

July 2009

Making Strategy Real

by Don Tapscott and Paul Barter

Sponsored by



In today's competitive global business environment virtually all firms work diligently to analyze alternatives and to create a business strategy that enables competitive advantage. Once the strategy has been defined however,

nine out of ten organizations fail to implement it effectively.¹ Trends such as globalization, increasingly empowered customers, and rapid and accelerating change make closing the gap between strategy and execution more critical than ever. The current difficult economic environment only increases this imperative. We are no longer living in the "rising tide lifts all boats" world of recent years and effective execution is front and center in the corporation. Today, many boats are sinking.

What is the answer? How can management communicate the strategy effectively and assure that the entire organization has bought in to the strategy and is aligned behind it? Business performance optimization systems are an important tool for success. As corporations are blessed (and cursed) with ever increasing amounts of rapidly changing data, decision-making limited to the executive suite or any one silo in the firm is no longer a viable option. This can lead to strategy disconnected from operations, decisions made without context and a lack of coordination across the organization and throughout the business ecosystem. Utilizing business performance optimization systems, empowered employees can confidently make timely, strategically aligned decisions based upon facts as opposed to intuition or corporate politics. These tools also enable transparency and act as a basis for enterprise risk management.

These tools can fundamentally change our organizations. The role of management is no longer that of "ultimate decision-maker" but that of "translator" and "coach" who initiates the strategy and define the metrics which bring the efforts of each stakeholder into alignment with the strategy as a whole. Good strategy effectively implemented can provide the sustainable competitive advantage that all organizations aspire to.



TABLE OF CONTENTS

- 1** Introduction
- 2** Today's Performance Reality: Data Driven Decisions
 - 3 New concepts and tools of data driven decisions
 - 3 It all starts with the data
- 3** Managing What We Measure
- 4** Enabling Strategic Agility
 - 5 Driving process efficiency
 - 5 Improved insight
 - 6 Flexible solutions that support all users
 - 6 The changing nature and demographics of the workforce
 - 7 Benefits of decentralization
 - 7 Ideal degree of decentralization
 - 7 Reaping the benefits of decentralization: the hard data
- 8** Risk and Transparency
- 9** Conclusions
- 10** Endnotes

INTRODUCTION

In the current economic environment, it is easy for managers to be sceptical about the future. The economic landscape is grim. This year, America's GDP has shrunk 6.2 percent compared to the baseline in 2008,² and exports are down by 24 percent.³ International trading partners are faring even worse: Germany, Japan, and Mexico's GDPs regressed 14.4 percent, 15.2 percent, and 21.5 percent, respectively. It is also important to remember that from a firm's perspective, financial performance is a lag indicator and that there may be continued challenging times ahead.⁴

In China, even state run newspapers are describing "great uncertainties" on the road ahead.⁵ Throughout the world, economies are struggling, and the keystone for renewed prosperity, the banking system, lacks the basic currency of consumer confidence. In short, as many pundits regularly point out, the worldwide economic outlook has not been this grim since the Great Depression.⁶

In this environment, it is easy to forget about the exceptional economic, scientific, and social successes we have seen in recent years as individuals, firms, and nations have transformed themselves. Only ten years ago, just 20 percent of humanity had regular access to communications technology and half the people on the planet had never made a phone call. Today, over 60 percent of us can place a phone call (or send an SMS message) whenever we choose.⁷ For the first time in history, the majority of humanity is connected and can make its voice heard.⁸ From a health perspective, worldwide average life expectancy has doubled in the past 100 years, from 36.2 in 1900⁹ to 66.6 in 2009.¹⁰

These examples don't even begin to describe the breadth of economic breakthroughs we have seen in recent years. From relentless advances in microprocessor and storage technology, to the explosive growth of the Internet, innovative new alternatives to carbon based energy sources and the sequencing of the human genome, innovation is alive and well. The outcome of these trends has enabled breakthrough products such as the Apple iPhone and Nintendo Wii, the Toyota Prius and the Tata Nano, the Boeing Dreamliner and the Airbus A380. Firms in all industries are accelerating new product introduction even in this challenging economy.

Warren Buffett once famously said, "You only find out who is swimming naked when the tide goes out." In the last year, the financial tide has clearly gone out further than anyone expected.¹¹ Although cost cutting is an important tool that management can use to respond to today's business reality, determining which costs to cut is of paramount importance. Generally, faced with the mandate to cut costs quickly, organizations will revert to techniques such as cancelling projects, deferring all discretionary purchases, and reducing head count. While these may be necessary strategies, they can be overused when leaders become too focused on simply hitting cost reduction targets and fail to consider the impact these moves can have on the organization. Amputation is not a wise weight loss strategy.

Similarly, firms should not cut costs or investments in areas that will enable long-term competitive advantage. The evidence suggests that if companies do not grow and

develop new products they will fail. Of the 100 largest U.S. companies at the beginning of the 1900s, only 16 remain. During the 1980s, a total of 230 companies disappeared from the U.S. "Fortune 500." As recently as June 8, 2009, bankrupt automaker General Motors and financial giant Citigroup were booted out of the Dow Jones Industrial Average in favor of Cisco Systems and Travelers Company Inc.¹² Neither size nor good reputation guarantees success.

We do need to position our firms to take advantage of selected new opportunities by cutting unnecessary costs that should probably have been addressed anyway. On one hand, "You never want a serious crisis to go to waste"¹³ and unproductive costs need to be rooted out. On the other hand, as William Gibson has pointed out, "The future is already here... it's just not evenly distributed."¹⁴ The disruptive transformational products of tomorrow are already in our competitors' new product pipelines. If we don't continue to invest for the future, we are consigned to failure.

Chief executives of corporations worldwide agree. In a recent survey, they identified excellence in execution as their top challenge for 2009. In addition, alignment between strategy and execution, speed, flexibility, adaptability to change, and risk management were all highly rated.¹⁵

All of these top five priorities are addressed by modern business performance optimization systems consisting of business intelligence, information management, enterprise performance management, and governance, risk and compliance capabilities.

TODAY'S PERFORMANCE REALITY: DATA DRIVEN DECISIONS

The power of data driven decision-making has been increasingly well understood for many years now.

During and after WWII, William Edwards Deming wrote about the power of statistical control of quality and the potential competitive advantages that could ensue. Peter Drucker built his impressive body of work on a number of basic insights, one of which was the prescient statement, "If you can't measure it you can't manage it."¹⁶

As technology continued to advance, many firms began to deploy what we would now call business intelligence systems. Today, when we say "business intelligence," we often don't mean any specific product but a broad range of applications, technologies and methodologies that support a user's access to and analysis of information for making decisions and managing performance.

In the modern era, business intelligence tools have been enhanced by integrating financial applications into the mix and the resulting suites of applications are commonly called enterprise performance management solutions. These suites enhance traditional analytics and scorecarding applications with financial applications such as: budgeting, planning and forecasting capability; profitability modelling; financial consolidation; and financial, statutory and management reporting.

BELOW Figure 1: Top Five Concerns Among Executives Worldwide; Source: The Conference Board



Note: The global top 5 list is weighted by regional representation in global GDP as established by the International Monetary Fund.

Finally, modern strategists such as Kaplan and Norton in *The Balanced Scorecard* and other books, have written about the importance of using more than just financial measures to manage a firm. The Kaplan model begins with mobilizing change through executive leadership, translating the strategy to operational terms, aligning the organization to the strategy, motivating to make strategy everyone's job, and implementing governance that makes strategy a continual process. Strategy management applications begin with balanced scorecards and strategy maps, which are then cascaded down to the scorecards, dashboards, analytical engines and visual interactive interfaces of modern business performance optimization systems. When these tools are appropriately utilized and broadly deployed within firms and their extended business ecosystems, the hard data says that such firms outperform their peers, and that their peers are noticing. By 2013, the use of business performance optimization systems in medium and large firms will increase by 32 percent.¹⁷

New concepts and tools of data driven decisions

Most recently, Google, SAP and others have expanded the definition of data driven decision-making beyond the numeric realm to the textual world, where products are sifting through the overwhelming quantities of written words—both within the firm and outside. These tools augment traditional business performance optimization systems and their numeric decision support capabilities. They enable firms to derive insight and competitive advantage from unstructured data. Leading firms are now shipping systems that utilize text analysis to capture voice of the customer (VOC) insight. The systems address the challenge of aggregating insight from the myriad unstructured Web and enterprise applications, including online forums, RSS feeds, blogs, call center logs, CRM systems, email archives, and customer surveys. These text analysis systems normalize and incorporate text into an existing data warehouse, where it can be correlated with data from existing structured sources and making it available for existing business intelligence tools to use in analysis and display.

Dave Greiner, Data Czar at Siemens Healthcare explains that what he's really excited about is bringing this data in from other sources. Greiner explains: "I speak to individuals within the business – but outside of IT – about the new possibilities to go beyond what was traditionally possible with decision support tools. It gives them new power to put together a sales campaign or execute a cost reduction initiative in far more efficient ways. That's what gets me excited, that's what I look forward to."¹⁸

Marissa Mayer of Google has famously spoken about how decision-making in many businesses has traditionally been influenced by the "political" position of decision-makers. When two or more alternative decisions are being considered, invariably the one supported by the most senior member of the firm is chosen. Mayer explains

Google's process of posting alternative solutions online in "beta" mode in different geographies or at different times and letting consumers' real-time measurable choices drive the final decision. In this way, Mayer says that "data is apolitical."¹⁹

Peter Drucker once said that, "the aim of marketing is to know and understand the customer so well that the product or service fits him and sells itself. Ideally, marketing should result in a customer that is ready to buy. All that should be needed then is to make the product or service available."²⁰ The new generation of text analysis solutions represent some of the most powerful tools created to date for understanding the customer.

It all starts with the data

Before we can utilize business performance optimization systems to align execution with strategy we have to start with trusted, accurate data or the proverbial "single version of the truth." In one recent example, a national police force wanted a "single view of the criminal" and so created a central data warehouse from a variety of operational and legacy systems. After completing the project, the force ended up with a database of 4.5 million names. This turned out to be a problem since the population of the country is only four million. So, either *everybody* in the country (and more) is a criminal... or the police department has a data quality problem.²¹

Firms have recognized the importance of accurate data and directed significant effort to address the issue. Dave Greiner explains: "Our executives realized the importance of having quality data. It became even more apparent as we acquired more companies, and we had to integrate more different systems, databases, and data structures with our own. This enabled us to spend far less time debating which numbers were correct and spend more time developing strategies and initiatives to bring those key performance indicators in-line. As a result, it's more actionable, and in a shorter period of time."²²

MANAGING WHAT WE MEASURE

Even in the best of times, executives face myriad challenges: How can we forecast performance? How does our performance compare to that of our peers? What can we use to measure our performance? What about risk? How do we link key metrics to strategic objectives?

The senior executive's most important role is to define strategy clearly and identify the key performance indicators that will align the organization and its strategy while minimizing risk. Without doing so, it is impossible to align employees' actions with the organization's short- and long-term goals.

CASE STUDY: WHERE THE HOLES AREN'T²³

The Supermarine Spitfire was a combat plane used extensively during WWII. To improve pilot survival rates, Royal Air Force (RAF) research teams kept careful records of all damage sustained to planes returning from combat sorties. These records were combined and mapped onto a Spitfire model to determine if specific parts of the planes were being targeted.

The data showed several loci of damage; it appeared that specific locations on the planes were being targeted. Additional armor was added to these locations, resulting in an increase of Spitfire losses. The researchers were perplexed.

It was Jay Wright Forrester, the inventor of system dynamics and random access magnetic memory, who identified where the Spitfire data had led RAF researchers astray. While Forrester praised the accuracy of the data collection, he criticized the algorithm used to bring the data to life: it was not possible that specific parts of aircraft were being targeted.

Instead, the fact that so many planes were returning to base with holes in roughly the same places substantiated that the Spitfires could all sustain damage in those locations while staying in the air. It was injuries sustained in other locations that brought the planes down, and those planes never returned to base to be analyzed. It wasn't where the holes were that was important, but where the holes weren't.

The extra armor was moved to areas that were typically undamaged on returning Spitfires, resulting in a dramatic reduction in losses.

Forrester recognized that high quality data is not enough: data needs to be understood in the correct context in order to be useful.

Often, when the data driven execution is not following the strategy, it is because the systems are skewed to analyze where the business holes are, rather than to analyze where they aren't. As with the Spitfires, the data driven execution only reinforces the business problems.

As the business world grows in complexity, it becomes increasingly critical that this alignment of execution with strategy permeate the entire organization and the firm's extended ecosystem. In their study of failed strategy, Kaplan and Norton found that over two-thirds of failures were not caused by poor strategy, but poor

execution.²⁴ In fact, some studies have indicated that up to 94 percent of employees have no idea what the corporation's strategy is!²⁵ Similarly, Kaplan and Norton observed that of businesses that established strategies calling for growth in excess of nine percent, fewer than ten percent of them achieved their goal. It was only organizations that had a culture that held strategy and execution in tandem that were able to beat the odds and bring their strategies to fruition.

Bruce Rogow, principal of the IT Odyssey²⁶, tells us that in his discussion with a broad range of executives, the "How is execution aligned with strategy?" question can vary between "It's working," to "There is almost no linkage between strategy and execution."²⁷ What is the difference? There is no single right answer but Bruce reminds us that organizations are composed of many individuals, each with their own unique behavior. Cultural aptitude, a willingness to listen and a real effort to understand what the strategy means are equally important. Systems need to be used (and seen to be used by everyone-including senior executives) rolled out and supported in an active and ongoing manner, and adjusted based upon feedback from users. A good test question is, "Do individuals really understand the firm's strategy, have they internalized it and have they adjusted their personal activities, decisions and priorities?" If the answer is "No," then strategic alignment has not occurred.²⁸

ENABLING STRATEGIC AGILITY

There have been very few times in the modern age when flexibility has been as important as it is today. Firms simply do not have hard data relative to supply or demand. The global economic downturn has caused a myriad of both consumer and corporate expenditures to decline in a negative feedback loop. Cost of capital is completely unpredictable and inputs, such as natural resources, are changing in price and availability moment by moment.

In this volatile business climate, flexibility and strategic agility are key. The concept of annual or multiple year planning is not currently realistic for most firms. Businesses must be efficient, flexible, and driven by customer and economic realities. We believe that there are three basic components of strategic agility: process efficiency within and across businesses, improved insight and decision-making for better collaboration, and flexibility to respond quickly to changing inputs and create new business processes that align with operations and strategy.

Driving process efficiency

Organizations can improve efficiency by establishing end-to-end business processes with centrally managed

BELOW Figure 2: The Supermarine Spitfire has in its history an important lesson about data analysis; Source: Wikipedia



integration. These can lower total cost of ownership and act as a framework for creating and enhancing applications that meet business and user requirements faster and enable enhanced business insight. Processes based upon newer service oriented architectures are key enablers of business and IT flexibility.

Once a firm has reliable enterprise data and efficient end-to-end business processes in place, the stage is set for performance optimization systems to help decision-makers gain insight into market reality. Armed with this intelligence, the company can make rational, strategy-aligned decisions in various areas, including budgeting and resource allocation.

BELOW Table 1: Achieving Superior Performance

Technical Ability of the Firm	High	This quadrant represents companies that have invested in performance optimization systems but their usage is not ingrained in the corporate culture. These companies likely have sufficient software and data warehouses, but they are not used as assets due to the lack of a unified strategic vision. Fully 30 to 40 percent of organizations operate in this quadrant.	This quadrant represents leading companies that have performance optimization systems built into their continuous cycle of re-strategizing and executing. The superior insight and response time afforded by a robust system, as well as a culture that values and uses analytics, enables these firms to weather most any economic situation. Only ten to 20 percent of organizations operate in this quadrant.
	Low	This quadrant represents companies for whom accurate data and systems do not exist in any meaningful way. These firms have not invested in BI tools at all, be it financially or culturally. Positively, any new BI initiative will be operating on an entirely blank slate.	This quadrant represents companies that are eager to adopt a continuous strategy based on performance optimization systems, but lack the technical means to do so. Such firms are typically set back by inconsistent datasets and business processes and therefore have no single version of the truth. Approximately 20 to 30 percent of organizations are in this category. These organizations seek greater technical capabilities.
		Low	High
Cultural Aptitude			

Improved insight

Business performance optimization systems, including business intelligence, enterprise performance management and governance, risk and compliance applications, are not blanket solutions that can be applied in equal measure in all firms. Instead, approaches to adoption need to vary based on the technical and cultural disposition of the firm in question. In general terms, to successfully use decision support tools to bridge the gap between strategy and execution, there must be both adequate technical infrastructure, as well as a corporate culture operating at all levels that strives to integrate real-time analytics into decision-making

CASE STUDY: EMERGENCY MEDICAL ASSOCIATES²⁹

Emergency Medical Associates (EMA) strives to provide the best quality medical care at the lowest cost to its patients while maintaining an environment for its physicians to practice medicine and be professionally satisfied. Jonathan Rothman, EMA's director of data management, has developed and deployed a suite of analytics tools to provide EMA's health care professionals with information tailored specifically to their department and role. "You log in," Rothman explains, "and everything you need hits you over the head."³⁰

Rothman recognizes that it's not possible to satisfy everyone with a single solution. In addition to providing interactive dashboards, EMA's analytics platform generates regular reports and emails them as PDFs to users with lower levels of technical facility. Individuals of every level of technical sophistication are able to make decisions informed by accurate, up-to-date information.

After the events of September 11, 2001, there was widespread concern about bioterrorism and viral attacks. Rothman explains: "EMA responded by developing the capacity to cluster patients into 'syndromic groupings'³¹—or collections of patients who present with certain symptoms. With this capability outbreaks become much easier to track. The links between symptoms and diagnoses can then be used to flag subsequent potential cases.

When it comes to data, Rothman says that more is better: "If we were purely motivated based on financial outcomes and had purely developed a financial BI solution, then we would not be pulling the data that we're now using today to survey for swine flu."³² EMA's centralized database becomes more effective and powerful as more symptom-diagnoses links are added. Thanks to the existing infrastructure it is relatively easy to "extend capabilities, evaluate additional data, and capture new insights by applying new logic."³³

Rothman's system provides health care professionals with the information they need to make informed, critical decisions at crucial moments—all without getting bogged down by mountains of data or cumbersome interfaces. In a space where signal versus noise can make the difference between life and death, EMA's IT systems have been designed from the ground up to deliver timely and accurate information. "There's nothing better," Rothman beams, "than a smart, astute, connected physician."³⁴

processes. Contrasting low and high corporate technical abilities with low and high cultural aptitudes for the use of BI tools yields the 2x2 in Table 1 (previous). While there is no "one true way" for the perfect use of tools for gaining insight, the best companies can strive to marry high technical abilities with a corporate culture that aggressively seeks out and uses analytic data. Against this standard, there are several ways that a company can fail to realize its potential when it comes to BI systems usage.³⁵

Flexible solutions that support all users

In the early days of corporate decision support tools, solutions were called "Executive Information Systems" and targeted specifically to the needs of senior executives. Although such systems were a best practice at the time, they were very complex and utilized teams of technically savvy support workers who were there to deliver reports in whatever format senior executives required. Senior leaders continue to be important users of tools that drive business performance optimization, but they are no longer the only users or even necessarily the most important ones.

Most of us have understood for some time that the types of skills required of today's workers differ greatly from those required in past generations. We tell our children to stay in school and work to increase our personal skills through ongoing education and training. Indeed, job requirements have changed over the last forty years with the rise of automation and information technology and there's little demand for routine and manual tasks. Access to information is fundamentally changing the nature of our work.

The changing nature and demographics of the workforce

In their 2003 academic study, Autor et al. examined how job skill demand has been altered by computer technology over the years.³⁶ They concluded that IT capital was substituting for activities involving repetitive tasks and complementing activities involving non-routine problem solving and personal interaction. The implications for business performance optimization are significant: these tools need to address non-routine tasks and allow for new, creative insights and competitive advantage.

Yet, such tools must also meet the end user's terms, as Dave Greiner points out: "A lot of people that use our tools may not be frequent users. They're not going to want to use a tool where they have to massage data to uncover a buried message."³⁷ This is especially true of employees of the Net Generation. Net Generation employees—those born between 1977 and 1997—have grown up with immediate access to rich data; they will expect the same at work. As employees of all ages grow accustomed to the near instant results provided by Google and others, the prospect of a six month reporting cycle quickly becomes archaic. Modern

BELOW Figure 3: EMA's performance optimization systems empower health care professionals to make data-informed decisions; Source: Emergency Medical Associates



tools will need to provide all employees with visual, customizable, and immediate access to useful information.

Benefits of decentralization

When decision-making is decentralized, responsibility moves to a large number of individuals in the organization, but all decisions need to be coherent and aligned with the overarching strategy. Thomas Malone, MIT Sloan faculty and author of *The Future of Work: How the New Order of Business Will Shape Your Organization, Your Management Style and Your Life*, opines: "We can afford to have vastly greater numbers of people well enough informed that they can make a lot more decisions for themselves, decisions that, in the past, were only possible in central offices."³⁸ He argues that decentralization has three main benefits:³⁹

1. It encourages motivation and creativity
2. It allows many minds to work simultaneously on the same problem
3. It accommodates flexibility and individualization

But perhaps most importantly, decentralizing is about aligning decisions with individuals with the skill and knowledge to make this decision. To make an informed decision, a decision-maker needs knowledge. But not all knowledge is created equal: some knowledge is general, or inexpensive to transmit. For example, general knowledge can be a news story, an industry statistic, or financial results for a particular business unit. In contrast, specific knowledge is costly to transmit.⁴⁰ Think of the operational knowledge that comes from twenty years of experience in a manufacturing environment, the knowledge to trade energy futures on an exchange, or the ability to run an IT department for a large multinational.

Based on these definitions, the best person to make a particular decision is the individual with the best specific knowledge of the question at hand. Consequently, firms are left with two options: move specialized knowledge

to existing decision-makers (which by definition is costly) or move decision rights to people with specialized knowledge.

Ideal degree of decentralization

While decentralization avoids the challenges of transferring specific knowledge, it does introduce a new complication: the potential for newly empowered decision-makers to make self-interested decisions—a risk that can only be reduced to a point with incentives and controls. Organizations must balance the benefits and costs of decentralized decision-making with those of a central strategy and a common customer focus.⁴¹

To achieve this balance, firms need to aggressively communicate the overall strategy, align incentives with the plan, and let the employees do the rest. Eric Schmidt, CEO of Google, said of his approach:

"Most companies use employee portals as an HR mechanism. Here are your benefits, here are your vacations days, and so forth. That is the classic view and that is the wrong view. The right view is to ask 'How can you spread information within the company that causes employees to solve problems without any executives needing to deal with them,' sort of a work minimization strategy for executives. Get the employees to do the work. It is much more efficient. They're happier and I'm happier."⁴²

In order to determine the ideal degree of decentralization, organizations need to lower the costs of making decisions; this is achieved by improving information and control. In fact, it turns out that aligning execution with strategy is often most difficult for middle managers. It is relatively simple to identify scorecard metrics for CEOs and individual contributors. It is often much more difficult to identify metrics for middle managers. Therefore, success in aligning a firm's execution with its strategy is often achieved here.

Reaping the benefits of decentralization: the hard data

Decentralizing decision-making has a number of positive organizational repercussions, as previously identified. But the right information technology investments can help make the most of those decentralized structures.

Table 2 (over) illustrates the result of a productivity study of 232 firms in relation to both decentralization level and IT investment. First, the table illustrates that on its own, decentralization of decision-making can result in a moderate productivity improvement of 1.6 percent. Second, it shows that IT investment on its own actually results in a productivity decrease. That is, firms that invest heavily in IT without a proper organizational structure to leverage these new capabilities, will see returns on their investments that are 3.7

CASE STUDY: DERIVING INSIGHT FROM THE PHYSICAL WORLD WITH REALITY MINING⁴³

Sense Networks, a company that specializes in reality mining (the process of gleaning analytic data from the real world) performed an experiment with geo-data. The firm bought access to GPS location data from several taxicab dispatch companies. Greg Skibiski, chairman and CEO of Sense Networks, explains: "It was real-time data of all the taxis moving around: where someone got in, where they got out; anonymous trip data."⁴⁴

Analysts at Sense Networks started to construct a story from the data. They were able to infer the income levels of cab customers by cross-referencing census information with cab-trip origins. The analysts then looked at the destinations of these trips, correlating GPS coordinates to known business locations. Using this data, combined with the financial records of publicly traded companies, the analysts looked for a relationship between the frequency that cabs visited retail locations and the financial performance of those businesses. There was no such correlation. There was however another.

"It turned out," Skibiski recalls, "that one of the most valuable predictors was how far people are willing to travel to get to the stores."⁴⁵ Not only were analysts able to see a correlation between distance traveled and sales reported, but for the chains of retailers that performed well, there was a corresponding drop-off in sales from competing companies.

Skibiski then started investing in accordance with the predictions they obtained from their taxi based model: "We did eleven stock trades based on this a couple of years ago. We nailed ten of them. That was a really great proof-point for any financial services business."⁴⁶

While correlating GPS data to stock prices may be outside the scope of what many firms are willing to do with their analytics dashboards, Sense Networks demonstrates the possible uses for the rich amounts of real-world data that will be available to the firms of the future.

These firms will require creative insights to spot and capitalize on the trends in data that will determine their competitive advantage.

percent lower than average. Finally, when both decentralization and IT investment are high, companies can expect productivity benefits of 4.6 percent, the most significant gains of all.

BELOW Table 2: Productivity Benefits of IT Investment and Decentralization⁴⁷

Decentralization	High	+ 1.6%	+ 4.6%
	Low	0	-3.7%
		Low	High
IT Investment			

Finally, in these highly decentralized decision-making models, firms must ensure the large number of decision-makers is properly supported by the IT tools to make better decisions. Simply put, the IT investment has a direct bearing on the firm's ability to deliver appropriate business intelligence.

RISK AND TRANSPARENCY

Information is power, and if you have an informational advantage, you can derive market advantage. This is especially true when it comes to identifying new and different market opportunities and responding to them. It is also true for identifying risk (in all of its various flavors) and avoiding it. The goal isn't to predict the future; rather it's to be able to enumerate the consequences of what the future may hold in order to aid decisions.

The Lehman Brothers story and others like it are now the stuff of legend. These tales highlight the importance of risk management for any layman to understand. As Robert Kaplan has summarized, "Now we're seeing the consequences of not making risk management a strategic part of strategy."⁴⁸

Less well known are numerous firms, such as Pimco, that make decisions based on different types of risk analysis. Pacific Investment Management Co. LLC, (Pimco) is one of the largest fixed income managers in the U.S. In 2005 and 2006, many in the organization advocated entry into the mortgage backed securities business but Bill Gross, the CEO, was sceptical. He thought that if the real estate market could appreciate by ten percent in a year, it could also depreciate by the same amount—even though this had never happened before and his staff reassured him that such a thing was impossible. (Mark Twain once said, "It ain't what you don't know that gets you in trouble; it's what you know for sure that just ain't so.")⁴⁹ Nevertheless, Gross asked his staff to run the numbers and identify what would be the effect on Pimco if housing prices were to decline by that much. The answer: financial catastrophe. He passed on the opportunity and now looks like a hero.⁵⁰

Andrew W. Lo, a professor at MIT's Sloan School Laboratory of Financial Engineering, says, "If corporate leaders, portfolio managers and regulators want to make good risk based decisions, they need to have the right framework to analyze the data."⁵¹ Business performance optimization systems, with their vast repositories of data about customers, suppliers, products, finances and more, are at the heart of the risk and transparency debate. A solid technology platform is a pre-condition to transparency. To share information with their stakeholders, companies first need to capture, organize and store all of the relevant data—you can't share and explain what you don't have and don't understand. As David Ticoll and I noted in our 2003 book, *The Naked Corporation*: "If you're going to be naked, you'd better be buff."⁵²

The consequences of not having a single version of the truth (or of sharing the wrong one) can be dramatic. On January 9, 2004, the Royal Dutch/Shell Group of Companies (Shell) announced it would need to re-categorize hydro-carbon reserves that had previously been disclosed. The announcement triggered a series of negative events for the company. First, Shell was placed on Standard & Poor's CreditWatch, and its credit was downgraded on April 19, 2004.⁵³ Second, a number of senior executives resigned, including the group's chief financial officer, the chairman of the Committee of Managing Directors, and the upstream division's chief executive officer.

In 2007, at Société Générale, trading irregularities were not reported to bank management by staffers who noticed them because, as a report by the Bank's own investigators noted, "This was not specifically a part of their job description."⁵⁴ The Bank later reported a \$7.3 billion loss, which was allegedly due to unauthorized trades by one employee, Jérôme Kerviel.⁵⁵

The fact that enterprise risk management (ERM) capability is no longer a "nice to have" but now a "must have" capability is highlighted by the fact that last May, Standard & Poor's announced that it would start incorporating ERM into discussions with companies that it rates and might soon begin to score companies based upon ERM. The move sent a strong message to enterprise business and technology leaders: Stop procrastinating and get your ERM act together ASAP.

How do you anticipate events that by definition are hard to predict? Firms must start by creating an organizational culture that encourages employees to take ownership of risks and weigh them against potential rewards. This means providing the appropriate tools to enable modeling risks and analyzing their business impact. While individual events may be difficult to anticipate, it's nevertheless helpful to have an understanding of their consequences. More importantly, this means making the process integral both to enterprise risk management systems and every component of the business intelligence system deployment.

The organizational culture must encourage employees to bring concerns about risk forward early; particularly when models are being applied in new ways or in new service offerings. It is important to model extreme events as part of the technology development process. We have learned from the Lehman Brothers example and others that extreme events do happen. The appropriate culture can transform battles about risk between optimists and naysayers into a focused dialogue about the nature of risk and how to manage it. There are many ways to reduce and hedge risks. It is important to consider the alternatives at the outset, as opposed to when an unacceptable outcome becomes reality.

CONCLUSIONS

Making strategy real, through the effective deployment of business performance optimization systems, is no longer a "nice to have" capability. At a basic level, these systems are now a survival requirement. When executed exceptionally, they are also an enabler of innovation and long-term competitive advantage—supporting the process efficiency, improved insight, and flexibility, that are the backbones of strategic agility. Such capabilities also enable transparency and the identification (and avoidance) of risks that are an increasingly important component of successful business in the modern era. Smart firms are embracing business performance optimization systems and are already beginning to enjoy the competitive inside track.

ENDNOTES

- 1 Robert S. Kaplan and David P. Norton, *The Strategy-Focused Organization*, Harvard Business School Press, 2000.
- 2 "Economy in Worst Fall Since '82," *Wall Street Journal*, February 28, 2009, www.online.wsj.com.
- 3 Ibid.
- 4 Christina Torode, "Balanced Scorecard founder: In recession, think risk management," *Search CIO*, March 17, 2009, www.searchcio.com.
- 5 Catherine Clifford, "Jobless claims: It's still tough out there," *CNN Money*, May 21, 2009, cnnmoney.com.
- 6 Alkman Granitsas, "ECB Provopoulos: Financial Crisis Is Still 'Unfolding,'" *Dow Jones Newswires*, May 27, 2009, www.nasdaq.com.
- 7 "Worldwide mobile cellular subscribers to reach 4 billion mark late 2008," *International Telecommunication Union*, September 25, 2008.
- 8 Alex Pentland, "The Nervous System of the Human Race has Come Alive," *What Are You Optimistic About*, Harper Collins, 2007.
- 9 Matt Rosenberg, "Life Expectancy," *About.com Geography*, August 17, 2007, www.geography.about.com.
- 10 U.S. Census Bureau, International Database, 2009 via www.infoplease.com.
- 11 "The Swimming Naked Awards," *The Economist*, December 16, 2008, www.economist.com.
- 12 Daniel Carty, "Dow Jones Boots GM, Citibank," *CBS News Blogs*, June 1, 2009, www.cbsnews.com/blogs.
- 13 Rahm Emanuel, "Rahm Emanuel on the opportunities of crisis," *The Wall Street Journal Digital Network*, November 19, 2008, www.WSJ.com/video.
- 14 "The Science in Science Fiction," *National Public Radio*, November 30, 1999, www.npr.org.
- 15 Frank Tortorici and Linda Barrington, "Weakening Global Economy and Growing Financial Pressures are Increasing CEO Concerns," *The Conference Board*, December 2, 2008, www.conference-board.org.
- 16 Thomas H. Davenport and John C. Beck, *The Attention Economy*, Harvard Business School Press, June 2001.
- 17 "Worldwide Economic Crunch Forces Enterprise Infrastructure Software Growth to Slow, 2008-2013," *Gartner Dataquest*, April 9, 2009.
- 18 Interview with, Dave Greiner, Data Czar for Siemens Healthcare in the US conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, June, 2009.
- 19 Marissa Mayer, "Data is Apolitical," *Stanford University's Entrepreneurship Corner*, May 17, 2006, ecorner.stanford.edu.
- 20 Peter F. Drucker, *Management: Tasks, Responsibilities, Practices*, Harper & Row, 1974.
- 21 Timo Elliott, "Data Quality and Bandit Sheep?" *BI Questions Blog*, February 29, 2009, www.timoelliott.com.
- 22 Interview with Dave Greiner, data czar for Siemens Healthcare in the U.S. conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, June 2009.
- 23 Ibid. Interview with Bruce Rogow, principal of IT Odyssey, conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, April 24, 2009. Bruce heard this anecdote in 1969.
- 24 Robert S. Kaplan and David P. Norton, *Strategy Maps*. Harvard Business School Press, 2004.
- 25 Ibid.
- 26 Each year, Bruce J. Rogow visits 120 IT executives under his IT Odyssey to develop a real time and broad perspective on how organizations are getting the most from their IT investments.
- 27 Interview with Bruce Rogow, principal of IT Odyssey, conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, April 24, 2009.
- 28 Ibid.
- 29 Interview with Jonathan Rothman, director of data management, Emergency Medical Associates, conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, April 29, 2009.
- 30 Ibid.
- 31 Ibid.
- 32 Ibid.
- 33 Ibid.
- 34 Ibid.

- 35 Don Tapscott and Steve Elmore, "Managing Enterprise Information: Architecting for Survival and Positioning for Success in Tough Times," nGenera Insight, March 2009.
- 36 David H. Autor, Frank Levy and Richard J. Murnane, "The Skill Content of Recent Technological Change: An Empirical Foundation," *The Quarterly Journal of Economics*, November 2003.
- 37 Interview with Dave Greiner, Data Czar, Siemens Healthcare, conducted by Paul Barter and Jeff DeChambeau, nGenera Insight, May 29, 2009.
- 38 Thomas W. Malone, "Ten questions: Faculty report from the frontier of management," MIT Sloan, March 2005.
- 39 Ibid.
- 40 Michael Jensen, *Fundamentals of Organizational Strategy*, Harvard University Press, 1998.
- 41 Louis V. Gerstner Jr., *Who Says Elephants Can't Dance? Inside IBM's Historic Turnaround*, HarperBusiness, 2002.
- 42 Don Tapscott and David Ticoll, *The Naked Corporation: How the Age of Transparency Will Revolutionize Business*, Free Press, 2003.
- 43 Interview with Greg Skibiski, Sense Networks, conducted by Alan Majer, nGenera insight, April 14, 2009.
- 44 Ibid.
- 45 Ibid.
- 46 Ibid.
- 47 Christina Torode, "Firms urged to keep an eye on risk management in times of crisis," *Enterprise Innovation*, March 27 2009, www.EnterpriseInnovation.net.
- 48 Erik Brynjolfsson and Lorin M Hitt, "Beyond the Productivity Paradox," *Communications of the ACM*, Vol. 41 No. 8, August 1998.
- 49 "Mark Twain" *WikiQuote*, retrieved May 28, 2009, www.en.wikiquote.org.
- 50 "The Opportunities Brought to you by Distress," *MIT Sloan Management Review*, Spring 2009.
- 51 Ibid.
- 52 Don Tapscott and David Ticoll, *The Naked Corporation: How the Age of Transparency Will Revolutionize Business*, Free Press, 2003.
- 53 Standard & Poor's Credit Rating," *Shell Press Release*, April 19, 2004.
- 54 Jonathan Rosenoer and William Scherlis, "Risk Gone Wild," *Harvard Business Review*, May 2009.
- 55 Ibid.

ABOUT THE AUTHORS



Don Tapscott is one of the world's leading authorities on business strategy, with emphasis on how information technology changes business, government, and society. He is the author or co-author of 13 widely read books, including *Wikinomics*, which was the best selling management book in the United States in 2007 and is now translated into 22 languages. He is Chairman of nGenera Insight, a global business innovation company, headquartered in Austin, Texas with offices in the U.S., Canada, and the U.K. Don directs several of nGenera Insight's research and education programs, which serve a marquee list of Global 2000 customers. Tapscott is also an adjunct Professor at the Joseph L. Rotman School of Management at the University of Toronto.



Paul Barter has been an executive analyst with nGenera since 2005. Paul has authored and co-authored several nGenera papers including "Rethinking Business Intelligence," "Platforms for Innovation" and "Marketing 2.0: Beyond Pops and Clicks." Paul has over 25 years of experience in the IT product and services sector with firms such as Compaq, General Electric and T4G Limited. In addition to industry experience in sales, marketing and strategy development, Paul also teaches E-Commerce Marketing and Technology Strategy in the MBA program at the York University Schulich School of Business. Paul studied Engineering and Economics at the undergraduate level and holds an MBA from the Northwestern University Kellogg International Executive MBA program.

I am grateful to Paul Barter, Alan Majer, Bob Morison, Naumi Haque, Ian Da Silva and Jeff DeChambeau of the nGenera Insight Team for help in researching, reviewing, and editing this paper and I also thank SAP for their financial support of this project. However, the views expressed are my own, and I and nGenera take responsibility for the opinions expressed herein.

Don Tapscott, Chairman, nGenera Insight

