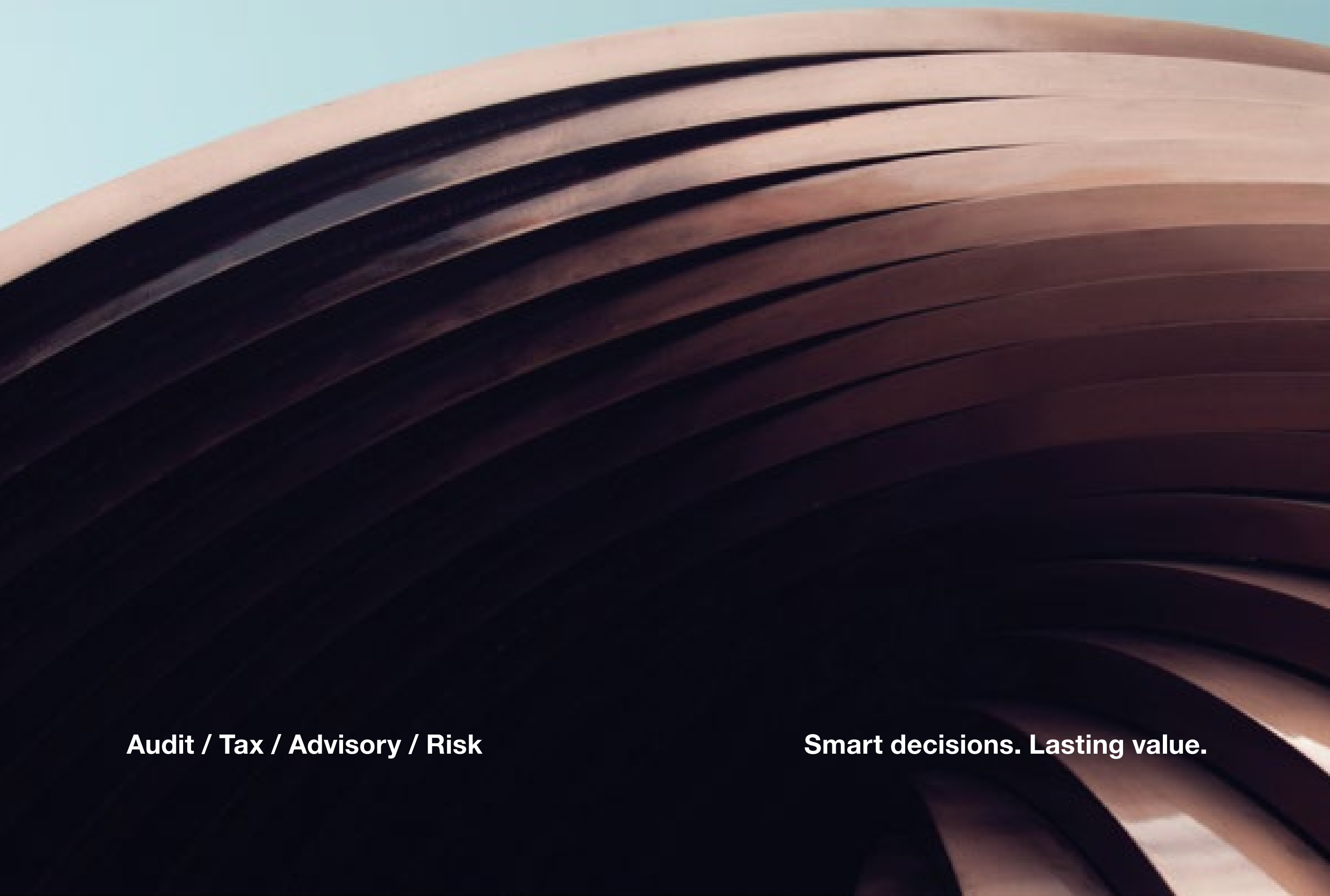
The Art of Smart

Crowe 100 Decision-Making Index and Report 2018



Audit / Tax / Advisory / Risk

Smart decisions. Lasting value.

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Welcome to the Crowe 100 Decision-Making Index and Report 2018

Helping clients make smart decisions that create lasting value is at the heart of the Crowe value proposition. If you look at any of the services that our member firms provide — audit, tax, risk consulting or advisory — you will find our people striving to do this in their work every day. We believe that this is part of what makes us different, together with our core values of caring, sharing, investing and growing.

We wanted to apply those core values to the concept of smart decisions, so we decided to invest some time considering what elements lead to smart decision-making. As we shared that question we found a rich and dynamic area of study and thought. We found that many of the world's brightest minds continue to explore the many facets of decision-making.

In making any significant decision, we all face a range of variables and also carry a host of unseen biases that influence us. At Crowe, we care about understanding this process better, and also asking the question: if we can learn more about the art of decision-making, can we improve the quality of our own decisions?

As part of our exploration of this topic, we made an early decision to share our findings. As well as seeking the insights of experts around the world, including some of Crowe's thought leaders, we decided to try and quantify the traits of quality decision-making in the context of corporate success.

Using data from the 2017 Forbes Global 2000 report, public filings and a news audit, we researched the 100 most profitable companies in industries we frequently serve, weighing the effects of growth, diversity, boldness and innovation over a five-year period. (A full methodology statement can be found at www.crowe.com/methodology.) Our findings reflect the significance of these themes while also illustrating when outside factors affect the outcome of a decision, possibly creating a false sense of success or failure.

We hope that both the report and index contribute to a deeper understanding of what goes into smart decision-making and create further interest in an ongoing dialogue on a subject that we are committed to in the service of our people, our clients and our communities.

David Mellor
CEO, Crowe Global
June 4, 2018

Hard Decisions Are Getting Harder

They've never been easy for anybody in a leadership position, of course. Many of the hundreds of CEOs I interviewed for the "Corner Office" series in *The New York Times* told me that this aspect of the job represented one of their steepest learning curves.

"You're not going to be able to run the numbers and come up with the perfect answers," Debra Lee, the veteran CEO of BET Networks, told me. "I had to learn to make decisions quicker on the spot and follow my gut."

With every industry in a constant state of disruption, the stakes are higher, too. There is more pressure to get the answer right every time, and there are new challenges around every corner. What is our AI strategy? How do we disrupt our own legacy business? Which unforeseen competitor might blindside us?

The burden of decision-making can be paralyzing to many executives, creating a further bind. Indecision can be demoralizing to teams, and defaulting to the status quo is a risky decision in itself, given how quickly the marketplace can punish companies that stand still. If you look under the hood of organizations that perform well and have high employee engagement and retention, you likely will find a strong culture of decision-making.

Studying the patterns across more than 2,500 senior leaders since the financial crisis, my colleagues at Merryck & Co. and I have seen three guiding principles for effective decision-making and one recurring blind spot.

Adam Bryant is managing director of Merryck & Co., a global senior leadership development and executive mentoring firm. Before joining the firm he worked as a journalist for 30 years. He interviewed more than 500 CEOs for the "Corner Office" series he created for *The New York Times*, work that also resulted in two highly regarded books on leadership.

First, be clear about the foundational thinking for your business. What is the problem the organization exists to solve, and what is your simple plan for winning against that problem? That plan is not an essay or a strategy deck. It is in one sentence that tells a clear story to employees — to be able to say, in effect, "Always remember where we're going, how we're going to get there, and how we're going to measure progress." That clarifying idea then becomes a compass for navigating decisions at all levels of your company: does this issue align with our simple plan, and how will it move us further, faster?

"A leader's job is to simplify complexity, and be right," said Kevin Sharer, who ran Amgen for a dozen years. "You've got to have the context for answering the questions. When people struggle with decisions, it's often because they take refuge in complexity."

Simplifying complexity also means focusing on a few priorities at a time, which is the only way to build to momentum to create real change.

"Time is the only one clear constraint in life, and if you focus on a few things, you have a great chance of achieving something interesting," said Rakesh Kapoor, the CEO of London-based Reckitt Benckiser.

Second, be clear about which decisions can be made quickly, and which ones deserve more time. Bruce Gordon, the former CFO of Disney Interactive, who has been a Merryck mentor to senior executives for several years, often reminds them that about 90% of the decisions they face can be answered in a minute or two. The stakes for those decisions are low, and people usually know enough at a gut level to make the call and move on.

"The other 10 percent, though, are going to have existential implications for your business," Gordon said. "These are the decisions that will determine whether you succeed or fail in the long run." Knowing the difference between the 90% and the 10% is a key aspect of leadership.

Third, develop a consistent framework for making decisions. That creates a forcing mechanism to clarify thinking before people meet for discussion and debate. Jeff Bezos, the CEO of Amazon, recently shared in a letter to investors that he has a "No PowerPoint" rule, and requires people to write a narrative six-page memo to pitch a big idea.

"The great memos are written and rewritten, shared with colleagues who are asked to improve the work, set aside for a couple of days, and then edited again with a fresh mind," Bezos wrote.

Lastly, guard against blind spots. That means enlisting a diverse group of colleagues to study a problem, rather than just those within a single business unit. Different backgrounds lead to different perspectives, which help everyone see around more corners and inspire questions and insights that illuminate an issue in an entirely new light.

Making effective decisions is not going to get easier, and the best organizations develop it as a discipline that everybody can practice, rather than a black-box mystery. Decisions are the oxygen of organizations — they need them to survive and thrive.

"People need to know whether we're going left or right," said Carter Murray, the CEO of FCB, the global advertising agency. "Making a decision is half the battle."

The Crowe 100

Surely decision-making is an art, but how close to a science can we make it?

As noted in our special report, the study of decisions is a vibrant and growing field of research. We wanted to know if there was any measurable correlation between the themes we see in research and thought leadership and the performance of public companies.

Using the 2017 Forbes Global 2000 list, we focused on three international sectors where Crowe has deep experience: manufacturing, healthcare and real estate (omitting any companies that had recently faced major scandals). We selected the top 100 companies across these three sectors based on 2017 profits. This provided an even geographic and industrial balance.

Our research revealed some interesting findings and case studies. We hope it provides food for thought as we all endeavor to improve the process of making smart decisions.

Methodology

One of the top challenges of corporate leadership is strong and effective decision-making. More than any other factor, decision-making remains the key component to determining successful companies from the flock and predicting future success.

Through our history of working with top business leaders and corporate boards, we've come to better understand the importance of decision-making and of studying its impact and results. As part of this process, we set out to create an index of the top decision-making companies by using objective indicators and subjective analysis of the products and process of good decision-making.

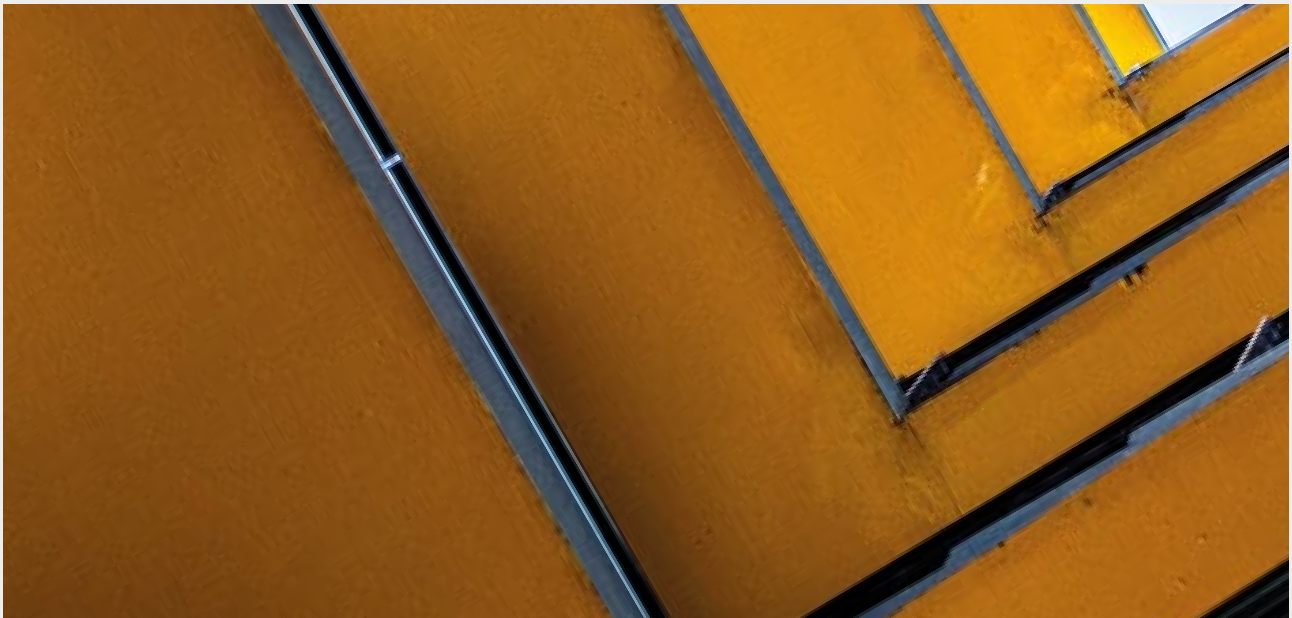
We recognize that while a good decision may be difficult to grasp at any one point, the effects of a good decision can be thoroughly examined.

GROWTH

An analysis of companies using financial performance measurements, since companies that make better decisions are apt to perform above their peers in the long term. Recognizing that investment markets provide a gauge of relative performance, we scored companies' market capitalization growth over the period.

DIVERSITY

An analysis of governing boards and C-suite executives that recognizes the powerful advantages of a diverse corporate team. We scrutinized annual reports to measure gender and nationality diversity over the five-year period and the growth of diversity over time.



For the Crowe 100 Decision-Making Index 2018, our methodology endeavors to unravel the minds of top companies using the objective results of good decisions and with analysis of a company's actions, keeping in mind the characteristics of a strong decision-making process.

Using the Forbes Global 2000 report as our base data set, we created our index by breaking decision-making into four components, which we analyzed and weighted equally, using data from the five-year period from 2013 to 2017.

BOLDNESS

An analysis of the critical yet eventful steps that set companies apart. We conducted a media audit of major business news during the period, collecting and scoring relevant news on industry-relevant parameters of bold action.

INNOVATION

A study of the companies' unique advances in management and technology. As with Boldness, our researchers audited major business news for the period to collect and score relevant stories, in this case using industry-relevant parameters of innovative action.

By combining scores across the four components, we arrived at our ranking of top decision-making companies.. While inevitably imperfect, the Crowe 100 Decision-Making Index 2018 explores the quantifiable aspects of decision-making using a combination of related objective data and subjective analysis. Our goal is to better understand the measurable aspects of decision-making to better inform conversations on this crucial art. A full methodology description can be found at www.crowe.com/methodology.

CROWE 100

DECISION-MAKING INDEX AND REPORT 2018

Crowe

Growth | Boldness | Diversity | Innovation

Overall Rank	Company	Headquartered	Sector	Growth	Diversity	Boldness	Innovation	Overall Score
1	Atlas Copco	Sweden	Manufacturing (Industrial Equipment)	7	6	8.5	7.5	29
1	Volvo Group [1]	Sweden	Manufacturing (Auto & Truck Manufacturers)	7	7	7	8	29
3	Apple	United States	Manufacturing (Computer Hardware)	6	5.5	9	8	28.5
3	Medtronic	Ireland	Healthcare (Medical Equipment & Supplies)	7	5	8	8.5	28.5
5	Cisco Systems	United States	Manufacturing (Communications Equipment)	6	6	7.5	8.5	28
6	Becton Dickinson	United States	Healthcare (Medical Equipment & Supplies)	8	5	7.5	7	27.5
6	Gree Electric Appliances	China	Manufacturing (Household Appliances & Electronics)	10	5	6.5	6	27.5
8	China Vanke	China	Real Estate	10	2	7	8	27
8	Country Garden Holdings	Hong Kong	Real Estate	10	4	8	5	27
8	Greenland Holdings Group	China	Real Estate	10	4.5	6.5	6	27
8	Klepierre	France	Real Estate	7	9	6	5	27
8	Northrop Grumman	United States	Manufacturing (Aerospace & Defense)	8	5.5	7.5	6	27
13	Great Wall Motor	China	Manufacturing (Auto & Truck Manufacturers)	9	5	6	6.5	26.5
13	Midea Group	China	Manufacturing (Household Appliances & Electronics)	10	3.5	7.5	5.5	26.5
15	CRRC	China	Manufacturing (Heavy Equipment)	10	2	7	7	26
15	Lockheed Martin	United States	Manufacturing (Aerospace & Defense)	7	5	8	6	26
15	Peugeot	France	Manufacturing (Auto & Truck Manufacturers)	10	8.5	3.5	4	26
15	Thermo Fisher Scientific	United States	Healthcare (Healthcare Equipment)	6	3.5	8.5	8	26
19	Fresenius	Germany	Healthcare (Medical Equipment & Supplies)	5	4.5	8	7.5	25
19	Stryker	United States	Healthcare (Medical Equipment & Supplies)	7	4.5	7	6.5	25
21	Brookfield Asset Management	Canada	Real Estate	10	5.5	7	2	24.5
21	Fiat Chrysler Automobiles [2]	United Kingdom	Manufacturing (Auto & Truck Manufacturers)	9	5.5	6	4	24.5
21	General Dynamics	United States	Manufacturing (Aerospace & Defense)	6	4.5	7.5	6.5	24.5
21	Hewlett Packard Enterprise [3]	United States	Manufacturing (Computer Hardware)	5	5	7.5	7	24.5
21	Raytheon	United States	Manufacturing (Aerospace & Defense)	7	4	8.5	5	24.5
21	Schneider Electric	France	Manufacturing (Electrical Equipment)	4	7	7	6.5	24.5
21	Vicinity Centres [4]	Australia	Real Estate	10	6	4.5	4	24.5
28	TE Connectivity	Switzerland	Manufacturing (Electronics)	5	5	7	7	24
29	Aetna [5]	United States	Healthcare (Managed Healthcare)	8	6	6	3.5	23.5
29	Anthem	United States	Healthcare (Managed Healthcare)	7	5	7	4.5	23.5
29	BAE Systems	United Kingdom	Manufacturing (Aerospace & Defense)	5	6	6	6.5	23.5
32	Annaly Capital Management	United States	Real Estate	7	5	6	5	23
32	HP	United States	Manufacturing (Computer Hardware)	5	8	5	5	23
32	Hyundai Motor	South Korea	Manufacturing (Auto & Truck Manufacturers)	1	6	7.5	8.5	23
32	SAIC Motor	China	Manufacturing (Auto & Truck Manufacturers)	7	3	7	6	23
36	Longfor Properties	China	Real Estate	8	2	7.5	5	22.5
36	Renault	France	Manufacturing (Auto & Truck Manufacturers)	5	5	6.5	6	22.5
36	UnitedHealth Group	United States	Healthcare (Managed Healthcare)	10	4	5	3.5	22.5
39	Boeing	United States	Manufacturing (Aerospace & Defense)	6	3	7	6	22
39	CRH	Ireland	Manufacturing (Construction Materials)	6	3.5	6.5	6	22
39	General Motors	United States	Manufacturing (Auto & Truck Manufacturers)	3	7	7	5	22
39	Hon Hai Precision	Taiwan	Manufacturing (Electronics)	8	1	7	6	22
39	Johnson & Johnson	United States	Healthcare (Medical Equipment & Supplies)	5	4.5	6.5	6	22
39	Safran	France	Manufacturing (Aerospace & Defense)	6	6.5	6	3.5	22
45	Corning	United States	Manufacturing (Communications Equipment)	3	4	7.5	7	21.5
45	Daimler	Germany	Manufacturing (Auto & Truck Manufacturers)	3	4	7.5	7	21.5
45	Eaton	Ireland	Manufacturing (Industrial Equipment)	3	4.5	6.5	7.5	21.5
45	Link REIT	Hong Kong	Real Estate	7	7	4	3.5	21.5
45	Poly Real Estate	China	Real Estate	9	4	4.5	4	21.5
45	Prologis	United States	Real Estate	7	3.5	5	6	21.5

[1] Company also noted as AB Volvo. Does not include Volvo Cars.
[2] Fiat merged with Chrysler in 2014. Pre-merger data from Fiat only.
[3] Split from Hewlett-Packard (now HP Inc.) in 2015. Data from 2015 to present.
[4] Part of 2015 merger with Novion. Pre-merger data from Federation Centres.
[5] Acquisition announced by CVS in 2017.
[6] Also noted as L E Lundbergforetagen Company.
[7] Established in 2015 as spinoff from CK Hutchison Holdings. Data from 2015 to present.
[8] Formed in 2014 when spun off from Westfield Group. Data is 2014 to present.
[9] EADS and subsidiaries given Airbus SE name in 2017. Includes EADS and Airbus data.
[10] Formed in 2015 with merger of Lafarge and Holcim. Data from 2015 to present.

Overall Rank	Company	Headquartered	Sector					Overall Score
45	Public Storage	United States	Real Estate	5	5	6	5.5	21.5
52	BMW Group	Germany	Manufacturing (Auto & Truck Manufacturers)	2	4.5	7.5	7	21
52	Deere & Company	United States	Manufacturing (Heavy Equipment)	5	3.5	6	6.5	21
52	Murata Manufacturing	Japan	Manufacturing (Electronics)	5	1	7	8	21
52	Saint-Gobain	France	Manufacturing (Construction Materials)	4	5	7	5	21
52	Toyota Motor	Japan	Manufacturing (Auto & Truck Manufacturers)	3	2.5	8.5	7	21
57	Cigna	United States	Healthcare (Managed Healthcare)	4	4.5	7	5	20.5
57	Cummins	United States	Manufacturing (Heavy Equipment)	4	4.5	5.5	6.5	20.5
57	HCA Holdings	United States	Healthcare (Healthcare Services)	5	4	6.5	5	20.5
57	Lundbergs [6]	Sweden	Real Estate	8	4.5	5	3	20.5
61	China Merchants Shekou Industrial Zone Holdings	China	Real Estate	6	3.5	4.5	6	20
61	Daikin Industries	Japan	Manufacturing (Construction Materials)	6	2.5	7.5	4	20
61	Emerson Electric	United States	Manufacturing (Electrical Equipment)	3	4	6	7	20
61	Kyocera	Japan	Manufacturing (Electronics)	5	1	7	7	20
65	Cheung Kong Property Holdings [7]	Hong Kong	Real Estate	4	4.5	6	5	19.5
65	Electronic Arts	United States	Manufacturing (Recreational Products)	10	3.5	3	3	19.5
65	Hitachi	Japan	Manufacturing (Electronics)	3	2	7	7.5	19.5
65	Unibail-Rodamco	France	Real Estate	4	4	6	5.5	19.5
65	Westfield [8]	Australia	Real Estate	6	3.5	5	5	19.5
70	Suzuki Motor	Japan	Manufacturing (Auto & Truck Manufacturers)	6	1	7	5	19
71	General Growth Properties	United States	Real Estate	4	5.5	5	4	18.5
71	Honda Motor	Japan	Manufacturing (Auto & Truck Manufacturers)	2	3	7	6.5	18.5
71	Illinois Tool Works	United States	Manufacturing (Industrial Equipment)	5	4	6.5	3	18.5
71	Mitsubishi Electric	Japan	Manufacturing (Electrical Equipment)	5	2	6	5.5	18.5
71	Simon Property Group	United States	Real Estate	4	3.5	6	5	18.5
71	Wheelock	Hong Kong	Real Estate	6	3.5	4	5	18.5
77	Airbus [9]	Netherlands	Manufacturing (Aerospace & Defense)	4	3	3	8	18
77	Ford Motor	United States	Manufacturing (Auto & Truck Manufacturers)	2	4	5.5	6.5	18
77	Fujitsu	Japan	Manufacturing (Computer Hardware)	4	3	5	6	18
77	Keyence	Japan	Manufacturing (Electronics)	10	1	1	6	18
77	New World Development	Hong Kong	Real Estate	7	3	4	4	18
77	Panasonic	Japan	Manufacturing (Consumer Electronics)	4	3	5	6	18
77	Sun Hung Kai Properties	Hong Kong	Real Estate	5	2	5	6	18
77	Tata Motors	India	Manufacturing (Auto & Truck Manufacturers)	3	3.5	5.5	6	18
85	Henderson Land	Hong Kong	Real Estate	4	2	5.5	6	17.5
86	Baxter International	United States	Healthcare (Medical Equipment & Supplies)	6	3.5	5.5	2	17
86	China Resources Land	Hong Kong	Real Estate	5	1	6	5	17
86	Emaar Properties	UAE	Real Estate	3	1	6	7	17
86	Subaru	Japan	Manufacturing (Auto & Truck Manufacturers)	5	2	5	5	17
90	Nissan Motor	Japan	Manufacturing (Auto & Truck Manufacturers)	4	1	5.5	6	16.5
91	Kubota	Japan	Manufacturing (Heavy Equipment)	4	1	6	5	16
92	Express Scripts	United States	Healthcare (Healthcare Services)	2	4	5.5	4	15.5
93	Dongfeng Motor Group	China	Manufacturing (Auto & Truck Manufacturers)	2	1	7	5	15
93	KIA Motors	South Korea	Manufacturing (Auto & Truck Manufacturers)	1	1	6.5	6.5	15
95	LafargeHolcim [10]	Switzerland	Manufacturing (Construction Materials)	4	2	5.5	3	14.5
95	Mitsui Fudosan	Japan	Real Estate	1	2.5	6	5	14.5
95	Porsche Automobil Holding	Germany	Manufacturing (Auto & Truck Manufacturers)	3	1	5.5	5	14.5
98	Fanuc	Japan	Manufacturing (Industrial Equipment)	3	2	4	5	14
99	Chongqing Changan Auto	China	Manufacturing (Auto & Truck Manufacturers)	3	3	2.5	5	13.5
100	Anhui Conch Cement	China	Manufacturing (Construction Materials)	6	1	4	1.5	12.5

Decisions With Lasting Value Require More Than Science

Smart Decision-Making in a Disruptive World

In 1999, a Stanford business school student named Marcos Galperin saw an opening for an eBay-style site to serve the fast-growing, but underserved, online market in Latin America. Sensing a narrow window of opportunity, he began lining up investors even before collecting his diploma.

Less than three months after returning to Argentina, Galperin officially launched his company, MercadoLibre. Within its first three months, the company gained more than 15,000 users and facilitated USD 2 million in transactions.

Fast-forward nearly two decades, and MercadoLibre is the leading online marketplace in Latin America, with a USD 15 billion market cap, a presence in 18 countries, and 211 million registered users who can browse over 114 million listings daily. In 2017, the company recorded USD 1.39 billion in net revenues, a 65.6% increase from 2016. It also sold 270 million items on its platform, a 49.1% increase from the previous year, in USD 11.7 billion worth of transactions.

Investors have been cheering practically non-stop since the company went public in 2007. In 2017, MercadoLibre's stock nearly doubled, and the company replaced Yahoo on the Nasdaq 100, which includes the index's largest domestic and international non-financial companies based on market capitalization.

Every business success story involves its own circumstances, nuances and quirks, and it can be foolish to extrapolate too many lessons from just one. But it's clear that MercadoLibre's decision-makers have balanced speed with a commitment to the long term, a powerful combination for any company.

"From day zero, my co-founders and I wanted to build a company that would survive us and thrive for generations," Galperin once told Stanford Graduate School of Business researchers. "Some of our competitors wanted to become rich and famous in the short term. That is why we remain successful, and many of our competitors are gone."

In 2008, that commitment to the long term meant making a bold decision to completely rebuild MercadoLibre's technology systems, allowing it to transition from a web application to a platform capable of supporting third-party integration and mobile applications. Galperin called it a "bet-your-company type of decision."

Galperin and his colleagues were also undaunted by the legal and logistical challenges of aggressive expansion into new markets. The payoff: leading market positions in Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Peru and Uruguay.

They also saw opportunity in the online payments business, launching MercadoPago in 2003. In 2017, it handled USD 13.7 billion in transactions.

New Challenges, New Opportunities

Study any great business throughout history, and you're likely to find a lot of smart, strategic decision-making. Think about Henry Ford's decision to more than double worker pay at his Model-T factory, thereby curbing rampant employee turnover and spurring a middle-class market for his cars; or Honda's decision to become the first Japanese manufacturer to make cars in America, beating out its competition by 10 years; or Bill Gates' decision to license — non-exclusively — a rudimentary computer operating system that he and his partners had bought for $50,000.

Making smart decisions today has arguably never been more important to the fate of companies, regardless of their sector or geographic location. As MercadoLibre's success shows, the rewards for getting those decisions right can be enormous.

But making decisions is also getting more complex. The rapid pace of change, driven by globalization, technology and regulation, puts an unprecedented amount

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> "It used to be that companies would make strategic plans for five years, but that number is decreasing. Now, they're revisiting those plans every year, and in some cases, twice a year."
>
> Juan Carlos, Regional Executive (Americas), Crowe Global

The 21st-Century Milkman

Problem

Big business is about efficiency and synergy. Streamlined logistics, savvy marketing and active consumer engagement all help to improve outcomes. In most industries, information technology is an integral tool.

In grocery retail, however, digital models of supermarket operation are an outlier in that their offerings are not necessarily faster and cheaper than the traditional model. For food and drinks, the perishable nature of goods also means there is a small window for matching consumers and products. Inevitably, waste occurs.

Decision

Four partners spotted this market inefficiency in the Netherlands, and devised a solution that would remove inefficiencies and benefit the environment. Michiel Muller was one of them.

He remembered his childhood, when a van would distribute milk bottles direct to customers' doors. Instead of 200 journeys from those streets to one supermarket for milk, one journey was made from the supplier to the end consumers. Simpler times, he thought.

Under the traditional grocery store model, perishable food must travel from original supplier to supermarket vendor. It then sits in storage, waiting to be scooped into a shopper's basket. From there, it must traverse trolley traffic, dance the checkout cha-cha, and ride the conveyor belt of cost-checks, before another trip to the customer's home.

Grocery retailers responded with digital delivery services. But without full focus on the online business, that arm is usually loss-making and, counterintuitively, online prices are higher.

Market incumbents faced a conflict.

“They transition slowly, because if they successfully migrate online, profit drains out of the business. They’re stuck in their own system.”

Meanwhile, Muller and his partners at grocery app Picnic created their own system. By using an app-and-van model, they’ve cut down on wasted food (and time).

“We’re the milkman 2.0: our last-mile model is unique in the world.”

Muller embraces the traditional value of yesteryear’s milkman to service his more than 150,000 users: reliability. Data is key here.

“We calculate journeys to the second, factoring drivetime, order size, customer location — are they easy-access or on the seventh floor? If it’s dark, we add eight seconds. With precision comes predictability.”

This commitment to cutting inefficiency fuels Muller.

“We’ve cut waste plastic and carbon, while our small electrical vans are super-efficient.”

Outcome

Less than three years on, Picnic is launching in Germany. It has new products every month, such as a tie-up with Heineken, which sees Picnic vans delivering beer at a low price and with minimal packaging.

Muller and his team are fulfilling their ambition to reduce waste, and to provide normal families in normal towns with a truly affordable luxury.

▶ *Continued from page 13*

of pressure on decision-makers to make the right call — frequently and quickly. The consequences of not getting it right can mean being disrupted or losing relevance.

"It used to be that companies would make strategic plans for five years, but that number is decreasing," says Juan Carlos, Regional Executive of the Americas for Crowe Global, based in Costa Rica. "Now, they're revisiting those plans every year, and in some cases, twice a year."

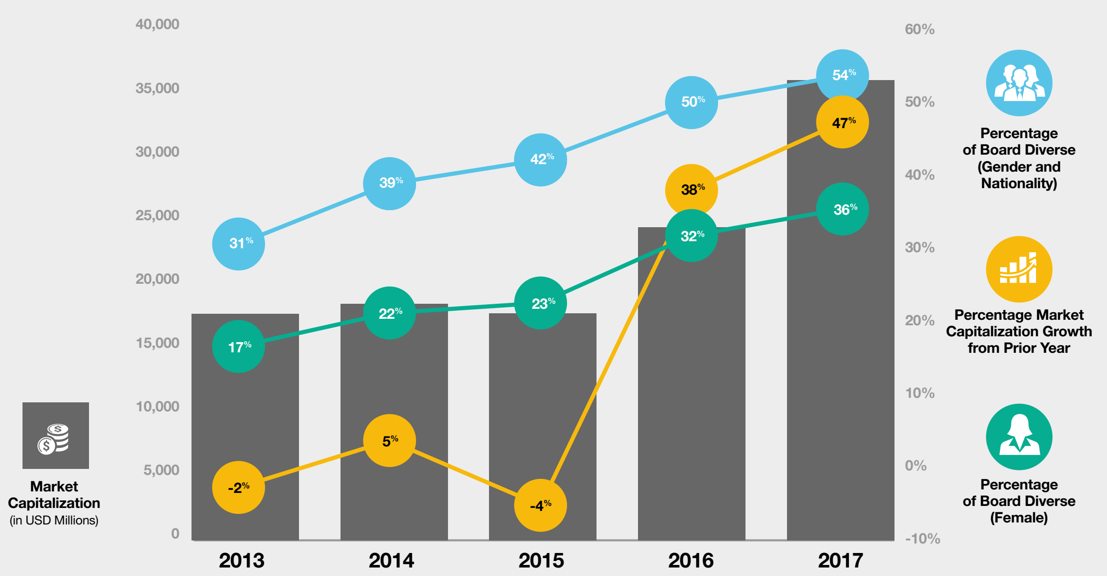
In part, that's because it's no longer clear where competition will come from or what new opportunities will appear. After all, MercadoLibre has been a public company for only 11 years.

The increasing turnover of the S&P 500, a group of large companies with stock listed on the New York Stock Exchange or Nasdaq, also illustrates the impact of creative destruction. From 1964 to 2016, the average time on the S&P 500 dropped from 33 years to 24 years.

To be sure, some of the change is simply the result of mergers and acquisitions. But there are also plenty of examples of companies dropping off due to market forces. Researchers at the consulting company Innosight predict more rapid turnover. By 2027, they project the average time spent on the S&P will be just 12 years.

The innovations of the information age have improved certain aspects of decision-making by putting information at our fingertips. But these new tools come with a price. Managers must now sift through an unrelenting stream of data — IBM estimated in 2012 that some 2.5 quintillion bytes are created every day — to discern what matters and what does not. Making matters worse, studies suggest that "information overload" can hurt decision-making by leaving us distracted and fatigued. Although coined in 1964, the term has taken on new relevance with the explosion of information technology.

Volvo Group, which manufactures heavy equipment such as trucks, buses and construction vehicles, tied for highest overall in the Crowe 100 Decision-Making Index 2018. Its top overall score is attributable to high scores across all categories rather than one particualr strength. Volvo increased market capitalization and diversity in all but one year. Atlas Copco, which produces industrial equipment and, like Volvo, is based in Sweden, similarly scored high in all categories.



Business leaders must also contend with more long-standing obstacles, like our emotions and cognitive weaknesses. As research from cognitive psychologists has long shown, we can be seduced by our biases, leading us to take mental short cuts, and ultimately, to make bad decisions.

The good news is that after decades of research, we have a deeper understanding of decision-making processes, including common pitfalls to avoid. We have also gained insight into how companies can best leverage the expert intuition of their most seasoned and experienced workers.

Of course, no decision-making process is guaranteed to result in good outcomes. The best decision-making process can still lead to bad results, and the reverse is also true. Luck — good and bad — will always be a factor.

As we'll see, the most successful businesses learn to embrace this reality, create the most conducive environments for decision-making and constantly re-evaluate it.

Growing Interest

Decision-making has long preoccupied psychologists, economists, mathematicians and management consultants, but the topic gained a considerably wider audience in 2003. That year, the American author Michael Lewis wrote *Moneyball: The Art of Winning an Unfair Game*, an examination of how the Oakland Athletics baseball club consistently outperformed other teams that had larger budgets to spend on players.

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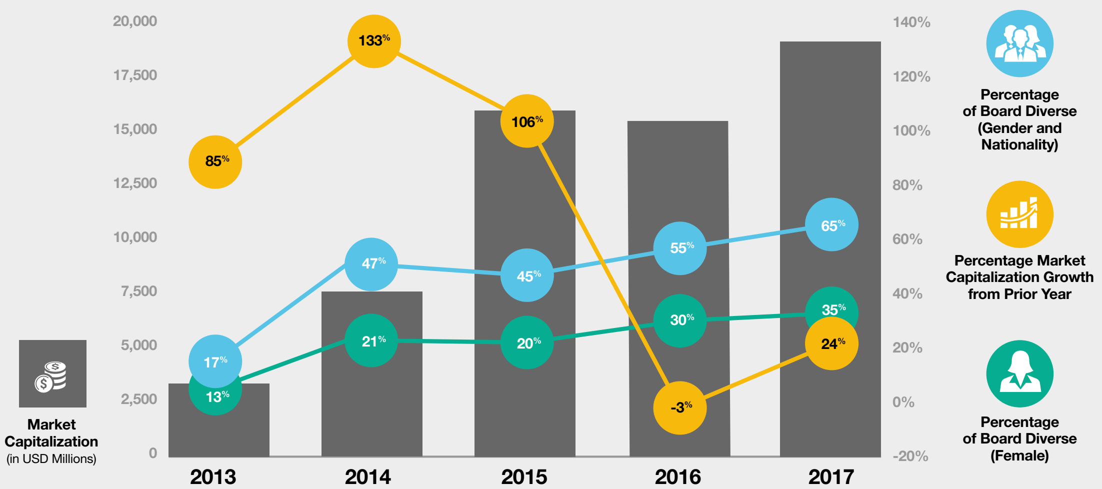
French automaker Peugeot had the largest growth in market capitalization in the five-year period among all consumer automakers in the index. Alongside launching new models and acquiring Opel from General Motors, Peugeot also grew the gender and general diversity of its board each year. The company scored in the top range for diversity and growth.



Middle East

Healthcare

Instinct and Adversity Cultivate a Healthcare Powerhouse

Problem

“I never planned to be a businessman,” says Dr. B.R. Shetty, who moved to Dubai from India in 1973 with next to no money in his pockets. His only objective was to repay a bank loan he had taken out, by becoming a pharmacist. But he met significant hurdles from day one. The decisions he made along the way were unconventional and opportunistic.

Decision

It was difficult for Shetty to find a job, so instead, he created one.

“I contacted pharmacies and started selling medicines door to door.”

Shetty thereby became the first-ever medical representative in the United Arab Emirates — before him, the profession did not exist there.

“I have always tried to be an early mover,” says Shetty, and his career provides numerous examples of this in action: from introducing medical sales to the UAE in the early 1970s to establishing the first clinic with laboratory, dental and pharmacy services all under one roof in 1975.

“At that time there were no clinics. I didn’t have an ambulance, so I was carrying patients in my car, if necessary.”

This can-do attitude has been a key part of Shetty's success. Obstacles and mistakes are all part of the journey. Navigating them improves the decision-making process.

"Without mistakes you cannot learn. I have made many mistakes and learned from them. There isn't a single day that goes by without a problem or mistake," he says. "If there is no problem, it is not a good day for me."

Timing is also very important in decision-making, according to Shetty. Acting quickly can carry risks, but Shetty knows his businesses, and trusts his instincts.

"I take very quick decisions. I follow my gut feeling and intuition," says Shetty. "I am actively involved in my business. If you are hands-on, then decision-making is easy. Opportunity comes once in a while. I grab the opportunities that knock at my door and avoid paralysis by analysis because I streamline the number of people involved in the final decision."

Outcome

Dr. Shetty is the Founder and Chairman of conglomerate powerhouse BRS Ventures, overseeing a diverse service portfolio covering healthcare, pharmaceuticals, financial services, education, hospitality and infrastructure.

Recognized as one of the most successful businessmen in the UAE, Shetty is the recipient of the Order of Abu Dhabi and the Padma Shri, among the highest civilian honors bestowed by the governments of Abu Dhabi and India, respectively.

His decision to leave India and explore the UAE was a risk, but one that he ensured would pay off. As for the loan that hung over him as he began his entrepreneurial career, Shetty paid that off within his first year in the UAE.

> "If you are hands-on, then decision-making is easy. Opportunity comes once in a while. I grab opportunities that knock at my door and avoid paralysis by analysis because I streamline the number of people involved in the final decision."

Dr. B.R. Shetty, Chairman,
BRS Ventures

▶ *Continued from page 17*

Although ostensibly about baseball, at its core the book is about how an overreliance on human intuition and expertise can lead to bad decisions. Lewis found that professional baseball scouts, often relying on their expert intuition, were systematically overvaluing certain players and undervaluing others.

Viewing talent through a different lens — advanced statistics — than did its competition, the Athletics management found ways to exploit this market inefficiency, scooping up mispriced players passed over by the experts.

The term *moneyball*, of course, has since become shorthand for using big data to make decisions traditionally made less rigorously and rationally. Notably, companies like Amazon, Netflix and Baidu came to embody the movement, leveraging their massive customer data to better predict customer preferences.

But *Moneyball* the book did not turn all decision-making into a science. While big data improved decision-making in certain areas, it had limits.

Indeed, just two years after *Moneyball* was published, the Canadian writer Malcolm Gladwell wrote *Blink: The Power of Thinking Without Thinking*. It explored how expert intuition can often trump rational thinking and how irrelevant information can often cloud our judgment.

The fact is, decision-making is not always easy to understand or even to detect. The history of those who helped pioneer the study of organizational decision-making proves it.

A New Field

In 1938, Harvard University Press published a groundbreaking book on organizational decision-making called *The Functions of the Executive*. But the author, Chester Barnard, was no academic. Raised in a middle-class household in New Jersey, he spent most of his career as an executive with American Telephone & Telegraph Company and later became President of New Jersey Bell Telephone Company.

Unsatisfied with explanations for his experience in business, Barnard sought a universal understanding of the role of an executive within an organization, and a theory for how executives could approach decision-making.

The book was notable for several reasons, according to scholars. For one, it placed decision-making squarely within the executive's job function, which had not been widely articulated at the time. It also identified psychological aspects of decision-making, defining it as an amalgamation of influences.

The decision-making process "transcends the capacity of merely intellectual methods, and the techniques of discriminating the factor of the situation," Barnard wrote. "The terms pertinent to it are 'feeling,' 'judgment,' 'sense,'

The Functions of the Executive, a groundbreaking book first published in 1938, is credited with being among the first to articulate the importance of decision-making by executives.

'proportion,' 'balance,' 'appropriateness.' It is a matter of art rather than science, and is aesthetic rather than logical."

Barnard also cast organizations in a new light. Before his book, the term *organization* was used to describe social clubs — a subject considered unworthy of study, according to William Starbuck, Professor in Residence at the Lundquist College of Business of the University of Oregon.

"People did not perceive organizations as making decisions until the late 1930s and 1940s," says Starbuck.

Expanding on Barnard's work, in 1947 the economist and political scientist Herbert Simon wrote *Administrative Behavior*, which explored the interplay between organizational structures and decision premises. Simon also introduced "bounded rationality," a theory to capture the cognitive restraints on decision-makers.

"The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solutions is required for objectively rational behavior in the real world," he wrote.

These limitations of the human mind led Simon to the idea of "satisficing," describing a process to make decisions with limited information deemed good enough.

In subsequent years, as scholars began studying how decisions were made in organizations, they undercut assumptions underlying classic rational choice theory. Among those assumptions: that decision-makers are aware of all alternatives; that they are aware of the consequences of each alternative; and that they apply consistent rules to make their preferences.

The reality, researchers found, is much messier. James March, now Professor Emeritus at Stanford University and the Stanford Graduate School of Education, once described the process of organizational decision-making as "organized anarchy." He observed that organizational goals change over time and that people experience first and then deal with the consequences later, rather than evaluate options and then decide.

March and a colleague once likened organizational decision-making to a chaotic soccer game:

"Consider a round, sloped, multi-goal field on which individuals play soccer. Many different people (but not everyone) can join the game (or leave it) at different times. Some people can throw balls into the game or remove them. While they are in the game, individuals try to kick whatever ball comes near them in the direction of goals they like and away from goals they wish to avoid."

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Choosing Investments from the Clients' Perspective

Problem

Wong Seak Eng, Fund Manager and Executive Director of Singapore-based Aggregate Asset Management (AAM), faced a problem. It was 2012, and the lingering effects of the global financial crisis of a few years earlier were still being felt. Regulatory reform was the order of the day, with new changes to apply to the investment community aimed at better governance. AAM needed to contend with these changes while attempting to get the company off the ground.

Decision

Despite the challenging circumstances, AAM successfully qualified and launched. At the heart of the company ethos, the founders decided, AAM would be deeply influenced by Asian culture. The founders were also personally invested, so they knew they were eating from the same pot they cooked with for clients.

Acknowledging the market frustration, and resentment toward the investment community by some sections of society due to Lehman's treatment of retirement minibonds, AAM's founders sought to put themselves in others' shoes and think about how they would want their retirement savings to treated.

The traditional model for large financial institutions is to be driven by building assets under management (AUM). Fees would be charged at 2% of AUM, and there was arguably little incentive for fund managers to help their clients make money.

AAM wanted to bring greater alignment of interests, with a focus on growing returns for clients.

If you drove your ailing car to a mechanic, and the mechanic could not fix the problem, you would not pay them. However, the fee-driven world of financial services operated differently.

To shift the focus back onto client care, AAM took a considered risk. They prioritized two key values: good and cheap. AAM did away with management fees. It dared to do so because it had confidence in its investment performance over the mid to long term.

Over time, its client-first approach and commitment to growth would make AAM stand out among the competition. However, while investors liked this key attraction of zero management fees, performance remained the most important element of the numbers game. This was not a gimmick, so delivery standards had to be high.

Outcome

Fund managers saw that investors appreciated the innovative model and took care to protect their clients. Eggs were never piled into one basket. Over time, clients built more trust and confidence in the approach, and the decision to adopt a much more diversified investment style than any competitors' ensured that, from a risk management perspective, if one investment failed, the client was protected.

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The Next Frontier

In recent years, the role of feelings in decision-making has taken on new prominence in scholarly circles. Indeed, according to one account, academic papers on the subject doubled from 2004 to 2007 and again from 2007 to 2011.

That's for good reason. Research in neuroscience shows that our brains process emotions before allowing any reasoning. For years, many business leaders sought to deny the presence of emotion in decision-making, or to eliminate it — now understood as wishful thinking.

In a new paper, currently under peer review, researchers Charles A. Dorison and Jennifer S. Lerner of Harvard University and Joowon Kim of the University Pennsylvania summarized some of the leading research in the field. They noted, for example, that studies have shown that fear increases perceptions of risk whereas anger decreases such perceptions.

While emotions often occur rapidly, they leave a "lingering impact" and color judgment and decision-making, they noted.

"Given their relatively short half-life, it may be tempting to conclude that emotions matter little for organizational behavior," they wrote. "The evidence suggests otherwise. Although fleeting, emotions serve an impressive coordination function. They trigger a chain of biological, motivational, and cognitive consequences."

Errors in Judgment

The history of business is littered with examples of companies making poor decisions with disastrous results. Sometimes, the culprit has been overconfidence — a feeling of invincibility or undue optimism. Or it's been an executive's decision to keep throwing money at a project, even though it consistently proved to be a losing investment. Still other times, it has involved focusing on information that confirms pre-existing notions and ignoring disconfirming information. Often, it's been a mix of all the above.

At the root of these bad outcomes is what is known as *cognitive biases*, mental blind spots that lead to errors in judgment. To vastly oversimplify, we have two ways of thinking. System 1, as it is called in academic literature, involves our intuition or unconsciousness. It allows us

Academic papers on the role of feelings in decision-making doubled from 2004 to 2007 and again from 2007 to 2011.

> “In the first place you have to be very tolerant of eccentrics because it’s very hard to sort the eccentrics from the breakthrough innovators in the early stages.”
>
> Melissa Schilling, Herzog Family Professor of Management, New York University Stern School of Business and author

to get through most of our day. It’s our default mode of thinking and includes our hunches. System 2, on the other hand, involves more cognitively demanding activities, like solving hard math problems or studying a foreign language.

After teaming up in 1969, the Israeli psychologists Daniel Kahneman and Amos Tversky began conducting experiments that would show how, when presented with hard, System 2 questions, people will often substitute them with easier System 1 questions — and do so without noticing.

The switch is understandable. To use our System 2 thinking requires mental focus, of which we have a limited supply. It is much easier to use System 1 thinking. But that’s where we can run into problems, they found.

“As we navigate our lives, we normally allow ourselves to be guided by impressions and feelings, and the confidence we have in our intuitive beliefs and preferences is usually justified,” Kahneman wrote in his best-selling book, *Thinking, Fast and Slow*. “But not always. We are often confident even when we are wrong, and an objective observer is more likely to detect our errors than we are.”

These biases are not just theoretical. To take one example, consider the “sunk-cost trap,” which highlights how our aversion to losses can make us act irrationally. A study by Barry M. Staw and Ha Hoang in 1995 showed that NBA teams granted their highly drafted (and highly paid) players more playing time, even if it was not justified.

Businesses can often make the same miscalculation, remaining committed, for example, to a division that is no longer performing well financially. Berkshire Hathaway CEO and Chairman Warren Buffett alluded to this bias in a recent shareholder letter. He explained

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Top Companies: Innovation

Overall Rank	Company	Headquartered	Sector	Innovation Rating
3	Medtronic	Ireland	Healthcare (Medical Equipment & Supplies)	8.5
5	Cisco Systems	United States	Manufacturing (Communications Equipment)	8.5
32	Hyundai Motor	South Korea	Manufacturing (Auto & Truck Manufacturers)	8.5
1	Volvo Group	Sweden	Manufacturing (Auto & Truck Manufacturers)	8
3	Apple	United States	Manufacturing (Computer Hardware)	8
8	China Vanke	China	Real Estate	8
15	Thermo Fisher Scientific	United States	Healthcare (Healthcare Equipment)	8
52	Murata Manufacturing	Japan	Manufacturing (Electronics)	8
77	Airbus	Netherlands	Manufacturing (Aerospace & Defense)	8

The Gender Factor

Problem

"I'm talking about hiring, promoting and retaining more women. Not just because it's the right thing to do, or the nice thing to do, but because it's the smart thing to do."

That was Canadian Prime Minister Justin Trudeau's rallying cry to business leaders, when he spoke on gender diversity at the 2018 World Economic Forum in Davos.

Among those watching his speech was Gabriela Uriarte Taberna, Deputy Director at the Spanish Confederation of Employers and Industries (CEOE). Trudeau's message mirrored a sentiment she has long championed.

Decision

Trudeau was not singling out any one nation when he uttered these words, but the problem he spoke about resonated with CEOE. Spain, like others, faces a diversity problem. It negatively impacts prospects of female success, and also the national economy, Uriarte says.

Six in 10 Spanish graduates are women, but only one of those six reaches an executive position. Only two of the 35 largest Spanish companies are headed by women. But in this traditionally patriarchal society, gender norms are changing, thanks to pioneering legislation and initiatives like CEOE's.

"At CEOE we have the conviction that with more women in decision-making positions, companies are more productive and innovative, have better economic results and a better working environment," says Uriarte. "We knew we could do something about it. We believe that business organizations must lead the change."

In 2012, CEOE launched its Promociona Project in conjunction with the Spanish Ministry of Equality and a prominent business school, ESADE.

“The goal of Promociona is to get more women into top positions at companies. We do this in two ways: we prepare female participants to achieve leadership positions, and we try to make companies aware so that men and women have the same opportunities,” says Uriarte. “Unless we change mentalities within companies and within society, things will remain the same.”

Among the selection criteria for the participants is a requirement to be “a woman who wants to change the world.” Being an active agent of change is imperative.

The training program takes place over six months at ESADE, consisting of three weeks’ face-to-face training and an online coaching course, followed by a six-month cross-mentoring to develop a Personal Professional Plan through a series of meetings between the participant and the mentoring CEO of another company.

“The face-to-face training is a general management program, dealing with communication skills, finances, marketing, negotiating, digital transformation, leadership, being a role model for other women and strengthening professional networks,” says Uriarte.

Outcome

With 45% of participants achieving promotion, Promociona is already bringing Trudeau’s words into action. Not just because it is the right thing to do, but because it makes business sense; it is a smart decision.

“The best result for us is that we feel we are changing corporate mindsets, as well as society,” says Uriarte. “This matters not only for justice and balance, but because it breeds economic results.”

Top Companies: Boldness

Overall Rank	Company	Headquartered	Sector	Boldness Rating
3	Apple	United States	Manufacturing (Computer Hardware)	9
15	Thermo Fisher Scientific	United States	Healthcare (Healthcare Equipment)	8.5
1	Atlas Copco	Sweden	Manufacturing (Industrial Equipment)	8.5
52	Toyota Motor	Japan	Manufacturing (Auto & Truck Manufacturers)	8.5
21	Raytheon	United States	Manufacturing (Aerospace & Defense)	8.5
3	Medtronic	Ireland	Healthcare (Medical Equipment & Supplies)	8
19	Fresenius	Germany	Healthcare (Medical Equipment & Supplies)	8
15	Lockheed Martin	United States	Manufacturing (Aerospace & Defense)	8
8	Country Garden Holdings	Hong Kong	Real Estate	8

► *Continued from page 25*

that one of the advantages of being a conglomerate is the ability to quickly reallocate capital among businesses and industries.

Although not perfect in its decision-making, Berkshire, he argued, was well positioned because it was not burdened by "historical biases created by lifelong association with a given industry" and was "not subject to pressures from colleagues having a vested interest in maintaining the status quo." He continues: "That's important: If horses had controlled investment decisions, there would have been no auto industry."

Taming Our Biases

Can we tame these biases that afflict our thinking and decision-making? The answer may depend on whom you ask.

Some academics remain skeptical that much can be done. But others are more optimistic and have suggested ways to mitigate our biases or, at least, to check the validity of our intuitions. Cognitive psychologist Gary Klein, for example, conceived of the "PreMortem Technique," flipping the process of a post-mortem. In a traditional post-mortem, of course, a physician seeks to determine the cause of death. In a pre-mortem, the answers are determined beforehand to be useful to decision-makers.

The PreMortem Technique, used to test assumptions underlying decisions, was first conceived by cognitive psychologist Gary Klein.

The exercise requires a team to imagine a course of action going wrong. Every member then writes down reasons why the project — an investment, product launch or acquisition, for example — failed. Exploring these potential pitfalls is designed to sensitize people to what they may have overlooked.

The leadership of the technology company Intel engaged in a similar exercise in the 1980s when it decided to exit the dynamic random access memory (DRAM) chip business. Although Intel had introduced the first DRAM chip in 1970 and dominated the business for years, it eventually lost market share as competition increased and the business became more commoditized. As recounted in a case study for Stanford Graduate School of Business, Andy Grove, then Intel's President, said the decision's origin came as the result of an intellectual exercise with then-CEO Gordon Moore. At the time, Grove said he was worried that the board would replace him and Moore:

"I recall going to see Gordon [Moore] and asking him what a new management team would do if we were replaced," Grove told researchers. "The answer was clear: Get out of DRAMs. So, I suggested to Gordon that we go through the revolving door, come back in [as the new management team], and just do it ourselves."

As the example demonstrates, the first steps to overcoming your biases are becoming aware of them and surfacing the right questions. Promoting disagreements is another.

Overcoming potential biases is especially critical for auditors, says David Chitty, International Accounting and Audit Director at Crowe Global, based in London. A company with no previous accounting problems, for example, could lull an accountant into false comfort or expectation that no problems will arise in the future.

"We often talk about the need to exercise professional skepticism," Chitty says.

Team Dynamics

Intense competition and globalization have made efficient collaboration a must, while the development of communications technology has made it routine. According to research cited in *Harvard Business Review* in 2016, "the time spent by managers and employees in collaborative activities has ballooned by 50 percent or more" over the previous two decades.

This growing influence of collaboration in the workplace has put a premium on finding the right ingredients for successful teams. For many companies, that means

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"Diversity just can't be the same person different color or different genders; it has to be experience that truly leads to different insights. If diversity is done well, it absolutely can do that."

Dorri McWhorter, CEO, YWCA Metropolitan Chicago

Balancing Disruption and Heritage

Problem

Founded in 1653, Bogota's Universidad del Rosario (UDR) values cultural heritage as part of its lifeblood.

Yet every day, the school's rector, Jose Manuel Restrepo Abondano, sees news in which technology is disrupting higher education and impacting tomorrow's leaders. How, then, is he to preserve, respect and leverage the institution's venerable history, while taking advantage of new techniques and systems that can drive the university forward?

Decision

Businesses may somewhat easily decide "out with the old, in with the new." For an academic institution, however, embracing its ancestry and heritage is a vital part of establishing its unique selling point.

The UK's Oxford and Cambridge, Harvard in the United States and Japan's University of Tokyo all trade on their historical reputations. Their ability to deliver knowledge and cultivate learning at the highest level must be shown, and their consistent production of leaders and success stories over decades — even centuries — is a testament to that.

UDR, for instance, has produced 28 Colombian presidents, and many more industry leaders. History is important. Respected universities conjure images of libraries fitted floor-to-ceiling with leather-bound books, or of lecture halls with a numinous element.

But today's university also conjures images of supercomputers and labs where white-coated researchers conduct cutting-edge experiments. Just as universities bring together students of art and science, leadership must also marry these disciplines in charting their organization's own future.

"The future of higher education is based on two principles: continuity and change. We must preserve tradition, but change to be sustainable," says Restrepo Abondano.

These conflicts are faced head-on by Restrepo Abondano, who keeps in mind UDR's motto, Nova et Vetera, or "Always old, always new."

"When strategic changes come about, we are transforming the original idea of our founders. Therefore, it is vital to go back to our roots and principles whenever we take strategic decisions — for instance, when we went from a teaching university to one that also prioritizes research."

Outcome

Restrepo Abondano's challenge applies to business leaders around the world.

Embracing technology, while preserving the value and impact of human traits like gut instinct, is central to success. Just as it would be foolish to shun technological advances that improve efficiency, it would be a mistake to rely too heavily on automation.

"For example, we implement new systems to measure, online, the academic production of our professors."

"But sometimes, technology isn't enough," says Restrepo Abondano. "People need to apply the technology and react based on that but also based on the people involved."

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having a diverse range of views, skills, expertise and experiences. Ever since the term *groupthink* was popularized in research by Irving Janis in 1972, business leaders have become more attuned to the dangers of a homogenous perspective in decision-making.

But these concerns have taken on new urgency in recent years, as demonstrated by the increasing calls for greater diversity and inclusion, notably at the executive and boardroom level. In part, social values of justice and equality are driving the movement. But diversity is also seen as fundamental to business success.

"It ensures that you are accurately reflecting the outside world, and society at-large, and this in turn will mean you are better connected with your stakeholder spectrum," says Andrea Rexer, Senior Editor, Finance at German national newspaper *Suddeutsche Zeitung*, and Editor-in-Chief of the paper's quarterly publication *Plan W*, which is aimed at female decision-makers.

A growing body of research suggests a strong correlation between financial performance and workforce diversity. Drawing on survey data gathered from more than 1,000 companies covering 12 countries, the consulting firm McKinsey found companies that ranked in the top quartile in diversity were 21% more likely to achieve above-average profitability than those in the fourth quartile.

Dorri McWhorter, the CEO of YWCA Metropolitan Chicago, an organization devoted to fighting racism and empowering women, can attest to the value of diversity. As an African-American, she often represents diversity in the boardroom. But she stresses that diversity must be deeper than just a person's skin color, gender or sexual orientation for its value to be realized.

"In my opinion, diversity allows you to tap into potentially different experiences," she says. "We used to say that diversity can't just be the same person, different color, different gender. It really has to be that different experience that leads to a truly different insight or different perspective."

A different perspective was what Crowe LLP CEO Jim Powers needed when recently deciding about how to improve recruitment at the firm. Powers recalls his instinct was to focus on salaries — specifically to make sure Crowe was paying at the top of the market. But some in the Human Resources department were not sold that salary was the key to improving recruitment.

Drawing on market data, they found recruits valued more intangible things like flexibility and work-life balance. Crowe decided to implement these strategies instead.

"I am sure that if we did what I wanted to do — my first instinct — we would have

> "Technology can do wonderful things. It can help you crunch numbers etc., but there are certain judgments that can't be outsourced."
>
> Jim Powers, CEO, Crowe LLP

had modest to no success and, you know, what we did actually cost us no more money essentially, but it was really much more on target," he says.

Avoiding Consensus Culture

For the last 20-plus years, Melissa Schilling has been researching innovation with a focus on some of the most iconic technology companies. In her recently published book, *Quirky*, she sets her gaze on eight innovators who changed the world, including Albert Einstein, Nikola Tesla, Steve Jobs, Elon Musk and Marie Curie.

Schilling, a professor at New York University's Stern School of Business, sets out to detail the individual traits of these remarkable figures. But she also seeks to understand the conditions under which innovations and innovators can emerge. The most successful companies in this area, says Schilling, are comfortable with conflict and wary of consensus.

"So many organizations are just implicitly structured around consensus," she says, noting that many proudly vote on many issues. "But when you vote on things, the thing that wins is the thing about which the most people achieve consensus. And so then, all your norms are about achieving consensus. As a result, you're more likely to put forward ideas that other people will buy into, which by definition are not going to be your more creative, unusual ideas."

Google, which in 2012 undertook a major two-year study called Project Aristotle to determine the qualities of an effective team at the company, came to the same conclusion. Among the factors it found not to be important were consensus-driven decision-making.

On the other hand, Google identified the most important factor to be "psychological safety," meaning that team members "feel safe to take risks around their team members" and "feel confident that no one on the team will embarrass or punish anyone else for admitting a mistake, asking a question, or offering a new idea."

Creating these conditions, of course, is not easy. Susan Hodkinson, Chief Operating Officer at Crowe Soberman and head of the firm's HR Consulting Group, based in Toronto, says that it can be particularly challenging for older generations to learn new ways of interacting with colleagues.

"Dealing with people differently is not so much an intellectual exercise as it's a personal exercise," she says. "And personal change is harder for everyone."

But companies that can nurture the most productive team dynamics have a competitive advantage in attracting and retaining talent. For example, the fast-growing construction company Construcciones El Condor S.A., of Colombia, has made team dynamics a priority, recently ranking seventh among

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Cambodia

Food & Commodities

Brewery's Fortune Favors the Bold

Problem

In the early 1990s, as Southeast Asia experienced a period of economic growth, the political and socio-economic climate in Cambodia was especially complex. Society was returning to normal after the atrocities associated with the Khmer Rouge regime. As democracy was being built, investments in the country began to increase, and the business community mobilized to see what opportunities were presented by economic expansion.

Despite favorable growth conditions, carving out a business strategy would not be easy.

Decision

In 1991, Goh Nan Kioh was scanning the horizon for opportunities. He was starting from scratch and operating in a time of immense political upheaval — less-than-ideal circumstances for an entrepreneur trying to forge a new path. In the beginning, Goh wore many hats.

"When I first started out in business, I was pretty much a one-man band who had to drive all aspects of the business. I made my own plans and strategic decisions," says Goh. "I only had my dreams and conviction to make the vision work."

His dreams and conviction led him to spot a business opportunity amid fast-paced regional growth.

"The early 1990s was a time of rapid economic growth in Southeast Asia and it is during these times that economic opportunities arise."

Goh decided to take a considered — but nonetheless brave — risk. He purchased an old, dilapidated and unused brewery in Cambodia from French investors. His goal was to be an early mover and revive the business before others entered the market. With brewers based elsewhere in Asia looking to expand across the region,

the sheer boldness of this move should not be underestimated. Timing was everything.

"The brewery happened to be in Cambodia and I felt that Cambodia could not be left out of the economic boom. Many people tell me 'fortune favors the bold' but in this case, it was a clear decision based on the premise that the brewery was located in a fast-growing region and I wanted to be there first when the country took off."

Goh, CEO of present-day Cambrew Group, found success and responded to the new challenges that growth presented by focusing on hiring new talent.

"As the business grew larger, I needed input from people with different abilities and expertise."

Goh points out, however, that while it is important to consult specialists for an expert view on things, the responsibility of making a final decision rests with him.

"Decision-making is not necessarily by consensus or majority — I ultimately make the final call after getting input from all the relevant people."

In this way, Goh ensures he is forming a rounded view of things, but that he also retains the power to make big, strategic decisions like the one he made in 1991.

Outcome

Despite its humble beginnings, and a need to compete against other powerful operators in the same sector — notably Heineken Group — Cambrew has grown to become the largest beer brewery in Cambodia.

> "My advice is that when there is established order in the market, one cannot be a follower and do what the established order is doing. One has to always move ahead of the pack and do things very differently to defeat the established order."

Goh Nan Kioh,
CEO, Cambrew Group

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the best places to work in Colombia and 17th in Latin America by the Great Place to Work Institute.

President Luz Maria Correa Vargas says the key is creating a place “where people are comfortable with their duties and co-workers; where their boss is a colleague who inspires them, generates trust and lacks favoritism; and where they feel the support of an organization which makes them proud to belong.”

The Need for Speed

Not all decisions are created equal. Some involve small stakes; others are bet-the-company types. Some decisions require lots of input; others require very little. The most successful companies appreciate the differences and understand the speed at which decisions should be made. They also realize that very few decisions are irreversible.

But as companies grow and mature, decisions often start taking longer to make. Excessive risk aversion may also start to creep in. As history proves, slow decision-making, or paralysis by analysis, can be fatal.

It can also mean missing strategic opportunities. Jiantao Yang, CEO of Ruihua Group and Co-Chairman of Crowe Global, recalls the decision that resulted in the 2013 merger of Crowe Horwath China and RSM China.

“At the time, Chinese enterprises were getting bigger and stronger,” he notes. “With Chinese investment going abroad, there was great need for strong Chinese CPA firms to provide comprehensive global services.”

By moving aggressively, Ruihua became the first firm to surpass the Big Four, by revenue, in China.

“This merger was a win-win for both parties,” Yang says. “It was a smart decision made by both sides, and it has also promoted the development of China’s CPA industry.”

Amazon CEO Jeff Bezos believes most decisions should be made with around 70% of information a decision-maker would like to have.

“If you wait for 90 percent, in most cases, you’re probably being slow,” he wrote in Amazon’s annual shareholder letter in 2017. “Plus, either way, you need to be good at quickly recognizing and correcting bad decisions. If you’re good at course correcting, being wrong may be less costly than you think, whereas being slow is going to be expensive for sure.”

> “If you’re good at course correcting, being wrong may be less costly than you think, whereas being slow is going to be expensive for sure.” — Jeff Bezos, Amazon’s 2017 annual shareholder letter

To avoid bottlenecks — and keep Amazon a "high velocity" decision-making company — Bezos encourages the use of the phrase *disagree and commit*. The idea is to help colleagues move past a decision around which there is no consensus. Colleagues can disagree with a decision, but ultimately once one is made, they must commit to the course of action and work to make it successful.

Speed implies a tradeoff with analytical rigor. And sometimes, speed can result in sloppy thinking and poor decision-making. But not necessarily.

In a well-regarded inductive study of eight microcomputer companies in the late 1980s, Kathleen Eisenhardt of Stanford University discovered that fast decision-makers considered more information and developed more alternatives than slower decision-makers. She also found that fast decisions were correlated with better company performance.

"Overall, the executives making fast decisions accelerate their cognitive processing by using efficient problem-solving strategies that maximize information and analysis within time constraints," she wrote.

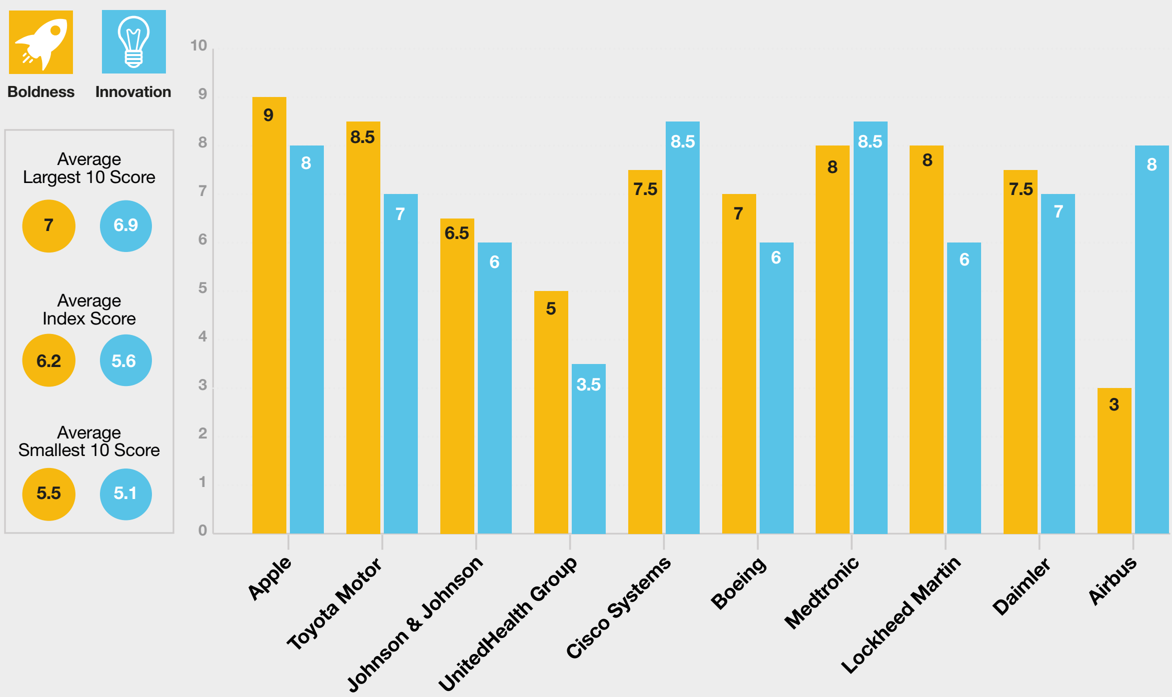
Eisenhardt speculated about why slow decision-making is problematic. "Executives learn by making decisions, but if they make few decisions, as slow decision-makers do, they learn very little," she wrote. "So they are more likely to make mistakes."

When to Go With Your Gut

For decades, academics who study decision-making have debated the usefulness of human intuition and rules of thumb, also known as heuristics.

10 Largest by Market Capitalization

The largest companies are sometimes thought to be the biggest trendsetters and slowest bureaucracies. The index's largest ten companies by 2017 market capitalization scored among the highest in Boldness and Innovation, averaging higher scores than both the index as a whole and the smallest ten companies.



While researchers like Kahneman and Tversky focused on how these can trip us up, other researchers have focused on their value.

The German psychologist Gerd Gigerenzer has long been in the latter camp. For decades, Gigerenzer, Director Emeritus at the Max Planck Institute of Human Development and director of the Harding Center for Risk Literacy, has promoted the use of rules of thumb to make decisions. In an uncertain world, where risk cannot be accurately evaluated, Gigerenzer posits that they can better guide our decision-making and that more information is not always better.

In his book *Risk Savvy: How to Make Good Decisions*, Gigerenzer argues that innate human craving for certainty feeds an illusion that all risks can be known or precisely calculated. But being risk savvy, says Gigerenzer, means accepting what we cannot know.

Relatively few decisions in business involve known risks, where all outcomes and probabilities can be determined. Most of the time, businesses face uncertainty, where there are at least some unknown risks. In those cases, Gigerenzer believes that rules of thumb and intuition should play a role alongside statistical thinking and logic.

Decision-makers should not assume that using rules of thumb means sacrificing accuracy, he argues. In fact, it's the opposite.

"In an uncertain world, complex decision-making methods involving more information and calculation are often worse and can cause damage by invoking unwarranted certainty," he writes.

Gary Klein, who has been studying how experts like first responders and pilots perform in high-pressure situations for decades, also touts the utility of intuition. His consulting company, ShadowBox, tries to help novices make decisions like experts.

Klein has a rule of thumb about how executives should approach strategic decision-making. Essentially, it's a mix of intuition and speculative analysis.

As the outset of a major decision, he encourages executives to consult their intuition. If you don't get in touch with your intuition early in the process, says Klein, it could be overwhelmed by data and information that comes in later.

But Klein also suggests that executives check their intuitions with critical questions. The key, he says, is to adapt to new information.

"The problems I see, especially in changing environments, is people fixate on their beliefs and assumptions and explain away discrepancies rather than become curious about them," he says.

"In an uncertain world, complex decision-making methods involving more information are often worse and can cause damage by invoking unwarranted certainty." — Gerd Gigerenzer, *Risk Savvy: How to Make Good Decisions*

Combining Tech and Human Judgment

For many companies, the artificial intelligence (AI) revolution has arrived. For others, it's just around the corner.

Major tech companies like Google and Alibaba are among those leading the way, each investing billions in AI. But other industries are also pouring money into it. AI in manufacturing is expected to reach USD 4.8 billion by 2023, while in healthcare it is expected to eclipse USD 6 billion by 2021.

These investments are aimed, in part, at automating back-office functions, like "reading" contracts or processing data and transactions. But they also are aimed at extracting cognitive insights and making predictions.

Increasingly, as the role of technology in decision-making grows, fundamental questions will continue to surface: What role should human judgment play? Under what circumstances can decision-making be completely outsourced?

Michiel Muller, CEO of Picnic, a Dutch online delivery service for groceries that was featured among *Wired* magazine's Europe's 100 hottest startups in 2017, knows which way it leans on those questions.

"We do not believe in it if the data does not support it," he notes. "Of course, there is always room for gut feeling, but data is essential. If the data points you in the right direction, you know you're on the right track and you can increase speed."

When and how much to depend on intuitive cognition versus data-driven models when making decisions has long occupied Matthias Seifert, Professor of Decision Sciences at IE Business School in Madrid. He once designed a study that sought to measure the effectiveness of human expertise against computers in predicting success in music.

In his study, Seifert asked 180 participants — half of them music industry professionals, and the other, postgraduate students with no particular music industry expertise — to predict how songs would fare on the UK and German pop charts.

When considering songs from well-known pop stars who had track records of success and lots of historical data to analyze, the computers performed better, and expertise was irrelevant. But when considering songs from new artists with no historical data to analyze, the humans were better, and expertise mattered.

This finding is perhaps not surprising, but it has potentially broad implications, says Seifert. If, for example, a company is considering launching a new product — something new to the market — a computer may provide important analysis, but it likely won't be able to replace the subjective judgment of experienced people.

"It always makes sense not to rely on any one forecasting method, but to combine the two," Seifert says.

That is especially true in a fast-moving, dynamic environment. Algorithms are only as good as the data on which they are based.

A well-known concept in psychology called the "broken-leg problem" is relevant to understanding the limits of data-driven predictions. If we want to predict whether an individual will go to the movies, we can build a model incorporating data, such as the person's history of going to the movies and his or her proximity to a movie theater. But if the person suffers a broken leg, the model would miss a crucial piece of data. A human, however, could spot the problem.

Technological innovations will continue to improve our decision-making processes. The most successful companies will learn to embrace these new tools. But they will also learn how and when to leverage human intelligence, perspective and judgment.

As we've seen, these qualities are more critical than ever to smart decision-making. They help us surface the most important questions; determine when we've collected enough information; distinguish between noise and knowledge; identify potential blind spots; and recognize when caution and boldness are required. In other words, they help us create lasting value.

Spending on AI in manufacturing is expected to reach USD 4.8 billion by 2023 while in healthcare it is expected to eclipse USD 4.8 billion by 2021.

To discuss how the art of smart decision-making can help your business email us at crowe100@crowe.org

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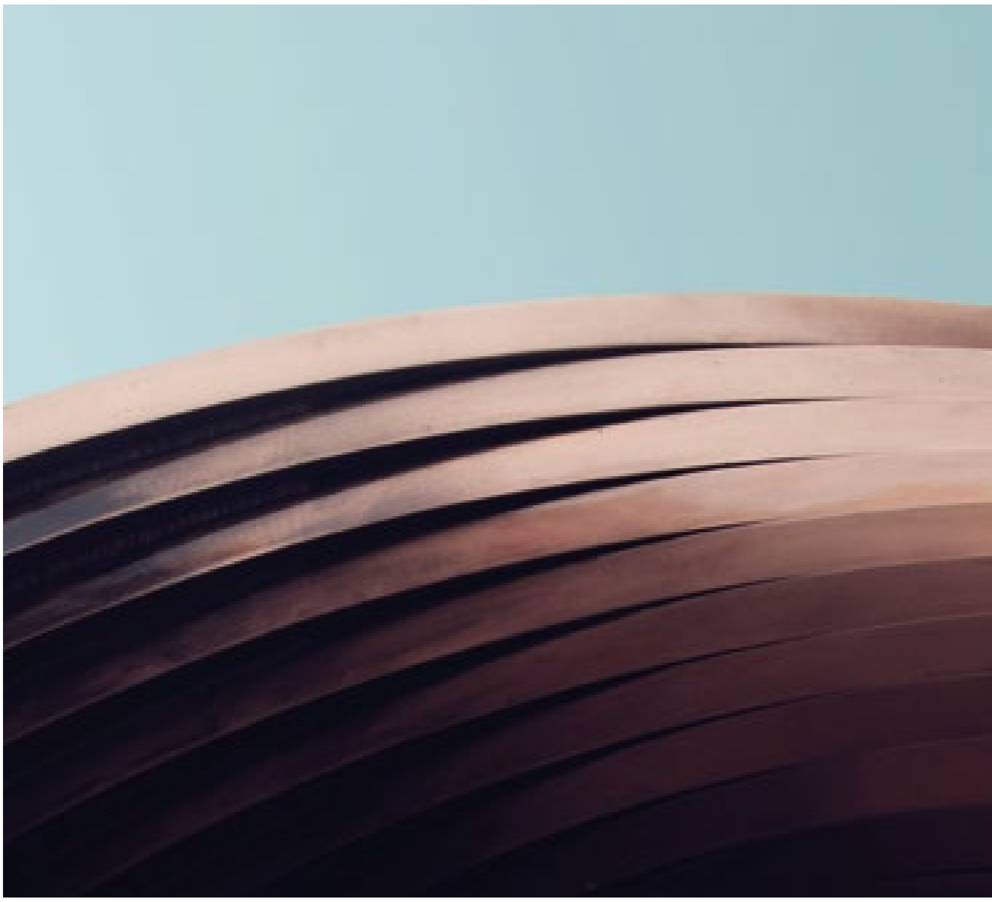

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