YayPay

Robotic Process Automation:

Re-Imagining Human Work

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Robotic Process Automation: A future of transformative productivity

Intelligent automation has been described as the next driver of the digital economy. The confluence of advanced technologies like artificial intelligence (AI), robotics, machine learning and data analytics have created an enabling environment for automation to transform business and shrink the productivity gap.

Automation has been germinating slowly in the business world for the last decade, as enterprises look to boost productivity while lowering costs. For the untrained eye, this mandate is at odds with reality. How do businesses increase output while reducing cost at the same time?

Robotics Process Automation By The Numbers

Market Growth:

- **60%** CAGR through 2024
- **Economic Footprint: $6.7 trillion** by 2025
- **Business Cost Savings: 35-65%**
- **Potential Productivity Growth: 1.4%**

The manufacturing sector has been doing it for decades through industrial automation and robotics, which slowly replaced labor-intensive tasks performed by workers. Now, that same concept is being applied to both manual and knowledge-intensive work in sectors extending far beyond primary industry to include professional services, healthcare, finance, advanced manufacturing and retail. This is being accomplished through robotic process automation (RPA), a term that describes the integration of advanced technology into repetitive human work environments that maximizes output while eliminating manual error.

"RPA will take the robot out of the human, freeing workers to contribute in more creative and profound ways."

Industry-Specific Applications

RPA is the foundation of competitive advantage for businesses across multiple economic domains. It is both a **vertical industry** (insofar as it is part of IT) and a **horizontal enabler** of business optimization in various industries.

IT

RETAIL*

TRANSPORTATION

MANUFACTURING

MINING

HEALTHCARE

EDUCATION


FINANCE & INSURANCE

GOVERNMENT SERVICES

*Image Credit: From Lowe's

Data-intensive industries, such as IT, professional services and finance and insurance, are already relying on RPA systems to manage their back-end workflows. Professional industries alone have an automation potential of at least 34%, a figure that jumps to 44% for financial services.[1] Automation potentials will accelerate as businesses look to boost customer service and streamline transaction-laden processes.

RPA will also be a major catalyst of the e-health transformation, assisting hospitals, pharmacists and general healthcare practitioners shift mountains of paperwork to a digital environment.

Automation PotentiaL

PROFESSIONAL INDUSTRIES 34%

FINANCIAL SERVICES 44%

Source: McKinsey Global Institute
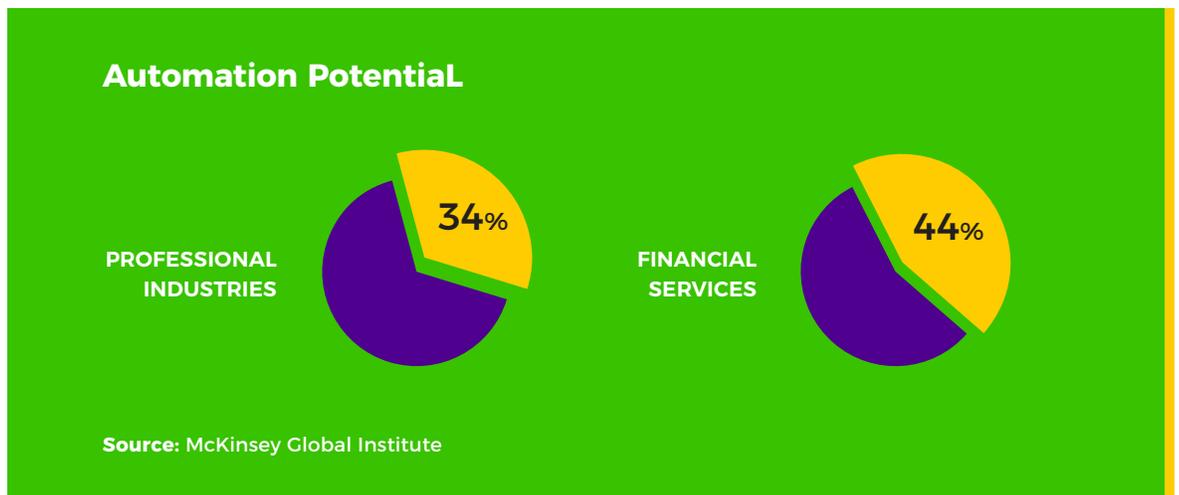
For sectors like manufacturing and mining, RPA is already being used for logistics and back-office processes tied to accounting and data management. In the future, advanced software and A.I. capability will enable diagnostics, risk management and bill of materials generation for primary industry that relies heavily on critical infrastructure.[2]

RPA is already a multi-billion-dollar market that is expected to grow manifold in the next ten years as businesses expand their A.I. capabilities. **Industry research predicts the RPA market will expand at a compound annual growth rate of 60% over the next seven years, reaching $8.75 billion by 2024.**[3] That means there's still time for early adopters to get ahead of the game.

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[1] McKinsey Global Institute.
[2] Everest Group (October 30, 2015). "The Robotic Process Automation (RPA) Opportunity Varies by Industry and Function | Market Insights."
[3] Grandview Research (October 2016). RPA Market Size Projected To Reach $8.75 Billion By 2024.

RPA Present & Future

	Information Technology	Retail	Transportation
Today	Data management, I.T. and virtual support	Customer service, logistics	Logistics
Future	Virtual workers deployed to manage and automate various admin tasks	Trade promotions, sales analytics, new product launches, real-time availability	Driverless vehicles

	Manufacturing	Mining	Healthcare
Today	Industrial automation, back-office	Accounts receivable, general ledger, customer service, data management	Automated mining
Future	Bill of materials generation, full supply chain management	Diagnostics, risk management, advanced drilling	Reports automation, e-health transformation

	Education	Finance and Insurance	Government Service
Today	Back-office	Accounts receivable, customer service, insurance claims	Back-office support, customer service
Future	E-learning, recruitment	Fraud claims recovery, counter-party credit risk	Streamline of government services from back-office to front line

RPA: The Labor-Cost Game Changer
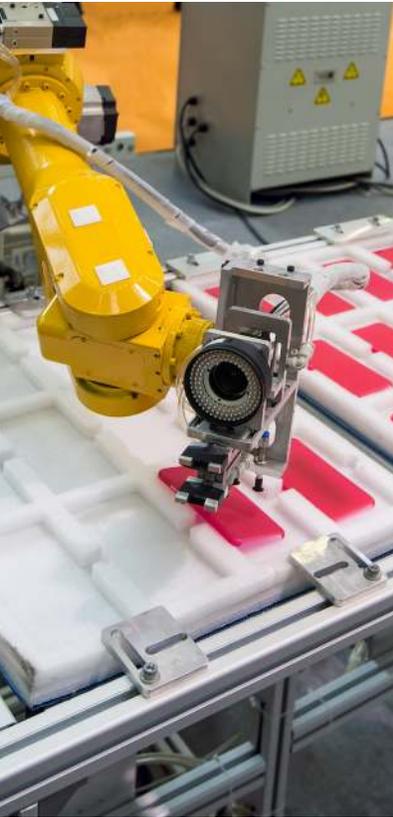
RPA is a game changer for its ability to re-imagine the future of human work. The growth and widespread adoption of robotic processes is leading the global shift toward digital labor, which refers to work that is performed by RPA systems. Digital labor isn't replacing human labor, but becoming intertwined within it. This dynamic relationship can lead to substantial job growth and enhanced human skills that transform the economy.

In many ways, this process has been underway for more than two decades as the I.T. revolution gave birth to the knowledge economy. RPA is accelerating this transition.

It's often said that robots will replace human workers. History (and RPA) have demonstrated that this isn't quite true. While robotics and automation do have a displacement effect on some jobs, they lower costs and boost profitability of businesses that employ them. They also create immediate demand for tech-savvy workers who can service, interact with and build from the efficiency gains generated by RPA systems. These forces produce economic growth, the key ingredient of job creation and the bedrock of success for any nation.

In the immediate term, RPA will transform tasks that are rule-based, template driven and repetitive in nature.

RPA is analogous to a human going into different filing cabinets and systems to get information and then populating it back to these systems. From the back office to the front line, **RPA will take the robot out of the human, freeing workers to contribute in more creative and profound ways. More directly, RPA is creating a bigger role for human "assessors,"** who are dedicated resources that intervene in case points where the rules need to be "adjusted" or "overwritten."

RPA technologies not only create new jobs, they enable new human skills and experience. Just as the I.T. revolution spurred millions of jobs in software, electronics engineering and web development, automation will create a new breed of tech-savvy workers that intersect I.T., professional service and domain-specific knowledge.

"The challenge for business leaders will be to integrate RPA's capabilities to make use of both human and digital labor."

RPA:
Boosting Productivity Gains

Labor productivity is a measure of how much value a business can generate with its existing workers. A business views productivity from the standpoint of how many units it can produce within a given workday. This essentially describes how much value an employee creates per hour of work. From this perspective, we can easily determine the productivity rate of an entire economy.

U.S. productivity growth has declined from an annual rate of 2.8% between 1947-1973 to a low of 1.1% between 2007-2016. Basically, our productivity growth is less than half what it used to be.[4] The growth of lower skilled (and lower paying) jobs suggests productivity could be heading lower in the short term unless businesses increase their adoption of emerging technology.

Lackluster productivity growth has been described as one of the greatest inhibitors of economic health in the 21st century. Research from McKinsey Global Institute recently showed that the adoption of robotics, A.I. and machine learning – the foundations of automation – could raise annual productivity growth by 1.4% over the next 50 years. That's double the productivity rate of the I.T. revolution of the 1990s and nearly four times bigger than productivity growth from early robots.

RPA Defined

Robotic Process Automation is the application of advanced technology that performs business functions automatically without the need for constant human intervention. RPA aims to use advanced computing methods, like A.I. and machine learning, to perform complex tasks that are scalable and cost effective.

Although there is a continuum between RPA, A.I. and their integration with robotics, each represent a different subset of the overall picture. The robots of RPA are static, whereas A.I. is "self-learning." Robots do exactly what you tell them to do and will do that thing the same way again and again. A.I. manages the variability, ensuring that the overall system is responsive to different inputs.[5]
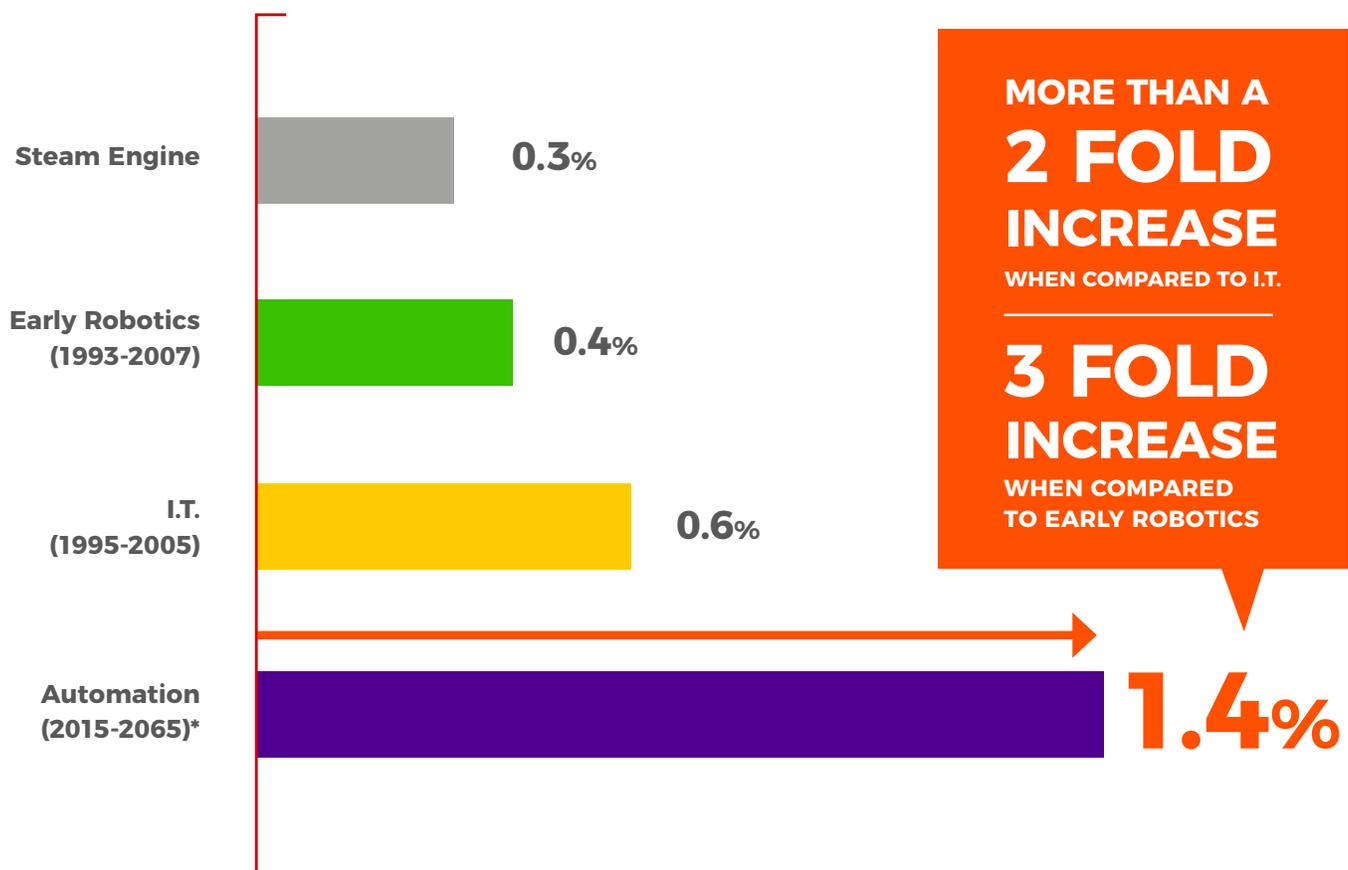
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[4] Bureau of Labor Statistics. Labor Productivity and Costs.

[5] Andrew Burgess (December 9, 2015). "RPA and AI – the same but different." Symphony HQ.

The age of slow productivity growth may finally be over with RPA. This is an exciting time for businesses, shareholders and workers themselves who benefit from greater economies of scale and more profitable businesses as a result of technological innovation. As the information age has clearly demonstrated, the shift to the digital economy is already taking place. RPA will accelerate this process and help businesses achieve more.

Increase in Productivity as a result of automation
(Annual productivity growth by technology)

Technology	Growth
Steam Engine	0.3%
Early Robotics (1993-2007)	0.4%
I.T. (1995-2005)	0.6%
Automation (2015-2065)*	1.4%

MORE THAN A 2 FOLD INCREASE
WHEN COMPARED TO I.T.

3 FOLD INCREASE
WHEN COMPARED TO EARLY ROBOTICS

1.4%

* Expected productivity growth range: 0.8%-1.4%
Source: McKinsey Global Institute (January 2017). Harnessing automation for a future that works.

What's In A Name?
Application Examples By Technology

Robotics	Automation	RPA	Artificial Intelligence
▼	▼	▼	▼
Industrial robots	Factory automation	Accounts receivable	Smart cars
Service robots	Electronic support tickets	Claims processing	Self-repairing hardware
Surgical robots	Software updates	Policy administration	Video game bot
Biorobots	Marketing automation	Credit card applications	Natural language processing
Drones	SCADA	Compliance reporting	Fraud detection
Bomb disposal robot	Programmable logic controllers	Patient registration	Purchase prediction
Space rovers	Space rovers	Credential verification	News generation
Pharmacy automation	Quality control	W4 management	Online customer support

Putting Digital Labor to Use

In the past, automation was usually understood within the context of industrial processes. Today, it is viewed as another step in the evolution of business process bundling. In the 21st century, the focus of automation is on enhancing service delivery. This makes automating back-office operations, such as accounts receivable, H.R. or even complex supply chain management, easier than ever before.

But it doesn't end there. RPA hasn't evolved in a black box. It has come with new innovations in A.I., big data and machine learning algorithms. Together, these advances allow businesses to better understand consumer behavior, develop new marketing strategies and segment their products and services more effectively than ever before. RPA has evolved in lockstep with these functions, and now offers solutions for roles that previously required cognition.

Businesses looking to integrate RPA should begin with one simple question: **which repetitive tasks does my business currently perform that can be done more quickly and reliably through automation?**

For example: This question is being asked increasingly of CFOs, who must contend with longer billing cycles and cash flow shortages. Most middle-sized finance departments have a DSO cycle of 60 days. This means it takes businesses 60 days to get paid for a product or service already delivered. Industry research and early-adopter use cases clearly show that accounts receivable departments can benefit greatly from RPA.

Take for example the most time- and resource-intensive task for any accounts receivable team: closing invoices and staying on top of the billing process. For any given middle-sized business, this task literally involves hundreds of hours and thousands of emails, not to mention coordinating and managing customer queries. The bigger your business grows, the more complex this challenge becomes.

RPA software can streamline bill collection and manage complex business relationships to reduce DSO. These tools are already being used by businesses across a range of industries.

Middle-Market Accounts Receivable Trends: A YayPay Case Study

In 2017, YayPay conducted primary consultations with 50 CFOs of small- and medium-sized enterprises to understand their RPA adoption trends. The companies surveyed had a median DSO of 60-90 days and generated annual revenues of between $10 million and $100 million. They employed an average of 51 to 200 workers.

Key Findings

The results of the consultations showed that CFOs have a strong appetite for new technologies that can boost cash flow while increasing productivity. The large majority of businesses use enterprise resource planning (ERP) and around half expressed an interest in accounts receivable RPA software.

When YayPay crunched the numbers, it found that:

- **Over two-thirds of respondents are interested in accounts receivable automation software;**
- **Over 70% already use middle-market ERPs;**
- **One-third use or have used a CRM tool, such as Salesforce.**

Productivity is clearly top of mind for CFOs. Even those who didn't expressly state a desire to adopt RPA were likely to agree that improving cash flow is important.

How to Bring RPA Into Your Company

After asking which repetitive process or task your business can readily automate, it's time to develop a strategy and present the business case for why RPA makes sense. Ernst & Young[7] has outlined an effective strategy for making RPA a reality for companies to boost operational efficiency, lower costs and create more favorable outcomes for workers and consumers alike. It is based on the following steps:

- **RPA Strategy:**
  What problem can RPA help you solve?

- **Proof of Value:**
  By fixing this problem, what value will RPA add to your business?

- **Business Case Development:**
  How much will it cost and how will it be implemented?

- **RPA Rollout:**
  Who are the people and what are the processes and technologies needed to roll out your RPA strategy?

- **Management:**
  Either through a third-party or in-house, who will manage and administer your company's RPA?

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[7] Ernst & Young. Robotic process automation: Automation's next frontier.

The Future of RPA

As the digital economy accelerates, the need for speed remains vital. RPA is uniquely positioned as a cost-effective solution that can help business automate small-scale processes for big-picture results.

RPA will continue to evolve over the next ten years, bringing scalable solutions to businesses in all corners of the economy. The continuum linking RPA, automation, robotics and A.I. will likely result in new transformations that raise the bar on business performance and create higher demand for skilled resources capable of working side by side with technology.
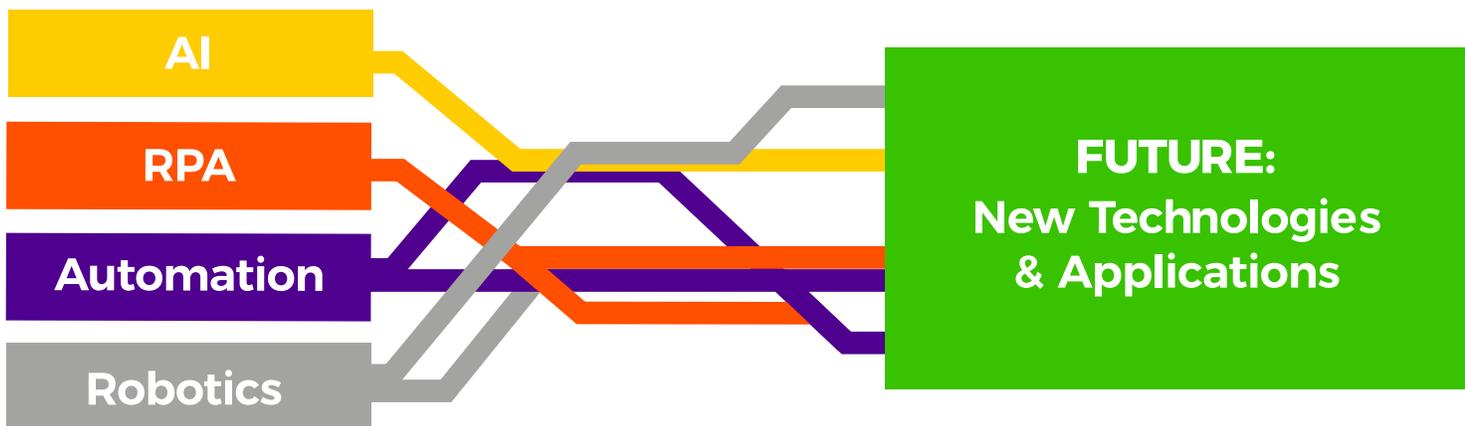
YayPay is a cloud-based, predictive accounts receivable automation solution that leverages data and automatic payment communications to accelerate collections. YayPay integrates with multiple accounting, billing, and CRM applications for a complete look into the collections process to help organizations better predict cash flow and increase revenue. YayPay makes collecting money fast, easy, and highly predictable.

Anthony Venus is CEO and Co-Founder of YayPay. In 2015, Anthony co-founded YayPay to fulfil the mission of making collecting money fast, easy, and highly predictable and to strive towards a vision of autonomous commerce.

He is a multi-time entrepreneur and has lived and worked on five continents. He was Co-Founder and CEO of Meridian Equity Partners, a licensed financial and lending firm; Strategic Intelligence, an online publishing firm; and Marketshare, a data collection and market-research company acquired by Harris Interactive (AC Nielsen) where he also served on the global management team. Anthony's career began at The Economist Group.

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