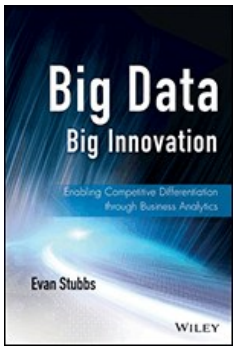

Big Data, Big Innovation: Enabling Competitive Differentiation through Business Analytics

by Evan Stubbs

Chapter 3: The Cultural Imperative

Overview

There's an excellent passage in Pirsig's book, *Zen and the Art of Motorcycle Maintenance*, where he talks of the relative value of a screw.[1] Screws are cheap. They're so cheap that they're practically inconspicuous. When they're working, they're invisible. It's only when they don't that we care.

An interest in quality can emerge anywhere, even in repairing a motorcycle. At some stage, everyone has stripped a screw. Normally, it's just irritating. When that screw holds the engine compartment shut, though, its relative importance changes. It may have once been a 10-cent screw. Now, its value is roughly equivalent to the resale value of your bike; if you can't get that screw out, your bike is worthless. And with that epiphany, you've probably suddenly become very interested in screws.

Culture's the same. When culture's supportive, it's invisible. It's only when it's an inhibitor that we notice it. Analytics is possible without a supportive culture; every organization has largely disliked cowboys that it still values. *Business analytics*, however, is a different game. Value only comes from getting people to work together. That's only possible when people agree on what it is they're chasing.

This chapter covers the *cultural imperative*, as shown in Figure 3.1. It describes the five perspectives on how information supports innovation and creates value.

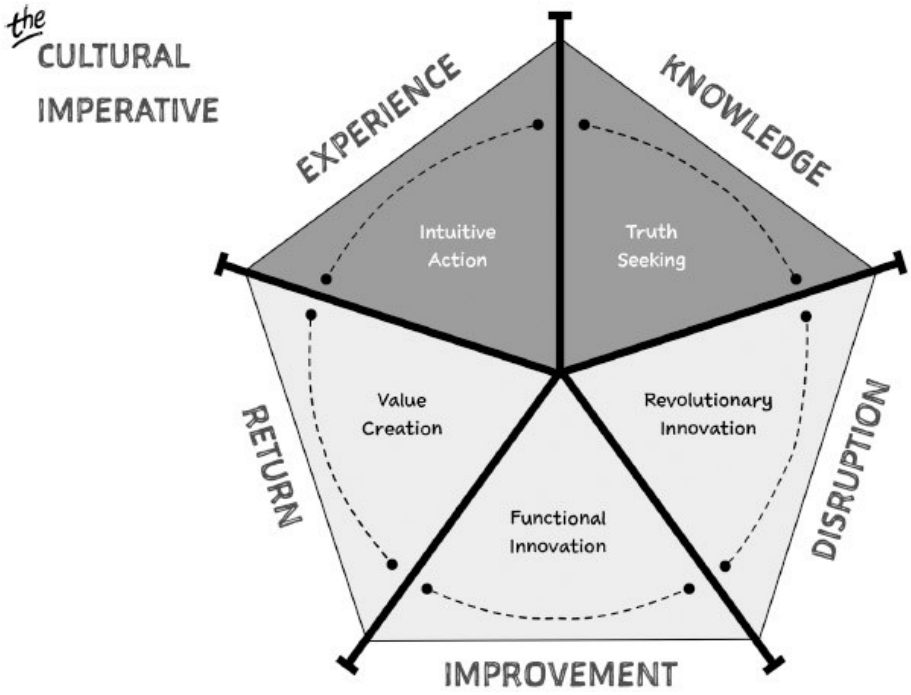

Figure 3.1: The Cultural Imperative

Every organization exhibits one or more of these to varying degrees. At a minimum, effective organizations are comfortable with intuitive action and truth seeking. The most high-functioning organizations manage to balance all of these competing points of view into a cohesive whole, creating dynamic value (covered in Chapter 8). The most dysfunctional organizations tend to coalesce around one point of view, becoming blind to opportunity in their dogmatic pursuit of a single goal.

Not everyone need be a disruptor. Everyone, however, needs to understand that the best results come from being comfortable with multiple points of view.

[1]Robert M. Pirsig, *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values* (New York: William Morrow, 1974).

Intuitive Action

Intuition is a powerful force. Our brain has greater processing power than the world's largest supercomputer. Its ability to detect patterns is unparalleled. Because of this, experience is an essential part of success—without it, all we do is

continually rediscover known solutions, wasting time and effort. However, this doesn't mean that we *always* come to the right conclusion on experience alone.

Copious research has demonstrated that we're horrible when it comes to unexpected situations. Our brain takes shortcuts constantly, building patterns and hiding them from the conscious part of our decision-making processes. These patterns help us make snap decisions, ones that work more often than they fail. When these patterns are violated, however, our intuition usually leads us astray.

Organizations that build a monoculture around this perspective are challenging places to be. Above all else, they value *experience*. On the positive, they tend to place strong emphasis on rewarding internal success. Experience is recognized and promoted. Assuming the right person can be identified, decisions are often made quickly—experience trumps all.

However, there are negatives. Rather than running on facts, the business operates on opinions and conjecture. Because of the link between experience and seniority, the highest-paid person in the room usually controls direction regardless of how valid or justifiable his or her beliefs are. "Analytics" is sometimes a dirty word, assuming the organization even has the capability in the first place. Even when people *do* go to the effort of sourcing valid information, it's normally ignored.

Apart from the smallest of organizations, those that build a monoculture around this perspective only have two futures. Either they get better at using their information or they go bankrupt. The only exception is if they're protected or a de-facto monopoly; any other situation usually ends in ruin or improvement.

The Lost Manufacturer

One of the "best" examples I've seen of an organization that built a monoculture around this perspective was a manufacturer that blended local assembly with global sourcing. While they had complete control over local assembly, they were largely at the whim of their global suppliers when it came to importing foreign goods.

Admittedly, their business was not an easy one. Their internal politics meant that a shipping contract meant little in practice. While they might submit an order for 200 goods of a particular type, they'd often open the container three months later to discover they'd been shipped 100 goods of a different type. In other months, they'd find 500 goods. It's not easy running a global business when your partners can't hold up their end of the contract.

When I talked with them, they were struggling. Their supply chain was hurting them, but it was more than that. Sales were down. Customers were unhappy. Recalls were up. Their problems were numerous. However, one of their biggest problems was that the product they were landing on shore didn't match what the market wanted.

Every month, their stock on-hand kept increasing. Obviously, this hurt their cash-flow; the money they were spending on product was getting locked up in capital. However, the bigger problem was more insidious. Despite their best efforts, they just weren't importing what the public wanted. Every month their inventory kept getting bigger.

I met with their planning team to discuss how they might fix these problems. In the room were the people who designed, ordered, sold, and marketed their products. After watching them for 20 minutes, it was painfully clear that their problems weren't because of strategy or even execution. Quite simply, it was because they couldn't agree on what they were doing.

They disagreed about how many products they'd sold over the last quarter. They disagreed about how large their potential market was. They disagreed about what they should be selling. They disagreed about who their customers were. They even disagreed about whether things were dire.

An hour later, the only thing they'd agreed on was that they couldn't agree. We walked out of the room having decided nothing.

To their credit, some of the more forward-looking people tried to raise these fundamental issues with their leadership team. Unfortunately, they were resoundingly shut down; those making the decisions were unquestionable. With over 20 years' experience, the data was quite simply irrelevant. In the battle between gut-feel and evidence, experience always trumped reality.

Three years later, they declared bankruptcy. Their local operations downsized by over 60 percent during the restructuring. And, despite a last-minute bailout from an interested party, their long-run sustainability is still in question. Their challenges were many and their successes few. However, one of their biggest blind spots was simply a complete and total resistance to actually *using* their information to support better decision making.

Common Characteristics

Organizations that revolve around this perspective often lurch from bad decision to bad decision. They have little understanding of how to define, manage, or even use information effectively. Because of this, decisions are made not on weight of evidence but on force of personality. Sometimes, through sheer serendipity, they get it right. Unfortunately, that single success usually justifies years of subsequent failures.

Culture doesn't magically appear. At some point, it was created because of its environment. Because of this, it's hard to fault their reliance on experience over evidence. More often than not, their data is usually fragmented, of highly variable quality, and generally not trustworthy. Usually, their culture was created by this very lack of information. However, this doesn't forgive *perpetuating* a dysfunctional culture. As this culture becomes the dominant one, they progressively ignore the root cause of their bad data: their own behaviors.

Analytics is seen as either being "too hard" or outright untrustworthy. If the data contradicts popular opinion, the default position is that the data is incorrect. Results are cherry-picked to support particular positions. In any given meeting, a substantial proportion of time is usually spent arguing what the right numbers are.

The almost total absence of data-driven decision making creates a vicious cycle. Decisions are made in the absence of data. When the organization acts on these decisions, this same lack of data makes it impossible to measure the effectiveness of those decisions. Because there's no traceability, everyone claims credit for successes and disowns failures. The successes people are happy to acknowledge justify the power of pure experience-based decision making. Because failures are ignored or outright covered up, this biased view ends up reinforcing the dominant culture.

Ironically, everyone normally agrees that things should be better. Sadly, the dominant culture prevents anyone from actually doing anything differently. And so, while things are obviously not as effective as they could be, the status quo remains.

Being comfortable with this perspective does have advantages:

- **Egalitarianism.** Success and internal experience is valued above all. Whether it's through experience or intuition, those who succeed are frequently promoted to positions of power and influence.
- **Clarity of ownership.** Sources of power are centralized and either explicitly or tacitly understood. Decisions rarely rely on consensus—specific individuals often have sole decision-making capability due to their experience. While they may or may not consult, they will eventually rely on their intuition taking into account the information presented to them.
- **Trust.** Those with the authority to make decisions are conferred a high degree of trust by the leadership team of the organization. This often encourages self-determination, personal responsibility, and the ability for individual units within the organization to operate semi-autonomously.

However, it does come with disadvantages. Some indicators of an organization excessively grounded in this perspective are:

- **HiPPO leadership.** The data people need to make their decisions either doesn't exist or isn't trusted. Analytics is rarely (if ever) applied. Subjectivity and gut-feel is the standard operating model, usually dictated by the *highest-paid person's opinion*.
- **Unconsidered reaction.** Firefighting is common and decisions are made without any clarity on how their effectiveness will be measured. Knee-jerk reactions are common and while plans may be made, they're rarely held to.
- **Fragmented inconsistency.** Decisions are made without consideration of their broader impacts. Outcomes are rarely (if ever) measured, making it impossible to understand what's working and what isn't. Fiefdoms abound and decisions are Made on self-interest rather than based on organizational objectives.
- **Self-delusion and outright denial.** Successes are claimed by all. Failures, however, are ignored or outright covered up, preventing valuable learning.
- **Survival.** The most common measure of success is treading water and simply maintaining the status quo. Achieving this is "good enough." Change is often seen as an active threat.
- **Aimless direction.** Key performance indicators are undefined and tenure is determined by politics rather than merit. Success is a subjective measure doled out by management based on unclear criteria.
- **Frantic desperation.** People constantly reinvent their job every time they face a challenge. Inputs and outputs are

undefined and when employee turnover happens, business processes are reinvented from scratch.

- **Person-centricity.** Competencies are not recognized, acknowledged, or even understood. Making something happen inevitably involves contacting a specific individual, without which everything becomes impossible.
- **Incapacitated and paralyzed.** Good ideas are ignored because of fundamental gaps in capability. Rather than being seen as an opportunity to improve, these gaps are used as a crutch to justify stagnation and the rejection of change.
- **Problem-based debate.** Cross-functional and internal disagreements are totally subjective in nature and focus on the root cause of current issues. Different parties will attribute current challenges to different sources, and rather than look for solutions, they'll argue about causes with no clear path to resolution. Usually ending at loggerheads, the different groups will take independent (and sometimes conflicting) actions to solve what they feel is "the real issue."
- **Feudal artisans.** Skills are hoarded by manual craftspeople who have developed their experience through years of practical application. The political enterprise guards their skills through the creation of fiefdoms and leverages their unique capabilities for internal political gain.
- **Technology is "nice to have."** Despite missing fundamental capabilities, technology is seen as a "nice-to-have" and is heavily neglected in favor of hiring and developing artisans. Spreadsheets multiply and information is a closely guarded power base for those who have accumulated it.

Expanding the Culture

Too much of one thing is rarely healthy. For most organizations with a monoculture of intuitive action, eventually things get so bad that something has to change. Their usual solution is very data-centric. If the problem is that they don't have good data, the answer must be to get that data. They decide that they need to consolidate, standardize, and cleanse all their information. Usually, they run out and buy a warehouse, appliance, or other storage platform and embark on a large-scale data transformation project.

Intuitively, this makes a lot of sense. This isn't entirely wrong, either. It's critical that every organization have access to high-quality information. It's just that it's not the whole picture. While it's an essential part of a functioning business analytics platform, it also unfortunately drives little value in isolation. It's what they *do* with the data that creates value.

Culturally, this usually marks the point where organizations become self-aware. They realize that even though they're highly experienced, they have an information problem and they need to fix it. Unfortunately, it's also where they often make a big mistake. After what's usually a very expensive and lengthy warehousing project, they realize that they have no idea what to do with the information they've consolidated.

On the positive side, they do normally get *some* productivity benefits. Standard measures usually enable some degree of operational efficiency and better performance measurement. On the negative side, this sudden deluge of information usually leads to "analysis paralysis." Despite knowing they have the data, they have no idea how to analyze it or even what to do with it.

Expanding the culture often involves getting people to acknowledge that accurate information (beyond financial measures) is critical to business success. Unfortunately, this means going directly against the dominant culture. Because of this, organizations with this monoculture usually only develop when faced with a "life-or-death" threat. Without that threat, "good enough" is good enough.

Truth Seeking

Experience only ever goes so far. That which we know is dwarfed by that which we don't. When dealing with the unknown, the best course of action is usually research. Organizations that are comfortable with this perspective understand that information is a key source of value as long as it's effectively analyzed.

However, this isn't to say that truth seeking is inherently better than intuitive action. Organizations that build too much of a monoculture around truth seeking are often slower than their competitors in action and time to market. Above all else, they value *knowledge*. Everything needs to be exhaustively justified with empirical information before anyone is willing to act. Decisions require consensus based on deep validation of the evidence. Experience and intuition takes a back seat to analysis and because of this, conservatism usually reigns.

Balancing this with a perspective that understands intuitive action leads to better outcomes. Organizations that embrace *both* of these perspectives are hopeful, if often stressed. One of their defining characteristics is that regardless of what

they say publicly, they know internally that they have problems. Of these, their biggest is often that they struggle to link big data and big data analytics to tangible returns. While they spend money, they're not entirely sure what it was worth.

They're often very advanced in many other ways. Their warehouses and reporting platforms may be technically excellent. Their operational processes may be extremely robust. They may even have very mature training and development programs. But, if you ask behind closed doors the tangible value of these, they'll usually acknowledge that it's hard to measure the returns. They'll have no problems telling you what their marketing campaigns are worth, but as to their data assets or the analysis they put into their data, your guess will probably be as good as theirs.

This isn't because they don't understand technology. Usually, it's because they place heavy emphasis on insight rather than outcomes. Their focus tends toward activities and tools and rather than being good at business analytics, they're experts in business intelligence or analytics. Many of their challenges lie in the way they view analysis— rather than seeing it as a discipline in its own right, they usually see it as something that can be solved by technology alone. This perspective actively undermines their long-term success.

Rise of the Technocrats

At one point, I was engaged by an organization to help with a technology selection process. They had unknowingly built a very strong monoculture around this perspective. Their main goal was to try to find the best technology they could to support customer matching. At our kickoff, 20 minutes into the conversation it was painfully obvious why they were struggling to connect with their customers in any meaningful way—they had absolutely no idea what their customers were interested in.

They had three separate sources of customer information across the group. One covered outbound communication, one services delivery, and one loyalty membership. For a variety of reasons they had never linked the three. In principle, they knew their customers' sociodemographic information, the households their customers were a part of, their spending over the last few years, the types of services they were most interested in, as well as their preferred communication channels. In practice, they could barely create a single clean list of email addresses.

Starting out with a single view of customer made a good deal of sense. The problem was that they hadn't thought about what should come next. They had no plans beyond creating a single view of customer—their implicit assumption was that by linking all their data, they'd somehow magically drive better customer engagement. When probed, there was no real engagement strategy. Despite having access to tremendously valuable behavioral and wealth information, their plans stopped at having a single source of truth and finding the "right" action. In many ways, they had the classic "if you build it, they will come" strategy. Unfortunately, their business case was based on a *big* revenue uplift through simply having this single view of customer.

I tried to explain that without the "what's next," it was unlikely that they'd deliver their proposed business case. There was nothing wrong with their desire to create a single view of customer. Nor was there anything wrong with the deep analysis they wanted to do. Their major problem was that they didn't know what they were trying to *do* with it. Having a single view of customer was an enabler, not an outcome. Their real challenge was working out how to leverage it once they had it, not how to create it in the first place.

The elephant in the room was that getting to that point would require a frank and objective review of how they went about acting on insights. Their real problem wasn't matching information; it was how they'd act on insight. Solving that problem would have required them to go back and redefine what they were trying to achieve based on the outcomes they wanted to drive rather than the technologies they wanted to buy.

Rather unsurprisingly, this was received rather poorly. They soundly rejected that point of view, firmly believing that by buying the right technologies their problems would disappear. Rather than looking into the skills, human capital, and processes they would need to develop, they wanted to focus on fuzzy matching routines and logical data architectures. They were so far down one track of thinking that nothing could persuade them otherwise.

At that point, I politely declined the offer to be engaged to deliver the project—it was painfully obvious that their project would likely fail and they would be looking for a scapegoat when things went badly. A year later, they had a great platform but still had yet to deliver any real outcomes. Shortly after that most of the team left for greener pastures.

Common Characteristics

Organizations with this perspective *love* technology and analysis. They're usually exceedingly good at buying it and managing it. They may also be experts in managing large-scale programs of work. Unfortunately, they also underestimate

the importance of people, process, and data in driving change. Because of this, they're constantly surprised when their projects deliver less business value than they were expecting.

People often work to activities, not necessarily outcomes. They're often extremely good at using data to find answers to hard problems. They may also be experts in using their technology assets. When it comes to acting on that insight, however, they're less consistent. The answers they find have a tendency to either disappear or be diluted. Creating knowledge and answering questions is counted as success; no one looks to see whether that knowledge created any value.

These organizations almost always conflate analytics with business analytics. It's not that they're ignorant—they'll often "talk the talk" and say all the right things. In their mind, though, "business analytics" is about data mining, visualization, machine learning, and other functional capabilities. Because of this they're mainly interested in functionality and analytical asset creation. Model accuracy is more often than not the primary benchmark for quality. Once they hit a sufficient level of quality or find a deeper truth, their job is done.

What happens from there is less of a concern. How that knowledge was *used* to drive value is either irrelevant or overlooked. Typically, the teams responsible for analytics or business intelligence claim that that's someone else's job and their role is just to create insight. Virtually no attention is paid to change management and it's taken as a given that the organization should value the insights they produce. Because of this, the rest of the business often gets frustrated and either complains, recruits their own analysts, or outright gives up and gets on with their job.

Processes are usually undefined and rarely reused. While frequently intelligent and highly capable, their teams are collections of individuals. Cottage industries abound and almost everyone in the team does what they prefer rather than what's the most efficient. This lack of reuse carries across to data as well; the amount of analytical data duplication (and corresponding effort) in these organizations can be staggering at times. While they may claim multiple petabytes of analytical data, peel back the layers and often they may have only terabytes of core data. The gap between the two is simply data being duplicated by different people.

Without changing their perspective, these organizations rarely achieve any real form of repeatable value from business analytics. They have deep insight but frequently deliver business-as-usual outcomes. Differentiation is transitory and regression to the mean is the norm.

Embracing this perspective does have advantages:

- **Clarity of insight.** There is tremendous value in being able to use data to answer hard questions. Where intuition and experience end, analytics sometimes continues.
- **Experimental innovation.** The constant drive to extract progressive insight from information often leads to testing and applying radically innovative techniques.
- **Analytical creativity.** The breadth and depth of information sources under analysis usually reinforces a culture of continuous creativity, encouraging analysts to always ask "what if."

Indicators of an organization overly grounded in truth seeking at the expense of the other perspectives are:

- **Intelligent inaction.** While the organization has the capability to find answers from data, insights are rarely acted on and disappear into the ether. Despite the capacity for intelligence, the organization rarely uses it to its advantage. Often, the organization becomes trapped by "analysis paralysis," which is struggling with the cognitive dissonance of having *too much* information.
- **Considered reaction.** Firefighting declines in favor of planned tactical execution but strategic planning still presents a challenge.
- **Inward-looking.** As external measures are still too hard to track effectively, decisions are made based on convenience, internal satisfaction, and political consensus, not necessarily on what would most benefit the customer.
- **Internal value.** While analytics is applied, it's unclear how much economic value it adds to the bottom line. Success is gauged based on internal customer satisfaction, perceived productivity improvements, and ease of decision making. Projects are still seen as successful in the absence of tangible value as long as they make it easier to run the business.
- **Being the underdog.** The dominant culture is one focused on keeping up and beating the odds. Passion is strong but there's a tacit awareness that capability lags comparable organizations.

- **Activity targeting.** Performance management happens but is focused on activity. For example, marketing groups benchmark based on campaign volumes, not profitability. Service centers focus on working to their measures, not necessarily what's seen as valuable by their customers. Centralized business intelligence teams are often viewed with distrust or resentment by other areas of the business because of their lack of interest on the outcomes their customers are trying to drive.
- **Challenging delivery.** Success happens, albeit through heroic effort. Analytically related activities take orders of magnitude longer than better-performing peers.
- **Process-centricity.** Focus shifts from the person to the process. Ability, efficiency, and quality vary significant between processes but the business still develops points of understood engagement. Corporate memory develops to the point where processes and services remain consistent even if people and delivery approaches change over time.
- **Underutilized capability.** Investment into technology increases but gaps prevail. Technology selection is based on functionality and perceived need rather than defined by outcomes and tangible measures. Despite this investment into technology, the business has little understanding how to leverage it to create advantage.
- **Fact-based debate.** Data is captured and distributed but seen as confusing. Decision makers actively use data but frequently disagree as their data is heavily duplicated and somewhat inconsistent. Disagreements focus on measures and often lead to inaction because of an inability to agree on the *what*. Sanity often prevails but at the expense of delay and political friction.
- **Cottage industries.** Individuals, rather than teams, are the primary engagement point for specific knowledge or skills. Fiefdoms and feudal empires still exist but carry less weight; skills are recognized and in demand across business units. Power migrates from the chief to the craftsperson. As the gatekeeper to skills, he or she is highly valued but creates a significant bottleneck.
- **Technology is the answer.** Gaps are recognized, and investment is channeled to remedy gaps. Unfortunately, little is considered outside technology; acquisition is seen as a silver bullet and people, process, and change complexities are often ignored or severely underestimated. Information ceases to be a power base. In its stead it leaves overwhelming confusion due to an overabundance of undirected and unfocused capability.

Expanding the Culture

Organizations comfortable with truth seeking and intuitive action are usually in equilibrium. They understand the importance of data, even if they're not especially good at using it. They value insight, even if they don't always act on it. It may not be optimal, it may not even be efficient, but it's sustainable.

Faced with a problem, the answer these organizations leap to is almost always technology. If they don't have the experience and they can't get any insights from their data, the answer *must* be better tools. They end up doing an exhaustive search to select best-of-breed technology. They conduct exhaustive feature or function comparisons. They debate the relative merits of different algorithms, architectures, and processing paradigms. Unfortunately, all too often they neglect to ask the most important question of all: How am I going to use these new capabilities?

In the absence of knowing where the value will come from, the "build it and they will come" plan is only partly effective. Capability without intent is usually just needless structural cost. When it comes to their ability to use their information to create value, they're competitive if not necessarily innovative. As long as they can demonstrate innovation or differentiation elsewhere in the business, this culture perpetuates. There's a significant opportunity cost, but at least they don't go out of business.

Many organizations never move past this point. They stay in a holding pattern, generally frustrated and stressed but still delivering to business as usual. Getting past this point involves realizing that business analytics is about more than assets or technology. It's about value creation, change management, and innovation.

Many organizations have a dominant culture that reflects characteristics of both intuitive action and truth seeking. Unfortunately, these alone usually inhibit an organization's ability to generate significant or renewable return from big data and business analytics. Organizations that stop with these perspectives usually add cost to their business without any clearly measurable benefits.

Developing culture beyond this point rarely happens organically. Usually, it only happens when one of three things occurs. The first is total erosion of competitive differentiation. Whether it's through competitive catch-up or internal failure, the organization might see its core source of differentiation disappear. An organization known for customer satisfaction might

find its market growth under threat if one of its competitors achieves equivalent levels of satisfaction. This search for a new source of differentiation can act as a trigger to approach business analytics and data-driven innovation differently.

The second is the introduction of one or more senior change agents. Whether it's through a board or executive leadership change, "new blood" may bring with them an understanding of the value of business analytics. Given the right senior support, this can act as a trigger to embark on cultural change.

The third is aspirational exposure. Many organizations look not only toward their competitors for inspiration but also outside of their industry sector. Whether it's through study tours, joint leadership planning sessions, or simply a conversation over the golf course, the existing leadership team may be exposed to an approach they'd like their organization to aspire to. This desire for improvement can then act as a trigger to push the boundaries of the organization's existing culture.

In the absence of these, there's no sense of urgency or reason to change. And without a reason, the status quo remains just that.

Value Creation

Organizations comfortable with this perspective start realizing tangible value from business analytics. By chance or choice they've discovered that success stems from following repeatable processes and helping the organization to change. They believe it's about *value and outcomes* and, like a well-tuned machine, they bring together the business, IT, and the analysts into a coordinated team focused on value creation. Above all else, they look for *return*. While they can't *always* measure the value they create through their use of business analytics, they know they need to do it. And, more often than not, they do. Rather than focusing on insight, they try to directly link their analysis to measurable results.

They still care about sophistication of analysis and efficiency of algorithms. However, their primary goal is on the outcomes they're trying to drive. This focus on value creation carries across into how they manage performance, define roles, and task people. Even more More important, they understand that insight without action is worth-less. People are actively encouraged to consider *impact* as success, not just *activity*.

They understand that without getting the rest of the organization to trust their results, everything they do is wasted. Because of this, they place specific emphasis on assisting front-of-house staff to leverage insights to drive measurable outcomes. They may not yet be at a point where business analytics is a core differentiator. However, they'll usually have a growing number of champions who see business analytics as a validated way of driving better business results.

Ironically, the biggest risk for organizations that embrace this perspective leads to stagnation. Despite having achieved real success, they'll usually start to falter without a well-defined roadmap. There is the constant risk that the competencies they've created will end up being constrained by the processes they've built.

In the worst case, the original innovators become consumed by business as usual. They get frustrated because they can't innovate, and eventually leave. Over time, the organization's competitive differentiation erodes and it's eventually left carrying significant overhead for no real competitive advantage. Like the wolf, regression to the mean is always knocking at the door.

The Unfortunate Regression

Organizations that understand this perspective see real value. Unfortunately, many also see real losses if they lose it. Over the course of a few years, one organization followed this precise trajectory. They started with a tremendously strong culture. They were a pleasure to work with, even being acknowledged by the broader market as "the place to be." Their enthusiasm levels were high, they had the explicit commitment of their chief marketing officer, and even better, they were rolling off the tail-end of a successful targeted marketing project. The head of their analytics team was a visionary with a strong sense of pragmatism who, through phenomenal effort and persuasion, had managed to successfully change their approach to direct marketing.

Prior to his joining the organization, the product teams were strong believers in the spray-and-pray school of marketing. Their conversion rates were so low that in order to hit their sales targets, they sent offers to *everyone*. With only minor exaggeration, it was so bad that their exclusion rules were, "If they're a customer, don't already have the product, and they're not dead, send the offer." This third requirement was only added *after* the campaigns had gone live (for obvious reasons).

This approach was tremendously inefficient, not to mention annoying to their customer base. For a purportedly customer-centric organization, they treated every single one of their customers exactly the same. Unsurprisingly, their churn rates at

the time were among the highest in the market. While they didn't measure net promoter score, some informal focus group testing had indicated that the single highest factor in a customer's decision to churn was whether they'd recently spoken to the company in question. Things were bad.

Shortly after joining, this visionary analytics manager made it a high priority to augment their existing direct marketing activities with analytically based insight. To build the information base he needed, his first project was to create a single view of customer blended with behavioral information. However, he understood that this was a step, not the goal. By placing an emphasis on change management and persuasion, he also managed to convince the direct marketing team to change their approach. Rather than maintain the status quo, they would trial a champion/challenger approach and benchmark their existing targeting strategy against one based on customer segmentation combined with propensity models.

Getting to this point took months, but it was worth it. Where their existing conversion rates had been sitting at around 1 percent, the new approach had conversion rates of over 10 percent.[*] Even better, he had managed to reduce the total number of offers going out (reducing marketing costs) while simultaneously beating the absolute number of offers accepted compared against their existing processes.

Whether through experience or luck, he had succeeded. And by doing so, he was able to demonstrate the value of business analytics in a very measurable and tangible way. Based on these results, the organization made a substantial investment in establishing a dedicated analytical marketing platform. They gave him the authority and investment needed to acquire the technologies and skills needed to take them to the next level.

Had their story ended at this point, they could have remained a case study in excellence. Unfortunately, they also became a case study in how easily things regress without constant attention. After a number of years of progressive success, that same visionary manager was offered an external higher profile position. Much to the organization's dismay, he accepted the offer and moved on. Even though this left a huge gap in their capability, it shouldn't have been enough to derail their focus. Before he left, he'd defined a strong roadmap with a series of clearly defined deliverables supported by a manageable cadence of initiatives. He'd created a culture that, in isolation, should have been self-sustaining.

The straw that broke the proverbial camel's back was his replacement. Despite being highly competent, he lacked the same degree of vision and persuasion. To establish his ownership over the role, one of the first things he did was to cancel the existing program of work under the guise of defining a better vision. This vision never eventuated and, over time, the team regressed to focusing only on maintaining what they had already delivered. Conversion rates were still high but nothing new was being delivered. Eventually, his team became bored and started to suffer high levels of staff attrition.

Over the course of the next three years the organization's competitors progressively caught up. Eventually, they overtook the organization. Almost on a monthly basis they saw their conversion rates decline back toward their original levels as their competitors became smarter with their marketing and their customers became more sophisticated. What had started out as a point of competitive differentiation was never converted into a source of ongoing competitive advantage. And, by failing to do so, their successes were short-lived. Where they should have created a culture of *revolutionary disruptor*, they instead regressed back to the mean by standing still.

Common Characteristics

Organizations with this perspective have a strong understanding of how their information is converted into insight. More importantly, they can quantify the value of this insight as it's acted on. They operate with a firm belief in the importance of action. Still, they often struggle with efficiency—many of their processes lack standardization, and they often make inconsistent use of automation.

They see tools as an essential but relatively unimportant piece of the picture. It's not that they don't appreciate the need for effective technology. It's just that they see it as necessary rather than sufficient.

They understand that the real challenges lie in change management and cultural transformation. Their leaders spend the majority of their time driving change and ensuring good processes are followed and relatively little time being directly involved in insight generation or other technical activities. While they have data scientists and other analysts, they understand the importance of role separation and believe that it's about far more than insights, data mining, or sheer sophistication. Instead, their analytics teams play a direct and involved role in making sure other business units apply their insights. Sometimes, this even goes so far as to take a supporting role in project delivery and field training.

While processes are often still fairly poorly defined, organizations demonstrating this perspective tend to be quite effective in reusing analytical data. Virtually all have established an analytical datamart of some form that promotes the centralization

and reuse of data. More importantly, they don't do this because of an IT drive for storage rationalization; they do it because they believe it's the right thing to do. Teams act as coordinated groups and are actively interested in sharing their successes and efficiencies, even if there's usually no easy way of replicating them without effort and time.

The biggest challenges these organization face are usually around improving efficiency and justifying further investment. Despite being able to demonstrate success and measure value, they usually have a relatively weak grip on how any specific activities within their overall value chain contributed to those same successes. They still spend more time than they should managing data and not as much time as they should ensuring their existing assets are performing as well as they could be. Their ability to "build" is usually higher than their ability to "deploy-and-maintain." While they can turn around a new model fairly quickly, migrating it into production involves a great deal of frustration and delay.

These challenges limit the time they have for innovation. And because of this, they often find it difficult to drive economies of scope through reusing their now-mature skills to solve other problems across the organization. While their enthusiasm and experience is high, they simply don't have the time to expand their scope of operations in any meaningful way. As strong as they are on creating value, they still lag in terms of innovation.

Some indicators of organizations comfortable with this perspective are:

- **Intelligent action.** Insights are developed *and* acted on in a consistent manner. Information is used to generate advantage as a matter of course.
- **Considered planning.** Tactical outcomes are balanced against strategic objectives. This dual focus becomes pervasive; shared services teams focus more on the outcome than the asset and, because of this, are often viewed favorably by the business. However, deployment processes are still largely undefined. Every automation attempt takes a great deal of effort, involves uncertainty, and experiences delays.
- **Outward-looking.** External measures are monitored and decisions are made based on expected value. The customers' opinion and their resultant action is the central consideration in decision making.
- **External value.** Insights are acted on and drive measurable outcomes within specific operational processes. There are clear and well-defined linkages between intellectual assets (such as data, models, or processes) and tangible outcomes. Business analytics initiatives are funded based on well-defined business cases that identify (and eventually deliver) specific tangible returns.
- **Being competitive.** The dominant culture is one focused on being smarter than the market. It takes the organization substantially less time to create value from information than its competitors.
- **Outcome targeting.** Performance management happens and is focused on outcomes. Success measures are geared toward tangible value, even if specific measures vary across the organization.
- **Meeting the benchmark.** Focus shifts from capabilities and heroism to achieving parity with leading practices. Analytically related activities are comparable to intelligent peers.
- **Role-centricity.** Focus shifts from the process to the role. Capability, efficiency, and quality become consistent between processes and knowledge is shared between individuals. Requirements and activities are well defined, if not always tremendously efficient. Inputs, outputs, and all stages in between are documented and consistent between people. Analytical asset creation processes are repeatable and efficient.
- **Realized capability.** The business has developed an understanding of how to leverage technology to create advantage. Capability ceases to be an inhibitor and instead becomes an enabler and opportunity.
- **Action-based debate.** Analytical data is centralized and there is a high degree of reuse, even if this data is not necessarily stored in the most efficient format. Decision makers spend little time debating data and easily isolate quality issues if they occur. Disagreement instead focuses on what action should be taken for a given problem.
- **Scalable factories.** Teams are seen as the primary engagement point for specific knowledge or skill. Employee turnover slows the team down but does not derail it. Competencies are held by the team and the loss of one person has a manageable impact on the group. Fiefdoms and feudal empires disappear in favor of shared service centers and communities of practice. Knowledge is freely shared and scalable efficiency becomes valued over personal power. Power migrates from the craftsperson to those capable of enabling the broader business.
- **Technology is an enabler.** Tools have been largely standardized within teams and are treated as a given. Rather than being seen as a silver bullet, technology is seen as just another dimension in an overall change process.

Discussion about technology focuses on how it will create value, not on what functions it offers.

Expanding the Culture

Organizations that have hit this point understand how they *should* be managing. It's just that they don't always do it as consistently as they could. Their focus is usually on making sure they apply their new-found knowledge. While they don't always have a firm grasp on the details, they know they need to build a better understanding of how to apply business analytics if they're to see sustained return.

It's in adopting and applying this perspective where organizations start seeing real tangible returns from their investments. The shift in focus from internal to external value is an inflection point in their ability to generate value from their data. Naturally, this assumes they're successful—having the right vision is only part of the cultural imperative.

It is, however, just one more perspective. Expanding past this point is a case of change management. The people generating returns need to build a strong coalition of the willing, a broader group of interested parties who *also* believe in the value of business analytics. Transformation is key; jointly, their goal is a small (if still significant) change in their organization's business model.

[*]A conversion rate is the proportion of offers sent that are acted on. A conversion rate of 1 percent would mean that for every 100 offers sent, only one would be acted on.

Functional Innovation

Organizations with this perspective have extended their focus from one-off benefits to continual improvement. They've embraced the journey it implies and actively chase *functional innovation*. They understand how their business works, have the ability to measure it, and relentlessly search for and deliver continuous gains. Above all else, they value *improvement*.

To avoid the tightening labor market, these organizations put an emphasis on automation. They embed analytics within operational microdecisions, improving decision quality as well as decision efficiency.[2] To ensure their analytical assets are effective, they've embraced formal asset management and value measurement. To drive repeatability and process efficiency, they've standardized their processes and minimized transaction costs through effective use of workflows. Tying all this together is a series of key performance indicators that reinforce positive behaviors and discourage inappropriate behaviors, supported by a measurement framework that makes outcomes transparent.

Processes are well defined, roles and responsibilities clear, and objectives transparent. New hires often find this disconcerting— rather than having to operate independently, they often find there are entire teams there to support them with analytical data management, model operationalization, or any other number of specific competencies. The organization has well-defined structures to share information and cross-pollinate innovations. Even better, these structures are actively used.

More than just looking for outcomes, they look for repeatability and reuse. Economies of scale and scope become real and provide cost advantages over their competitors. Quality and agility become more than concepts; organizations at this level deeply understand and have the ability to track, measure, and improve both. Embracing this perspective is a significant step; few organizations truly reach this point. Those that do, have the sophistication and management maturity to operate and coordinate truly complex management structures.

Moving beyond this point involves a clear executive commitment to deliver sustainable competitive advantage through more than just functionally aligned or efficient activities. Instead, the leadership team must decide to treat business analytics as a differentiator in its own right and embrace disruption. There is nothing to say that this is a necessary step; many organizations look for differentiation elsewhere. However, organizations that reach this or the next level create a form of differentiation that, if sustained, is hard to replicate.

The Benefits of Being Personal

It takes a great deal of work to turn this perspective into part of the dominant culture. Surprisingly, it can also take less time than one might suppose. It just takes focus, an understanding of what's possible, and the commitment to get there.

Different organizations start their journey for different reasons. GE, for example, embarked on an exhaustive Six Sigma exercise to establish a level of quality and cost differentiation over their competitors. More than just a project, this became a major part of their culture. The benefits of getting to this level of focus are significant; Motorola, for example, credited the same approach with more than $17 billion of savings as of 2006.

Other organizations look to achieve success through analytical efficiency. They create "model factories," performance engines designed to automate the creation of analytical assets. In one case, an organization was able to reduce the time it took to define, create, and deploy their analytical assets to less than three days. This innovation though hyper-specialization gave them a significant advantage in their market.

Still others look to innovate through constant improvement. One such organization started with a focus on improving customer relationships. Like most organizations, they invested far more in trying to make the next sale than they did in servicing the customer's needs. To hit their sales targets, they rolled out an integrated marketing platform that allowed them to communicate across multiple channels. In less technical terms, they could pick up the same conversation with the customer across web, email, SMS, or phone.

While they'd been quite good at using analytics to refine their targeting strategies, this introduced a whole extra level of complexity. Not only did they have to take into account what a potential customer might be interested in but they had to factor in whether the customer liked being sold to over that channel. Undaunted, they innovated. They developed a number of novel solutions to help them prioritize offers based on point of contact, channel, and customer preference.

To meet deadlines, their initial release worked on an overnight schedule. As such, their predictions were still somewhat hit-and-miss; the models had no way of accommodating customers who had already rejected an offer earlier in the day. In those situations, their system would recommend the same product over and over again, ad infinitum.

Their next project fixed this. Over the next few months they took another step and included real-time information in their recommendations processes. It was at this point where they realized they had the perfect engine to improve other business processes. They'd had a significant impact on sales efficiency. Over drinks one evening, they realized they could have a similar impact on servicing efficiency.

As with most organizations, sales ensure sustainability. They provide the revenue that keeps the company solvent. Servicing, however, is what builds loyalty. Having a good relationship with customers can't guarantee they'll buy another product. What it will do is increase the odds of being at the table the next time the customer has a need. The problem is that servicing is usually expensive. Its returns are long-term, something that doesn't gel well with quarterly targets.

This team realized that they had a massive opportunity. By reusing the predictive real-time multichannel capabilities they'd developed across the sales arm of the business, they'd likely achieve a level of customer relationship unheard of in the industry. That's just what they did.

To explain why this was so significant, put yourself in the shoes of a car enthusiast. You've probably bought at least one expensive car, maybe more. For those people, insurance is a necessary evil. In making the decision about whom to insure with, cost is a key consideration. Most likely, so is ease of claim. The last thing they want is to see their prized asset get damaged.

What the team realized was that they had the perfect engine to both help the customer *and* reduce their own costs. First, they established data feeds from a number of meteorological sites. Then, they created a number of detection routines that cross-referenced damaging weather patterns against geolocated policy holders. By merging the combined data with policy data, they could work out in real time:

- Which customers were likely to see damaging weather such as hail
- When the weather was likely to hit
- Whether the customer had a garage or other protective location they used

A few hours before the weather was due to hit, they'd automatically send out an SMS with a warning and, if appropriate, a personalized suggestion they might want to garage their car. It was automatic, it was cheap, it was personal, and, more important, it was useful.

Through reusing their capabilities across multiple business problems, they helped transform the organization's overall approach to customer engagement. Shortly afterward they extended the same approach to a broad-based outbound campaign to warn people to bring in their washing and the like. And, they kept going.

Common Characteristics

Organizations that exhibit this perspective are driven by the constant need to improve. Their desire for continual efficiency and efficacy gains becomes a deep-rooted belief; they understand both the value of data as well the need to act. Through

hard-won experience, they also know how to execute. Their challenge is no longer selling the value. Instead, it's making it pervasive.

Strongly defined processes increasingly become the norm and the use of analytics to support microdecisions becomes the new "business as usual." Entrenched silos increasingly break down, largely because stakeholders across the business can see the value of acting on cross-functional information.

The biggest challenges these organizations face are usually around cultural change. Their leaders understand the importance of continual improvement; it's simply a case of making it stick. While there are usually examples of best practice scattered across the organization, the goal is to make them constantly applied. This is about as hard as one would expect; usually, it involves going directly up against what people are comfortable with.

Some indicators of an organization that's embedded this perspective into their culture include:

- **Considered execution.** Action consistently takes place within the context of broader strategic objectives. Automation of microdecisions becomes the standard operating model. The focus of the organization moves to progressive differentiation rather than short-term tactical advantages.
- **Integrated coordination.** Business units maintain their primary focus on external measures but consistently work together to achieve cross-functional outcomes. Rather than focusing on*sales opportunities*, the organization centers itself around *solving the customer's problems*.
- **Incremental value.** Instead of one-off improvements, the dominant culture is one focused on continuous improvement. In parallel, funding is geared toward internal opportunities with higher rates of return.
- **Being the leader.** The dominant culture is one focused on being better than the market. The organization is focused on doing things other competitors would likely find impossible.
- **Improvement targeting.** Performance management is focused on *scale* of outcomes. Reward is geared toward achieving higher-than-average rates of return or efficiency improvements.
- **Beating the benchmark.** Focus shifts from achieving parity to beating parity. Analytically related activities are more advanced in comparison to intelligent peers.
- **Competency-centricity.** Focus shifts from the role to the competencies that drive the role. Teams have well-defined support structures that align management structures to competencies, not technologies or roles. Developing human capital is seen as a core part of the business and the organization excels in developing talent.
- **Reused capability.** The business is consistently reusing existing capabilities to fuel advantage and differentiation. Economies of scale and scope start to emerge.
- **Opportunity-based debate.** Accurate and trusted data has become so pervasive that little if any debate focuses on the problems or facts. Instead, discussion centers around which opportunities the organization should pursue. Disagreement revolves around which opportunities would provide the greatest strategic and tactical benefits.
- **Managed utilities.** Internal support structures are so efficient, cost-effective, and responsive that leveraging and paying for them is no different from turning on a tap and paying the water company for the water consumed. The use of information and analytics is pervasive in all aspects of the business and is treated as a given.

Expanding the Culture

Organizations that have hit this point truly understand the value of business analytics. They've seen the benefits, they know the potential, and like an addict, they crave more. Their focus moves from delivery to transformation; like missionaries, everyone involved in the project starts proselytizing the benefits to anyone who will listen. Their goal is not to just increase the value they're generating. Instead, it's to convert nonbelievers and transform the *entire* organization.

Assuming the organizational is already heavily focused on value creation, it's at this point where it becomes about more than just business analytics. Instead, it becomes about organizational strategy. Expanding the culture further involves a broad organizational commitment to directly compete on data. Not every organization needs to go this far; realistically, most probably don't. There are many sources of competitive differentiation. In the context of broader strategy, business analytics is just another option from many.

There are, however, significant advantages to establishing it as a cornerstone. Digitization will continue to affect every

industry sector over upcoming decades. And, coping with the age of uncertainty will require ever-increasingly complex analytical capabilities. *Every* organization benefits from a better ability to analyze the information it has access to.

Anything beyond value creation and continuous improvement requires clear and overt senior executive commitment. It implies a new business model, one centered on information. In some organizations, this is simply a logical step. In others, it's a revolution fueled by an internal visionary. In both cases, it's impossible without the backing of the board, the leadership team, and potentially even the shareholders.

[2]James Taylor, *Decision Management Systems: A Practical Guide to Using Business Rules and Predictive Analytics* (Upper Saddle River, NJ: IBM/Pearson, 2012).

Revolutionary Disruption

This final perspective is relatively rare. Organizations at this point have established the right culture, management structure, measurement framework, and technology platform to drive sustainable competitive differentiation. For them, business analytics *is* a point of differentiation, no different from customer-centricity or product design. Above all else, they value *disruption*. They become revolutionaries, focused on reinventing their markets.

More important, this approach reflects a philosophy, not a destination. Even though the organization may have seen significant returns, there's nothing to say that they have exhausted every source of business analytics–based value. They've achieved a level of value measurement, automation, and repeatability that allows them to start truly driving economies of scope.

Getting to this point is quite difficult. Globally, there are few organizations that have truly achieved this level of capability at a functional level, let alone at an enterprise level. Those that have tend to be acknowledged as the leaders in their markets. However, because this perspective relies heavily on the broader culture, it's still surprisingly easy for an organization to regress. Just because an organization is truly mature does not mean they have to stay there. As stated earlier, it can take five to seven years to enact real cultural change.[3] This cuts both ways: just as it may take seven years to create a culture, an organization can regress given seven years of inattention or diverted attention. With a typical managerial hire holding the role for roughly three years, that's as brief as two poor managerial hires.

From here, business analytics is a key part of strategic planning. It's not only assumed that new business initiatives will capitalize on business analytics in some way, it's outright expected. Projects that do *not* include business analytics in some way are actively deprioritized in favor of those that do, largely because those that don't have an increased risk of failure. Optimization happens as a matter of course, in terms of both outbound activities as well as internal effort. Inefficiencies are quickly identified and actively managed with the results pushed out across other groups.

While many organizations are at least superficially interested in embracing this perspective, it's not always realistic. Become a disruptor involves reinventing the organization. For an organization that differentiates based on incremental improvements to existing product design, this may simply be a leap too far. And, there's nothing wrong with that; innovation can happen anywhere. Big data and business analytics are simply *another* opportunity for differentiation, not the *only* source.

Industries characterized by large amounts of data will increasingly see this approach as being a preferred source of competitive advantage, largely because it offers so many advantages across the business. Whether it's through a desire to become this type of organization or a need to understand one's competitors, being aware of what this perspective entails is essential.

Common Characteristics

This represents a pinnacle of execution; rather than follow a single model, organizations that have achieved this level redefine it. Some of the biggest indicators of an organization that's adopted this perspective are:

- **Considered optimization.** Activity is continually optimized to maximize return. Competing priorities and opportunities are prioritized automatically. The focus of the organization moves to holistic efficiency and sustained differentiation.
- **Dynamic value.** The dominant culture is one comfortable with cannibalization and continual change. Business units achieve a state of balanced dynamic tension, reinventing as well as improving. Through revolutionary innovation, the organization focuses on solving problems the customers didn't know they had.
- **Being the disruptor.** Business analytics and the use of infor-mation are seen as a differentiator by the leadership

team. The organization is focused on entering new markets.

- **Differentiation targeting.** Performance management is focused on being best in class. Reward is geared toward achieving excellence.
- **Ignoring the benchmark.** Focus shifts from beating parity to ignoring parity as being meaningless. The organization sets the benchmark and competitors benchmark their competitiveness on the organization in question.
- **Attractive capability.** Focus shifts from competencies to attracting excellence. The quality of competencies and potential for knowledge gain become a magnet for global talent. Being the market leader creates its own draw within the labor market and hiring highly skilled resources becomes increasingly easy.
- **Market-based debate.** Discussion centers on how best to transform and grow the business. Success through a relentless focus on effective execution is treated as a given. The challenge is seen as maintaining the level of differentiation the organization has achieved.
- **Democratized empowerment.** Internal support structures start to shrink; rather than requiring centralized support, the ability to analyze, profile, and act on information has become the status quo.

Apart from getting there, the biggest challenge faced by organizations that embrace this perspective is simply maintaining their position long enough to establish a self-sustaining culture. Competitive differentiation is a never-ending process and the organization's philosophy needs to align to this.

[3]John P. Kotter, *Leading Change* (Boston: Harvard Business Review, 2012).

Notes

1. Robert M. Pirsig, *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values* (New York: William Morrow, 1974).

2. James Taylor, *Decision Management Systems: A Practical Guide to Using Business Rules and Predictive Analytics* (Upper Saddle River, NJ: IBM/Pearson, 2012).

3. John P. Kotter, *Leading Change* (Boston: Harvard Business Review, 2012).