troubled project who will only trip over one another), rather than understanding and adapting to the new reality.
- **Making decisions too close to the vest even when secrecy is not critical,** thus losing out on potential sources of knowledge and insight as well as reducing the breadth of ownership.



Unfortunately, an optimally made decision is not enough to guarantee a good outcome, especially when times get turbulent. There’s also luck. Some well-made decisions inevitably prove wrong for reasons that could not have been anticipated, and some badly made ones back their way into fortuitous success. Both present “teachable moments” if we let them. More often, we punish those responsible for well-made decisions that don’t pan out and reward the alchemists lucky enough to have gold paint spill on their lead.

ADAPTING TO TURBULENT TIMES

Turbulence changes none of the above. In fact, it adds to it: new pitfalls, even new practices. That may sound contradictory when speed and nimbleness are critical. What needs to be different is, for lack of a better word, the style.

AVOIDING CLASSIC MISTAKES

Turbulent times don’t always bring out our wisdom; sometimes just the opposite:

- **Paralysis.** Two classic mistakes often go side by side: stopping the act of making decisions and staying the course on decisions already made. It’s the epitome of intellectual laziness and reflects the mistaken belief that any change is inherently riskier than stasis. It’s risk non-management trying to disguise itself as risk minimization. Back in the boat, it’s staying on course for your original destination without looking for an intermediate harbor and keeping all sails set even as the shifting winds pick up to gale force.
- **The sunk-cost trap.** There’s a natural human instinct not to walk away from something that you’ve already put a lot of resources and effort into, even if the likelihood of achieving the goal falls precipitously. It’s a trap; the time and money spent are forever gone. Even if you only need another X to get a return of Y, if you wouldn’t now start something new that cost X to get Y, you should cut your losses. It’s hard psychologically and can be politically fraught, but it’s correct. People who don’t understand this or are loath to apply it are always welcome at friendly poker games.

- **Indiscriminate belt-tightening.** It makes sense to get down to fighting weight when you need to be nimble, and every organization puts on weight over time when things have gone well. But across-the-board cuts (“We all must share the burden ...”) are like losing weight by getting rid of both fat and muscle. We know better for our bodies, but we don’t always seem to for our organizations — again, intellectual laziness.

TURBULENCE AND THE NEED FOR QUICK DECISIONS DOESN’T CHANGE THE NEED FOR CLEAR THINKING

Even when we avoid these obvious traps, others litter our path:

- **Freezing up in the face of seemingly overwhelming disaster.** The hyper-urgent actions to keep the financial system from imploding in 2008 were often nothing the principals would ever want to do or ever dreamt of doing, but which emerged as the least awful alternatives.⁴ “Extraordinary times call for extraordinary measures,” as then-US Federal Reserve Chair Ben Bernanke said.
- **Overly rigid adherence to abstract principles or standard procedures.** The words “always” and “never” can be dangerous when taken too literally. Sometimes, decision makers need to be pragmatic, possibly even devious, though not unethical. This is particularly true in dire situations, where “I did it by the book” is no defense for letting a disaster get worse. As boxer Mike Tyson said, “Everybody has a plan until they’re punched in the face.”
- **Analysis paralysis.** This may be a slight exaggeration, but I suggest that spreadsheet software is both the best and the worst thing that ever happened to decision making. Why it’s the best is obvious. It allows us to answer what-if questions by easily building straightforward models

of complex situations. Why it can be the worst is what happens when we turn the spreadsheet jockey loose before we think through the model. (Yes, it’s like computer programming that way; it is computer programming!) Mucking about with the spreadsheet sucks up all the energy; there are only a few scenarios worth modeling, but the ability to model thousands provides a kid-in-a-candy-store experience.

MAXIMIZING FLEXIBILITY

Turbulence and the need for quick decisions doesn’t change the need for clear thinking, but it modifies the goal and style. The thoroughness needs to focus on:

- **Favoring future-proof decisions.** When turbulence obscures the future, the primary goal of investments is that they will pay off under a broad set of eventualities. A high payoff investment that seemed like a no-brainer under stable conditions may not look so good if the payoff depends on too many uncertain things going right.
- **Reducing the scope of decisions.** Plans for investments need intermediate checkpoints to the greatest extent practical, with a plan B or C thought out and ready to be embraced with minimal disruption if new potential circumstances make B or C suddenly look better than Plan A. There might also be a Plan Z to stop cold turkey or Plan Y to pause and mothball what’s been done in an orderly way for possible revival. Such course corrections are also teachable moments. Could we reasonably be expected to have anticipated the new circumstances, and if we didn’t have a Plan B, why not? Is there a pattern of analysis or behavior that could be improved for the future?
- **Revisiting prior decisions.** Economist Paul Samuelson nailed this when criticized for changing his mind over time: “When the facts change, I change my mind. What do you do, sir?”⁵ No one can predict which facts change and when, but that’s no excuse for not paying attention when they do. Some prior decisions will stand. Others will become very questionable, raising the possibility of abandoning, limiting, or modifying them. All are fair game; there should be no sacred cows.

- **Proactively seeking exposures.** Assuming there's already attention paid to competitors, customers, and technologies (i.e., the risk sources that apply in placid times as well as turbulent), turbulent times demand attention to the sources of turbulence described in the introduction. This attention should not be restricted to investments in progress. Decisions made years or decades ago could come back to haunt us. Examples include critical facilities in areas where hundred-year floods have become, if not annual, a lot more frequent; water-dependent operations in long-standing drought-stricken areas; and critical components procured from countries with unstable and potentially hostile governments.



In the short term, hope may be the only alternative, suggesting the need to develop contingency plans and workarounds. Back in the boat, this is like paying attention to the weather forecasts and, when gales are coming, plotting a new course that brings you closer to harbors in case you need them, even if they add time to the voyage.

RETHINKING OPTIMIZATION

Software suites like enterprise resource management and supply chain management have enabled levels of optimization unthinkable not that many years ago, but there is such a thing as overoptimization. It's when the optimal result requires a lot of separate steps to go right and there aren't straightforward workarounds when they don't. This is particularly applicable to supply chains as we learned during the pandemic. But other events can throw a monkey wrench into an optimized process: strikes, fires, and acts of God-like storms or earthquakes. These can happen to upstream vendors we may not even be aware of, as we learned with the Fukushima nuclear disaster in 2011.

A bit of redundancy or inefficiency can be thought of as a form of insurance. No sane person bemoans what they spent for fire insurance last year because their house didn't burn down. From a more mathematical viewpoint, we should think of optimizing the expected value rather than the best case when probabilities of problems and glitches increase, as they do in turbulent times.

THE ROLE OF IT

People made decisions for many millennia without the benefit of IT, and it's not self-evident that we make our really big decisions in the computer age consistently better than before. Smaller decisions in relatively information-rich situations are another matter. But IT, properly used, has been and will continue to be important to decision makers in critical ways.

IT is really good at collecting, storing, retrieving, and analyzing facts and making them instantly available everywhere. The more heavily a good decision requires and relies on facts and rigorous analysis versus the other ingredients noted above, the more helpful IT can be.

By shortening the time between decisions and when their results can be seen so the decision maker can analyze and act on them, decisions can become much smaller in scope, limiting their risk. Many more such decisions will be needed, but the sheer volume of data collected can help decision makers improve their rules and guidelines (see sidebar).

ZARA: SUCCEEDING IN FAST FASHION WITH DATA-DRIVEN DECISION MAKING

Zara is a ubiquitous European chain of clothing shops catering to young women who want to be fashionable but have a limited clothing budget. This is not an easy clientele. Their tastes can be fickle, and some seemingly inspired ideas just don't catch on.

Most retailers in this space can't afford to have garments made in high-wage Europe, so they rely on China and other low-wage countries for their production. Although this lowers unit costs, the lengthy supply chain stretches the turnaround times for changing the styles, cuts, colors, and sizes of the products, as well as the markets to which they're sent. Thus, the stakes of these product decisions are high, and the error rate in making them is reflected in the prevalence of clearance sales, with as much as 70%-80% off. What never makes it to the financial statement is the opportunity loss when an item is an unanticipated hot seller, but the company can't get it to the shops before customers move on.

Zara had a different idea.¹ It made its products in Spain, its home country, in small workshops close to its distribution facility. How could Zara afford this? The company used IT to reduce the scope, and thus the risk, of its product decisions. By capturing extensive product data at the point of sale, transmitting it in near real time to headquarters, and analyzing it quickly and thoroughly, the retailer could rapidly change work orders and production runs to increase the supply of what sold well and decrease or eliminate production of what didn't. Zara could also quickly reallocate products from one market to another (e.g., if Dutch women liked something German women didn't). The result was a near absence of clearance sales. Everybody won: customers got what they wanted, Spaniards got jobs, and Zara made money.

¹ McAfee, Andrew, Anders Sjöman, and Vincent Dessain. "Zara: IT for Fast Fashion." Harvard Business School Case, 25 June 2004.

IT can help identify in a timely way when decisions are needed. For example, it can supply early problem detection and trends via dashboards, executive support systems, and business intelligence.

It should be obvious, but it always seems to bear repeating that information upon which decisions are made must be accurate! There's no room for fudges, and a culture that tolerates them (or even encourages them with a nudge and a wink) must change. Turbulence can destroy an enterprise that doesn't have a handle on what's really going on. Good decisions will result solely from luck.

4 GUIDELINES

Decisions can affect the next five seconds or five centuries. Decision-making techniques, using that word loosely, range from carefully crafted algorithms to the seat of the pants; each has a role. Since the ability to decide is what makes us human, decision making showcases every human foible.

The world we live in and our own lives have been shaped for good or ill by an infinity of decisions. People will analyze and try to improve how we make decisions as long as there are people, and while some of us (we hope those in powerful positions) should gradually get better at it, progress won't be monotonic, and there is no endpoint. Still, we must chip away, trying to learn from past mistakes, our own and others'. Here are four guidelines for decision makers at all levels:

1. **Be inquisitive.** Ensure you really understand the nature of the decision and its ramifications. Asking lots of questions is a sign of wisdom, not a confession of ignorance.
2. **Be skeptical.** Don't accept answers at face value.
3. **Be diligent.** Making good decisions is not easy; tools and techniques can help, but only if their limitations are understood; if not, they're dangerous.
4. **Be humble.** No one is immune to mistakes, and surrounding oneself with "yes people" greatly increases the likelihood of going wrong. The death and destruction caused by hubris over the millennia is incalculable.

A thought that might have occurred to you while reading this piece is that nothing suggested for turbulent times would be overkill or wrong in placid times. Maybe it should just be the standard way. As we know, turbulence can appear out of nowhere. On 10 September 2001, we may have berated ourselves for having bought Enron or WorldCom stock, but otherwise the waters seemed pretty calm.

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DECISION MAKING IN THE TIME OF COMPLEXITY

Authors

Dave Martin, Tony Ponton, and Kim Ballestrin

If you peruse the business section of the newspaper, browse the business section of a bookshop, or read any business journals (*Amplify* included), you will almost certainly encounter a huge number of words devoted to complexity and the challenges that dealing with it cause for business leaders. How to deal with complexity has become the defining question for leaders in the last decade, and terms like VUCA (volatile, uncertain, complex, and ambiguous) have become ubiquitous.¹

The massive disruption caused by the pandemic has made the problem of complexity very real for leaders who once considered themselves in a relatively safe, stable environment. Global supply chains have proven highly susceptible to disruption, and established norms around how and where we work have been overturned. At the same time, the need to respond rapidly to a changing climate is shifting long-established patterns of investment and threatening to strand once-valuable assets.

TRADITIONAL DECISION MAKING

In the past, we have been able to rely on a relatively small set of decision-making strategies that work extremely well when conditions are stable. Although we like to tell ourselves that we are data-driven, rational decision makers, a large number of decisions are made based on experience or instinct, rather than actual analysis. More often, analysis is often used to justify a decision that has already been made. There is nothing wrong with experience-based decision making. When conditions are stable, past experience is a very good predictor of future outcomes. What worked yesterday will probably work today, as long as conditions are stable.

Where analysis-based decision making is used, it serves organizations well. Identify the problem, analyze potential solutions, then pick the best (or least worst) outcome. If conditions are stable, you can analyze potential outcomes from a decision with a high degree of certainty. The analysis you did last year is likely to still be valid today. As long as conditions are stable.

**WHEN PAST
EXPERIENCE
CAN'T BE USED
TO PREDICT
FUTURE
OUTCOMES,
LEADERS
MAY BECOME
PARALYZED**

As soon as conditions become unstable, these decision-making techniques quickly lose effectiveness. When past experience can't be used to predict future outcomes, leaders who rely on experience may become paralyzed, unable to decide or stuck in a pattern of repeatedly trying what worked before with less and less success.

In rapidly changing conditions where the results of an analysis are out of date before it is completed, leaders can end up in a spiral of analysis paralysis, continually searching for the analysis that gives them certainty and unable to move without it. Complexity robs us of our ability to be certain about our decision making.

MANY OF THE TOOLS WE REACH FOR IN DAY-TO-DAY DECISION MAKING ARE THE WRONG TOOLS FOR A COMPLEX ENVIRONMENT

THE SEARCH FOR CERTAINTY

We are, as a rule, certainty seekers. We invent techniques like budgets, plans, and schedules to remove doubts about our likelihood of success and make ourselves more certain, or at least give ourselves the illusion of certainty. When we can't find certainty, we get stuck. If we can't be sure we are making the right decision, we often can't make a decision at all.

Complexity presents many challenges for decision making. In an uncertain environment, with conditions rapidly changing, how can you be sure that the decision you make is the right one? What data do you need to make the right decision? What happens if a decision is made and conditions change?

The biggest problem with making decisions in a complex, rapidly changing environment is not the decision itself; it's our psychology.

Our psychological need to be right the first time presents the biggest challenge to successful decision making in complexity. The inability to see a clear decision often leads to a decision being continually deferred to build more certainty through more analysis. This leads to delays that cannot be tolerated in our fast-changing world.

Once a decision is made, if it ever gets made, it is often seen as fixed. We have chosen our path; let's not revisit it. However, in a rapidly changing environment, the right decision today may not be the right decision tomorrow, and the inability to adapt becomes a veritable albatross around the neck of the organization.

THE WRONG TOOL FOR THE JOB

Leaders have deeply internalized the need to be right the first time. They feel every decision must be correct and unchangeable because to change a decision is to admit to having made a bad decision in the first place. Having a "right-first-time" view is fundamentally incompatible with successful decision making in complexity.

Many of the tools we reach for in day-to-day decision making are the wrong tools for a complex environment. It's like reaching into your tool bag and finding only a hammer. Although a hammer is a useful tool and can do many things, it is not the best tool in many situations. You can drive a screw in with a hammer, but slowly and with much damage to the timber you are fastening — and no guarantee that the timber will stay fastened under load.

Thus, leaders need to expand their decision-making toolbox. They need tools that allow for a rapid situation assessment so they can make a decision (right or wrong), then adapt that decision as it plays out in the real world.

The most important tool for leaders in complexity is the notion of partial correctness: a decision does not need to be, and indeed often cannot be, fully correct. It just needs to be correct enough to provide a starting point for learning.

The notion of waiting for a fully correct decision (indeed, the notion that a fully correct decision exists at all) is problematic in a complex environment. Leaders must accept that any decision they make will not be the "best" decision, but the "best we can do with the knowledge we have right now" is the right decision to make at this point in time.

As more information comes to light about the situation and how the organization is responding to the actions already taken, that decision can (and must) be revisited and adapted. Leaders in complexity can learn from Paul Samuelson, the famous 20th-century economist who is attributed to have said: “When the facts change, I change my mind. What do you do, sir?”²

Decision making in complexity is not difficult, just different. Old tools based on searching for certainty and finding the best answer must give way to a new set of tools based around iteration, experimentation, and adaptation.

COMPLEXITY IS EVERYWHERE, BUT NOT EVERYTHING IS COMPLEX

Although having the right tools in your toolkit to handle decision making in complexity is important, it is also crucial not to throw away your old tools. Buying a screwdriver does not necessitate throwing away your hammer.

A lot of decisions are made in a context of complexity, but there are a great many decisions within an organization that are simple. Perhaps the answer is fairly obvious, or the problem is amenable to analysis.

It is popular in business writing these days to refer to the entirety of the business environment as complex — everything is VUCA! This is just as unhelpful as assuming that nothing is complex. A mix of different decision types and decision-making tools are required in modern organizations.

So having a well-stocked tool bag is important. Knowing when and where to use each tool inside is even more important, and that requires a mechanism for appraising a situation and assessing which decision-making tools to pull out of the bag.

KNOWING WHERE YOU STAND

The Cynefin framework is a sense-making tool that provides a common language for groups to identify the levels of certainty in the environment (see Figure 1).³ It has five domains, with the central



Figure 1. Cynefin framework (source: Snowden)

one representing “when we do not know where we are” (the AC refers to *Aporotic* or *Confused*). The main value comes from the conversations in understanding which of the other four domains we are actually working in:

- The **Clear** domain is where we can have one best practice. We should be able to look up the decision somewhere and get a predictable outcome.
- The **Complicated** domain is one of expertise. There are often several good options, and the right subject matter experts can guide the decision to a good outcome.
- The **Complex** domain means we cannot predict the outcome. We will need to navigate the environment and take an exploratory approach to influence our decision making. This is the place where being partially correct shines, and we must be comfortable with the ambiguity that ensues. When we cannot predict an outcome, the attempt to gain certainty before we make a decision is costly and futile. This is the key reason for taking a test-and-learn (partial correctness) approach. How can we make the decision in a way that makes it safe to learn while helping us avoid bad unintended consequences? (Good unintended consequences are fine and should be amplified.)
- The **Chaotic** domain is where decisions are required very quickly, and the main aim is to control the environment and prevent further bad things from happening.

THE RIGHT TOOL FOR THE JOB

The Clear and Complicated domains have a high level of certainty. There is either one clear option or several good ones to choose from. Tools such as SWOT (strengths, weaknesses, opportunities, and threats) and cost-benefit analysis are effective here. In the Chaotic domain, action is required to prevent bad consequences from occurring or to prevent more damage. This is where a command-and-control approach is expected and useful. Take a building evacuation: everyone knows to follow the directions of the emergency response team that has been trained on what to do in various scenarios. Drills are very useful practices to prepare for and speed up decision making when a chaotic event happens.



One of the symptoms of complexity is when the usual decision-making tools seem to be taking a long time. For example, when business cases (to inform cost-benefit decisions) take years to compile. We cannot get to a +/-10% level of confidence without almost building the project, and by then, the sunk cost is so high it's tricky to stop it. Here, we can use light exploratory tools such as design thinking, experimentation, and feasibility studies. By surfacing and testing assumptions, we can start with being partially correct and build more certainty from that point.

One often-ignored tool in navigating through environments of complexity is the transparency of information. The ability for leaders to ingest, digest, and radiate the right information at the right time from the right source is essential to be able to respond to the demands of the VUCA environments in which organizations now operate.

Unfortunately, the organizational constructs that exist in today's enterprise have become so complex that they create a bifurcation of information. Information is held in silos and shared on a need-to-know basis, to the extent that leaders are left with no choice other than to make localized decisions based on what they know, surmise, or believe.⁴ This inherently increases the risk of incorrect, short-sighted decisions that are not in the best interests of the organization, the leaders, or their people.

One of the most important tasks a leader can undertake to mitigate (if not remove) the complexity that is truncating their ability to make fact-based decisions is increasing information transparency. This requires a focus on purposeful design in the context of the individual organizations and its leaders to reconnect or create the connective tissues that enable communication, information flow, and directional decisions (see Figure 2).

Designing purposefully requires us to fully understand the organization's information needs. We must know how to do the following:

- Make and enable dynamic directional decisions and expedient interventions.
- Provide alignment between strategic intent and delivery.
- Create bidirectional flow rather than single directional (push-pull).
- Be synchronous (immediately available) versus asynchronous (on demand).
- Understand what information is white noise and does not provide value.
- Recognize what needs to be deprecated — what is no longer recommended or must be removed — as it is simply there because it always was.

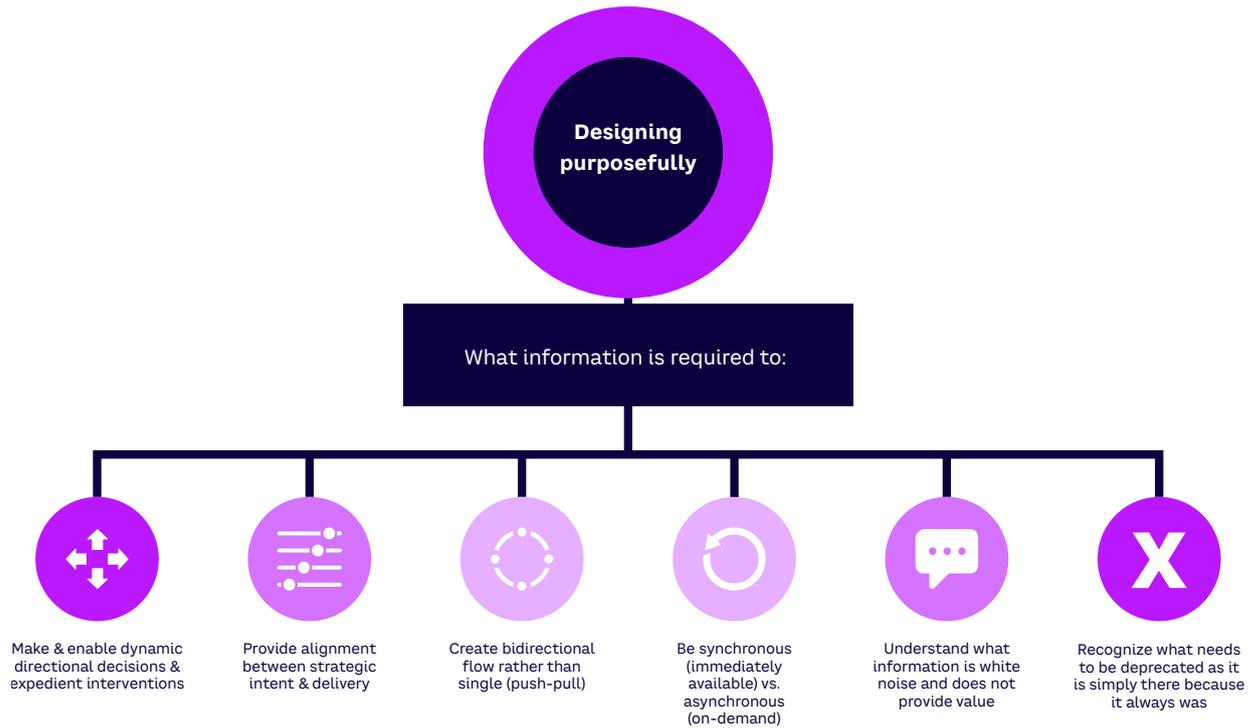


Figure 2. Purposeful information design

When we talk about tools to support decision making, leadership style is generally not top of mind. However, leading with intent is an important factor in increasing transparency and, therefore, a key factor in enabling decisioning.⁵

Leading with intent creates a bidirectional flow of transparency. Ensuring that those who are closest to the work have both the competence required and the organizational clarity needed to fully understand the situation allows decisions to be made close in person, place, and time to the issue at hand. Decisions can be made quickly, and feedback on the outcomes of those decisions can be received faster than in traditional, top-down decision-making systems.

This aligns to our understanding that right-first-time decisions in complexity are rare and the probe/sense/respond journey in the Complex quadrant of the Cynefin framework is required to reach the destination.

COMPLEX DECISION MAKING: A JOURNEY, NOT A DESTINATION

Decision making in complexity differs from decision making in other domains in that it's an

iterative process rather than a linear one. In other domains, you use whatever techniques are appropriate to arrive at a decision, and that's the end of the process. In complexity, you may make multiple decisions to get to where you want to go, checking each decision against actual results and refining as you go.

The process of complex decision making is a four-step cycle (see Figure 3). We start with the desired outcome — where we want to end up. It could be a very specific outcome, like increasing sales by 20%, or a more general one like being best in the market within five years. This gives you a direction you can test against, like plugging your final destination into your GPS; at any stage in the journey, you can test to see whether or not you are on track to reach your destination.

We next ask ourselves how we will know we are on the right track. What measures will we use to know that we are succeeding or failing in moving toward our goal? In our GPS example, we can check the distance remaining on the display. So for your end goal, what serves the function of the distance remaining on the GPS display? What measures can you make (preferably leading rather than lagging) that will tell you whether or not you are moving in the right direction?

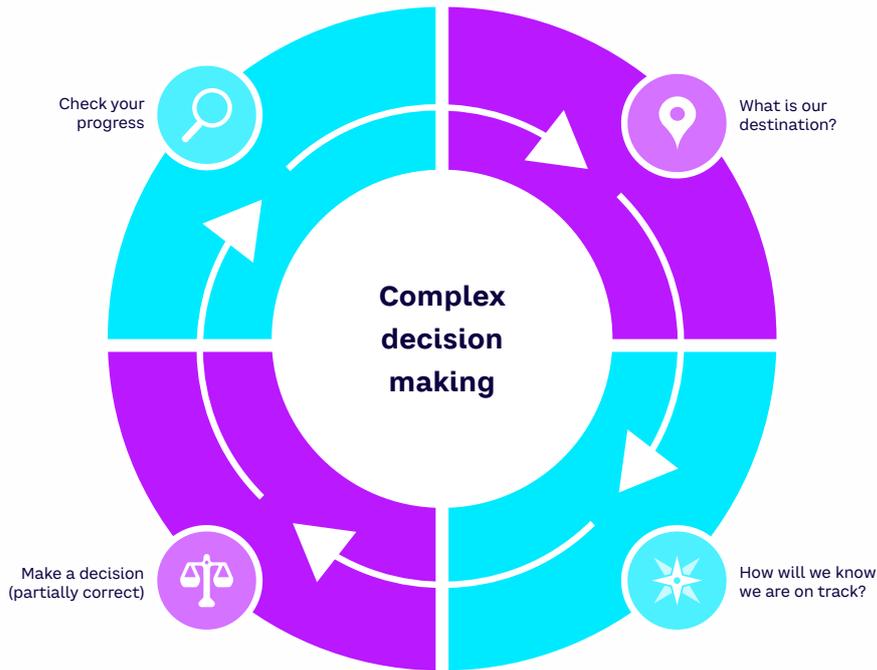


Figure 3. Cycle of complex decision making

Next, we make a decision that we think will get us closer to our goal. It may not get us all the way there (if it will, it's probably not a complex decision), but it should get us closer. Make the decision. Don't wait for all the information because you will never have all the information. Don't wait for the best possible decision because you will never know what that best possible decision is. Just make the best decision you can with the information you have on hand.

Then we watch our indicators. Are we moving in the right direction? Are we moving in the wrong direction? Are we standing still? What impact is the decision we made having?

Once we can see the impact of the decision and the direction we are heading, we loop back to the start. Now that we know more, is our destination still the destination we want to get to? Has a new destination revealed itself? Are our measures still appropriate? Do we need to revise the decision already made? If we are going in the wrong direction, do we need to change the decision? If we are going in the right direction, can we do anything to get there faster?

Decision making in complexity is a journey, not a destination. The decision you make is not the end of the process but the beginning of a cycle.

CULTURE OF COMPLEX DECISION MAKING

In complexity, there is no one best decision to make. We cannot avoid all risks. If we expect there to be a single best decision that we can make, that we can get right the first time, then decision making in a complex environment will seem impossible.

Leaders must become comfortable with the idea of decision making as a journey rather than a destination. They must become comfortable with not always having the answer, making mistakes, heading in the wrong direction, learning from that, and correcting. They must become comfortable with being partially correct.

Organizations that can make the leap from right-first-time decisions to partially correct ones will navigate the complex environment in which we find ourselves much better than those that can't. To do that, they will need to challenge the existing culture built around the need for certainty and the fear of not having the answer or of being wrong. They need to allow themselves to be uncertain, to make the best decision they can for now and correct later with no fear of punishment.

Our current culture strongly discourages the appearance of uncertainty. Politicians and business leaders are accused of flip-flopping or having made a horrific blunder if they revise or change a decision in the face of new evidence. Instead, they are expected to push on with their chosen course with certainty and determination. To change is to show weakness.

Overcoming this is the biggest challenge to making decisions in complex environments. Far more than the decisions themselves, the cultural barriers that lock us into right-first-time thinking and prevent us from embracing partial correctness are the challenges we must overcome.

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AMPLIFY

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