

Democratizing IT Automation in a Multi-Cloud World: Tools, Teams, Culture, and Best Practices for Automation Success

February 2021 EMA Research Report Summary
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Executive Summary

Increasing automation for both IT and business processes continues to be a priority for organizations big and small. Organizations are encouraging automation, with 96% working toward more business process automation and 93% working toward more IT automation. However, less than 20% are assigning evangelists and creating Automation Centers of Excellence (ACoE). Automation is important to management and a goal for next year for 89% of respondents, however, only 31% are including increased automation as part of performance reviews. WLA is becoming a utility to facilitate automation orchestration for a broad range of use cases and supporting a broad range of stakeholders across multi-cloud environments. EMA believes WLA is a key component in achieving broader automation success.

This study was designed to look more closely at the organization of workload automation teams, how broadly WLA access and information are shared across the organization, and other human factors that could reveal the best practices of those achieving greater automation success. EMA conducted a web-based, email invite survey of 412 IT and business users of WLA software North America (US), Europe (UK, France, and Germany), and Asia (Singapore, Thailand, Malaysia, Vietnam, and India).

The drive to public cloud and digitalization has put pressure on WLA software, and the efforts to keep WLA software modern and relevant have resulted in significant new functionality and expanded use cases for WLA. Most major trends in IT impact the scheduling functions in IT operations and find their way into workload automation software. With each major trend in IT, new scheduling and orchestration needs arise. WLA has matured and adapted to meet these changing needs.

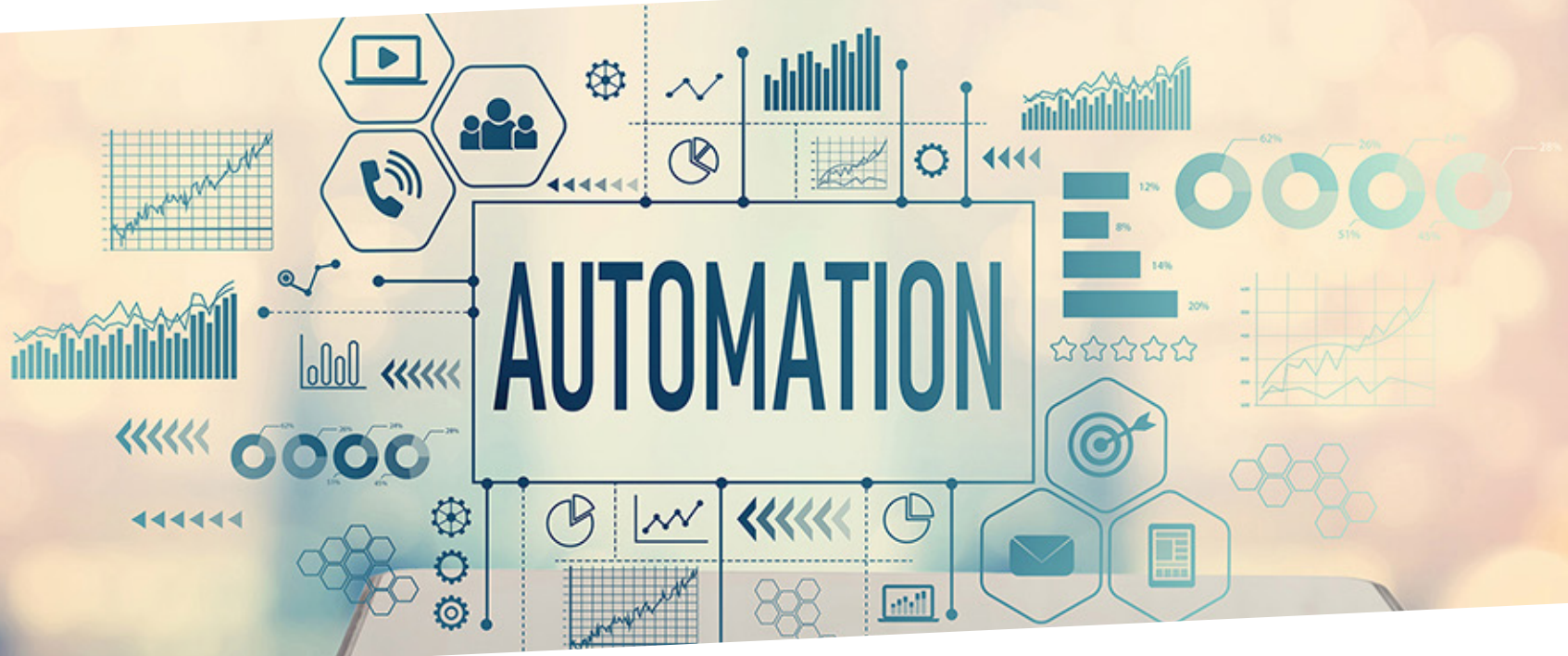
The result is that today, there are many different types of processing orchestrated by WLA. While traditional batch processing is still the largest category of jobs run each month (just over 11%), managing data pipelines and event-driven automation each make up nearly 10% of jobs. As the concept of a business day has blurred with near real-time processing, 24x7 ecommerce, and global operations across many time zones, calendar and time-based scheduling has given way to event-driven automation for many processes. With the explosion of online interactive applications, often in the form of webpages or mobile apps, it may seem like back office processing that requires scheduling would be declining significantly. The reality is that there are a lot of back office tasks required to keep these apps running and performing. Provisioning and configuring infrastructure is another area in which WLA is being deployed. Defining an environment required during development within WLA software can ensure consistency in how the environment is configured and can be repeated as code moves from development to test to production. WLA also plays a significant role in DevOps and release processes.

Many users from many disciplines across the organization are interacting with WLA, but only 14% of organizations feel they are serving all relevant stakeholders. WLA is becoming more of a utility for many roles, even as the original operator functions remain important. Including more user types with access appropriate to their role will continue to allow more stakeholders across the organization to benefit from WLA. Custom portals defined within WLA, dashboards, and integrations to applications like ServiceNow, Slack, Teams, etc. are an important part in benefiting those outside of the traditional WLA login. The most advanced WLA products help developers quickly build out new processes and leverage WLA to speed deployment of new automation.



A central team responsible for the WLA software and supporting the broader WLA users is the most predominate organization structure and is the form of organization for 33% of respondents. Central oversight includes managing the WLA install, training users, setting naming standards and other best practices, and managing global job dependencies and conflicts. A central team handling all WLA functions is still a common form of organization and is used in 26% of organizations. Here, only these team members define jobs and interact with the WLA software, although dashboards or other reporting and alerts may be used to communicate with other stakeholders. About 40% of organizations also use several forms of decentralized organization. The most prevalent decentralized WLA teams are those specifically supporting ERP applications.

Centralized WLA teams are the most effective means of managing WLA, with the central oversight form providing the most effective democratization and the best results in job success rates and meeting SLAs. Organizations with centralized WLA teams tend to have executives with a better understanding of the WLA function. There is a high correlation between centralized teams and those identifying as more creative with automation. More executive involvement and understanding improve results. As IT continues to play a bigger role in business processes that reach outside the organization and impact customers directly, WLA will continue to adapt and become an even more important tool to orchestrate automation across the enterprise.





Expanding Use Cases for WLA

The effort to keep WLA software modern and relevant has resulted in significant new functionality and expanded use cases for WLA. Most major trends in IT impact the scheduling functions in IT operations and find their way into workload automation software. Big data and the importance of data management is one such trend. The phrase “big data” was coined in 2005, and impacted IT operations significantly over the past 16 years. Anyone familiar with workload automation knows how this trend impacted scheduling functions. This trend raised the importance of managed file transfer capabilities, increased the need for integration software, and created an entirely new ecosystem of software and processes surrounding Hadoop. WLA tools adapted to these needs and supported the needs of IT operations to better manage big data.

Another major trend is cloud computing. The phrase “cloud computing” was first used in 2006 and also impacted IT operations significantly over the past 15 years. Workload automation adapted, embraced cloud computing, and became an important tool for many in managing their cloud environments and workloads. Use of WLA tools to configure public and private cloud environments is commonplace. This is one example of new capabilities built in to WLA tools by leveraging core WLA capabilities to automate the execution of machine-level tasks and functions, and string them together in a logical and controlled stream. More importantly, cloud computing expanded the environments and locations of computing resources beyond the walls of a single data center or a single operating system. Many processes can span these various environments and WLA is key in visualizing and executing these processes across the various environments. The impact of cloud computing on WLA is addressed in more detail later in this report.

Both cloud computing and big data have spawned other significant trends. The power to handle big data is foundational in creating large datasets that drive machine learning today. WLA is adapting as machine learning is maturing. Cloud computing and (more gradually) the internet created easy and pervasive connectivity, driving entirely new categories of end-user applications and benefits, moving IT out of the back office and directly in the line of delivering customer services. One example is tracking shipments, something people take for granted today. It was UPS who first rolled out this previously internal-only information to end consumers in 1994. Today, they receive almost 40 million tracking requests daily. Every major shipping operation now provides this information directly and automatically to consumers. This is one of hundreds of examples of IT directly involved in customer services and business outcomes.

Not all such trends touch consumers directly. DevOps emerged in 2009 with the goal to create better coordination and cooperation between software developers and operations. WLA adapted to assist in this coordination and handoff from development to production with improved change management, release automation, and jobs as code, allowing developers to directly define scheduling parameters in their code. DevOps also contributes to IT moving closer to external customers, but indirectly. DevOps done right can speed delivery of new applications, driving digital transformation.

With each major trend, new scheduling and orchestration needs arise. The examples above are representative of a long list of such trends. The important point is that WLA has matured and adapted to meet the changing needs. The result is that today, there are many different types of processing orchestrated by WLA. As the concept of a business day has blurred with near real-time processing, 24x7 ecommerce, and global operations across many time zones, calendar and time-based scheduling has given way to event-driven automation for many processes. Jobs triggered by an event like receipt of an email, receipt of a file, or an action taken by a user are on the rise.

Workflow automation and orchestration at 7.9% are other growing categories. The terms workload and workflow are often confused and misused, and there really is no good, all-purpose definition. In the world of business process management (BPM), workflow refers to the process or steps involved and workload refers to the work to be done—usually by a human. Workflow shows up in IT operations in service desk software and other human process-oriented functions in which process flow, escalation, and other aspects are managed to get humans to complete a task. Workload automation focuses on the work to be done as well, but in WLA, the work is done by a machine. In workload automation, the workflow is really the job stream, which reflects the steps in a process to get to a specific outcome, and the workload is the work being done by the compute and other resources orchestrated by WLA.

Why are these two terms showing up together in the context of workload automation? With the drive to automate more and more human tasks, work formerly done by humans in a workflow is being automated and done by a machine. This may require an integration to a workload automation software to launch a process, such as integrating WLA with ServiceNow to cause a process to start or to get the status of a job, automating some of the steps to work and resolve a ticket. WLA software has also been expanded in ways to allow human interaction at certain points of a process depending on certain outcomes. Formerly human or mostly human workflows are being orchestrated from inside WLA software that controls work done by both machines and humans. It is all getting mixed together as organizations strive to increase automation.

A large part of the original batch process work of IT was reporting. Today, analytics and visualization software carry much of this information, but unlike large, printed reports, this information can take the form of on-demand reporting, dashboards, and alerts. This reflects more granular reporting on a more frequent or on-demand basis. WLA is still involved in orchestrating this work. In this survey, 7.6% of jobs deliver analytics and visibility.

With the explosion of online interactive applications, often in the form of web-pages or mobile apps, it may seem like back office processing that requires scheduling would be declining significantly. The reality is that there are a lot of back office tasks required to keep these apps running and performing. Files

fill up, resources must be allocated dynamically based on traffic, and integrations to share data with downstream processes require orchestration. WLA is often used to do this kind of work. This study puts that work at 7.4% of the jobs orchestrated by WLA.

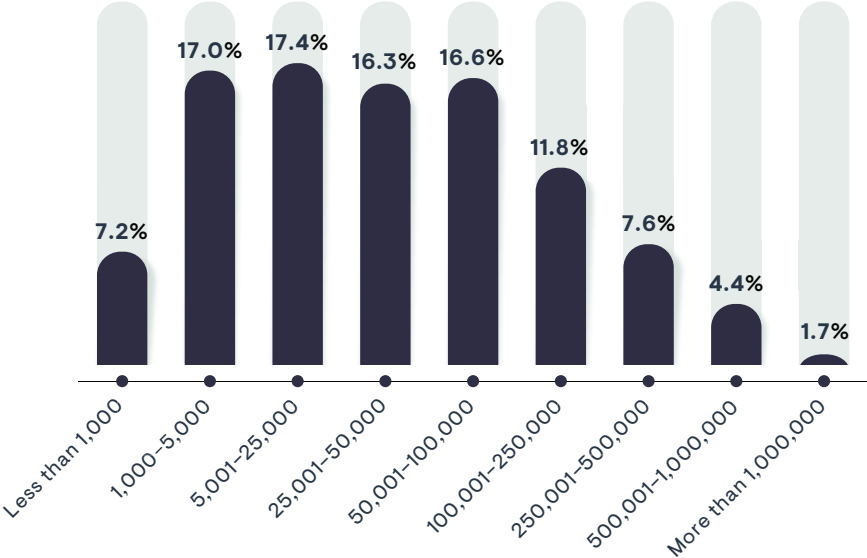
Provisioning and configuring infrastructure is another area in which WLA is being deployed. Defining an environment required during development within WLA software can ensure consistency in how the environment is configured and can be repeated as code moves from development to test to production. In this survey, almost 13% of jobs are configuring infrastructure, with 7% of jobs configuring public cloud and almost 6% configuring on-premises infrastructures. In a similar vein, DevOps and application release activities represent almost 7% of jobs. Further to the effective use of DevOps, several WLA products support integration with applications to allow scheduling parameters to be defined in code in the application (jobs as code). This can be bidirectional, where applications can call or invoke jobs or job streams to be run by WLA, or applications can self-define their scheduling needs in code to the WLA. Over 5% of jobs involve scheduling embedded in applications. With the rise in containerized applications, WLA has also been enhanced to support containers, with 4.3% of jobs involved in container management.

A more recent IT trend is showing up in WLA. Robotic process automation (RPA) is used to automate human tasks. Sometimes referred to in the pejorative as “armchair automation,” RPA is often used to automate steps between two applications or even two subsystems within the same ERP application. Rather than export data to Excel in one step, RPA can automate the function to modify or add to that data and upload the data in a different step. RPA software initially focused on screen scraping to achieve its interaction with human interfaces to applications, but RPA is maturing and getting better at using APIs and other means to remove the human from machine-to-human-to-machine processes. As RPA use becomes more sophisticated and involved in mission-critical functions, some are finding that WLA can add governance and control that is not native within RPA itself. While currently the smallest category of jobs, just over 4% of jobs run are orchestrating or interacting with RPA.

With the expansion of the types of jobs controlled by WLA and the drive for increased digitalization, the number of jobs running each month is significant and rising for most organizations. Workloads are shifting from big, overnight

batch jobs to more near real-time, more frequent, and more granular functions (think more frequent, small batches), driving up the number of jobs run.

How many jobs are run in production each month?



Sample Size = 412



Expanding Environments for WLA Software and Workloads

Cloud computing moves compute, storage, and other infrastructure out of the on-premises data center and into very large, modern data centers run with cutting-edge tools, best practices, and serious network bandwidth. With four or five major cloud vendors, one might expect that this would consolidate and simplify computing and reduce the number of environments in which workloads might run. Cloud computing has certainly caused many to cease growing, if not outright shuttering, on-premises data centers, but many have focused more on doing new things in the cloud while leaving old processes in their on-premises locations. Many organizations do not use one public cloud provider, but may engage three or four for different purposes or just through happenstance. As edge computing emerges at the fringes of the cloud, there will be an exponential growth in the number of computing locations. From the perspective of WLA software, there are more places workloads might run, not fewer.

Early in the lifecycle of cloud computing, it was thought that there would be seamless bursting to the cloud with workloads freely moving between on-premises and cloud resources in a dynamic dance to balance cost and resource needs. This was the early definition of hybrid cloud. Over time, it seems the term “hybrid cloud” has been watered down to mean different things to different people. To some, it can mean an end-to-end process that spans both cloud and on-premises, but to others it can mean using on-premises, private, and public clouds across an organization more generally. The original definition may become the norm someday, and certainly some of that vision has been realized along the way. In many ways, containerization is doing more to achieve the dynamic processing vision than cloud computing alone. Some will use the term multi-cloud in place of hybrid cloud to mean the more general definition, and others will even use them together, as in “hybrid, multi-cloud strategy.” For the purposes of this report, the term multi-cloud will be used to mean the most generic definition of having a mix of public cloud providers, and/or private cloud, and/or on-premises. Essentially, there are lots of environments to run workloads.



Expanding Users for WLA

The types and numbers of users of WLA have also expanded as WLA has matured and adapted to changing needs. Serving more users from across an organization is one characteristic of what is referred to as “democratization of IT.” The democratization of IT is a topic with many definitions and meanings to different people. Some refer to it as the consumerization of IT, putting more power in the hands of consumers to access information in a self-service way. Some consider it a different way to share information among teams in companies, and some even consider it voting for leaders in companies driven by social media. One consistent thread is the idea of providing more access to technology and empowering more users, whether that is customers in B2B settings, consumers, or employees across an organization. WLA products have been increasing the means of access and increasing access privilege controls to support more users with differing needs. This has increased access to information as well as increased access to WLA automation features to a wider group of users within IT organizations and to business managers and staff. WLA has increased the use and reach across an organization, resulting in more directly affecting business outcomes.

Many users from many disciplines across the organization are interacting with WLA, but only 14% of organizations feel they are serving all relevant stakeholders. Asset management, end-user management, and business staff are the top three groups considered to be underserved. All business job title respondents ranked business staff, business managers, and business executives as the top three underserved groups, showing that even as business users are growing, business people still feel underserved by WLA. Looking at all the stakeholders considered to be underserved, it is clear WLA’s reach across the organization is not done growing.

EMA believes that the importance of adding end-user management to the WLA users is a result of the global pandemic. The need to automate tasks around managing end users increased significantly in 2020 as organizations addressed the need to radically increase remote access for employees working from home. While many WLA tools can be of assistance in automating some of the end-user management tasks and processes, clearly there is desire to increase support to this important IT function.



WLA Team Organization Structures and Outcomes

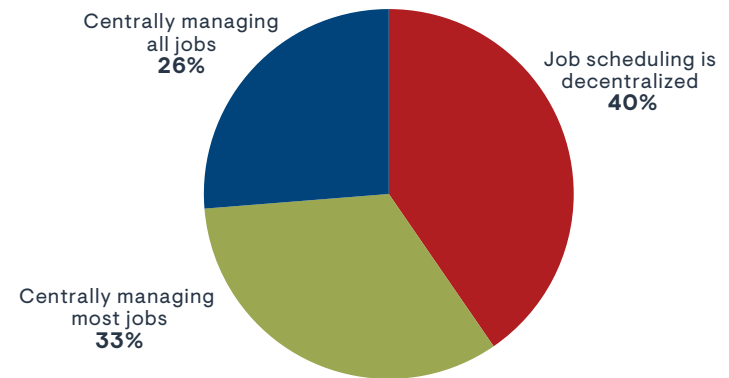
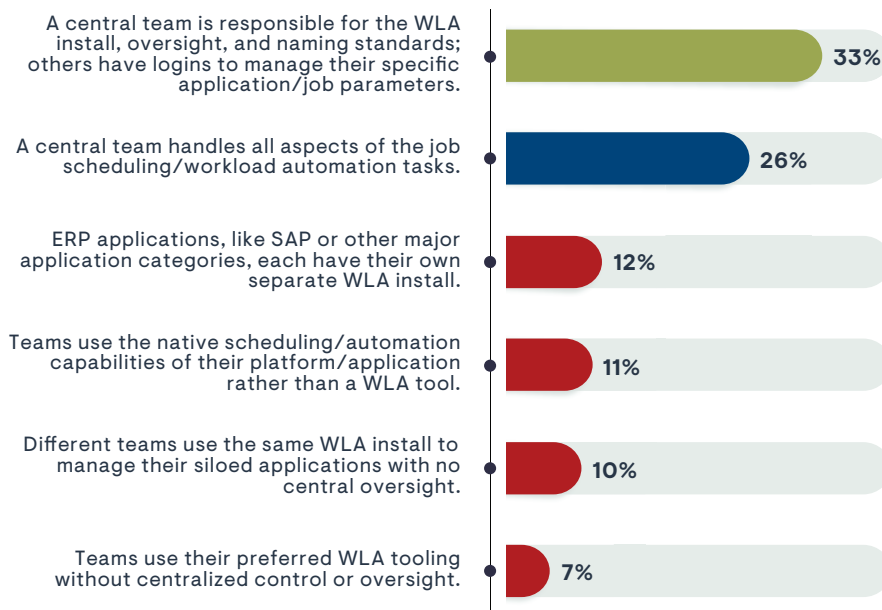
Organization Structures

In the early days of job scheduling, the predominant users were generally IT operators or a small team responsible for scheduling. It was a simpler set of users with direct access to the scheduling software. Other stakeholders, like developers and business operations, interacted with operators by phone or later by email. A centralized organization structure was the norm. With the expansion of workload types and user types, and the resulting increase in complexity, the organization surrounding WLA changed as well.

Respondents were asked how the workload function is managed in their organization. A central team responsible for WLA software installation and that supports the broader WLA users is the most predominate organization

structure and is the form of organization for 33% of respondents. Central oversight includes managing the WLA install, training users, setting naming standards and other best practices, and managing global job dependencies and conflicts. A central team handling all WLA functions is still a common form of organization and is used in 26% of organizations. Here only, these team members define jobs and interact with the WLA software, although dashboards or other reporting and alerts may be used to communicate with other stakeholders. Several forms of decentralized organization are also used by about 40% of organizations.

How is the workload automation function managed in your IT operations?



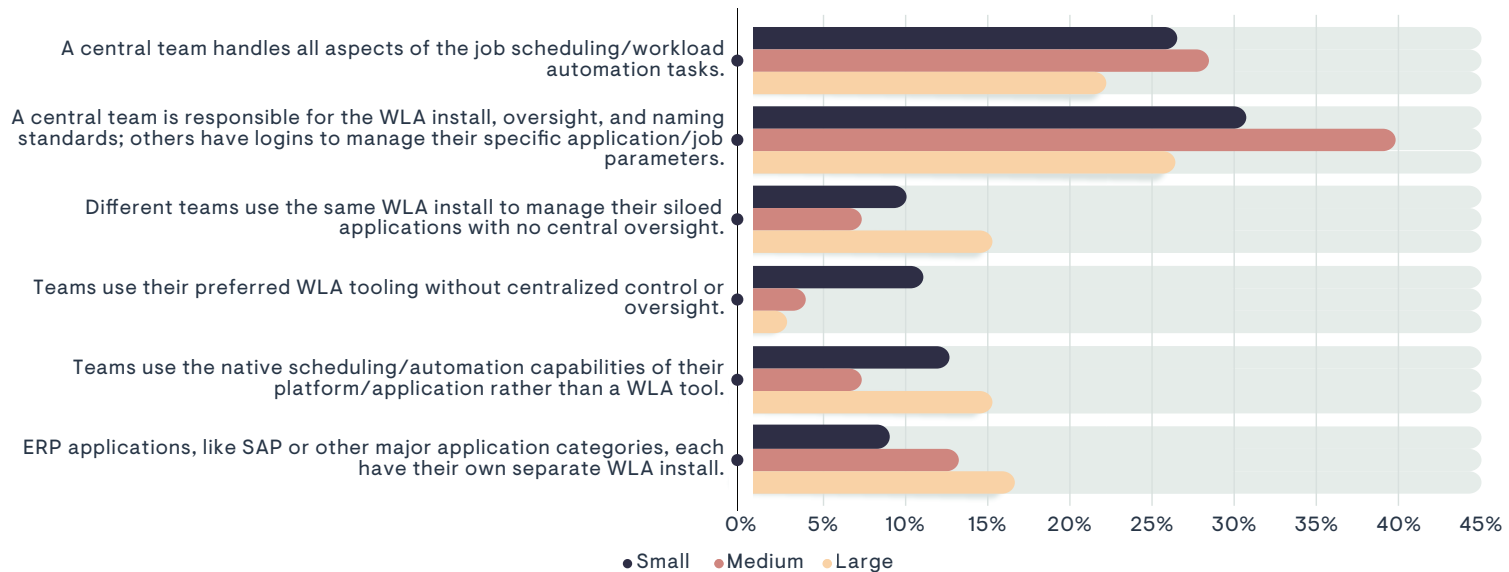
Sample Size = 412

The most prevalent decentralized WLA teams are those specifically supporting ERP applications. This form of organization exists in 12% of those surveyed. Interviews conducted for EMA Radar Reports on WLA have included many such ERP-specific teams. Often, this is the first time an enterprise-class WLA software is deployed in the organization and purchased specifically to orchestrate ERP workloads. One such ERP-focused team started using WLA for a new SAP implementation. Seven years later, that ERP-focused team found themselves supporting SAP, the WLA software, and became the de facto central oversight for WLA support and training group for six other IT groups within their company. The team was not officially a WLA team and the software was not purchased to support the entire company, but organically, others learned of the capabilities and begged off of the WLA software for their needs. The SAP team manager said the CIO was aware of this development and would consider adding budget and staff to support broader use of WLA, but establishing a separate WLA function was not in their plans. This was something they would monitor over time.

Some organizations have different teams doing their own thing, with native scheduling tools specific to the platforms or applications on which they work. This is the form of organization used by 11% of those surveyed. Some organizations will have a single WLA product that everyone uses, but there is no centralized oversight. Each team does their own thing using the same WLA install. This is the form used in 10% of those surveyed. Continuing with the “do their own thing” theme, 7% allow different teams to both pick the WLA of their choice and use it as they wish with no central oversight.

Company size can play a role in which form of scheduling team organization is used. While central oversight is most common for all company sizes, it is most prominent in medium-sized companies. Large companies are more likely to have decentralized teams, but all forms of organization are used across all company sizes.

**How is the workload automation function managed in your IT operations?
By Company size**

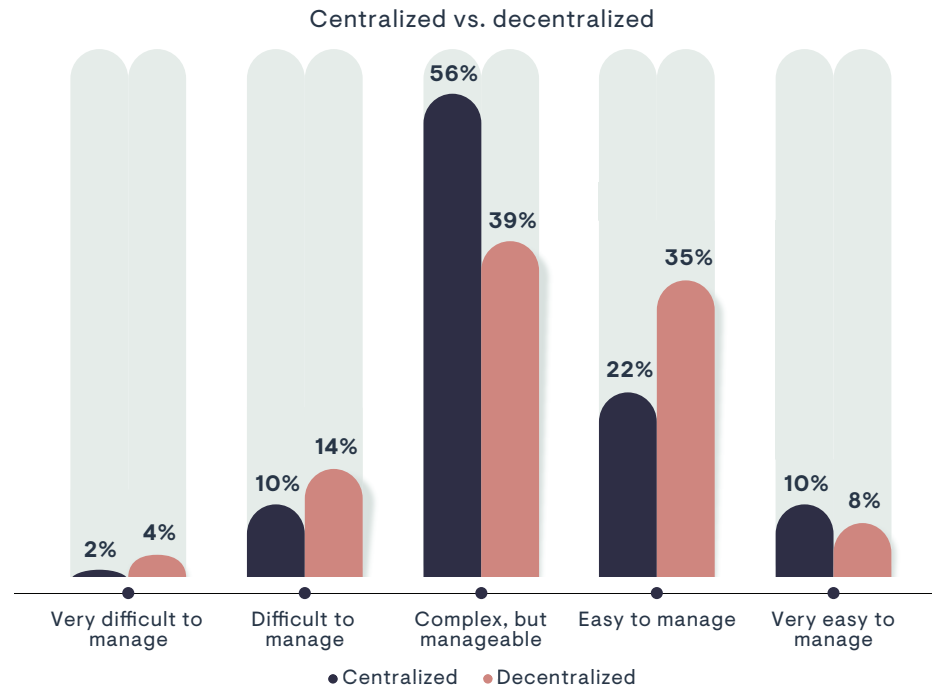


Outcomes

How WLA teams are organized is interesting, but what matters is what is effective for a given organization. Respondents were asked how they would describe their WLA environment. 36% selected easy to manage or very easy to manage, while just 14% find it difficult or very difficult to manage. 49% selected

complex, but manageable. Centralized teams are more likely to feel that WLA is complex, but manageable, while decentralized teams are more likely to feel that WLA is easy to manage.

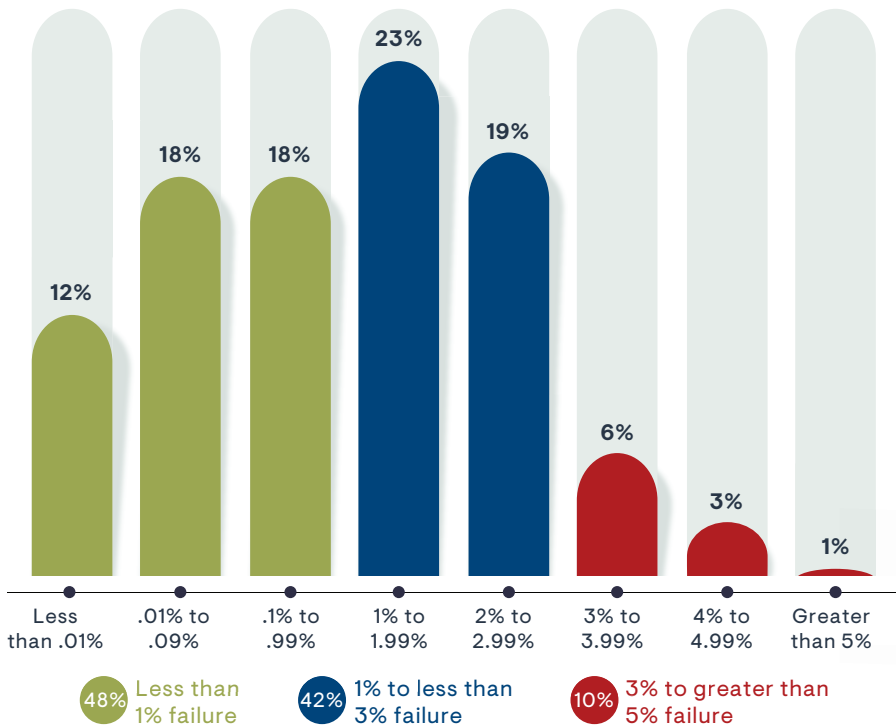
How would you describe your scheduling/workload automation environment?



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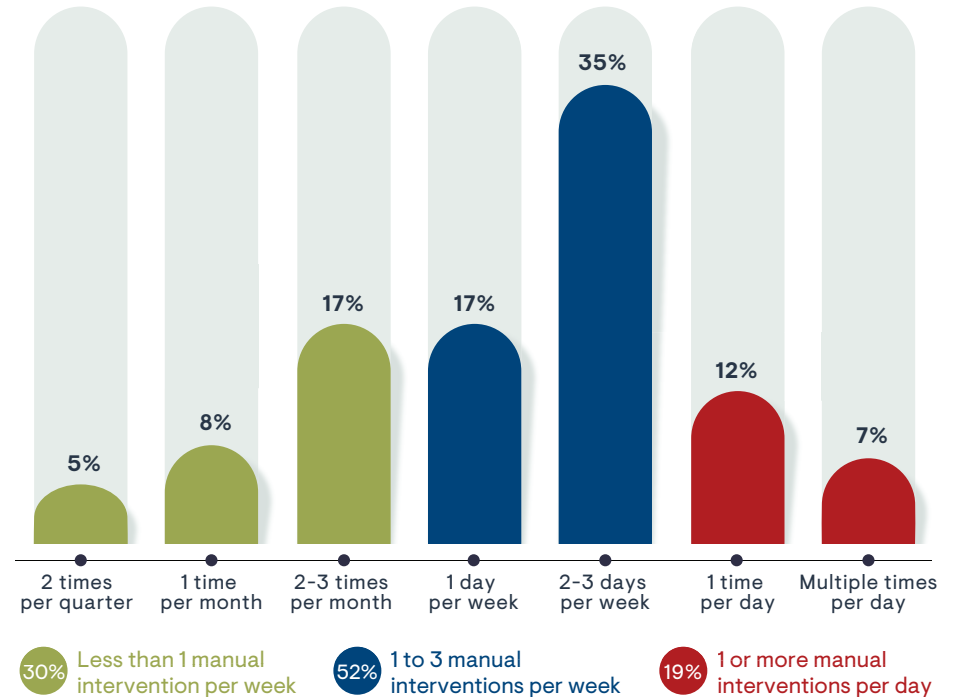
When asked about job failure rates, 86% said their goal was a 99.99% job success rate or better, but only 12% are achieving a failure rate of less than .01%.

What is your job failure and job rerun rate over the past 12 months?



Respondents were also asked about the need to manually intervene in a WLA process. 30% had less than one manual intervention per week, while 52% had one to three manual interventions per week, and 19% had one or more manual interventions per day.

On average, how often do you or your staff need to manually intervene in a WLA process?

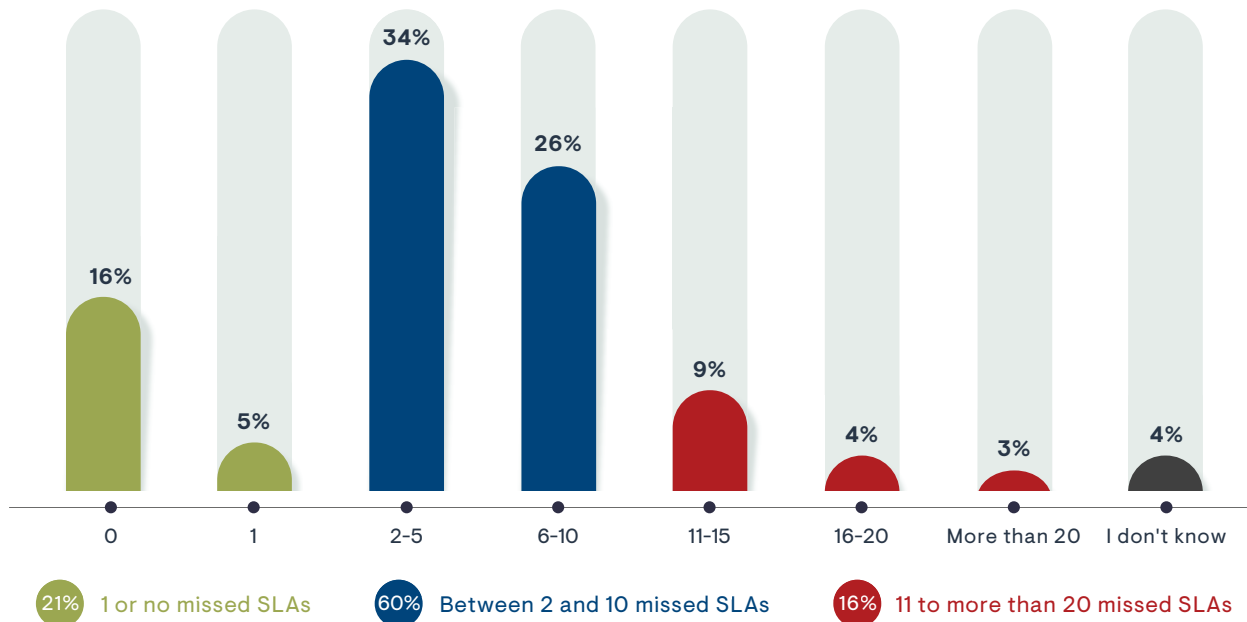


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Another measure of success with WLA is how often WLA problems resulted in missed SLAs. Respondents were asked how many times WLA problems resulted in missed SLAs in the past 12 months. 21% had one or no missed SLAs, 60% had two to ten missed SLAs, and 16% had 11 or more missed SLAs, with some having more than 20.

It is interesting that decentralized teams were more likely to feel that managing their WLA software was easy, while centralized teams were more likely to feel managing their WLA software was complex, but manageable—yet it is the centralized teams that are producing better results.

How many times have job failures or other WLA problems resulted in missed SLAs in the past 12 months?

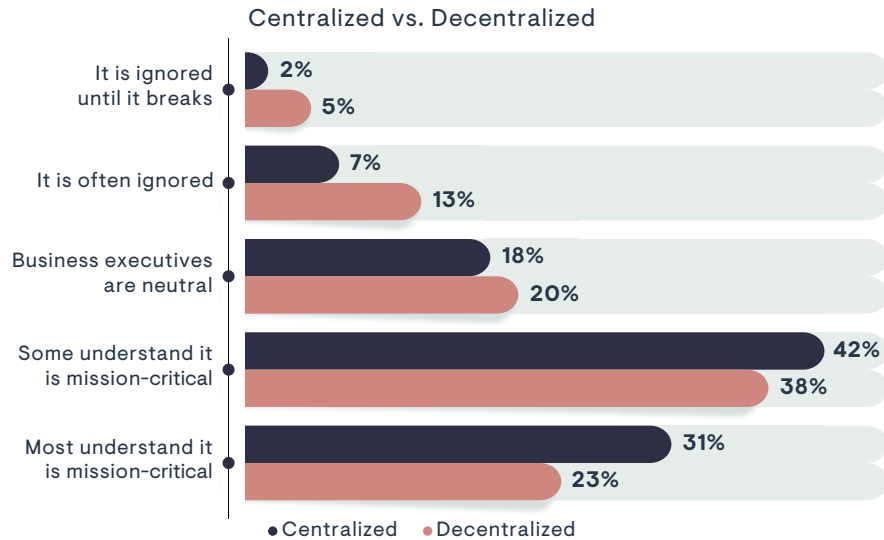


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Leadership and Executive Viewpoints

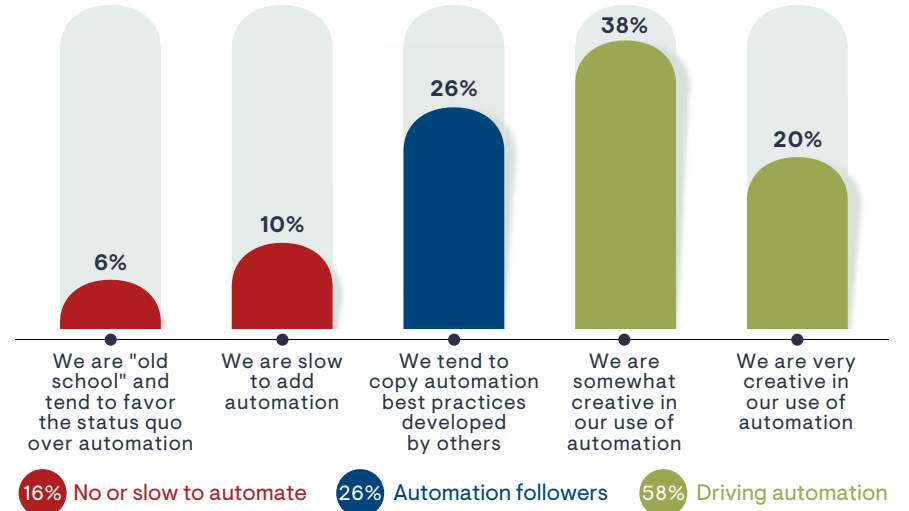
Corporate culture and executive priorities can play a big part in determining effectiveness of an organization overall and of individual teams and processes. Budgets reflect the priorities of an organization’s leadership and can drive innovation or stagnate progress depending on the availability of funding. Respondents were asked about executive awareness and perception of the scheduling function. When asked how business executives feel about the need to manage processing schedules, 68% felt that some or most understand it is mission-critical.

How do you think business executives feel about the need to manage processing schedules?



Respondents were also asked about their organization’s posture toward automation, with 16% identifying as status quo or slow to automate, 26% follow others, and 58% are more creative in their use of automation.

Which statement best describes your organization's posture toward automation?

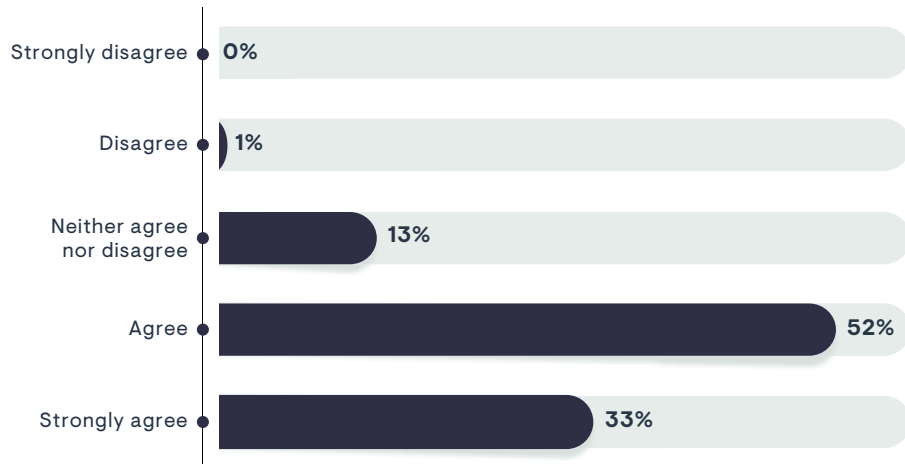


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In many organizations, what gets measured tends to be what gets done. Respondents were asked if expanding automation was important to management and one of their goals for the next year, with 89% agreeing or strongly agreeing. However, only 31% reported expanding automation as a factor in measuring their performance.

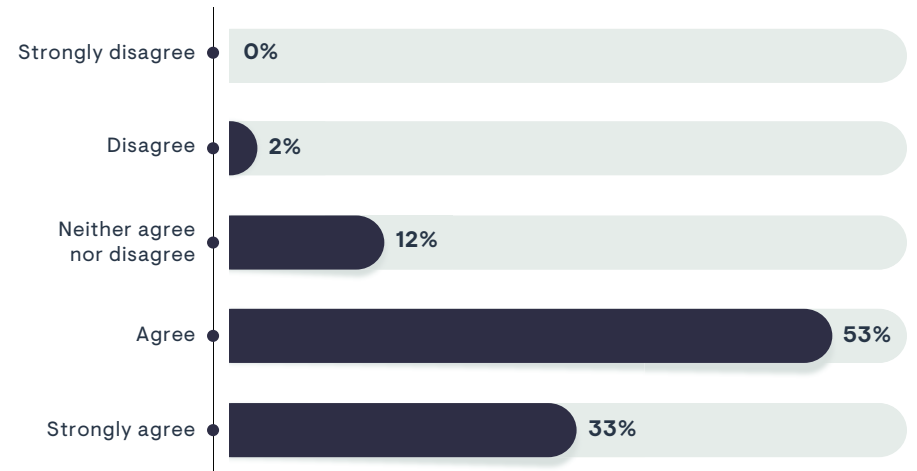
When asked if their business would benefit from a more centralized view of all forms of automation across IT and business processes, 85% agree or strongly agree.

Our business would benefit from a more centralized view of all forms of automation across IT and business processes.



WLA is a key part of IT operations automation, and EMA believes there is great potential to continue the expansion of WLA as a broader automation orchestration platform. EMA is not alone in this belief, as 86% of respondents agree or strongly agree.

**Please indicate your level of agreement with the following statement:
*Workload automation tools should be expanded to orchestrate automation tools across the enterprise.***



Sample Size = 412



Making Automation an Organizational Priority

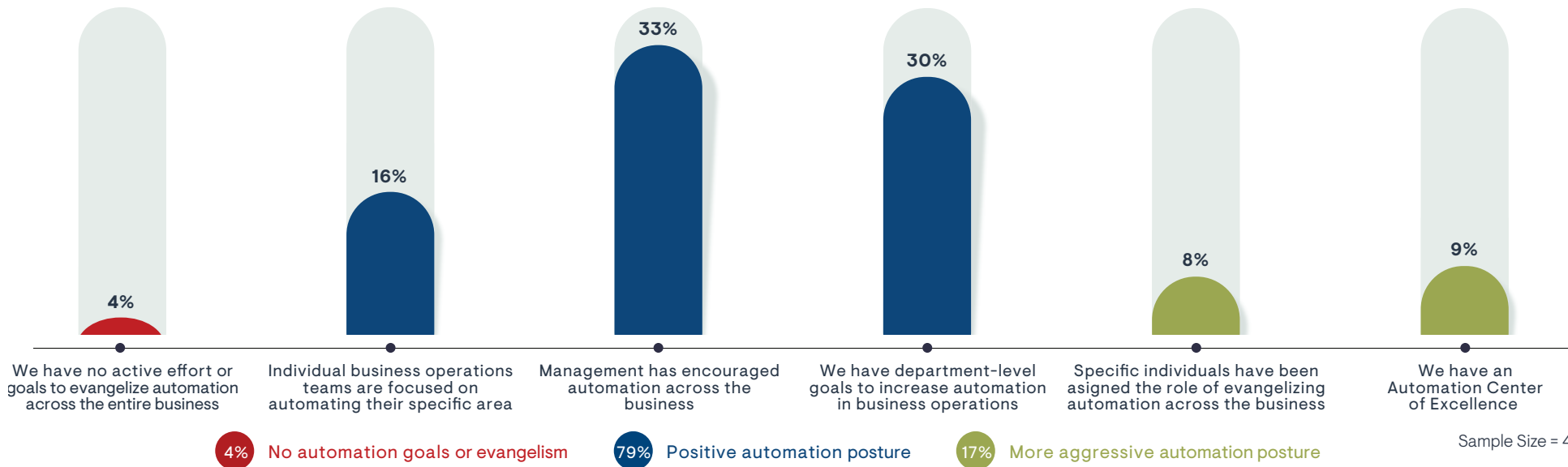
Automation does not just happen. It takes assessment of the current environment, understanding of how things work, and vision to see how things could work. Often, the folks closest to the work know what could make their job easier, but they do not feel empowered to bring those ideas forward or feel those ideas will get resources to become reality. It takes leadership to create a culture in which automation can thrive.

A big inspiration for this research was a scheduling team manager interviewed for an EMA Radar Report for WLA. This individual worked in a company that achieved significant automation that included their WLA software right in the mix of processes key to running the business more effectively. It reached out to the point of sale of their 3,600 locations and straight up to the CEO's office. When asked how this was possible, the response was twofold. First, leadership of the company was credited with creating a culture of striving to automate and empower everyone on that mission. That is certainly important and somewhat rare, but the real magic may have been in the second part of the response. This IT manager, running a central oversight type team of about 15 people in the bowels of the IT organization, also said that he talks to businesspeople both

at corporate and out at the stores regularly. He asks every businessperson he meets about the challenges in their jobs and what would be their desire if he could give them a button to automate their biggest challenge. That passion and communication in an organization that values creativity and empowerment supported by leadership is a no-lose situation.

The next two charts reflect the responses to two questions intended to learn how many organizations may be traveling a similar path, or at least heading in that direction. Respondents were asked about their organization's efforts to evangelize automation across their business. Just 9% have an Automation Center of Excellence, and only 8% have specific individuals assigned the role of evangelizing automation across the business. These 17% are those with the most aggressive automation posture. The bulk of respondents, 79%, fell into the three groups that together have a positive posture toward automation, ranging from individual department-level focus on automation to management encouraging automation to department-level goals to increase automation. Merely 4% have no active effort to evangelize automation.

Which statement best describes your organization's effort to evangelize automation across the entire business?

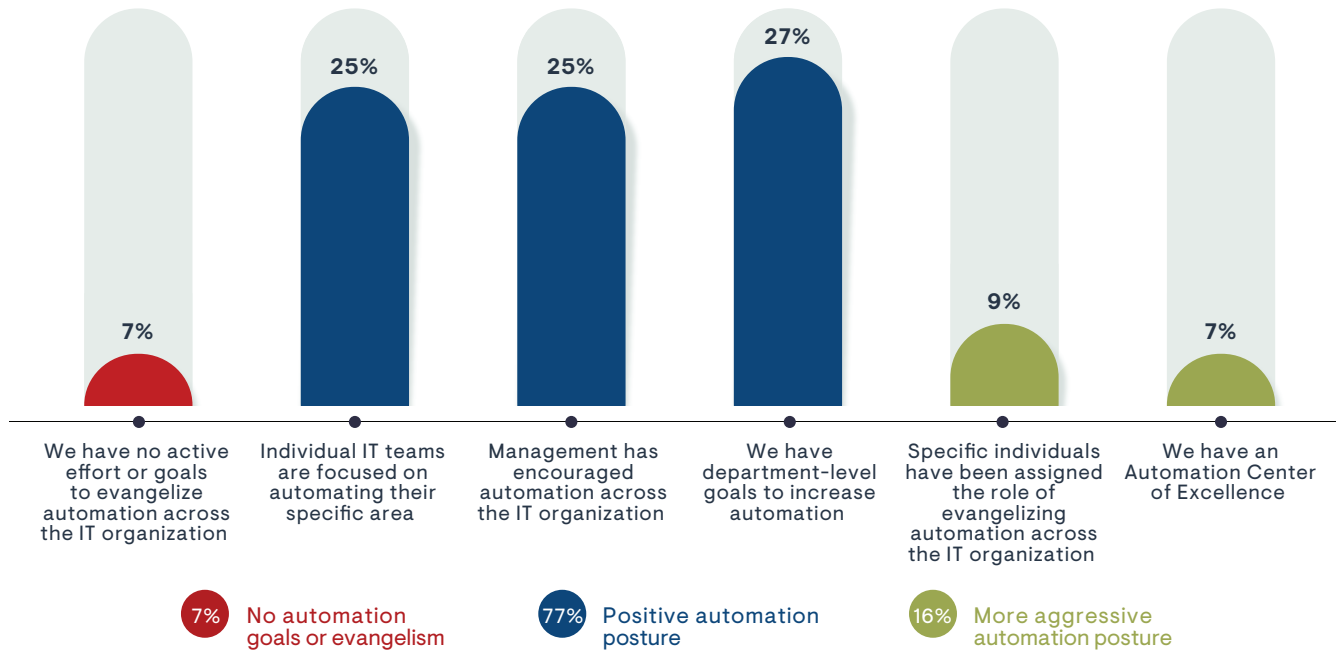


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Automating business processes is taking a priority in most organizations. Sometimes, IT does not get the same attention or resources to automate their processes. Respondents were also asked about their organization's effort to evangelize automation across the IT organization. The results were a bit lower than for business process automation, but more encouraging than expected. Just 7% have an Automation Center of Excellence that includes the IT functions

in their mission, and 9% have specific individuals assigned to evangelize automation across the IT organization. The bulk of respondents, 77%, fell into the three groups that together have a positive posture toward automation, ranging from individual IT team focus on automation to management encouraging automation across the IT organization to department-level goals to increase automation.

Which statement best describes your organization's effort to evangelize automation across the IT organization?





EMA Perspective

Organizations are encouraging automation across both business and IT processes, with 96% working toward more business process automation and 93% working toward more IT automation. However, those most aggressively pursuing automation are assigning evangelists and creating Automation Centers of Excellence (ACoE). EMA believes the ACoE should not be limited to business process automation. IT processes should be treated with the same regard as other business processes, and automation within IT should be valued on par with business process automation. It does not make sense to starve the software factory or the operations that run all the new digital apps. Nothing will aggravate customers more than new digital apps that do not work well or are slow to be enhanced. The IT part of the business is in just as much need of automation, and in some organizations, even more so than the business operations. IT needs a voice at the ACoE, not just a seat at the table to leave with tasks supporting business process automation, but to have their automation needs addressed and projects funded as well.

EMA believes most organizations value automation, but less than 20% are creating individual evangelists or coordinating activities with an ACoE. The ACoE is effective at bringing forward ideas, communicating and coordinating across departments, and setting big vision goals to drive the organization forward. This can only work with serious executive sponsorship.

Automation is important to management and a goal for next year for 89% of respondents; however, only 31% are including increased automation as part of performance reviews. An ACoE is a good idea, but automation creativity should not be kept just to those assigned to this committee. There should be an active outreach to evangelize automation and everyone at every level should be encouraged to think creatively and bring forward ideas.

Specific to WLA, EMA believes centralized WLA teams are the most effective means of managing WLA, with the central oversight form providing the most effective democratization. Organizations with centralized WLA teams tend to have executives with a better understanding of the WLA function. There is a high correlation between centralized teams and those identifying as more creative with automation. More executive involvement and understanding improve results.

WLA is becoming more of a utility for many roles even as the original operator functions remain important. Including more user types with access appropriate to their role will continue to allow more stakeholders across the organization to benefit from WLA. Custom portals defined within WLA, dashboards, and integrations to applications like ServiceNow, Slack, Teams, etc. are an important part in benefiting those outside of the traditional WLA login. The most advanced WLA products help developers to quickly build out new processes. Developers can use jobs as code to define the scheduling parameters for their application directly in their code. With some products, developers can make calls to WLA to perform a variety of scheduling, file transfer, and other functions. Alternatively, the job stream defined in WLA can drive the process and the developer can write code snippets or functions for particular custom needs. As IT continues to play a bigger role in business processes that reach outside the organization and impact customers directly, WLA will continue to adapt and become an even more important tool to orchestrate automation across the enterprise.





25
YEARS

About Enterprise Management Associates, Inc.

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