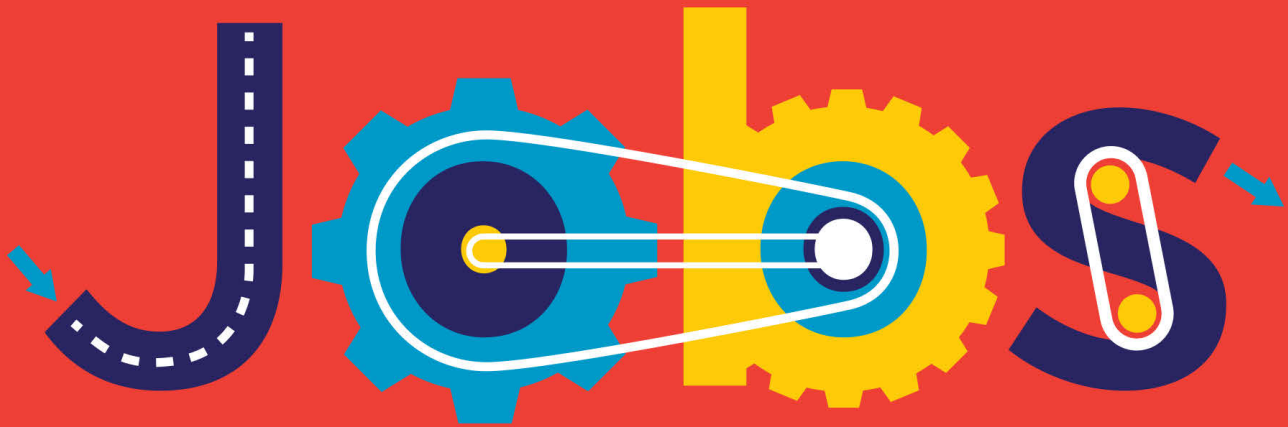


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Reinventing



A 4-STEP APPROACH



FOR APPLYING

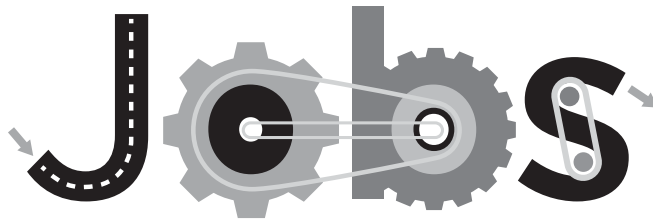


AUTOMATION TO WORK

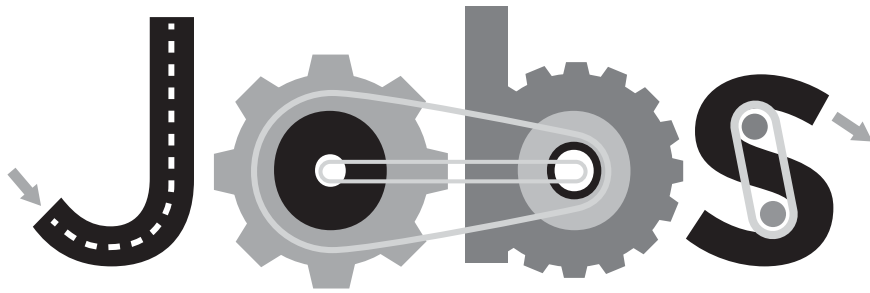


Ravin Jesuthasan & John W. Boudreau

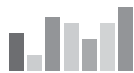
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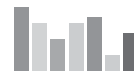
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A 4-STEP APPROACH



FOR APPLYING



AUTOMATION TO WORK



Ravin Jesuthasan and John W. Boudreau

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Boston, Massachusetts

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INTRODUCTION

AI and Robotics Are Here. Now What?

If you are a leader wrestling with where, when, and how to apply automation in your organization, you're in good company. Leaders everywhere are asking how automation will affect their organizations and how jobs—those of their teams, bosses, colleagues, friends, and families as well as their own—might change or even be eliminated. Optimists say that machines will free human workers to do higher-value, more creative work. Pessimists predict massive unemployment or even an apocalypse in which humans merely serve the robots. Of course, both the optimists and the pessimists are partially correct and partially wrong.

But what everyone gets wrong is asking, “In which jobs will automation replace humans?” We see smart and well-meaning leaders get stuck in the typical discourse about job replacement. It's a dead-end conversation. Simply asking which humans will be replaced fails to take into account how

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work and automation will evolve. You can't solve the "how to automate work" problem by thinking only about automation replacing jobs.

Consider the example of the automated teller machine (ATM). A familiar example, for sure, but one that illustrates the myopia that comes from asking, "Which jobs will be replaced by automation?" It's also a good example to start with because the evolution of banking work, through automation, is continuous.

Did the ATM Mean the End of Bank Tellers?

On June 14, 2011, Barack Obama noted that ATMs allowed businesses to "become much more efficient with a lot fewer workers."¹ In reality, for decades, the number of teller jobs actually *increased*, along with the number of ATMs. In 1985, the United States had 60,000 ATMs and 485,000 bank tellers. In 2002, the United States had 352,000 ATMs and 527,000 bank tellers.² Understanding how automation affects work clearly requires a more nuanced approach than "how many jobs do ATMs replace?"

Economist James Bessen explains the paradox of more ATMs creating more teller jobs in his book *Learning by Doing*.³ Quoted in a *Wall Street Journal* article, he says, "The average bank branch used to employ 20 workers. The spread of ATMs reduced the number to about 13, making it cheaper for banks to open branches. Meanwhile, thanks in part to the convenience of the new machines, the number of banking transactions soared, and banks began to compete by promising better customer service: more bank employees, at more branches, handling more complex tasks than tellers in the past."⁴

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Fast-forward to today. Personal devices and cloud-based financial transactions demand even greater changes in banking work. Has automation finally replaced tellers? Again, the reality is more nuanced. In May 2017, “while more than 8,000 U.S. bank branches have closed over the past decade (an average of more than 150 per state) and more than 90% of transactions now take place online, the number of U.S. bank employees has remained relatively stable at more than 2 million.”⁵

Why is there such stability in the number of bank employees as automation advances? The work of the teller job has evolved. “Where the bank branches still stand as a brick-and-mortar presence, the tellers have started coming out from behind the window with smartphone or tablet in hand to help customers help themselves. But with thousands of those branches closing, you’re more likely to find a teller online now. They’ve become the human face of an increasingly virtual world. It’s a role exemplified in Bank of America’s new experiment with hybrid banking, small unstaffed mini-branches that offer a direct link to tellers via video conference.”⁶

The ATM story is a useful parable for leaders, workers, and everyone else, because it illustrates why the simplistic idea of “technology replaces human worker jobs” is so misleading. That approach can’t predict how work and automation actually evolve. The story also illustrates the pivotal future capability for leaders—optimizing the ever-evolving options for combining human and automated work.

That’s what this book is about. Going beyond the question of how and to what extent automation will replace traditional jobs, we present a systematic framework in the form of a structured, four-step approach that leaders can use to

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reveal optimal work-automation combinations and redefine jobs in their organizations. Our framework frees you from asking the simplistic question of “which jobs will be replaced by automation?” and instead gives you a more nuanced, but precise and actionable method for determining the optimal combination of humans and machines in your organization.

The Road Map for Reinventing Jobs

This book is for everyone who must consider how automation will affect jobs and work, which includes almost anyone. However, we wrote this book particularly for leaders, because leaders must decide where, why, and how to *optimize the combination of human and automated work*. This can appear messy at first. Again, it is not as simple as asking which jobs will technology replace. Nor is it as simple as “lift and shift” outsourcing, where intact jobs move to third parties. Instead, automating work requires leaders to radically but systematically rethink the “job,” the main unit of work for centuries. Leaders that understand this and take a disciplined, nuanced approach will reap enormous rewards.

We know this because we have spent decades helping business leaders achieve strategic success through people and work. Ravin has been recognized as one of the twenty-five most influential management consultants in the world and has helped some of the largest and most prominent companies worldwide transform their organizations and work to realize a step change in performance. He has worked with governments, educational institutions, and nongovernmental organizations like the World Economic Forum on the

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future of work. John is one of the world's foremost thought leaders on strategic human capital, work, and the future of the human resources profession. He has helped clarify how work, talent, and the organization are most pivotal to strategic success in many companies, ranging from early-stage startups to some of the largest global organizations.

Our focus on the impact of work, talent, and the organization on strategic success brings a truly unique and differentiated perspective to the question of how to automate work. Most experts approach this problem from the technology side. We come at it from the organizational and human capital perspective. We have a strong point of view about how to achieve optimal work-automation combinations based on our decades of experience helping organizations reinvent work, leadership, and even themselves in light of the latest workplace technologies and innovations.

While the specific challenges facing the organizations that we've worked with have changed over the years—whether in response to process improvement (business process reengineering or agile), redesign, or new methods of resourcing (like outsourcing, talent platforms, or contingent workers)—the approach that we've developed and used over the past ten years to help leaders reinvent their companies is a structured, four-step framework: (1) deconstruct jobs into component work tasks; (2) assess the relationship between job performance and strategic value; (3) identify options for recombining tasks in light of the new technology or process; and (4) optimize work by putting it all together to reinvent jobs.

Most recently, we've used this systematic step-by-step approach to help leaders with the specific challenge of how

Is Your Organization Ready for Automation?

In addition to helping organizations grapple with the future of work, this book also focuses on research from Willis Towers Watson.

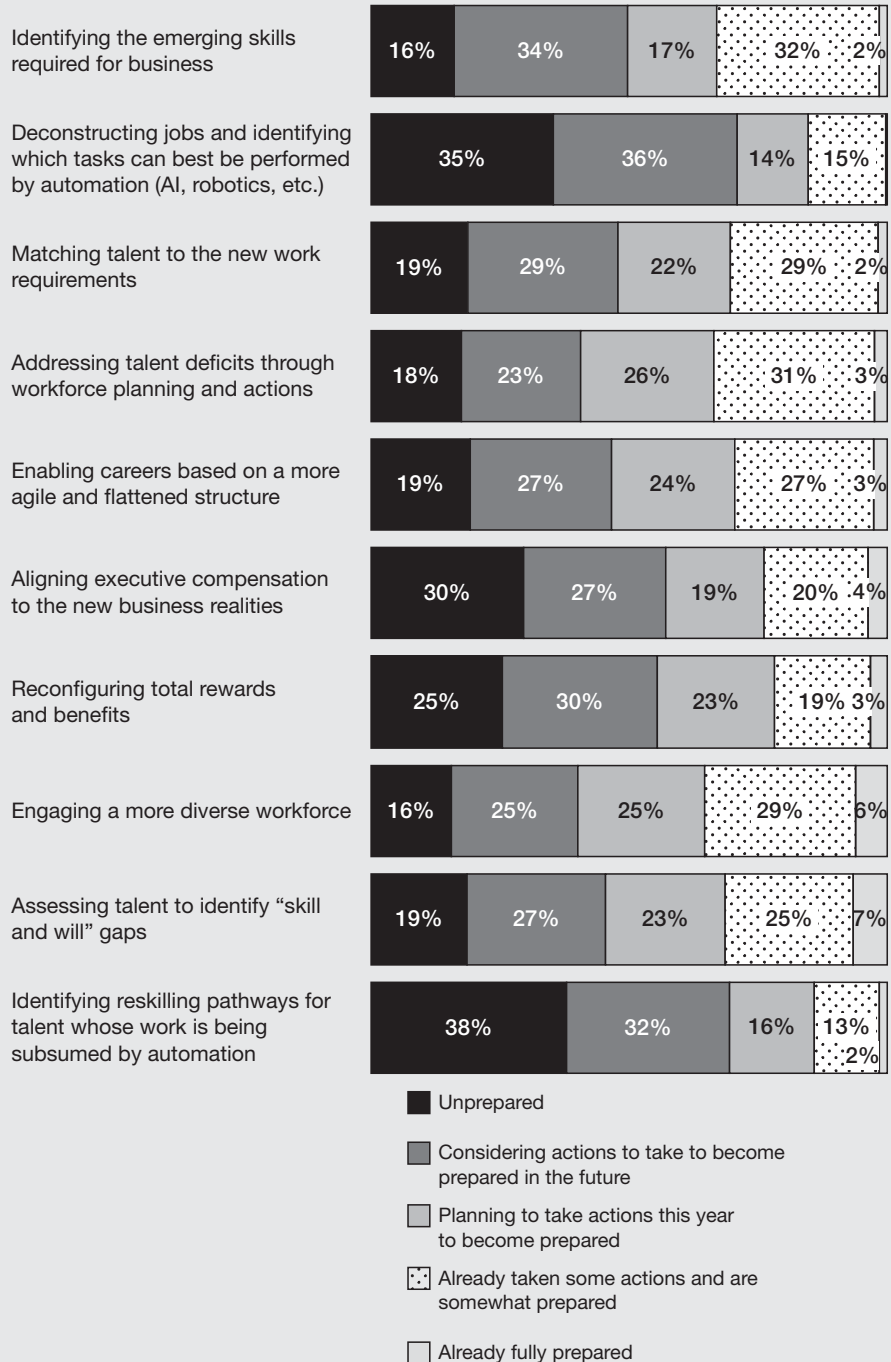
One recent study highlights the preparedness of organizations for the impact of several trends, including automation. The figure from our Global Future of Work Survey (page 7) shows how the participating companies rated their preparedness in several key areas: already fully prepared, already taking some actions, planning to take actions, considering taking actions, or unprepared. The two areas where companies were most unprepared are “deconstructing jobs and identifying which tasks can best be performed by automation” and “identifying reskilling pathways for talent whose work is being transformed by automation.” As we will show in this book, these two areas underpin future leadership requirements as jobs are reinvented; they are pivotal to our framework.

to respond proactively to the onset of work automation. We’ve used this framework in organizations across a variety of industries—bio pharmaceuticals, oil and gas, high tech, financial services, transportation—to optimize the power and potential of automation and to solve the work and challenges associated with it. (See the sidebar “Is Your Organization Ready for Automation?” for more about our research.)

Now, with this book, we offer you a hands-on guide to the four-step approach and show you how to apply it to your automation challenge. Our hope is that by using this book, you can deconstruct the work in your organization, identify

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Actions taken and opportunity areas related to creating optimal combinations of humans and automation



Source: Willis Towers Watson, Future of Work Global Survey, 2017.

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the payoffs, choose the right automation approaches, and then optimize work automation. Our framework will help you navigate the ever-changing, complex, and nuanced opportunities of automation. It provides a tool set to help you resist the siren's song of simply cutting costs by substituting automation for humans that is still a common pitch of many a robotic process automation (RPA) vendor. Such simplistic approaches often produce unforeseen problems that can be anticipated with the sophisticated approach we describe.

How This Book Unfolds

Part 1 presents the four-step framework in detail and how to apply it to your automation-work choices. The first step is to deconstruct jobs into component tasks. This step recognizes that “in which jobs will automation replace humans?” is the wrong question. Jobs contain many tasks that have different automation compatibility and payoff. You can see these patterns only when you deconstruct jobs into tasks. The better question, therefore, is which job tasks are best suited to automation?

We can then describe tasks in terms of their automation compatibility using these three dimensions:

- Repetitive-variable. Is the task more repetitive, with predictable routines and success criteria, or more variable, with unique and unpredictable routines and changing success criteria, requiring innovation and perhaps the application of decision rules to new or unique circumstances?

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- Independent-interactive. Is the work task performed more independently by a single person or more interactively with others, involving communication and empathy?
- Physical-mental. Is the work task more physical, using strength and manual dexterity, or more mental, using cognition, creativity, and judgment?

Chapter 1, “Deconstruct the Job,” discusses how to deconstruct jobs into work tasks and then how to categorize them using these three questions, the foundation for optimally applying automation.

The next step, in chapter 2 (“Assess the Relationship between Job Performance and Strategic Value”) is to answer the “what’s the payoff?” question. If your goal is to prevent mistakes, that implies a very different work-automation approach than if the goal is to improve existing performance, and both are very different from augmenting your human workers to achieve exponential performance value. This chapter describes how to analyze each task to identify its relationship between work performance and value. That clarifies your goals and the optimum payoff to work automation.

The third step of our framework asks, “What automation is possible?” Most leaders jump directly to this step—imagining all sorts of automation options. Yet, you can only optimize automation options after you’ve done the first two steps. Once you’ve deconstructed jobs into work tasks, identified how compatible the tasks are with automation, and identified the performance payoff of those tasks, you can more precisely identify automation options. We’ll show you three types of automation: robotic process automation, cognitive automation, and social robotics.

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RPA applies process automation to high-volume, low-complexity, and repetitive tasks. Cognitive automation takes on more complex tasks by applying intelligence like pattern recognition or language understanding. Social robotics involves robots interacting or collaborating with humans in physical space by combining sensors, artificial intelligence (AI), and mechanical mobile robots.

Chapter 3, “Identify Options,” will help you understand these three automation types and their relevance to different types of work. You’ll see how the information from steps one, two, and three gives clues about whether automation should replace, augment, or create new work for humans.

Should automation substitute human endeavor, augment it, or create new human work? What does work optimization look like? The fourth step of the framework pulls it all together. Chapter 4, “Optimize Work,” presents actual examples that illustrate optimizing work automation. It shows how the four elements of our framework combine to help you see work automation as more than just a jumble of anecdotes and examples, but rather discern how each example reflects an optimum combination of job deconstruction, return on performance, and automation.

However, optimizing work automation doesn’t end with reinventing the job. Reinventing jobs redefines the very nature of your organization. The new human-automation work that you create seldom fits easily into traditional job descriptions and organization structures, and it is often optimally sourced in different ways than traditional employment. Organizations consist of many interconnected jobs and structures. Our experience reveals that true optimization requires connecting the reinvented jobs to structures, decision rights, social networks, culture, and other

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organization-level factors. It requires fundamental changes in the definition and execution of leadership. Finally, it requires that everyone approach their own work and careers as a constant process of deconstruction and reinvention. Part 2 addresses these issues. Chapter 5, “The New Organization,” discusses how optimizing work automation leads to changes in the organization and describes several companies at the forefront of these changes.

These new, reinvented work options can fundamentally shift organizational characteristics such as leadership, power, accountability, culture, structure, information sharing, and decision making. Front-line employees will now have access to information and expertise that previously resided only with their supervisors or managers. Decisions that previously required escalation from the front-line worker to a supervisor to a manager now are assisted by AI. Norms such as “customers come to us because only we have the information they need,” must change to “customers arrive with more information than we have, and come to us for a trusted and collaborative relationship.”

Chapter 6, “The New Leadership,” examines how leaders must evolve to fit this new reality and describes a vital new role for them as guides to perpetually upgrading work. Leaders and workers must collaborate as never before to navigate a world of constantly upgraded work, as the tasks humans formerly did must evolve to be substituted for or augmented by automation.

Workers must trust their leaders and the organization enough to share their ideas about how to automate their own work. Leaders and organizations must devise pathways that provide continuity for workers, but without assuming the work will be constant. Workers must be more entrepreneurial,

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prepared to shift between employment, contracting, freelancing, and so on.

Leaders need to rethink their roles and means for realizing the mission of their organizations. This will require new capabilities and tools for leaders and workers, and an increased level of collaboration. Increasingly, both leaders and workers must orchestrate an ecosystem, populated with robots and AI, rather than manage within a self-contained organization.

Chapter 7, “Deconstruct and Reconfigure Your Work,” shows how our four-step framework can guide you in thinking about the new meaning of your own work and career and in optimizing your personal strategy for work automation.

We have found that virtually every organization is wrestling and experimenting with automation, but missing the benefits that come from deep and systemic change. One reviewer of our book put it well: “Automation is driven by the strategic need to move faster, be more consumer focused and leverage technology, reduce cost, increase speed, and improve service to create new value in this technology-enabled era. Whatever the goal, it always ultimately rests on the leadership decisions about how automation will affect the work, and the supporting work systems. Yet, very few automation strategies even consider the work, let alone provide a framework for optimizing it.”

Lacking a framework and playbook, it’s hard to learn from those experiments, particularly the lessons about how, when, and where to apply automation in organizations, and how to create the leadership and organizational structures that will maximize the benefits and reduce the risks. We have seen the value of reframing the work automation challenge through

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deconstructed and reinvented jobs that use the right automation to optimize and balance performance and risk.

Automation will significantly disrupt and potentially empower the global workforce. It won't happen all at once or in every job, but it will happen. You need a work-automation strategy that recognizes the nuances, realizes the benefits, and avoids needless cost and disruption.

This book will help you build that strategy. The framework we present here will help you better understand the implications of emerging trends, how work automation can transform your organization, and how to drive that transformation.

You can access a digital copy of our framework and numerous other resources to support your journey in reinventing jobs by visiting the following websites: willistowerswatson.com/reinventing-jobs and drjohnboudreau.com/speaking/reinventing-jobs-to-optimize-work-automation.

REDEFINING THE ORGANIZATION, LEADERSHIP, AND WORKERS

common? They each require the following enabling skills for success:

- Oil rig manager. A global mindset is needed to manage a team of workers from around the world. The process and method orientation ensures the integrity of highly repetitive, process-based work. The enabling skill of caution leads to success when a small mistake can have devastating consequences.
- Actuarial leader. The global mindset is evident in leading a global function. The process and method orientation supports maintaining the integrity of determining reserves, evaluating claims, and so on. Caution and risk aversion enhance performance on risk diligence.
- Independent quality assessor. A global mindset is not used to supervise a global team, but rather for evaluating processes and products in many different countries. The process orientation now supports creating consistent, repeatable processes that can be audited and verified. The enabling skills of caution and risk aversion are in play for establishing appropriate risk tolerances for deviations from established standards.

Skills of the Successful Leader of the Future

As jobs and organizations perpetually reinvent themselves to optimize work automation, leaders will evolve from hiring talent and delegating tasks to orchestrating evolving work delivered by automation and many different human-worker relationships. Skills such as continuously deconstructing

and reinventing jobs and an ability to not only find and nurture technical competencies but enable skills will incur a premium.

Optimizing work automation by perpetually reinventing jobs requires fundamental changes in leadership and leaders' relationships with workers. One of the most important changes will be in the transparency with which leaders and workers address constantly reinvented work. The most agile organizations must have everyone—workers and leaders alike—willing and able to candidly share what they know about how work is changing and to reinvent it. That will take courage on the part of leaders.

When John Boudreau interviewed former Secretary of Commerce Carlos Gutierrez, the secretary observed that a competitive and agile US economy depends on a competitive and agile workforce that can identify evolving work opportunities and the evolving pathways to prepare for them. He recalled one of his toughest decisions while CEO of the Kellogg Company—to close the Battle Creek manufacturing plant in 1999.¹⁰ The original plant was an icon within the company, but its processes were obsolete in an age of modern manufacturing. Gutierrez and the Kellogg team did what they could to treat workers humanely, but there were limits to the pathways they could offer, particularly for workers who were unable or unwilling to relocate. They informed the workers about the closing shortly after the decision had been made.

Boudreau asked Gutierrez how much advance notice he had had before the plant closed. He said that several previous CEOs had seen the inevitability of the closing, but the daunting prospects of disrupting workers and the community had delayed the decision. Gutierrez felt it was his duty not to pass it along to the next CEO.

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Currently, workers faced with a plant closing may have more options, including living in Battle Creek but using virtual tools and freelance platforms to find future opportunities. In the increasingly data-rich and agile work world, workers and leaders should perpetually prepare for inevitable work obsolescence. Might future events like a plant closing be less shocking in the new world of agile pathways?

That requires a new mindset. Gutierrez suggested that even today's leaders, when faced with work obsolescence and disruption, will instinctively wait to engage workers after a tough decision is made. He said, "Looking back, my team and I had a choice about how early and transparently we would share our knowledge that the plant and its work would soon change drastically."¹¹

Leaders assume that if they reveal disruption too early, it will produce worker stress, contentious labor union or community reactions, and departures of key employees. Why risk starting an unpleasant conversation earlier than necessary? Such traditional assumptions must be questioned if leaders and workers embrace agile work and learning.

Every day, leaders and workers have choices about how transparently they share knowledge of how work is changing. Candid and honest conversations about the perpetual upgrading of work provide workers and leaders time and opportunity to adjust, even if it's painful. Are your leaders driven by old assumptions to keep quiet until disruptive change occurs? Or, is HR equipping leaders and workers to transparently perceive, discuss, and prepare for inevitable work changes?

As a leader, you must prepare for all of the changes automation brings. You must also prepare for the ways in which your own job might be automated. We turn to that topic in our final chapter, showing how to apply our four-step process to your own job.

ABOUT THE AUTHORS

RAVIN JESUTHASAN is a recognized global thought leader and author on the future of work, automation, and human capital. He has written numerous research reports and articles on these topics and is the coauthor of the books *Lead the Work* (Wiley, 2015) and *Transformative HR* (Wiley, 2011). Jesuthasan is an advisor to some of the largest companies in the world and has led numerous large-scale, global restructuring and transformation engagements.

Jesuthasan is a regular participant and presenter at the World Economic Forum's annual meetings in Davos and Dalian/Tianjin and is a member of the WEF's Steering Committee on Work and Employment. He has been featured extensively by leading business media including CNN, the BBC, the *Wall Street Journal*, *BusinessWeek*, CNBC, *Fortune*, *FT*, *The Nikkei* (Japan), *Les Echos* (France), *Valor Econômico* (Brazil), *Business Times* (Malaysia), *Globe and Mail* (Canada), the *South China Morning Post*, Dubai One TV, and *The Australian*, among others. He is a frequent guest lecturer at universities around the world including Oxford University, Northwestern University, and the University of Southern California.

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About the Authors

You can access a digital copy of our framework and numerous other resources to support your journey in reinventing jobs by visiting the following websites: willistowerswatson.com/reinventing-jobs and drjohnboudreau.com/speaking/reinventing-jobs-to-optimize-work-automation.