Why Digital Transformation Must Be Designed and Owned by the Middle

Using AI and Other Technologies to Dramatically Improve a Business Requires Abandoning Traditional Top-Down Approaches

By Don Jones

ΞXPERIENCE IT

Executive Summary

Big companies all over the world have launched major initiatives to digitally transform themselves. By some measures, nearly a half of these initiatives are not meeting their goals, and some are even failing.

While many reasons for this have been cited, one has received very little attention: the traditional top-down approach by senior executives to designing the work in the middle levels of the organization. This approach was often hugely successful in the last big era of technology-driven business process change: the age of reengineering. And it appears to be in vogue this decade – perhaps because senior executives believe that only they will be willing to look for opportunities for artificial intelligence and other digital technologies to replace labor in the middle and front lines of the organization.

However, this paper proposes a new approach. We believe that capitalizing on the digital technologies we have today (especially AI and machine learning) requires organizations to take a much different approach to transforming their operations in the middle. As we point out in our paper (and as an increasing number of studies confirm), to digitally transform the work in the middle of their organizations, senior executives must empower their leaders and teams in the middle to redesign their own operations.

It's a very different approach to technology-driven transformation, one that demands big changes in mindsets and behaviors at the top and middle ranks of companies about how best to design work and manage people.

In this paper, I explore the key changes in mindsets and the resulting behaviors at the top and the middle to make digital transformation initiatives succeed.
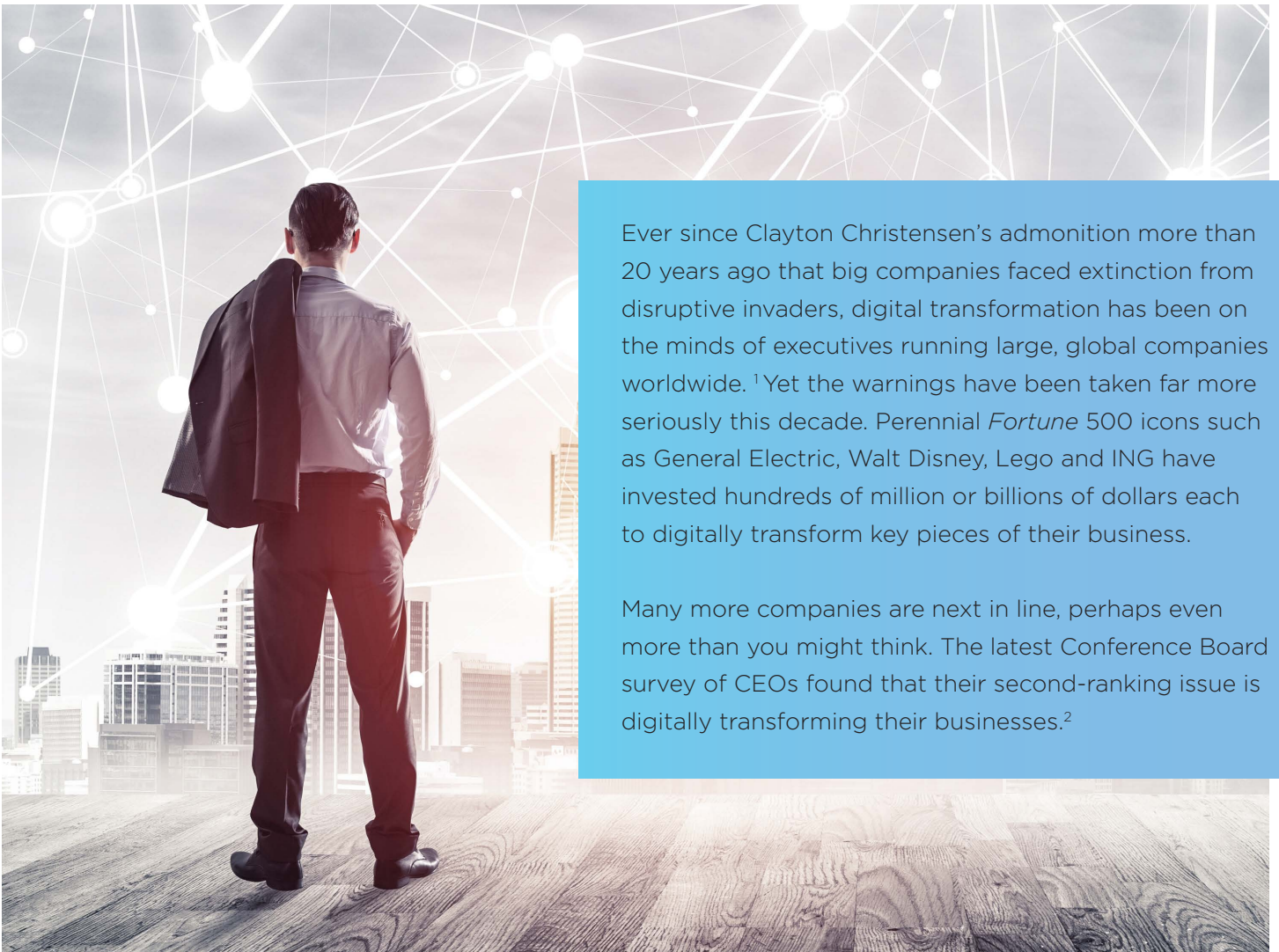
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Ever since Clayton Christensen's admonition more than 20 years ago that big companies faced extinction from disruptive invaders, digital transformation has been on the minds of executives running large, global companies worldwide. [1] Yet the warnings have been taken far more seriously this decade. Perennial *Fortune* 500 icons such as General Electric, Walt Disney, Lego and ING have invested hundreds of million or billions of dollars each to digitally transform key pieces of their business.

Many more companies are next in line, perhaps even more than you might think. The latest Conference Board survey of CEOs found that their second-ranking issue is digitally transforming their businesses. [2]

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[1] Clayton Christensen's book "The Innovator's Dilemma," published in 1997.
[2] Conference Board top issues of CEOs survey. https://www.conference-board.org/press/pressdetail.cfm?pressid=7295

Yet many companies are hitting the wall. Their digital initiatives are neither producing the huge productivity and customer experience improvements they anticipated, nor yielding the projected savings and revenue boosts. Several studies of large-company digital initiatives bear this out. A 2016 survey by McKinsey & Company of 2,135 executives found that the digital initiatives of nearly half (48%) generated returns below the cost of capital (10% ROI or less). In fact, nearly a quarter (23%) said the returns were negative.[3]

From our work and conversations with many companies, we hear many reasons offered: not enough risk-taking, inadequate investments, lack of digital skills and more. However, we also see another rarely noticed factor that has big negative consequences: new digitally optimized work routines that were designed by top management but founder when the middle of the organization tries to implement them.

The Flaws of Top-Down Digital Transformations

When senior management designs a new digital process to be implemented by middle managers and their employees, that new process is often suboptimal. Whether in digital marketing, digital customer service, digital order fulfillment or some other area, the new process is often designed with no input from the mid-level leaders and staff who best understood how the old process works.

It's not at all surprising that many senior leaders have been taking a top-down approach to designing digital work in the middle of the organization. In fact, on the surface it makes great sense. Many seasoned executives have been trained by 25 years of reengineering thinking. Going back to the mid-1990s, they were likely involved in initiatives for redesigning work flows across functional silos: e.g., order to delivery (customer service, manufacturing, distribution), customer acquisition (marketing, sales and order inquiry) and concept to market (market research, product development, product engineering, supply chain). The belief was that the organization needed fresh thinking about how to revamp work across such functional silos, which required C-suite executives running those functions to do the design work, along with their reengineering consultants.
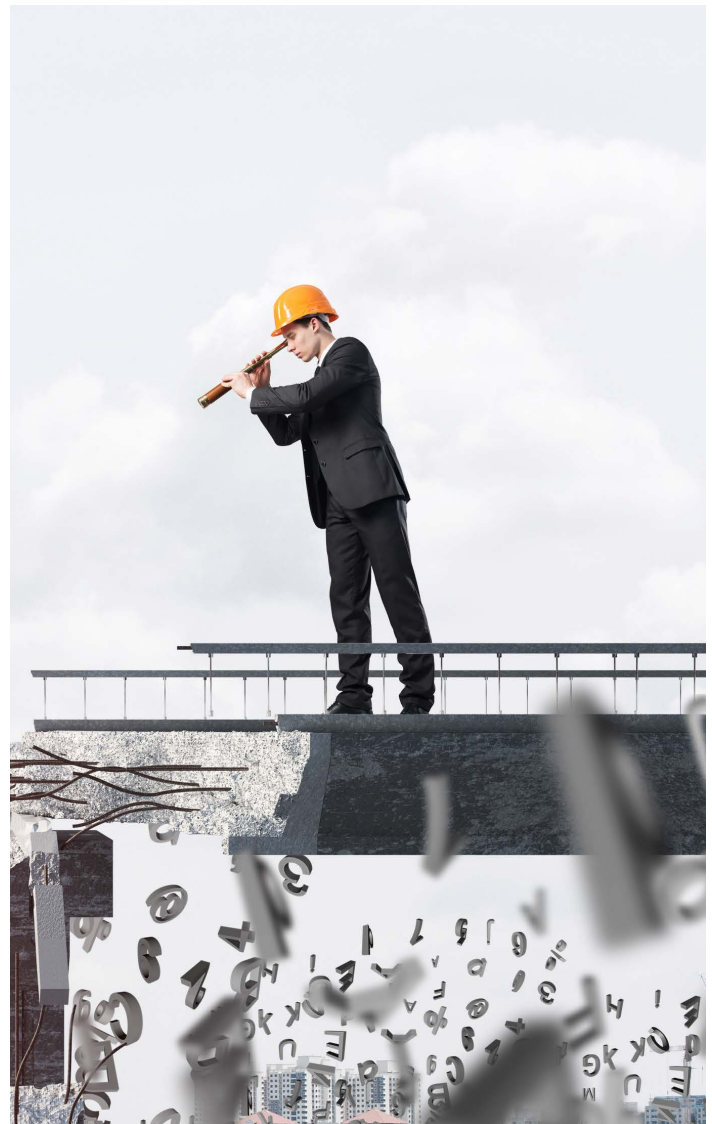
[3] Jacques Bughin, Laura LaBerge, and Anette Mellbye, "Reinvention through digital," McKinsey report, July/August 2017, P. 8. https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20McKinsey%20Insights%20Number%201/Digital%20McKinsey%20Insights_Issue%201.ashx

The C-suite had another reason to redesign processes across functions: the opportunity to eliminate lots of unnecessary work and jobs. One study of hundreds of companies done at the height of the reengineering craze found that nearly three quarters had cut an average of 21% of the jobs in the business processes they targeted.[4] If top management had left the redesign work to the people in the trenches, their companies wouldn't have eliminated as many jobs. What middle manager and his staff would eliminate their positions if they had nowhere else to go in their companies? In fact, this is one of the reasons that many reengineering initiatives failed back then; numerous organizations resisted the changes. As management guru Tom Davenport, a pioneer of reengineering, once wrote: "The rock that reengineering has foundered on is simple: people. Reengineering treated the people inside companies as if they were just so many bits and bytes, interchangeable parts to be reengineered. But no one wants to 'be reengineered.'"[5]

In fact, the foremost authority on reengineering, Michael Hammer, often told executive audiences they needed to warn those below them to get behind their company's reengineering initiative. "You either get on the bus or get under it," he was famous for saying.

To many senior executives, digital transformation may sound like a modern-day version of reengineering. Both types of transformations are possible because of information technology. Like the enterprise software systems and personal computers for reengineering in the 1990s, today's AI, digital sensors, smart phones and other digital technologies let every employee and every product of a company be digitally connected to one another, and to the mothership.

But what might be fueling many executives' desire today to design the work in the middle -- even more than 20 years ago -- is the specter of artificial intelligence. Several research and consulting firms this decade have projected that AI could wipe out many jobs. If a company's leadership team believes that AI can remove a lot of labor, it's not surprising they would want to keep a grip on redesigning the work in the middle of the organization.

Nonetheless, this is flawed thinking. The reason is that digital technologies such as AI, machine learning, process automation tools, and embedded wireless sensors do more than enable companies to reengineer work flows across functional areas. They also enable work to be reengineered within a function, or even within one activity in that

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[4] CSC Index 1994 "State of Reengineering" study.
[5] Tom Davenport, "The Fad That Forgot People," Fast Company, October 31, 1995. https://www.fastcompany.com/26310/fad-forgot-people

function. Intra-functional redesign work requires intimate knowledge of that work – exactly how that job is performed today– before it can be enhanced or automated by digital technologies.

The way we put it, middle managers are the catalytic agents of digital transformation. These leaders possess a unique vantage point for unleashing digital innovation in a large enterprise. They have direct experience with the nuances involved in the cross-functional handoffs of work. They deeply understand how work actually gets done in their area. They and their people typically know the details down to the smallest task level – tasks that must be implemented to achieve an outcome.

Organizations that want to use AI to automate work need that task-level expertise, and only the people who do the work and their managers have it. Erik Brynjolfsson and Tom Mitchell, two leading experts on the workforce implications of digital technologies, believe companies must analyze work at the job level – and even within a job, at the task level – to see where machine learning technology could take on certain tasks. "Jobs typically consist of a number of distinct but interrelated tasks," they wrote in a recent *Science* article. "In most cases, only some of these tasks are likely to be suitable for [machine learning], and they are not necessarily the ones that were easy to automate with previous technologies."

As an example, they pointed to tools that help lawyers analyze the tasks of working with a client. Machine learning technology can help them classify documents that might be relevant. However, they would struggle to use the technology to automate interviewing of potential witnesses or to devise a legal strategy.

In our view, it's no surprise that many digital transformation initiatives are failing: They're imposed on mid-level managers from above. This can be a recipe for failure in many big initiatives, as McKinsey and others have discovered. A McKinsey 2016 survey of about 1,500 executives who had been through organizational transformations of all types (digital and other) found that the most successful initiatives were managed quite differently than the rest. For example, a much higher percentage of line managers (82%) were visibly engaged in the most successful transformations, while in those that were less successful only 57% were visibly engaged.

[6] Brynjolfsson and Mitchell, "What can machine learning do? Workforce implications," Science magazine, Dec. 22, 2017. http://science.sciencemag.org/content/358/6370/1530

[7] McKinsey, "The people power of transformations," February 2017. https://www.mckinsey.com/business-functions/organization/our-insights/the-people-power-of-transformations?cid=other-eml-alt-mip-mck-oth-1702

As additional proof, consider a 2013 study by Stanford University lecturer Behnam Tabrizi. He looked deeply at 56 companies in nine industries (including high-tech, retail, banking and pharmaceuticals) that had been through big change initiatives. Among his findings about the most successful initiatives (32% of the sample), mid-level managers were usually the "major authors" of the initiatives. In the least successful initiatives, mid-level managers spent most of the time "devoted to sheer corporate survival," said Tabrizi. They were "focused on pleasing people rather than doing their jobs, they procrastinated on decisions for fear of failure, blamed others for mistakes and avoided taking risks. [They] were alienated and felt senior executives had used them as tactical tools."[8]

During digital transformations, many senior managers significantly undervalue the need to understand organizational processes down to the task level, as well as how work moves from one function to another. This knowledge is unique to middle management, and it must be tapped fully in a digital initiative.

Table 1: Digital Transformation and Its Discontents

Signs of Disempowerment in Digital Transformations		
Organizational Characteristics	What Executives Believe	What Employees Believe
High prevalence of digital culture	40%	27%
Culture of promoting collaboration and exchange of ideas across departments and functions	95%	52%
Discussions around novel business initiatives that leverage newer technologies are open to all employees	76%	41%
Hierarchy doesn't really matter; it is the value of people's ideas that makes a difference	76%	45%
Employees can set time aside to innovate	74%	42%
Dedicated ways to share innovative ideas with senior leadership	64%	32%
Employees engaged in operational implementation of new ideas	62%	31%
Empowered to experiment and deploy at pace in designed areas	56%	17%
Source: *2017 research report, "The Digital Culture Challenge: Closing the Employee-Leadership Gap," Capgemini Consulting and Brian Solis*		

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[8] Behnam Tabrizi, "New Research" What Sets Effective Middle Managers Apart," Harvard Business Review, May 8, 2013. https://hbr.org/2013/05/reinventing-middle-management

Yet this doesn't appear to be the way most companies approach digital transformation, according to several studies. One was a 2017 survey led by consulting and IT services giant Capgemini of 1,700 executive leaders, middle managers and employees in 340 organizations in the U.S., France, Germany, Spain, Netherlands, Sweden, Italy and the UK.[9] The research found that only a minority of the employees felt empowered to experiment with digital initiatives. Less than half of the employees surveyed (42%) said they could set aside time for such innovation, and only 41% were permitted to join discussions with senior leaders about novel business initiatives based on new technologies. Only about a third (32%) said their companies had "dedicated avenues" through which they could share innovative ideas with the executives at the top. Even worse, only about one in six (17%) felt empowered by their bosses to institute new work practices in their areas. Lamented one survey participant: "We are pretty isolated, and we don't have any incentive to work with other departments either." (See Table 1.)

That data shows the gulf of understanding at the middle – the managers who bridge the gap between top executives and employees one or more layers below them. Mid-level leaders possess what we call "bi-focal vision." They can see both the myriad tasks in their areas, and also of how the work of an organization (a customer order, a marketing and sales campaign, a new product, a shipment, etc.) moves from one function to another.

Studies of employee engagement reflect this gulf. Gallup's 2017 report on U.S. workforce morale found only 33% of employees were engaged in their jobs, up only 3% from the prior five years. And all the top-down-designed digital transformation initiatives can't be boosting engagement. The

value-added, less rote and more creative work that will increase with each digital transformation requires higher levels of discretionary effort and creative engagement. The 67% of workers who are not engaged in their jobs are not likely to offer that kind of help.

[9] Capgemini Consulting and Brian Solis, "The Digital Culture Challenge: Closing the Employee-Leadership Gap," pp. 11-12.
https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/07/dti_digitalculture_report.pdf

A Very Different Approach:
Digital Transformations Designed and Owned by the Middle

Digital transformation must be led from the middle out. The Capgemini research confirms this. Its survey identified companies whose digital cultures the firm believes were exemplary. It called these companies "front runners." They represented 34% of those surveyed. It also identified a trailing group of companies on the cultural dimension, a group it called "the slow movers." The differences between the front runners and slow movers were striking:

- Some 70% of survey participants from "front runners" said all employees are encouraged to share thoughts with top management, and that there were formal ways of doing that. In contrast, only 1% of the slow movers said the same thing.
- The vast majority (96%) of front runners said their companies were marked by high levels of cross-functional collaboration vs. only 4% in the slow movers.

The most successful digital companies had these traits, argued Brynjolfsson and his fellow MIT Sloan School professor Andrew McAfee in their most recent book (*Machine, Platform, Crowd*). "The first is egalitarianism, especially of ideas," they wrote. "While these companies have a clear organizational structure and management hierarchy, they also have a practice of listening to ideas even if they come from junior or low-level people, and even if they originate far from the R&D department or other parts of the core."[11]

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[10] Capgemini Consulting and Brian Solis, "The Digital Culture Challenge: Closing the Employee-Leadership Gap," pp. 11-12. https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/07/dti_digitalculture_report.pdf
[11] McAfee and Brynjolfsson, "Machine, Platform, Crowd: Harnessing Our Digital Future," (W.W. Norton, 2017), p. 323.

But this is not easy. For leaders at the top to empower leaders at the middle to run with digital transformation, several conditions must be in place. The first requires a properly defined scope and clearly understood scale requirements. "One of the biggest mistakes in solving complex problems using AI is improperly scoping the problem in the first place and not understanding how the solution needs to scale," says Yaneer Bar-Yam, director of the New England Complex Systems Institute, a research firm based in Cambridge, Mass.[12] It's a recipe for massive wasted resources and frustration, he believes.

Senior leaders play a critical role in *working with* the middles to create guidelines for scoping AI projects. Neither senior leadership nor middle leaders can scope the problem on their own. It requires the unique perspectives and vantage points of both roles. The reason for this is that you have to determine what problem you are solving. Problems that need to be solved at scale require one kind of AI system, while problems that require a unique solution that doesn't have to scale require a different type of solution. Both can, and often need to, exist within the same enterprise.

"Complex tasks require complex organizations," wrote Bar-Yam. "When we are part of a complex team, we find the world a remarkably comfortable place, because we can act effectively while being protected from the outside environment, and contributing to the organism function."[13]

The first task of senior and middle leaders is to define the complex problem they are solving for so they can define a solution that matches it. Once the scope of the project and the scale of the solution are properly defined, the second task is for senior leaders to give middle managers end-to-end responsibility to digitally transform work across functions. That means giving them the license to design the processes, rules and technology they will use, in line with the project scoping guidelines. The third task requires senior leaderships to enable middle management and their teams to design processes they can monitor and update frequently. Middle managers must be given the permission and skills for creating adaptable work processes, not static ones.

In their book, McAfee and Brynjolfsson argued that in the most successful and technologically savvy companies they've worked with, managers shift their roles from being "evaluators and gatekeepers of ideas" to promoters and iterators of ideas from their people. "The key practice for managers within these companies is that they try not to let their own biases and judgments play too large a role in determining which of the ideas they hear are the good ones, and thus worthy of implementation. Instead, they fall back whenever possible on the processes of iteration and experimentation to find unbiased evidence on the quality of a new idea."[14]

In short, these executives push down ideas for how to better operate the business to the people who must make those ideas work. Then they let them experiment with and continually refine those ideas once they're in the field. When this happens, amazing things can result:

- Much better digital products and processes, owned by the people who designed them: the middles and their teams
- Sustainable, self-adopting processes where decisions are made closest to the problems themselves (i.e., by work teams)
- A much more highly engaged workforce in the middle and on down the organization

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[12] Making Things Work, Solving Complex Problems in a Complex World, Yaneer Bar-Yam, New England Complex Systems Institute, Knowledge Press
[13] Yaneer Bar-Yam, Making Things Work, NESCI, Knowledge Press, 2004
[14] Ibid

Key to accomplishing all that begins with changing long-held mindsets – with both leaders at top and with leaders in the middle – about several fundamental beliefs that get in the way of digital success. It starts with cultural change, mindset shifts that change behavior over time at the top and middle management levels.

That's what digitally successful companies such as ING have found. "Culture is perhaps the most important element" of a digital transformation, said Bart Schlatmann, COO at the financial services company's Netherlands unit. In 2015, the company embarked on a major digital initiative. "We have spent an enormous amount of energy and leadership time trying to role model the sort of behavior – ownership, empowerment, customer centricity – that is appropriate in an agile culture. Culture needs to be reflected and rooted in anything and everything that we undertake as an organization, and as individuals."[15]

So what new mindsets and behaviors are critical at the top and the middle for a digital transformation to work? And how can company leaders and heads of learning and development get highly accomplished leaders at the top and the middle to think and act in very new ways?

Digital Transformation Lessons from Chess Champion Garry Kasparov

Exactly how organizations get their people to work together in teams *and* with machines will be the most important factor in digitally transforming their businesses. It's already worked this way in the game of chess, as MIT professors Brynjolfsson and McAfee wrote in their book, *Race Against The Machine*:

"... it's not well known that the best chess player on the planet today is not a computer. Nor is it a human. The best chess player is a team of humans using computers. After head-to-head matches between humans and computers became uninteresting (because the computers always won), the action moved to "freestyle" competitions, allowing any combination of people and machines. The overall winner in a recent freestyle tournament had neither the best human players nor the most powerful computers."

The two professors were writing about Garry Kasparov, one of the world's leading chess players. Kasparov wrote about two amateur chess players (both Americans) who used three computers in a chess tournament. Writes Kasparov: "Their skill at manipulating and 'coaching' their computers to look very deeply into positions effectively counteracted the superior chess understanding of their grandmaster opponents and the greater computational power of other participants."[16]

Kasparov's formula for winning at chess:

Weak human + machine + better process
Beats
Strong computer alone
And beats
Strong human + machine + inferior process

To win at digital transformation, companies need people who are closest to the work in the middle of their organizations -- the middles themselves -- to create superior processes that capitalize on digital technology. Brilliant executives at the top (teaming up with other brilliant executives) who spend billions on technology will not make up for the inferior work processes they foist on the middle.

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[15] McKinsey Quarterly interview with ING's Bart Schlatmann (then chief operating officer of ING Netherlands) and Peter Jacobs, (CIO, ING Netherlands). Published January 2017.
https://www.mckinsey.com/industries/financial-services/our-insights/ings-agile-transformation
[16] Erik Brynjolfsson and Andrew McAfee, Race Against the Machine (Digital Frontier Press), 2011.
https://www.amazon.com/Race-Against-Machine-Accelerating-Productivity-ebook/dp/B005WTR4ZI#reader_B005WTR4ZI

First Step: Changing Mindsets and Behaviors, at the Top and the Middle

We believe many organizations that launched digital initiatives skipped the first step: changing mindsets and behaviors of leaders at the top and the middle. We also believe many of these companies are the very ones that studies have found to be generating little if any economic value from their sizable investments.

So generally speaking, why can't leaders at the top and middle just "do the right things" necessary to push down the digital reinvention of work to the middle of the organization? Why must long-held mindsets and behaviors change at both levels for beneficial things to happen digitally?

The following scenario illustrates how old mindsets and behaviors can thwart the best digital intentions. Imagine that top management of a large newspaper company believes AI is crucial to automating the writing of certain stories – writing that a computer could produce because the prose essentially needs to report on a set of numbers. (Some great examples of this are stories that summarize athletic events, corporate quarterly financial statements, and weather reports.) Given the rapid revenue contraction of the newspaper industry, you couldn't fault senior leaders of any newspaper for wanting to automate labor-intensive processes. Corporate survival is at stake if the industry can't find ways to dramatically cut costs without reducing the quality of its news product.

But let's say the mindset of senior management at the newspaper company is essentially this: "It's up to us, the company leaders, or the consultants we bring in, to figure out how to automate the writing of those stories, because if we let our journalists and their editors try to figure it out, they might not be able to, in part because they won't *want* to for fear of eliminating their jobs." If that were the case, we would *not* expect that digital initiative to bear much fruit.

The reason is that this strategy does not tap the expertise of the newspaper's mid-level leaders and their staffs: the sports editor, financial news editor, weather news editor, and other editors with story types that could be automated by AI. Only they possess the intimate knowledge necessary to figure out what kinds of stories can be written by a computer, as well as the knowledge about exactly how it could be done. They write and edit these stories every day, and so they know where the data comes from, which facts are most important to feature in the stories (e.g., in baseball box scores, who had the winning hits and which pitchers won and saved the games), and the structure of the work output (e.g., what must come first in the article is who won the game and by what score). In fact, it worked out this way at one news company that we know of (The Associated Press), that empowered a middle manager (the head of its business news) and her staff to figure this out. The results have been stunning.[17]

In other words, the leaders at the top of a news organization must fully believe that the knowledge required to digitize a well-defined problem (in this case article writing that is mostly about reporting on numbers) is buried deep in the heads of middle managers and their staffs – and not in the heads of top management.

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[17] Article by Tata Consultancy Services,
http://sites.tcs.com/insights/perspectives/artificial-intelligence-big-part-associated-press-future

A mindset at the top of "Only we know what to do" will disempower and discourage middle managers and their staffs, who might secretly hope that top management fails.

Conversely, what if the mid-level leaders at a newspaper had approached such a digital initiative with a mindset that amounted to this: "We're not capable of figuring this out. It's too complex, and there's a great chance we would fail, which could end our careers here. We're better off simply executing what the leaders at the top tell us to do." By the way, it's not hard to believe that newspaper industry middle management might feel this way about digital initiatives. In the U.S., annual newspaper industry ad revenue has plummeted 63% since 2006.[18] After years of being asked by top leaders to make brutal cost reductions and staff cutbacks (in fact, newsroom jobs in the U.S. have plunged 37% since 2004[19]), it's not hard to imagine that middle managers might view themselves as being incapable of finding creative ways to make major cost reductions. Why would they believe this after years of being told from above to lay off staff? They likely wouldn't. So with such a mindset, middle managers would not likely volunteer to lead this kind of digital initiative – and even if asked to do so, would likely approach it with trepidation.

So in this example, the mindset at the top ("Only senior management can figure out how to automate the production of certain types of news stories") and the mindset in the middle ("Judging by top management's previous cost cutting, we assume we're not capable of figuring this out") would not bode well if company leaders one day came to middle management and said: "You figure out how to automate these stories." Neither side would likely believe that middle management was up to the task.

Most likely top management would try to digitize that work – and hope it would get cooperation from the middle and reporters. But the people in the middle would likely be skeptical about top management's intention, and may not want to give it their full effort.

This is a hypothetical example to illustrate how the mindsets of top executives and mid-level managers going into a digital initiative have a great impact on how they behave in that initiative. A mindset at the top of "Only we know what to do" will disempower and discourage middle managers and their staffs, who might secretly hope that top management fails. But even if top management delegates the digital initiative to middle managers, they must first work with them to properly scope the problem. And even if they do, the middles will likely feel they're not up for the risk of failure.

We believe this scenario has played out this decade in many digital initiatives at all kinds of companies. And where it has, we believe it has led to suboptimal results – digital initiatives that fell far short of top management's expectations.

So how do big companies facing huge customer and competitive pressures to digitally transform their businesses avoid that from happening? Well, it starts with changing certain mindsets of leaders at the top and the middle. It means finding ways to fundamentally alter their often unconscious attitudes and beliefs about their roles and how they should manage others, both those below and above them.

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[18] Pew Research Center and News Media Alliance statistics. Annual revenue fell from $49 billion in 2006 to $18 billion in 2016.
http://www.pewresearch.org/fact-tank/2017/06/01/circulation-and-revenue-fall-for-newspaper-industry/
[19] Pew Research Center 2017 "State of the News Media" report, as cited in Columbia Journalism Review article, Nov. 15, 2017.
https://www.cjr.org/tow_center_reports/local-small-market-newspapers-study.php

Unless leaders at the top and middle change their longstanding mindsets and behaviors about who should design and own digital innovations in the workplace before, during and after a digital transformation, not much good is likely to happen. Old behaviors and mindsets that served them well in the past are hard to change. As leadership coach Marshall Goldsmith once said, "After living with their dysfunctional behavior for so many years – a sunk cost if ever there was one – people become invested in defending their dysfunctions rather than changing them."

The problem is actually more difficult than that. After living with successful mindsets and behaviors for years, leaders become invested in defending their experiences even at a time when it no longer serves them or their organizations.

Let's start with what mindsets and behaviors must shift at the top of companies.

New Mindsets at the Top

We see four fundamental changes in the way top executives must think about a digital transformation:
- Who scopes the problem: top or a top/mid-level leader partnership?
- Who drives the change: top or mid-level leaders?
- How often must change happen: periodically vs. continuously?
- What rewards motivate performance: extrinsic vs. intrinsic?

Old and New Mindsets at the Top			
Issue	**Old Mindset**	**New Mindset**	**Resulting Principles**
Who scopes the problem	Top scopes the problem	A top/middle partnership scopes the problem	Clear guidelines that scope a transformation must be created in a top/middle partnership
Who leads change	The top drives change	Top lets middle drive change, and then own it	The people who do the work should redesign it
Frequency and magnitude of change	Periodic revolution	Continuous evolution	A problem needs to be solved by the people closest to it
How to motivate change	Extrinsic rewards matter: carrots and sticks	Intrinsic rewards matter: satisfying the soul	People want badly to be engaged by work and be valued by those they work with

Case Study:
How Zappos Zoomed After Pushing Decisions Down to the Middle

> "Whenever a city doubles in size, the productivity per resident increases by fifteen percent—both the city as a whole and each individual living there become more effective. For (traditional hierarchical) organizations, the opposite is true. Individual productivity tends to decrease as companies grow in size. This is only exacerbated during periods of rapid growth."

Zappos, the online shoe retailer, is a widely celebrated and studied success story that engages and empowers the middle of the company. The Las Vegas-based company (launched in 1999 and purchased by Amazon 10 years later for $1.2 billion) uses a distributed decision-making model that pushes much more responsibility and accountability down to middle management and the front lines than you would find in a traditional hierarchy.

However, Zappos didn't start with the model it has today. It created it after running into the same problems all hierarchies are face in a digital age. Zappos was growing fast and realized it was taking much longer than it used to change directions.

"What caught the team's attention was a surprising statistic from the book, *Triumph of the City*,"[22] says John Bunch, head of internal infrastructure/

systems at Zappos. "Whenever a city doubles in size, the productivity per resident increases by fifteen percent—both the city as a whole and each individual living there become more effective. For (traditional hierarchical) organizations, the opposite is true. Individual productivity tends to decrease as companies grow in size. This is only exacerbated during periods of rapid growth."

With that in mind, Zappos CEO Tony Hsieh pushed decision-making down to middle managers – and more specifically, to self-managed, flexible, teams that designed the way they worked while still operating within guidelines of the company. "As we grow we can become more effective on a per employee basis. ... Instead of a traditional management hierarchy authorizing every decision, teams closest to the work make the call, and are able to move much faster to tackle new opportunities and challenges."

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[22] Triumph of the City, by Edward Glaeser
https://www.penguinrandomhouse.com/books/303439/triumph-of-the-city-by-edward-glaeser/9780143120544/
[23] Humanity's Greatest Invention?
https://medium.com/magazines-at-marquette/humanitys-greatest-invention-face-to-face-with-edward-glaeser-author-of-triumph-of-the-city-4877dbd06488

Who Scopes the Problem

Automating work through AI requires tightly scoped projects and clear goals. Only top leaders (who best understand the goals) and the middles (who understand how the work is done at the task level) can properly define the scope. This top/middle partnership is often missing. Said a senior leader we worked with: "It was impossible to get the new changes down through our company's 'clay layer.'" The implication was that the middles resisted the changes from the top.

Who Drives Change

The top management predominant mindset is that only they are qualified to determine and drive workplace changes – especially the profound changes that digital technologies now allow companies to make. They believe only *they* have experience and knowledge for an enterprise-wide view to design the optimal, end-to-end solution. It reinforces their penchant to work with outside consultants in redesigning work processes.

That mindset is not all wrong. Senior management plays a critical role in partnering with the middle to scope and define the problem. This model worked splendidly in the era of cross-functional business process reengineering. But it doesn't work well in today's digital transformations, where digital tools such as AI must transform work at both the task and macro business process levels.

Yet since senior managers and their consultants don't have deep expertise in tasks that must be digitized, they shouldn't be driving the digital transformation here. Rather, this change must be enabled at the top, scoped and defined through

a top/middle partnership but then driven (and owned) by mid-level managers and their teams. That requires a much different belief system at the top about who should drive digital change: that the people who do the work should redesign it.

The new mindset of senior executives, about their role in such a transformation, is that they must provide guidance (the purpose, principles), resources (space and funding) and protection from the internal antibodies. Associated Press' AI initiative is a great example of digital innovation driven from the middle of the organization.[20] Here's how the global news service recently described it in a report it published:

> "In the summer of 2013, News department leaders at The Associated Press made a daring suggestion to their business-side colleagues. They recommended working out a deal with a fledgling startup in the artificial intelligence space to automate the creation of certain news content. A few months later, a deal was struck with the Durham, North Carolina-based Automated Insights to automate the production of narrative text stories directly from data, first in sports and, soon thereafter, for corporate earnings reports.
>
> "So, yes, you read that right. The journalists at AP were the ones who first suggested handing over some work to a computer program — to the robots, if you will. Ironic perhaps, on its face, the move proved pivotal for the news agency in combating two mega-trends in the business — the relentless increase in news to be covered and the human constraints associated with covering it.

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[20] Associated Press report on its AI initiative, "The Future of Augmented Journalism."
https://insights.ap.org/uploads/images/ap_insights_the_future_of_augmented_journalism.pdf

We find that compelling – especially the notion that the change came from the middle: the sports and business editors and their staff, not from the top. Yet the top of AP has gotten firmly behind the middle.

With such mindsets developed, it becomes easier for top management's behavior toward middle managers to change.

Frequency of Change

Here the mindset at the top must shift from regarding company transformations as periodic events (undertaken only when a threat looms in the distance) to a continuous evolution. Senior managers must see today's digital solution as only temporary, one that must continually be evolved (by mid-level teams). They must also believe that the best answers come from collective intelligence – not the intelligence of any one person with a big title atop a business function. When a front-line team and their manager are told to keep improving a process, it taps into a wellspring of creativity and energy – i.e., much better ideas about how to improve a key business activity.

When top managers make this shift, they will delegate decisions to mid-level teams on how to improve their work. They let those teams figure out how to update the processes, rules and roles that they play. This kind of team ownership is a far cry from the ways that most organizations define a team's responsibility. We will discuss this in more detail in the following section.

Extrinsic vs. Intrinsic Rewards

Top management's age-old beliefs and behaviors about how to get people below them to institute changes that are designed at the top is the carrot-and-stick approach: rewards and penalties. The typical strategies are financial rewards (pay raises, bonuses) and job uncertainty (firing people who don't perform according to expectations). Inherent in this mindset and its resultant behavior is that middle managers and their teams resist fundamental change -- the "clay layer" as cited above. And so, the thinking goes, only carrots and sticks can overcome the resistance.

Rewards are still important. However, to get middle management and their teams to continually improve the digital products and processes they manage, the old reward and recognition system is inadequate. People in the middle need to be internally driven to perform well – even if a pay raise may be a quarter or year away.

I must note that much of the highest-value work in the new economy is *undefined* and thus not open to easy measures. It requires creative initiative at a precise time, often by more than one individual. If that undiscovered opportunity for adding value never happens, no one will notice. But your digital strategy will likely fail if it does not evolve at the pace that the world requires.

The part that should scare responsible senior leaders is that 70% of their workers are not engaged in their work. They are not using their individual and collective creativity to add value. They are doing work that you measure them on. Then they are going home each day and

channeling their unused creative capacity to coaching a local sports team, building a treehouse with their kids, or starting a business on the side. When leaders worry about the risks of empowering middle leaders and their teams to own much more of the tools of their own agency, we ask those leaders to be clear about the massive risks of having 70% of their workforce disengaged.

How do you create engaged and self-motivated middle leaders and their teams? First, senior management must encourage middle leaders to make more rewards intrinsic. They must recognize the power of the daily reinforcements they can give their people and, as important, that team members can give one another. That lets team members know how valuable and talented they are. One of the most important human needs is to be valued and supported by colleagues. Top managers who recognize this also recognize why the vast majority of workforces are disengaged: Their bosses and their teams don't regularly provide signs of appreciation.

However, this support and recognition won't be effective unless middle managers and their teams are given: a) the authority and responsibility to shape the way they do their work, and b) the tools for success – the data, technology, training and other assets they need to perform well. Many top leaders miss this crucial step, and others won't let it happen. Unfortunately, whether they realize it or not, they neuter their teams.

Top managers need to recognize that the controls and measures they place on mid-level groups more often than not erode their sense of ownership of a project and how engaged they are with their work and their peers. Much of the disengagement in the middle of companies happens in exactly this space.

In fact, these groups shouldn't be called teams. They are simply people working together in a function. The compliments that such a disempowered group may hear about what a great and talented team they are will likely ring hollow to them. A mid-level manager and her staff should be called a team only when they are given the permission and tools from above to design and continue to improve their work. And only when they are such an empowered team will they truly feel they deserve the compliments that come their way.

The New Mindsets in the Middle

Perhaps not surprisingly, the road to digital excellence starts at the top, but it doesn't end there. In fact, the road is widest in the middle. If top managers are the only company leaders who think and act differently on these three counts, they still won't unleash a wellspring of innovation in the middle. Mid-level managers are not likely to launch a flurry of digital initiatives in their domains. Even if they do, their well-intended digital innovation could turn into digital anarchy.

The reason is that the rest of the company's leaders must shift the way they think and act on three issues:
- The outcomes from optimizing their area of the business
- How to measure the performance of their teams
- Their role in solving business problems in their areas

Our table below summaries these shifts.

Old and New Mindsets for Middle Managers			
Issue	**Old Mindset**	**New Mindset**	**Resulting Principles**
Focus	Functional outcomes	Enterprise outcomes	Individuals and their team need to clearly understand how their actions and outcomes tie into the organizational strategy and objectives
How to measure performance	Role-based performance metrics created by the top of the organization	Team culture & performance-based metrics created mostly by the team in alignment with organizational objectives	Teams need to own the processes, roles and rules that drive team behaviors
Role in solving problems	Directly responsible for solving problems	Responsible for identifying the right problems to solve (and enabling teams to solve them)	Team members need to be creatively engaged in their work to find innovative ways to improve it

Let's explore each one.

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Focus: From Functional to Enterprise Outcomes

If middle managers are to drive much of a digital transformation initiative in their domains, they must work closely with other middle managers in their functions and others. The following hypothetical example illustrates why this is the case.

Consider a larger retailer that sells products from its stores and its website. Say the retailer wants to develop a new mobile app that can sense when a customer is near or in the store and is checking the prices on a new HDTV. That retailer wants a new mobile app to a) create an instant promotion on HDTVs that pops up on the customer's mobile phone, b) tells him the HDTV he's looking for is available in the store, and c) can be shipped to his home after he purchases it (if his vehicle is too small to carry it.) This won't happen without collaboration by the company's middle managers and teams in marketing/promotion, store operations, and warehousing/shipping.

That team now has a digital initiative: rapidly develop a mobile app that lets customers look up products on the app and get promotions for those products when they're in or near one of its stores; entices them to purchase the product in the store; and schedules the delivery. Now if the managers and their teams from promotions, store operations, and delivery focus only on their pieces of the app, they are not likely to work together closely.

In fact, the mindset of many middle managers is to focus only on operations under their control. Yet there's a great chance those managers will work on three separate mobile phone initiatives with little interplay. That has been a reigning mindset of middle managers (by function, division, etc.) for years: make their function and team efficient because that's what their paid to optimize, and lock up scarce resources (talent, funds, inventory, etc.) for their own needs. The needs of other functions come last.

But using the example above, customers don't care about whether they get promotions on their mobile phones. It's only useful to them if those offers are timely and if they can act on them.

They want the retailer to satisfy a need (that the retailer may have helped create) – there and then.

The mindset of middle managers, each of whom are just a piece of a larger cross-functional business process (like "create demand to deliver a product"), must shift to optimizing enterprise-wide goals. What's best for customers and what's best for the company must take precedent over narrow functional goals.

What kinds of enterprise outcomes would drive such cross-functional collaboration? One is the organization's greater purpose. It provides the bigger picture of how a functional manager and her team's work can make a difference across the enterprise. For example, the hypothetical retailer's organizational purpose may be something like "fulfilling customers' impulse." That would include letting customers know about, see, touch, buy and receive products at their moment of interest – especially when they're near the retailer's stores.

The marketing team, for instance, will understand their part of that greater purpose, and develop a mobile app that can sense when a customer is near or in one of the retailer's stores. Managers and teams in store operations and delivery functions can also understand how their own processes contribute to this goal.

But all must have a clear sense of the *organization's* purpose of fulfilling the impulse purchases of customers. On their own, functional outcomes such as promotion sent, inventory displayed in store, and product delivered to home won't achieve the greater organizational purpose.

Middle managers and their teams who are driven by such organizational purposes will clearly understand why are they doing their work. But without that mindset, they can easily focus on activities that may be interesting but don't help achieve larger outcomes.

Performance Measures: From Individual Performance to Team Culture and Performance

Leaders who view an individual as the central unit of productive output reward individual performance over team performance. Their teams are far less collaborative. They wait until a strategy is handed down to them from top management. They don't take risks or experiment if that means deviating from the routines and the plan.

These mindsets and the behaviors they produce are antithetical to how middle management and their staffs need to operate today. Depending on a middle manager to solve a vexing problem – a supply shortage, a rash of defective products, a misfiring mobile app – is increasingly a big gamble and a huge stress on that person. Even if they implore their teams to help put out such fires, leaders will find middle-level teams will not offer risky (although creative) answers.

In organizations that are successful with their digital transformations, the mindset of middle managers is that the team – not the individual – is the central unit of productive output. These organizations know that to drive team performance they must tweak the culture. Middle managers must see their role as translating (not only implementing) top management's strategy for their area of the business. Translating strategy is the job of their teams. They are closest to the problem – the defective product, the supply shortage, the misfiring mobile app -- and thus they need to solve it quickly.

In these companies, middle managers not only reward team contribution; they also enable and encourage the teams to reward each other. Teams like this understand how work really gets done. The shortsighted coach who rewards only the stars often loses to the coach who understands how the whole team needs to fit together and who realizes that the 'enablers' are just important as the ones who score the goals.

You don't have to look far for examples of the opposite, where individual rewards from above far outnumber and outweigh the rewards for teams. As Steven Kerr of Ohio State University states in a seminal paper: "… numerous examples exist of reward systems that are fouled up in that behaviors which are rewarded are those which the rewarder is trying to discourage, while the behavior he desires is not being rewarded at all.[21]"

If senior managers need teams in the middle to do things differently, they must reward team performance at a significantly higher level. What's more, they must give those teams a greater say in how their members share those rewards.

One of our clients (a global technology company) implemented a massive digital system designed to support a team-based approach to work. The good news is the company has recognized that the DNA of its digital transformation is embedded at the team level. The bad news is that if you interview the mid-level teams going through the changes, you'll see that the reward system of the company is still almost entirely based on top-down individual evaluations.

You don't need a doctorate to understand why this company's team-based approach to digital transformation isn't paying off. Senior management must have the courage to change not only the systems but to also how they give out rewards. Most leaders are not willing to do this -- because powerful interests are invested in keeping the historical reward system in place.

However, changing the reward system is a key role of senior leadership. Fortunately, companies that can make the hard decisions in digital transformation will be far ahead of the competitors that can't.

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[21] "The Folly of Rewarding A While Hoping for B," Steven Kerr, Ohio State University. Reprinted in 1995 in the Academy of Management Journal, 20 years after publication.

Role: From Solving Problems to Identifying the Right Problems to Solve

This old mindset for middle managers is believing their team is only responsible for *implementing* a strategy. The result is that middle managers create long a list of challenges when implementing a strategy. These managers have little experience proactively finding, defining and -- in particular -- scoping new problems.

Why doesn't this work today? To put it briefly, it takes middle managers far too long to come up with answers to problems. However, today's volatile and complex marketplace environment requires organizations to do just that. To digitally transform their areas of the business, middle managers must see their role as getting *their team* to translate the strategy and solve the problems in their domains. They must highly value the ability to determine which of many problems should be solved – and then dissect those high-value problems so tightly and clearly that their team can then solve them.

The way these middle managers *act* in a digital transformation is far different as well. They must proactively search for, define and scope new problems. They will spend a lot more time on clarifying the scope and level of the problem they are addressing. They understand it in relationship to the organizational purpose and intent.

Properly scoping work to be automated is one of the most vexing issues in digital transformations. Unless you scope and define the level of problem you are solving, it won't matter how much money and technology you throw at it. Software code, even more so for AI code, needs very specific and clear problem requirements and definitions. Those closest to the work are the only people who deeply understand the activities that such technology will automate or enhance.

How to Begin Shifting Mindsets and Behaviors: Simulating the Changes

So these are the most essential changes in mindsets and behaviors for top and middle leaders. Intellectually, they may make perfect sense. But emotionally and behaviorally – that is, turning new thoughts into behavior changes – they very difficult to shift.

However, changing such entrenched mindsets and behaviors is achievable. But first realize what is not likely to work: telling leaders to read books or white papers and come back to work with a whole new approach. Also not likely to work is putting them through classroom lectures. That may be part of what's necessary to start teaching traditional leaders new tricks. But it's not the whole thing, or even most of it.

In our work, we have found that talking is never enough for deep behavior change. Research shows leaders best shift how they think and act through simulations. For a digital transformation, this means playing out the new roles they must undertake.

In other words, top and middle leaders need to practice the new mindsets and behaviors that we prescribed earlier. They must "try them on," just like a clothes shopper tries on a new dress or suit, and walks around in them. But more than the clothes shopper, top and middle leaders must put themselves into simulated but life-like business scenarios. That's where they can begin to feel the work of digital transformation.

One of the biggest lessons we have learned from 28 years of staging such simulations is that smart, committed, and experienced leaders might *say* they understand a new mindset and the behavior that they must adopt, but often behave very differently when tested in the heat of a simulation. Each leader must see his or her own gaps. This is one of the most powerful uses of behavioral simulations.

Through this process some leaders discover their own strengths for the first time. They then can be encouraged to continue using those newly recognized strengths. This happened in a simulation a few years back at appliance manufacturer Whirlpool. One female leader was shocked to learn she was the most influential executive in her 30-person simulation team. It wasn't a shock to her colleagues, but it was to her. She had no idea that her quiet, consistent, self-effacing manner created such trust and influence with her peers. It was an eye-opening moment for her. Over the years, she has continually told us know she has never forgotten that lesson.

Leaders also get to 'try on' a new leadership behavior within the safe practice field of a simulation before they apply it back on the job. In a simulation for a global mining company, one executive believed the idea of working across functional boundaries was essential to the health of the enterprise. However, in the simulation, he defended his territory with every ounce of his role's power and consistently put his function's goals above the company's greater goals. It wasn't until the fictional company crashed after round one, and functional leaders pointed fingers at one another, that he and the other functional heads realized the huge gap between their espoused theory and their actual behavior under pressure. Fortunately, they had a chance to experiment with a different set of behaviors in round 2, and saw considerably different outcomes. This led to some predictably challenging and powerful debriefing discussions.

Helping leaders see their gaps and "try on" new mindsets and behaviors gives them personal control over their path forward. This type of learning is far more likely to "stick" than listening to a lecture. Research and our experience show that the most effective way to get people to change their behavior is to let them decide on their own why and how to do so. Only when leaders choose to shift their own mindsets and behaviors can they hope to change the cultural and performance of their teams.

Conclusion: What's at Stake in our Digital Transformations?

Since our start, we have worked with over 140,000 leaders at all levels, in hundreds of companies and a diverse range of industries, and in more than 24 countries. We have watched them struggle and emerge victorious in shifting their mindsets and behaviors through simulations. This year, I conducted one-on-one interviews with more than a dozen of those leaders. They have left me with two lasting impressions about the digital transformation we all are going through:

- The vast majority of the leaders have what it takes to make a digital transformation highly successful – but only if their organizational processes don't get in the way of the work.
- What is at stake right now in these digital transformations is our humanity. The way that we work together isn't only about work, it's about the way we live, grow and succeed with the people who share a great part of our life.

Large organizations are at a critical juncture. To succeed with their digital transformations, they must get the people part of it right. The top-down work transformation approaches of the previous era won't work in digital transformation. If anything, it stands to decimate the hard work, talent and spirit of people in the middle of companies.

Mid-level leaders and their teams are crucial to making digital transformation work. But to engage them well in this endeavor, leaders at the top must bring a very different mindset and behaviors toward the middle ranks of their organization.

Digital transformation is not just about productivity, efficiencies and competitiveness, though all of that is critical. It's also about finding a way to advance the ways that leaders at the top and the middle work together.

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