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The Future of Strategic Measurement: Enhancing KPIs With AI

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CONTENTS

1 Introduction

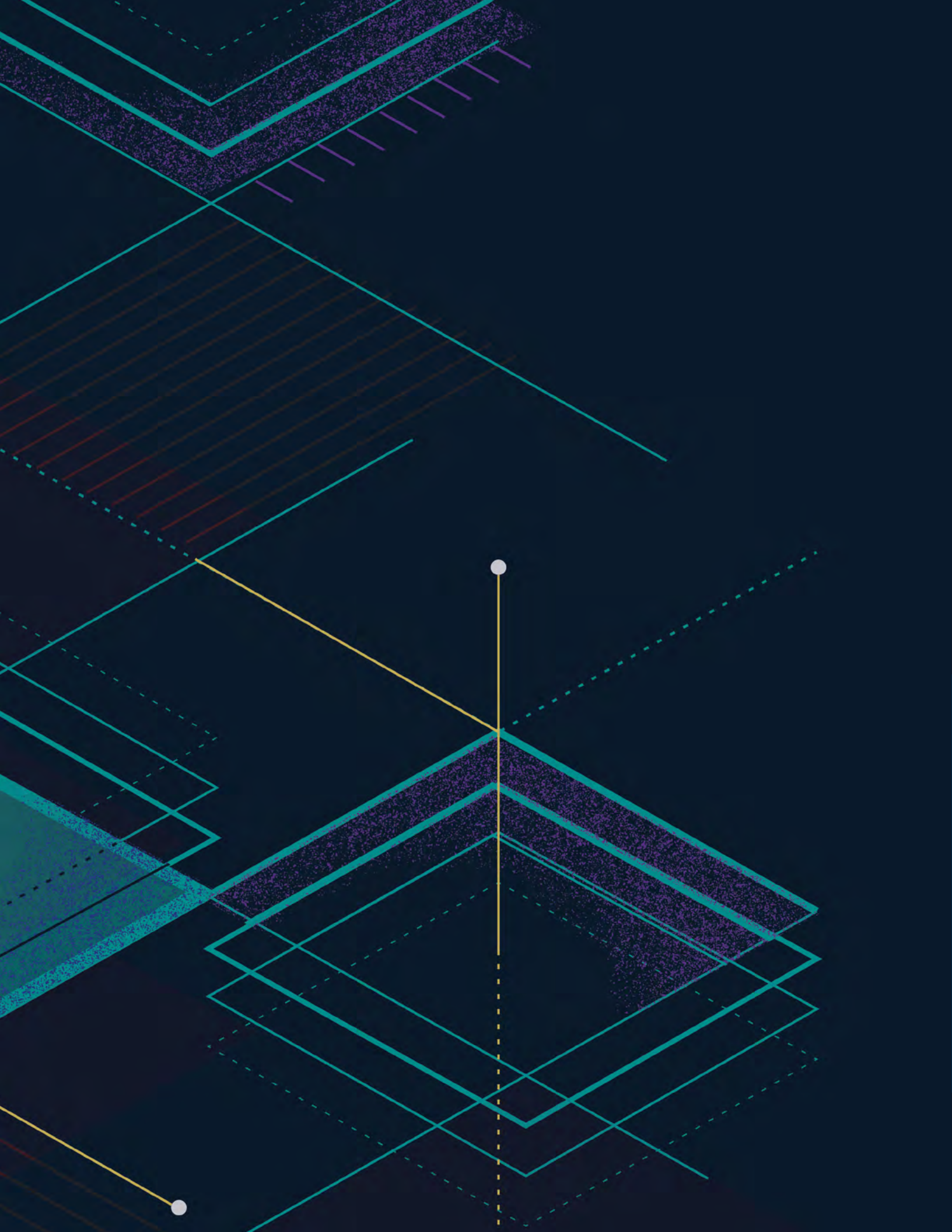
4 Developing Smarter KPIs

10 Transforming Legacy KPI Practices

11 Takeaways

13 Conclusion

14 Appendix: Using ChatGPT to Craft Novel KPIs



Introduction

Legacy key performance indicators (KPIs) increasingly fail to deliver the information and insights leaders need to succeed. They fall short in tracking progress, aligning people and processes, prioritizing resources, and advancing accountability. These failures both undermine operational efficiencies and compromise the pursuit of strategic objectives and outcomes. Sophisticated organizations worldwide recognize that their KPIs need to be measurably smarter and more capable. They consequently invest in algorithmic innovations to make their performance metrics more intelligent, adaptive, and predictive. Smart KPIs powered by artificial intelligence (AI) become sources — not merely measures — of strategic differentiation and value creation.

ABOUT THE RESEARCH

This report presents findings from the seventh annual global research study on artificial intelligence and business strategy by *MIT Sloan Management Review* and Boston Consulting Group. In spring 2023, we fielded a global survey and subsequently analyzed records from 3,043 respondents representing more than 25 industries and 100 countries. We also interviewed 17 executives leading AI initiatives in a broad range of companies and industries, including financial services, media and entertainment, retail, travel and transportation, and life sciences.

Our research examines how managers and leaders use AI to enhance strategic measurement to advance strategic outcomes. It explores how organizations have adapted KPIs — and even generated new ones — with AI to define and deliver measurably better performance.

Based on a global survey of more than 3,000 managers and interviews with 17 executives, we find AI being used to fundamentally redefine performance as well as enhance it. We see organizations using algorithms to challenge and improve enterprise assumptions around performance, profitability, and growth. Companies that revise their KPIs with AI are three times more likely to see greater financial benefit than those that do not. Smarter KPIs lead to better outcomes.

Online furniture retailer Wayfair, for example, used AI to reexamine the fundamentals behind its lost-sales KPI. "We used to think that if you lost the sale on a particular product, like a sofa, it was a loss to the company," says CTO Fiona Tan. "But we started looking at the data and realized that 50% to 60% of the time, when we lost a sale, it was because the customer bought something else in the same product category."

This insight led Wayfair to reengineer its lost-sales KPI into a more valuable metric. Whereas the company previously calculated item-based lost sales in response to price changes, it now also calculates category-based retention of sales in response to price changes. With the new, more accurate KPI, Wayfair is able to make more effective furniture recommendations that incorporate customer preferences — from price points to shipment times — when suggesting next-best offers. Logistically, the operations team aligned product placement decisions with distribution center and warehouse constraints to improve both customer and employee experiences. A smarter KPI measurably improved outcomes for everybody.

This example is no outlier. Our research finds organizations across industries using AI to revisit their KPI fundamentals and discover latent or undervalued performance features. By identifying, redefining, and communicating smarter metrics — their strategic measurement system — leaders increase their company's ability to optimize desired outcomes.[1]

Smart KPIs can do more than just unearth sources of value and differentiation that would otherwise go undetected or underexploited. They can also prevent the undesirable outcomes that can result from a failure to regularly reexamine assumptions underlying legacy KPIs. The 2008 global economic crisis, for example, was triggered in part by banks' dependence on a then widely used metric, value at risk, which measures potential portfolio losses in normal market conditions at a single point in time. Financial institutions did not adjust this measure as riskier subprime mortgages and credit default swaps became a larger part of their portfolios. Guided by a metric that severely underestimated potential losses — in some cases, by orders of magnitude — many financial institutions went bankrupt or suffered significant losses.

Executives who recognize the power and potential of AI-enabled KPIs acknowledge that their current KPI design and review practices are anachronistic. More and more companies are rising to this challenge by embedding governance processes and functions to oversee KPI development. KPI governance mechanisms that maintain detailed, accurate, and relevant performance data over time ensure that KPI quality is explicitly considered during their design and not an afterthought. Schneider Electric, for example, is making significant financial and nonfinancial investments in learning how to improve not only performance against established metrics but the performance metrics themselves. Accountability for performance *on* KPIs is increasingly insufficient; companies need accountability for the performance *of* KPIs, too.

Our global survey reveals that 60% of managers believe that they need to improve their KPIs, but only one-third (34%) are using AI to create new KPIs. Strikingly, 9 out of 10 managers within that 34% agree or strongly agree that their KPIs have been improved by AI. (SEE FIGURES 1 AND 2, PAGE 3.) While it is still early days for most organizations, the benefits of enhancing KPIs with AI are becoming clearer to more and more companies.

The far-reaching implications of these findings are difficult to overstate. Companies that algorithmically improve their KPIs are reconsidering the purpose of performance measurement, the function of KPIs, and the strategic value of metrics. Our research demonstrates that these reconsiderations frequently lead to new processes for transforming both KPI design and how organizational behaviors align with strategic outcomes. Strengthening strategic alignment is both an objective and an outcome of smart KPIs.

These algorithmic imperatives put a provocative twist on the oft-quoted phrase "what gets measured gets managed." Thanks to AI, what organizations learn to measure, they must also learn to manage — and how they measure matters as much as what they measure. As better instrumentation, better data, and better algorithms change the measurement process, opportunities for strategic differentiation and value creation improve as well.

This report synthesizes and expands upon key findings from the four articles in our yearlong collaborative research series on enhancing KPIs with AI.[2] We discuss a nascent but growing effort to create smarter and more valuable KPIs and offer evidence-based management takeaways for developing and using next-generation KPIs to drive better performance. We also detail specific steps managers can take to begin realizing the benefits of smarter KPIs.

FIGURE 1

Improving KPIs Is a Leadership Priority

While more than half of the leaders we surveyed are focused on improving the quality of their KPIs, only approximately one-third use AI to generate new KPIs.

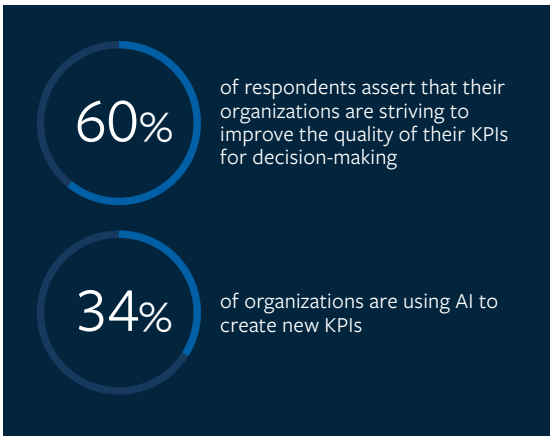
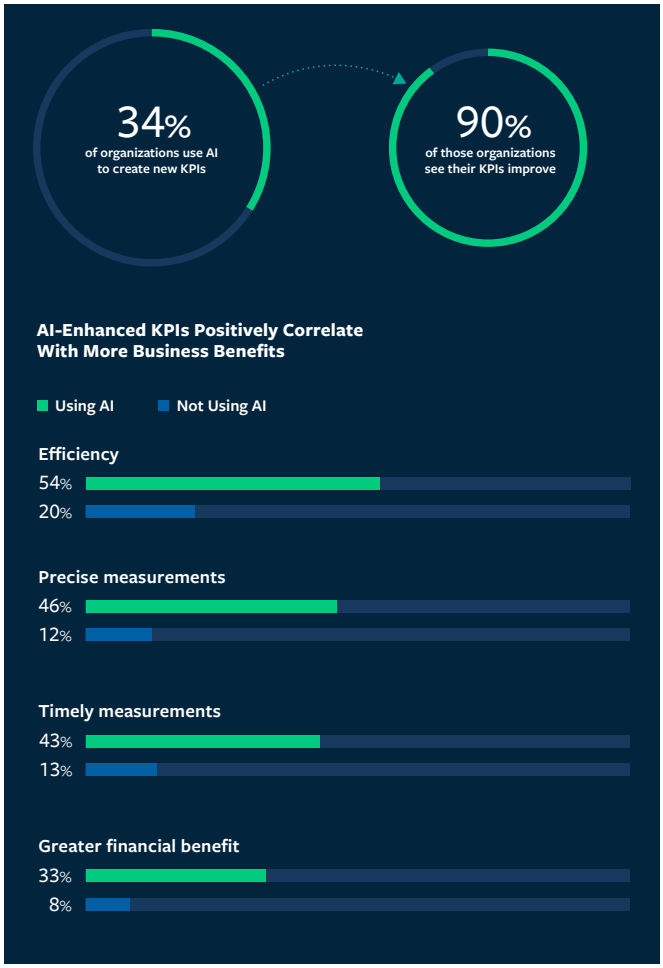


FIGURE 2

Creating New KPIs With AI

Of the 34% of organizations surveyed that use AI to create new KPIs, 90% see improvements.



> **A common corporate objective is to improve KPIs over time. Our research shows that using AI is one of the most effective ways to enhance KPIs.**

Developing Smarter KPIs

Organizations typically use KPIs as benchmarks to evaluate progress on a wide range of business objectives, such as sales growth, customer satisfaction, and operational efficiency. Data-gathering techniques and analytics are subsequently used to measure progress against these metrics. This approach prioritizes what KPIs measure rather than how KPIs are measured.

Today, however, shifting economic conditions, evolving consumer expectations, and digital transformation efforts create a mandate for organizations to reconsider — on an ongoing basis —what key performance means and how to measure it. Managers acknowledge the need for change: Six out of 10 survey respondents agree that improving their KPIs (in terms of what gets measured and how it gets measured), not just improving performance, is critical for effective decision-making. Every executive we interviewed explicitly declared that improving KPIs with AI is an enterprise interest, and it is an immediate priority for several.

There are many paths to improving KPIs. Low-cost approaches that rely on human judgment, intuition, and experience can deliver incremental changes with incremental insights into performance. In contrast, AI-enhanced KPIs can deliver significantly more detailed and accurate insights into current and future performance. For companies deploying such — smart — KPIs, the organizational costs are outweighed by business benefits spanning increased efficiency, better alignment, and improved financial outcomes.

Three Types of Smart KPIs

We see three ways that AI-enriched KPIs improve on legacy metrics that simply track performance. Smart KPIs better describe ongoing and past performance, more effectively anticipate future performance, and make more useful recommendations to promote outcomes. These three types of smart KPIs (descriptive, predictive, and

Type of KPI	Description	Benefits	Example
Smart Descriptive KPIs	Synthesize historical and current data to deliver insights on *what happened* or *what is happening*.	Provide a deeper understanding of performance gaps and their causes.	Sanofi's "snackable AI" tool boosts situational awareness by revealing critical interdependencies among different KPIs.
Smart Predictive KPIs	Anticipate future performance, producing reliable leading indicators. Provide visibility into potential outcomes. Identify patterns that other techniques or humans cannot, allowing them to draw on a richer range of potentially counterintuitive patterns.	Enable preemptive actions in order to mitigate risks or leverage opportunities.	General Electric has transformed its KPIs to focus on leading indicators and is using AI to analyze order pipelines by comparing orders against the installed base of products and services, helping to accurately identify opportunities to increase future orders and drive stronger revenue and margins.
Smart Prescriptive KPIs	Use AI to recommend actions that optimize performance.	Indicate performance gaps and suggest corrective measures.	Sanofi's smart KPIs align operations and sales by recommending adjustments to sales activities or priorities based on supply chain performance.

FIGURE 3
Three Types of Smart KPIs

Enriched with AI, smart KPIs offer several advantages over traditional KPIs.

prescriptive) map to a well-known distinction between descriptive, predictive, and prescriptive analytics.

The idea of prescriptive KPIs might be unfamiliar, but executive dashboards that color-code KPIs already provide a simple call to action: Red indicates that performance is down, and green means that performance meets or exceeds expectations. Smart KPIs go further: They can make more detailed recommendations about next steps leaders should take in response to these signals and diagnose implications for other KPIs. (SEE FIGURE 3, PAGE 4.)

Improving Existing KPIs With AI

Goodhart's law declares that when a metric becomes a target, it ceases to be a good metric. But targeting metrics themselves for improvement is both consistent with Goodhart's caution and an essential ingredient for sustainable operational success. Continual KPI improvement becomes a target in its own right.

Media conglomerate CBS offers a compelling example of this sensibility and approach. One executive began exploring whether AI could discern performance drivers that executives couldn't identify through intuition and experience alone.[3] In the interest of predicting which programs would become hits, the executive gave her AI teams 50 years of KPIs and consumer research data to determine whether the company had the right KPIs for predicting the success of TV pilots.

The team used AI to confirm the merits of existing KPIs and identified additional ones that helped refine how the company assesses pilots. "We got better by going through this AI exercise," she noted. "The analysis changed what we were looking for and helped improve our performance."

Intentionally using algorithms to revisit and review key performance parameters leads to improved performance. For Tokopedia, one of Indonesia's largest marketplaces, merchant reliability is core to maintaining strong customer relationships. The organization sells 1.8 billion products per day through 14 million merchants — more than 85% of which are new entrepreneurs, says CTO Herman Widjaja. While merchants have good products to sell, not all of them manage their stock efficiently, which in turn negatively impacts fulfillment, customer satisfaction, and, ultimately, the volume of transactions taking place on the platform. To address this issue, the company began synthesizing and analyzing millions of merchant and customer data points.

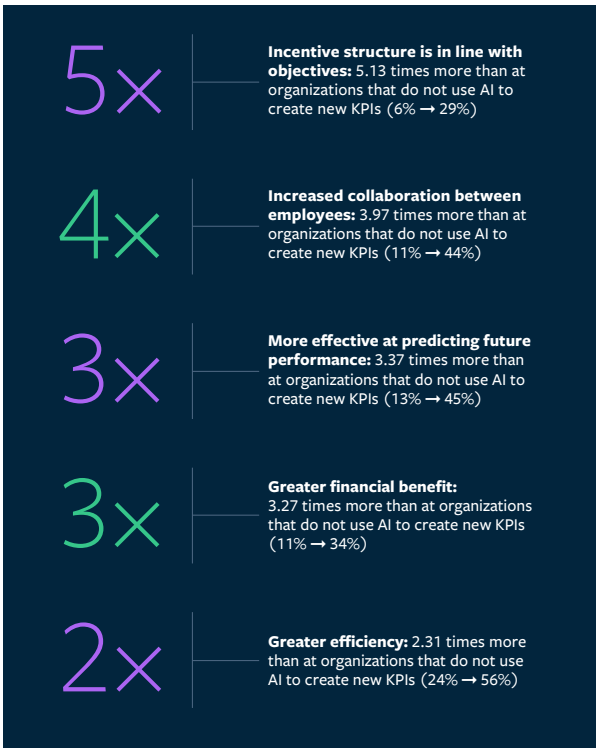
Its algorithmic analysis of the data led to a scoring system that enhanced the company's KPI for merchant quality. The system has improved both customer service (by connecting customers to those merchants most likely to deliver a quality product) and marketplace effectiveness (by identifying and helping low-scoring merchants improve their own operations). The scoring system benefits all parties: the customers, the merchants, and Tokopedia itself. With it, the company has been able to create a more credible, effective marketplace.

ENHANCING KPIS WITH AI AT MAERSK

Maersk, the Danish transportation, shipping, and logistics company, used AI to reassess and redefine how it measures throughput and the productivity of its network of 65 assets in ports, transportation, and warehouses worldwide. Front-line managers had to decide whether key performance was best defined by loading and unloading ships or trucks as quickly as possible or by managing the loading process so that the transportation could reliably depart as scheduled. To reach a decision, the company used AI-driven models to represent each approach and assess its effects across the value chain. These models concluded that reliable departures that used less loading equipment would preempt bottlenecks both at transshipment points and during connections between different modes of transport, such as road and rail. With AI, Maersk prioritized the right KPI, overcoming a human bias to maximize speed. This approach led to more efficient, aligned performance across the enterprise and, in turn, increased customer satisfaction with reliable deliveries.

FIGURE 4
Benefits From AI-Adjusted KPIs

Organizations that create new KPIs using AI are more likely to see stronger alignment, increased collaboration, more accurate forecasts, and more efficiency than organizations that do not create new KPIs using AI.



Creating New KPIs

Identifying strategic and operational KPIs is a common function of human leadership teams. Yet our research confirms that AI — not only humans — can propose and even design new and novel KPIs to guide executive decision-making. We heard story after story of leaders turning to algorithms to source key performance metrics that are not only strategically and operationally valuable but, in some cases, derived from data patterns too complicated for humans to discern. Our survey data affirms that companies using AI to create new KPIs see a broad range of business benefits compared with those companies that don't use the technology to create new KPIs. (SEE FIGURE 4.) Organizations using AI to create new KPIs (34% of all respondents) are more likely to realize benefits around alignment, collaboration, efficacy, financial benefit, and efficiency.

The Appendix section (SEE PAGE 14) describes an experiment we conducted with ChatGPT that resulted in several novel, and potentially useful, KPIs.

Avinash Kaushik, chief strategy officer at digital marketing agency Croud, was formerly the senior director of global strategic analytics at Google, where machine learning helped his team discover a new measure of performance. In one situation, he recalls, the technology giant had made a substantial but underperforming marketing investment in a primary digital channel. "We had no idea what was wrong with us," Kaushik recalls. "We knew we were failing; we just didn't know why, and we'd exhausted all the questions we could ask." Google's wealth of talent, analytic resources, and data access weren't enough to crack the code.

Kaushik's team developed an algorithm using a machine learning model called a classification tree to identify connections and correlations they had missed. "Because we didn't even know what questions to ask, this kind of unsupervised machine learning algorithm was a really good approach," he says. "We let the algorithm find the patterns."

What the algorithm found surprised Kaushik's team: KPIs they had thought were the most essential to optimize weren't. The most influential metrics, their order of importance, and their optimal ranges of operation were a revelation. A surprising measure was the percentage of impressions in which a person viewed and heard a full ad. If the percentage was below a certain benchmark, the marketing campaign was doomed to fail; if higher, the campaign had a chance at success. Not six months after

implementing the algorithm's recommendations, desired performance increased 30 points — "an insane performance improvement," Kaushik says.

KPI GOVERNANCE AT SCHNEIDER ELECTRIC

Schneider Electric's chief governance officer and secretary general, Hervé Coureil, acknowledges that harnessing data to unearth and generate new KPIs can be costly and time-consuming. But, he contends, it's strategically necessary. "We want our KPIs to evolve over time because we don't want to drive our business on legacy or vanity metrics," he says. To ensure that KPIs develop in accord with changing objectives and new measurement capabilities, Coureil cosponsored a performance management office (PMO) within the company's data team to oversee performance standards. "We looked at performance measurement as one of our transformation drivers," he says. The PMO helped top management evolve its portfolio of KPIs and align them with the company's various operating units. It also pushed the businesses to become more data-driven and analytically aware of the links between performance improvements, improved metrics, and enhanced outcomes.

Our research finds growing demand for new, AI-driven KPIs. At Region Halland Health System in Sweden, for example, researchers created and trained an algorithm based on data from death certificates, government records, and electronic records to better predict sudden cardiac death (SCD) in the year after an electrocardiogram (ECG) is performed. SCD afflicts 300,000 people in the U.S., and millions globally, every year.[4]

"The algorithm became quite good at predicting who's going to succumb to sudden cardiac death in the year after an ECG is taken," says Dr. Ziad Obermeyer, a physician and professor at the University of California, Berkeley, who helped train the algorithm. "Every time someone gets an ECG, it generates a risk score that measures the probability the individual will die from sudden cardiac arrest." That ECG score can function like a key performance indicator: With the score in hand, a doctor might observe how a patient's SCD risk profile changes after they're prescribed a medication, such as a beta blocker or an ACE inhibitor.

While using AI to discover effective predictive indicators for SCD remains a work in progress, researchers are already excited about its potential to create early indicators for other diseases. "Having the ability to turn these very complicated biological signals into indicators is very powerful," Obermeyer says. "I think that's going to be something we'll see a lot more of, not just for sudden cardiac death but for diabetic complications and all sorts of other preventable, high-stakes conditions."

Establishing New Relationships Among KPIs

Because performance drivers interact in complex ways, you don't just need better KPIs: You need a better understanding of how KPIs are related to each other. We see executives, analysts, and data science teams collaborating to identify interdependencies and establish new relationships among KPIs. These relationships may reveal tacit or subtle links between, say, employee productivity and customer engagement, profit margins and market share, or quality manufacturing output and return on assets.

Our research finds growing demand for new, AI-driven KPIs.

Pernod Ricard, a $10 billion global spirits company, uses AI to describe and deepen the connection between two of its most important KPIs: profit margins and market share. In the past, these KPIs were siloed, each with its own set of measures. The finance function focused on profitability, while sales and marketing focused on market share.

The company now deploys AI to deliver insights into how commercial and marketing investments that improve profits — such as media or in-store activation — also influence market-share objectives and vice versa. Instead of seeking to maximize each individual KPI, the spirits maker now seeks to optimize both KPIs in concert with each other.

"If you can imagine moving a cursor between market share optimization objectives and margin optimization objectives, you need to know how the required investments vary to reach these objectives," says Pierre-Yves Calloc'h, Pernod Ricard's chief digital officer. "AI is going to give you that information. With AI, we can better align market share KPIs, margin KPIs, and required investments to reach them." This capability transformed how Pernod Ricard's leadership allocates capital and balances its aspirations for profitability and market share.

BOLSTERING KPIS AT WAYFAIR

"In business, there's a tendency to optimize operations for micro KPIs. However, a singular focus on these metrics can sometimes lead to a 'local maxima' problem, where the benefits to one part of the business may come at the expense of the overall health of the business," notes Fiona Tan, Wayfair's CTO. For example, optimizing for the profitability of certain products or services, such as warranties, could reduce the number of items a customer buys, which negatively affects crucial business concerns such as customer loyalty or long-term customer value. This situation underscores the importance of having robust macro KPIs that govern and balance local or short-term gains with long-term objectives. Wayfair takes a holistic view that aims to ensure efforts to boost immediate profits do not undermine the overall customer experience and the sustainable growth of the company.

Intelligent algorithms also help align enterprise strategy with unit- and team-level operations by fostering silo-busting behaviors that enable more efficient and effective collaborative work. At Singapore-based DBS Bank, leadership created cross-functional groups to improve its customer focus, customer service, and profitability. This move was a significant departure from a traditional operational approach, in which each department owned separate KPIs for its distinct customer touch points. It took DBS three years to create a value map that enabled these groups to manage a "customer journey" that comprises outcomes in four categories: customer experience, employee experience, profitability, and risk.

At scale, the numbers of drivers, metrics, and interdependencies across these outcome categories were overwhelming and impossible for human managers to optimize. AI, however, offered fresh perspectives on visible and hidden performance patterns and identified key interdependencies among the performance drivers. According to Sameer Gupta, group chief analytics officer and managing director at DBS Bank, identifying interdependencies among drivers and KPIs was a fundamental shift that enabled all group members to see the same data, continually assess the factors driving different outcomes, and agilely respond.

AI-based platforms can also drive strategic alignment across an organization by improving the quality of communication. Roughly 10,000 executives at France-based pharmaceutical company Sanofi have visibility into and access to their KPI data via its Plai app. Plai uses AI to link internal data with personalized insights and what-if predictions that invite managers to better coordinate and align their plans, says Stephanie Androski, Sanofi's head of global finance operations and transformation. As Androski explains:

> *We now have one number that's going behind our sales forecast, and it's the central point for multiple other KPIs. If we're predicting a potential out-of-stock situation for a product, not only does it give us the ability to say, 'Oh, wait a minute — the AI is predicting we might be out of stock of that product in four months. Is that real, and can we get ahead of it?' It also gives us the ability, as the finance team, to ask, 'Are the sales too ambitious for this product? Will we lose market share?' or 'What does this do to the overall forecast?' Because everything is more out in the open, and because you can see it, it's really helped increase that dialogue and productivity.*

INSIDE THE ALGORITHMS THAT MAKE KPIS SMARTER

In practice, developing smart KPIs requires categorizing variables into three distinct types:

- **Strategic outcome variables:** Well-known overarching targets, such as revenue or profit.
- **Operational drivers:** Variables that might impact the strategic outcome, such as pricing, consumer reviews, or website traffic.
- **Contextual factors:** External factors beyond a company's control, typically measured or tracked through external data such as consumer spending forecasts, intercountry freight, or government regulation.

The objective of using AI techniques in the context of KPIs is to better understand causal relationships between operational drivers and contextual variables on the one hand and strategic outcomes on the other. The output of this effort might then be an enhanced version of an existing KPI, a new KPI altogether, or an explicit causal link between KPIs. Either way, the goal is to produce a more reliable and dynamic leading indicator of strategic outcomes.

For example, in the case of Tokopedia, the relevant strategic outcome involves the number and value of transactions on its platform. This outcome is directly related to operational drivers involving merchant attributes that Tokopedia can both track and influence, such as fill rates and number of products offered. Finally, there are contextual factors beyond Tokopedia's direct control, like merchant locations or the number of searches (an indicator of demand) for a given merchant's products, that also influence the strategic outcome. With AI, Tokopedia was able to synthesize a variety of operational drivers and contextual factors into a single merchant-quality KPI. This KPI simultaneously improved the quality of buyer-seller matching and offered merchants valuable insights to improve their own operations; these benefits jointly drive overall strategic outcomes for Tokopedia, such as the volume and value of transactions.

ALIGNING CFO AND CMO KPIS TO IMPROVE PATIENT READMISSION RATES

Reducing readmissions is both a key outcome indicator and an essential factor in reducing costs for hospitals. In legacy provider organizations, CFOs manage costs and reimbursement flows, and chief medical officers (CMOs) emphasize the quality care of patients and their release from the hospital. Each role tends to view reducing readmissions from a distinct perspective, with its own independent metrics. It is now possible to use AI to analyze patient data, identify root causes of readmissions, and recommend targeted interventions. With this information, CFOs and CMOs can share a "patient readmission rate" KPI that offers a single source of data for improving outcomes and reducing costs. Both departments understand how their actions advance low-cost options that improve readmission rates and increase quality of care. This shared KPI promotes alignment across the organization — an alignment made possible by a KPI forged from pattern-recognizing algorithms.

Transforming Legacy KPI Practices

Where KPIs were once the domain of human expertise and decision-making, algorithmic innovations profoundly reshape their powers and purpose. We see this less as a transition than a disruption: The human monopoly on KPI development, management, and governance is eroding.

Below, we describe six shifts from what legacy KPIs currently allow to what algorithmically informed KPIs demand. These demands force leadership teams to integrate AI into the way they develop and use KPIs. Without exception, our executive interviewees acknowledged that their smart KPI initiatives are a challenging but necessary undertaking.

FROM 'Performance Tracking' TO 'Redefining Performance'

Tracking performance — that is, assessing progress toward predetermined performance targets — exemplifies legacy uses of KPIs: The primary perceived value of KPIs is keeping score. Our research suggests that investing to better track legacy KPIs that are still in use can have diminishing returns. Executives working with novel instruments, technologies, and dataflows can develop new perspectives on what drives performance and its measurement. Their investments to improve KPIs with AI pay off with new definitions of performance, not just better measurements of performance on legacy metrics.

Much as the James Webb Space Telescope's startling images of early galaxy formation overturned some legacy cosmological understandings of the universe, increasingly intelligent instruments and algorithms can reveal surprising features of performance. At Google, for example, Kaushik observed how unsupervised learning algorithms identified completely unexpected performance markers for its media buys. Other conversations with leading AI researchers and practitioners suggest that tomorrow's most effective leadership teams will depend on smart KPIs to unlock new performance capabilities. Optimizing tomorrow's performance will be guided by the best and smartest KPIs.

FROM 'Static Benchmarks' TO 'Dynamic Predictors'

Legacy "set 'em and forget 'em" benchmarking practices give way to targeted investments in smarter KPIs that anticipate market conditions, supply chains, and consumer behavior with greater precision. Schneider Electric models dynamic KPIs that compute how volatile weather influences trade-offs among KPIs related to energy costs, distributive load-balancing risks, and carbon footprints. Dynamic KPIs invite businesses to anticipate changing environments earlier and respond to them more effectively. Without exception, the executives we spoke with indicated that they are increasingly orchestrating dataflows and workflows to make their KPIs more adaptive and predictive. We already see such predictive dynamism in high-frequency algorithmic trading and programmatic-advertising marketplaces. Dynamically unpredictable markets invite dynamically predictive KPIs.

FROM 'Judgment-First' TO 'Algorithmically Defined' Strategic Metrics

Traditionally, human executives have designed and defined KPIs based on experience, market trends, and business objectives. Combining generative AI with other intelligent algorithms cracks this human monopoly and encourages previously unimagined metrics. Tomorrow's most innovative metrics for aligning and assessing key performance may well be machine-made.

This obligates organizations honoring a responsible AI ethos to openly embrace transparency, interpretability,

and explainability for their "machine-made" metrics. Smart KPIs must be seen to align with enterprise values and objectives. This requires new processes for setting, improving, aligning, and communicating strategic and operational metrics. Human oversight complements and commands algorithmic insight and foresight.

FROM 'KPI Management' TO 'Smart KPI Governance and Oversight'

Whereas better KPI management emphasizes specific outcomes, KPI governance ensures that desired outcomes are appropriately aligned and optimized. Managing KPIs involves maximizing performance against individual metrics, often in isolation at the team or unit level. KPI governance, in contrast, calls for overseeing and actively refining entire KPI portfolios at the enterprise level. Our research shows that many leaders continue to privilege KPI management over KPI governance.

Effective governance demands that leaders understand how intelligent algorithms can — and should — influence the ways in which KPIs learn, improve, and learn to improve. Identifying and managing trade-offs between competing and conflicting KPIs becomes mission-critical. Cross-functional reviews to assess such trade-offs are key to ensuring alignment. The goal of smart KPI governance is not (merely) optimizing individual KPIs but optimizing strategic KPI portfolios — the group of KPIs that best represent strategic aspirations, objectives, and outcomes.

Essentially, businesses need KPIs for their KPIs — intelligent metrics and standards to reliably evaluate the effectiveness, efficiency, and alignment of the KPIs themselves. Developing KPIs for KPIs demands a meta-level strategy and approach for ensuring continuous improvement of the performance measurement system itself. Better governance, not simply better data science, shapes these meta-KPIs. Every executive we spoke with observed that their progress in governing KPIs has just begun.

FROM 'Keeping an Eye on KPIs' TO 'KPI Dialogues and Discussions'

Checking KPIs throughout the day is a common management habit in offices around the world — a habit made more pleasing and useful by the evolution of more detailed, visually compelling, and insightful dashboards. Intelligent algorithms, however, transform eye-catching dashboards into machine learning platforms that facilitate, enable, and empower real-time dialogues between managers and their KPIs. For example, equipping KPIs with generative AI capabilities makes it possible for managers to prompt dashboards to produce counterfactual scenarios for financial planning or inventory management. Iterating with large language models can remake these counterfactual scenarios into useful narratives for decision-making and collaboration.

The management paradigm shifts from passive data consumption to active data interaction. Real-time data dialogues — with and between multimodal KPI dashboards — lead to better-informed, more agile, and more strategic decisions. Sanofi's Plai initiative presents a case study of how predictive analytics provokes more future-oriented internal collaborations. This generative extension from performance-tracking displays to dashboard dialogues, conversations, and interrogations enhances analytic engagement and decision-making alike.

FROM 'Strategy With KPIs' TO 'Strategy for and With KPIs'

In traditional strategic management approaches, KPIs constitute tangible, measurable objectives that represent executive-determined business goals. Strategy must incorporate measurable objectives to guide behaviors, communicate goals, and hold individuals accountable. KPIs bridge strategy and operations. This is strategy with KPIs.

Smart KPIs demand a new paradigm, for they themselves require a strategy for their development and optimization over time. Your smartest KPIs optimize your strategy, and your optimal strategy includes smarter KPIs. Having a strategy for, as well as with, KPIs encourages strategists to attend not only to measurable objectives but to measurably enhanced KPIs.

Takeaways

None of these shifts is subtle or incremental; they disrupt how organizations understand, define, and pursue performance excellence. Leadership initiatives for strategic performance improvement cannot be divorced from initiatives to develop smarter KPIs. These takeaways highlight next steps organizations must take to make their smart KPIs operationally, organizationally, and strategically more valuable.

Takeaway 1: Realign Data Governance to Enable Measurably Smarter KPIs

Robust, reliable, and sophisticated data governance is a critical enabler for smarter KPIs. Measurably improving key performance requires measurably improving data. Data — in all its forms — must be seen and treated as a

strategic asset. Our interviews with executives in enterprises as varied as DBS Bank, Tokopedia, General Motors, and Pernod Ricard affirm that effective smart KPI development is overwhelmingly contingent on the quality, accuracy, timeliness, and contextual relevance of data. In other words, garbage in, garbage out. There is no escaping their observation that smarter KPIs often depend on high-frequency and highly accurate data.

To enhance data governance for smarter KPIs:

1. Align data governance frameworks and capabilities with specific KPIs, such as customer lifetime value (CLV), new recurring revenue, and employee experience. Data sets should not be governed separately from the KPIs to which they directly — or even indirectly — contribute. Data governance should identify and label the data that both describes performance and informs performance measurement.

2. Incorporate oversight and insight from data stewards and data owners. Their involvement is technically, organizationally, and culturally pivotal. Metadata management — intentionally defining the data about data — ensures that smart KPIs with predictive and prescriptive powers accurately capture, analyze, and improve performance excellence criteria.

3. Strengthen cross-functional data governance. Data and metadata for smarter KPIs must be seen as enterprise assets, not functional, departmental, or siloed ones. Relying on departmentally defined data governance increases the risk of injecting bias in data interpretation and prioritization, consequentially distorting KPI measurements.

Takeaway 2: Establish KPI Governance Systems

Strategically enhancing organizational performance requires establishing robust governance mechanisms for smarter KPIs.

To create an effective KPI governance system, consider:

1. Establishing an executive group to oversee development of a comprehensive strategic measurement system for ongoing KPI development that incorporates both better data and more intelligent algorithms. A performance management office can serve this purpose: It can define clear governance principles and priorities for smarter KPIs, including rules for human-machine collaboration.

2. Instituting processes or systems for measuring KPI quality. Such meta-KPIs — essentially, KPIs for KPIs — could evaluate KPI reliability, utility, improvement, and value. Such systems should assess the quality and future evolution of individual, shared, and ensembled KPIs. In effect, senior leadership could seek to measure enterprise returns on KPI investments.

3. Creating accountability and oversight to ensure that smarter KPIs align operational outcomes with evolving strategic business objectives. Effective KPI governance adds a new layer of accountability that enables leaders to use enhanced measurement techniques to deliver KPIs that augment the performance of workers, not control them.[5]

These three KPI governance components should identify interdependencies among metrics across business silos. Both anecdotal evidence and our survey results reflect that organizations using AI to create and/or refine KPIs see improved cross-functional collaboration.

Takeaway 3: Use Digital Twins to Enhance Key Performance Metrics

Defining new or enhanced performance metrics with machine learning demands experimentation. As virtual models mirroring real-world systems, digital twins offer platforms — or sandbox simulations — for smart KPI development that can both complement and supplement existing digital twin initiatives.

To use digital twins for smarter KPIs:

1. Identify appropriate KPIs for twinning and algorithmic enhancement. Are the dataflows and workflows appropriately governed and accessible? Consider creating digital twins either for CLV or digital marketing campaigns, for example, or to simulate, test, and learn optimization options. Understand how these metrics link to business objectives and contribute to enterprise value.

2. Map KPI dataflows and workflows. What are the data sources for digital twins, and how do they feed and flow through systems and processes? Comprehensive mapping is critical for creating digital twins that accurately reflect real-world scenarios.

3. Integrate cross-functional collaboration into the digital twinning process and include data science teams. Leadership should lead by example, by using and communicating smart KPI twins as resources for business planning and execution.

Takeaway 4: Prioritize Cultural Readiness and People-Centric Approaches

Disrupting the human monopoly on KPI development challenges organizational culture and traditional leadership roles. As smart KPIs learn to become more capable, are they seen more as colleagues, collaborators, advisers, or data dictators? Adopting smart KPIs can threaten the way many experienced managers see themselves and their future value to the enterprise. Partnering with technologists and data scientists can be seen less as a collaborative venture than a compromising or deferential one.

A healthy senior management team embracing smarter KPIs must:

1. Acknowledge and preempt organizational resistance to smart KPI adoption. This in turn requires leading by example to credibly spearhead cultural change. That means, in part, demonstrating how smart metrics drive value creation and empower better decision-making.

2. Anticipate and address new power dynamics that emerge as smarter KPIs surface organizationally sensitive interdependencies among siloed functions, processes, and departments.

3. Acclimate executives to working with algorithms that complement and augment KPI development and continuous improvement. Consider hosting executive education classes for managers to learn how to "dialogue with dashboards" to improve their decision-making.

Takeaway 5: Strategic Alignment With Smart KPIs

Smart KPIs in the networked enterprise can help align strategic aspirations with strategic performance, but people, process, and technology also need to be aligned to develop smart KPIs. Smart KPIs need strategies of their own.

To strengthen strategic alignment with (and for) smart KPIs, consider taking the following steps:

1. Begin with the organization's declared strategy. Then identify and rank the KPIs leadership agrees are most important to and best define the company's strategic progress and success.

2. Address these KPIs as a unit of analysis. Simulate best-, worst-, and most-likely case scenarios: How do the ranking and weighting of those strategic KPIs shift among these scenarios? What new data or improved analytics would make them more important and influential to management decisions? What new smart KPI capabilities (descriptive, predictive, or prescriptive) would point out opportunities for greater efficiencies, stronger strategic alignment, or better options to attain strategic outcomes? Our research strongly suggests that executives engaging in this exercise will discover that algorithmic innovation invites the design of novel, more detailed strategic KPIs.

3. In parallel, map interdependencies among KPIs and development pathways for smart KPIs. Ensure that these maps reflect strategic planning goals and communicate strategy narratives. This approach pushes top leadership to look at people, products, profitability, and growth opportunities through the prism of interconnected strategic metrics. Strategic aspirations become measurement-driven rather than just data-driven or defined by human judgment.

Conclusion

Transforming static metrics into smarter, more dynamic, and more accurate KPIs helps executives and their boards shift their approach to strategic insight, aspiration, and accountability. Smart KPIs promise and can deliver previously unattainable levels of data-driven, organizational dynamism. This is not hype; this is what AI now makes possible and what we heard from executives who are already investing in smart KPIs.

While the challenges these disruptions pose — ethical, operational, organizational, and cultural — appear daunting, the leaders we spoke with believe that the strategic benefits far outweigh the costs. They shared their openness to new ways of measuring success and a willingness to update and revise their legacy beliefs about AI and strategic planning.

Intelligently integrating intelligent KPIs into the enterprise requires a new cultural commitment to more effective partnerships between talented people and their technologies. How leaders learn from and with their smartest KPIs will determine the success of both.

Appendix: Using ChatGPT to Craft Novel KPIs

As this report was being researched and written, the power and potential of large language models (LLMs) and generative AI became clearer. With tongue only slightly in cheek, we prompted ChatGPT-4 to imagine a brainstorming session where business, technology, and marketing leaders were invited to reimagine customer lifetime value as a smart KPI. The prompts' sequencing and responses speak for themselves. Neither the prompts nor the LLM's responses have been revised or edited in any way. At minimum, we anticipate generative AI playing an ever more informed, influential, and insightful role in the design and development of intelligent KPIs, especially in domains with vast amounts of unstructured data.

What follows is our verbatim exchange with ChatGPT:

Our Prompt

Imagine a brainstorming session about the future of customer relationships and the value of the 'customer lifetime value' KPI in measuring, valuing and assessing them....this brainstorming session's purpose is to come up with novel, clever and high-impact ways of both bettter measuring and getting greater from 'CLV'....the participants for this imaginary CLV brainstorming session will be advertising and marketing guru david ogilvy of 'confessions of an advertising man' fame, cosmetics and direct marketing entrepreneur mary kay, branding innovator and copywriter mary wells lawrence, internet innovator and AI pioneer kai-fu lee and openAI founder and entrepreneur sam altman....please present a transcript of their provocative, high-energy and productive exchange and conclude by presenting their three most profound CLV KPI insights and recommendations....

ChatGPT

Creating a transcript for an imaginative brainstorming session involving David Ogilvy, Mary Kay, Mary Wells Lawrence, Kai-Fu Lee, and Sam Altman on the topic of Customer Lifetime Value (CLV) KPI presents an exciting opportunity to blend insights from advertising, marketing, technology, and AI. Here's a fictionalized account of their exchange, culminating in three profound insights and recommendations:

David Ogilvy: "Let's start by redefining CLV. It's not just about the total spend; it's about understanding the customer's journey and evolving needs. We need a more dynamic model."

Mary Kay: "I agree. It's about building relationships, not transactions. Our measurement should factor in the emotional connection a customer feels towards a brand."

Mary Wells Lawrence: "Branding is key. We should explore ways to quantify how brand perception impacts CLV. Maybe integrate social media sentiment analysis?"

Kai-Fu Lee: "Utilizing AI can revolutionize how we measure CLV. We can deploy machine learning to predict future customer behavior based on past interactions and social trends."

Sam Altman: "And let's not forget personalization. AI can help us tailor experiences to individual preferences, potentially increasing CLV through enhanced satisfaction."

David Ogilvy: "Indeed, the future of CLV lies in personalization and prediction. The more we understand and anticipate, the better we can serve."

Three Profound CLV KPI Insights and Recommendations:

1. **Dynamic CLV Modeling:** Move beyond static monetary valuation and develop models that account for customer journey and engagement levels. Utilize AI to update these models in real-time, reflecting changes in customer behavior and preferences.

2. **Emotional Connection Index:** Create a metric that measures the emotional bond between customers and brands. This index could be derived from social media analysis, customer feedback, and engagement levels, providing a more holistic view of the customer's relationship with the brand.

3. **Predictive Personalization:** Invest in AI-driven personalization strategies that anticipate customer needs and preferences. This approach can not only enhance the customer experience but also predict future spending patterns, making CLV a more accurate and valuable metric.

This fictional exchange highlights the synergy between traditional marketing wisdom and modern AI-driven approaches, offering innovative strategies for enhancing the value and measurement of customer lifetime value.

Our Prompt

While a good first effort, this brainstorming too superficial, dispassionate and disconnected from both the professional experiences and technical capabilities and skill sets of its participants.....present a richer, more nuanced, more sophisticated transcript and set of recommendations....do this for a leadership readership of top boston consulting group clients...

ChatGPT

For a more nuanced and sophisticated brainstorming session targeting a leadership audience from top Boston Consulting Group clients, let's delve deeper into the expertise and perspectives of David Ogilvy, Mary Kay, Mary Wells Lawrence, Kai-Fu Lee, and Sam Altman, focusing on enhancing and redefining Customer Lifetime Value (CLV) KPIs.

David Ogilvy: "Let's challenge the status quo. CLV isn't just a number; it's the story of a brand's relationship with its customer. We should capture the narrative, not just the transaction."

Mary Kay: "Absolutely, David. In direct marketing, personal relationships are crucial. Our CLV model should reflect the depth and quality of these relationships. Perhaps a metric that captures repeat interactions and referrals?"

Mary Wells Lawrence: "In branding, we strive to create a lifestyle around a product. Why not measure how a brand integrates into a customer's life? Maybe through social media engagement or lifestyle surveys."

Kai-Fu Lee: "Incorporating AI, we can analyze vast datasets to uncover patterns in customer behavior. We could predict future value based not just on spending, but on engagement, lifestyle alignment, and sentiment."

Sam Altman: "We're in an era where personalization is expected. AI can help us tailor experiences, yes, but also anticipate needs and adapt CLV models in real-time based on individual interactions."

David Ogilvy: "It's about striking a balance between data-driven insights and human-centric marketing. Our approach to CLV should reflect that."

Three Sophisticated CLV KPI Insights and Recommendations:

1. **Narrative-Driven CLV Assessment:** Develop a comprehensive CLV model that incorporates qualitative data — like customer stories, feedback, and brand interaction narratives. This approach provides a more human-centric view of the customer-brand relationship, crucial for brands with a strong focus on customer experience and loyalty.

2. **Lifestyle Integration Index (LII):** Measure the degree to which a brand is integrated into a customer's lifestyle. This index could utilize AI to analyze social media interactions, lifestyle survey data, and customer engagement across various platforms. The LII provides insight into how deeply a brand resonates with its customers beyond just monetary transactions.

3. **Real-Time Personalization and Adaptation:** Leverage advanced AI algorithms to offer real-time personalization in customer interactions. The CLV model should dynamically adapt based on ongoing customer data, anticipating needs and preferences to enhance customer satisfaction and predict future value.

This enriched dialogue and set of recommendations are tailored to resonate with an audience at the forefront of business strategy and innovation, emphasizing a blend of traditional marketing wisdom, cutting-edge AI, and a deep understanding of customer-brand dynamics.

Our Prompt

this is much better; thank you

ChatGPT

You're welcome! I'm glad to hear that the revised version met your expectations. If you have any more questions or need further assistance, feel free to ask!

Our Prompt

Now present a transcript where they disagree about the role, purpose and value of CLV and summarize the two key elements and aspects of that disagreement

ChatGPT

In a more contentious and contrasting brainstorming session on the role, purpose, and value of Customer Lifetime Value (CLV), the distinguished participants bring their diverse backgrounds and perspectives into sharper conflict. Here's how such a discussion might unfold, highlighting key disagreements:

David Ogilvy: "CLV is fundamentally about maximizing profit from each customer. It's a direct measure of success for any marketing campaign."

Mary Kay: "I disagree, David. It's not just about profit; it's about building long-term relationships. Focusing solely on profit risks losing the human element that's crucial in direct marketing."

Mary Wells Lawrence: "While I see both points, I believe the emphasis on CLV can overshadow the importance of brand image and awareness. These elements don't always directly translate to immediate customer value but are essential for long-term success."

Kai-Fu Lee: "From a tech perspective, I think we're missing the potential of AI here. CLV should be about predicting future trends and behaviors, not just measuring past and present profitability."

Sam Altman: "Kai-Fu has a point. The future of business lies in anticipation, not retrospection. CLV, if too traditionally defined, might limit our vision."

David Ogilvy: "But without a strong link to profitability, how do we measure the success of our efforts? We're in business, after all."

Two Key Elements and Aspects of Their Disagreement:

1. PROFITABILITY VS. RELATIONSHIP BUILDING:

- **Ogilvy's Perspective:** CLV is a direct indicator of profitability and should be the primary focus. This view emphasizes the traditional marketing approach of maximizing revenue from each customer.
- **Mary Kay's Counterpoint:** Emphasizes the importance of long-term relationships over immediate profitability. This approach argues for a more holistic view of CLV, considering factors like customer loyalty and engagement, which may not directly translate to immediate profits but are crucial for long-term success.

2. SHORT-TERM MEASUREMENT VS. LONG-TERM PREDICTION:

- **Lee and Altman's Perspective:** Stress the role of AI in transforming CLV from a retrospective measurement tool into a predictive model that anticipates future trends and customer behaviors.
- **Ogilvy and Lawrence's Counterpoint:** While acknowledging the potential of AI, they caution against losing focus on current profitability and brand image, which are vital for immediate business success. This highlights a tension between leveraging new technologies for future predictions and adhering to tried-and-tested methods that ensure current profitability and brand strength.

This transcript captures the tension between traditional marketing views that prioritize profitability and newer approaches that emphasize long-term relationships, brand image, and the predictive power of AI, reflecting a deep divide in perspectives on the value and purpose of CLV.

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1 There is an extensive literature on performance, performance measurement, strategic performance, performance strategies, performance measurement strategies, strategic performance measurement, and strategic measurement. Our research focuses on strategic measurement, which we describe as an organization's system for reliably quantifying value creation for itself and other stakeholders. In our view, a strategic measurement system includes at least three types of capabilities: one for defining, developing, and communicating key performance metrics that reflect and advance strategic aspirations; a technical capability for collecting, synthesizing, and analyzing performance data that informs the development of, and relationships among, key strategic and operational metrics; and a governance capability with mechanisms and processes for optimizing and learning from the other capabilities.

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