

Prepared for



Automation Intelligence: The Path to Transformative Automation

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Enterprises are striving to modernize applications and embed digital technologies across their businesses to improve business processes, services, and products. Digital transformation relies on IT and encompasses a range of technologies and strategies, including cloud computing, artificial intelligence, the Internet of Things (IoT), big data analytics, mobile computing, social media, and more. Digital transformation also involves cultural and organizational changes. Organizations must embrace new ways of working and adopt a digital-first mindset. Automation supports the digital transformation journey, and automation intelligence operationalizes automation for insight and predictability.

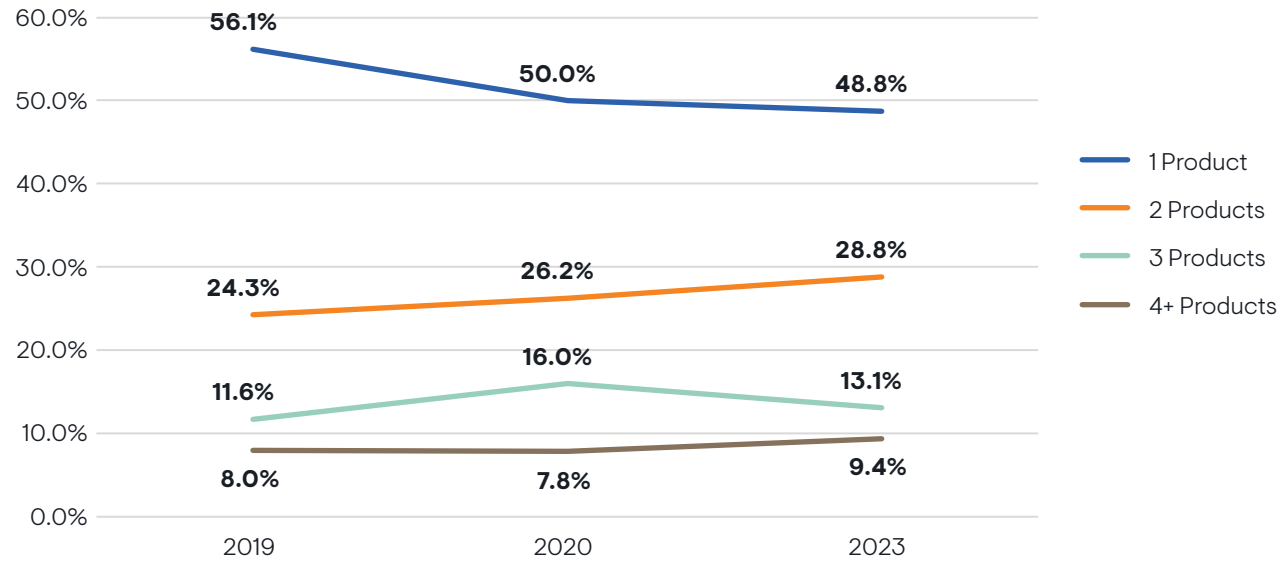
Automation is Key in the Age of Digital Transformation

Automation is an essential component of digital transformation. Automation can help organizations scale their operations and improve the consistency and quality of their services. Enterprises are relying on workload automation software to support cloud computing and orchestrate automation in support of digitized processes. In 2023, 82% of organizations experienced an increase in the number of jobs, up from 77% in 2020. The rate of increase is also higher in 2023, with the average increase in jobs at 19.8%, up from 16.5% in 2020.¹

Digital transformation requires more advanced features and better integration from workload automation tools. Many organizations are adding a WLA tool or changing to a new WLA tool to get the features and characteristics required. This is causing an increase in the number of WLA products used. Figure 1 shows this trend. In 2019, 43.9% used more than one WLA product. By 2023, 51.2% used more than one WLA product. Using multiple WLA products means having a fragmented view of automation results. This is particularly troubling for processes that start with jobs in one WLA product and end with jobs in a different WLA product. The performance and results of the end-to-end process are not easily understood or adjusted without a unified view.

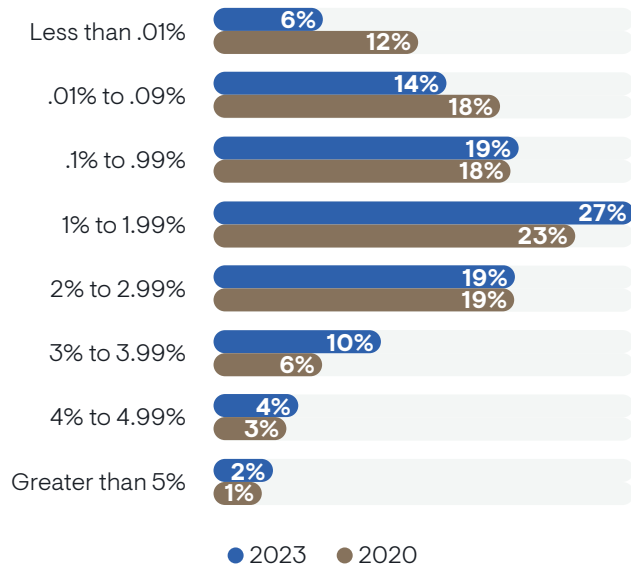
¹ All data is from EMA research: “From Scheduler to Automation Fabric for the Enterprise: Workload Automation Transformation in 2023,” a global 406 N survey of WLA users and executives.

NUMBER OF WLA PRODUCTS IN USE
2019-2023

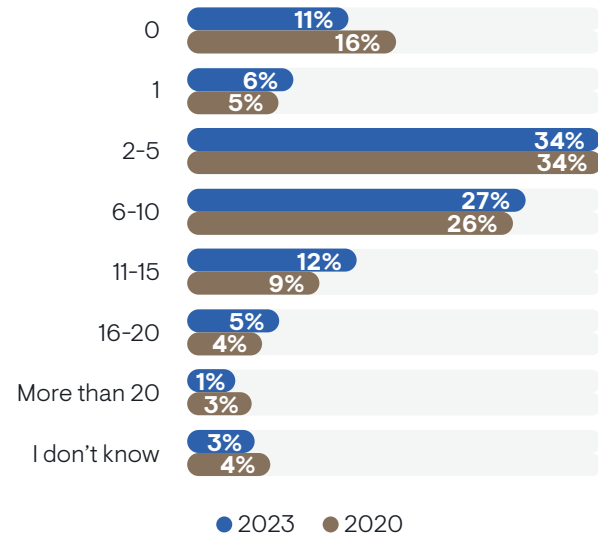


Increased job volumes and utilizing multiple WLA products increase the complexity of managing the automation. Organizations are experiencing greater job failure rates and are missing more SLAs. Job failure rates increased from 1.3% in 2020 to 1.58% in 2023. In 2023, 89% of organizations missed one or more SLA due to job failures, up from 84% in 2020.

WHAT IS YOUR JOB FAILURE AND JOB RERUN RATE OVER THE PAST 12 MONTHS?



HOW MANY TIMES HAVE JOB FAILURES OR OTHER WLA PROBLEMS RESULTED IN MISSED SLAS IN THE PAST 12 MONTHS?



Automation drives mission-critical processes and can help to consistently meet SLAs when automation is well managed. Increasing volumes and increasing complexity make it more difficult to manage automation. To ensure positive outcomes, organizations can benefit greatly from increasing their automation maturity, which can help them improve efficiency, reduce costs, and drive innovation.

Automation Adoption Across EMA’s Four Stages of IT Maturity

Advancing IT management maturity requires supporting automation. EMA’s IT Management Maturity model was paired with our IT Automation Maturity model. The resulting four phases with an eye to automation are:

- Reactive Infrastructure Management – with task-driven automation
- Active Operational Management – with use case-centered automation
- Proactive Service-Oriented Management – with integrated automation
- Dynamic Business-Driven Management – with transformative automation

	REACTIVE	ACTIVE	PROACTIVE	DYNAMIC
IT Management Maturity	Infrastructure Management Responding to alarms	Operational Management Monitoring the infrastructure	Service-Oriented Management Managing to the service	Business-Driven Management Managing to the business
IT Automation Maturity	Task Automation Task-specific, fragmented, few analytics	Use Case Automation Multi-task, human approved AI/analytics	Integrated IT Automation Spans IT processes, prescriptive AI/analytics	Transformative Automation Business outcomes driven by AI/analytics

Reactive Infrastructure Management: with task-driven automation

Organizations at this stage struggle to survive reactively on a day-to-day basis. Management investments, including automation, are strongly siloed, often focused on element management and task-related automation. Processes largely consist of passing problems on to specialists without proactive analytic insights, sometimes randomly and with considerable OpEx overhead, since guessing can lead to long, beleaguered war room debates.

Active Operational Management: with use case-driven automation

At this stage, IT functions primarily as a collection of skill groups (network specialists, systems specialists, applications managers, etc.) that have effective common processes well focused on use case requirements. This includes some cross-group sharing, such as operations and ITSM, from a use case-specific perspective. Automation and IT analytics are now beginning to redefine IT processes and how IT works, albeit focused on skill group specifics with a use case-specific focus. IT organizations can begin to set the stage for the next level of maturity by investing in unifying analytic and automation technologies with broad, cross-domain awareness.

Proactive Service-Oriented Management: with integrated automation

At this stage, IT views itself as an integrated service provider, interfacing with the business as a consistent and effective unit with a broad array of metrics to demonstrate both OpEx efficiencies and more critically sustained business requirements. IT decision-making for automation and other technology investments has become primarily strategic rather than reactive. The terms “agile” and “self-healing” are increasingly reflections of reality rather than wishful thinking. As IT organizations move forward, higher levels of automation are becoming coupled with increasingly high levels of business stakeholder involvement.

Dynamic Business-Driven Management: with transformative automation

Intelligent automation, or automation informed by analytic insights associated with both IT and business performance, largely defines this fourth stage. As a result, business-aligned automation has become so integrated with IT processes and organizational dynamics that the role of IT has shifted once again. At this stage, IT’s role goes beyond supporting the business to informing on and actively shaping business behaviors based on shared objectives between key business stakeholders and IT leaders.

Many organizations have focused on management maturity. Some may have greater IT management maturity than automation maturity; however, they will eventually need to catch up on automation maturity to continue advancing. For example, an organization might be proactive in their IT management practices, but still be at the active stage with use case-focused automation. It will be difficult to advance IT management further without maturing automation to support more advanced IT management. Advancing automation maturity requires analytics, and the highest levels of automation maturity require intelligence.

Automation Intelligence is Key to Achieving Consistent Automated Results

Analytics play a critical role in running automation because they provide valuable insights into how automation is performing and where improvements can be made. Analytics add intelligence to automation to help organizations track key performance metrics and identify areas where companies can optimize automation to deliver better results. Enterprises can identify problems earlier during an automated process while there is still time to correct them before missing an SLA. More advanced automation intelligence provides modeling of processes and can create a faster path to digital transformation of those processes. By leveraging automation intelligence, organizations can maximize the benefits of automation and ensure that it is delivering the expected ROI.

Many workload automation solutions include some form of analytics. Some are more robust than others. Those relying solely on built-in analytics may miss some key features, and they will also live with a limited view of automation outcomes since built-in analytics are limited to the workload automation product within which they are contained. Many organizations use more than one workload automation solution. A complementary WLA analytics product can provide more robust features as well as integration across multiple products, supplying a holistic view of all automation. Achieving higher levels of automation maturity can require a significant investment of time, resources, and organizational commitment. Since not all automation analytics solutions are created equal, it is important to select the right automation intelligence solution to avoid these challenges.

Achieving Transformative Automation

For organizations to advance automation maturity, users require visibility into automated processes to understand outcomes and trends. Enabled with intelligent analytics, users can identify issues hours, days, or even months before they impact the business service. Smart alerting will advise the right individuals of issues that require attention without overwhelming staff with alert storms and unnecessary statuses. Alerts are appropriate for the intended audience and are based on the impacted business process versus object-based analytics that focus on individual IT components. Business users get updates and alerts from the vantage point of the outcomes to be delivered to customers. IT support can drill down to the individual IT components with prescriptive suggestions to help them resolve issues quickly. Automation, supported by automation intelligence, allows business leaders and IT leaders to assess and adjust digital business processes in a data-driven manner and in a common language.

Broadcom's Automation Analytics & Intelligence

Automation Analytics & Intelligence (AAI) is a predictive analytics platform for workload automation data. It provides organizations with the necessary visualization, adaptability, and intelligence to successfully manage complex workloads across multiple scheduling solutions. Workload automation analytics provides service-level assurance, critical path management, and enterprise-wide observability. AAI turns critical workload data into business insights.

Broadcom's AAI was adapted from the acquired Terma Software Labs family of workload analytics products. Terma Software was the pioneer in the area of predictive analytics of workload data and partnered with the Broadcom family of workload products (originally CA products) since its inception in 2003. Broadcom acquired Terma Software Labs in late 2019.

AAI is integrated with AutoSys, CA7, ESP, and Automic Automation. AAI is also integrated with Control-M (mainframe and distributed), IBM Workload Scheduler (mainframe and distributed), and Tidal Enterprise Scheduler. In addition, AAI can integrate with any workload solution through APIs. A summary of key features is shown in the table.

Cross Platform/Vendor Visibility	Real-time single point of view across IBM Workload Scheduler (mainframe and distributed) CA7, AutoSys, Automic, ESP, Control-M (mainframe and distributed), and Tidal Enterprise Scheduler.
Dynamic Service-Level Management	Discover and track service-level agreements (SLAs) across platforms and schedulers simply by identifying the job that needs to be delivered.
Predictive Analytics & Smart Alerting	Predict outcome of SLAs before they impact the business. Proactive alert management to resolve before there is any impact to the business.
Historical Trending & Analysis	Robust and configurable data archive with historical workload data (365+ days) to identify jobs trending over time to prevent SLA breaches.
Workload Change Simulation	Simulate potential changes against defined SLAs before going to production. Limits SLA breaches and allows you to optimize complex batch processing across vendors and platforms.
Business Process Monitoring	See your workload from line of business and business process perspectives instead of a series of unrelated job streams.
Dynamic Critical Path Discovery	Real-time discovery of critical paths to determine requirements to meet SLAs.
Open Architecture for Ease of Integration	Full REST API support for consuming and sending data.



About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com. You can also follow EMA on [Twitter](#) or [LinkedIn](#).

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