

FROST & SULLIVAN RESEARCH SUGGESTS RPA TIED TO COMPANY SUCCESS, PROFITABILITY

FROST & SULLIVAN VISUAL WHITEPAPER

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RPA Drives Modern Business: Frost & Sullivan Research on Automation Across Industries

Robotic process automation (RPA) is advanced software typically used to enhance an organization's automation strategy. RPA software creates and enlists virtual "bots" or "agents" that can quickly and accurately conduct rules-based processes and tasks that may be too repetitive, time consuming and data-intensive for employees to perform efficiently and accurately. RPA also enhances the automation capabilities of other applications, such as Business Process Management, and other systems, such as Content Management and CRM.

FROST & SULLIVAN RESEARCH INTO RPA SHOWS THE FOLLOWING LEADING TRENDS:

- While in existence since early 2000s, usage has accelerated with other automation-enabling technologies, such as artificial intelligence and machine learning.
- RPA has become a differentiating factor within automation and an enabler of digital transformation.
- RPA implementation varies greatly across, and within, organizations.
- Different industries approach RPA with varying priorities.

To understand the level of adoption and interest in RPA, Frost & Sullivan conducted a new survey of over 400 IT and Business decision makers. These decision makers came from small, medium, and large businesses of over 100 employees, and represented numerous vertical industries and regions. This project was done in collaboration with Hyland, a leading content services vendor and advanced solution provider in the RPA industry.

How RPAs Optimize Processes

A routine regulatory audit may require large volumes of data to be pulled, categorized, summarized and reported. To conduct this through a manual process may take hours or days, and the potential for human error puts an organization at risk for regulatory compliance infractions. An RPA-based system can use a virtual agent to consistently conduct this process and create the report, but with greater accuracy and in a much shorter time frame.

Key Takeaways of Frost & Sullivan RPA Usage and Intensity Survey

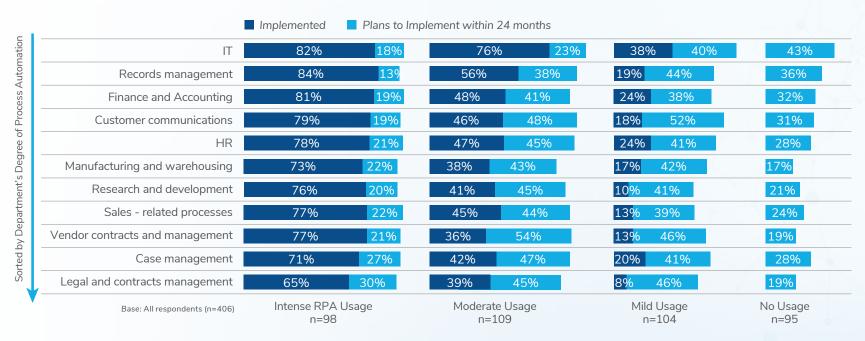
- IT teams are the most likely of all functional areas to have adopted RPA, but usage is also increasingly common in HR, Finance and other rules-and data-heavy departments.
- RPA intensity—defined by the number of departments that use RPA—follows similar trends in implementation by functional area.
- 82% of organizations plan RPA implementation in at least one new department within the next 24 months.
- Usage of RPA for IT is strongest in healthcare, education and commercial markets (commercial is defined as manufacturing, retail, utilities, oil & gas, telecom, transport/logistics)
- There is a positive correlation between the intensity of RPA usage and the profitability of an organization.

23% Non-usage Mild usage (1-3 departments with RPA) 27% Moderate usage (4-6 departments with RPA) Intense usage (7 or more departments)

(7 or more departments with RPA)

RPA INTENSITY SCALE

RPA IMPLEMENTATION - BY INTENSITY OF RPA USAGE



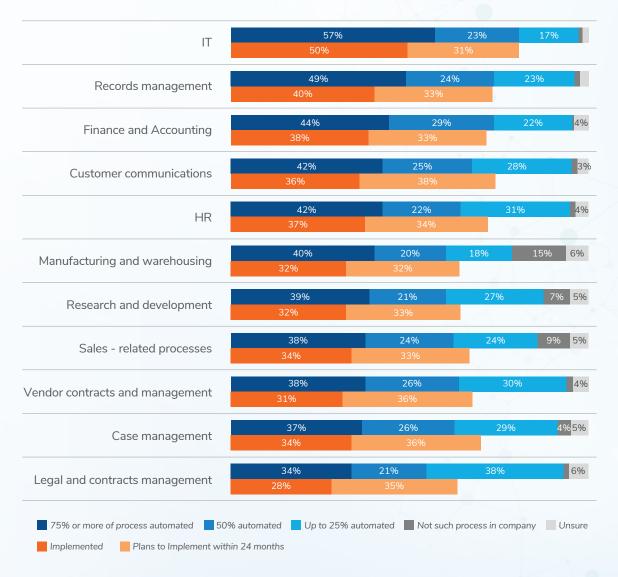
RPA Usage by Department and Intensity

- The RPA survey showed business departments that are more likely to leverage automation in general also have higher RPA usage.
- The RPA journey tends to mirror the overall degree of automation and RPA implementation. That is, three of the top five departments with the most RPA/ Automation deployments are also the first ones to be prioritized on the RPA journey.
- The average number of bots per department ranged from 38 to 49.

TYPICAL RPA IMPLEMENTATION JOURNEY



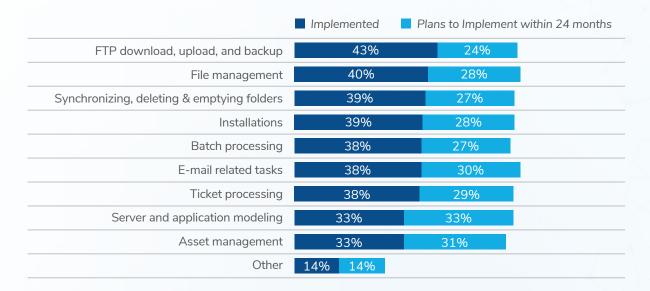
AUTOMATION AND RPA IMPLEMENTATION BY DEPARTMENT



IT and RPA: Critical Component of Automation Balances IT Team Time and Efforts

Past Frost & Sullivan research* indicated trends similar to what the current survey revealed: businesses often turn to automating IT processes to allow expensive IT resources to be spent on higher value tasks. The most common IT processes that use RPA are: FTP download, upload and backup; file management; and managing folders**.

RPA IMPLEMENTATION BY IT PROCESS



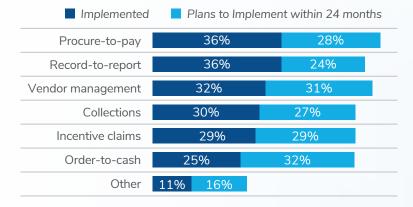
^{**}File management refers to granular work, such as updating security settings, adding metadata, deleting system or generating files. Folder management refers to work at folder level.

Finance, Human Resources and RPA

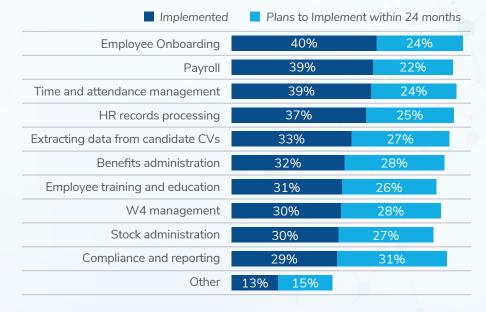
Finance and HR are often prioritized for the second phase of RPA adoption, after IT, and in the top five departments for both automation in general and RPA implementation in particular.

- Finance and Accounting's top RPA tasks indicate the need to ensure accurate and compliant tasks: procure-to-pay, record-to-report and vendor management. Minimizing manual tasks helps reduce opportunities for error in this heavily-regulated field.
- Human Resources focuses RPA on employee onboarding, payroll and time/attendance. As work becomes more digitally-enhanced, in particular due to remote work scenarios, these areas are increasingly being automated to reduce the amount of time needed to get new employees fully engaged in the organization.

RPA IMPLEMENTATION BY FINANCE & ACCOUNTING PROCESS



RPA IMPLEMENTATION BY HR PROCESS



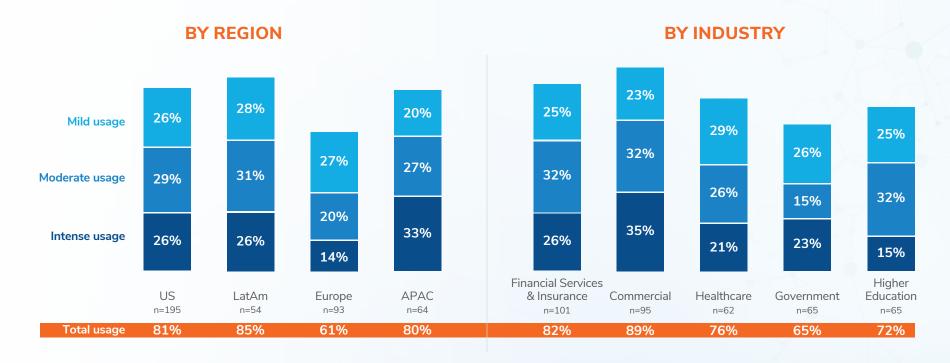
RPA Intensity Varies by Region and Industry

Intensity of RPA usage by region:

- One-third of organizations in the Asia-Pacific region stated they employ an intense usage of RPA (across 7 or more departments).
- Europe had smallest proportion of respondents who use RPA intensely—only 14%. In addition, organizations in Europe were most likely to report no RPA usage at all at 39%.

Intensity of RPA usage by industry:

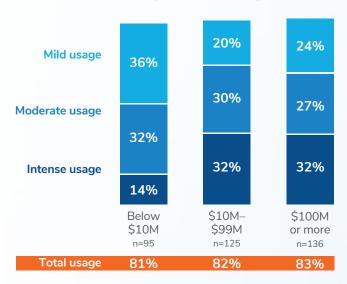
- Among the top five Industries, Commercial* and Financial verticals reported the highest levels of intense RPA usage at 35% and the highest levels of overall adoption at 90%.
- Government had the lowest levels of both intense usage at 23% and adoption in general at 64%.



Larger Companies Have Higher Rates of RPA Usage

- Once an organization reaches \$10 million in annual revenue, the likelihood that it uses RPA intensely doubles. This suggests that organizations scaling beyond \$10 million in revenue rely heavily on a growing suite of automation tools to streamline routine business processes and to keep costs in check while revenues increase.
- 32% of respondents in companies that declared \$10 to \$99 million in revenue, or over \$100 million in revenue, stated they employed "intense" usage of RPA (across 7 or more departments).
- The percentage of companies reporting under \$10 million in revenue and "intensely" using RPA was only 14%—less than half of those reporting over \$10 million in revenue and using RPA intensely.

BY ANNUAL REVENUE



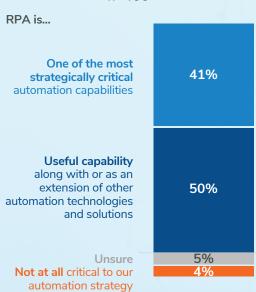
RPA Critical for Automation

RPA is critical:

 96% of respondents are evenly split between whether RPA is "one of the most critical" capabilities for automation or at least a "useful" capability when combined with other solutions.

TOTAL





How RPA Drives an Organization's Success

The top two business goals supported by RPA are:

- 1) Digital transformation overall and
- 2) Business efficiency
- Well over half (57%) of respondents included process efficiency as one of their top three perceived benefits of RPA.
- Workflow automation—again, tied closely to process optimization—was the most oftenmentioned capability provided by RPA.

But the benefits of RPA go beyond process optimization:

- Innovation is third most important goal supported by RPA.
- RPA is used either to free up departments within the business to be more innovative or to help drive innovation.

This may indicate that businesses are increasing their expectations of what data and automation can provide beyond simply improving existing processes.



How RPA Drives an Organization's Success (continued)

Past Frost & Sullivan research* on RPA concurs:

- Cost reduction through efficiency improvements is the primary goal for implementing RPA.
- RPA is increasingly also used to generate revenue; for example, by enabling sales or customer service to process orders and payments and resolve customer issues more quickly and with fewer human resources (see case studies).
- F&S research shows that digital transformation through automation has two very clear benefits to organizations: 1) process optimization and 2) enhanced customer experience.

BENEFITS OF RPA



BUSINESS GOALS SUPPORTED BY RPA

Digital transformation	56%	
Business efficiency	52%	
Innovation	38%	
Data centricity	33%	
Customer centricity	32%	
Market extension	20%	
Revenue growth	19%	
Creating or maintaining competitive advantage	17%	

MOST ATTRACTIVE VALUE-ADD CAPABILITIES OF RPA

	47% 6% 3%		
	À A		
33	3%		
309	%		
299	%		
289	%		
25%	5		
25%	5		
24%)		
21%			
	299 289 25% 25% 24%	30% 29% 28% 25% 25% 24% 21%	29% 28% 25% 25% 24%

^{*}Source: Frost & Sullivan's "North American Robotic Process Automation Market View for Customer Care"

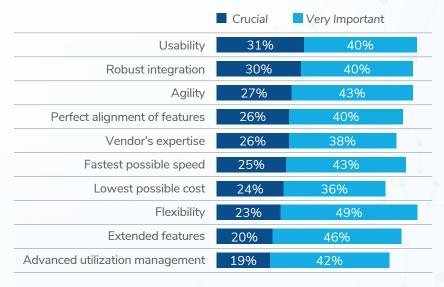
What Organizations Want from RPA

- Usability, integration and agility* are the top three "most critical" factors identified by organizations for choosing the right RPA solution.
- Flexibility* is also important: less "critical" than most other features, but chosen by 72% of respondents as either "critical" or "very important."

What Keeps Organizations from Adopting RPA?

- For all its promises and potential to elevate an organization's automation strategies, RPA is not without its challenges.
- The cost of implementing, operating and maintaining an RPA solution was the most frequently listed concern.
- Cost was followed closely by concerns about how to integrate unstructured data into RPA processes, as well as security and regulatory compliance challenges.

RPA SOLUTION CHOICE CRITERIA



MAIN PERCEIVED OBSTACLES TO RPA ADOPTION

Cost of RPA deployment, operation and maintenance	44%
Challenges with automating processes with unstructured content, documents and communications	
Data security and regulatory compliance concerns	
of integration with relevant systems and applications	37%
Learning curve for users and administrators	35%
Apprehension about automating jobs done by humans	
Difficulty correctly documenting the process and business rules	
Insufficient IT support/buy-in	25%
None, see no obstacles	6%

^{*}Usability includes the general interface, automation designer and administration panel; Robust integration means integrating with other relevant systems, apps and repositories, including cloud and web-based; Agility refers to allowing easy changes to automations when business requirements change; Flexibility refers to deploying RPA to different areas of business.

RPA Linked to Profitability

RPA seems to be related to business profitability:

- As shown in the chart below, companies with intense RPA usage across 7+ departments had profits that outperformed the rest of the respondents in 2020.
- There are, of course, likely other factors at play; for example, highly profitable companies may have more flexibility to purchase an RPA solution. (Cost is listed by companies as a major obstacle to adoption.)
- However, it is compelling to note that there seems to be a clear correlation between higher profitability and heavier RPA adoption.

DECLARED PROFIT GROWTH - 2019 VS 2020 - BY RPA USAGE INTENSITY



Financial Services and RPA

- The financial sector is a leading industry when it comes to the adoption of new technologies for creating new customer interactions and streamlining internal processes. It also has high rates of RPA adoption.
- Frost & Sullivan research* shows this market is a leader in tech adoption. It is the top blockchain user (60% of global spend); Al, ML and IoT are other areas of significant investment.
- Finance's top RPA tasks indicate the need to ensure accuracy and compliance: customer onboarding, IT services and compliance reporting.
- Minimizing manual tasks helps reduce the chance for human error in this heavily regulated industry.

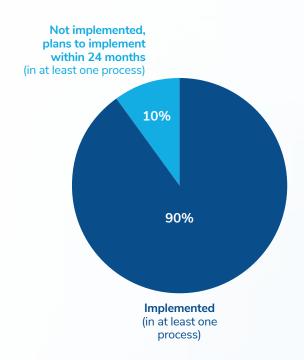
*Sources from Frost & Sullivan: "How Blockchain is Transforming the Financial Services Industry and Growth Opportunities Driven by Emerging Technologies in Financial Services—An IT Decision Maker Perspective"



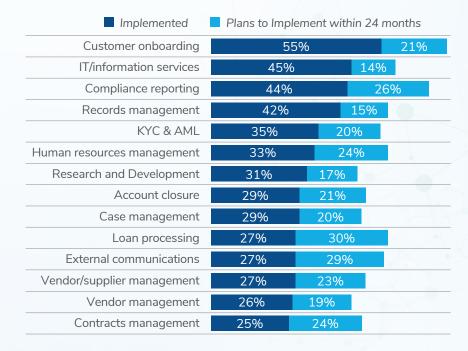
Financial Services and RPA (continued)

Financial institutions declare the highest RPA adoption in customer onboarding, IT, compliance reporting and records management.

RPA IMPLEMENTATION - FINANCIAL SERVICES



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

86%

Base: Financial Services (n=84)

 $\ensuremath{\mathsf{Q2}}.$ What is the current status of RPA (Robotic Process Automation) for each process below in your organization?

Q17. In which of the following processes is your organization currently using RPA?

Q18. In which of the following processes is your organization planning to use RPA in the next 24 months?

Insurance and RPA

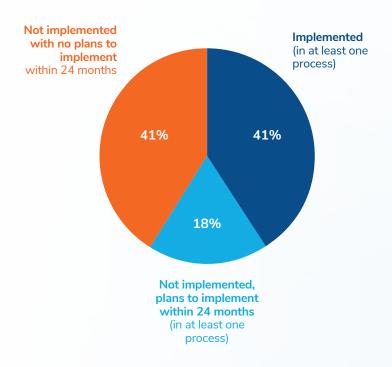
- ► Frost & Sullivan research* shows that technologies with highest impact on the insurance industry are artificial intelligence (AI), Internet of Things (IoT) and blockchain. In addition, drones are being used for augmenting asset inspection, while chatbots and virtual agents help with connecting with clients.
- Data enables new solutions, such as prevention/mitigationas-a-service, integrating wearables and other devices, usage-based policies, integrating value chain partners (for example, security companies or energy efficiency-related services), automation for CX and operations efficiency and increasing bundling of services to provide 360-degree coverage.
- RPA helps insurers with managing new data streams and automating functions, such as policy management and actuary services, as well as creating better customer experiences.
- Insurance's top RPA tasks show the desire to improve operational accuracy and efficiency.

*Source: Frost & Sullivan's "Digital Trends in the Finance, Banking and Insurance Industry, Global"

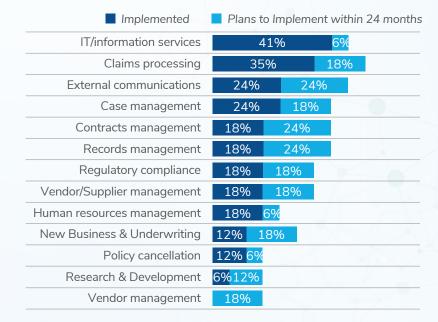
Insurance and RPA (continued)

IT and claims processing have the highest RPA implementation rate among insurance processes.

RPA IMPLEMENTATION - INSURANCE



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

59%

Base: Insurance (n=17) Caution: low sample base. These results are directional only. Q2. What is the current status of RPA (Robotic Process Automation) for each process below in your organization?

Q19. In which of the following processes is your organization currently using RPA? Q20. In which of the following processes is your organization planning to use RPA in the next 24 months?

Healthcare and RPA

- ► Healthcare IT is the fastest-growing market within the healthcare sector, with a 15% yearly growth average from 2016-2023*. It is also a major market for RPA, illustrated by high adoption rates.
- The market for healthcare analytics will double to nearly \$39 billion by 2023*, showing that the industry is moving quickly to modernize and better utilize data.
- Patient metrics are being increasingly tracked before, during and after treatment: information from EHR and EMR, RPM**, wearables and apps, telehealth and mHealth, as well as population studies and data from trials are increasing the amount of information being used by providers and insurers. In 2020, there was also a 10x growth in virtual visits.



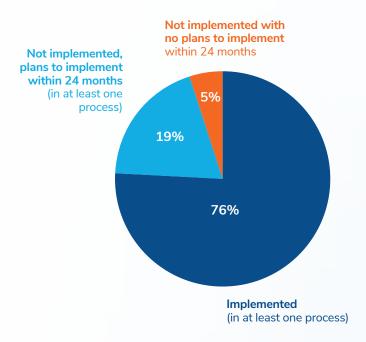
*Sources: Frost & Sullivan's "Digital Trends in Healthcare—Global, 2019 to 2023" and Frost & Sullivan's "Post-pandemic Global Healthcare Market Outlook, 2020"

**EHR is Electronic Health Records; EMR is Electronic Medical Records; RPM is Remote Patient Monitoring

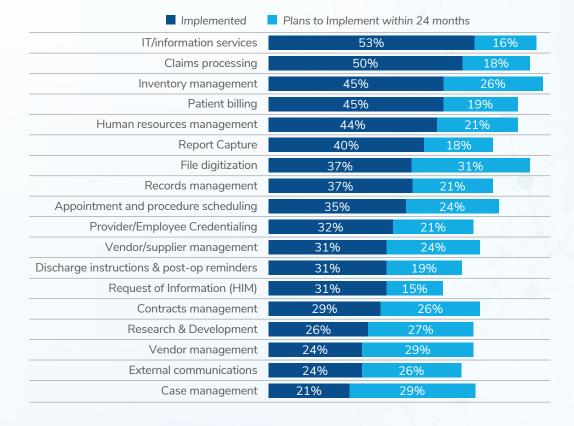
Healthcare and RPA (continued)

Healthcare declares highest RPA adoption in IT and claims processing.

RPA IMPLEMENTATION - HEALTHCARE



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

89%

Base: Healthcare (n=62)

Q2. What is the current status of RPA (Robotic Process Automation) for each process below in your organization?

Q21. In which of the following processes is your organization currently using RPA? Q22. In which of the following processes is your organization planning to use RPA in the next 24 months?

Government and RPA

- Globally, governments spent nearly \$12 trillion in stimulus measures in 2020. In many cases, governments took months to execute the dispersal of grants, loans and other economic stimulus measures. Advanced data automation solutions would help future programs roll out more quickly and track the success of these measures.
- A Frost & Sullivan study* published in February, 2021 showed that Government was the industry most negatively affected by the move to remote work. Having stronger data and automation programs driven by technologies, such as RPA, would help governments to be more flexible and adaptable in light of such circumstances.
- Frost & Sullivan research on smart cities shows that local governments are moving quickly to offer an increasing array of digital services to residents and visitors across transportation, communication, emergency and alert systems. RPA bots can help streamline these services, making them more responsive and efficient.
- Online forms and information requests were the top RPA processes implemented by governments, followed by IT services.

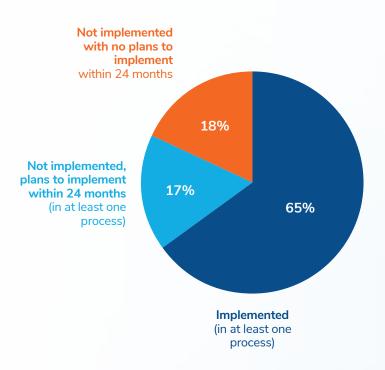
*Source: Frost & Sullivan's "2021 Predictions— COVID-19 Accelerates CX Investments and Global Smart City Scorecard"



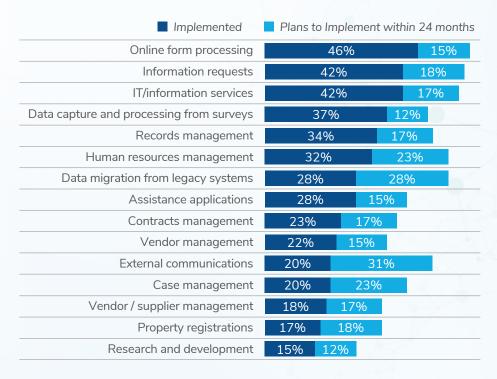
Government and RPA (continued)

Government organizations have implemented RPA mostly in online form processing, information requests and IT.

RPA IMPLEMENTATION - GOVERNMENT



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

77%

Base: Government (n=65)

Q2. What is the current status of RPA (Robotic Process Automation) for each process below in your organization?

Q23. In which of the following processes is your organization currently using RPA? Q24. In which of the following processes is your organization planning to use RPA in the next 24 months?

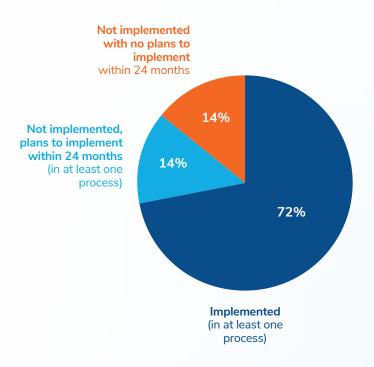
Higher Education and RPA

- Colleges and universities were among the institutions most disrupted by the COVID-19 pandemic, having to move nearly all student and teacher activities online.
- ► Technology can assist with classroom support while streamlining billing and student aid, admissions and university research.
- ▶ Top areas for RPA implementation in higher education include IT, employee services and HR management.

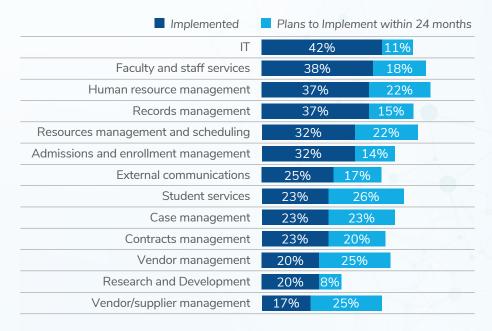
Higher Education and RPA (continued)

IT, faculty & staff services as well as HR and records have the highest RPA adoption among processes in higher education.

RPA IMPLEMENTATION - HIGHER EDUCATION



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

83%

Base: Higher Education (n=65)

Q2. What is the current status of RPA (Robotic Process Automation) for each process below in your organization?

Q15. In which of the following processes is your organization currently using RPA?

Q16. In which of the following processes is your organization planning to use RPA in the next 24 months?

Commercial* Markets and RPA

- Many industries are rapidly evolving and need better ways to automate data-related processes. For example:
 - RPA adoption helps manage companies do more with fewer resources. This is critical in operating companies such as the oil & gas industry, who saw average reductions in CapEx of 40% and OpEx of 15% in 2020. Digital solutions continue to expand as a result, making the market for digital solutions to oil & gas a \$278B industry by 2025
 - Manufacturing's use of digital solutions is expected to grow to \$119B by 2025. Robotics, context-aware factories, AR/VR and AI are some of the digitally-driven solutions that are modernizing this space
 - Longer term, solutions such as quantum computing will impact this industry and its need for automation
- Top areas for RPA implementation in commercial markets are IT services, HR managements, and records management.



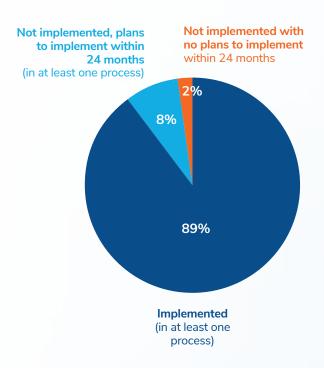
^{*}Commercial markets include manufacturing, retail, utilities, oil & gas, telecom, transport/logistics

^{**}Source: Frost & Sullivan's Digital Industrial and Energy Guidebook

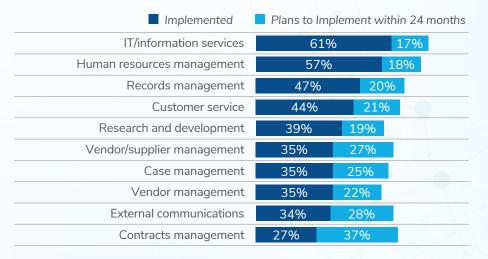
Commercial* Markets and RPA (continued)

IT and HR have the highest RPA adoption among processes in commercial sector.

RPA IMPLEMENTATION - COMMERCIAL



RPA IMPLEMENTATION BY PROCESS



SHARE OF ORGANIZATIONS PLANNING TO IMPLEMENT RPA IN AT LEAST ONE NEW DEPARTMENT WITHIN NEXT 24 MONTHS

91%

Base: Commercial, including energy/utility, manufacturing, retail, wholesale, O&G, transportation, telecommunication (n=95)

Q2. What is the current status of RPA (Robotic Process Automation) for each process below in your organization? Q25. In which of the following processes is your organization currently using RPA? Q26. In which of the following processes is your organization planning to use RPA in the next 24 months?

Examples of RPA Deployments in Different Industries

Telecom Industry:

A telecom company turned to an RPA-driven personal interactive assistant (PIA) to support its customer service agents. The PIA program automated key tasks and functions of the customer service function, helping to shorten customer calls, resolve issues more quickly and improve the overall experience for both customers and employees.

As a result, the company achieved significant operational benefits, including a 30% increase in the resolving customer issues on the first contact, a 25% reduction in call handling time and cost reduction of up to 40%. Customer satisfaction also rose by 20%, which is critical in an industry with increasing rates of customer turnover.



Banking Industry:

A firm that provides services around digitalization of accounting processes turned to an RPA solution to enable automation of its invoice receipt system. RPA replaced a manually-driven process that was time consuming and costly, as it needed to process nearly 8,000 invoices per month. Human error also tended to factor into the manual process, creating additional overhead to resolve discrepancies.

The RPA solution was able to greatly reduce the error rate. By using bots to check pre-determined parameters and ensure correct formats and entries, processing time was reduced by 70% and costs by 55%. Along with these operational improvements, customer satisfaction increased markedly as well.



Robotic Process Automation (RPA) Survey, Frost & Sullivan, February 2021

METHODOLOGY



• Online survey

RESPONDENT PROFILE



- Decision makers on purchasing software for content and process management or automation
- From organizations with 100+ employees

SAMPLE



- Total sample n=406
- Quota:
 - by industry
 - by region
 - by respondent group (IT vs. Business)

FIELDWORK



 December 2020-January 2021

NEXT STEPS (>)

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