Reinventing Jobs
A 4-Step Approach for Applying Automation to Work

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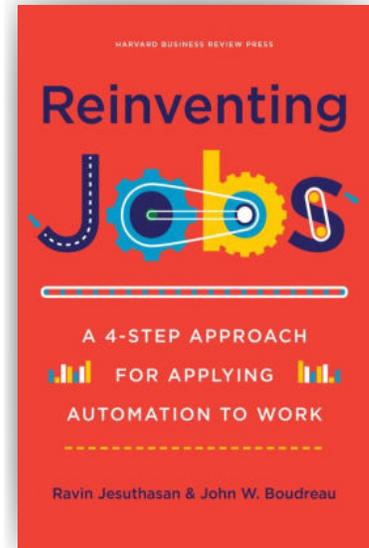
KEY CONCEPTS

To achieve the optimal combinations of humans and machines, leaders must implement the following four-step framework:

1. *Deconstruct existing jobs into key tasks and categorize them.*

2. *Determine the payoff of each task*. Estimate the relationship between the performance and strategic value of each task.

3. *Identify automation options*. Consider the different types of AI and robotics capable of performing each task.

4. *Reinvent the job by optimally combining human and automated work*. Create new jobs by determining which human tasks should be substituted, augmented, or transformed by automation.

INTRODUCTION

Technology creates new work, but it can simultaneously substitute, augment, and transform existing work. To help leaders, employees, and policy makers navigate this rapidly changing landscape, **Reinventing Jobs** provides a four-step framework to seamlessly introduce automation into their organizations' work roles, processes, and strategies. According to Ravin Jesuthasan and John W. Boudreau, the key to transforming companies into industry leaders of the future is learning to optimize human-automation collaboration today.

PART I: OPTIMIZING WORK AUTOMATION: A FOUR-STEP FRAMEWORK

To leverage the benefits of artificial intelligence (AI) and robotics, leaders must reinvent their companies' existing jobs and workflows to allow for more effective human-automation collaboration. The following four-step framework can help facilitate this transition:

STEP ONE: DECONSTRUCT THE JOB

Contrary to popular belief, automation seldom simply replaces the people doing a job. Instead, existing jobs are reconfigured, splitting their duties and responsibilities between human-robot collaborators. The first step in this process requires leaders to break down each existing job into its key work tasks. For example, a bank teller's tasks include:

- Greeting customers.

- Verifying account balances.

- Withdrawing and counting cash for customers.

- Recommending additional bank services.

- Providing customer service.

- Collaborating with designers to improve products and processes.

Once a job has been deconstructed, leaders must determine which tasks are best suited for automation. They must identify where each task falls along the three dimensions of automation compatibility:

1. *Repetitive vs variable*. Repetitive work is highly compatible with automation. For example, the repetitive task of processing withdrawals can easily be done by an automated teller machine (ATM). Variable tasks, however, such as finding new ways to improve bank products, requires a human mind.

2. *Independent vs interactive*. Independent work like calculating cash balances can be performed by an ATM. Interactive tasks like talking with customers may be better conducted by human bank tellers.

3. *Physical vs mental*. Both types of work can be automated, but generally more physical work is suited for automation, while tasks that use cognitive abilities are suited to humans. For example, ATMs dispense cash to customers, but human bank tellers recommend the most appropriate additional bank services.

STEP TWO: ASSESS THE RELATIONSHIP BETWEEN TASK PERFORMANCE AND STRATEGIC VALUE

Even when a task is repetitive, independent, or physical and *can* be automated, that doesn't mean it should be automated. Too often, companies wrongly automate tasks simply because a robot is capable of doing the work. A more productive approach realizes that automation is only worthwhile if it provides the *payoff* that impacts strategic goals that include cost efficiency but often go well beyond it. To determine the optimal role of automation, leaders must estimate its *return on improved performance* (ROIP).

ROIP is a spectrum determined by two things: the *level* of task performance and the strategic *value* of that performance. When depicted on a chart, the ROIP spectrum appears as a curve with value as the vertical dimension and performance level as the horizontal dimension. It can be divided into four sections:

1. *Negative value*. Poor performance produces significant negative value, but improvement beyond the standard produces little additional value. The goal is to minimize errors.

2. *Constant value*. A wide range of performance produces little additional value. The goal is to reduce variance.

3. *Incremental value*. There's a consistent incremental increase in value for each incremental performance increase. The goal is to raise performance incrementally.

4. *Exponential value*. There's an exponential positive relationship between increased performance and strategic value. The goal is to achieve performance breakthroughs that exponentially impact value.

> *ROIP is a spectrum determined by two things: the **level** of task performance and the strategic **value** of that performance.*

STEP THREE: IDENTIFY AUTOMATION OPTIONS

The final step in the framework requires leaders to decide how to optimally combine human and automated work.

Every leader should become familiar with three categories of automation:

1. *Robotic process automation (RPA)*: The simplest type of automation, RPA is often used for high-volume, low-complexity tasks like transferring data between software systems. RPA is best for repetitive, independent, and mental work.

2. *Cognitive automation (artificial intelligence)*: AI is capable of recognizing patterns and performing complex tasks. Whether through reinforcement learning or self-learning, machine learning and natural language processing can transform many forms of cognitive work.

3. *Social robotics*: The combination of robotics with mobility, sensors and AI that enable them to work interactively and physically with humans. Social robotics work with humans in myriad ways and can take any form, from flying drones to walking anthropoids. Social robotics are effective for both routine and nonroutine tasks.

STEP FOUR: REINVENT AND OPTIMIZE

The final step in the framework requires leaders to decide how to optimally combine human and automated work. Leaders must first understand the three different roles that automation can play:

1. *Substitute for human work*. In scenarios where the task is repetitive and independent with a negative, constant or incremental-value ROIP, automation can replace human workers. For example:

   - Social robotics can substitute human workers as factory floor inspectors.
   - RPA can gather data on mortgage applicants by analyzing their tax records and social media accounts to calculate borrower risk.

2. *Augment human workers*. In scenarios where the work is variable with incremental or exponential-value ROIP, automation can be used to help improve human workers' performances. For example:

   - The Smart Tissue Autonomous Robot, which is a cobot, is used by surgeons to offer a high degree of surgical precision.
   - GE technicians use cognitive automation to analyze their machinery's performance patterns and predict optimal maintenance.

3. *Create new work*. In scenarios where the work is variable and interactive with incremental or exponential-value ROIP, automation can generate new, unique opportunities for humans to dramatically enhance their value. For example:

   - Cognitive automation can be used to help identify the particular types of post-treatment care and counseling needed by cancer patients, allowing human caregivers to match the care to the patient.
   - Insurance companies combine RPA, remote image processing, and cognitive automation to assess their clients' claims quicker and with much greater precision. The human appraiser is transformed from analyzing claims in the field to reviewing the automated analysis and providing customers with concierge-level service.

Once leaders understand the four-step framework, they must put it all together. The following six questions provide a succinct overview of how to reinvent a job with automation:

1. What are the key tasks of the job?

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2. Are the tasks:

   - Repetitive or variable?

   - Independent or interactive?

   - Physical or mental?

3. Is the ROIP (return on improved performance) of the task:

   - Negative (reduces mistakes)?

   - Constant (reduces variance)?

   - Incremental (improves value linearly)?

   - Exponential (improves value transformatively)?

4. Which of the following types of automation are available for the tasks:

   - RPA?

   - Cognitive automation?

   - Social robotics?

5. Will automation substitute workers, augment workers, or create new work?

6. What is the optimal way to reinvent this job, combining human and automated work?

Reinventing jobs by optimizing human-automation collaboration creates challenges and opportunities beyond the individual jobs, affecting the relationships among jobs and organization units and structures.

Part II: Redefining the Organization, Leadership, and Workers

The New Organization

Reinventing jobs by optimizing human-automation collaboration creates challenges and opportunities beyond the individual jobs, affecting the relationships among jobs and organization units and structures. Consequently, leaders must anticipate organization-level implications as they integrate automated and human work. Two strategies can help accomplish this:

1. *The outside-in approach*. Here, leaders identify the big picture of how automation will impact their companies and industries. They develop automation visions to align their organizations' decisions. Using those broad trends, they identify ways that their own organizations' work can evolve to accommodate changes.

2. *The inside-out approach*. Leaders start by reinventing jobs where reinvention best improves costs, risks, and productivity. As they make specific changes in jobs, they observe patterns that reveal new organizational structures, relationships, and networks that enhance and support the job-level reinvention. Organizational changes evolve from the work-level reinvention.

Using either approach, leaders must anticipate how automation will impact their organizations':

- *Strategies*: What their companies will and will not aim to achieve, and how. For example, integrating automation into an oncology center may allow its strategy to evolve from simply providing the best surgical cancer treatment to making doctors and patients partners in making the best possible treatment decisions.

- *Structure*: Internal power, information, authority, and accountability. With automation enhancing cancer surgery, the surgeons at an oncology center would share power with AI-powered machines. Now, the surgeons share authority and power that they previously held exclusively, with AI designers and robotic technicians.

- *Processes*: The way decisions are executed. The reinvented oncology center might now use analysis generated by cognitive automation to inform doctors, nurses, and patients of the best treatment options. No longer is this process the sole responsibility of a single doctor or nurse, and now the patient may see the same information provided to the caregivers.

- *Metrics*: The benchmarks used to measure success. Previously, the oncology center evaluated the cost and effectiveness of surgery, but the newly automated center would also measure the patient experience.

- *People practices*: How the work experience of the human workers is designed and managed. In the newly automated oncology center, the sourcing, selection, training, rewards, engagement, culture, and careers of the human workforce will change to support virtual teams, self-managing caregivers, and greater treatment experimentation. All human workers must develop their capacity for continuous learning and adaptive flexibility.

Reinventing jobs transforms work and organizations, and thus transform leadership.

Ultimately, automation reinvents not just jobs, but organizations, including leaders who can understand and embrace optimal automation to create organizations that are more agile, work-centric, and have fewer boundaries than ever before.

THE NEW LEADERSHIP

Reinventing jobs transforms work and organizations, and thus transform leadership. Future leaders must become more adept at:

- Constantly deconstructing and reinventing jobs as technology continues to evolve.

- Coordinating work delivered by combinations of humans and automation.

- Nurturing human-robot collaboration.

- Navigating work that's perpetually changing.

- Engaging employees and customers as collaborators.

- Finding and nurturing employees' competencies.

- Serving as a hub for a boundaryless talent ecosystem that includes regular employees, contractors, gig workers, volunteers, AI, and robotics.

The five transformative changes that will redefine leadership are:

1. *Mindset*. Leaders must think in terms of perpetual change, constantly recombined tasks and skills, and humans as collaborators with automation.

2. *Ability*. In the future, the best workers won't be highly qualified for specific jobs, but rather superb learners who excel at analyzing information and finding connections in disparate data.

3. *Reward*. Salaries and permanent jobs will be replaced by rewards for deconstructed tasks and short-term positions. Compensation will be regularly renegotiated as jobs are reinvented.

4. *Deployment*. Leaders will become responsible for matching employees to work that's constantly reconfigured through tasks, skills, and capabilities, rather than jobs.

5. *Development*. Leaders and workers will work together to navigate a connected array of development options, focused on the tasks and skills that evolve with the combinations of human and automated work.

DECONSTRUCT AND RECONFIGURE YOUR WORK

To anticipate how their own roles will evolve in the future, individual workers must:

- Deconstruct their current jobs into tasks.

- Identify which tasks will likely be substituted by automation, which will be augmented by automation, and which will be transformed by automation.

- Determine how to reinvent themselves to better fit the tasks that will require and enhance the value of human workers.

- Imagine their future work descriptions as they could appear in two, five, and ten years.

- Consider how they'll fit in a future organization—one that's a digital, agile, and boundary-less.

About the Authors

Ravin Jesuthasan, CFA, is a recognized global thought leader and author on the future of work, automation, and human capital. He has been recognized as one of the 25 most influential consultants in the world and his more than 100 publications include the books *Lead the Work* and *Transformative HR*.

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