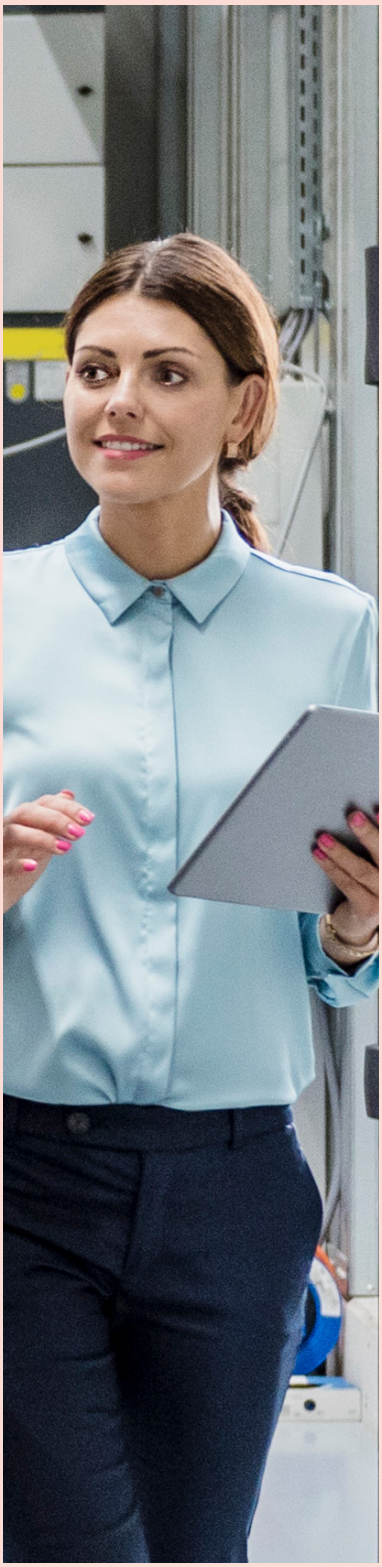
IMPACT OF AUTOMATION ON PROCUREMENT LABOR



Infosys®
Navigate your next

Impact of automation on global workforce

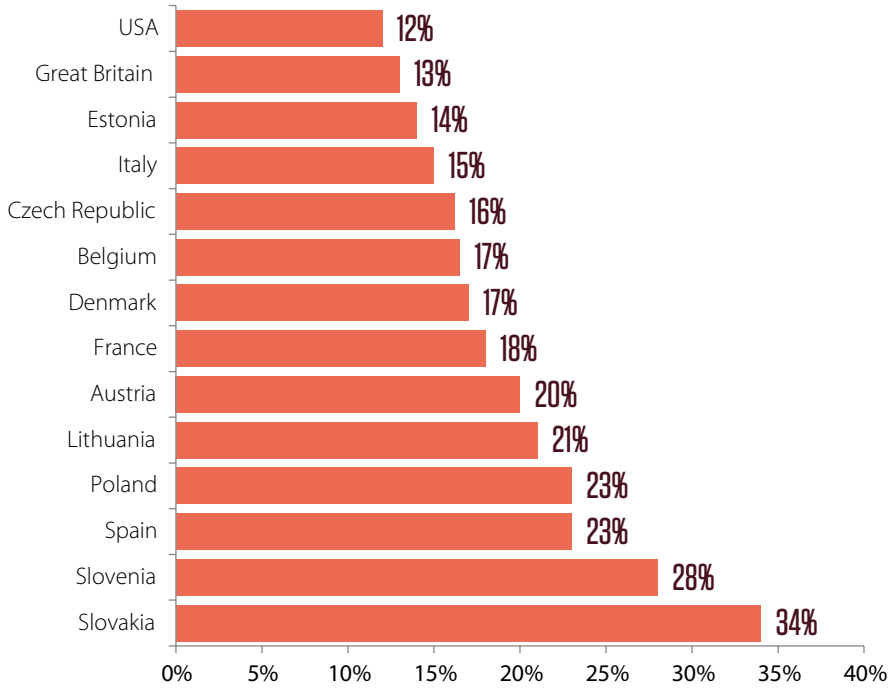
Automation technologies including artificial intelligence, machine learning, and robotics are expected to bring new risks and opportunities for both the businesses and economies.

Introduction

Latest technologies and innovations such as AI and automation have been widely adopted across various sectors including procurement. However, there is an uncertainty around its overall impact, particularly on professional roles within the supply chain. Recent advancement in automation will surpass the efficiency level of human workforce in future. If these advanced technologies also become cost effective, then it is certain that automation may disrupt the entire supply chain. It is imperative for business leaders to not only embrace the benefits of automation, but also focus on addressing the workforce transition challenges brought about by automation technologies.

- The risk of automation is increasingly putting pressure on lower-level workers, and the COVID-19 crisis is likely to accelerate automation, as it enables companies to eliminate dependency on human labours.
- Organization of Economic Cooperation and Development (OECD) estimated around 14% of jobs across all categories are at high risk of automation .
- As per OECD, employment grew at a slower pace in occupations that were at high risk of automation. Globally, employment among the top half of occupations by risk of automation grew only by 6% compared to 18% among the bottom half (2012 – 2019).
- This also indicates that despite automation, the employment across all sectors grew in last 5-7 years.

Average risk of automation on labour force by country

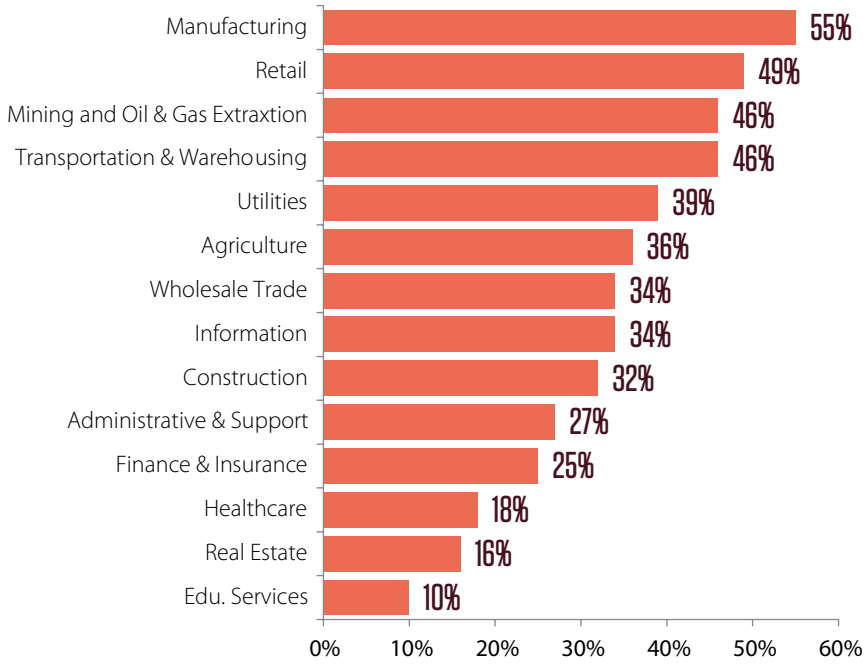


Source: OECD, Industry Article, Reports

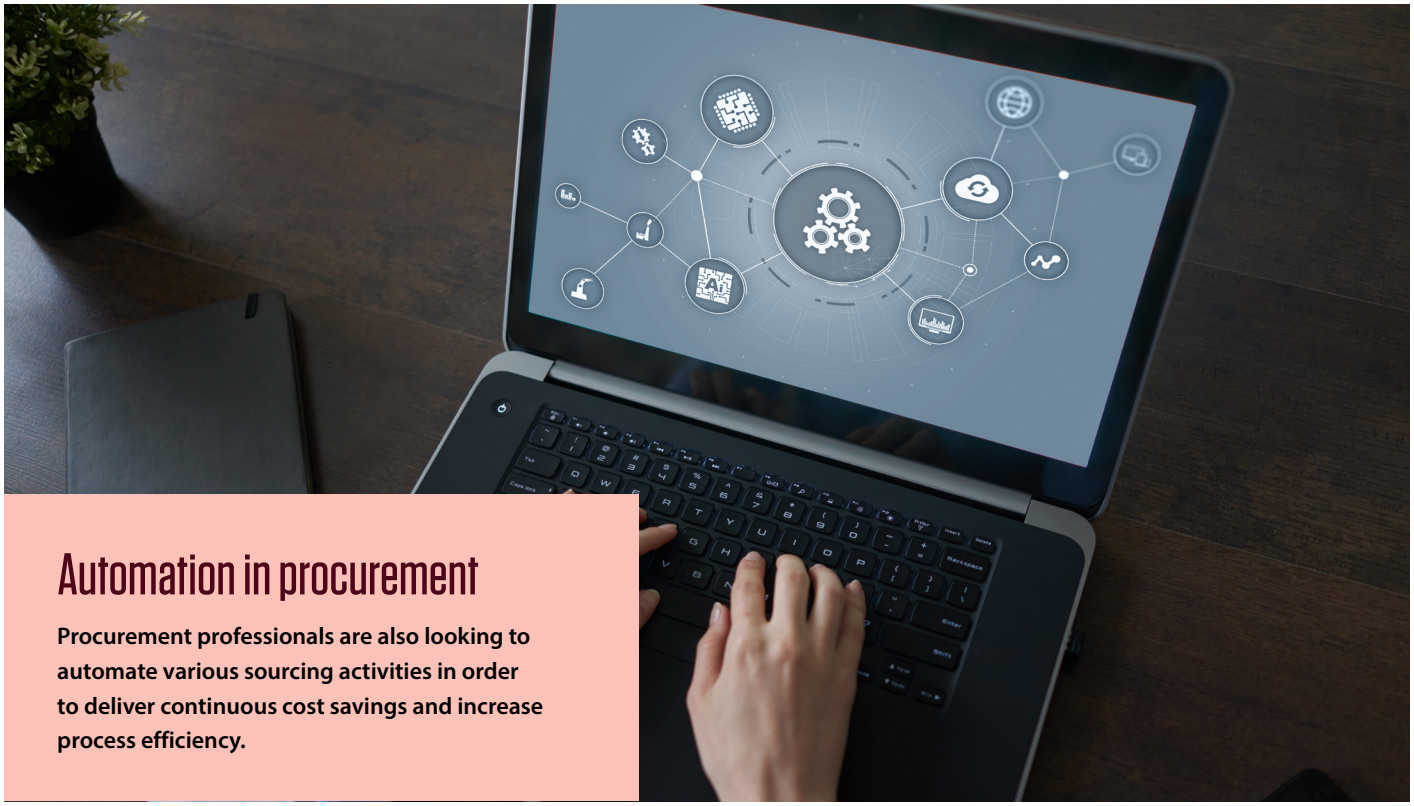
Automation-driven productivity gain will vary from industry to industry, with manufacturing sector likely to gain up to 55% in future.

- Manufacturing, transportation and warehousing, and wholesale trade sectors are expected to witness automation-driven labour productivity gain by 34-55%.
- For instance, a Taiwanese contract manufacturer had recently replaced 60,000 factory workers (55% of the total workforce) with robots to enhance productivity.
- By 2030, it is expected that on an average employers will need 20-25% fewer workers as compared to the current situation.

Automation-driven expected productivity growth, 2015 vs 2030



Source: US Bureau of Economic Analysis, US Bureau of Labor Statistics, Bain Macro Trends Analysis



Automation in procurement

Procurement professionals are also looking to automate various sourcing activities in order to deliver continuous cost savings and increase process efficiency.

Automation in Procurement

Automation in procurement processes maximizes efficiency and reduce the overall sourcing time. Procurement automation software supports business-critical activities like decision-making and strategizing. It transforms the procure-to-pay process while keeping the cost down.

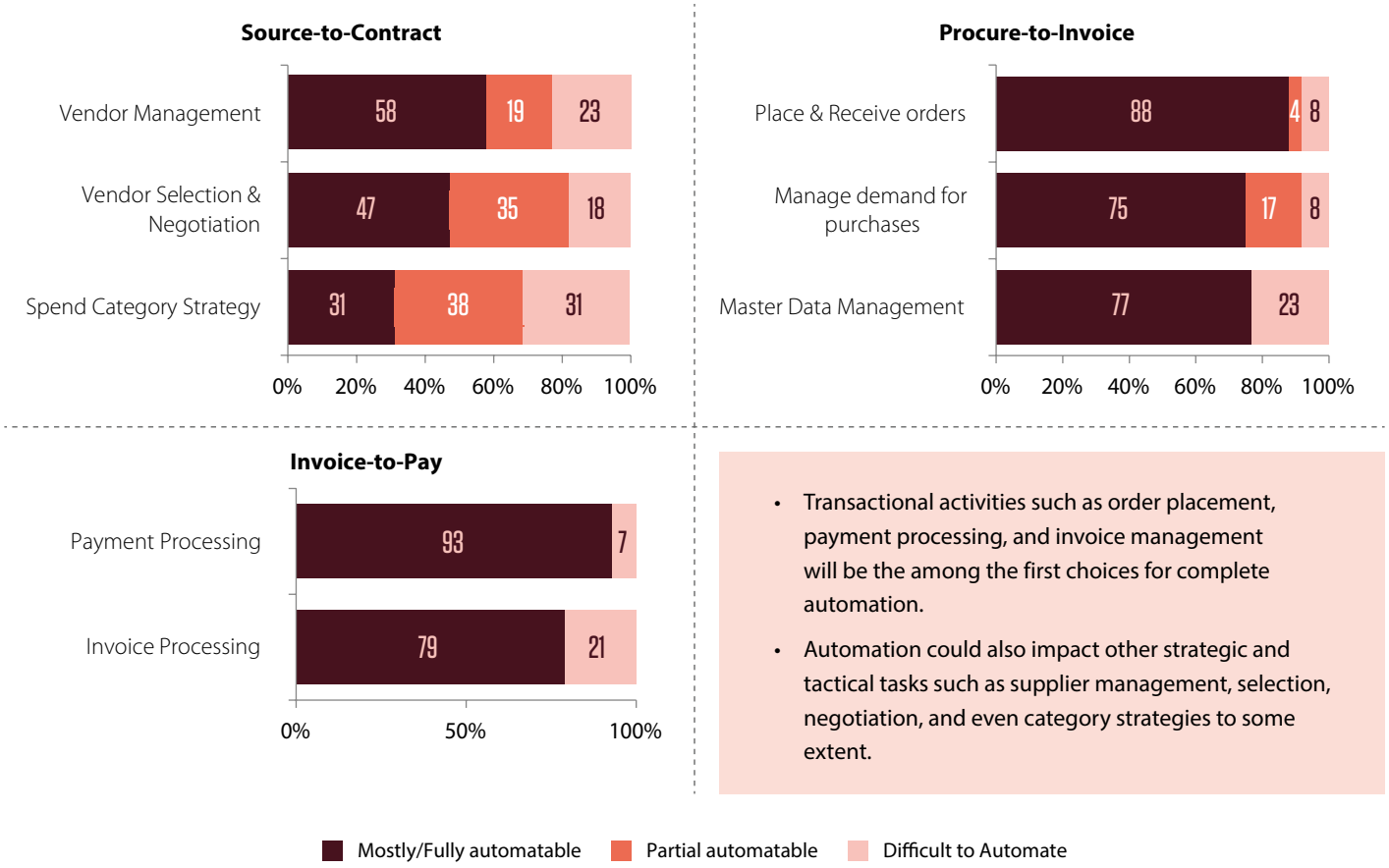
Key procurement activities susceptible to automation

Purchase requisition	Procurement process automation will cut down the time of approval cycle and remove redundant steps in the process.
Purchase order	Automation will enable organizations to automate the entire purchase order cycle to deliver improvements across productivity and process efficiency.
Invoice management	Automated invoice management is more efficient than manual processing, with features ranging from auto-approval of standard low-value invoices to extended functionality through integrations with finance and accounting tools.
Vendor management	With automation, procurement teams can streamline vendor selection for less critical parts, quickly identify and resolve grievances.
Contract management	Procurement automation organizes all contracts in a central repository that can be accessed in a single click. it also increases the consistency level of all contracts and maintain accuracy.

Source: Industry Article

As per various journals and articles, it is estimated that around 50–60% of source-to-pay tasks could be fully or largely automated in future by using technologies such as big data analytics and machine learning.

Potential of automation in procurement activities



- Transactional activities such as order placement, payment processing, and invoice management will be the among the first choices for complete automation.
- Automation could also impact other strategic and tactical tasks such as supplier management, selection, negotiation, and even category strategies to some extent.

Source: SCM World, Articles, Blogs

Key automation technologies and software in procurement

Robotic process automation	RPA enables simple, repetitive tasks such as scanning invoices into ERP systems.
Machine learning	ML helps to perform tasks that require some degree of judgment, such as assigning transactions to spend categories.
Smart workflow	Smart workflow management software helps to identify supplier qualification and on-boarding process.
Natural language processing	NLP helps to mine contracts for data with a method called 'text parsing', which uses algorithms to efficiently scan and interpret large amounts of contracts for critical information.
Cognitive agents	Cognitive agents provide answers to users on matters such as purchasing policies, and can even recommend particular suppliers.

There are many procurement tools and software available which can enable automation in procurement.

- Spend Analysis: Ariba, Ivalua, JAGGAER
- Supplier Discovery: Ariba, ThomasNet, APEX Analytix
- Supplier management solutions: Ariba, MasterControl
- Contract management system: Concord, Conga, Icertis
- e-Invoicing: FreshBooks, Xero, Zoho Invoice
- Complete Suite: SAP SRM, Ariba, Tradogram, TradeGecko

A recent analysis by McKinsey indicates that in the future, analytics-based procurement systems will be able to identify group of potential suppliers, send an RFQ, score their responses and also create a list of negotiating points. Once a contract is signed, the system will monitor supplier performance and trigger corrective actions if cost, quality, or delivery KPIs are missed. The system triggers an alert for human intervention only when the supplier does not meet the set KPIs.

Source: SCM World, Articles, Blogs

Automation impact on procurement jobs

Advanced technologies and automation increase the sourcing efficiency and enable better planning capabilities to the entire supply chain system. While it is improving procurement process outcomes, there is a growing concern about its potential threat to eliminate jobs.

Impact of automation on procurement jobs

Rapid advances in automation and artificial intelligence technologies have the potential to significantly disrupt supply chain roles. Automation in procurement ranges from usage of robotics in warehouse to artificial intelligence and data processing technologies that can gather and process information more efficiently than humans. It is estimated that almost 60-70% of the daily tasks performed by lower-level procurement professionals will be automated in future.

Many organizations have started using procurement software for activities such as supplier management solutions, e-invoicing, and spend analysis.

Procurement Jobs	Risk of Automation
VP Sourcing/ Chief Procurement Officer	Low
Sourcing Advisor/ Consultant	Low
Category Managers	Low-Medium
Purchase Managers	Low-Medium
Purchase Agents/ Buyer	Medium-High
Procurement Specialist	Medium-High
Unskilled jobs at warehouse and distribution centres	High
Clerical and other administrative roles	Medium-High

Source: OECD, Industry Article, Reports

Low-skilled employees in supply chain are more vulnerable to job loss due to automation. Around 60-70% of the day-to-day work is expected to be automated for lower-level procurement roles.

- It is estimated that around 40-50% of the overall tasks for mid-level procurement employees are expected to be automated in future as compared to other procurement roles such as purchase agents, procurement specialist etc. (~60-70% of the daily task are expected to be automated for lower-level procurement roles).
- Regular sourcing tasks such as managing purchase order and invoices are expected to witness complete automation in future, which may impact the lower-level procurement jobs.
- Senior level employees such as VP Sourcing and Chief Procurement Officers are least vulnerable, as automation will compliment their role. Major part of their job role involve taking strategic and tactical decisions with the help of various strategic tools.

Few examples of technology in procurement and potential impact on job

Technology/Software	Impact
• Sensors • RFID tags • Robots • Cameras	Elimination of manual inventory counts
• cloud-based solutions	Elimination of accounting and order entry positions

Industry Example: Walmart had eliminated around 7,000 back-office accounting and invoicing jobs at its US stores by replacing with cashier-replacing capable and shelf-scanning robots, indicating that the move will boost efficiencies in stores.

Source: OECD, Industry Article, Reports

Summary

A few lower-level procurement tasks will be at risk of automation, however these advanced technologies will also enhance productivity and create new opportunities for multiple new roles in future.

- The impact of advanced technologies can broadly be categorized as the substitute effect and the complement effect, i.e., technology-lead functions can either be substituted or complemented. The supply chain professionals needs to align themselves with the rising trends and adopt with the emerging technologies.
- With increased customer expectations, the new supply chain roles need to work directly with customer-facing departments along with product development, manufacturing, and logistics to define the right product and service portfolios for specific clients.
- This customer-centric approach will drive the need for supply chain professionals to adopt latest modelling and analytical tools for insights and decision making.

Potential impact of automation in future	*The Substitute Effect*	• Routine tasks such as invoice management and purchase order is expected to be completely automated in future. • Robotics in warehousing, automated forecasting, scenario planning, material handling, and replenishment are another few areas where automation may also impact. • As per recent MIT study, one robot on an average replaced around 3.3 workers in US last year and lowered wages by about 0.4%.
	The Compliment Effect	• While AI and robotics would improve productivity, however at the same time the automation of regular tasks would release people from performing monotonous and tiresome tasks. • This will enable the human workers to focus on client-centric job roles, as the supply chain management functions are slowly shifting to customer-focused approach due to demand for more individualized product and services.
Blended workforce		• Increasing adoption of automation will create blended workforce in supply chain which will require reskilling and upskilling of workers, thus creating new opportunities. As automation takes care of mundane tasks, this will create opportunities for employees to focus on other skill sets. • In some cases, lower costs resulting from automation combined with high demand for products and services will add back jobs. • For instance, as per the forecast by Forrester, Australia's job market is expected to decline by around 11% by 2030 due to automation. Procurement along with finance and accounting will be the first to hit and it may eliminate around one million roles. On the other hand, the same technology is expected to create around 1.7 million new jobs.
Initiative by various countries to protect the workforce		• Governments from different countries are expected to provide incentives to employers to retain human workers by lowering the total cost of an employee. For example, by reducing or eliminating employer-paid payroll taxes or even subsidizing employment directly. • Alternatively, governments may also consider imposing tax on companies related to robotics and automations that invest in advanced technologies to displace workers.

Source: Industry Article

Source: OECD, Industry Article, Reports

References

1. https://supplychaindigital.com/technology/how-ai-and-automation-could-impact-supply-chain-roles
2. https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/11/automation-in-procurement.pdf
3. https://isg-one.com/articles/automation-promise-or-threat-to-employment-in-the-sourcing-industry
4. https://www.coupa.com/blog/supply-chain/impact-ai-and-automation-supply-chain-careers
5. https://spendmatters.com/2017/04/24/automatable-procurement-supply-chain-jobs/
6. https://www.cips.org/supply-management/news/2019/march/almost-half-of-buyers-at-risk-of-being-replaced-by-automation/
7. https://www.cips.org/supply-management/news/2019/march/almost-half-of-buyers-at-risk-of-being-replaced-by-automation/
8. https://blogs.gartner.com/power-of-the-profession-blog/automation-coming-procurement-function-near-eventually/
9. https://www.mckinsey.com/~/media/mckinsey/featured%20insights/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works-Executive-summary.ashx
10. https://kissflow.com/procurement/procurement-automation-processes/#:~:text=What%20is%20Procurement%20Automation%3F,repetitive%20and%20time%2Dintensive%20tasks.
11. https://www.zycus.com/blog/procurement-technology/procurement-automation-transformation.html
12. https://home.kpmg/content/dam/kpmg/us/pdf/2017/10/procurement-automation-ivalua.PDF
13. https://www.bain.com/insights/labor-2030-the-collision-of-demographics-automation-and-inequality/
14. https://www.oecd.org/future-of-work/reports-and-data/what-happened-to-jobs-at-high-risk-of-automation-2021.pdf

For more information, contact infosysbpm@infosys.com

Infosys®
Navigate your next