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By Robin Erickson, Jeff Schwartz and Josh Ensell
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Is Your Corporate Footprint Stuck in the Mud?
By Darin Buelow, Matt Szuhaj, Josh Timberlake and Matt Adams
Geography is a key driver of corporate performance, affecting factors such as talent attraction and retention, operating costs, exposure to risk and shareholder value. Companies that proactively manage their global footprint—in good and not-so-good times—can gain a competitive advantage that is difficult to replicate, literally positioning the organization globally to achieve its strategic objectives, both in the short term and for the future.

Making the Most of Your Marketing DNA
By Simon McLain and Jonathan Copulsky
Most marketing organizations execute the same basic activities. But not all great marketing organizations make identical choices. Both the great brand builders and the great product innovators can be great marketers, but the underlying capabilities and choices that allow each to succeed are different and not necessarily interchangeable. Knowing this can influence how a company invests its incremental marketing dollars.

Integrated Reporting: The New Big Picture
By Nick Main and Eric Hespenheide
Integrated reporting aims to incorporate everything from strategy to risk management, from financial reporting to the inclusion of other capitals (societal and environmental impacts), and to meet the needs of a broad a group of stakeholders. It intends to interlink these elements in a way that makes their interdependencies clear. In doing so, it may represent the most significant change to the reporting rulebook in years.

Sustainability 2.0
Using sustainability to drive business innovation and growth
By Peter Capozucca and William Sarni
Sustainability can drive innovation by introducing new design constraints that shape how key resources are used in products and processes. It can suggest areas where innovation can pay off especially well. How a company attempts to overcome these new design constraints, delivering similar levels of performance and cost at lower levels of resource usage, may be key to its prospects.

I Have Not Yet Begun to Shop … or Have I?
Smarter phones, smarter shoppers and strategies for a new consumer perspective
By Pat Conroy and Anupam Narula
Smartphone-equipped consumers remain a minority, yet their attitudes and behaviors, as well as increasingly capable devices and a proliferation of mobile applications, suggest a much larger customer base in the future. For these mobile consumers, the pre-store and in-store shopping process is being redefined with a range of players vying for a prominent role in enabling, guiding and constructing business models around those consumers.
Carpe Diem; Carpe Numerorum

THE ECONOMY HAS BEEN STUCK IN NEUTRAL—AT BEST—SINCE THE financial meltdown of 2008/2009. Debt levels are forcing both the household and government sectors to pull back spending. There are two by-products of this general economic weakness: a significant surplus of labor (including college graduates) and ample idle cash on many corporate balance sheets as regulatory, political and market uncertainty cause industry to postpone capital projects.

Yet the choices made now regarding talent and core capabilities will help determine which organizations will be better prepared to compete once the economy turns.

Notwithstanding the global economic weakness of the past five years, digital technological progress has exceeded most expectations. Yesterday’s terabytes are today’s petabytes and tomorrow’s exabytes. Beyond the raw quantity of data—and the unprecedented channels for acquiring it—this information explosion is impacting all areas of decision making, with a potentially profound effect on an organization’s competitiveness.

Austerity may be in the air, but data, as well as the tools and talent to turn data into a strategic tool, have never been more abundant. This presents an opportunity for those organizations that are strategically connecting the dots now, creating the capabilities to make value-accrative rather than dilutive decisions. Analytics as a discipline is not terribly new and, despite a recent nod from Hollywood, often lacks the star power to draw a lot of interest. Brad Pitt reportedly doesn’t do analytics as a day job. However, real analytic capabilities have emerged as increasingly important as the environment becomes more information intensive.

Many organizations are fixated on costs, particularly wages and salaries. The more prescient will likely see growing their analytic capabilities as a strategic imperative, recognizing that it will be increasingly difficult to compete through quality of business judgment with yesterday’s skills and capabilities. Many organizations have some decision support competencies, and these have often served them well given the possibilities at the time. Analytics as enabled by technology, however, has vaulted into the category of core capabilities. As a recovery eventually takes shape, expect it to underpin new business models and deliver hard-to-replicate advantages for those who master it.

Consider an acquisition decision: The old world decision sandbox includes some opportunity screening, target evaluation (assessing if the target is accretive by running scenarios on combined financials along with some synergy assessment) and finally some post acquisition integration cost projections. The new information world includes growing amounts of data on customers of both the acquirer and target companies (demographics, spending habits, location, overlap, etc.), on competitors (direct/indirect), key suppliers, creditors, investor profiles, tax/regulatory regimes, logistics, ERP and other systems compatibility. More opportunities can be more thoroughly evaluated before a decision is made.

Leveraging rapidly growing data availability requires both analytic capabilities and a culture that supports utilizing these skills to overcome common decision biases. With deeper decision support capabilities, the case for or against any particular decision will likely be more grounded in available data than personal bias.

More than ever, judgment and intuition should be fortified by analytics. Those organizations that seize the moment and cultivate these capabilities now can be positioned to make better decisions as the global economy rights itself.
WE EACH HAVE A CALLING. IT MIGHT BE REVEALED

through the intense focus of a Formula One racing driver like 24-year-old champion Sebastian Vettel, whose mechanical intuition helped him nurse a car hobbled by gearbox problems to a second place finish in the 2011 Brazilian Grand Prix. Or the intuitive directing of Clint Eastwood. Or the eye for consumer product design of the late Steve Jobs.

We romanticize the accomplishments of talented individuals, but companies often have their own version of a calling. At a very basic level, these strengths may be revealed as the product of a company’s strategic choices. It is more than 30 years since Michael Porter gave us his now classic cost leadership, product differentiation or nothing perspective on corporate strategy, for example.

His conclusion was that there were, broadly speaking, two paths to a strong market position—and a performance abyss for those who did not follow one of those paths.

All well and good. But, given that change over time is a reality, how can a business on either path sustain superior performance as it evolves? In “To Thine Own Self Be True,” the authors examine sustained, superior performance and consider the types of behavioral changes companies take in pursuit of it. An analysis of 45 years of data suggests that companies adjust their core positioning—their chosen path of cost leadership or product differentiation—at their peril. Yet other avenues of strategic change, pursued with a healthy respect for a company’s positioning, are systematically associated with longer-term success. By their nature these decisions are not easy, and nothing we write here can make them so. But, the authors argue, they needn’t be a stab in the dark.

Strengths can inform more specific decisions as well. One of the changes we have seen over the past several years has been the emergence of social media as a significant factor in commerce. In “Making the Most of Your Marketing DNA,” the authors describe a set of marketing archetypes—strengths a company may possess that can guide investments in, among other things, social media. A closer examination of what a company excels at—customer experience, say, or product innovation—can serve as a starting point to implement these emerging technologies most advantageously. Effective marketing organizations, they observe, view investments through the lens of their natural strengths.

The notion of using our own strengths as a guide to personal betterment is widely embraced. In many respects, “know thyself” turns out to be useful advice at a corporate level as well.

Know Thyself
A DELICATE BALANCE:
Organizational Barriers to Evidence-Based Management

BY JAMES GUSZCZA AND JOHN LUCKER
> ILLUSTRATIONS BY ANTHONY FREDA

“The most difficult subjects can be explained to the most slow-witted man if he has not formed any idea of them already; but the simplest thing cannot be made clear to the most intelligent man if he is firmly persuaded that he knows already, without a shadow of doubt, what is laid before him.” — Leo Tolstoy

FUTURE PRESENT

Over a hundred years ago, H. G. Wells stated that statistical thinking would one day be as necessary for efficient citizenship as the ability to read and write.¹ Wells’ prescient comment is equally true of management and organizational behavior in the age of big data and business analytics. In domains as varied as professional sports, medicine, consumer business, financial services and government operations, a consensus has rapidly developed about the power of statistical thinking to help experts make better decisions and businesses improve their operations. And a stream of best-selling books, movies and podcasts on the topic has piqued societal awareness of analytics as a catalyst for fresh thinking and change.²
However, in our many years as consultants, we have found that the realized benefits of business analytics are unevenly distributed across domains, and even among different organizations within the same domains. One might chalk this up to the fact that intelligently working with data and doing statistical analysis is hard work, involving specialist skills. Fair enough. But this turns out to be only part of the problem.

Generally speaking, data analysis is only part of an “analytics” project; and ironically it often isn’t the hardest part. It is not uncommon for sophisticated technical work to end up on the cutting room floor—resulting in unrealized value—for reasons having more to do with human and organizational behavior than the finer points of data quality or statistical methodology.

In previous articles, we have discussed the ways in which business analytics is more than a story about arcane statistical algorithms, big data management and information technology. Certainly the newfound prominence of business analytics owes much to Moore’s Law and its corollaries. But business analytics is not ultimately about technology and technique any more than architecture is about blueprints and drafting tools. Well-conceived analytics projects are directed at the central problems and processes in the domain at hand. For example, in medicine this might mean making more reliable diagnoses and triage decisions. In insurance this might mean making better underwriting, pricing or claim settlement decisions. In a human resources context this might mean making better hiring and talent management decisions.

A common challenge in such applications is achieving a realistic compromise between a current-state business or decision process and an envisioned ideal that could in theory be achieved with perfect data and the best available analytics. We have encountered many organizations that, often out of a combination of inertia, competing priorities and culture of skepticism about the effectiveness of business analytics, spend years deliberating before taking the first step toward embracing analytical methods. Others eagerly embrace the notion of analytics but treat it as an “all-or-nothing” proposition requiring data or algorithmic perfection before actions can be taken. Some organizations swing from one extreme to the other.

Of course the preferred point is somewhere between these extremes: in many business settings, analytics is best viewed as an iterative process of continued improvements and data-driven refinements of core business operations. In such settings, either extreme skepticism leading to inaction or extreme aspiration leading to analysis paralysis is suboptimal. Such extreme attitudes and approaches are often borne both of sketchy notions of how analytics works and poor communication between the technical people who analyze data and the decision-makers for whom the fruits of their efforts are intended.
The legendary statistician John Tukey memorably characterized large-scale data analysis as “the collision between statistics and computing.” Similarly, if not properly planned and managed, business analytics projects can feel like a “collision between data analysis and business decision making.” If they are to enjoy the benefits of analytical methods, organizations should strive to avoid collisions and promote evolutions, syntheses and collaborations among people with differing skills and perspectives.

To that end we humbly offer a taxonomy—based on our observations in the field—of what can go wrong. A connecting theme of our observations is that analytics projects are often stymied because of failures to appreciate that both data-driven analytics and expert decision making have strengths as well as limitations and that the strengths and limitations of each must be counterbalanced with those of the other. The image of “data mining” should give way to the image of “data dialogues.”

A MIDDLE PATH

An intriguing aspect of business analytics is its near-universal applicability, yet this also accounts for why it can be such a slippery topic to discuss. Analytics projects take on vastly different aspects in different contexts. For example, the authors have built credit-scoring models using tens of millions of data points as well as analyzed human resources databases containing mere hundreds of data points. Size matters, but it’s not decisive. Similar comments can be made about data quality and completeness, the relative appropriateness of “supervised” versus “unsupervised” learning techniques, the relative appropriateness of experimental versus observational data, appropriate validation methodologies and so on. Such considerations are context-dependent and can vary in veracity and business significance in real-world settings. To bring order to the kaleidoscopic—and ever expanding—variety of applications and methodologies, a classification scheme might be helpful.

One way to classify analytics projects is by the degree to which decision making can be outsourced to computer algorithms. Some of the more prominent examples of business analytics hinge on computer algorithms that serve as decision-making “robots” whose day-to-day functioning involves a minimum of human intervention. Think of Netflix using collaborative filtering algorithms to suggest new titles based on a customer’s viewing history. In each case an algorithmic, data-driven approach both refines and scales up a traditional mode of doing business: Savvy booksellers and video store clerks can be very adept at recommending books and
movies to their loyal customers. But even Quentin Tarantino in his video store heyday could not make movie recommendations on the scale of Netflix’s recommendation engines.

At the other extreme, consider an executive at a global reinsurance company recommending how much capital to set aside in reserves as a cushion for adverse events. Any such manager worth her salt will make the decision in the light of highly sophisticated analyses of past loss trends, correlations among the risks in a portfolio, and stochastic simulations of future economic conditions and other macro factors. But the decision remains solidly with the executive and is unlikely to be left up to the indications of a purely automated algorithm.

The term “business analytics” is broad enough to apply equally well to each of these extreme instances. In each case, data analysis is used to guide a business decision, and the result is decisions that are—on average and in the long run (think the Law of Large Numbers)—better than those that would result from unaided judgment. In the book and movie examples, the machine learning algorithms and induction rules simply replace human decision-makers.

A connecting theme of our observations is that analytics projects are often stymied because of failures to appreciate that both data-driven analytics and expert decision making have strengths as well as limitations and that the strengths and limitations of each much be counterbalanced with those of the other.
(the store clerks); in the reinsurance example, the analytical results serve as inputs to a decision that remains fully under the purview of a human decision-maker.

Our focus in this article is the broad swath of analytics applications falling at various points on the spectrum bounded by these two extremes. It is in this “middle realm” that the success of business analytics can be most surprising and sometimes downright counterintuitive. Medical decision making offers a good paradigm example. Here, highly trained professionals—medical doctors—regularly make decisions under uncertainty. Which of two patients arriving in full crisis at the emergency room complaining of chest pains should be admitted first? Given a positive outcome of an imperfect test, should a patient be treated for a rare disease? Should a risky operation be recommended to a patient? It is hard to imagine such decisions being turned over to a purely algorithmic process similar to the ones used to recommend movies or make targeted marketing decisions. The stakes are too high and the evidence too subtle and complex to turn over to a purely automated decision process.

Yet one could also argue that, precisely because the stakes are so high and the evidence so subtle and complex, the opposite strategy of entrusting medical decision making to the unchecked professional judgment of doctors is similarly suboptimal. In *Blink*, Malcolm Gladwell provides a memorable example that illustrates the point. Gladwell’s anecdote begins in the late 1990s at the resource-strapped Cook County Hospital emergency room. (As it happens this was the very emergency room that inspired the television show *E.R.*) Brendan Reilly, the chairman of the hospital’s Department of Medicine faced 250,000 patients visiting the Emergency Department (ED) each year. An average of 30 arriving patients per day complained of chest pains and worried they were having heart attacks. This presented ED physicians with the formidable problem of rapidly deciding which patients to send to intensive care, which to send to intermediate care, and which to send home. In a controlled experiment, Reilly found that a computer-driven decision-rule protocol was markedly more accurate than the unaided judgment of physicians. In a *JAMA* article summarizing his work, Reilly reported that 84 percent of the physicians he surveyed believed that the decision-rule approach improved patient care. Reilly himself concluded that the analytics-driven rules approach improved efficacy without compromising patient safety.

More generally, there is now considerable evidence that Computerized Decision Support Systems (CDSS) can improve both practitioner performance and patient outcomes. And Atul Gawande has written eloquently about the power of simple checklists—which in other domains would be called business rules—to improve the delivery of medical care. In a *New York Times* op-ed, none other than Billy Beane...
joined the chorus of medical, political and business leaders who prescribe a data-driven, evidence-based approach to medical care analogous to the evidence-based methods he famously used to bring the Oakland A’s up in the ranks.\textsuperscript{12, 13}

Obviously none of this work suggests that physicians could or should be replaced with purely automated decision protocols. What it does suggest is that purely “clinical” decision making—one extreme end of our spectrum—is likely a sub-optimal model for much medical decision making. In many situations, physicians make better decisions armed with data-driven predictive models, decision-rule sets and checklists than they do relying on unaided professional judgment.

What can be applied to medical decision making can also be applied to decision problems in domains as diverse as human resources and talent management (\textit{Moneyball} has become a classic example), risk management, insurance and loan underwriting, fraud detection, caseworker deployment, retail pricing and understanding the organizational drivers of employee resignations. In each of these domains—and many others—evidence-based methods have been shown to outperform the unaided judgment of trained professionals.\textsuperscript{14} We believe that, as with medical decision making, the rise of data-driven decision making does not presage the end of professional judgment in any of these fields. There will always be a need for HR managers and talent scouts to make hiring decisions; risk and insurance professionals to make risk management, underwriting and investment decisions; and caseworkers in government, business, and education to make various decisions serving citizens, customers, employees and students.

While the march of business analytics will not \textit{replace} professional judgment, it can continually transform, enhance and refocus professional judgment. This is a major reason it would be a mistake to view business analytics as a technical domain beginning with data analysis and ending with computer algorithm implementation. Professional judgment enters this process at two crucial points. First, professional judgment and domain knowledge should be used to frame, prioritize and inform specific steps in the process of analyzing data to build predictive models or craft rule sets and checklists. Second, no predictive model or decision rule is complete or infallible: Human judgment is needed to decide when to use, temper or simply ignore model indications. There is no simple recipe for doing this. The process is typically a pragmatic blend of art, science and case-specific business strategy. In short, both analytical methods and the traditional decision processes they are intended to improve have strengths and weaknesses that should be pragmatically counterbalanced.\textsuperscript{15}
ANGELS AND DEMONS

Scott Fitzgerald famously wrote that “the test of a first-rate intelligence is the ability to hold two opposing ideas in mind at the same time and retain the ability to function.” A similar comment applies to an organization’s ability to execute on analytics. A prerequisite for achieving organizational buy-in of analytics is understanding, forming a strategy around, and communicating the required interplay between analytical methods and the best available domain knowledge and judgment.

The biggest challenges of executing on analytics are often found where algorithmic indications should be integrated with human professional judgment. Because of the range of personnel involved, this is an inherently organizational issue. Unsurprisingly, challenges often arise from such sources as office politics, inertia, principal/agent issues and organizational dynamics. Such generic project implementation issues often take on added force because business analytics may often be poorly or inconsistently understood by the various stakeholders within the organization.

As a result, one often encounters extreme or overly simplistic attitudes about predictive analytics. At one end of the continuum is the sort of extreme skepticism and hostility to analytical methods dramatized in such books as Moneyball and Super Crunchers. At the other, models are tacitly regarded as repositories of truth rather than provisional, imperfect decision aids that should be continually monitored and subjected to critical thinking. Models are either demons or angels. We believe that such extreme conceptions are at the root of many of the organizational biases that we have observed over the years.

POINT: EQUATIONS TRUMP EXPERTS

“We tell ourselves stories in order to live.” — Joan Didion

Business analytics is typically viewed as a “techy” or “geeky” subject because of its statistics and machine learning subject matter as well as the need for such IT-heavy contributions as data warehousing, systems implementation and dashboard reporting. We tend to regard business analytics in the context of what economists call “human capital.” After all, decision making and decision makers—a.k.a. people—are central to all enterprises, and decades of academic research and business experience suggest that data-driven methods can help even highly trained domain experts make better decisions.

This is not just because our databases are now so deep and rich or that we now possess powerful analytical tools and techniques. It is also because we human
beings are so surprisingly bad at weighing evidence, juggling probabilities and making consistent, coherent decisions in the face of uncertainty. Business analytics is therefore as much about human psychology as it is about data and algorithms.

As an example, take a moment to form a mental image about Linda. Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Now that you’ve formed your mental image, rank these three scenarios in order of likelihood:

- Linda is active in the feminist movement.
- Linda is a bank teller.
- Linda is a bank teller and is active in the feminist movement.

The pioneering psychologists Daniel Kahneman and Amos Tversky posed precisely this question to groups of students at several major universities. Kahneman discusses this experiment in *Thinking, Fast and Slow.* Not surprisingly, most of the students felt that being active in the feminist movement was the most likely scenario given what we know of Linda. But at each university, between 85 percent and 90 percent of them also felt that being a bank teller was the least likely of the three scenarios. In other words, they judged that Linda’s being a feminist bank teller is more likely than Linda’s being a bank teller. But a moment’s reflection reveals that this cannot possibly be the case: Feminist bank tellers are a **subset** of all bank tellers! The probability of being a feminist bank teller must therefore be lower than the probability of being a bank teller.

In this example, our intuitions can lead us badly astray in a way that is as surprising as it is straightforward. Kahneman attributes phenomena such as the Linda story to a certain type of mental process that he called “Type 1.” Type 1 mental processes are fairly automatic, effortless and place a premium on “associative coherence.” In contrast, “Type 2” mental processes are controlled, effortful and place a premium on logical coherence. Although we fancy ourselves primarily Type 2 creatures, many of our mental operations are Type 1 in nature. And—here’s the rub—Type 1 mental processes are very poor at statistical reasoning. This is a major—and, in business, too often neglected—reason why analytical methods are taking root in broad swaths of business, government and medicine. Models can serve as correctives for the bounded rationality and biased cognition of human decision-makers.

Ironically, the dominance of Type 1 thinking can also lead to the organizational resistance to the very analytics initiatives that can help organizations become more
“Type 2” in nature. A major culprit is the so-called “overconfidence bias.” So far are we from being naturally statistical thinkers and rational decision-makers that Kahneman characterizes the mind as a “machine for jumping to conclusions.” He comments that “neither the quantity nor the quality of evidence counts for much in subjective confidence. The confidence that individuals have in their beliefs depends mostly on the quality of the story that they can tell about what they see, even if they see little.” (Italics added.) This is why human experts’ confidence in their own judgments systematically exceeds those judgments’ accuracy. Kahneman calls this phenomenon “the illusion of validity.” It is no wonder that the corrective power of predictive models is so counterintuitive to people making decisions in the field.

This helps explain a phenomenon we have long noticed in our consulting work: Often it is senior leaders and decision-makers who are skeptical about the economic value of predictive models. In light of Kahneman’s observations, this makes sense. After all, such individuals have had the longest time to form an “associatively coherent” body of narratives pertaining to their domains: which draftees will make the best baseball player; which student to admit; which intern to hire; which insurance risks will profit the company; which medical protocols can be cut short. Perhaps their eminence has resulted, in part, from their skill at weaving convincing narratives that impress their colleagues. Their seniority lends them an air of authority, and indeed part of their success might be attributable to their charisma and ability to convince their colleagues with their narrative accounts. Unfortunately, given the authority that such individuals enjoy within their organizations, their resistance can seriously hinder the progress of analytics projects.
A DELICATE BALANCE

We have witnessed situations in which a few well-positioned skeptics have wielded disproportionate influence over the fate of predictive modeling projects. Consistent with Kahneman’s discussion, such people tend to disbelieve models and be most confident in the accuracy of their own judgments. In conversation and in meetings, they often emphasize a relatively small number of instances where a model makes counterintuitive predictions, and deemphasize the unproblematic majority of instances. We have seen convincing “anti-modeling” narratives wrapped around memorable cases where a model appears to make a novice error that no competent human expert would ever make. The appropriate response is to analyze such cases with the perspective that (a) models combine the information that they are presented with and (b) no model is perfect, and analyzing anomalies and outliers is a standard way to improve a model. In analytically minded organizations, this is the natural response. But in cultures where anti-model skepticism dominates, such narratives can take on a life of their own.22

Another key finding of behavioral economics is the surprising prevalence of the so-called “availability heuristic:” One’s estimate of an event’s likelihood is affected by how easily it comes to mind. For example, people fear perishing in an airplane accident more than perishing in an auto accident even though the former is actuarially less likely; in academic studies, people have been willing to pay more for terrorism insurance than insurance that covers multiple perils including terrorism; and people tend to estimate that words ending in “ing” are more frequent than words whose penultimate letter is “n.” We have seen examples of apparent model failure lead to conclusions that the model in question is not to be trusted. In these situations, offering statistical evidence of high model accuracy and segmentation power on out-of-sample validation data is only weakly effective against such “cognitively available” stories. The irony is amusing and frustrating in equal measures: The very types of cognitive biases that the model is intended to ameliorate are themselves responsible for institutional “organ rejection” of the model.

Such problems are cultural rather than technical in nature and therefore do not lend themselves to easy answers. Achieving proper communication, unbiased assessments and organizational buy-in are often no less challenging than achieving technical excellence.

COUNTERPOINT: ALL MODELS ARE WRONG

“Any sufficiently advanced technology is indistinguishable from magic.”
— Arthur C. Clarke
We have just discussed an organizational bias that might be called "model accuracy neglect"—the tendency to overestimate the accuracy of one’s own judgments and regard predictive models with undue skepticism. It is also worthwhile to explore a set of organizational biases that tends to the opposite direction: undue deference to analytical techniques and practitioners, and lack of critical thinking in model design and execution.

George Box, one of the world’s preeminent statisticians, is widely known outside the statistical community for his aphorism, “all models are wrong, but some are useful.” It is a sign of the times that one now hears academic statisticians regularly quoted at business conferences and in the popular press. Box’s motto expresses a subtle idea in a mere eight words. But perhaps this idea is too subtle. For Box’s message is often distorted (as in “it’s not too bad to bend the rules”) in ways that lead to this second type of organizational bias.

Two themes are important. First, it is important not to lose sight of the practical context of modeling projects: The goal is not “absolute truth” of the sort sought in fields like mathematics and physics. Rather, it is improved decisions. Second, it is important to have a realistic conception of what models can and cannot do. At the opposite end of the spectrum from “model accuracy neglect” lies another type of organizational bias that might be called “magical thinking about analytics.”

Business analytics practitioners are often motivated by the sheer pleasure of using mathematics and scientific reasoning to arrive at useful facts and insights. The authors remember hearing about a prominent executive of a major insurance company—an actuary by training—who was spotted reading one of Einstein’s original essays on relativity theory while traveling on the corporate jet. The scientific motivation is both admirable and valuable and should be encouraged by organizations wishing to become more analytically oriented. At the same time it is important to remember that the goal of any business analytics project is not “Truth with a capital T” but converting raw data into insights, inferences or predictive models that can lead to better decisions. The goal is not “Truth” but “true enough to be useful.”

This is the essence of Box’s motto, one that becomes clearer in one of its less quotable versions: “Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful.” The thought seems transparent to the point of requiring no comment. Yet in practice we see it violated frequently and in a variety of ways. Examples include:

• The data perfection syndrome: Organizations often defer analytics projects until such time as an elaborate analytics data warehouse has been constructed. One often hears comments like “first we need to get our data house in
order.” Fair enough, but in many situations this can amount to leaving on the table millions of dollars of savings that could be realized from imperfect and provisional—yet practically effective—models built with imperfect data. A common sentiment is that one’s data needs to be in excellent shape in order to begin analysis. This is typically a mistake. Just as “all models are wrong,” one could also say that “all databases are incomplete.” We have found that, more often than not, something useful can be gleaned even from highly imperfect data. Indeed, analyzing provisional or imperfect data can help focus the organizations’ thinking about what new data elements to collect or how to improve the collection of existing data elements. Furthermore, incomplete data can often be augmented by publicly available or third-party data sources.

- **The super-model syndrome:** An analogous organizational bias is failing to distinguish between a good-enough, “satisficing” model and a theoretically

**Analytics experts are humans, too. And just like the decision-makers whom models are intended to help, analytics experts can be overly confident both in their abilities and in the accuracy of their judgments. This can be exacerbated by the fact that analytics experts possess uncommon skills that many consider advanced or esoteric.**
ideal model. As with holding out for perfect data, significant benefits are often sacrificed by engaging in a snark hunt for model perfection or failing to account for the opportunity cost of striving for greater degrees of accuracy. We believe that this organizational tendency results at least in part from a “magical” view of models as repositories of truth rather than inherently imperfect but (in varying degrees) useful decision tools.

- **Outsourced critical thinking:** A related organizational bias is a naïve belief that “the answers are all in the data” or “the quants have figured this out for us.” These are perhaps not bad guiding principles in data-rich, low-risk situations such as recommending books and movies. But in cases where the data are messy, incomplete, ambiguous and/or of limited quantity, considerable institutional knowledge, domain expertise and common sense is needed to effectively make sense of it. Popular phrases such as “data mining” might be partly to blame here. Mining for nuggets of gold is a helpful metaphorical image for a certain kind of algorithmic-powered knowledge discovery. But real-world data analysis more often resembles a dialogue between indications from data and the active hypothesis formation and critical thinking of the data analyst. Furthermore, there is no way to guarantee that the people within an organization best equipped to analyze the data (analysts) are also in the best position to interpret the results. We have been privy to a number of predictive modeling projects that ended badly because the business people outsourced necessary critical thinking entirely to analytics personnel who, while skilled, did not have the appropriate perspective to properly design the analysis and interpret the results. In more than one case, we have witnessed the results of analysts who actually built models to predict the wrong quantity—a decision that should have been discussed and signed off on near the beginning of the project!

- **Over-confident analysts:** Analytics experts are humans, too. And just like the decision-makers whom models are intended to help, analytics experts can be overly confident both in their abilities and in the accuracy of their judgments. This can be exacerbated by the fact that analytics experts possess uncommon skills that many consider advanced or esoteric. However, specialist quantitative skills are not the same thing as critical thinking ability. To take one example, we encounter arguments from authority with unfortunate regularity. This has manifested itself (for example) in analysts stonewalling or rejecting useful methods that do not conform to textbook assumptions; electing to predict an easy (such as a binary) quantity that conforms to textbook assumptions rather than attempting to predict a more complex (for example highly skewed) quantity that would yield more powerful results; or mistaking statistical
significance for business significance. In such cases the damage can be mitigated or avoided by injecting critical thinking, checks and balances, and communication among people with a variety of perspectives into the process. Analytics should be viewed neither as an “ivory tower” nor a “back room” exercise.

- **Glamorous models**: Here another George Box quote is apropos: “Statisticians, like artists, have the bad habit of falling in love with their models.” A common manifestation of this tendency is continuing to refine an analysis or model past the point of diminishing returns. A less obvious manifestation is failing to appreciate—or failing to communicate—a model’s limitations, assumptions or inherent risks. Once again, a dramatic example came to light after the market downturn. The statistician and Wall Street quant David X. Li, at one time called “the world’s most influential actuar,” became famous for a model that greatly simplified the complex relationships among the various securities underlying collateralized debt obligations. Li’s model seemingly offered its users the ability to price complex securities that had been considered too difficult to price. Unfortunately, the model was too simple to support its widespread use. Box’s aphorism notwithstanding, it was not Li himself who fell in love with his model; it was the larger derivatives pricing world. Well before the 2008 crash, Li both articulated the limitations of his model and nicely captured a type of organizational bias in the adoption of models: “The most dangerous part … is when people believe everything coming out of [the model].”

Li’s comment speaks to the dangers of “magical thinking” about analytics and models: the notion that models are repositories of truth rather than inherently provisional and imperfect—but useful—tools for guiding actions.

In an interview, economist and Financial Times columnist John Kay provided a clear statement of this position, one that is perhaps less open to misinterpretation than Box’s concise motto. Kay was asked why investment models, built by people with quantitative PhDs from elite universities, appeared to fail. Kay replied:

“Put simply, people made the mistake of believing the model. The people who built them—the mathematics PhDs—didn’t know very much about the world. The people who knew about the world didn’t understand the mathematics. Both groups had inappropriate confidence in the value of these models. They aren’t useless—but models can only illuminate the world, never be a substitute for judgment.”
ACHIEVING BALANCE

Organizations wishing to be first-rate analytical competitors should therefore cultivate the ability to function without losing sight of two opposing ideas about business analytics. On the one hand, in domain after domain, many models have been shown to be effective in helping human specialists make decisions more consistently, accurately and economically. Models are useful. On the other hand, models in these domains often tend to be not repositories of “truth” but rather inherently provisional decision tools that benefit from continual improvement. The goal is therefore not so much to choose between specialists and equations but rather to set up a virtuous cycle whereby one continually works to improve the functioning of the other.

While there is no simple recipe for achieving this, promoting dialogue between groups with different perspectives and skills is a good way to begin. Modelers can do more effective work when they are in continuous dialog with the decision-makers for whom their work is intended. Not incidentally, this also helps reduce the chances of nasty downstream surprises, expensive implementation snags and unmet expectations that manifest themselves only at the close of a project. Conversely, such dialogue can help achieve organizational buy-in of analytics in an organic, incremental way rather than via a collision between data analysis and traditional judgment-driven modes of decision making. In many organizations, promoting such communication is as important an executive function as articulating a strategic vision for analytics in the first place.

Above all such dialogue can help the organization avoid the extremes of skepticism-induced inaction and delay resulting from pursuing unnecessary degrees of perfection. Both extremes are expensive places to reside. DR

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Endnotes

1. Wells actually wrote, “The time may not be very remote when it will be understood that for complete initiation as an efficient citizen of one of the new great complex world wide states that are now developing, it is as necessary to be able to compute, to think in averages and maxima and minima, as it is now to be able to read and write.” H. G. Wells, Mankind in the Making (1904). Wells is commonly paraphrased as having written “statistical thinking.”

2. A recent example: Michael Lewis’ book Moneyball, a book which we view as popularizing the concept of “actuarial versus clinical judgment,” has recently been turned into a major Brad Pitt movie. (A landmark academic article in this field is “Clinical versus Actuarial Judgment” by R.M. Dawes, D. Faust, and P.E. Meehl, Science, 31 March 1989 <http://www.sciencemag.org/content/243/4899/1668> ). A second example is a journalist at Slate magazine taking an online Stanford University Machine Learning class and blogging about the experience. See “Blogging the Stanford Machine Learning Class” by Chris Wilson, Slate, October 18, 2011. <http://www.slate.com/articles/technology/future_tense/features/2011/learning_machine/stanford_machine_learning_class_week_1_what_what_richard_scary_0.html>

4. Supervised learning involves predicting or explaining a well-defined target variable. Regression analysis is a common example of supervised learning. Unsupervised learning involves finding “interesting” patterns, associations, or groupings in a multidimensional database. Consumer segmentation is an example of unsupervised learning.

5. See for example, “Factorization Meets the Neighborhood: a Multifaceted Collaborative Filtering Model,” by Yehuda Koren: <http://public.research.att.com/~volinsky/netflix/kdd08koren.pdf>  Koren is a member of the team that won the Netflix Grand Prize.

6. One of our favorite counterintuitive examples was used to open Ian Ayres’ book Super Crunchers: the Princeton Econo-

ist Orley Ashenfelter has successfully used simple regression models to predict the future value of fine Bordeaux vintages from basic information about growing season temperatures and rainfall. The initial reaction of eminent wine critics was one of dismay and disbelief. This is understandable because one would intuitively think that judging wine quality would be an example where objective, statistical analysis is helpless against the nuanced perceptions of a sophisticated palate. A rich, oaky blend of data, scholarship, and tasting reports is available at Ashenfelter’s website: <http://www. liquordashboard.com/>.

7. See “A Crisis in the ER” in Malcolm Gladwell’s book, <br>


11. See “The Checklist” by Atul Gawande in the December 10, 2007 issue of <br>
   The New Yorker <http://www.newyorker.com/features/critical成功的templates/2007/12/10/071210fa_fact_gawande> or <br>
   The Checklist Manifesto by Atul Gawande (2011 Pantheon).  <br>


14. The concept of “evidence-based management” is by no means original with us. A good resource is <br>

15. In his book Super Crunchers, Ian Ayres elegantly captures this thought: "The rise of statistical thinking does not mean the end of intuition or expertise. Rather, [it] underscores how intuition will be reinvented to coexist with statistical thinking. Increasingly, decision makers will switch back and forth between their intuitions and data-based decision making. Their intuitions will guide them to ask new questions of the data that nonintuitive number crunchers would miss. And data-bases will increasingly allow decision makers to test their intuitions—not just once, but on an ongoing basis … while there is now great conflict between dyed-in-the-wool intuitivists and the new breed of number crunchers, the future is likely to show that these tools are complements rather than substitutes. Each form of decision making can pragmatically counterbalance the greatest weaknesses of the other." (page 195)

16. Daniel Kahneman also discusses this issue in the chapter “The Hostility to Algorithms” in Thinking, Fast and Slow.


18. The University of Minnesota psychologist Paul Meehl was a pioneering figure in the academic study of what has come to be called “actuarial versus clinical prediction.” Towards the end of his career, Meehl commented, “There is no controversy in social science which shows such a large body of quantitatively diverse studies coming out so uniformly in the same direction as this one. When you are pushing over 100 investigations, predicting everything from the outcome of football games to the diagnosis of liver disease, and when you can hardly come up with half a dozen studies showing even a weak tendency in favor of the clinician, it is time to draw a practical conclusion.” — “Causes and Effects of My Disturbing Little Book,” Journal of Personality Assessment 50, pp. 370–375. In Thinking, Fast and Slow, (Chapter 21—“Intuitions vs. Formulas”) Daniel Kahneman reports that “Meehl … was one my heroes from the time I read his Clinical vs. Statistical Prediction: a Theoretical Analysis and a Review of the Evidence.”
Endnotes

20. In a recent edge.org master class, Kahneman reminisced that his seminal research in cognitive heuristics and biases was in part motivated by his experience teaching a statistics class. He found the material he was teaching very unintuitive and began to wonder whether this was due to a fact of human psychology that humans are not “good intuitive statisticians.” See “The Marvels and Flaws of Intuitive Thinking” by Daniel Kahneman at <edge.org: http://edge.org/conversation/the-marvels-and-flaws-of-intuitive-thinking>
21. Consistent with this hypothesis is the work of the University of Pennsylvania psychologist Philip E. Tetlock. In his book Expert Political Judgment: How Good is it? Tetlock discussed a study of many thousands of predictions made by experts in a variety of fields. Tetlock found that the experts performed little better than random chance, and worse than statistical algorithms. Furthermore, the more prominent experts fared worse than their less celebrated counterparts. It is likely that some of the high-profile experts’ success is due to their over-confidence, as well as the narrow and over-predictive nature of their forecasts, rather than to the accuracy of their predictions. Tetlock wrote that, “There is no reason for supposing that contributors to top journals—distinguished political scientists, area study specialists, economists, and so on—are any better than journalists or attentive readers of the New York Times in ‘reading’ emerging situations.” For an informative review of Tetlock’s book, see “Everybody’s an Expert” by Louis Menand in the December 5, 2005 New Yorker.
22. This is an example of a phenomenon that Timur Kuran and Cass Sunstein call the availability cascade: a collective belief formation process in which a perception or attitude becomes steadily more plausible as it becomes more prominent in a group’s discourse. Kuran, Timur and Sunstein, Cass R., “Availability Cascades and Risk Regulation,” Stanford Law Review, 51 (April 1999): 683–768
24. Ibid.
25. For example, one of us had a recent conversation with an executive at a financial services company who had spent years overseeing the development of a large analytical data warehouse without having a clear idea of what the data would be used for.
26. Although sometimes we wonder. One of us made the mistake of trying Daniel Kahneman’s “Linda” experiment on a group of senior actuarial science majors at The University of Wisconsin. They got it right with hardly a moment’s thought.
27. Deirdre McCloskey wrote about this issue in her book The Cult of Statistical Significance.
THE MOBILE ELITE: MEETING THE GROWTH CHALLENGE IN THE 4G ERA

BY SCOTT WILSON AND PHIL ASMUNDSON
> ILLUSTRATION BY DONGYUN LEE

“"A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be."”
—Wayne Gretzky

THE HYPERCOMPETITIVE MOBILE SECTOR

Mobility is everywhere. But with this growing ubiquity comes a set of unique challenges for companies riding the wireless wave of opportunity. Throw the impending arrival of the broadband 4G era into the mix and uncertainty levels are set to spike as the scramble for competitive advantage reaches fever pitch. Given the current volatility of the U.S. mobile sector, it could be argued that a period of hypercompetition¹ is engulfing the formerly stable wireless industry. Established markets are constantly threatened by new entrants with technologies or business models that throw traditional standards and rules into flux, resulting in periods of prolonged market volatility.
Perhaps because of this heightened uncertainty, much of the established U.S. mobile sector still finds itself treading water, unsure of where and how to capitalize on new opportunities. Such companies can embrace the prospects of a more democratized digital world or staunchly defend existing businesses and protect traditional revenue streams. The decision is not so clear-cut, and now more than ever, the challenge is to do both. To begin with, incumbents must find new ways to compete against the waves of innovation emerging from Silicon Valley that have shifted the locus of creativity in mobile to the West Coast. But how should companies ride out this volatility? In the short term, viable pathways to growth need to be secured—or else the masters of old mobile risk being marginalized by a growing army of upstarts.

WELCOME TO THE OPEN MOBILE WORLD

Currently, the core elements of mobile disruption are centered on a patchwork of seismic events unfolding around three pillars of change: the rapid acceleration of innovative mobile Web technology; rising consumer demand for new mobile products and data services; and an evolving regulatory policy debate pushed along by the U.S. Federal Communications Commission, which seems inclined to pursue a more open, competitive market environment—the likes of which the industry has yet to experience. Collectively, these elements are the cornerstones of the open mobile era—a macro-level phenomenon that reaches far beyond the boundaries of the traditional U.S. mobile industry, into the surrounding technology and media sectors and across myriad adjacent vertical industries adopting wireless technologies.

For a number of years, Deloitte’s telecoms industry group has been researching the likely impact of the open mobile era and publishing a series of studies that offers incumbents guidance on how to capitalize on emerging growth opportunities. Findings from the latest study, focused on surveying a select group of senior executives in and around the mobile industry, once again point to growth and innovation as the dominant issues of the day. The gentle breeze of change is long gone, and in its place, a full-blown, Schumpeterian headwind threatens to leave a trail of creative destruction in its wake. The industry’s leaders are seemingly challenged on an almost daily basis by floods of new entrants. Many of these incumbents have limited experience in developing cutting-edge, mobile-technology-based business models, proving that experience in itself is not a harbinger of success in this mobile era.2

* As used in this article, “Deloitte” means Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries.
Our research suggests that, in periods of market volatility, resources—often more so than market position—can be a determining factor of success. The pressing need for new organizational capabilities to compete and capitalize on new opportunities is evident. What is also apparent is the expanded role of platform leadership and ecosystem development to support top-line growth and innovation initiatives. However, the understanding of the roles that capabilities play in deploying these strategies remains inconsistent. At the heart of this issue is perhaps a growing tentativeness among incumbents to fully embrace open platform tactics. Mobilizing and managing new open ecosystems becomes crucial to business model innovation, especially in light of recent sector events that are rapidly redrawing the competitive landscape. But in which areas, and to what extent, should strategic approaches be built upon open methods of collaboration with third parties?

MINING FOR GOLD

The backbone of the open mobile growth era is the rollout of 4G (fourth generation) LTE (Long Term Evolution) and WiMax (Worldwide Interoperability for Microwave Access) wireless network technologies, which are gathering speed. The long-awaited network upgrade is set to address voracious U.S. consumer demand for higher download speeds and greater bandwidth capacity, which should provide enhanced mobile data products and services. On paper, 4G networks promise to usher in a new wave of mobile ubiquity, opening the door for innovation to increase across all areas of the mobile value chain and beyond. And although nationwide 4G coverage is still being developed, the network standards battle between WiMax and LTE has tilted in favor of LTE. The majority of U.S. wireless service providers have announced support for the LTE standard, which is designed to be backward compatible with 3G GSM and HSPA technologies, giving it a cost advantage over WiMax in the process. LTE will also provide network operators 2–5 times greater spectral efficiency than the most advanced 3G networks, reducing the transmission cost per bit and allowing better economics for carriers and end users. Recent market forecasts suggest LTE services will generate more than $11 billion in service revenue in the United States by 2015, and global LTE subscribers will number 303.1 million by 2014.

From a growth perspective, the implications of the move to 4G are significant. Carrier voice revenue declined 7 percent over the last four years, while data revenue soared 132 percent and now accounts for 35 percent of the total revenue for the wireless industry. This trend is set to grow significantly over the short term and, with it, new revenue opportunities distinct from their traditional network services will emerge for incumbents. 4G is expected to provide the highway to this new value creation.
To begin with, much of the industry believes that an explosion in mobile services, distinct from revenue that comes from straightforward mobile advertising and software applications, will provide the greatest revenue opportunities in the next three to five years. Services, rather than hardware per se, are thought to represent a greater source of future value (see figure 1). It is important to define services in the context of emerging mobile business models in popular consumer and enterprise areas such as entertainment, social networking, mobile payments, mobile cloud services and productivity, and so on. The SoLoMo mantra (“social-local-mobile”) is becoming commonplace across the industry and growing louder by the day. Companies should expect to find opportunities in the overlap of social media platforms such as Facebook and location-based mobile services and mobile OS platforms such as Android or iOS. The startup successes of location-based mobile companies, including the likes of Foursquare and Gowalla, provide a perfect example of where future value could emerge in this category.

**Figure 1. What will drive future mobile revenue opportunities?**

<table>
<thead>
<tr>
<th>Percentage of respondents</th>
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<td>0%</td>
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![Figure 1. What will drive future mobile revenue opportunities?](image)

Source: Deloitte Open Mobile Analysis 2011

**THE RISE OF THE MACHINES**

In a similar vein, at the sector level, the emergence of 4G will accelerate widespread mobile business model innovation across a number of vertical industries such as healthcare and life sciences, which are already adopting wireless technologies. Others are quickly following suit, and industries such as consumer products and financial services are likely to experience higher rates of new
mobile business model growth over the next five years (see figure 2). This is generally in alignment with current market trends; the rise of mHealth and smart grid energy technology, in particular, offer huge potential revenue opportunities for mobile incumbents to expand top-line growth.

Machine-to-machine (M2M) wireless technology is often the cornerstone of these opportunities. Although M2M technologies are certainly not new to the industry, worldwide M2M connections are on a steady upward march forecasted to reach 225 million by 2014. Industry-wide M2M operator revenues is estimated to continue its rise from $4.3 billion in 2008 to $12.9 billion by 2012. On a global scale, the figures are even stronger; revenue from mobile connected M2M and embedded devices is set to rise to $18.9 billion by 2014.6

Figure 2. Which vertical industry has most potential for new mobile growth and value generation?

![Bar chart showing percentage of respondents selecting top three industries for mobile growth and value generation.](chart)

Source: Deloitte Open Mobile Analysis 2011
Smarter energy and smarter healthcare

Several forces are driving this surge in the M2M market, including the declining cost of mobile device and infrastructure technology; increased deployment of IP, wireless and wireline networks; and a low-cost opportunity for carriers to eke out new revenue streams by utilizing existing infrastructure in new markets. This opportunity will be most prominent across a number of enterprise verticals with energy likely to lead the way: Smart grid and smart metering technologies are set to experience the most growth in the M2M market. The Obama administration’s targeted economic stimulus package of $3.4 billion to modernize the nation’s power grid will further accelerate development of this market. At the broadest level, the emergence of smart grid networks will provide improved tracking of energy utilization, mainly in the form of smart grid metering, for real-time communication between consumers and the electricity grid. This will enable significant energy and cost-saving features not possible with today’s grid. Growth opportunities are significant; forecasts suggest the U.S. smart grid market will grow from $21.4 billion in 2009 to $42.8 billion in 2014. By 2014, 88 percent of this market is projected to consist of device and hardware manufacturers, software developers, and providers of communications infrastructure and equipment.

The healthcare sector is also set to gain from increased adoption of mobile technology, which should benefit carrier service revenue in the United States where the market for wireless home-based healthcare applications and services is estimated to grow at a five-year CAGR of 80 percent and become a $4 billion industry by 2013. Mobile Health, or mHealth, is emerging as a significant growth opportunity for companies looking to capitalize on advances in wireless healthcare utilizing M2M technology. Analyst forecasts estimate the potential value of the mHealth market to be approximately $4.6 billion as early as 2014. The driving forces behind this expected uptick are numerous. Mounting pressure to cut burgeoning costs in the U.S. healthcare system is a government-mandated objective; in particular, preventable readmissions cost an estimated $12–17 billion per year. On top of this lies the trend of an aging population, exacerbated by the size of the baby
boomer demographic. Americans aged 60 or older represented 18 percent of the U.S. population in 2009, and this segment is expected to grow to 27 percent by 2050.12

Wireless healthcare solutions offer a way to deal with these and other pressing issues. Advances in the area of remote patient monitoring (RPM) are expected to have a big impact across targeted disease areas where chronic conditions are a leading cause of the readmissions problem. RPM can equip healthcare providers with timely information about patients’ health while improving the speed and accuracy of diagnoses. Wearable body sensors and remote monitoring can keep chronic patients out of hospitals and improve their quality of life while significantly reducing admission expenses. Continuous remote monitoring of patients through wireless sensors and wireless networks also allows caregivers to detect and respond to intermittent problems and improve medical providers’ abilities to schedule visits. This, in turn, helps alleviate pressures pertaining to resource planning, especially problems related to unnecessary call-outs.

Improving disease management, despite an increasing incidence of chronic diseases, is a particularly promising avenue, considering seven out of 10 deaths among Americans each year are the result of chronic diseases; heart disease, cancer and strokes account for more than 50 percent of all deaths each year. In 2005 alone, 133 million Americans—almost one out of every two adults—had at least one chronic illness.13 Given this situation, the numbers are stark. Costs associated with chronic disease management accounted for more than four-fifths of the total healthcare expenditure, or $2 trillion annually by 2009, and are expected to increase 6.1 percent per year over the projection period 2009–2019.14 But, if as expected, adoption of such RPM technology becomes suitably widespread, savings are expected to reach $197 billion over the next 25 years.15

With these opportunities only set to grow bigger, many mobile technology and wireless companies are planning to collaborate in high profile alliances with counterparts across the energy, healthcare and life sciences sectors. The immediate benefit will come from combining resources and knowledge to push the growth of wireless technology in these industries to the next level. The key challenge for wireless incumbents will be to position themselves at the center of new ecosystems and create differentiated platforms for growth that will allow them to exploit new business models in the process. But unlocking value in nascent markets will require sustained collaboration, a problem area for many mobile incumbents.

One solution could be to learn from the software-driven “open” development tactics used by mobile’s new elite, which could help establish a roadmap to growth for traditional incumbents.
SOFTWARE, THE GREAT DISRUPTOR

Perhaps the biggest element of mobile hypercompetition is the impact that so-called “Web companies” continue to have in transforming the traditional competitive landscape. A majority of Deloitte’s Open Mobile survey respondents, who were not affiliated with network carriers, believe Web-based companies are likely to have an increasingly dominant role in mobile over the short term. Google and Apple in particular continue to be the keystones of the new-wave vanguard in mobile that also sees the likes of Facebook, Amazon and Twitter—all giants of the Internet economy—exert more and more influence over the design and utilization of Web-enabled mobile devices and services. Google provides a prime example. Much of Android’s growth in mobile is driven by the one-two punch of its mobile search and advertising platform, which has increased revenue by more than 500 percent since 2009. Not to be outdone, key competitor Apple has aggressively pursued its own double whammy of leading-edge consumer hardware design, combined with world-class software development, to carve out its own commanding presence. Driven by the rapidly evolving iOS operating system platform and an expanding portfolio of mobile devices and tablets, the results have been overwhelmingly positive, leading to the July 2011 announcement that the company is now the number one global smartphone producer.17

The significance of this shift in the balance of power toward firms that leverage software and media content at the core of their mobile strategies cannot be overestimated. One of the biggest drivers of value generation in the open mobile era is the development and proliferation of mobile software applications, or simply “apps,” which rapidly blossomed into a multimillion dollar industry of their own. The app economy is booming and likely to be worth in excess of $2 billion by 2012 with fortunes undoubtedly being made and lost in the process. Significantly, some analysts estimate software innovation outpaces network innovation by a factor of five to one, meaning new product introduction lifecycles for mobile software can average three to six months while network service innovation can take 18–24 months. Not surprisingly, network services are often left playing catch-up with software innovation.

The incumbent challenge

From a carrier perspective, the rise of software in their network-dominated world poses interesting questions for the wireless incumbents, especially with regard to how they leverage collaboration to take advantage of growth opportunities in adjacent industries. With the “content is king” mantra ringing in their ears, there is little doubt that software innovation is driving platform innovation,
which in turn is driving device adoption that ultimately helps fuel the growth of network data services. The challenge for incumbents will be to exert their still-powerful presence and compete in an area in which they have traditionally lacked expertise, allowing them to carve out new business models that extend beyond the boundaries of the traditional wireless sector. Responses from the mobile executives in our recent Open Mobile survey suggest this is a priority—a large majority believe carriers must make the transition from the walled gardens of the past to new organizational forms built around open ecosystems to enable enhanced collaboration with developers. Others suggest that the most likely route to sustained success may come from a managed open strategy—where carriers retain prioritized control over premium applications and assets but allow third parties access to core network functions.

The good news for incumbents is that this message seems to be hitting home. Only a few years ago, U.S. carriers were virtually impenetrable for the majority of software developers, but this is starting to change. Today, each member of “the big 3” is making a bigger effort to attract more developers to collaborate and build out their ecosystems. For instance, both Sprint and AT&T have recently launched new initiatives focused on building out new centers of innovation and processes to facilitate co-development with third parties. This should help build platforms that could see new apps and services launched in areas such as messaging, geolocation and M2M. Beyond this increased network access, carriers are also looking to develop new app storefronts that will cater to multiple third party platforms and handsets directly linked to new external developer channels. This will offer developers a range of economic, technical, sales
and marketing benefits in return for creating the apps with the best revenue potential to run on their networks. And perhaps in a nod to the likes of Apple’s WWDC program, each of the big 3 now hosts its own annual developer conference with the goal of growing a sustainable developer community to foster more collaboration. All of these steps suggest carriers are beginning to follow a collaborative product and services strategy to keep pace with threats from the likes of Google and Apple and win the prized developer mindshare. But in order to get there, an increased focus on developing appropriate capabilities is critical.

NAVIGATING THE PATH TO GROWTH

Against the backdrop of change in mobile, the twin strategies of platform leadership and ecosystem development are central to capitalizing on emerging growth opportunities. Our surveyed executives agreed, and most indicated that their organizations were on track with planning and investing for the open mobile era despite the lingering effects of the recent economic downturn. The broader role
of platform leadership within organizations planning for mobile growth seems to be taking hold. Digging deeper, the simplicity of applications development and user experience, cross-industry potential, open interface access and modular technology architectures, and the use of a vibrant ecosystem to support and develop the platform are considered the most critical elements for platform success.

The effectiveness of the formation and deployment of a platform-based ecosystem
can differ between various sectors of the mobile value chain, but the building block capabilities of alliance formation, knowledge management, trust-building and collaboration in general are seen by respondents as the keys to developing platforms and ecosystems to stimulate innovation. Competence in each of these areas should be a top priority.

**Follow the mobile elite**

The call for incumbents to move toward a more open form of market competition has been a consistent theme throughout our research. Studying the strategies and tactics of the Silicon Valley elite may prove useful in constructing the path forward. Most surveyed executives seemed to believe that carrier competitiveness in the 4G era will be dependent on dismantling the closed platforms of the past and replacing them with more open forms of organization (see figure 5). This is considered essential to stimulate business model innovation beyond the walls of the traditional wireless industry and ensure new platforms will gain sustainable foot-

### Figure 5. Will carrier competitiveness in the 4G era be dependent on transitioning from “walled gardens?”

<table>
<thead>
<tr>
<th>Industry</th>
<th>YES Percentage</th>
<th>NO Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Device Manufacturer</td>
<td>83.8%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Software Developer</td>
<td>84.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Network Carrier</td>
<td>89.5%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Infrastructure and Component Manufacturers</td>
<td>91.1%</td>
<td>8.9%</td>
</tr>
</tbody>
</table>

Source: Deloitte Open Mobile Analysis 2011
holds amid market turbulence. In this market era, innovation in software drives OS and device utilization and boosts network asset utilization. Incumbents prone to exerting restrictive control and access over software applications, content, media and network applications should realize the risks to market share in doing so.

Despite a growing recognition that the move to open platforms is necessary, transitioning away from closed, proprietary business models is not easy. Winners in this era will be the ones who can astutely mobilize new ecosystems, manage highly distributed network alliances, build trust with new partners in the innovation process and generate value from mobile technology platforms that, in turn, will form the core of new business model development. Companies that fail in these key areas may struggle to compete.

Run to where the money will be

For incumbents, finding new, nontraditional sources of wireless growth will become imperative to sustaining their leading positions. Companies active in areas such as wireless healthcare, smart grid energy management, financial services and retail are set to experience significant growth in the use of mobile technology. New business models with wireless technologies at the core of their platforms will drive value generation. Top-line growth will become increasingly dependent on how well incumbents, particularly carriers, can organize to collaborate with players in adjacent industries where they do not possess leading knowledge or prior experience.

Go toe-to-toe with the new wave

The art of innovation lies at the core of the incumbent challenge in mobile. The question becomes how to balance the daily grind of defending hard-won market share with the need to find unexplored opportunities. Our research highlights the strategies used by successful new entrants—the mobile elite—to focus on two main tactics: the development of astute open platform leadership and the mobilization of flexible innovation ecosystems. To seize the moment with emerging growth opportunities, incumbents should consider similar tactics to reenergize their innovation process.

The first step will be to focus on areas of the value chain that are still underserved by new entrants. Survey insights point to targeting innovation at the services level, across the adjacent vertical industries where wireless technology is set to disrupt established markets. By following a managed open strategy, wherein careful targeting of open platform development is balanced with retaining proprietary control of core value-generating assets, incumbents can go toe-to-toe with the new wave. Tactics should include extending third party developer collaboration in areas
of promising value generation such as M2M in the healthcare and energy sectors. Fostering innovation in areas such as mobile cloud computing and mobile commerce, combined with making bold plays in the ever-expanding field of mobile social media, could also pay dividends.

By developing supporting innovation communities that use dispersed networks of development partners, drawn together from disparate geographies, companies can reconfigure talent, resources and capabilities to serve and feed their platforms and ensure innovation is regenerated beyond their own four walls, thus allowing incumbents to reach beyond the boundaries of their established footholds and strike out into new frontiers. DR

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Endnotes

1. Hypercompetition, as described by Prof. Richard D’Aveni, denotes hyper-inflated market competition that can emerge in sectors prone to rapid technological disruption with competitive advantage often difficult to sustain. See D’Aveni, R. (1994): Hypercompetition: Managing the dynamics of strategic maneuvering, New York: The Free Press


3. For more on LTE see Next Generation Mobile Networks (NGMN) <http://www.ngmn.org/home.html>; Also, GSMA <http://www.gsma.com/technology/lte.htm>.


16. Additionally, the company reports 550,000 Android devices activated per day, while the Android Market has seen more than 6 billion apps installed. As of October 2011, Google had a cash reserve of $42.56 billion (Source: Google Inc, Q3 2011 Earnings Conference Call).


At the Court of
A visit and conversation with Henry Chesbrough on all things open innovation and the challenges of sustaining the open business model.

KING HENRY

BY SCOTT WILSON > PHOTOGRAPHY BY MATT LENNERT

The Faculty Club at Berkeley is a rather discreet place. Its dark oak hallways are punctuated with stained glass windows, with a smattering of stag’s head trophies jutting out from the walls. The overall impression is that of a gentlemen’s hunting lodge from a bygone era. The club, according to my host, has been around since the turn of the last century. It exudes a quiet elegance through its exposed beams, leather Chesterfield chairs and ornate fireplaces. I am here to meet Professor Henry Chesbrough of the Haas Business School and the originator of the “Open Innovation” movement with three highly successful books on the subject—the most recent from 2011, which focused on open innovation in services.
Since Chesbrough’s first book on the subject was published in 2003, the use of Open Innovation (OI) has steadily grown to become a widely accepted and much-lauded model of innovation management. At the very highest level, the model was founded on the theory that companies should become adept at looking beyond their own four walls to trade unused intellectual property and source new ideas from third parties back into their own organizations in order to stimulate their stagnating innovation processes. Stories abound on how effective the “inside-out to outside-in” theory can be at, among other things, kick-starting sputtering engines of innovation—IBM springs to mind as a high profile example. But rather than go over old ground, I want to hear more about how the model has evolved, where the challenges are in sustaining its effectiveness and why some companies fail in getting it right.

Over lunch in the club’s bustling dining room, I begin our discussion by asking him how he arrived at Berkeley and to explain the genesis of the OI concept. Chesbrough recalls that he began his academic journey at Yale and then worked for a couple of years before moving to California for the first time in 1981 to begin an MBA at Stanford. Soon after graduation, he entered the nascent personal computer industry and went to work for Quantum, a disk drive manufacturer.

“That’s when the disk drive industry was a good industry to be in, and I stayed at Quantum until 1990 as an employee and until 1995 as a consultant,” he said. “During that time Quantum grew tremendously, and it was a wonderful experience for me personally, and we had great success as a company and for the shareholders. But after my stock options vested and I had a new baby with my wife, it was clear the disk drive industry was not going to continue to be such a wonderful industry to be in, and I started to think more broadly about what would I like to do if I wasn’t doing this. And that’s when the idea of going back and getting a PhD really came into my mind. So I went to Berkeley for my PhD and, following the birth of my second daughter, got an appointment at Harvard where I taught at the business school for six years. I then came back to Berkeley in 2003 when it became clear that I was not going to get tenure at Harvard and I was going to have to leave.”

The waiter interrupts us to take our order. I ask Henry what’s good. “You know, because I come here fairly often I’ve sampled widely … I’m the kind of person that—I don’t know if this is true of all people who study innovation—but I like variety. I tend not to be the person who has the same thing for lunch every day.”

Okay, so you like to mix it up a little?

“Yes, which I think is useful when you are studying innovation.”

Order taken, we begin to discuss the U.S. mobile sector and the seemingly unrelenting market turbulence forcing the once traditional wireless sector to open
up and provide new pathways for new players to enter the game. We talk about how OI concepts are being used to create and capture value in this hypercompetitive environment and how the challenges faced by large corporations to sustain competitiveness sparked the original thinking on OI.

“My own thinking about open innovation started inside the large corporate laboratories of companies like AT&T with Bell Labs, with Xerox and their Palo Alto Research Center, with IBM and the Watson Research Center, GE and the labs it has in Schenectady and so on,” he said. “So I actually started from inside large companies, if you will, while developing my thinking. Then following the break-up of AT&T in the 1980s, I began to study parts of that business that were split off. Among the companies that I followed was Lucent, the telecom equipment company that got the bulk of what was left of Bell Labs. I actually spent a fair amount of time there and followed, among other activities, an internal venture capital group they set up to commercialize ventures out of Bell Labs Technologies giving Lucent an alternative pathway to the external market.

“So Open Innovation began from close observation of what companies actually are doing and then trying to step back and reflect on what they were doing in relation to what I’d read as a PhD student and then as a professor in what we were teaching our students. And you know Professor Michael Porter’s work was very powerful and influential in the ‘80s and the ‘90s about strategy. It was really a model, you could say, of closed innovation where you figure out what your key strategic assets were and you either went low cost or went for differentiation or you found a niche. You were constantly looking for ways to compete against the other guy. And, as I saw what was going on in the industry labs, it was clear that certainly a lot of that was happening, but there was a lot of other stuff going on that his model didn’t really explain very well at all.

“I probably spent the most time at Xerox and its Palo Alto Research Center. One of the projects I did there tracked 35 projects that started inside of Xerox’s labs and got to a certain level of development, but then internal funding for all these projects was stopped. I was curious as to what happened to these projects subsequently because in many cases Xerox proactively encouraged the employees working on them to leave and take them to the external market because once these people left the lab, budget was freed up to be redeployed for something that was more strategic and promising in their core business.

“One of the things I discovered was most of the 35 projects, when they went outside, subsequently failed. But a few of them succeeded and actually became publicly traded companies, and if you added up the market value of those publicly traded spinoff entities it more than exceeded the value of Xerox’s own market value. So that really made me think how to better understand this and what you...
would do both in a large corporation like Xerox and in a small corporation or if you were a policymaker looking at this. How would you think about a system that was more open and more distributed? In the example of Xerox, their core business models were doing a good job of commercializing certain technical projects that really fit well with their core strategy. But then you also had these other projects that didn’t fit with the core, but when they exited to the outside they found different business models that made them much more attractive as standalone entities. So that became the genesis really of the thinking that became Open Innovation.”

At this point, Chesbrough emphasized that even from its inception open innovation was not just about technology and R&D processes. It was more about the business model issue than people originally realized. This was the motivation for his second book, Open Business Models, published in 2006.

“In subsequent work, I thought about what if the business model wasn’t fixed; what if you could actually innovate the business model … So instead of Xerox, which was sort of destined to pick certain product ideas that fitted with the core strategy and really had no way to handle the ones that didn’t fit, now we might think about business models that might be more adaptive. And in some cases, might actually—if an idea didn’t fit the current strategy—change the core business model so that it might fit down the road.”

To Chesbrough, the early logic behind the original concept remains consistent throughout his later work and is reflective of the shifting patterns of corporate value generation, particularly in the area of services.

“Xerox now gets more than 25 percent of its revenue from services. IBM is another classic case. A lot of its revenue is generated from services. Company after company is getting more and more of their business from services. In some cases what’s really happening is the business model is shifting. So for example, a GE aircraft engine can be sold for tens of millions of dollars to an airframe manufacturer.
That same engine can also be leased on a so-called “power by the hour” program to that airframe manufacturer. In the first case it’s a product transaction. In the second case it becomes a service. And with the latter what benefits GE is all the aftermarket sales and service, spare parts, etc., that accrue during the 30-year life of the engine and operations. So now all that comes back to GE, whereas with the first case, when GE sold the engine, they were in competition in the aftermarket with all the former GE technicians that spent 10 years at GE and then decided to go out on their own. They’ve got all the tools. They’ve got all the manuals. They’ve got all the equipment, the training, but they don’t have GE’s overhead. So they’re undercutting GE, 20, 30 percent on price, and it’s the same people. So this is the way to kind of bring that 30-year aftermarket back into the fold of GE.”

So far, so good I’m thinking, but how about exploring the tougher side of OI, the making it work on a regular basis side. Does he think that the many definitions of “open” are ultimately spoiling the “pure” vision of the original concept, thereby confusing companies trying to make it work?

“I think there is some confusion, some noise out there that makes it a little … distorts the signal a little bit. There’s actually, I think, a very close analogy to what happened in open source software, the schism that opened between the free software people and the open software people. The free software people were people like Richard Stallman and others who thought basically software should be free. And the distinction between that and the open view, which is that software should be open and can be shared but you should have the ability to make private extensions on top of it, really gets back to the idea of the business model.

“In the world of free they really don’t like business models. They really don’t think they’re needed, and they think that the world would be more innovative without them in software. The open people think the opposite, that actually being open is a fantastic generative mechanism to stimulate a lot of innovation, but to get back to scale and to get companies to actually use it and better their companies on it, they’re going to need the ability to do a lot of support and sustaining

“To me a lot of the things that get the ideas to scale and really drive the real social impact arrive only after companies become a bigger part of it and it gets going. So I’m much more like the open software people rather than the free software people.”
activities. And that requires some funding. You need some mechanism to make enough money to provide those services. So the open folks think you can have and should have legal regimes and business models to enable that, whereas the free people don’t.

“In open innovation we have a similar debate. The differences between free and open become apparent once the initial creativity stages are over and the innovation begins to get going; companies come in and business models are created; capital investments have to be made; and there are financing mechanisms to do all that. To me, a lot of the things that get the ideas to scale and really drive the real social impact arrive only after companies become a bigger part of it and it gets going. So I’m much more like the open software people rather than the free software people.”

Point taken, but what about the companies and executives that don’t have that all-encompassing view and struggle to fully implement the model? On this, Chesbrough remains bullish.

“My sense about executives is that they’re ultimately pretty pragmatic, and I think a lot of good things can happen by making business models themselves more open and creating mechanisms to share things with associated IP and so on, much like the open software people. Now, our definition of open innovation is actually in an academic book we wrote in 2006 and describes the purposive use of inflows and outflows to accelerate internal innovation going to market and enabling other channels for ideas to go to market, respectively. So there’s an outside-in component and an inside-going-out component to the model.

“But many people, when they think about open innovation, only think of the first half. They don’t think about the second half, the inside-out piece. Companies are quick to pick up on the idea of expanding their intake from outside sources in their own processes. But they’re much more reticent about actually thinking about the things that Xerox dealt with where they had projects that weren’t going anywhere but didn’t know what to do with them. Even today, not many companies think hard about that problem. So that inside-out half of the model is still, I think, a work in progress.”

We’re now about half way through our allotted time so I move on to discussing what the optimal conditions are for making open innovation work. Chesbrough pauses and picks his words carefully.

“There are some underlying conditions that need to be satisfied. One that may sound obvious or basic would be labor and mobility. In Japan, for example, even today there’s kind of a two-tier labor market where many people, once they graduate college, join a company and they’re there for their career. There’s a second tier in the market that’s kind of a lower tier that’s much more temporary and people … move from company to company. Those people are typically in lower status jobs
and in a few of the more artistic kinds of industries as well. Within that first tier of the market, labor mobility in Japan remains very low even today. And I think that really impairs open innovation because even if you bring in external ideas it’s the same people that you had last year or the year before or the year before that. The idea might come in but the people with those ideas don’t come in.

“We’ve learned that to really transfer knowledge effectively in a way companies can really make use of it, you need a certain amount of creative abrasion and a certain amount of dwell time together working on it. Open Innovation works best when you have people collaborating side by side, with people that are moving from one organization to another. It doesn’t have to be a lot of them but enough that you can have interpreters going back and forth to bridge the differences. You need people in a boundary spanning role, a brokerage role, and so on. Aside from mobility and labor, another precondition is the need for some basic IP rules to enable open innovation, particularly in situations where there are some capital intensive investments that have to be made. Maybe not at the infancy of these industries, but in the stages where it really begins to get to scale you’re going to have to invest significant capital up front. You’re going to need some IP to pay for that. And so a country or a system where there effectively is no IP would have a very, very hard time organizing for Open Innovation.”

Ah, yes, the ever-thorny issue of intellectual property and how best to control it in an "open" setting. I wonder out loud just how difficult it is to implement OI effectively in countries where protecting IP takes more of a back seat—in China for example.

“The good news in China is that labor mobility is not a problem,” he says firmly. “They’ve got lots of labor mobility. People are jumping ship all the time. In fact, the companies that I’ve talked to that have R&D labs in China complain that the turnover rates can be 20 or 25 percent a year: Every four or five years you’ve got a brand new lab in terms of people working there. So that is a leak in the system from their point of view. Now, it does make it hard for them to commit to developing as much technology in their labs as they might like to because it’s a real threat that a lot of it will walk out the door without appropriate compensation.

“However, I am actually bullish on this problem being fixed in the following sense. If you were in Taiwan in the 1960s, Taiwan was just rife with IP pirates of various kinds, copying left, right and center with little or no protection of intellectual property at all. But if you look at Taiwan today, 50 years on, IP is very well protected, highly respected, and they now have a very interesting division of labor in the offshore manufacturing community for electronics and semiconductors and the like that is really supported by good IP management. I think in time we’ll see something similar in China. You will see the rise of indigenous companies who
have a lot of internal technology who are going to want to protect that technology similar to what happened in Taiwan. Up until recently China hasn’t had enough of an indigenous technology sector to have a lot to protect relative to the value of appropriating or copying everything else. I think there is a natural dynamic here as companies grow and move up the value-added ladder and move up the technology maturity latter. You have companies that are genuinely developing technology—they’re not simply copying anymore. We’re going to need more of those in China before you’ll really see an effective mobilization of policy to tighten it up, but I think it’s coming. I can’t tell you whether it’s going to be five years or 15 years, but I think it is coming.”

The lunch crowd in the dining room is beginning to drift away, the shadows from the stained glass windows stretching deep across the room. I turn to the industry aspects in making OI work. I ask him to explain how companies can successfully navigate the dynamics of individual industries, where technologies can be radically different, and still generate success with OI.

“Often you accept the premise that you’re living and innovating in a world where there’s a lot of useful knowledge widely distributed. If that’s the case there’s actually more value, not in coming up with yet another building block of technology but rather in coming up with the architecture that connects these things together in useful ways that solves real problems before other people do. So that system architecture, that system integration skill, which has always had some value to it, becomes even more valuable in a world where there are so many potential piece parts that can be brought together for the purpose.

“When you think about innovation being modular or architectural, or radical, or incremental, etc., these are actually artifacts of someone putting together a system or architecture, and the trick becomes navigating the competitive dynamics within that system as it unfolds.”

I let this sink in for a moment, and noticing my raised eyebrow he expands further.
"As I think the Apple and Google success in mobile shows, because an industry launches with a particular architecture that might go for some period of time, that architecture can be overthrown or disrupted by a new architecture. The question is where do we play in this new architecture, or should we try to come up with an alternative of our own instead."

This leads us to talk about the challenges Apple has had in replicating its success in the U.S. mobile sector in countries like India. I ask where he thinks the future value will reside for upstart new entrants taking on the wireless incumbents of old.

"Significant growth in mobile is unlikely to be in the U.S. or Japan or Western Europe … And so the business model that Apple’s done today, it’s really going to need a different model. Now Google, I think, is in a very different situation. Let’s say for the sake of argument that the Google Android experience isn’t as good as the Apple iPhone experience. That may be so, but the Google business model, I think, is much more likely to be effective in the emerging markets than Apple precisely because Google is largely agnostic about where the (user) minutes come from and how they’re sold, etc. As long as there’s a device where they can serve ads, their business model is going to be just fine. So it’s not that the technology or the user experience is better, it’s that the business model is better adapted to the local environment."

As we move back to the topic of business models, the dominant theme running through our discussion, I ask Chesbrough what his views are on platform leadership and ecosystem development, two of the most prominent strategic tactics in mobile. Do they share anything in common with the Open Innovation playbook?

“Platform leadership, to me, is the business model side of the technical integration or systems integration ideas we were talking about a few minutes ago. The real value lies in finding the ways to connect all these things together and solve real problems before other people do it. The platform side is the business model that gets you where you’re going, and when it’s clear that you’re going to get there, "Jobs overruled his staff, and instead of taking 30 percent of the revenues for the developers, 70 percent for Apple, he flipped it and gave the developers 70 percent and Apple took 30 percent … He made the call against the advice of his own staff and, as a result, nurtured this wonderful ecosystem."
you can rally and inspire and motivate customers and developers and others to join the platform. You consciously invite many people into the process outside your organization. You design your model in ways that they can make money and they can create business models that work for them, even while your business model works for you. Done really well, their activities increase the value of your business to you so it’s their money making your business more valuable; a real value multiplier. It’s easy to say, hard to do.”

And what about ecosystem development—easy to get wrong I would think? He pauses and provides another anecdote on Apple, made all the more poignant by the passing of Steve Jobs less than two weeks after our discussion.

“I was at a meeting with John Riccitiello of Electronic Arts last week and he told me of a meeting with Steve Jobs back when they were just setting up the app store business model. Apple’s staff had done an exhaustive analysis of who was bringing the customer to the table, who was dictating the systems, who was really adding the most value to this, and they were making an argument that Apple should take the lion’s share of the revenue when these apps were sold because they were the channel. They were the brand. They were the ones with the customers, the system, you name it. And, Riccitiello and others were saying to Jobs, you know, look you’ve got to give us more reason to participate here. If we can’t make any money we just won’t play. And so, as Riccitiello tells it, Jobs overruled his staff, and instead of taking 30 percent of the revenues for the developers, 70 percent for Apple, he flipped it and gave the developers 70 percent and Apple took 30 percent … He made the call against the advice of his own staff and, as a result, nurtured this wonderful ecosystem.”

The dining room is deserted and it’s time for the professor to head back to the classroom and me to get back to the office. We walk out together and I ask him if he’s shocked at just how pervasive his ideas on innovation have become in such a short period of time.

“When I wrote the first book in 2003 I did a Google search on the term ‘open innovation’ and I got about 200 page links back that said ‘company X opened its innovation office at location Y.’ There was really no meaning to the two words together … When I was finishing the research for my last book last year that same search on that same term generated 22 million links, most of which were about this different new model of innovation. So I’ve taken a very broad view and tried to be very active and engaged in promoting it. Obviously, that’s not one person’s effort. A whole lot of other things have happened and a lot of other people have built on it, but it’s been a real source of satisfaction for me to just watch how quickly it has developed.”
Indeed, a great example in itself of the power of Open Innovation. 

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Three years ago, Deloitte Consulting LLP launched The Persistence Project to identify the management practices that contribute most to sustained, superior corporate performance. Preliminary results have been published in the Harvard Business Review and the Annals of Applied Statistics. This article is the fifth in a series, providing a preview of the project’s findings. See www.deloitte.com/us/persistence for more and to join the conversation.

TO THINE OWN SELF BE TRUE

Sustaining superior performance requires knowing what should change and what should stay the same.

BY MICHAEL RAYNOR AND MUMTAZ AHMED

> ILLUSTRATION BY STERLING HUNDLEY

WHEN AND HOW a company must change in order to sustain superior performance is an evergreen topic of the art and science of management. And like just about every other question of substance, actionable truth is often lost in a vast wasteland of vacuous aphorisms. As but one example, consider that “if it ain’t broke, don’t fix it,” certainly rings true, yet one is simultaneously exhorted to “do it to yourself before someone else does it to you.”
A common synthesis is to argue that when change is required the key is to remain true to some set of core values. Everything should be on the table, we’re told, except that. Sadly, it’s an answer that merely raises another question. How is one to know what those values are—what Polonius in Hamlet called our “self” to which we must be “true”? To speak of preserving core values is to give only the illusion of specificity, for it amounts to saying “don’t change what you shouldn’t.” If we want to make the pursuit of corporate success more predictable, we need something more objective and measurable—and far less circular.

Based on our research into the behaviors of companies with superior performance, we believe it is possible to say something more about the kinds of stability and change that are systematically associated with success or failure. Our findings are not conclusive and our prescriptions are not completely quantitative, but we hope you will find here the seeds of a more transparent, more scientific and less philosophical approach to the pursuit of long-term competitive success.

To begin with our conclusion, we have observed three categories of behavioral change by top-performing companies:

- Positioning: Changing from differentiated to low cost, or vice versa. This type of change is pursued relatively frequently, but typically with disastrous outcomes.

- Markets: Changing or expanding markets served by moving into one or more of new products, new geographic regions or new segments.

- Competencies: Changing or expanding core competencies, most often by reinventing processes that had been critical to the success of a given Position.

These three categories are neither mutually exclusive (companies can change along more than one dimension) nor collectively exhaustive (there are other ways to think about change). Rather, they are empirically derived from our study of the patterns of change exhibited by superior long-term performers.

Changes in Positioning, whether or not they imply changes in Markets or Competencies, typically fail. When they work they take the form of movements “upmarket” to a differentiated position, rather than “down market” to a low-cost position—again, regardless of the level of change in Markets or Competencies required. In contrast, changes in Markets or Competencies typically succeed, regardless of the degree of change required. Changes in Markets tend to be more frequent, however, perhaps because they require less fundamental change: It’s easier to sell what you’re selling now to someone else than it is to reinvent how you do something core to your existing Positioning.

Unearthing these findings has been a two-stage process. First, we needed to
identify companies with superior long-term performance (see inset below). To that end, we assess a company’s performance annually, as measured by return on assets (ROA), compared to all publicly traded companies. Companies that finish in the top 10 percent (that is, the 9th decile) often enough that there is a less than 10 percent chance they achieved that result by chance alone are called “Miracle Workers.”

Second, within the Miracle Worker categorization we looked at three trajectories of performance: those that “lost it”—that is, had a strong string of 9s followed by a meaningful string of 8s or less; those that “found it”—the mirror image of “lost it;” and those that appear to have “kept it”—that is, their string of 9s appears to continue to this day.

It is by comparing the responses of these three categories of Miracle Workers to competitive and environmental change that we observed that Positioning is the “core value” companies should preserve—the “true self”—while Markets and Competencies are the levers of change associated with long-run success.

POSITIONING

There are, at the most fundamental level, two generic positions available in any market: cost leadership and product differentiation. Either of these positions can be a foundation for superior profitability. With this categorization scheme in mind, consider now the fates of two Miracle Workers in the “lost it” category: Thomas & Betts Corporation (T&B) and Maytag Corporation (Maytag). Each of these enjoyed sufficient (for the purpose of our analysis) success from the

IDENTIFYING SUPERIOR PERFORMERS

Ten percent of any population will be in the top 10 percent. That doesn’t mean those “top performers” are any different from the rest of the population, though. To be truly exceptional, a company’s performance has to be better than we would have expected by chance alone.

It turns out that frameworks for competitive success built inductively on a foundation of case study research are often relying on companies with performance profiles indistinguishable from those of lucky random walkers.

The good news is that companies with truly exceptional performance are out there; you just have to know how to look for them.

See www.deloitte.com/us/persistence to download A Random Search for Excellence for a more complete explanation.
mid-1960s to the mid-1980s thanks to their success as differentiators, yet endured subsequent long runs of less impressive returns as a result of attempting to become cost leaders.

T&B manufactured electrical wiring products of the sort used in residential and commercial construction, while Maytag (which was acquired in 2006) made washing machines and dryers. Strategically the two firms were quite similar. T&B was consistently in the 9th decile for almost 20 years thanks to its innovative products across a wide range of categories—everything from cable ties to electrical junction boxes. Its commitment to innovation showed up in a patent portfolio about double its nearest competitor. Its commitment to customers showed up in a willingness to invest in differentiating seemingly commoditized and low-dollar products. The combined result was a material pricing premium across a wide range of products that showed up as a significant return on sales advantage.

Modest but profitable growth came entirely organically and included measured expansion into international markets where its differentiated strategy translated well: Europe, Canada, Japan and Australia. In contrast, other players in the industry undermined their positions with large acquisitions and premature moves into emerging markets.

Maytag, the appliance manufacturer, similarly owed its early success to a differentiation strategy. The company’s products were perceived to be of superior quality and durability, a perception that was bolstered by a long-term and highly effective advertising campaign built around “Ole Lonely,” the Maytag repairman who never gets a call thanks to the reliability of Maytag appliances. The company translated this brand into a strong pricing premium through significant support for its network of over 10,000 independent retailers. For example, Maytag covered the costs of shipping its products to its distributors, reducing its distributors’ expenses. As a result of this and other such initiatives, distributors were willing to encourage customers to purchase Maytag over the competition. The result was over 20 years of industry-leading performance.

T&B’s decline began coincident with the 1981 recession. There had not been any noticeable shift in the company’s strategy or tactics, so it seems reasonable to conclude that the drop in performance was caused by the general slowdown in economic activity.

In response, T&B embarked on a major change in Positioning. A series of large acquisitions made electronic components almost half of total revenue by 1991, while its historical electrical manufacturing activities were seen as old news. By itself, this would constitute merely a change in Markets, but the electronics business was characterized by standardized technologies that T&B could not differentiate (as it had in the electrical business) and a proliferation of foreign competitors with
strong cost advantages. The result was that success demanded strong cost leadership, something T&B proved unable to establish. It wasn’t until a change of senior management in the early 2000s that T&B returned to its roots as a differentiator in electrical components—and saw its ROA begin to recover.

For Maytag, too, the 1981 recession seems to have been a watershed but for different reasons. Cost pressures pushed Maytag and the industry generally into a greater reliance on national retailers. The emergence of “big box” chains in the late 1980s accelerated this trend. Between 1985 and 1996 the number of independent distributors carrying Maytag products fell from over 10,000 to 650.

 Unlike T&B, Maytag remained committed to the appliance industry, but like T&B, attempted to establish a new position as a broad spectrum, cost-competitive appliance manufacturer. Buying Magic Chef in 1986, at the time a company half its size, moved Maytag into the “mass market” segment of household appliances. An even bigger deal followed in 1988 when Maytag almost doubled in size, further diversified its product portfolio and increased its geographic footprint by acquiring Hoover, the UK-based vacuum cleaner company, in 1988. Unfortunately, Maytag’s performance, both absolute and relative, eroded steadily, to the point that the company was acquired by a much larger and globalized competitor.

In drawing this conclusion, it is important to note that we did not single out T&B and Maytag for study because their repositioning efforts were unsuccessful. Rather, we chose to study them initially simply because of their lifetime performance: They are bona fide Miracle Workers. Further analysis revealed that
Figure 1. Performance profile for two “Lost it” Miracle Workers

Panel A: Thomas & Betts Corp

Panel B: Maytag
their Miracle Worker status had a particular profile: a streak of statistically significant high performance, followed by a statistically significant streak of lower performance.

What we have discovered is that high performing companies with this “lost it” profile tend to have responded to adverse events by attempting to change their Positioning. Not every “lost it” company we studied responded this way, and not every repositioning attempt failed. But the grain of the wood is clear: A change in Position is a low-odds proposition.

MARKETS AND COMPETENCIES

Miracle Workers that either “found it” or “kept it” often tend to have opted for dramatic change in Markets or Competencies, frequently in order to maintain their historical Positioning, typically as differentiators.

Take, for example, Heartland Express Incorporated, a truckload (TL) trucking transportation services provider. Heartland’s performance since going public in 1985 until 2007 was an essentially unbroken string of 9s: the dip in 1992 was due to a large acquisition, while the 8th decile ranking in 2005 is too isolated to warrant explanation. In absolute terms, however, the company has two distinct eras of performance; our statistical analysis identifies 1994 as the change point.

We have identified three defining elements of Heartland’s strategy. First, the company was historically focused on a relatively small geographic footprint and a
small number of customers. Even within those constraints, Heartland remained highly selective with respect to the freight it carried, picking only the most profitable loads.

Second, Heartland was very nearly unique in pursuing this approach because it had the discipline to accept the trade-offs it implied: By focusing in this way, Heartland had to live with much more volatile performance and lower levels of growth than other trucking companies.

Third, Heartland was able to maintain the service levels required to make this strategy work in part thanks to having broken a long-standing industry trade-off. Trucking firms that use owner/operator (o/o) drivers have a smaller asset base than firms that employ their drivers and so must invest in trucks. Traditionally, however, o/o’s have been less reliable than employed drivers. As a result, the lower asset base associated with an o/o fleet typically comes at the price of lower levels of customer service, and hence lower prices. Heartland, however, enjoyed the lower asset base of an o/o fleet without the negative impact on service, and hence pricing, thanks to a richer and more comprehensive compensation package that included not only higher pay but also, among other benefits, full scholarships to university for the children of its drivers. By paying more it was able to maintain a stable and high-performing workforce even though the economic benefits did not accrue entirely to Heartland’s drivers.

During this initial period of higher absolute performance Heartland’s returns were steadily deteriorating. Shouldn’t that have signaled to the company’s leadership that remedial action was required? Based on Heartland’s response, the answer

Changes in absolute performance, then, can be misleading: Declines might not signal that anything needs fixing, just as increases might not mean you’re doing anything right. Instead, the key to long-term survival seems to lie in knowing when material change is required in order to preserve one’s relative performance position.
seems to be “yes … and no.” Heartland’s ROA in the 1980s was almost three times the industry average, a level that few efficient markets will long support. One quite reasonably could expect an erosion of profitability as new players entered the market in an attempt to get a piece of the action themselves or as customers vertically integrated in order to reduce their costs.

Changes in *absolute* performance, then, can be misleading: Declines might not signal that anything needs fixing, just as increases might not mean you’re doing anything right. Instead, the key to long-term survival seems to lie in knowing when material change is required in order to preserve one’s *relative* performance position.

This is a distinction Heartland seems to have been able to make. During era 1, the company’s advantage from a differentiated strategy built in large part on an o/o fleet was gradually undermined due to increased competition. This shows up in a steadily declining ROA. By the middle of era 1, Heartland began increasing its percentage of employee drivers. However, this was only part of a transformation of the company’s competencies. Rather than resist the increased asset intensity implied by the shift to employee drivers, Heartland also invested heavily in maintaining a new and highly efficient trucking fleet. It went even further, building up and maintaining a much higher trailer-to-truck ratio than other carriers in order to ensure higher levels of service and preserve what it could of its historical pricing premium.

In order to keep these assets more nearly fully utilized, Heartland invested in growth and in 1994 doubled in size—and expanded its geographic footprint considerably—through the acquisition of Munson Transportation. At the same time, it did not let this growth compromise its historical discipline in selecting only the freight that was the most profitable, whatever the short-run impact on asset utilization might be. This metamorphosis put an end to the decline in performance and established a new, stable trajectory that defines era 2, which runs from 1994 to today.

It is worth underlining that, absent these changes, Heartland’s streak of exceptional performance would have ended long ago. Extrapolating the slope of performance degradation from era 1 into era 2 finds Heartland in the red by 2002, with an average ROA through 2010 fully 14.4 percentage points per year lower than what it actually achieved.

In short, Heartland had changed its Markets (by shifting to a larger geographic footprint and a more diverse customer base) and some of its Competencies (greater asset intensity and a new human resources model), while preserving others (freight selectivity). In so doing, it was able to maintain the service levels that defined its Positioning, which in turn supported a pricing premium that drove a return on
Figure 2. Performance profiles for a “Found it” and “Kept it” Miracle Worker

Panel A: Heartland Express

Panel B: Linear
sales advantage. The company’s absolute lead over its competition was noticeably slimmer in era 2 than in era 1, thanks largely to structural shifts in the industry itself. But to the extent that a sustained performance advantage is possible, Heartland seems to have captured it.

Less dramatic change can deliver equally significant outcomes. Consider Linear Technology Corporation, which became a public company in 1985. A designer and manufacturer of high-performance, highly customized analog microprocessors, its primary customer was the U.S. government, including the Department of Defense (DoD). As the provider of a differentiated product with only weak substitutes, Linear was well positioned to command a price premium. However, since the DoD was the only customer for those products, that pricing power had its limits, and Linear’s profitability, although admirable, was not nearly what it would be within a decade.

The key to Linear’s breakthrough was taking its show on the road and providing similarly highly differentiated products to a variety of new markets and geographic regions. By 2005 government work had fallen from nearly half of total sales to less than 3 percent, and overseas markets went from much less than half to well over 70 percent of total sales. This didn’t happen automatically: Linear had to continue to invest heavily in R&D in order to provide those markets what they needed, and the reduced reliance on defense work exposed the company to a sharp contraction in revenue in 2001. But Linear’s long-term commitment to its historical Position served it well.

What Heartland and Linear reveal in very different ways is the power of persistence, of sticking with a Position that a company understands well and can likely implement more effectively than one it must attempt to master on the fly. Where one might argue that Heartland had evidence that its strategy was successful and worth pursuing, surely the degradation in absolute ROA must have given pause: A far less precipitous fall provoked Maytag into a dramatic repositioning attempt. How was Heartland to know that the key to its success was Positioning and not its Market focus or particular unique Competencies? And Linear’s performance was hardly notable at first: Its upward trajectory is only obvious in hindsight. How was it to know that its Positioning was sound and that it would be able to transplant its Competencies to a broader array of Markets, both product and geographic, with such remarkable success?

Note: Our model for assessing the streaks of high and low relative performance is probabilistic. At a 90 percent confidence level, Heartland’s streak of 9th decile performances ends in 2008, thanks to four 8s in six years. At a 99 percent confidence interval, however, the streak is still “on,” and these 8s are plausibly a statistically insignificant “blip.” In contrast, for the “lost it” Miracle Workers, their streaks have ended to a near certainty: Maytag has ceased to exist as an independent company and so no recovery is possible; T&B could once again deliver a string of 9s, but the string of lower-performing years is sufficiently long that all T&B can do now is begin a new streak, not re-establish a pre-existing one.
The simple answer is that they couldn’t have, any more than T&B and Maytag could have known that their attempts to change Position were going to fail. The data—in the form of performance, competitive analysis, the attractiveness of new opportunities, and so on—are never conclusive. Every company that plies the turbulent waters of strategic change chooses a course that makes sense at the time. In short, it’s not readily apparent ex ante what distinguished successful from failed attempts at strategic change. Unfortunately, it’s rarely readily apparent.

Securing and keeping a competitive advantage is the result of myriad daily decisions, many of which resist meaningful codification beyond general principles. The quest for hard and fast rules is quixotic. The trick is therefore not to be “objective” but to have the “right bias,” and thankfully, the data do offer some guidance. Our case-based analysis suggests strongly that although each of our three types of strategic change—Position, Market, Competency—can succeed, changing Position brings with it the greatest risks, while changing Markets and Competencies are typically more successful paths to enduring performance. These observations, we hope, help managers see more clearly both the risks and rewards of the different types of strategic change available to them and to assess their options accordingly.

We must accept the fact that nothing lasts forever. The great companies we have identified will eventually run aground, even if they persist and change in all the right ways. It is nevertheless more than a vain hope that an understanding of what has led to the demise of once great companies and how others have achieved or sustained their success—so far—can give us some insight into what it takes for the rest of us to achieve a greater longevity and vigor. If we can heed Polonius and be true to ourselves we might at least defer meeting up with Yorick in the boneyard. DR

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Endnotes


2. Maytag also acquired G. S. Blodgett in 1997, which was subsequently sold in 2001 at a pretax loss of $60 million.

3. Hoover was sold in two tranches in 1993 and 1995 at a total pretax loss of $151 million.

4. The systematic drop in absolute performance between Heartland’s two eras left its average performance much closer to the cutoff for the 9th decile of performance. With much less of a cushion between its average and this cutoff level of performance, largely random year-on-year variations that in the past would have gone by unnoticed now push Heartland into the 8th decile and out of Miracle Worker territory.

5. This was followed up by two smaller acquisitions, of A&M Express and Great Coastal in 1997 and 2002, respectively, deals that increased the company’s size by a third.

6. A trucking company with spare capacity can be sorely tempted to cut price to marginal cost in order to increase asset turnover. The downside in the long run is a decreased ability to charge higher prices when capacity is scarce. Heartland seems rarely to have succumbed to this temptation: It often “fired” 20 percent or more of the customers that came along with each of its acquisitions in order to preserve its focus on business that did not materially drag down the average profitability of its book.
ONE BY ONE, a 4-year-old arranges a cluster of wooden blocks on a table top, hoping to win a token prize. The contest isn’t happening in a classroom or a living room, but rather, in a board room at KSB, a €2 billion German manufacturer of pumps and valves and provider of related services. A company recruiter carefully watches his every move. He’s looking for a winner, but more importantly, he’s eyeing the future of the company. KSB hosts contests and workshops with 4-year-olds to attract them to industrial careers and measure their aptitude for jobs within the company. KSB will follow the paths of children with potential in an attempt to eventually add them to its workforce.¹
Unorthodox recruiting practices at German companies like KSB are the product of an uphill battle against demographics being fought by many organizations. Siemens’ CEO Peter Löscher has said that “the demographic shift will be an extreme challenge for Germany’s economy.”² A dearth of qualified engineers and a shrinking population are expected to make economic growth harder to come by.³ Employees at German industrial companies, including Siemens and Porsche, are enjoying bonuses and increased wages to keep them from seeking greener pastures elsewhere.⁴ Companies like KSB that may not have the brand recognition of Siemens or headquarters in a big city have recognized that attracting and retaining an ample workforce now and in the future will likely require innovative recruiting techniques.

Germany is not the only country facing stiff demographic headwinds. Recent research shows that demographic trends and their influences on workforces vary widely between countries and regions.⁵ Different regions—even countries within regions—are in different stages with regard to current and future labor forces, suggesting that labor strategies should be tailored to local situations. But variance in required strategies between regions and countries also presents important opportunities for companies with a presence in several regions. Recognizing and anticipating demographic differences in disparate parts of the world may help companies replenish otherwise shrinking talent pools.⁶

REGIONAL PICTURE: GROWTH, SHRINKAGE AND LIFE IN THE CITY

According to the U.S. Census Bureau, the global population is anticipated to grow from 6.9 billion in 2010 to 9.3 billion in 2050. Nearly 5.6 billion people live in what is currently described as the developing world (Africa, all of Asia except Japan, all of the Pacific except Australia and New Zealand, and Latin America), and approximately 1.3 billion live in the developed world (North America, Europe, Japan, Australia and New Zealand). The population in the developing world is expected to grow at a compound annual growth rate (CAGR) of close to 1 percent through 2050, while the developed world will likely show almost no growth.⁷

Yet, a closer look reveals demographics that differ across regions (see figure 1). Africa experienced the highest growth in population and potential labor force—the population that is 15–64 years of age—both in certain terms and as relative numbers in the period 2010–2050. Asia’s population growth, on the other hand, is expected to slow down, and its potential labor force will begin to shrink in the period 2040–2050 with −0.1 percent CAGR.
### POPULATION (millions)

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### POTENTIAL LABOR FORCE

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### CAGR

|-------------------------|---------|---------|---------|---------|---------|
| POPULATION
| World                   | 1.2%    | 1.0%    | 0.8%    | 0.7%    | 0.5%    |
| Asia                    | 1.1%    | 0.9%    | 0.6%    | 0.4%    | 0.2%    |
| Africa and Near East     | 2.3%    | 2.1%    | 1.9%    | 1.7%    | 1.5%    |
| Europe                  | 0.1%    | 0.0%    | −0.1%   | −0.2%   | −0.3%   |
| North America           | 0.9%    | 0.9%    | 0.9%    | 0.8%    | 0.7%    |
| South America           | 1.3%    | 1.1%    | 0.8%    | 0.6%    | 0.3%    |
| Oceania                 | 1.4%    | 1.2%    | 0.9%    | 0.7%    | 0.5%    |

| POTENTIAL LABOR FORCE
| World                   | 1.6%    | 1.1%    | 0.7%    | 0.5%    | 0.3%    |
| Asia                    | 1.6%    | 0.9%    | 0.5%    | 0.1%    | −0.1%   |
| Africa and Near East     | 2.7%    | 2.4%    | 2.2%    | 1.9%    | 1.5%    |
| Europe                  | 0.3%    | −0.3%   | −0.5%   | −0.6%   | −0.7%   |
| North America           | 1.0%    | 0.5%    | 0.4%    | 0.7%    | 0.7%    |
| South America           | 1.7%    | 1.3%    | 0.7%    | 0.4%    | 0.1%    |
| Oceania                 | 1.5%    | 1.0%    | 0.8%    | 0.6%    | 0.5%    |

1Potential labor force means the population 15–64 years of age
2CAGRs > 1% are marked with green; negative CAGRs are marked with red

Source: U.S. Census Bureau
If growing populations are the rule in the near future, Europe is the exception. The population in Europe is expected to start declining in the coming decades, implying a shrinking potential labor force. This trend is not isolated to a single country; virtually all regions in Europe are expected to experience declining potential labor forces with stronger declines occurring in eastern and southern Europe.8

In addition, around the world, people are migrating to cities in unprecedented numbers. In 2010, 70–80 percent of the population in North America, Latin America, Europe and Oceania lived in cities, and urbanization is expected to reach 80–90 percent by 2050. Similarly, in Africa and Asia, urbanization is experiencing a significant uptick, from 15 percent in 1950 to around 40 percent today. Approximately 60 percent of the population is expected to live in cities by 2050, suggesting that an even larger percentage of the future workforce will be located in cities than is currently the case.9 Companies with offices outside of cities that struggle to attract a properly skilled workforce could consider establishing offices in big, popular, growing cities where talent may be more willing to live and work.

We have already seen strategic responses to this trend. Vodafone Netherlands, for example, opened a second head office in Amsterdam in addition to its office in the far south of the Netherlands. The company relocated most of its commercial and management functions to its Amsterdam office. In addition to being closer to its customers, which are located mostly in the large cities in the west of the country, Vodafone made the decision based on the fact that it wanted to be closer to critical talent. Vodafone discovered that online marketing and sales talent and workers with international ambitions were typically unwilling to move to the south of the country, prompting the company to relocate closer to its desired talent pool.10

**SHORTFALLS AND SOLUTIONS**

The potential labor force development of key countries depicted in figure 2 suggests that with the exception of India, the United States and the United Kingdom, the remaining countries shown expect a decline in their potential labor force. India’s ongoing growth is introducing opportunities for companies trying to supplement their workforce. Porsche, for example, started to search in India and other emerging countries because the company could not find enough qualified engineers for a planned plant expansion in East Germany.11

In Germany, the potential labor force started shrinking in 1999 after an ongoing population decline, and Japan’s potential labor force, which has been declining for 15 years, is anticipated to continue its downward trajectory for the foreseeable future. In several other countries, a decline appears imminent. For example, China’s potential labor force is expected to dwindle by 2015.
HEADWINDS, TAILWINDS AND THE RIDDLES OF DEMOGRAPHICS

Robots and automation

Fertility rates and immigration are the primary drivers of these waning numbers. Countries suffering the sharpest drops in labor force have already sustained low fertility rates—the number of births per woman—for a long time. A stable population requires 2.1 births per woman in developed countries. Japan fell below this number around 1970, and as of 1990, the birth rate had dropped below 1.5 births per woman—with a further decline to 1.4 in 2000 and 1.3 in 2010. Japan is turning to technology to offset its ongoing demographic challenges. With more than a fifth of its population in the 65+ age group, the country is banking on robots to replenish its workforce and care for its elderly. Robots—already a staple in Japanese factories, rice paddies and sushi bars—are now working as receptionists, janitors and caretakers for the elderly.12

China’s fertility rate, which hovered above 5.5 live births per woman in 1970, fell below the required 2.1 births for a stable population as of the early 1990s13 due to the implementation of the one-child policy. Immigration levels have not kept pace with this decline, helping to explain the country’s ebbing potential labor force.

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1 U.S. potential labor force growth is mainly driven by immigration (Population Reference Bureau, 2007: “new immigrants and their children will account for all of the growth in the U.S. labor force between 2010 and 2030”)
2 Potential labor force in the UK shows decrease in 2029, followed by a stable period and growth in 2037

Source: U.S. Census Bureau

Figure 2. Potential labor force development of key countries

Index
1995 = 100

(Expected) year of declining potential labor force

<table>
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<th>Index</th>
<th>(Expected) year of declining potential labor force</th>
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<td>Belgium</td>
</tr>
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<td>1996</td>
<td>Japan</td>
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</table>

Source: U.S. Census Bureau
Recruit thy neighbors

Immigration is another key driver of the potential labor force. This is especially true for the United States where the growing potential labor force is driven primarily by immigration as its fertility rate is 2.1 (the number needed for a stable population). Countries such as Japan and Germany, on the other hand, have far lower levels of immigration that cannot compensate for their relatively low fertility rates.

German companies are developing strategies to strengthen their workforces by attracting foreign talent. More than 50 German high-tech companies and schools are planning to launch a project in Poland next year. The aim is to recruit dropouts from Polish schools and train them to work in Germany. Given a lack of qualified German applicants for their skilled positions, German companies are increasingly looking east to countries like Poland to supplement their waning workforce numbers.14

While Germany and the Netherlands’ declines look quite similar (see figure 3), the German decline appears to be much steeper. Germany’s forecasted shortage of employees in 2050 is estimated at 8.2 million or 19 percent of their current labor force, compared to only 275,000 or 3 percent in the Netherlands.15 The main reason for this differing decline is Germany’s lower fertility rate of 1.4 compared to 1.7 births per woman in the Netherlands. To envisage the magnitude of the implications, the forecasted German labor shortage in 2050 will be higher than the total current workforce in the Netherlands.

As the Netherlands and Germany are neighboring countries, a severe employee shortage in Germany might have implications for the Netherlands. A young, talented Dutch engineer could easily live in the middle of the Netherlands and travel east several days a week. Given the shortage of engineers in Germany—a skill shortage that, in all probability, will grow as a result of the declining labor force—the proximity and similar languages of the two countries could spur German companies to start recruiting aggressively in the Dutch market. Higher wages and excellent career opportunities can be very attractive for the talent involved, but it would leave companies in the Netherlands struggling to find employees with technical skills and incite them to take appropriate measures to counter the potential talent drain. The ripple effects of demographics, therefore, are far more intricate than the macro-level trends alone would suggest.

Respect thy elders (and keep them on the payroll)

When it comes to demographics, death is as significant as birth rates. Life expectancy is growing and is projected to continue growing in the coming decades. This increases population but not the potential labor force, which is currently
defined as people in the 15–64 age range. In the developed world, the number of people in the 65+ age group as a percentage of 15–64-year-olds is expected to grow significantly between now and 2050.16

Countries with an aging population and a shrinking potential labor force will most likely show only small GDP growth through 2050. A declining labor force implies that a country can only boost its GDP by improving labor productivity per person. Consequently, the heavy burden of healthcare and retirement costs will be placed on fewer shoulders and lead to lower net income for the working population, suggesting reduced spending power among consumers in the 15–64 age range to drive consumption and the economy.

However, a grayer population can have a silver lining. The 65+ age group could become a large addition to the labor force if countries and companies can provide appropriate incentives and, in some cases, redesign how work gets done. Flexible work arrangements, greater support, and recognition from managers can help companies retain older employees.17 Making it financially attractive for 65+ employees to continue working may require new government policies in many countries that allow people to work beyond the current retirement age and incentivize this with, for example, adjusted tax rules.
The average age of BMW’s plant workers is on the rise and expected to hit 47 years of age by 2017. As a result, the company piloted a production line in Germany consisting of employees with an average age of 47 years. The carmaker improved the ergonomics of assembly lines based on requests from workers and introduced workstation changes every four hours, fitness exercises during work time, and even a relaxation room for short naps. BMW made 70 relatively small alterations that reduced errors on its assembly line and physical strain on its workforce. Absenteeism declined, and the defect rate on the assembly line dropped to virtually zero. BMW expanded the pilot to several other plants and plans to introduce it to more plants in the coming years.

Influence choices at a young age

A dearth of young people also implies a smaller pool from which companies can select employees, magnifying the importance of matching educational backgrounds with workforce needs. German companies, for example, have begun to focus on aligning education with the needs of its industries.

“In Germany, I consider it a duty for companies in particular to promote interest in technical occupations through active interaction with children and youth,” said Wolfgang Malchow, former board member for human resources at Bosch. “This is the only way we can win over qualified junior staff for tomorrow and beyond.”

The Bosch Solar Energy business division and Staatliches Gymnasium, a public high school in Arnstadt, Germany have realized the need to promote interest in technical occupations at an early age. They recently signed an agreement to offer early career orientation for students within the context of the Knowledge Factory (‘Wissensfabrik’ in German), a cooperation between companies and schools in
Emerging countries and the long arm of recruiting

The prospect of a declining labor force and an aging population looms over China’s longer-term circumstances, but the country’s current problem is precisely the opposite. The college-educated Chinese workforce is expanding faster than its economy, adding more than 6 million graduates each year. China’s economy is growing, but it is not producing enough professional jobs, so nearly a quarter of its graduates fail to find work. This may turn around in the current decade, but the abundance of college graduates from China and other emerging countries provides opportunities for companies seeking college-educated workers.

The Japanese arm of the Boston Consulting Group (BCG) is responding to China’s surplus of aspiring talent by recruiting many of China’s best and brightest graduates to supplement the workforce in its Japanese office. Although Japanese companies have long been recruiting in China for their Chinese affiliates, recruiting for positions in Japan is a new development. For Chinese students, this means a chance at much higher pay and professional development. This strategy is spurred by more than a declining labor force in Japan: Chinese personnel are a critical part of the marketing strategies at Japanese companies trying to foster a foothold in China. (“Sales pitches by Japanese staff in China have their limits,” according to an official with a major food company.) The goal is to cultivate Chinese talent that can eventually develop new markets in China for this Japanese company.

Big business on campus

Collaborating with universities and vocational training schools has yielded additional paths around the demographic walls. India provides some telling examples. With an expected fertility rate of 2.6 in 2011 and the youngest population of the representative countries, India’s demographic picture bodes well for talent-strapped companies trying to expand their workforce. For example, Infosys started the Campus Connect initiative to help increase India’s competitiveness. Infosys and engineering institutions collaborate to deepen the pool of IT talent. The initiative targets college campuses that feed the IT industry and fuel its growth. It includes, for instance, training sessions at colleges, aligning curriculums with industry requirements and publishing Infosys courseware on the Web. (However, in the “Nothing good lasts forever” department, India’s fertility rate has been declining since 1970 when the fertility rate was 5.5. This, coupled with a longer life expectancy, will add to India’s percentage of people aged 65+ relative...
to people aged 15–64. This percentage is expected to almost triple in the next 40 years.)

Dutch companies are also exploring innovative ways to develop an ample skilled workforce. IHC Merwede, one of the largest ship building companies in the Netherlands, recently invested heavily in a new technical education organization to anticipate future shortages of specialized, technical employees. IHC Merwede brings in employees as teachers, and metal study objects are, if made successfully by the students, actually used in the end product (ships). By bringing theory to practice, IHC Merwede hopes to attract motivated students to the metal sector.26

Recruiting and retaining women

Many companies are devising creative solutions that take demographic realities into account, including deliberate steps to make better use of countries’ entire potential labor forces by creating more professional opportunities for women. In South Korea, for example, only 60 percent of female graduates in the 25–64 age group are employed, making college-educated South Korean women “the most underemployed in OECD countries,” according to The Economist.27 South Korean women often encounter social pressures to trade professional life for parenthood, making it difficult to maintain an upward career trajectory. Many companies, as a result, fill their senior-level positions exclusively with men, leaving large numbers...
of talented females professionally eclipsed. Goldman Sachs uses this otherwise unfortunate trend as an opportunity to recruit underutilized female talent, and it now has more women than men in its office in Seoul.

So too at Siemens, which expands its talent pool by recruiting women, including mothers. It established 400 day care centers for employees’ children and plans to double that figure. Furthermore, the company created a science camp for talented high school-aged female mathematics and physics students and started a mentoring program for female undergraduates.

Flexible careers and flexible hours

Companies may not be able to alter the demographics of the countries in which they operate, but adapting their talent strategies to the needs of their workforces can go a long way in offsetting demographic pressures. Cisco is pursuing a new model for career development that accommodates lateral as well as vertical moves to cultivate its next generation of leaders. The corporate lattice model is a more flexible approach to performing work, building careers and developing talent.

More flexible career paths can help retain employees with young children and older employees who want to continue working but at a slower pace.

In the Netherlands, 75 percent of women work part time. Job sharing is the norm, especially in female-dominated sectors like healthcare and education. Part-time work has become a powerful tool to attract and retain talent—male and female—in a competitive Dutch labor market. Part-time work isn’t the sole province of the female workforce; 23 percent of Dutch men work reduced hours, and 9 percent work a full week in four days. Dutch companies are accommodating this trend by allowing for flexible hours as well as work spaces. At the headquarters of a large Dutch company, for example, designers created a space without assigned work stations, and the company allows employees to work “anywhere, anytime.”

LOOKING AHEAD

The numbers can be discouraging, but companies operating in countries with declining populations are not powerless in the face of demographic headwinds. In some cases, they have turned these challenges into competitive opportunities. Understanding the potential challenges and opportunities a company might encounter in the coming decades begins with three fundamental considerations:

- The demographic realities that define the major countries where a company operates.
- The potential talent-related problems and opportunities a company may encounter when operating in a specific country.
• The bigger picture—possible solutions and opportunities across countries and regions.

Demographics may be destiny, but they don’t have to be doomsday. An ounce of demographic foresight can yield insights as to where a company’s customers and its workforce will likely live. Knowing the future whereabouts of its workforce and its customer base can help a company decide where to establish factories, offices and headquarters. Multinational companies can use shifting populations to their advantage by allowing abundance in one location to offset scarcity in another. DR

Jorrit Volkers is a partner in the tax practice of Deloitte Netherlands.

Ardie van Berkel is a partner and Human Capital practice leader of Deloitte Netherlands.
Endnotes

3. Ibid.
4. Ibid.
6. One note of caution; in order to gain insights into long-term trends like demographics, several simplifications and assumptions have to be made. Key uncertainties include the balance of emigration/immigration and life expectancy, given medical developments.
8. Ibid.
24. Ibid
27. “Profiting from sexism: If South Korean firms won’t make use of female talent, foreigners will,” The Economist, October 2010.
28. Ibid.
32. Ibid.
The Talent Paradox: Critical Skills, Recession and the Illusion of Plenitude

BY ROBIN ERICKSON, JEFF SCHWARTZ AND JOSH ENSELL
> ILLUSTRATION BY BRIAN STAUFFER

With relatively high unemployment and low voluntary turnover, it is tempting to go back to “business as usual” and put employee recruitment and retention challenges on the back burner. Many executives may expect there to be a surplus of labor available that companies can swoop in and grab when the market picks up. However, this is only half of the story. Despite high unemployment, many companies are increasingly having trouble filling job vacancies, with over 3.2 million unfilled jobs in the United States as of July 2011.1 Worse, these shortages often occur in critical, skilled roles that have high barriers to entry and are crucial to a company’s success. This points to a talent paradox:

While there is a surplus of job seekers, some companies are facing shortages in critical areas where they most need to attract and keep highly skilled talent.

In other words, high unemployment rates do not mean that the talent you need will be there when you need it.
This talent paradox is raising the stakes in the competition for critical talent, with organizations trying to outbid each other for a select group of critical employees and the skills they need to succeed. Poaching competitors’ top performers is becoming commonplace. This competition is fueling rising salaries as well as prospective employees’ expectations, making it difficult to meet skill needs while keeping labor costs at desired levels.

A targeted retention strategy can help companies navigate the talent paradox through an increasingly sophisticated view of what employees are looking for, what they value and why they are leaving. If a company can better understand why employees are leaving, it can take the requisite actions to get them to stay—in effect, creating a retention firewall to keep employees in and competitors out.

A RECESSION ISN’T A STRATEGY

Companies face a labor market where, despite high unemployment, they still need to focus on attracting, developing, managing and retaining their critical employees who have opportunities to leave for higher salaries and more varied job roles and experiences. As the economy improves, we expect employees with critical skills will begin to leave their employers in larger numbers based on historical turnover after recessions and recent Deloitte* research that suggests only 35 percent of global employees surveyed expect to stay with their current employers.2,3

Since employees’ desire to change jobs is so strong, one may wonder why these employees have not already left. The main reason is that the majority of these employees have nowhere to go in the current labor market. However, critical employees whose skills are in demand, no matter the economic situation, frequently can leave to go to another organization. Because organizations have a constant need for this critical talent, power in the labor market for these skills and talent is shifting from demand (organizations) to supply (employees). Even when the economy is down, these employees have opportunities to leave if dissatisfied with their jobs and retention incentives.

Overall, quits (or voluntary turnover) have dropped significantly since the recession began in December 2007. However, since the National Bureau of Economic Research declared the end of the recession in June 2009, the economy is slowly beginning to see an increase in voluntary turnover as workers switch from one job to the next (Figure 1).4 In May 2011, 2 million employees quit their jobs, the highest level since December 2008 and a 35 percent increase from a low of approximately 1.48 million employees who quit their jobs in January 2010.5

* As used in this article, “Deloitte” means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries.
Critical and highly skilled talent is cautious but increasingly on the move. Despite an increased level of voluntary turnover since January 2010, there has not been a significant change in overall unemployment. Part of the reason is that employees who have opportunities in the market quit their jobs after receiving better job offers instead of quitting to join the ranks of the unemployed.\(^8\)

Lost critical talent is becoming increasingly difficult to replace as the shortage of skilled employees continues to grow, even in emerging markets with higher numbers of science and engineering students. Employees with critical skills often fill roles with barriers to entry (e.g., length of training, arduous certifications, legal issues such as citizenship requirements), take a long time to develop the requisite experience, and are in limited supply. In these labor markets, companies can go out and buy more workers (up to a point), but the wage increases needed to attract these workers and make them take the risk of leaving their current jobs could be very significant. However, even a large increase in wages will not necessarily lead to many new people ready to fill the jobs in the short run; because of the time it takes to develop these employees, it could be years before workers are more readily available.\(^9\) This only increases the importance of a company’s retention efforts to its overall success.

Software engineers are one area where companies’ inability to keep and find the engineering talent they need is impacting their ability to create new products. Daniel Gruneberg, co-founder of the daily deal site Zozi, notes that “there are a lot of ideas, but to actually do it you need someone to build it.”\(^{10}\)

**Figure 1. U.S. quit level in thousands of employees, total nonfarm, seasonally adjusted (June 07 to July 11)**

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To try to attract the necessary talent from the market or competitors, technology companies have begun to increase starting salaries, benefits and stock options. Reggie Bradford, CEO of Vitrue, noted that his company “now pays starting salaries of up to $90,000 for engineers with one year of experience,” over $20,000 more than they paid six months ago.11

Because of this high demand for talent, voluntary turnover and job switching are common in technology companies. For example, Top Prospect, an incentive-based social recruiting site, analyzed the companies their users left and subsequently joined to show the flow of employees through Silicon Valley. Their analysis showed high flows such as Facebook gaining 15.5 employees from Google for every one employee Facebook lost to Google, Apple gaining 7.6 employees from Yahoo! for every one lost to Yahoo!, and LinkedIn gaining 22 employees from Microsoft for every one lost to Microsoft.12 While these flows are due in part to the relative size of the companies and the attraction of future IPOs, with constant turnover such as this, it is no wonder technology companies offer a wide range of benefits to try to retain top talent. However, just as using the recession as a retention strategy has proved ineffective, poaching employees with critical skills isn’t a strong talent strategy for long-term success.

MEETING THE EMPLOYEE RETENTION CHALLENGE

Companies’ retention strategies should take an increasingly sophisticated view of why employees are staying and leaving. Yet, as Deloitte surveys and recent data show, business and HR executives’ perspectives on what they think their employees want and what employees actually want often differ—this is especially true of nonfinancial programs and priorities. So where should business and HR leaders focus their retention efforts? To successfully attract, develop and retain the key employees needed to succeed in today’s economy, three imperatives emerge:

1. Identifying the employees and skills most critical to your organization and strategy

   Organizations should first identify their critical workforce segments, those
employees who drive a disproportionate share of revenue, who are difficult to replace and without whom an organization cannot execute its business strategy. These are the employees that a company needs to acquire and keep to be successful in the market. Identifying the key workforce segments that produce the most value to the organization and focusing efforts on these groups enable executives to make talent investments that yield the most significant return. Our experience suggests that many companies think they do this but actually find it hard to do for a variety of reasons, including company politics, HR concerns and an egalitarian discomfort with saying one group of employees is more valuable to the organization than others. However, focusing investments on critical workforce segments is no different than focusing capital investments on the areas of the company growing the fastest—it is all about getting the most return for the dollar invested.

Given how technological change, regulations and globalization continue to drive structural change in the labor market, companies should go beyond identifying their critical talent in the present and also take a long-term view that considers finding and keeping the skills needed now and in the future. It doesn’t help that these skills are changing—sometimes rapidly. As the economy continues to evolve, it will increase the pace at which current skills become obsolete and are replaced with new ones. For example, the skills companies needed their software engineers to have only a few years ago have now become commonplace and replaced with new ones such as mobile application development and HTML5—technologies that barely existed only a few years ago.

Not only are the required skills continually changing in the world of technology, but most companies are demanding new skills from their skilled trade workers. Additionally, a lack of qualified trade workers with the new, necessary skills is leading to labor shortages that could impact the proliferation of new technologies. For example, in the solar industry, there is a rapid increase in demand for photovoltaic installers and electricians with specific experience in solar installations as job growth for these occupations was expected to exceed 40 percent from 2010 to
2011. Given this rapid growth, solar employers cannot find the qualified workers they need as there are not enough workers with the necessary skills. In response to this and the overall increased demand in the green energy sector, the National Joint Apprenticeship and Training Committee, a joint program between the International Brotherhood of Electrical Workers and the National Electrical Contractors Association, published a Green Jobs curriculum with 75 lessons to help apprentices learn new skills and to further develop journeymen looking for the skills needed to work in the green economy. Developing employees with the skills needed today is key to resolving the labor shortages; however, development programs also need to be focused on the future as skills will continue to evolve.

Skills evolution has also occurred in the services sector. For example, ManpowerGroup notes that companies are now looking for salespeople who have skills such as “excellent oral presentation,” “critical thinking” and “consultative approach: ability to read people, diagnose problems” while only a few years ago they were looking for salespeople who had “assertiveness,” “thorough knowledge of product or service” and “competitive nature.” Because of constant skill change, it is no longer enough to hire a critical skills worker; you need to hire a critical worker who has the latest skills and the ability to up-skill over time. If companies want to thrive in a constantly changing market, they will not only need to attract and retain employees to fill key jobs; they will also need to focus on developing and attracting employees with the right skills within these jobs and keeping them.

Health care providers are experiencing this issue in the area of medical coding. Coding is how organizations take the descriptions of patients’ conditions and turn them into codes that can be easily tracked and grouped together, and it plays a key role in insurance reimbursement, reporting and quality of patient care. Currently, the practice of medical coding is going through a transformation as companies and countries move from the World Health Organization’s International Classification of Diseases (ICD) Ninth Revision to the ICD Tenth Revision. The changes from ICD-9 to ICD-10 are significant—for example, the number of diagnosis codes will increase from approximately 13,600 to approximately 69,000 to allow for more granular descriptions. Additionally, companies in the United States have to move to this new standard quickly as the U.S. Department of Health & Human Services set an October 1st, 2013 deadline for ICD-10 compliance.

Some health care organizations have been early adopters in moving to ICD-10 and have trained their employees on ICD-10 as part of that transformation. However, since other health care organizations now need these resources, competitors are increasingly trying to poach medical coders with ICD-10 skills. Because of increased demand, coders with ICD-10 skills are receiving large offers to leave their current employers and move to competitors. If health care organizations want to
keep the medical coders that they invested in training from leaving, they will need to understand their needs and target specific retention initiatives to keep them.

Figure 2. Top three most effective retention initiatives by generation: Executives’ expectations vs. employees’ desires

<table>
<thead>
<tr>
<th>Generation</th>
<th>Baby Boomers (ages 48 – 65)</th>
<th>Generation X (ages 32 – 47)</th>
<th>Millennials (31 and younger)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXECUTIVES</td>
<td>EMPLOYEES</td>
<td>EXECUTIVES</td>
<td>EMPLOYEES</td>
</tr>
<tr>
<td>#1) Additional benefits (e.g., health and pensions)</td>
<td>42% 50%</td>
<td>32% 64%</td>
<td>33% 41%</td>
</tr>
<tr>
<td>#2) Additional bonuses or financial incentives</td>
<td>33% 43%</td>
<td>31% 41%</td>
<td>27% 40%</td>
</tr>
<tr>
<td>#3) Flexible work arrangements*</td>
<td>32% 42%</td>
<td>29% (Tied) 33%</td>
<td>25% 33%</td>
</tr>
</tbody>
</table>

*Indicates non-financial retention initiative

2. Determining what different groups, generations and, wherever possible, individual employees actually want through increasingly personalized approaches

Once an organization confirms which employees are critical, they should conduct a diagnostic to find out what these employees really want through anonymous employee engagement surveys, focus groups and in-person conversations. Research from Deloitte’s Talent Edge 2020 and Managing Talent in a Turbulent Economy survey series has uncovered a tale of two mindsets where, for the most part, employers are unaware of which retention incentives are most effective. Most companies think they know what their people want, but often do not take the time to understand what different employees want from them or understand the impact the recession has had over the last few years—e.g., yes, flexible work environments
are important, but after three lean years most employees are now more interested in promotions and higher compensation. The risk is that many companies take a blanket approach that does not reflect what employees truly value, which varies based on generational, global and gender differences in addition to the current economic, technological and cultural environment.

- **Generational differences**: Different generations have different goals, expectations and desires—and employers should tailor their retention plans to satisfy them. Figure 2 reflects what executives think each generation wants and what each generation is really looking for.\(^{19}\) Coming out of the recession, the foremost thing that employees are looking for are promotions followed by additional financial incentives for Millennials and Generation X and support and recognition from managers for Baby Boomers.

- **Global differences**: The latest Talent Edge 2020 report found that almost a third (32 percent) of the surveyed employees in Europe, the Middle East and Africa (EMEA) thought that “lack of job security” would be the top reason for them to leave an employer and more than half (57 percent) of the EMEA employees surveyed found promotion/job advancement to be the strongest retention incentive. Almost a third (35 percent) of surveyed employees in Americas and 21 percent in Asia Pacific (APAC) chose “lack of trust in leadership” as one of the three most significant factors that could cause them to look for new employment today, while only 14 percent of surveyed employees in EMEA made the same choice.\(^{20}\)

Talent management and retention need to be viewed as a global art and science. For example, global corporations are more worried about the poaching of critical employees in India than in the United States right now because even with shortages of key skills, the talent markets in the United States are deeper than they are in emerging markets. Part of successfully managing the talent paradox is making sure that organizations that want to compete around the world have a global portfolio of employees, e.g., employees with the right skills in the right countries.

- **Gender differences**: Deloitte’s research found that surveyed men appeared to focus on financial incentives, while surveyed women were more likely to seek recognition. Among surveyed men, 42 percent said “additional compensation” would keep them from leaving and 39 percent cited “additional bonuses or other financial incentives” as top retention incentives. Among women, only 27 percent cited “additional compensation” as a top retention incentive and only 19 percent cited “additional bonuses.” Meanwhile, 40
percent of surveyed women said “support and recognition from supervisors or managers” would be a valuable retention incentive, compared to just 28 percent of surveyed men.

- “I want what I want, and it’s not what you think.” As technology, the economy and culture change, so too do employees’ expectations of their employers. Only a few years ago, employees had never even heard of iPhones, would not have dared ask to work from home on a regular basis, and could not have carried their whole office with them unless they had a moving truck. However, employees now expect their employers to provide them the tools they need to work remotely and offer them the chance to do so. To adapt continually to such changes, companies should focus on having a culture that is open and receptive to constantly changing its talent programs to meet its employees’ needs. It is no longer enough to have a “menu” of talent programs where employees can pick the ones that meet their tastes—instead, a talent strategy needs to focus on the company’s and employees’ core values to provide the flexibility needed to meet the demands of its talent.

When looking at cultural aspects that contribute to retention, consider how values differ by groups of employees, such as generations. Figure 3 shows that nearly two in three (63 percent) surveyed Millennials rated a company’s commitment to “sustainability” as “very important” compared to just one in three (35 percent) surveyed Baby Boomers. And by more than 2:1 (32 percent to 13 percent), surveyed Millennials were more likely to consider their employers’ commitment to “corporate responsibility/volunteerism” to be very important than were surveyed Baby Boomers. Work-life balance was most important to surveyed Generation Xers at 53 percent, compared to 38 percent for surveyed Baby Boomers.

As an example, W.L. Gore is a company that focuses on a set of fundamental beliefs and guiding principles that serve as the basis of its strong culture. Part of its culture is believing that employees should be passionate about what they want to do and then giving them the freedom necessary to pursue their passion while at work. Its culture is also shaped by a lattice organizational structure that is “free from traditional bosses and managers” and makes employees responsible for the work they choose to take on. Continuing to focus on this and other aspects of its culture has allowed Gore to be named in Fortune magazine’s “100 Best Companies to Work For” for 14 years in a row. By continuing to focus on providing its employees what they need to live their cultural values, Gore has been able to gain the talent it
needed to earn a spot on Fast Company magazine’s 2009 “Fast 50” list of the world’s most innovative companies.24

Figure 3. When considering an employer, how important is the organization’s commitment to the following?

<table>
<thead>
<tr>
<th></th>
<th>Baby Boomers</th>
<th>Generation X</th>
<th>Millennials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability</td>
<td>35%</td>
<td>41%</td>
<td>63%</td>
</tr>
<tr>
<td>Creating a fun work environment</td>
<td>19%</td>
<td>29%</td>
<td>55%</td>
</tr>
<tr>
<td>Work-life balance</td>
<td>38%</td>
<td>53%</td>
<td>41%</td>
</tr>
<tr>
<td>Corporate responsibility and volunteerism</td>
<td>13%</td>
<td>24%</td>
<td>32%</td>
</tr>
<tr>
<td>Diversity and inclusion</td>
<td>11%</td>
<td>33%</td>
<td>31%</td>
</tr>
</tbody>
</table>


3. Cultivating your capabilities to understand, anticipate and predict what is driving your employees to leave

Too many organizations start actively managing attrition at the moment a critical or highly skilled employee tenders his or her resignation—in other words, when attrition risk has reached 100 percent. A better paradigm would be to:

- Identify which of your critical, high-performing and high-potential employees are most likely to leave six months in the future.
- Understand the reasons why those individuals might leave.
- Know what you can do to increase their likelihood of staying.

The use of retention analytics and predictive models allows organizations to identify employees at risk of leaving before they leave, helping companies to develop the mitigating programs needed to keep their critical employees. By understanding what employees are looking for and what their options are, organizations can do a better job of giving their employees what they want. Internal data (promotion,
compensation, etc.) and external data (demographics, economic indicators, etc.) are modeled to identify predictive patterns, such as the probability of voluntary turnover. Predictive analytics is a sophisticated approach to data analytics, creating leading indicators, as opposed to historical insights. Using advanced analytics to predict turnover risk, down to the individual level, can provide the lead time needed to identify employees who are likely to leave, help companies understand why each individual is at risk, and help determine what to do today to minimize the risk of that employee leaving.

The specific reasons that drive the individual risk scores will be unique to each organization’s workforce, industry and culture. Rather than deploying costly blanket initiatives, using predictive analytics to determine why specific individuals are at risk enables HR leaders to invest in targeted activities that are customized to the individual or group at the most significant risk of leaving and that have the most likelihood of success through intervention.

Recognizing the high demand and turnover rate in management consulting, Deloitte has developed a retention analytics model that identified possible predictors of voluntary turnover for key talent segments in Deloitte. The model helps Deloitte identify both individuals and pivotal groups of employees most at risk. For each employee, the model detailed both the calculated attrition risk score and the key drivers of that risk (reason codes). Some of the top reason codes for Deloitte were the average number of flights taken per week, the average number of hours worked per week, and the number of paid time off (i.e., vacation) hours actually taken. The tool also identified actions that might mitigate the risk of turnover for each employee with a high probability of attrition. Key retention initiatives will soon be implemented by individual, pivotal role and key demographics.

WHY WOULD ANYONE CHOOSE TO WORK HERE (AND WHY WOULD THEY STAY)?

Given the talent paradox, that is the question many companies should answer if they hope to attract and retain critical, scarce and highly skilled talent. Companies can no longer assume they can easily acquire the critical talent and skills they need or that talent will stay put in their organizations simply because of economic conditions: The recession and current weak economy are no longer a viable retention strategy for highly skilled and prized employees and leaders. Given the growth aspirations of many companies and the scarcity of critical skills and talent, no matter the economic state, it is increasingly important to proactively focus on giving employees a reason to stay and grow with the organization.

At some level, this boils down to treating critical talent like customers, focusing on needs and expectations for money, benefits, job experience, development
and corporate values to develop talent or employer brands that clearly summarize what employees (current and future) can expect from their employer. The employer brand a company offers should give employees a sustained reason to want to join, stay and grow—focusing on financial, tangible and intangible benefits including a company’s culture. To build a strong employer brand, companies should identify their critical employees and determine what they really want and combine their talent experience with their customer experience and overall corporate mission.

Finally, there is a good dose of science emerging in what was once mostly art. Analytics and predictive models can highlight which employees are most at risk of leaving and suggest what actions might get them to stay. Analytical tools and capabilities are now an attractive investment for business leaders whose plans rest on having critical talent in the organization.

Ultimately, there is no off-season. With the global economy in the doldrums, it is tempting to consider the recession as an unfortunate but convenient moat around critical talent. Yet, just as planning continues in a turbulent economy, the competition for the best players to implement those plans also continues. Neither “the economy” nor “talent” are monoliths. Even as some segments of the workforce see their fortunes fall, others are well aware that they will be key players in growth segments during and especially after economic conditions improve. Being the place those workers seek out, stay and grow is to be in a position of strength. DR

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Endnotes


6. Ibid.


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Is your corporate footprint stuck in the mud?

When Ken was asked by his CEO to attend a meeting about the company’s global footprint strategy, he wasn’t sure what to expect. Hadn’t they just finished moving the last labor-intensive production line to Suzhou? As director of operations, Ken felt like he had a pretty good handle on how the company was doing in terms of facilities utilization—it seemed unlikely that they could squeeze more out of any of their sites.

Upon his arrival, Ken was ushered into a darkened conference room where he greeted the other members of the leadership team who were getting settled. A few moments later, the CEO welcomed them.

“I hope you had a good trip in. Today is all about learning, exploring possibilities, and generating ideas to create significant value for our company.”

Ken watched as the facilitator further dimmed the lights and tapped his keyboard. Several large computer screens on the wall of the conference room glowed, showing a world map with a constellation of about 30 colored indicators. Ken recognized the locations of their manufacturing and distribution sites but noticed the headquarters, back office, contact centers, data center and R&D hubs were shown as well.
The facilitator pressed a few more buttons and a number of charts and tables popped up across the map depicting the company’s financials for last year, employee headcounts, operating costs and more. The head of HR answered a few questions about talent issues in some of the back office and R&D sites.

“Let’s run a few hypotheticals,” the facilitator said. He double-tapped the indicator for one of the R&D sites. It blinked slowly. “What if we were to redeploy this to a market that had better industry presence, a growing base of engineering talent and also offered R&D tax credits?”

He dragged the blinking site across the screen to a Southeast Asian country and released it. Ken immediately noticed a new column on one of the tables that showed an improvement in financial performance.

His mind raced. One of his production sites was getting hammered with an electricity rate increase that he was going to have a hard time dealing with. Ken began to realize that the company’s footprint strategy hinged on much more than just the utilization of their facilities.

WHY DO COMPANIES GET STUCK?

Many organizations recognize that geography is a key driver of corporate performance. Yet many maintain ineffective and inefficient footprints that can hamper talent attraction and retention, increase operating costs, overexpose them to risk and depress shareholder value. Why do companies leave value on the table by suboptimizing their geographic deployment, and how can they better capture that benefit?

During good economic times, many companies expand rapidly and deploy enterprise assets in pursuit of singular objectives—to increase revenue, reduce costs or source new talent. In times of hardship, companies in search of immediate solutions may take an unsophisticated approach to disposing of high-cost or underperforming operations.

Fewer companies are deliberate and proactive in assessing their overall corporate footprint and the degree to which it supports and contributes to the business strategy. Geographic variables such as talent availability, operating costs, risk or tax regulations can change quickly. Mergers and acquisitions generate additional footprint complexity, often yielding overlap in some geographies and underrepresentation in others.

Yet many companies lack mechanisms to effectively evaluate and react to these changes. Some make footprint decisions at the subenterprise (e.g. business unit or regional) level. Others, through sheer inertia, continue to perform the same functions in the same geographies while the world changes around them. Still
others regard footprint decisions primarily in terms of real estate rather than a more expansive view that considers the proper location for every corporate function and asset.

By enhancing “locational awareness” and evaluating the corporate footprint with a more holistic perspective, companies can more efficiently and effectively position assets and strike a balance between market access, talent availability, risk mitigation and cost containment.

**WHAT IS A “FOOTPRINT”?**

A company’s footprint is more than just the real estate it occupies. It includes the people it employs; customer access and speed to market it experiences; operating costs it incurs, and the risk it undertakes. Where companies locate their assets helps dictate the potential value they can achieve as an organization. This configuration of attributes—the “footprint”—includes a wide array of corporate assets such as:

- Capital
- Talent
- Machinery and equipment
- Inventory
- Contract manufacturers
- Facilities
- Intellectual property

**DYNAMIC CHALLENGES**

Extraordinary events of the past few years have presented significant challenges for many companies. Though global organizations have faced location and footprint decisions for decades, these circumstances, and the continuation
of longer-term business trends, have altered the cost and conditions that companies enjoyed—sometimes profoundly. Beyond these events and trends, there are traditional triggers for footprint realignment that can create more urgency around such decisions.

**Disruptive events**

Companies are occasionally jolted into location awareness by disruptive political, natural or economic events. Prior to the 2011 Arab Spring upheaval in the Middle East, Egypt had been considered a budding global technology destination where many global IT companies have tapped an abundant, low-cost supply of programming talent to create tens of thousands of jobs. Foreign companies are undoubtedly taking a more cautious view of Egypt, and the Middle East in general, in light of the recent and predominantly unpredicted uprisings.

Escalation of drug-related violence in northern Mexico has also influenced the footprint strategy of many leading organizations. One major global retailer cancelled plans to deploy a new several hundred person back-office support center in Monterrey after a wave of crime—which was historically focused along Mexico’s border with the United States—threatened to sweep through northern Mexico’s hub city as well. Validating the company’s concerns, conditions did subsequently deteriorate to the point that Monterrey’s violence levels are as extreme as anywhere in the country. Global manufacturers, who operate thousands of maquiladora facilities along Mexico’s northern border, are also exercising increasing caution.

Other globally felt events, such as the Japan earthquake and tsunami of 2011, and recent terrorist activity in locations ranging from Mumbai to Norway, can have similar ramifications. For companies directly affected—and even those that were not—global events often serve as triggers to reevaluate location and supply chain risk within the portfolio. The aftermath of these shocks can range from companies taking a renewed organizational focus on risk mitigation strategies and contingency planning, to delaying or revisiting investment plans, or potentially to redeploying existing operations to lower-risk locations.

**The economy**

Possibly nothing impacts companies’ global footprint decisions more than their outlook on the economy. During good economic times, companies eagerly invest in new production sites, R&D operations or other expansion initiatives. The recent global recession and concerns of a “double dip” have pushed companies to try to do more with less. Many organizations have been forced to cut costs to remain competitive throughout the turmoil. Many large-scale capital investments have been
put on hold, replaced on the corporate “to-do” list by initiatives aimed at reducing real estate, labor or other costs.

While priorities often shift toward consolidation in this economic landscape, footprint optimization is equally important in good economic times as in bad. Mergers and acquisitions, for example, present an opportune time to reduce redundancy. Many companies, however, address redundancy at the business unit level, and few take the opportunity not only to review where the new combined footprint is, but also where it is not.

Forward thinking companies are constantly working to right-size their footprint and deployment of assets for both current and future economic conditions, understanding that the legacy footprint that was suitable for the last economic period is unlikely to be optimal for the next.

**Going green**

Increasing volatility in energy costs is another trend significantly influencing footprint decisions. When fuel prices soared late in the ’00s, some companies brought manufacturing back from distant low-cost countries, while others increased their distribution capacity to get closer to customers. But the fuel effect has transcended costs, as a growing emphasis on sustainability further enhances the importance of energy in the footprint equation. Increasingly, companies are seeking to identify renewable energy sources as production inputs—not only for cost containment reasons, but for corporate social responsibility as well. This has led to the emergence of several new industrial hubs that feature hydroelectric or geothermal power. Executives in energy-intensive manufacturing industries are turning their attention to locations such as East Malaysia, where demand for developed industrial land in Sarawak has far outpaced supply; Quebec, Canada; and, although less so in the wake of the financial and natural disasters that have befallen it lately, Iceland.

Long-term benefits of a properly aligned footprint can greatly exceed the cost of implementation. Present value cost savings over a 10-year period can range from 5 to 25 percent, with headquarter re-deployments representing the lower end and realignment of distribution operations typically nearer the upper end of the range.
MEGATRENDS

A number of ongoing trends have dramatically impacted companies both home and abroad and are showing no signs of reversing any time soon. These trends will likely continue to influence location decisions and may require companies to anticipate the impact on their operations and therefore on their global footprint.

China’s continued evolution

The decisions that led many global companies to China a decade ago cannot be automatically assumed to hold valid today. China’s coastal wage rates are escalating at double-digit rates; this combined with the potential risk for revaluation of the Chinese yuan has led to more companies considering other Asian candidate countries for low-cost, export-oriented manufacturing. At the same time, China is producing a massive, growing and increasingly talented pool of engineers, computer scientists and IT graduates (estimated at over 500,000 per year). While many companies are exiting—or bypassing—China for low-skilled manufacturing, savvy companies are seeking to backfill those positions by growing and diversifying in-country research and development or high-tech manufacturing capabilities.

Increasing share of demand coming from emerging markets

Global economics are constantly evolving, as illustrated by changes in cross-border investment. A more diverse group of countries draws foreign direct investment (FDI) each year, and emerging economies such as India, Turkey, Brazil and several Southeast Asian nations are attracting a growing share. (See figure 1.) For businesses, this means the environments in which they operate—or those in which they could potentially operate—are experiencing perpetual changes in talent, technology, infrastructure and operating costs that can further increase (or in some cases, decrease) their attractiveness for future investment.

The influx of capital and jobs has helped increase consumer spending in many emerging economies. Spending power in 35 top emerging market countries grew by an average of 83 percent from 2001 to 2009, contributing to a cycle of growth and expansion that often leads to more foreign investment. As demand stagnates in many developed countries and companies increasingly turn to burgeoning markets for revenue, they are positioning footprints to build market presence and brand reputation for long-term sales growth.

Skill migration and competition for talent

The specter of the Baby Boomer generation’s retirement from the U.S.
IS YOUR CORPORATE FOOTPRINT STUCK IN THE MUD?

Figure 1. Foreign Direct Investment inflow

2005

2014 (projected)

Source: Economic Intelligence Unit, September 2011
workforce has made media headlines for the last few years, but the aging of the workforce is not limited to the U.S. In fact, the trend is impacting countries such as Japan and Germany far more severely.8 Though the economic recession has dampened news of it, a competition for talent to replace those exiting the workforce looms, forcing companies to be more creative about where they find skilled personnel. Similarly, these trends will likely require companies to give more thought to other talent strategies, such as utilizing mobile technology to engage professionals remotely.

**Narrowing gap in educational quality**

Many emerging countries have invested heavily in their education systems over the years, recognizing its value to enhance their position in the global economy. This educational development has closed the gap between top-tier developed markets and some emerging countries, such as Romania and Chile, particularly at the university level. These developments may present opportunities to get ahead of the curve by gradually shifting the work done at existing locations to the types of activities aligned with the emerging skills and education levels. For example, it is becoming more common for companies to consider R&D placement in markets that may have been more focused on low-skill manufacturing—or would not have even come to mind—10 years ago.

**Continued manufacturing automation**

A long-running debate concerns the relative benefits of labor arbitrage in offshore manufacturing versus cost reduction and efficiency enhancement through automation. As technology continues to improve and arbitrage opportunities decline in many growing markets, automation is again gaining traction. This, in turn, has led to what some call the “Talent Paradox”: high unemployment levels in areas with protracted shortages of skilled workers. Many companies from Cleveland to Cincinnati, for example, struggle to find R&D and innovation talent, although

Restrictive measures enacted by one country can have a ripple effect on others; Canada, whose immigration slogan is “Canada Wants You!,” has used policy to welcome top skilled talent shut out by restrictions in the United States.
Ohio’s unemployment rate continues to exceed 9 percent. This phenomenon is not limited to North America and Europe, but is also extending to other countries throughout the world as companies replace man-hours with kilowatt hours. For some industries and manufacturing processes, automation advancements are reshaping location and footprint decisions as companies suffer from skill and talent shortages in legacy locations.

China’s recent discouragement of low-skilled manufacturing (through reduced incentives and increased legislative restrictions), an evolving immigration policy in the United States that may incorporate potentially restrictive provisions being debated in state and federal legislation, and the enactment of treaties in South America and Asia that could result in trade protections for regional economies are all policy trends that can have a profound impact on companies’ existing footprint and the decisions they make for the future. Restrictive measures enacted by one country can have a ripple effect on others; Canada, whose immigration slogan is “Canada Wants You!,” has used policy to welcome top-skilled talent shut out by restrictions in the United States. South American countries, particularly Brazil and Argentina, have started implementing policies to restrict some labor-intensive manufacturing imports, particularly from China, to protect a domestic industry described as “under siege” by Brazil’s finance minister. Other Asian countries such as Vietnam, Cambodia and Bangladesh have benefitted from China’s dissuasive stance toward lower-end manufacturing. These legislative maneuvers should not be viewed in isolation, but rather should be regarded as interconnected forces.

A POTENTIALLY GAME-CHANGING SHIFT IN ENTERPRISE VALUE

Assessing the enterprise footprint and executing the recommended realignments are not small endeavors. Footprint optimization can be costly and time consuming. But companies able to do so are realizing short-term financial benefits and likely better positioning themselves for long-term success.

Aligning an enterprise footprint primarily creates value through infrastructural and operational economies of scale and flexibility. Real estate expenditure decreases and the reduction of redundant positions are fundamental value drivers; however, other geographically variable operating conditions and costs can also contribute additional ongoing value. Companies can materially improve deployment performance by enhancing their access to appropriate labor skills and leveraging cost arbitrage, as well as managing other operational costs such as taxes, utilities and logistics. The characteristics of a company’s specific footprint determine the relative
impact of these factors which, when balanced for both existing and new locations, are essential to realizing sustainable benefits.

Realizing the benefits of a realigned footprint requires material investments and implementation planning. The primary investments include costs associated with exiting existing facilities, capital expenditures for new facilities, equipment relocation, employee severance and stay bonuses, relocation of key personnel, and incremental recruiting and training. The required expenditures can be significant and can reach $50 million for large-scale redeployments. In addition, detailed implementation and communications planning is essential to retain key talent and mitigate potential impacts to productivity during the transition. A detailed evaluation of organizational design and operational processes should also be utilized to provide the foundation for change and facilitate redeployment decisions. Absent this perspective, changes to the footprint may not yield the expected results.

Long-term benefits of a properly aligned footprint can greatly exceed the cost of implementation. Present value cost savings over a 10-year period can range from 5 to 25 percent, with headquarter redeployments representing the lower end and realignment of distribution operations typically nearer the upper end of the range. Deployment of shared service operations and realignment of commercial operations typically yield present value savings of 10–15 percent. Payback periods and return on investment also vary but generally are two to five years and two to five times investment levels on a present value basis, respectively. Even though a significant effort and cost are required to align a footprint, the financial and operational return to an enterprise can be sustaining, as shown in the following examples.

“ONE SIZE DOESN’T FIT ALL”

A leading global nutrition company has experienced rapid organic growth over the past decade, putting a strain on all facets of the business. As a result of uncoordinated growth, the company had adopted divergent footprints in key regions of the world. European operations had become highly dispersed across countries, leading to redundant people, processes and space. Conversely, its U.S. footprint had grown overly centralized in a single metropolitan area with a high cost of living, which inflated wages for skill sets that could be efficiently sourced in other lower-cost locations and exposed the company to elevated levels of business disruption risk associated with centralization in a city susceptible to natural disasters. With growth projections approaching double digits annually, the existing footprints were no longer sustainable.

With a mandate from top executives, the company set out to systematically define a configuration and locations conducive to future business growth.
The solution, in this case, lay somewhere between the legacy U.S. and European models. Extracting selected functions from the countries in Europe and consolidating them in a low-cost, in-region “center of excellence” is expected to yield present value cost savings of 10–15 percent, generate returns of three to five times the costs of implementation, and create economies of scale in Europe. In the United States, deployment of a second “hub” is anticipated to reduce operating costs for the enterprise by 5 percent, yield a return of twice the cost of implementation, provide access to new talent, and offer risk diversification.

The new footprint strategy is not without obstacles; moves to the new locations will be costly, transitions are likely to be challenging to manage and key personnel may be lost in the process. However, those issues can be anticipated and mitigation plans implemented. With manageable challenges and payback periods of approximately three to five years, the implementation costs proved to be a beneficial investment for a footprint that offers a flexible, cost effective and sustainable platform to support future growth.

“ROOM TO GROW”

With an increasing number of drugs in the pipeline, this highly profitable developer and manufacturer of pharmaceuticals anticipated rapid growth that would require additional staff and facilities. As a reaction to its growth expectations and dispersed footprint, company executives sponsored an initiative to evaluate deployment options across the entire enterprise, including headquarters, R&D, manufacturing and commercial activities. The objectives of the program included not only supporting growth and the development of commercial capabilities but also reinvigorating R&D and innovation within the organization and redefining the company culture to be more collaborative.

Through a structured and disciplined process, the company developed guiding principles based on the strategic goals to evaluate potential deployment scenarios that could support consolidation and future growth. These principles, which focused on the retention and attraction of specialized highly skilled talent, and a broad financial analysis were used to analyze the trade-offs between five distinct deployment scenarios ranging from partial consolidation to full co-location of operations. The company selected a deployment scenario calling for consolidation of operations into a single location. In addition to facilitating the company’s cultural and operations goals, the deployment strategy offered present value operating cost savings of 15–20 percent, a return of approximately three times the costs of implementation, and a payback period under three years. Also as a result of broad planning, employee turnover has been minor and research collaboration has measurably increased.
THE WAY FORWARD

Through work with a variety of leading companies supporting enterprise footprint optimization initiatives, we have identified a number of key insights, described in the accompanying table.

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<td><strong>Set the tone at the top.</strong> Leadership buy-in and communication up front is critical to encouraging supportive contributions among key stakeholders and mitigating organizational uncertainty. Identify a senior leader to take responsibility for design and execution of changes, and clearly communicate the importance of positive participation early in the process.</td>
<td><strong>Don’t wait for a crisis.</strong> When crises strike, companies tend to favor decisive action over rigorous analysis. Enterprise footprint optimization presents the opportunity to take a step back to proactively align location footprint and strategic planning to make urgent reactions to crises either unnecessary or at least more efficient.</td>
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<td><strong>Take a holistic view.</strong> To be effective, the optimization process should consider everything from key strategic objectives, such as enterprise sustainability and market growth, to operating requirements, such as talent availability, risk management and cost containment.</td>
<td><strong>Don’t undercommit.</strong> The potential for a transformative impact on the business in terms of positioning it for the future and developing a source for sustainable competitive advantage justifies the expenditure of time and resources. Insufficient leadership communication or dedication of resources could lead to transition costs without realization of the full benefit of footprint optimization.</td>
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<td><strong>Start with quick wins.</strong> In many cases, there are immediate improvement opportunities that can start delivering benefits in less than three months. These “quick wins” not only can make the overall effort self-funding, they can help build momentum and credibility, which are essential to sustained improvement and gradual pursuit of a target footprint.</td>
<td><strong>Don’t forget about tax.</strong> The intricacies of international tax law often present a prime opportunity for a footprint assessment. In fact, for some companies, the tax incentives offered by particular jurisdictions can justify the entire effort.</td>
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<td><strong>Consider long-term objectives.</strong> A key component of enterprise footprint optimization is literally mapping the future of the organization. With that in mind, it is important to align the footprint with strategic objectives, include scenario analysis as part of the initiative to identify key factors that could impact plans, and build in footprint flexibility to quickly respond to change.</td>
<td><strong>Don’t ignore change management.</strong> Integrating effective organizational design adjustments, aligning talent management and incentives with changes, and identifying and addressing the impact on corporate culture are essential to long-term success.</td>
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<td><strong>Challenge traditional assumptions.</strong> Sophisticated tools such as advanced analytics can allow organizations to test assumptions and model profitability at a depth not previously feasible. These initiatives offer the opportunity to validate or refute standard assumptions using these resources as part of footprint modeling.</td>
<td><strong>Don’t view the exercise solely as one in cost reduction.</strong> While cost reduction is a potentially significant component, organizations that focus exclusively on that objective miss the true benefits of balancing a wide range of critical factors, from cost efficiency and operating requirements to talent availability, tax impacts and access to new markets.</td>
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<td><strong>Align incentives.</strong> Traditional incentive programs tend to reinforce the status quo and encourage optimization within individual functions rather than for the enterprise as a whole. To address the issue, incentives should be realigned so that managers and employees are motivated to both support changes and focus on overall margins rather than focusing on increasing performance within their particular function.</td>
<td><strong>Don’t let groups opt out.</strong> There may be legitimate reasons to exclude certain groups, functions or geographies, but each group that opts out erodes the benefits of a holistic review. Many times, individual groups perceive the exercise as a threat rather than an opportunity, further emphasizing the need for strong, early and consistent communication.</td>
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<td><strong>Repeat as needed.</strong> Plan to periodically repeat the analysis as the business environment changes and your footprint evolves. The good news is that subsequent analyses will likely take only a fraction of the time and effort that was required initially.</td>
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For leading companies, internationalization is starting to give way to true globalization as these organizations extend their reach to all corners of the habitable world in search of new markets, resources, talent pools and cost advantages. Yet this path can be challenging to navigate as the business environment is constantly evolving, from gradual changes in costs and talent markets to political and natural events impacting economies.

Companies not focused on these dynamics can be quickly left behind, encumbered by locations that no longer suit their needs, unnecessary redundancy in their operations, elevated risk levels, and footprints that do not position them to anticipate and address change quickly. On the other hand, companies that proactively manage their global footprint can gain a competitive advantage that would be difficult to replicate, literally positioning the organization globally to achieve its strategic objectives, both in the short term and for the future.

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IS YOUR CORPORATE FOOTPRINT STUCK IN THE MUD?

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7. World Bank, per capita incomes at purchasing power parity, 2011 (countries are emerging market economies and include Algeria, Argentina, Belarus, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Croatia, Dominican Republic, Equatorial Guinea, Estonia, Hungary, Latvia, Lithuania, Malaysia, Mauritius, Mexico, Oman, Panama, Peru, Poland, Romania, Russia, Saudi Arabia, Slovak Republic, Slovenia, Suriname, Thailand, Tunisia, Turkey, Turkmenistan, Ukraine, and Uruguay)
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Exactly how many users, did you say?

Seven hundred thirty eight million people live in Europe, 590 million live in Latin America and the Caribbean region, 345 million live in North America, and 37 million live in Oceania.1

When it comes to counting heads, however, social media site Facebook trumps five of the world’s seven continents with more than 800 million users,2 spanning 70 languages and as many as 500 million active users in a single day. And more than 350 million of these users access Facebook through a mobile device each month.3 Facebook’s user count is up from 500 million a year ago and 300 million two years ago.4

Meanwhile, in our world of almost 7 billion inhabitants, there are now over 5 billion mobile subscribers.5 Worldwide 3G subscribers grew 35 percent between 2009 and 2010 to 726 million,6 while 4G lurks on the horizon. Global consumers downloaded 300 million mobile apps in 2009, increasing by more than 16 times to 5 billion in 2010.7

From a marketing perspective, the time to ask whether social media and mobile matters is long past. Although companies now allocate only 7.1 percent of their marketing budgets to social media spending, pundits expect that number to increase to 17.5 percent over the next five years.8 Worldwide mobile advertising revenue is forecasted to reach $3.3 billion in 2011, more than double the $1.6 billion in 2010, and grow to $20.6 billion by 2015.9 According to Gartner’s Stephanie Baghdassarian, “mobile advertising is now recognized as an opportunity for brands, advertisers and publishers to engage consumers in a targeted and contextual manner, improving returns.”10
But with the vast marketing reach and potential of social media and mobile, the question of how to invest is more relevant than ever. Is it better to invest in social or mobile? Is there a higher return on developing a mobile app to enable customers to shop on-the-go, or building and marketing an online community to crowdsource innovative product ideas? Or is it more effective to synchronize an organization’s various social and mobile programs to facilitate a seamless and integrated customer experience?

How can marketers make better choices around the richer-than-ever set of marketing investment options, particularly when it comes to social media and mobile?

**SPRINTER OR MARATHONER?**

We use the term “Marketing DNA” to help organizations understand how they can take a more systematic and structured approach to choosing among available marketing options.

DNA contains the genetic instructions for how organisms develop and function. At one level, human beings are remarkably similar. Just look at similarities in our skeletal structure, key organs and physiology. Nevertheless, the seemingly small variations in our DNA manifest themselves in significant differences, ranging from our physical features to our intellectual abilities and athletic prowess.

Consider, for example, the sport of running. While virtually all humans have the muscles necessary to run, those with a high percentage of particularly slow twitch muscle fibers excel at endurance sports, while those with a high percentage of notably fast twitch fibers can produce short bursts of power more appropriate for sprinting. According to Scott Trappe, from Ball State University’s human performance laboratory, most humans have 1–2 percent fast twitch muscle mass. By comparison, three time Olympic gold medalist sprinter Usain Bolt may have as much as 25 percent superfast twitch muscle mass.11

The Olympic sprinter and the Olympic marathoner may both be great runners, but neither would be likely to medal in the other’s sport of choice. But Olympic-level performance in either event doesn’t happen naturally. It’s more than just having the right DNA. Both the Olympian sprinter and marathoner undertake intensive training regimens, including strength conditioning, careful attention to nutrition and extensive time on the track. However, one would certainly expect to see the marathoner focus far more on endurance training than the sprinter and the sprinter to focus far more on speed work.

Like the human genome, the genome of marketing organizations is more alike than dissimilar, reflecting common legacies and development paths. Most marketing organizations execute the same basic set of marketing activities, ranging from
building their brands to creating compelling experiences for their customers to enabling sales of their products and services. But not all great marketing organizations make identical choices or operate identically. Similar to the great sprinter and the great marathoner, the great brand builder and the great product innovator can both be great marketers, but the underlying capabilities and choices that allow each to succeed are different and not necessarily interchangeable. One marketing organization may not have the equivalent of superfast twitch muscle mass when it comes to branding, but it may have more than its fair share of product innovation muscle mass. Knowing this can significantly influence how it invests its incremental marketing dollars.

SMALL VARIATIONS, BIG DIFFERENCES

So what are the marketing equivalents of the sprint vs. the marathon? We have identified five ways that differences in Marketing DNA manifest themselves:

- **Sales**: alignment between marketing and sales and service channels, including partners and third parties
- **Product and service innovation**: creation and management of the pipeline of customer-centric innovative products and services
- **Customer experience**: integration and management of key customer touchpoints and delivery of “moments of truth”
- **Customer insights**: development of the deep customer insights to get the right offering, through the right channels, to the right customer segment
- **Brand**: creation and propagation of a compelling brand promise

Few marketing organizations can succeed without a minimum of capabilities and proficiency in each of these five areas. It’s hard to imagine a successful marketing organization that doesn’t exhibit at least basic capabilities when it comes to branding (or sales alignment, or product innovation management, or customer experience delivery, or customer insight development).

But great marketing organizations seem to have oriented their activities and investments around a core element, which becomes the pivot point for other activities. For a great marketer, finding and cultivating that core element is analogous to a runner, early in his or her athletic career, understanding whether he or she is better off choosing to train for the sprint or the marathon.

The concept of Marketing DNA can help organizations structure the choice process and provide a more systematic way to understand the actions that
organizations can take to allow their Marketing DNA to express itself. An organization’s Marketing DNA both shapes the options available and identifies the unique raw materials that can be activated to enable marketing success.

Looking across a wide range of marketing organizations, we’ve identified five marketing archetypes, or prototypical models, that exemplify the investment choices and trade-offs that effective marketing organizations make.

WHAT IS AN ARCHETYPE?

An archetype, according to Merriam-Webster, is “the original pattern or model of which all things of the same type are representations or copies.” Similarly, a marketing archetype is a prototypical model that defines the unique combination of capabilities and characteristics that define a great marketing company. We believe there are five primary models: Sales Driven, Product and Service Innovator, Winning Customer Experience, Customer-Insight Driven and Iconic Brand Builder.

While each model has a dominant element (as indicated by the titles), it is the prioritization and alignment of all elements that defines an archetype. That is, great marketers understand which element is primary, which are secondary and which are tertiary and ensure investments and activities are aligned accordingly. For example, a Product and Service Innovator’s DNA is aligned around product and service innovation. However, highly successful Product and Service Innovators also configure other elements—particularly the capabilities to generate deep customer insights and the sales capabilities to effectively bring new products to market—to support a differentiated positioning.

ARCHETYPES IN ACTION

Let’s look at examples of companies that represent each marketing archetype and have focused their investments and capability development efforts accordingly:

Sales Driven: What differentiates a sales driven organization from one with a successful sales force? Best Buy sales associates encourage customers to tag on Geek Squad Black Tie Protection while purchasing products. Best Buy also blends multiple channels for a shopping and service experience designed to make it easier for customers to interact. Customers can shop online and pick up products
at the store or order services online and have technicians call back. Text alerts send special offers and upcoming events specific to subscribers’ preferred stores that were preselected online.

**Product and Service Innovator:** What differentiates a product innovator from a good product developer? Nearly all of P&G’s organic sales growth since 2000 has been attributed to new brands or improved products, and at least one report suggests that it has outpaced its competitors with regard to innovation.¹²

Three investments illustrate the company’s emphasis on product innovation:

1. P&G’s Connect and Develop open innovation program has forged partnerships with over 1,000 entities to bring new ideas to life. Cultivating ideas externally was an innovation itself, after P&G’s internal R&D had proven mature.

2. P&G’s Corporate Innovation Fund serves as an “in-house venture capital firm” to develop ideas that are then handed to business units.¹³

3. The company’s FutureWorks team is dedicated to disruptive new products, services and business models.

**Winning Customer Experience:** What differentiates a winning customer experience from attentive representatives? Nordstrom is recognized for its focus on providing personalized experiences. Its front-line personnel keep “personal books” on each customer and system-generated profiles track purchase behavior.

In contrast to defining store space by brand, Nordstrom breaks up the store space by so-called lifestyle sections, defined by a group of brands that target the same customer group, to allow shoppers to put together outfits easier. Additionally, Nordstrom has a unique compensation draw system in place. Salespeople get whichever is higher, base salary or commission, cultivating a competitive yet collaborative sales environment. Salespeople also tend to remain loyal to Nordstrom, moving to positions with increasing responsibility.¹⁴

**Customer-Insight Driven:** What distinguishes a customer-insight driven organization from one that knows its customers? Progressive Insurance has a history of innovation driven by its analytical capabilities and customer insights. Initially, the company focused on underserved, higher-risk segments of the market, targeting customers typically shunned by insurers. Progressive made a breakthrough in its customer analytics in 1996 when it...
## WHAT’S YOUR MARKETING DNA?

<table>
<thead>
<tr>
<th>ARCHETYPE</th>
<th>EXAMPLE CHARACTERISTICS</th>
</tr>
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</table>
| Sales Driven                   | • High degree of formalized collaboration between marketing and sales (e.g., structured training, management councils, cross line of business marketing teams)  
• Use of dynamic pricing models to quickly adjust to the external environment (e.g., competitive offerings, consumer feedback, economic conditions) and bolster cross-sell efforts  
• Consistent messaging across fully integrated channels aligned with the brand |
| Product and Service Innovator  | • Innovation driven by deep research capabilities and well defined ways of collecting customer insights (e.g., ethnographic research)  
• Clearly defined innovation process including how new products and services will be marketed and sold  
• Organizational emphasis on hiring innovative thinkers and creating a culture of creativity |
| Winning Customer Experience    | • Experiences are customized based on an understanding of individual customer needs, preferences and behaviors across all customer touch points  
• Highly consistent messaging across channels reinforced by high degree of marketing and sales collaboration  
• Performance measurement emphasizes metrics that reinforce customer experience delivery and brand promise |
| Customer-Insight Driven        | • Commitment to data collection and storage on a companywide scale to support a holistic view of the customer  
• Use of sophisticated modeling and data mining techniques to identify emerging customer needs, predict behavior, test pricing and execute highly customized offers or campaigns based on needs of target segments  
• Customer-facing employees take action on insights for specific customer segments, or even at individual customer level |
| Iconic Brand Builder           | • Compelling brand promise that creates an emotional connection with customers as well as employees  
• Deep training and development programs to provide staff with the knowledge to foster customer relationships and act as brand stewards  
• Pervasive and brand relevant performance metrics encourage behaviors that reinforce the brand promise |
became the first company to use customers’ credit reports in their insurance underwriting. This customer insight led to more precise risk measurement and more competitively priced insurance plans. Progressive has continued to find new ways to collect and use customer data to improve its underwriting and pricing, most recently with the rollout of a new insurance plan based on driving data collected from a device installed in the customer’s automobile.

Iconic Brand Builder: What distinguishes an iconic brand builder from an organization with a compelling brand promise? Harley-Davidson has formed a deep emotional connection with its consumers that was reinforced through the creation of the Harley Owners Group in 1983. H.O.G. encouraged riders to become more actively involved in the sport, and now the term “hog” is synonymous with motorcycle. As Willie G. Davidson, VP of Styling and grandson of founder William Davidson, says, “We’re riders … The best way for us to perpetuate the adventure is by living it and sharing it.”
## BRINGING MARKETING DNA TO LIFE

<table>
<thead>
<tr>
<th>PREDOMINANT MARKETING DNA</th>
<th>MOBILE</th>
<th>SOCIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Retail store’s GPS enabled smartphone app increases sales opportunities by sending coupons to customers who are near a store</td>
<td>Sporting goods company emails shareable discount codes to bloggers who have written about recent purchases to boost repeat and referral business</td>
</tr>
<tr>
<td>Product and Service Innovation</td>
<td>Telecom network provides mobile phone-based transactional financial services in the developing world to offer more competitive loan rates due to reduced costs of dealing with cash and branches</td>
<td>Consumer packaged goods company’s social media platform enables crowdfunding of new products and package design</td>
</tr>
<tr>
<td>Customer Experience</td>
<td>Automaker connects its electric vehicle’s system with the owner’s mobile phone to allow vehicle usage and battery state monitoring, as well as performance comparison with other drivers</td>
<td>Retailer uses location-based responses to social media messages (e.g., salesperson from local store contacts customer) to anticipate customer’s needs and questions</td>
</tr>
<tr>
<td>Customer Insight</td>
<td>A study of competitors’ location-based check-ins informs decisions about a possible new store opening in that neighborhood</td>
<td>Product recommendations based on purchases by others in the customer’s social network with similar profiles</td>
</tr>
<tr>
<td>Brand</td>
<td>GPS enabled mobile app allows motorcycle riders to record and share their favorite routes to enhance the camaraderie and loyalty of the riding community</td>
<td>Consumer packaged goods company uses an online contest in which users help to choose ideas to fund to enhance their brand as a supporter of the communities it operates in</td>
</tr>
</tbody>
</table>
GETTING SOCIAL, GOING MOBILE

Let’s revisit the potential choices associated with social media and mobile marketing. As described previously, it’s about how to invest in these rich platforms, not *whether* to invest. Our discussion of Marketing DNA suggests an organization’s investment in a mobile ‘app’ or social media program may look radically different depending upon its predominant orientation (See inset “Bringing Marketing DNA to Life” on page 100).

Now, let’s take a look at how leading marketing companies have actually focused their investments in social media and mobile to express and reinforce their Marketing DNA:

*Sales Driven: Reaching out to customers via mobile banking and educational blog to enable cross-selling*

Compared to the industry average of two retail banking products per household, Wells Fargo leads at nearly six, thanks to its core strategy of cross-selling.\(^{19}\) The bank sees its technology infrastructure as a key differentiator, aligning the organization’s functions and channels in reaching customers and selling based on needs.\(^{20}\)

Wells Fargo boasts 5.5 million active mobile customers as of Q1 2011, its fastest-growing delivery channel.\(^{21}\) According to a recent survey, Wells Fargo leads the industry in providing mobile banking in text, mobile website and app forms.\(^{22}\) It was the first major bank to offer text banking to connect to non-online customers who are otherwise unreachable.\(^{23}\) The bank is also among the first institutions to offer mobile banking to corporate and small business customers, capturing business from small business owners such as doctors who do not always have access to a PC. Providing convenient and easy-to-adopt mobile technology is a key initiative for Wells Fargo to stay connected with its customers, retain them and thereby introduce more targeted products and services to them.

Wells Fargo is also an early adopter of social media, engaging customers with social technologies since 2006. In April 2011, it staged a flash mob in the middle of Times Square to announce its return to New York City and its new status as a coast-to-coast bank. Performers danced to “One Singular Sensation,” changing from Wachovia’s green and blue to Wells Fargo red to hint at the rebranding. The bank later sponsored the video on YouTube to expand its influence, and reached 1 million viewers in a month and 2 million to date.\(^{24}\) These marketing investments and activities reinforce Wells Fargo as a sales-driven bank.
Product and Service Innovator: Enhancing car sharing through an innovative mobile app and social media monitoring

Zipcar entered the market in 2000 with its innovative by-hour or by-day car sharing service. Since then, it has rapidly expanded to major urban areas in North America and the UK, in addition to 250 college campuses.25 Its Zipcard locks and unlocks before and after a reservation and doubles as a credit card for gas. Rates include rental, insurance and gas, creating a hassle-free car sharing service for “Zipsters” who often want to avoid the costs associated with car ownership and parking.

Eyeing Zipcar's rapid growth, competitors moved quickly. Hertz On Demand was launched in December 2008 and offers free membership, compared to Zipcar’s $60 annual membership fee. However, Zipcar differentiates with its technology infrastructure and continues to command 75 percent market share. 26 Its innovative mobile application was recognized as one of Wired’s “Five Commuter iPhone Apps You’ve Gotta Try” and TIME magazine’s 50 best iPhone apps for 2011.27 The app features location-based reservation, remote honking to locate a reserved Zipcar, tap-to-contact for help while on the road, a feature to lock and unlock the assigned car and more. Zipcar also texts Zipsters near the end of a reservation to remind them to return the car and allows them to text back to extend the reservation if no one else is in line.

Zipcar’s word-of-mouth marketing approach is designed to keep costs low for budget-conscious consumers. As a result, the company focuses marketing dollars on low-cost, high-impact tactics such as social media—and has gone a step further to turn social media into innovative customer service. Members rave about how the company helped find a lost GPS after spotting a tweet, or located an available vehicle after a blogger complained about vehicle shortages. Although no frills, these social and mobile investments effectively strengthen Zipcar’s up-to-date service innovator positioning.

Winning Customer Experience: Creating a vivid experience for diehard fans using social media campaigns

The Discovery Channel, whose diehard fans follow quirky nonfiction series such as Storm Chasers and the annual Shark Week, has been a leader in using social media to enrich its fans’ experience. Discovery Channel’s most notable campaign involves their flagship programming event Shark Week. This year, Discovery launched a mobile app that lets users participate in social conversations on their computers, iPhones and iPads while watching Shark Week programming. Additional content was created specifically for the app to enhance the viewing experience and increase the social conversation around Shark Week.

Discovery has developed other innovative social media campaigns to promote
other programs. To make the second season of *The Colony* relevant for a younger, socially connected market segment, the station launched a Facebook campaign to illustrate how a virulent disease could affect the viewer’s personal social network. The simulation used a Facebook-like interface unique for each person with a fake newsfeed featuring friends’ names and images alongside status updates, links and other content.  

*Customer-Insight Driven: Driving toward great insights with proprietary apps and Facebook Connect*

Amazon has long been recognized for implementing consumer insights-based features that have become market standards. One click checkout, a recommendation algorithm, and ratings and reviews help consumers find the products they seek.

Amazon has translated its insights-based approach to mobile usage. In most mobile app stores, any developer can sell an app at a self-designated price. However, rather than let developers set the apps’ price, Amazon will retain full pricing control based on its determination of a market price, and will pay the developers a percent of sales.  

Because of Amazon’s insights, consumers are viewing a curated list of apps, Amazon is earning an optimized price and developers may earn more than they would with a self-priced application.

Amazon has also turned to social media to expand its use of customer insights, integrating Facebook Connect in 2010. As a result, customers who opted in on Amazon’s site would see personalized gift recommendations based on their Facebook friends’ profiles (favorite music, etc.). The combination of social intelligence with Amazon’s proprietary recommendation capabilities reinforces Amazon’s insight-driven positioning.

*Iconic Brand Builder: Connecting with customers emotionally via Facebook and blogs*

Consumers recognize Hallmark as an iconic brand, dubbing obligatory card giving occasions “Hallmark holidays.” By 2010, the company’s marketing team recognized that Hallmark’s iconic status was contingent on remaining relevant to consumers whose social connections were becoming more casual and moving online.

Sacrificing television advertising dollars, the company increased its allocation of funding to digital from 2 percent in 2009 to 5 percent in 2010 and 10 percent in 2011. Early innovations recreated Hallmark moments online. On Facebook, users can personalize cards with messages and photographs. Hallmark then prints,
stamps and mails paper versions of the cards to recipients. While the Facebook card store drove traffic away from Hallmark.com’s e-cards website, it promoted the brand’s association with “social connecting and emotional wellbeing,” according to Camille Lauer, director of Social Innovation at Hallmark.32

Hallmark’s new “Life is a Special Occasion” branding was launched in early 2011 to promote the brand’s relevance beyond holidays. Offline, the brand promoted social connections during bedtime and mealtimes.

Hallmark turned to bloggers to promote the message online, partnering with popular blog networks such as BlogHer and Momversation. With a Skype station at one conference and a video mashup of bloggers’ perfectly imperfect moments at another, the brand allowed its influencers to reinforce the brand’s status as a social connector both at the conferences and in their recap blog posts.

MAKING THE MOST OF YOUR MARKETING DNA

Around the year 2000, a high school cricket coach in Jamaica noticed a player’s rare gift for speed and encouraged the athlete to join the track and field team. The student thrived as a runner, improving under the tutelage of two former Olympic coaches who originally bemoaned their protégé’s lack of dedication and penchant for practical jokes.

Less than a decade later, the student—Usain Bolt—attained multiple short distance world records and Olympic gold medals, earning himself the title of the “World’s Fastest Man.”

Although Usain Bolt apparently had the genetic makeup of a world-class sprinter, he might never have realized his potential without the mentorship of a series of willing and able coaches and intensive training. Had he pursued a sport that was not as well-aligned with his genetic makeup, had he not had tremendous coaching or had he not trained intensively, his level of success might have been

Great marketers understand their organization’s genetic foundation and align investment decisions and execution activities accordingly. One of the CMO’s most important strategic roles, therefore, is to find and unleash the “inner runner” within the organization.
limited. Eliminate any one of these three ingredients and results might have been very different.

Now, consider the case of another world-class athlete, Michael Jordan, one of the greatest basketball players in the history of the game. At the beginning of the 1993–1994 National Basketball Association season, Jordan abruptly retired from the Bulls to pursue a career in baseball. As a baseball player, Jordan played for the Birmingham Barons and the Scottsdale Scorpions, never batting above .252. A .252 batting average in the minor leagues is hardly the performance of a world-class baseball player. DNA, coaching or training? We may never know. However, a year after announcing his return to basketball with a two-word press release, “I’m back,” Jordan led his team to the first of what turned out to be a second “three-peat” for the Chicago Bulls.

Just as the cricket coach saw Bolt’s potential and provided the direction and tools to activate it, and just as Jordan gave up baseball to return to basketball, great marketers understand their organization’s genetic foundation and align investment decisions and execution activities accordingly. One of the CMO’s most important strategic roles, therefore, is to find and unleash the “inner runner” within the organization.

How can a CMO and other marketing leaders “coach” his or her organization to improve its potential? There is no definitive recipe, but there are several steps that marketing leaders can act on to get the journey underway:

1. **Map your DNA:** Similar to the Human Genome Project that has mapped all human DNA, an organization must first define the combination of characteristics and capabilities that make it different. This begins with an assessment of each of the five primary elements of Marketing DNA and how they are embedded in an organization’s history, capabilities, talent and the like. See characteristics in inset “What Is Your Marketing DNA?” on page 114 and examples throughout this article to provide a starting point.

2. **Know your environment:** Although DNA defines a species, natural selection dictates its success over time. Similarly, an organization’s Marketing DNA should be viewed in the context of the broader competitive and market environment to determine whether an organization has, or can carve out, a positioning that is differentiated and sustainable. Evaluating Marketing DNA relative to the competition can more clearly reveal the specific characteristics and capabilities that are merely “table stakes” required to survive from those that can provide the basis for differentiation and competitive advantage.
3. **Define your pivot point:** As demonstrated by organizations like Harley-Davidson and P&G, some companies’ dominant DNA is obvious, even though it likely took investments over an extended period for it to manifest itself so clearly. For others, however, the evolutionary path is less clear. Therefore, marketing leaders should identify the marketing archetype that exemplifies their organization—Sales Driven, Product and Service Innovator, Winning Customer Experience, Customer-Insight Driven or Iconic Brand Builder—and establish this as the primary pivot point for key organizational activities.

4. **Cultivate DNA:** As demonstrated, relatively minor changes in foundational marketing activities can get expressed with wildly different consequences. Just as it took Usain Bolt’s cricket coach to understand and channel his genetic makeup so too must marketing leaders unleash “the inner runner” in their organizations. Evaluate marketing investments, including social and mobile, in the context of the organization’s Marketing DNA, and orient investments around activities and capabilities that directly inform, align with and reinforce the company’s marketing archetype.

5. **Evolve and learn:** Species evolve, and the environment in which they live changes. So while social media and mobile investments are currently critical aspects of most CMOs’ agendas, the levers CMOs can pull to express their specific genetic code will undoubtedly change over time. While the marketing archetypes are concrete, the tactical investment decisions marketers face are more fluid. So it is incumbent upon CMOs and marketing leaders to help their organizations adapt as new trends, competitors and technologies unfold and to use Marketing DNA to guide the journey.

As marketing budgets face increasing scrutiny, marketers and finance teams should make better choices about where and how to spend each marketing dollar. An understanding of Marketing DNA and marketing archetypes can provide a compelling way to frame marketing choices and trade-offs, focus investments, reinforce a differentiated market positioning and help focus the organization on the attributes and capabilities that matter most.

Or, put another way, don’t waste your time training for a sprint when your best event may be the marathon. DR

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The authors would like to acknowledge the contributions of **Todd Roberts** of Deloitte & Touche LLP and **Erica Michelstein** and **Lisa Zhao**, both of Deloitte Consulting LLP.
Endnotes
10. Ibid.
13. 2008 Annual Report, Procter & Gamble
20. Ibid.
Integrated Reporting: THE NEW BIG PICTURE

By Nick Main and Eric Hespenheide
> Infographics by Janko Williams

At first blush integrated reporting may sound like a topic solely for accountants. In concept it includes systems to record data, the inclusion and valuation of assets and liabilities and the presentation of complex information according to a set of standards—all of which may sound familiar. But integrated reporting as defined by the International Integrated Reporting Committee aims to incorporate everything from strategy to risk management, from financial reporting to the inclusion of other capitals (think societal and environmental impacts). It aspires to meet the needs of a wider group of stakeholders—e.g., investors, employees and Non-Governmental Organizations (NGOs). And it intends to interlink these elements in a way that makes their interdependencies clear. Everyone in an organization, not just the accountants, is likely to be touched by integrated reporting.
The potential importance extends beyond a reconstitution of traditional corporate reports. Corporate reports—whose growing sophistication and range have been a reflection of the development of the global economy over the past two centuries—are in some sense the rulebook that investors and society at large use to “keep score.” Change the rulebook and you will almost certainly change the game. The movement toward integrated reporting potentially represents the most significant change to the rulebook that we will have seen in years.

YOU DON’T KNOW WHAT YOU’RE MISSING (REALLY)

Financial statements are becoming increasingly long and complex with vast tomes of technical detail, requiring a high level of financial expertise to interpret. Complicating matters further, the world has at least two primary sets of standards under which these financial statements are prepared, although a convergence project is underway.

But financial statements are not the end of it. Companies produce an increasing array of reports not necessarily linked to the financial statements. Governance issues including executive pay are sometimes reported on, as well as at least some of the impacts of the business on society and the environment. But these are often reported to different audiences, in different formats and at different times. In this context, the idea of simplifying all the reporting under a consistent banner—inTEGRATED reporting—is very attractive. Note that integrated reporting is a more comprehensive concept than just an integrated report (see inset below).

INTEGRATED REPORTING DEFINED

According to the International Integrated Reporting Committee, integrated reporting combines the different strands of reporting (financial, management commentary, governance and remuneration, and sustainability reporting) into a coherent whole that explains an organization’s ability to create and sustain value. The main output of integrated reporting is an integrated report; a single report that the IIRC anticipates will become an organization’s primary report.1
Beyond the financial reporting complexity issues noted above, there is the reality that the tangible assets included in financial statements reflect a steadily diminishing component of shareholder value. Since 1983, when tangible assets represented 83 percent of market value, to 2009, when they represented only 19 percent, there has clearly been a change in business models that may not be fully reflected in traditional financial statements. Current financial statements often do not include the “true” value of inputs from, or reliance on, natural capital and other forms of capital. Conditions are ripe for new ideas.

The two organizations at the forefront of the development of new ideas regarding integrated reporting are:

**The Integrated Reporting Committee of South Africa (IRCSA),** which, under the chairmanship of Professor Mervyn King, produced a report built on a pronouncement on corporate governance in South Africa (King III), which proposed that integrated reports become the preferred form of corporate reporting.

**The International Integrated Reporting Committee (IIRC),** which was formed in 2010 under the aegis of the Prince of Wales Accounting for Sustainability Project and the Global Reporting Initiative. In addition to business executives and investors, representatives from the major accounting bodies, standards setters and security regulators sit on this committee.

**THE BASIC IDEA**

Integrated reporting is a process, not a product: The report periodically delivered to stakeholders is an output of an extensive underlying effort that precedes it. Reporting on an organization’s current state and future prospects requires a comprehensive understanding of the strategies being adopted, the risks the organization is facing, the opportunities it is pursuing, details of its operations, its impact on the environment and the wider society, and more.

The complexity sounds daunting, and for some good reasons, as we will describe. The processes and the products of integrated reporting are intended to provide benefits to both the company and its stakeholders. For the company, an important value lies in the preparation—the selection of metrics, the scrutiny and analysis of the business impacts and risks, the resultant insights and the subsequent adjustments to operations and even strategy. According to Novo Nordisk, “... the primary benefit of integrated reporting is that it allows a company to better understand, manage and report on multiple dimensions of value. We believe this can help companies make better decisions and to manage businesses in a way that creates shared value.”
Additionally, a properly designed set of performance measures reported on as part of regular management processes gives the incentive and ability to improve performance. For the stakeholder, the report is intended to increase the understanding of the company—its management, strategy and operations, and its perils and prospects.

In the end, integrated reporting, when executed with requisite rigor, can allow both the company and its stakeholders to make better-informed decisions. It has been suggested that the integrated report will become an organization’s primary report, which links in with various supporting, more detailed, reports.

No single, agreed-upon definition yet exists for an “integrated report.” However, there are two representative interpretations:

**According to the IRCSA:**

An integrated report tells the overall story of the organization. It is a report to stakeholders on the strategy, performance and activities of the organization in a manner that allows stakeholders to assess the ability of the organization to create and sustain value over the short, medium and long term. An effective integrated report reflects an appreciation that the organization’s ability to create and sustain value is based on financial, social, economic and environmental systems and by the quality of its relationships with its stakeholders. The integrated report should be written in clear and understandable language in order for it to be a useful resource for stakeholders.4

**According to the IIRC:**

Integrated Reporting brings together the material information about an organization’s strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of how an organization demonstrates stewardship and how it creates value, now and in the future. Integrated Reporting combines the most material elements of information currently reported in separate reporting strands (financial, management commentary, governance and remuneration, and sustainability) in a coherent whole, and importantly:

- Shows the connectivity between them; and
- Explains how they affect the ability of an organization to create and sustain value in the short, medium and long term.

So the idea is deceptively simple. Integrated reporting is designed to collate all the relevant data about an organization’s strategy, risks and opportunities,
risk management, environmental and societal impacts and financial data and results. Organizations could use this data to create a report or reports that are transparent, focused on value creation in the long term as well as short-term profitability, and explain how all these elements form a coherent whole.

Before integrated reporting becomes a reality, however, much work needs to be done to develop frameworks, standards and measurements, among other issues.

**HOW DOES INTEGRATED REPORTING RELATE TO OTHER REPORTING FRAMEWORKS?**

The thinking behind the integrated reporting approach is somewhat different than the thinking behind the development of existing reporting frameworks and standards. Again, according to the IIRC:

> Integrated Reporting reflects what can be called “integrated thinking”—application of the collective mind of those charged with governance (the board of directors or equivalent), and the ability of management, to monitor, manage and communicate the full complexity of the value-creation process, and how this contributes to success over time. It will increasingly be through this process of “integrated thinking” that organizations are able to create and sustain value. The effective communication of this process can help investors, and other stakeholders, to understand not only an organization’s past and current performance, but also its future resilience.5

Integrated reporting is likely to draw on existing financial reporting measurement standards, which will continue to be the basis for the measurement of the existing use of and returns on financial capital—possibly in a globally converged model.

Environmental and societal impact reporting standards, however, are less well developed. An early incarnation, environmental reporting, took hold in the 1980s for a variety of reasons: Some companies were driven by progressive environmental practices; others may simply have wished to portray themselves in that manner; and many others were likely spurred by litigation—or the threat of litigation—that surrounded industrial waste sites, environmental disasters and the like. Early efforts were mostly sporadic and fragmented, such as inserting brief sections on environmental issues into annual reports, with no linkage to strategy or performance and no attempt to obtain independent assurance.

A decade later, as reports were broadened to include other social issues, they became known as corporate social responsibility, citizenship or sustainability reports. In both their earlier and later forms, these reports were often published separately from financial reports.
Standardization, however, remains elusive. The closest thing to a uniform sustainability reporting framework is the Sustainability Reporting Guidelines (GRI Guidelines) by the Global Reporting Initiative (GRI), which is a sustainability reporting framework widely used around the world.6 The GRI Guidelines document was a response to a somewhat free-form reporting in corporate social responsibility reports and established a framework of appropriate disclosures for various environment, social and governance indicators. In more recent years this has extended to industry-specific requirements. The GRI Guidelines are a voluntary standard and lack any regulatory mandate.

According to the GRI, more than 4,000 professionals around the world have been trained in the use of the GRI Guidelines, which are available in 25 languages. Yet despite this progress, out of more than the estimated 63,000 multinational corporations around the world, only a fraction produces sustainability reports.7 The Corporate Register, a UK-based organization collecting reports from all regions, sectors and companies of all sizes, states that more than 4,700 sustainability reports were issued in 2010, up from approximately 3,200 in 2007.8 At the GRI’s website, fewer than 2,000 reports explicitly stating that they were created using the GRI Guidelines were registered in 2010.

Viewed in context, this pace of adoption may not be as slow as it seems. Consider that financial reporting has struggled to adopt a global uniform framework for nearly 100 years. Despite the small overall numbers, the uptake of sustainability reporting has been exponential, with a dampened but still aggressive growth rate during the global financial crisis.

Beyond the GRI Guidelines a proliferation of competing sustainability-related frameworks, principles, codes and management systems has arisen. The list includes AccountAbility’s AA1000 principles for managing and reporting sustainability performance; the Connected Reporting Framework; Social Accountability International’s SA8000 for managing labor practices; International Standards Organization’s ISO26000 on sustainability management; the Greenhouse Gas Protocol; and many more. Add in a regulatory patchwork—the US Security and Exchange Commission’s Management Discussion and Analysis (MD&A) disclosure rules; the UK’s Enhanced Business Review requirements; the EU’s Modernization Directive 2003 (now adopted by all member states) to include nonfinancial key performance indicators in the annual report; Australia’s National Greenhouse and Energy Reporting requirements—and there’s little wonder that some organizations are unsure of where to turn.

But if integrated reporting is a framework for putting together a balanced view of the organization, integrating inputs regulated or created by other frameworks and standards, where are the gaps?
The most obvious appears to be in environmental reporting. As we have noted, the GRI Guidelines may be the premiere framework for corporate responsibility reporting, but they are completely voluntary. Standards on reporting greenhouse gas emissions are also voluntary, while standards for measuring and disclosing water use and water impacts are both voluntary and emerging. The thinking about standards and measurement techniques for areas such as ecosystem services consumed by business has only just started.

Moreover, some information about strategy and environmental and societal impacts cannot be reduced to financial metrics. Much of this will be disclosed as narrative or nonfinancial performance indicators; developing standards for measuring and reporting these impacts will be yet another challenge.

WHAT MIGHT AN INTEGRATED REPORT LOOK LIKE?

To help generate discussion to guide the development of the International Integrated Reporting Framework, the IIRC has published in its discussion paper a series of principles and content elements for preparing an integrated report.

The elements of an integrated report as suggested by the IIRC in the discussion paper are:

**Organizational overview and business model:** What does the organization do, and how does it create and sustain value in the short, medium and long term?

**Operating context, including risks and opportunities:** What are the circumstances under which the organization operates, including the key resources and relationships on which it depends and the key risks and opportunities that it faces?

**Strategic objectives and strategies to achieve those objectives:** Where does the organization want to go, and how is it going to get there?

**Governance and remuneration:** What is the organization’s governance structure, and how does governance support the strategic objectives of the organization and relate to the organization’s approach to remuneration?

**Performance:** How has the organization performed against its strategic objectives and related strategies?

**Future outlook:** What opportunities, challenges and uncertainties is the organization likely to encounter in achieving its strategic objectives, and what are the resulting implications for its strategies and future performance?
While many of these components should be familiar, the business model element deserves some discussion as it introduces the concept of how the business creates and sustains value in the short, medium and long term and the businesses’ interaction with external factors, its relationships and use of resources. In doing so this element considers six capitals that the business may use: financial, manufactured, human, intellectual, natural and social.

These are defined thus:

**Financial capital:** the pool of funds available to the organization

**Manufactured capital:** manufactured physical objects, as distinct from natural physical objects

**Human capital:** people’s skills and experience, and their motivations to innovate

**Intellectual capital:** intangibles that provide competitive advantage

**Natural capital:** includes water, land, minerals and forests; and biodiversity and ecosystem health

**Social capital:** the institutions and relationships established within and between each community, group of stakeholders and other networks to enhance individual and collective well-being; includes an organization’s social license to operate

Integrated reporting, then, will include a lot more information about how the entity fits within the environment and society and how it creates long-term value. The focus will move from being merely concerned with reporting the past in financial terms to considering the past and short-, medium- and long-term futures in a connected strategic manner. It will be tailored to the reporting entity’s specific circumstances and likely have a greater degree of transparency.

The IIRC has issued a set of guiding principles underpinning the preparation of an integrated report:

**Strategic focus:** An Integrated Report provides insight into the organization’s strategic objectives, and how those objectives relate to its ability to create and sustain value over time and the resources and relationships on which the organization depends.

**Connectivity of information:** An Integrated Report shows the connections between the different components of the organization’s business model, external factors that affect the organization, and the various resources and relationships on which the organization and its performance depend.
Future orientation: An Integrated Report includes management’s expectations about the future, as well as other information to help report users understand and assess the organization’s prospects and the uncertainties it faces.

Responsiveness and stakeholder inclusiveness: An Integrated Report provides insight into the organization’s relationships with its key stakeholders and how and to what extent the organization understands, takes into account and responds to their needs.

Conciseness, reliability and materiality: An Integrated Report provides concise, reliable information that is material to assessing the organization’s ability to create and sustain value in the short, medium and long term.11

Given the numerous elements that integrated reporting includes one can’t help thinking that conciseness may be one of the biggest challenges.

THE DEVIL WILL BE IN THE DETAIL

Many issues may arise as the integrated reporting framework is developed. The IIRC is starting a number of pilots with businesses to support them as they go about producing integrated reports. These pilots are expected to identify areas where more work is needed.

Some likely issues that we see will need to be addressed are:

Ecosystem and natural capital: As pointed out earlier there are no standards for evaluating the value of natural capital or ecosystem services consumed by a business. While valuing an ecosystem may be possible at a macro level, allocating between consuming entities is much harder. For many of these natural capital
assets and services there is no market price. The value of many is context-specific. For example, the value of water use in a water-stressed area is higher than in an area of water abundance. And that true value may not be reflected in any market price—if such a price exists.

**Future orientation:** One of the key changes that will be effected by integrated reporting is a move from merely reporting historic financial results to a focus on the longer-term viability of the entity. However any material purporting to provide information about the future prospects and profitability of the entity is normally regulated and risky for directors and others involved. No one can predict the future—forecasts are inevitably wrong at some level of detail and are dependent on assumptions about the future. Management is likely to have the best information available to make such predictions but needs to be protected from the consequences of undue reliance by investors.

Safe harbor provisions may be needed to allow future-oriented disclosures to happen.

**Materiality:** Another principle is that material information should be made available. There are frameworks for determining what materiality means for financial data—both on a quantitative and a qualitative basis. But what does it mean for nonfinancial data?

**Stakeholders:** And material for whom? For what stakeholders are the data being produced? Who has a legitimate claim for access to this information?

**Confidentiality:** The information in an integrated report is likely of far greater strategic significance than that in a set of standard historic financial statements. What is the right balance between disclosure and loss of competitive edge?

**KPIs:** Failing to focus on the material aspects of performance, or choosing the wrong key performance indicators (KPIs) and key risk indicators (KRIs), can lead to wasted efforts and loss of credibility. If an organization focuses on metrics that are immaterial to its business model, if excessive or superfluous data predominates, the report may be confusing and—if it proves irrelevant to the majority of stakeholders’ needs—ultimately useless. The threshold for reporting on a particular metric will vary for each company, including factors such as its industry, stakeholder demands, regulatory mandates, profitability, the markets it operates in and its brand and product strategy.

Fortunately, many organizations will not need to start the process from scratch. A variety of KPIs and KRIs are already available and can be drawn upon for integrated reporting. Existing functions, including risk management, internal audit, compliance and legal can be tapped for their expertise. Some combination of these groups will exist in many organizations, and they will likely have identified,
catalogued, measured, monitored and mitigated a host of relevant performance and risk indicators that can form the basis for integrated reporting.

**Audit:** Clearly auditing integrated reports is consistent with the need for greater reliability as well as encouraging consistency. However, there is less experience in the provision of external assurance for users of nonfinancial data than there is for the audit of financial data, which has decades of development behind it. The business processes producing this information are likely to be less sophisticated and robust than those producing financial data. What about forward looking or strategic data? What, if any, assurance reporting will be needed or could be provided there?

**LEADING PRACTICES**

While a growing number of companies do engage in some form of integrated reporting (as they have defined it), virtually all do so on a voluntary basis that yields variances in format and scope, thereby limiting comparability and usefulness.

Only one country has mandated comprehensive, fully integrated reporting to date: South Africa, where listed companies must abide by the King III Code on Corporate Governance by providing an annual integrated report in addition to audited financial and sustainability reports (or explain why they are not providing the report).

In line with the expectation that integrated reporting should be a journey that South African companies have been encouraged to embark on from March 2011 onwards, analysis of the South African experience to date has not revealed any comprehensive examples of an integrated report. Deloitte South Africa recently carried out a high-level analysis of listed company reporting practices and concluded that, on average, companies are less than half way along the journey toward integrated reporting. Those companies that had embraced the concept of integrated reporting are, however, well progressed and scored between 60 and 75 percent against the Deloitte South Africa criteria.¹²

**WHAT DOES THE FUTURE HOLD?**

Just as most of the world has moved steadily toward the adoption of International Financial Reporting Standards, the progression toward a single, global, common framework for integrated reporting seems all but inevitable. Less clear, however, is the timing of adoption, which may be affected by a variety of economic, political, social and other factors.

Regardless of how the timing plays out, many companies are putting integrated reporting on their agendas now, as the benefits of being ahead of the curve
may be significant. One such benefit may be marketplace advantage, where organizations that report on the full spectrum of issues may be seen as more advanced than those that restrict their reporting to traditional financial information and limited mandated disclosures. The information disclosed through integrated reporting may provide additional input to sway investors, influence customers and attract business partners. Additionally, uniform integrated reporting of an entity’s financial and nonfinancial performance would likely yield comparable information for global companies, allowing benchmarking and evaluation activities that are not currently possible.

Additional potential benefits of a strong engagement with integrated reporting include:

- Improved ability to identify and respond successfully to opportunities, risks and changes in the business environment through a focus on longer-term business impacts
- More readily apparent linkage between environmental, social and governance performance and financial performance
- Better linkage of overall performance and executive compensation
- Competitive advantage through cost savings, operational efficiencies, brand differentiation and innovation (e.g., new product development)
- Improved stakeholder relations by better addressing their needs and managing their expectations
- Improved compliance with existing and pending regulations and corporate governance requirements
- Improved credibility with key stakeholders through transparent and independently assured integrated reporting
- Alignment and simplification of internal and external reporting for consistency and efficiency

**ACT NOW ... OR NOT?**

This is an early stage in what is likely to be a far-reaching process, and becoming engaged now may pay dividends not just in preparedness but also in influencing the outcome. At a minimum, keeping up to date with developments at the IIRC could serve a company well as integrated reporting becomes more fully defined in the years to come. In addition there is an opportunity to engage in the debate and help shape how integrated reporting evolves.
Of course engagement at this level entails some costs, and companies may elect to observe from the sidelines as the standards and frameworks are developed. But there can be another reason to become engaged. Evolution of this reporting framework is responding to the changing expectations not just of disclosure but also of businesses’ wider responsibilities in society. Participating in the exercise may lead businesses to re-examine the risks and opportunities in this new environment and the metrics used to manage the business. In short, it may end up being transformational not just for reporting but for the entire business strategy.

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Endnotes
1. International Integrated Reporting Committee, <www.theiirc.org/about>
7. According to a source at Bloomberg LP (which provides news on publicly traded companies to the financial sector), there are about 63,000 publicly traded companies.
8. <http://wiki.answers.com/Q/How_many_publicly_traded_companies_are_in_the_US_and_the_world?ixzz1c1T4XnoC>
11. Ibid.
12. The analysis covered seven subjects, 58 principles and 160 questions seeking to measure actual performance against best practice. <deloitteusa.wordpress.com/tag/integrated-reporting/>
Sustainability 2.0
Using sustainability to drive business innovation and growth

BY PETER CAPOZUCCA AND WILLIAM SARNI > ILLUSTRATION BY JON KRAUSE

For a useful perspective on how many leading organizations are approaching sustainability as a core business strategy, think back to when the World Wide Web was new. Initially, organizations established a website, providing static content and little to no interaction with their customers or employees. It was a trendy thing to do. As the Web evolved, so did organizations’ view of the technology. They adopted a strategy that integrated applications and practices to foster greater collaboration and information sharing among employees and customers. Now, the Web is transforming how organizations conduct business, ranging from improving efficiency to creating new, innovative products and services—all with an eye toward improving the bottom line.

Adoption of sustainability may be following a similar path.
At first, organizations were just trying to be good corporate citizens, focusing on energy conservation and offering “green” products. It felt good to do, but it wasn’t central to the business. More recently, many business leaders have begun to view sustainability as a more integral component of their business strategy, identifying opportunities and risks as a way to enhance revenue, margins and brand value. Organizations with a broader, more strategic plan for sustainability will not only drive innovation across their enterprise—including transforming key processes—but may also influence what their customers want and how their suppliers operate.

UNDERSTANDING INNOVATION

Sustainability assumes greater relevance in the context of innovation. While it is valid to discuss sustainability as an important driver in value creation, differentiation of products and services will ultimately play a greater role in shaping a company’s prospects in the market. Increasingly, that differentiation is the product of sustainability-driven innovation.

Efforts to drive innovation can either be sustaining, providing an incremental advantage within the current competitive landscape, or they can be disruptive. (Perhaps confusingly for readers, our topic of sustainability-driven innovation is a different concept than sustaining innovation, which, along with disruptive innovation, is a category defined by Clayton Christensen.1) Both types of innovation are important because they add value to the company, but disruptive innovation opens up new roads that organizations may not have considered. Either type may be driven by sustainability concerns.

Because innovation in business is generally intended to confer an advantage of some sort, it can be useful to view innovation in terms of those advantages—foremost among which are cost leadership, quality/performance and speed to market.

Some examples:

- **Cost leadership:** Calling cards are an example of a sustaining innovation that increased the convenience associated with making long distance or international calls. However, Internet telephony is a disruptive innovation that is redefining the cost equation for the entire telecommunications industry.

- **Quality/performance:** Compact fluorescent light bulbs (CFLs) are an incremental innovation that use less energy than traditional light bulbs. But new light emitting diode (LED) bulbs are a more significant sustaining innovation. They are even more energy efficient than CFLs, deliver higher-quality illumination, last much longer, are cooler to the touch and contain no mercury.
• **Speed to market**: DVD-by-mail was disruptive, increasing competitive pressures on local video stores through the creation of a new channel (or, perhaps more accurately, repurposing a channel that dates back to the 1840s). Now on-demand streaming video is giving DVD-by-mail a taste of its own medicine, being disruptive both to DVD-by-mail and the video store models.

**SUSTAINABILITY-DRIVEN INNOVATION**

In many cases, sustainability can be a game changer. Sustainability can drive innovation by introducing *new design constraints* that shape how key resources—energy, carbon, water, materials and waste—are used in products and processes. It can also suggest areas where innovation can pay off especially well. These five resources are ubiquitous throughout an organization’s supply chain, and the potential to boost efficiency and cut costs across these resources is significant. In the past they often were not treated as primary design constraints. That’s now changing, and how a company attempts to overcome these new design constraints, delivering similar levels of performance and cost at lower levels of resource usage, may be key to its prospects. Choices made with regard to these constraints may well determine whether a company is pursuing a disruptive or sustaining (again, using Christensen’s categories) path in regard to innovation.

For instance, major beverage bottlers require about five ounces of crude oil—a significant cost component—to manufacture a single 16-ounce plastic water bottle. Of course, crude oil is a major risk factor in production cost control, subject to price volatility due to the turmoil that often surrounds oil-producing countries. Similarly, its production, transport and use entails some level of environmental risk. With this in mind, one major bottled water manufacturer was able to decrease the amount of plastic in each of its bottles by approximately 40 percent. By mitigating a key supply chain risk factor, the manufacturer realized significant cost savings and also cushioned itself from crude oil price shocks. While sustainability concerns certainly entered into the equation, the benefits accrued in more than one column of the “triple bottom line” ledger.

In another example, a company that designs and manufactures equipment to clean and maintain indoor and outdoor surfaces proactively eliminated the need for chemicals in one of its cleaning machines. These chemicals resulted in environment-related operating costs, as well as potentially negative consumer perceptions. The company’s cleaning technology electrically converts water into a cleaning solution, resulting in improved performance, reduced operating costs, improved safety and a lower environmental impact. The technology improved productivity
by eliminating the need for chemicals training, purchasing, storing, handling and mixing.

The focus on reducing waste and use of key resources—or finding substitutes—can be a powerful driver for developing innovative products and operating models if all the risks and opportunities are appropriately considered. Examples of how a sharper, broader sustainability strategy could drive innovation include:

- **Commodity and raw material availability and use**: How are environmental disturbances affecting raw goods? Are nonrenewable resources being depleted too quickly?

- **Energy consumption and cost**: Will price volatility in carbon-based fuels continue? Can we use energy more efficiently while still maintaining or increasing production?

- **Emissions and waste**: Waste equals wasted profits. How can we reduce the amount of materials we waste in our processes? How will new taxes on packaging or waste disposal affect our business?

- **Water availability and quality**: How might increasing water scarcity, particularly in emerging markets, affect our manufacturing process and revenue continuity? Will we have to rethink production as we face stricter regulations?

- **Demand for sustainable products**: Do consumers and our suppliers care about the sustainability attributes of our products? Will they pay more for “greener” offerings?

**CUTTING RESOURCE USE WITHOUT LOSING PRODUCTIVITY**

Sustainability-driven innovation goes beyond designing green products and packaging solely on their inherent virtue. It entails improving business operations and processes to become more efficient, with a goal of dramatically reducing costs and waste. It’s also about insulating a business from the risk of resource price shocks and shortages. Taken together these enhancements can deliver business benefits that go far beyond the bottom line—whether it’s improving your overall carbon footprint, enhancing your brand image or engaging your employees in a more profound way.

Developing and enacting a broad strategy to manage energy and resources and drive process innovation involves several steps. Briefly, these include:

- **Rigorously evaluate energy and resources use—look beyond current pricing and consider volatility and availability**. Collect and consolidate data from the different silos across your enterprise (direct and supply chain use, across the
business units). This helps establish an internal baseline for measuring and monitoring the impact of your energy and resource strategy, supports external benchmarking and makes it easier to define goals that support your overall business strategy. It also shifts the focus from individual sustainability projects to broader programs that treat energy and other resources such as water as strategic assets.

**Identify key areas for improvement—not all sustainability initiatives are created equal in terms of potential to create business value.** Some business operations require more resources than others. For instance, it takes more energy to melt sand into glass than to freeze ice cream. It’s not a question of which operations use the most resources, but which ones use more than they should. Track and analyze data across the facilities and processes to compare apples to apples. Then you can identify and prioritize areas with the most potential for improvement and return on investment. Not all sustainability initiatives are the right ones to invest in—some initiatives can create both top-line value and bottom-line savings while others may only reduce operating costs.

**Prioritize projects—don’t follow the leader, but instead prioritize projects based upon your individual company strategy.** With many sustainability projects competing for limited dollars, you need to prioritize and pay close attention to sequence and timing. For example, instead of assuming that the cost of a particular resource will rise uniformly across the entire enterprise, look at current and anticipated costs for individual locations. Also, consider benefits beyond the bottom line, such as increasing your brand value.

Major beverage bottlers require about five ounces of crude oil—a significant cost component—to manufacture a single 16-ounce plastic water bottle. Crude oil is a major risk factor in production cost control, subject to price volatility due to the turmoil that often surrounds oil-producing countries.
Measure key performance indicators and results against target: establish meaningful targets for improvement with verifiable data. Use baseline data and your investment plan as reference points to verify that you are getting the results you expect. Make sure employees understand how their behavior affects their use of a particular resource and what they can do to help implement and sustain improvements. Aggressively scale the most effective improvements across the enterprise in order to increase return on investment.

DRIVING INNOVATION IN THE SUPPLY CHAIN PROCESS

Many organizations focus their efforts on internal operations to cut costs, but this alone may not address one of the most significant savings opportunities: the supply chain. While many organizations recognize they could save money by asking suppliers to cut their operational costs, many leaders are going a step further to realize even more savings, closely examining their supply chain from end to end to reduce inefficiency and waste.

Suppliers that use too much energy, water or materials, or produce more waste and carbon than necessary, are spending too much and passing those costs along. Initiatives to reduce energy, carbon, water, materials and waste typically have rapid payback periods and may be among the lowest risk projects an organization can undertake.

How can a business identify the sustainability design constraints created by its supply chain partners and other external factors? For example, could business leaders have anticipated that sustainability would be thrust into the spotlight because of the action of a retailer two steps downstream? What imperative will this create for companies to develop innovative products, services or operations? Is there a reliable and useful way to proactively identify potential risks and opportunities before they put the company in a reactive position?

One approach that can provide insights is the use of what we have referred to as a “heat map.” This tool can be applied to both operations and supply chains, and includes activities such as design, source, make, deliver, use and return/end of life. To develop this matrix view, companies can layer in the financial impact and sustainability priority of each component for each sector. By combining these two elements visually (figure 1), companies can see where opportunities and risks may exist for themselves—as well as for their supply chain partners—and use that information to help drive and enhance their sustainability strategies.

Figure 1 shows how a packaging company in the food industry can use a heat map to uncover strategically important opportunities and risks, some of which may operate as design constraints within the innovation process. Looking down-
stream, the packager may see that food and beverage companies have made public statements regarding product safety and lowering energy costs for refrigeration. These should spark questions for the packager, such as: Can we design or improve tamper-evident packaging? Can we produce more cube-efficient packaging to reduce transportation requirements for frozen goods? Extending this exercise from source materials upstream to consumers downstream paints a highly detailed portrait of the sustainability opportunities and challenges that packaging companies may soon face.

These innovations can help organizations dramatically improve their business performance by rooting out energy, carbon, water, materials and waste inefficiencies that could provide significant savings for all involved.

**DEVELOPING A BROAD SUSTAINABILITY STRATEGY**

Financial and sustainability analysis can reveal surprising and often valuable insights. Some of the most important include:

**Lesson 1: Dig deeper**

The methodology described above and its output—the heat map—are designed to evaluate a company’s sustainability opportunities and risks throughout its extended supply chain. This approach can help uncover issues posed by a
company’s partners. It also drives innovation. Just as importantly, the heat map can be used to develop a holistic sustainability strategy. Additional analyses that can help a company improve its sustainability strategy include:

- Examining critical inputs (such as materials and energy) and outputs (for example, components, finished products, greenhouse gas emissions and water pollutants) across each node of the supply chain to provide a picture of the positive impact sustainability efforts could have across a company.

- Identifying the bottom-line impact that sustainability issues (such as energy price fluctuations) have on a business.

- Helping companies understand how current and future laws and regulations might affect operations.

- Uncovering the sustainability priorities of a company’s key customers and competitors.

- Measuring customer sustainability priorities against product attributes and brand positioning.

Lesson 2: Collaborate where it makes sense

When drawing a heat map for their company’s market, most leaders are especially attuned to places where there are consistently high sustainability priorities across neighboring sectors. For example, if areas of potential collaboration occur in the product design phase, a company may have opportunities to jointly focus on innovation to design products that are sustainable from end to end. This type of collaboration may result in cost savings and improved compliance with regulatory mandates.

Lesson 3: Follow the money

Investigate issues where high financial impact aligns with high sustainability priority. Companies in the consumer packaged goods industry, for example, might reap relatively larger financial benefits by improving sustainability performance across their entire value chain—think beyond the manufacturing footprint.

Lesson 4: Mind the gap(s)

Discrepancies between financial impact and sustainability priority may indicate that companies are giving too little or too much attention to one sustainability priority over another. For example, one manufacturer initially focused on the presumed large impact that proposed carbon legislation would have on its business.
Further analysis revealed that the proposed legislation posed virtually no financial risk. Instead, it suggested that the company should focus on its global sourcing approach. Although it sourced from a number of low-cost countries, the company did not have effective practices in place to monitor working conditions and product safety associated with these goods. The investigation helped align priorities with the most significant financial benefit.

Lesson 5: Look over the horizon

Sustainability strategies should address current issues but leave room for future opportunities and risks as well. Although the heat map provides a current-state snapshot of an industry and company, leaders should keep in mind that the future landscape could look quite different. For example, companies may not currently view water as a sustainability risk or even a financial risk. However, population growth and pollution could create a situation where this critical resource may become significantly limited, which in turn could affect the ability to run operations to meet your revenue plan.

THE BIGGER PICTURE OF SUSTAINABILITY

Very often, there are significant opportunities for organizations to use sustainability to drive innovation and improve how they do business. A methodical analysis can highlight areas ripe for attention. Taking it a step further, that analysis may yield even greater benefits if it is extended beyond the company’s own walls through collaboration with suppliers, customers and alliance partners. Changes to each link in the supply chain can affect everything upstream and downstream and create financial benefits for everyone involved.

To reach this new frontier, leading organizations are taking a hard look inside their operations and across their supply chains, assessing where they are, prioritizing initiatives, and then formulating a broad sustainability strategy to foster product and process innovation to achieve their goals. They are also adopting metrics that more accurately measure their progress and improve their image in the marketplace. Companies that achieve this vision have the opportunity to enhance revenue and brand value, engage effectively with key stakeholders, manage risk and reduce costs.

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William Sarni is a director with Deloitte Consulting LLP and its Enterprise Water Strategy practice leader.

Endnotes
Price Checker
DISTANCE: ~10 MILES
Crane River Syrah, '08
• Big Box Wholesale - $12
• BevLand - $14
• Jon's Grocery - $16

Crane River Syrah, '08
54 reviews
READ REVIEWS

3 of your friends like this wine

“This wine is full bodied, balanced, juicy, and initially rather expressive...”

INSTANT AISLE COUPON!!!
$4 off
Crane River 2008 Syrah
$14 $18

Shopping List
A - Z Aisle Meal
Roast Beef with stuffed peppers
Beverage: Wine

Red Wine
2 lbs. roast
4 large bell peppers
4 yellow onions
Rice

Wine Helper
FOOD: Roast Beef with stuffed peppers
PAIR WITH: Syrah
I HAVE NOT YET BEGUN TO SHOP … OR HAVE I?

Smarter phones, smarter shoppers and strategies for a new consumer perspective

BY PAT CONROY AND ANUPAM NARULA

> PHOTOGRAPHY BY MATT LENNERT > INFOGRAPHICS BY TROY BISHOP

Shoppers wander grocery store aisles, checking items off of tattered shopping lists. They fumble for clipped coupons in the checkout line and scan loyalty cards at the register only to overspend anyway and come home to discover they overlooked an ingredient, bought something they already had in quantity or forgot the milk. Depending on one’s appetite for nostalgia, this scene is either a pleasant nod to the past or a costly and frustratingly outdated experience in a world that could—and perhaps should—offer something better. Fortunately for those with the latter point of view, the consumer seems poised to take much greater (and earlier) control of the shopping experience.
Smarter phones and shoppers empowered with shopping-related mobile applications are transforming the shopping process. Early adopters of smartphones in a shopping context—ordinary consumers who have embraced mobile technology to make their lives easier, make more informed product decisions and save money—are benefiting from increasingly capable devices and a proliferation of mobile applications, and it is likely that a far larger population of smartphone users will follow in their footsteps. For these mobile consumers, the pre-store and in-store shopping process is being redefined with a wide range of players vying for a prominent role in enabling, guiding and constructing business models around that process. While smartphone-equipped consumers currently comprise only a small percentage of the general public, their attitudes and behaviors may be indicative of a much larger customer base in the future.1

STRONGER SENSES

Just as the smartphone vastly expanded the range of uses of the basic mobile phone beyond making and receiving calls, the emerging capabilities of advanced technology smartphones will continue to expand the way consumers perceive their shopping needs, learn about products and promotions, and make purchases. One way to look at the emerging capabilities of mobile devices is through the discrete electrical components that make up a phone: antennae, microphones, speakers, displays and circuitry. A different perspective on future capabilities, however, views mobile devices as an extension of the human sensory system—helping shoppers make better decisions through broadened perception. While advances in the underlying guts of a smartphone are important, the potential implications of smarter phones are more apparent in the context of seven sensory dimensions: hearing, seeing, touching, sharing, navigating, thinking and imagining (see figure 1).

Mobile devices “hear” and “see” via a combination of microphones, speakers, speech recognition software, cameras, displays and image recognition algorithms. To a shopper, phones with greater speech comprehension and improved image recognition and displays may open the door for greater verbal and visual interaction while shopping. Similarly, smartphones enable “touch” through pressure-sensitive screens, keyboards, orientation sensors for input, external sensors and vibration. Mobile devices could guide the user through a store with haptic technology and receive tactile input similar to an interactive video game controller. Furthermore, mobile devices “share” and “navigate” with antennae, ever-improving networks, GPS, compass and proximity sensors. To a shopper, this could result in personalized location-specific information routed to them based on proximity to a store, within a store aisle, or near a product or display. Finally, there is a strong
I HAVE NOT YET BEGUN TO SHOP ... OR HAVE I?

The interplay between the seven dimensions, particularly when mobile devices “think” and “imagine” with processors, memory, and cloud computing. To a shopper, this means mobile applications that augment the shopping experience with digital content, often via video.

Figure 1. A framework to understand the impact of advancements of mobile devices on consumers

These seven dimensions—via the underlying hardware and software—combine to create what seems like magic. An inanimate device seemingly always within arm’s length—next to a shopper’s ear, in a shopper’s pocket or purse on the go, or on the nightstand at bedtime—performing animated tasks like whispering suggestions in their ear or tracking their every move. For shoppers, these more acute sensory dimensions could manifest as follows:
Emma glances at the screen of her smartphone to see what remains on her shopping list. The night before, Emma read the retailer’s weekly specials and planned the meals for the week—all of which was easily accessible on her phone. In addition to reading reviews from other shoppers, she checks expert nutritionist analyses before deciding on the brand to purchase. Emma’s phone gently nudges her toward another item on her list, to help her find it on the shelf. She takes a photo of a product shelved near the brand she originally intended to purchase to learn more. A short video launches with a description of the product and a coupon offer. She decides to try the new product. Emma’s phone tells her that a few of the remaining items are less expensive at the nearby wholesale club store. She quickly preorders them for curbside pickup later in the day. Buying a week’s worth of meals for her family on a limited budget was never easy; however, with the priced shopping list on her phone the odds were much improved. At the checkout aisle, her loyalty card information and coupons are transmitted from her phone to the cashier, and her bank account is debited. Emma leaves the store within budget—and without a tattered paper shopping list or crumpled coupons.

Looking to the future of shopping for consumers like Emma, advances along each of the seven dimensions may expand the role of mobile devices and technologies in influencing the shopping experience.

The fundamentals for our gripping (to us) fictional account above are falling into place. Smartphone adoption is sizeable and on the rise in countries across Asia, Europe and North America. For example, 29 percent of respondents in a recent online survey of 2,288 U.S. consumers used a smartphone as their primary phone.² Most of the smartphone users accessed their email, searched for information online, browsed the Internet, used social networking sites, streamed video content and used online banking on at least a weekly basis.³ The use of smartphones for online purchases is also increasing: Most smartphone users purchased a product or service using their device in the past six months.⁴

PROLIFERATION OF SHOPPING-RELATED MOBILE APPLICATIONS

The term “mobile application” is used broadly to refer to not only applications, but also shopping functionality using a mobile Web browser or even text messages. Increasingly, retailers and consumer product companies are building their functionality to be more accessible on a smaller screen—whether for the most technology-savvy smartphone users or more mainstream mobile-phone-using counterparts. There is a role for both application- and browser-based functionality today, and both are offering a wider range of features for shoppers. Looking at mobile functionality, applications support shopping activities in three process
categories: pre-store planning, in-store experience and post-purchase interaction (figure 2). These categories provide a useful context for conceiving strategies particularly suited to the expectations of technology-enabled shoppers.

**Pre-store planning:** For consumers, this consists of three primary activities centered on product choice, price and evaluation. First, customers decide which product to purchase. Functionality in this category includes updating a customizable shopping list and access to related recipes or accessories. Second, customers might explore incentives or cost-cutting strategies by downloading coupons, identifying special offers and viewing circulars of weekly specials. Third, customers can

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**Figure 2. Categories of shopping-related mobile functionality**

<table>
<thead>
<tr>
<th>Pre-store planning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manage a shopping list or recipe(s)</strong></td>
</tr>
<tr>
<td>Access a shopping list, download recipes for food</td>
</tr>
<tr>
<td><strong>Manage coupons or special offers</strong></td>
</tr>
<tr>
<td>Download/redeem coupons, identify special offers, view retailer circular of weekly specials</td>
</tr>
<tr>
<td><strong>Research prices or product reviews</strong></td>
</tr>
<tr>
<td>Scan/compare product prices, search for additional product information, view videos with additional product information, read product reviews</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>In-store experience (online or physical)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Make a mobile payment, including gift cards</strong></td>
</tr>
<tr>
<td>Purchase via mobile-enabled electronic payment at checkout</td>
</tr>
<tr>
<td><strong>Make an online purchase</strong></td>
</tr>
<tr>
<td>Purchase via mobile-enabled electronic payment at a website, pre-order products for pickup at a retailer, purchase products for home delivery</td>
</tr>
<tr>
<td><strong>Participate in a loyalty program</strong></td>
</tr>
<tr>
<td>Scan retailer loyalty card, receive rewards for entering a store, enter product rewards information</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-purchase interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interact with food retailers</strong></td>
</tr>
<tr>
<td>View a retailer’s website or mobile application, view a retailer’s social networking site, play a retailer’s mobile game, scan a QR code for more information</td>
</tr>
<tr>
<td><strong>Interact with food or product manufacturers</strong></td>
</tr>
<tr>
<td>View a manufacturer’s website or mobile application, view a manufacturer’s social networking site, play a manufacturer’s mobile game, scan a product, UPC or QR code for more information</td>
</tr>
</tbody>
</table>
research products in more detail, motivated by their need for more information or lower prices. For example, consumers can compare product prices, search for additional product information, watch videos with additional product information and read product reviews on their mobile devices.

**In-store experience:** This consists of three primary activities focused on purchasing, payment and rewards. First, customers make a purchase in-store or online, for example, by pre-ordering products for pickup at a retailer or purchasing products for home delivery. Second, customers can use their smartphones to purchase a product or a gift card online using mobile-enabled electronic payments remotely or a “mobile wallet” at the checkout counter. Third, the in-store experience can be enhanced with reward-related offers—for example, by scanning retailer loyalty cards with a mobile device, receiving rewards for entering a store and accumulating information about product rewards.

**Post-purchase interaction:** After the planning and initial purchase, mobile technology still has a role in the shopping experience, frequently in the form of ongoing interaction with retailers and manufacturers. For example, a consumer can scan a product’s UPC or QR code to view retailers’ and manufacturers’ social networking sites, gather more information, or play a mobile game associated with a product. The post-purchase interaction experience can influence pre-store planning for subsequent purchases.
I HAVE NOT YET BEGUN TO SHOP ... OR HAVE I?
A PATH FORWARD FOR CONSUMER PRODUCT COMPANIES

Advanced mobile devices and technologies and a proliferation of shopping-related mobile applications could result in profound changes in the shopping process. Improved mobile devices provide an opportunity for consumer product companies to enhance the pre-store planning experience, play a prominent and helpful role in-store, and maintain a valuable, ongoing conversation with shoppers.

Pre-store planning

Become a part of the planning process. Third-party application providers, retailers and consumer product companies have developed mobile applications that simplify and enhance the pre-store planning process. This includes applications that create and manage shopping lists, maintain shopping carts and identify meal plans or recipes. Many consumers shop with a list, whether the list is physically written down or stored in their minds. In some cases, a shopping list is simply a reminder; in other cases, it is part of a deliberate plan to meet a budget. Either way, the planning process for shoppers is important because it represents a starting point where awareness and consideration become initial purchase intent.

“One group of consumers is already planning shopping with lists,” according to Andrew Miller, founder and CEO of CardStar, a loyalty card mobile application provider. “[Mobile applications] really help them. The second group of consumers does not plan today, but phones will make it easier for them.”

Consumer product companies can work with third-party applications and retailers to position their brands and products in shopping lists or recipe applications, whether through advertising or product placement. For example, the meal planning and recipe mobile application Epicurious enables searching through existing recipes, creating personal recipes and developing shopping lists based on the ingredients required for recipes. Additionally, consumer product companies should consider creating their own planning or shopping list applications to promote their own products and understand their customers’ overall shopping habits including competitor product purchases. For example, the Kraft iFood Assistant is a meal planning and recipe management application that allows consumers to search among recipes that promote Kraft brands, create and share recipes, watch video content supporting recipes and check off items on the shopping list by typing or barcode scanning. The challenges are twofold. First, simplify the process of creating and fulfilling a list, which may mean supporting fulfillment in a range of ways across channels, including in-store, online using home delivery or store pickup, and direct-to-consumer sales. Second, influence the front end of the shopping process to build awareness, consideration and intention during planning that result in product purchases.
Consumer product companies can foster customer loyalty, as measured by repeat purchases and higher product trial rates, by supporting the planning process. Additionally, personalized mobile advertising and promotions could provide a route to consumers with greater return on marketing spend based on a data-driven understanding of the products that shoppers consider and purchase on their shopping list.

**Embrace online product comparison.** Consumers can compare products and prices using myriad mobile applications. For example, shoppers can use retailer applications that increasingly include weekly sales circulars and pricing information. Many retailer sites also highlight product reviews from consumers and experts based on their usefulness as rated by other site users. For example, GoodGuide provides expert reviews of the health, environment and social responsibility aspects of products based on quantitative measures by scientists. For example, for food products, ingredients and nutritional content are assessed compared to other brands in the same product category. Furthermore, shoppers have access to many third-party applications that provide price comparison for even relatively small-ticket purchases like food, personal goods and household goods across many online and traditional retailers.

Consumer product company applications that include product information, reviews and ratings, and highlighted recommendations are one route to the consumer prior to a store visit, but equally or perhaps more important are third-party applications with expert product assessments and reviews. Alexa Andrzejewski, the founder and CEO of the mobile application company Foodspotting, which aggregates user reviews of menu items at restaurants, has been working to make reviews more relevant through the use of “more contextual information, including a reputation system” to prioritize the most applicable and relevant reviews.

Due to the increased transparency of product information via mobile devices, three possible approaches to comparison shopping emerge as particularly applicable. First, cultivate a forum that allows consumers to share opinions and reviews of your products. Consumer product companies that develop their own forum are better positioned to curate conversations, respond to accentuate positive comments and mitigate negative opinions. Second, commission independent, expert reviews that help consumers make decisions. Even if your product is what consumers intend to purchase when they enter a store, expert reviews can play a role in defending the purchase intent during the shopping process. Third, become an honest broker of reviews, including competing products. In each of these approaches, companies can begin with an honest assessment of their product’s strengths and
deficiencies compared to competitors to understand those situations where their product is especially suited and where to improve their product.

There are several potential benefits to embracing comparisons, foremost among which is that they tend to encourage a closer connection with the discerning consumers who could become brand advocates and amplify positive reviews.

“When consumers are getting enough all-around value from a brand, they like to show it off within their social circle,” according to Jamie Thompson, co-founder and CEO of Pongr, a mobile and social gaming company. “The process can start in-store, but when it happens post-purchase, you know you’ve done a good job because the consumer actually bought your product and now is marketing it for you.”

Cultivating a forum or monitoring popular third-party forums can also allow companies to respond constructively to reviews and participate in discussions as a contributor of accurate information.

Companies should also consider narrowly targeted product promotions. It is remarkably easy to distribute electronic coupons via smartphones and for consumers to subscribe to receive them. While mobile devices offer a potentially effective channel for price-based promotions, however, excessive broadly available discounts can encourage customers to delay purchases until the next promotion. Consumer product companies should consider designing promotional programs that are narrowly targeted and based on information like location, shopper demographics and purchase history.

“Merchants [and consumer product companies] have the ability to create targeted one-to-one personalized digital circulars but are not there yet,” according to CardStar’s Miller.

Similar to nonmobile promotions, consumer product companies should explore measuring a promotion’s effectiveness in terms of reaching new consumers and convincing undecided ones without distributing unnecessary discounts to price-insensitive customers. Uncertain usage rates of mobile promotions can result in significant demand forecast errors, so consumer product companies should consider experimenting with small pilots before a broader rollout.

There are several potential benefits for consumer product companies that rein in price-based promotions. First and foremost, narrowly targeted promotions can spur revenue growth while reducing reliance on promotions that often destroy margins. In addition, reduced reliance on price-based promotions can result in more accurate demand forecasts and profit projections. Furthermore, removing an abundance of price-based promotions from a marketing mix can result in a better understanding of brand loyalty and account profitability.
In-store experience

Enhance the in-store product experience and brand conversation to help consumers save time and make better decisions. The evolution of smartphone capabilities has brought unprecedented personal connectivity into the physical world of shopping. In the same way the people never leave the house without a wallet or purse, smartphones are nearly always along for the ride. They are effectively co-pilots on shopping excursions, with the smartphones and shopping-related applications representing a new route to consumers in physical stores or online. This path can be used by consumer product companies to engage consumers in a range of ways, including location-based promotions and links to video content using product barcodes.

Social networking that includes location-based customization and rich media can help consumer product companies embrace brand advocates and mitigate critical comments in a genuine, in-store conversation. Consumer product companies should try to enable in-store conversations that help consumers in the short term (e.g., product recommendations and information) and in the long term (e.g., targeted new products based on consumer feedback). Similarly, advertising and negotiating favorable merchandising on retailers’ mobile websites can bring brands into the in-store conversation. For example, the wholesale retailer Sam’s Club’s multifunction mobile application helps consumers to access promotions, read product reviews, determine product availability and navigate the store.8

There are several potential benefits of extending the in-store product experience and brand conversation. Mobile channels can increase brand awareness and

“When consumers are getting enough all-around value from a brand, they like to show it off within their social circle. The process can start in-store, but when it happens post-purchase, you know you’ve done a good job because the consumer actually bought your product and now is marketing it for you.”

— Jamie Thompson, co-founder and CEO of Pongr
consideration very near to the point of decision and point of sale. In addition, smartphones can build brand loyalty through product promotion when it is most relevant. Stronger in-store presence can also result in higher product sales whether through a retailer’s mobile channel or a manufacturer’s direct-to-consumer site for hard-to-find SKUs or mainstream products.

Pursue greater collaboration with retailers, shopping-related application providers and payment companies. Advances in shopping-related mobile functionality are coming from many sources. Many traditional and online retailers have developed multifunction mobile applications that help consumers throughout the shopping process. Similarly, third-party application providers have developed innovative shopping-related applications to help with distinct steps during the shopping process. For example, shopkick is a location-based loyalty rewards program to encourage foot traffic in physical stores. When consumers enter the promoted stores they receive rewards points and, often, targeted promotions. Brand companies can promote their products with rewards for scanning select products in-store to encourage product consideration.

Underlying these mobile applications and functionality is an emerging ecosystem that also includes mobile providers and payment companies to develop and distribute mobile content. Along with consumer product companies, all of these players are shaping the mobile-enabled shopping landscape, making collaboration an attractive possibility. For retailers, this could include joint business planning efforts to align goals and identify opportunities to work together, such as mobile merchandising and advertising. Similarly, consumer product companies can work with retailers and payment companies to make the checkout process easier for consumers by promoting electronic delivery of receipts and corresponding coupons, providing in-store shopping cart price totals while shopping, and supporting consumer product loyalty programs. In fact, smartphone-related technology is often ahead of companies’ abilities to apply it to create a competitive advantage.

“Most people would say that the technology is there, and that deployment is the problem. But, technology keeps evolving,” according to David Schafran, co-founder of EyeNetra, an innovative company that has combined a mobile diagnostic application with a low-cost, clip-on eyepiece that allows consumers typically unable to afford seeing an optometrist to measure their own eyes for glasses or other treatment. “The challenge is the development of the right product. One has to have a product aligned with a business model that brings a delightful experience to all stakeholders in the chain.”

For consumer product companies, there are potential benefits of greater
collaboration with retailers, third-party application providers and payment companies. Consumer product companies that collaborate with others may have greater visibility into innovative mobile shopping functionality that can promote their brands and products—for example, brand loyalty programs and promotions on retailer mobile applications. Additionally, consumer product companies experimenting with emerging technologies have a greater opportunity to shape the mobile shopping ecosystem.\textsuperscript{10}

**Post-purchase and ongoing interaction**

Extend the product experience. A mobile presence can serve not only to prompt or initiate purchases, but also to maintain a post-purchase conversation that helps consumers. For example, Kellogg’s Special K Challenge is a weight management program where users can select and customize meal plans and recipes based on Kellogg’s Special K products. Consumers are able to track progress towards their weight and fitness goals, access tips and receive motivational messages daily.\textsuperscript{11}

Consumer product companies should consider the full lifecycle of their products and enhance it with additional interactions that enrich the product experience and extend the conversation, particularly for brand advocates—those valuable consumers that spend an above-average amount on that brand and are actively involved with the brand through engagement and advocacy.\textsuperscript{12} For example, the Tide Stain Brain app and website provide stain removal instructions for different stains—written by experts and other users. Consumers are able to share cleaning solutions, provide feedback and ask questions with other community members.\textsuperscript{13}

Conversations with consumers can yield data for new product development, including personalized products and broader improvements. For consumer product companies, there are several benefits to extending the product experience across channels and away from home, including maintaining and growing brand awareness and consideration among existing customers and identifying unique ways to personalize products and the product experience.

“You can’t make up genuine enthusiasm, and when a brand finds it, they should promote and reward the socialization of authentic brand love,” according to Pongr’s Thompson.

Build a lifecycle view of consumers through sophisticated data analysis. Advanced mobile functionality and applications enable rich data collection and analysis across the entire shopping and consumption lifecycle, including contextual information such as physical location, demographics and buying behavior.
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The view begins with awareness and consideration and extends to trial and subsequent use. Companies can begin by aggregating and modeling data derived from shopping lists, loyalty card programs, payment transaction history, coupon use, photos and location-based analysis of shopper movement.

“When we look at consumer shopping data, very few consumers are scatterbrained—patterns are emerging,” Miller said.

For consumer product companies, there are several potential benefits of building a lifecycle view of consumers across channels and buying situations. Advanced segmentation analysis enables predictive modeling that can help project the effectiveness of consumer-specific promotions by better characterizing market preferences and consumer behaviors from large pools of data. The amount of data generated from the planning process to in-store consideration and actual purchases is unprecedented—allowing for broad ethnographic consumer analysis that previously required market researchers observing consumers in stores and at home. In addition, analytical capabilities can help detect and respond to signals more rapidly than competitors through predictive modeling. Furthermore, advanced analytics can help companies automate the way they collect information.14

FORGING AHEAD

Smarter phones that enhance pre-store planning, in-store experience and post-purchase interaction seem poised to transform shopping for consumers. The potential advantages of connecting with current and prospective customers from the early stages of decision making, to point of purchase and afterward in various user communities and forums represent new ground. Never in the history of commerce has it been possible to acquire as much data or participate so extensively in the process of connecting with consumers. Consumer product companies that systematically fine-tune these connections as well as their marketing strategies can be well positioned with regard to creating mobile-enabled paths in sync with evolving consumer needs. DR

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Endnotes

2. Ibid.
4. Ibid.
1. **ANTHONY FREDA**’s brain illustrations—his eighth appearance in *Deloitte Review*—show the combination of analytics with human decision making. He lives and works in a former convent in Mt. Sinai, New York.

2. **JON KRAUSE** contributes his fourth illustration to *DR* with his painting of a birthday boy whose gift comes with strings attached. He lives in Philadelphia.

3. **DONGYUN LEE** debuts in *DR* with his illustration for *The Mobile Elite*. He splits his time between New York City and Korea.

4. 5. Photographer **DAVID CLUGSTON** does double duty for us in this issue. For David, this makes eight appearances in our pages featuring humans; he regularly shoots phones, shoes and coffee. He lives in Seattle.

6. **JANKO WILLIAMS** is one of the world’s foremost digital retouchers and works from David Clugston’s studio in Seattle.

7. **BRIAN STAUFFER** makes his second appearance in *DR*. His illustration of the box trap won’t hold anything for long, even with cash as bait. He lives in Marin County, California.

8. **ALEX NABAUM**’s illustrations are regularly featured in *TIME, Newsweek, WIRED, New York Times, ESPN, Rolling Stone,* and *The Economist*. He lives in Salt Lake City.


10. **TROY BISHOP** is *DR*’s graphic designer. He created the infographic overlays in *I Have Not Yet Begun To Shop ... Or Have I?* He lives in Santa Monica, California.

11. **STERLING HUNDLEY** makes his fifth appearance in *DR* with his “man turning away from himself in the mirror” painting. He lives in Richmond, Virginia.
Deloitte Review is printed by a company that has been a long-term leader in environmental responsibility.

The facility uses vegetable-based inks and alcohol-free chemistry in the pressroom. Computer-to-plate technology replaces film and photographic chemicals in prepress operations, with all metal plates collected and recycled.

The company was among the first printers in Western Canada to recycle its water miscible waste solvent, resulting in a reduced environmental impact. A chemical distiller allows the facility to distill, recycle and re-use the chemicals from its presses, eliminating the need to send out hundreds of barrels of contaminated chemicals per year to be disposed of or recycled.

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