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How bots, algorithms, and artificial intelligence are reshaping the future of corporate support functions

Alexander Edlich, Fanny Ip, and Rob Whiteman

Industrial companies are discovering additional sources of value in applying advanced technology to general and administrative support functions. The results can be impressive for businesses that can adapt to the disruption of legacy systems.

As advanced industrial companies continue to grow, support functions are coming under more and more pressure to deliver value, manage complexity, and reduce cost. Many organizations have already tapped the potential of traditional levers such as centralization, offshoring, and outsourcing. To succeed, today's leaders are turning to digital solutions and automation to improve performance and reduce costs across finance, human resources, and IT.

As technologies such as robotic process automation (RPA) mature, an increasing amount of the work done by people will be transferred to bots and

algorithms. Our experience shows that companies following a systematic approach to tech-enabled transformation can reap substantial efficiency gains in their general and administrative (G&A) functions. The resources freed up in this way can then be deployed in more valuable activities such as business counseling and scenario analysis. This article explores: the value that can be created through tech enablement in administrative functions; looks at real-life examples from finance, HR, and IT; considers key success factors; and suggests how companies can make the best start on their transformation journeys.

Sources of value

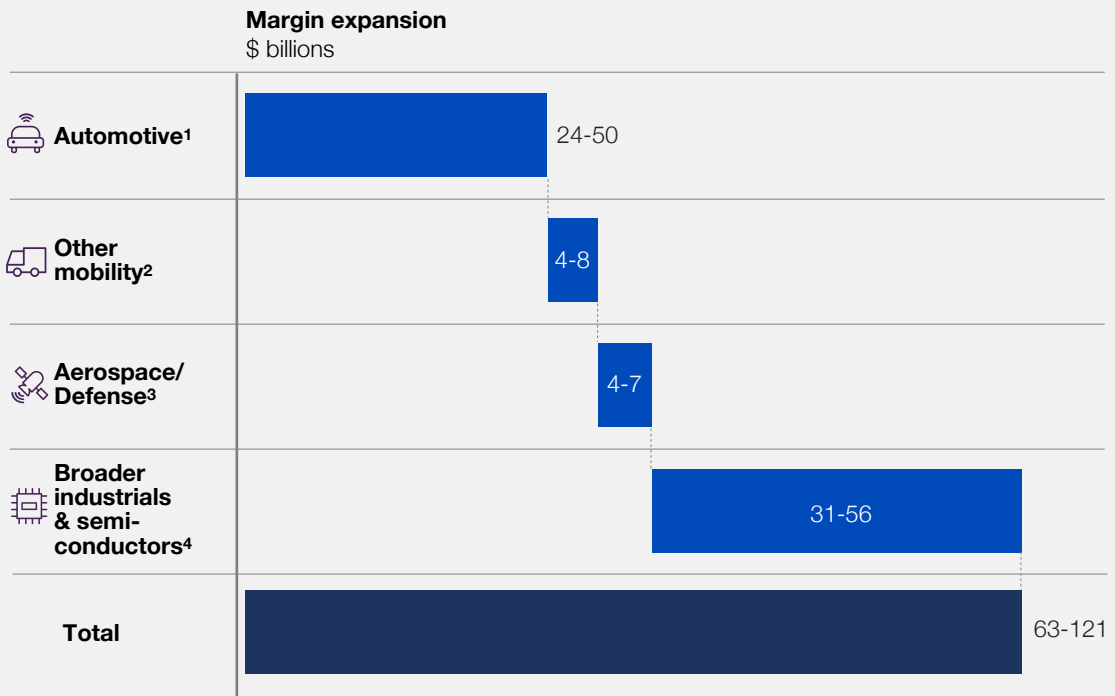
Today's better, faster, and cheaper technology is set to reshape support functions—and will do so without the years of pain often associated with traditional tech initiatives such as enterprise resource planning systems. Early results in other industries show that companies can achieve 5 to 10 percent cost savings in as little as 18 to 24 months, with long-term savings of more than 30 percent.

Across the advanced industrial sector, the median spend on G&A expenses accounts for 4 to 8 percent of revenue. Our estimates indicate that the value that could be created from tech enablement is in

the region of \$60 to \$120 billion globally, albeit with considerable variation between segments (Exhibit 1). Although the direct cost savings may appear small when compared with those in areas such as procurement or manufacturing, McKinsey analysis indicates that a company's ability to deliver productivity improvements in G&A is one of the biggest predictors of its ability to outperform its industry in total returns to shareholders. Approached in the right way, then, automating routine G&A tasks through a tech-enabled transformation can deliver substantial impact to the whole organization.

EXHIBIT 1

The value from tech enablement in G&A activities varies by industry sub-segment



¹ Whole value chain including tier 1 suppliers, automotive OEMs, and dealers

² Commercial vehicles and off-highway equipment (e.g., for construction and agricultural use) including tier 1 suppliers, equipment manufacturers, and dealers and distributors

³ Includes tier 1 suppliers and equipment manufacturers

⁴ Includes industrials, food processing and handling, motion and controls, industrial automation, and electrical, power, and test equipment across the value chain: component suppliers, equipment manufacturers, distributors, VARs, engineering and services providers, and product companies

Modernizing the finance function

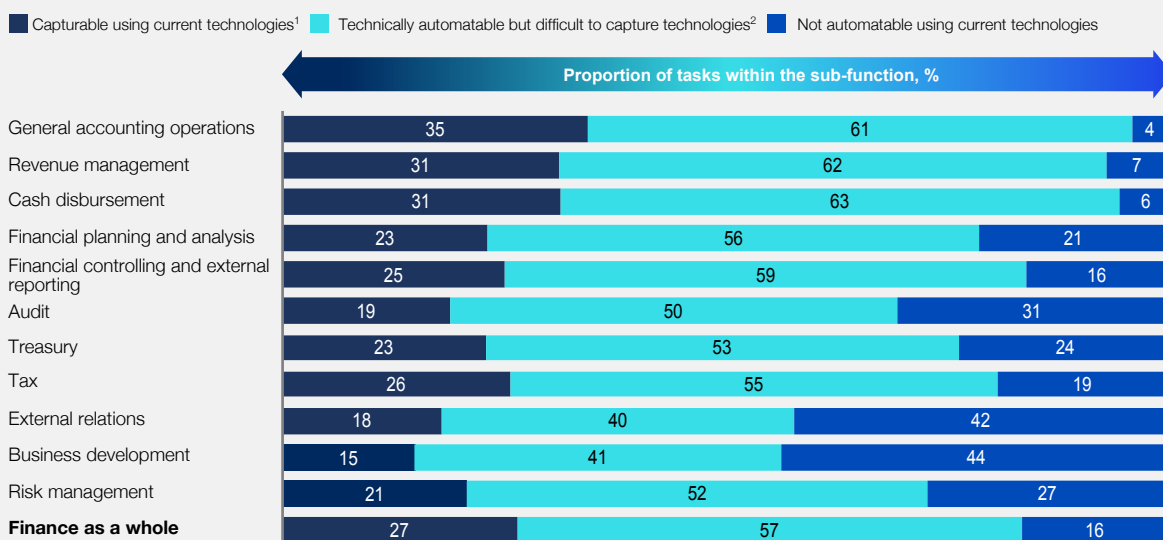
At many organizations, the finance function is beginning to evolve toward a more integrated consultative model that supports value-based decision making. However, companies often have difficulty devoting enough attention to the analysis required to support this model because of the demands of day-to-day transactional activities. The sheer scale of these activities makes them ripe for automation: in fact, our analysis shows that 27 percent of finance activities could be automated using technologies already available (Exhibit 2).¹ About a third of this opportunity could be captured using basic technologies such as robotic process automation (RPA), a type of general-purpose software that can sit on top of existing IT systems. Capturing the remaining two-thirds

of the opportunity requires advanced cognitive automation technologies such as machine-learning algorithms and natural-language tools.

At one company that was trying to verify whether employees were reporting vacation time accurately, the internal audit function developed an algorithm that compared declared vacation days with data from badge swipes and computer-usage data. Another company reengineered every part of its record-to-report process by redesigning activities and organizational structures around a portfolio of technologies. Managers introduced RPA for tasks such as preparing journal entries and applied machine learning to reconcile differences between accounting records. Having demonstrated that natural-language tools could be successfully deployed to produce report commentary, the

EXHIBIT 2 Many sub-functions in finance can be automated using current technologies. . .

Potential for automation using proven technologies



¹ Taking into account the relative complexity and expense of different types of automation technology: robotic process automation, machine learning, smart workflows, cognitive agents, and natural-language processing

² Because of investment requirements and technological complexity

company has redesigned processes to enable this technology to be introduced later. Overall, the company expects to see cost savings of 35 percent over the next two years from implementing its automation road map.

As the finance function becomes the hub for enterprise data, automation efforts need not be limited to finance processes alone. One agricultural equipment manufacturer successfully automated its sales and operations planning process by turning a handful of data scientists loose on financial and operational data managed within the finance function. By introducing machine algorithms into the process, the company not only improved efficiency but also enhanced its ability to react to natural business cycles.

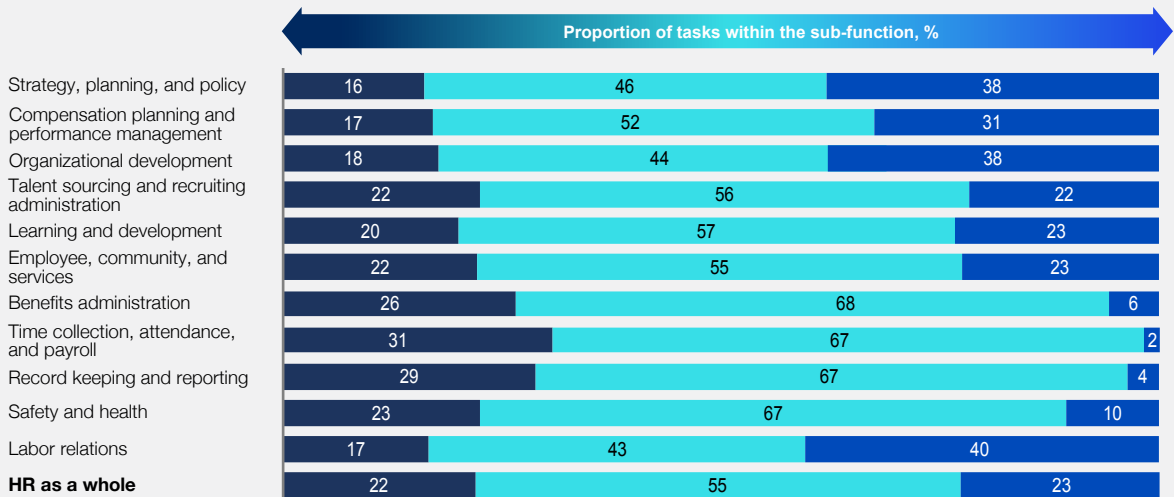
Optimizing workforce deployment (Human Resources)

As expectations evolve, HR needs a tech-enabled transformation of its own. The possibilities are legion (Exhibit 3). Bots can act as a “third arm” for the HR organization by supporting transactional activities such as time collection, payroll, and record keeping. Activities such as talent sourcing offer huge scope for algorithm-based technologies. Meanwhile, conversational AI platforms such as chatbots and cognitive agents are beginning to manage inquiries previously handled by HR service centers including benefits administration and record-keeping activities. Such platforms provide 24/7 coverage and operate alongside the human workforce.

EXHIBIT 3 ... as can many sub-functions in HR...

Potential for automation using proven technologies

■ Capturable using current technologies¹ ■ Technically automatable but difficult to capture² ■ Not automatable using current technologies



¹ Taking into account the relative complexity and expense of different types of automation technology: robotic process automation, machine learning, smart workflows, cognitive agents, and natural-language processing

² Because of investment requirements and technological complexity

Finally, predictive analytics can be used to improve hiring, retention, and succession planning. One company undergoing a restructuring was trying to identify promising employees to lead its new organization, but found that HR and company data was scattered across the enterprise. Using machine-learning capabilities, the company aggregated demographic, performance, and organizational data to identify the key drivers of employee performance, identify the individuals with the greatest potential, and find roles in which they would succeed. Leaders then transformed the recruiting process to focus on early markers of success and redeploy talent in new roles. These measures enabled the company to achieve improvements of 80 percent in the conversion of new recruits, 26 percent in productivity, and 14 percent in net income.

Building a scalable technology backbone

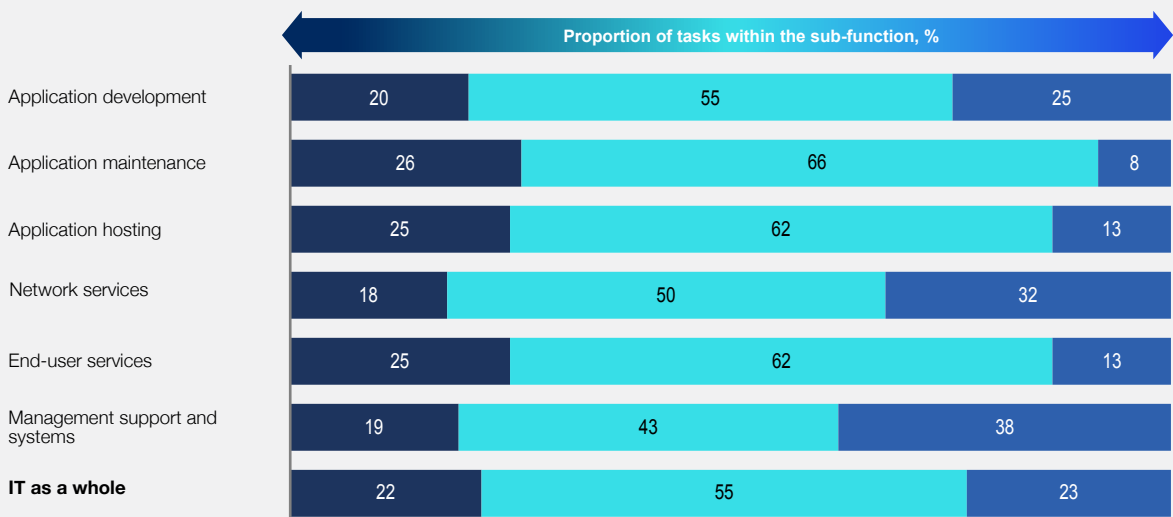
In addition to supporting the deployment of automation technologies in other functions, IT can take advantage of bots and algorithms in its own operations (Exhibit 4). Our analysis shows, for example, that 40 to 80 percent of the basic activities required to resolve service desk tickets can be automated through RPA and related technologies.

When one company analyzed incident tickets, for instance, it found that between 25 and 35 percent of them were requests for “password reset” or “access.” To resolve these tickets, it introduced RPA bots that connect with multiple applications via the user interface or application programming interfaces. By adopting automated ticket resolution, the company

EXHIBIT 4 . . . and many sub-functions in IT

Potential for automation using proven technologies

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¹ Taking into account the relative complexity and expense of different types of automation technology: robotics process automation, machine learning, smart workflows, cognitive agents, and natural-language processing

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instantly freed up employee capacity and reduced outsourcing contract costs for helpdesk support, as well as reducing resolution times and improving performance. Alternatively, service desk automation tools exist that support automation of repeatable IT operations workflows such as user provisioning, password resets, and event log monitoring.

Similar use cases exist in areas such as application testing, data migration, and network administration. Automating transactional activities like these can enable IT to free up capital and resources to focus on strategic activities such as modernizing ERP platforms, migrating to the cloud, and developing new digital solutions for the business.

Lessons learned in capturing value

Even the most successful companies face challenges in capturing value from tech-enabled transformations. We have identified a few common keys to success from automation leaders' responses to our recent survey:

Make automation a strategic priority. Organizations whose automation efforts prove successful are more likely than others to have designated automation as a strategic priority.² Among advanced industrial companies, about three-quarters of successful automation programs had been prioritized as part of the strategic-planning process.

Deploy automation technologies systematically.

Whether companies achieve success through traditional top-down deployment or flexible agile methods, following a systematic rather than ad hoc approach is vital. Our survey found robotic process automation to be the most commonly adopted automation technology. In addition, successful companies were more likely than others to cite the use of advanced technologies such as machine learning, cognitive agents, and natural-language processing to supplement RPA.

Decentralize governance. Traditional transformation efforts tend to follow centralized models, but technology-enablement programs favor decentralized options. In our survey, respondents from successful organizations were more likely than peers to say their functions or business units were accountable for delivering automation efforts, with or without support from a central team. Conversely, less successful organizations were more than twice as likely as successful ones to say a central team had sole responsibility for delivering automation.

Ensure IT is involved. Automation programs stand or fall by the engagement of the IT function. The IT teams at successful organizations are more likely to have automated their own processes and taken part in initial discussions and planning for automation projects prior to the pilot stage. Among advanced industrial companies, 69 percent of successful organizations involved IT early in the automation planning process.

Internalize costs and benefits. Leaders of successful efforts had a deep understanding of the total cost of ownership for automation projects. Across all programs, the most common benefit cited was reduced costs.

Prioritize workforce management. Many large organizations predict their companies will face automation-related skill gaps in the future; successful organizations make addressing this gap one of their top five priorities. They also agree that acquiring employees with the right skills is their biggest automation-related challenge in the next three years.

How to get started

A tech-enabled G&A transformation journey typically involves three phases: start-up, launch, and scale.

Start-up

In this first phase, a company typically tackles:

Assessment and roadmap. To decide which sub-functions, processes, and locations will benefit most from tech-enabled transformation, start with a clear understanding of your organization and the activities it performs. Assess the potential for automation by combining top-down analysis with task-by-task validation, then use your findings to inform decisions about which technologies to invest in and where to deploy resources. Finally, translate all this into a roadmap to guide your program.

Proof of concept. To demonstrate feasibility and potential for impact, build a practical application such as a simple bot or algorithm in weeks, not months. This gives you early experience with technology and a chance to create presentations, videos, and other communications to generate excitement for your broader program.

Vendor selection. Selecting the right technologies to support your transformation is a balancing act between maintaining a simple architecture and maximizing impact. Most companies start with an RPA platform and add complementary technologies such as business-process management or optical character recognition within the first three to six months. More complex automation tools, such as natural-language processing, are typically added after about a year. Emerging technologies, such as cognitive agents, are usually confined to pilots during the early stages of a transformation.

Launch

Areas of focus in the launch phase usually include:

Domain sprints. Companies typically build solutions through multiple rapid, intense working sessions or sprints. A sprint usually consists of five or six use cases relating to a specific “domain”: a sub-function, process, or location. Sprints employ agile methods and follow standard IT phases from

preparation and design through to build, test, and refine.

IT support. Even when sprints are led by other functions, involving IT early is critical to securing the right infrastructure and environment and standardizing processes for deployment and maintenance. Successful leaders establish clear lines of accountability between functions, automation resources, and IT support groups to avoid confusion.

Center of excellence (CoE). Most companies choose to set up a tech-enablement CoE to provide governance, build capabilities, and maintain assets. This will typically follow a centralized model initially with some development capacity embedded in functions, before moving to a federated model as the transformation matures.

Scale

In the last phase, transformations typically complete:

Additional sprints. Once you have conducted a few sprints, it’s time to scale up systematically and rapidly deploy technologies in further sprints. As each new process is deployed, maintenance and support teams can resolve issues and manage changes while continuing to refine their support model.

CoE scale-up. The speed at which you scale up your CoE depends on the number of opportunities in your pipeline. As your program scales, the CoE’s interaction model with other teams will evolve to shift more responsibilities to the business, and in turn the business will start to undergo a culture shift with employees seeing technology as a source of support, not competition. Ongoing capability-building and change-management efforts will help to build support for the new way of working.



Fueled by the promise of productivity gains, technology-enabled transformations are beginning to reshape the future of work in support functions. Bots and algorithms are already at work alongside humans, but adapting to the disruption can be challenging even for an industry familiar with physical automation. Even so, advanced industries are well positioned to capitalize on lessons from other industries that are further ahead in the

journey, such as banking, while capitalizing on internal capabilities already embedded in the organization, such as lean. ■

¹ For details of the analysis, see Frank Plaschke, Ishaan Seth, and Rob Whiteman, “Bots, algorithms, and the future of the finance function,” McKinsey & Company, January 2018.

² “The automation imperative,” McKinsey & Company, September 2018.

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