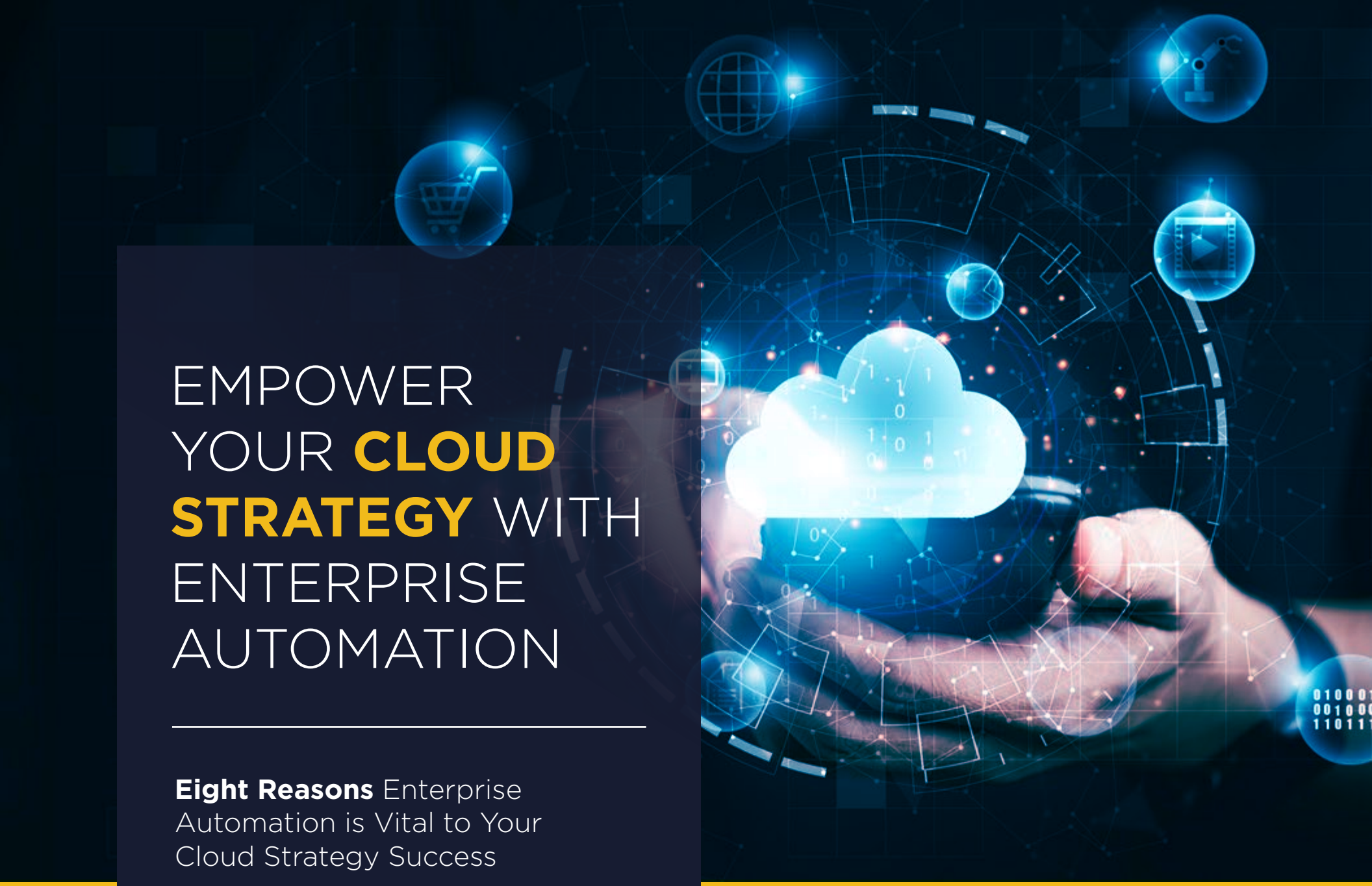

EMPOWER YOUR **CLOUD STRATEGY** WITH ENTERPRISE AUTOMATION

Eight Reasons Enterprise Automation is Vital to Your Cloud Strategy Success

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Executive Summary

The forecast is cloudy. As your digital-first strategy flourishes, more and more services are being conducted in the cloud. Moving major legacy systems to the cloud and digitally transforming key processes imposes radical change to both legacy systems and the underlying infrastructure management tools used by developers and IT operations.

Automation is especially vital to success. Every cloud provider offers an integrated automation solution: Regardless of the service, AWS Batch, Azure Scheduler, Google Workflow, Composer, Azure Logic Apps, Apache Airflow, or any of the other myriad of cloud-based automation add-ons enable organizations to schedule workload.

Here's the problem. These environment-specific cloud schedulers manage many of the basic functions required, but they are not as full-featured as enterprise-class workload automation solutions.

Moreover, the use of multiple different schedulers can quickly result in a proliferation of point solutions that lack integration and DevOps support – resulting in the familiar and thorny 'islands of automation'.

To compound the situation, these individual schedulers do not provide a holistic view of automation, including processing dependencies and outcomes.

Even everyday tasks are either lacking altogether or inadequate, whether it is responding to ad-hoc delays in process from the business, suspending processing, point of failure recovery, critical path, or service level delivery.

The bottom line? Blindly adopting these disparate, ad hoc cloud automation services can increase cost of operation, degrade service delivery, and potentially undermine compliance.

This Broadcom eBook explores the automation challenges created by cloud computing and digital transformation projects. It also reveals how an enterprise automation strategy provides a single control point for all processing including the clouds, enabling you to visualize and manage complex workloads – and ultimately drive faster digital success.

The aim of adopting an open cloud strategy is to enable business services to be executed across any of the chosen providers, eliminate vendor lock-in, and ensure emerging technologies can be embraced quickly.

Introduction

The cloud is fast becoming the platform of choice to power almost every enterprise application. Whether it is public, private or hybrid clouds, from enterprise resource planning (ERP) and customer relationship management (CRM), to emerging artificial intelligence (AI)-based services and everything in between, the cloud offers flexibility, security, and low total cost of ownership.

However, that success it not without its challenges. Automation in all its forms is critical to successful service delivery and delivering operational excellence.

As we embrace cloud strategies, we must think about how our automation policies will be impacted – not only how to maintain the quality of service delivered but how that can be optimised.

In order to achieve successful cloud adoption there are many challenges that organizations need to focus on.

1. Maintain Visibility
2. Safeguard Operational Control
3. Be Cloud Agnostic
4. Ensure Business and IT Service Levels are Met
5. Manage a Multi-Cloud Environment
6. Enable the Business with Self-Service
7. Control Consumption of Cloud (IaaS)
8. Maintain Security, Governance and Compliance

This paper highlights each of these areas in turn, and demonstrates how enterprise automation enables a successful cloud strategy.

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Abstracting away the individual cloud providers' capabilities creates an efficient operational model that delivers high-quality services with incredible agility – and avoids long-term cloud vendor lock-in.

1 Maintain Visibility

Reliance on point automation solutions from individual cloud providers results in 'islands of automation': disconnected business processing and IT operations silos. This fragmented visibility lowers operational efficiency and increases risk.

The single pane of glass provides comprehensive end-to-end visibility. This unified business process visibility has become so familiar we take it for granted. However, as we embrace hybrid and multi-cloud operations, that single, complete view can easily disappear.

As we deploy different cloud providers, we typically accept their automation capability as the default position. After all, it's easy to implement and is either free or less expensive than a dedicated enterprise automation solution. We think we're making a smart move.

Except it's not. That dedicated cloud automation service only provides sufficient functionality to get the process running. You will be able to see a screen with a particular process running – but not a lot more. These views are basic, showing the steps that need to execute but nothing about what service delivery is expected: Is it late? Has it started? When does the business require it? How do you suspend the process? These questions are difficult to answer in the heat of IT operations.

Point solution automation tools create islands of automation, disrupting visibility and offering a fragmented, disconnected picture of your automation. Operations teams are working with their hands tied, constantly scanning multiple screens to understand every scenario.

As we spread processing across an ever-increasing number of platforms and providers, this ability to rapidly visualize the current situation is more critical than ever. Failure here will result in an increased cost of operations, more late deliveries causing business outages, and reputational damage to operations.

AutoSys provides a unified console that provides consistent operational controls to manage in-flight workload. This uniform way to design and monitor jobs and workflows reduces the cost of operations and allows you to improve service delivery.

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88%

agree or strongly agree that their business would benefit from a more centralized view of automation

— The Great Scheduler Migration[1]

1 The Great Scheduler Migration, Enterprise Management Associates® (EMA) 2019

2 Safeguard Operational Control

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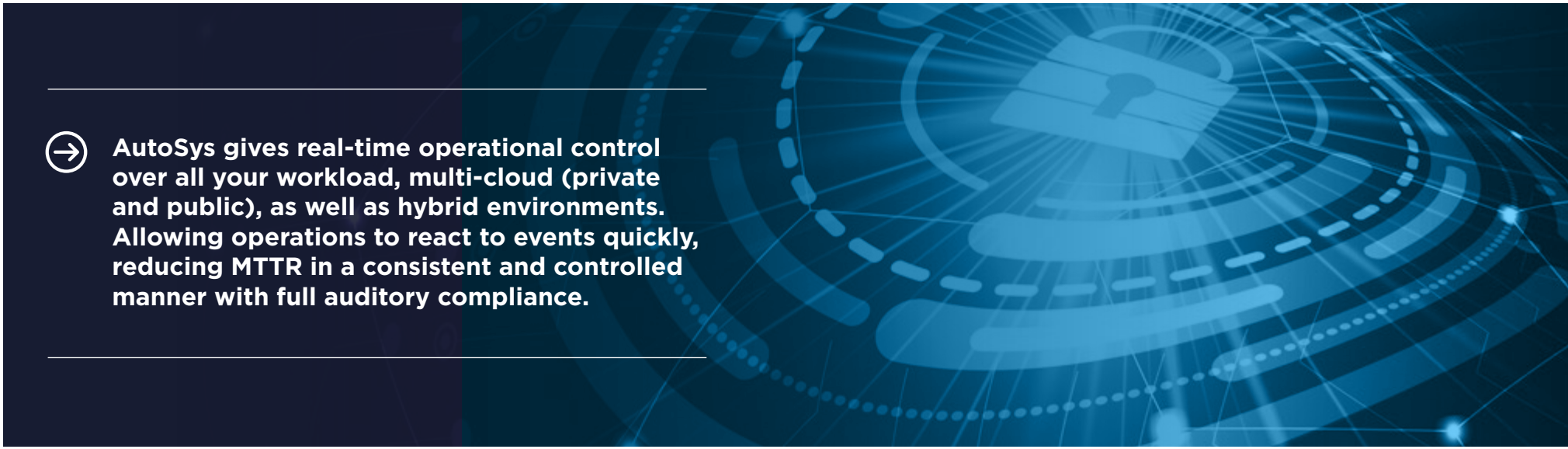
No schedule is static. The larger your operational footprint, the more you need to safeguard complete, agile command and control in support of the business.

One of the most familiar maxims to anyone in operations is this: change is fast and constant. Whether it is the daily requests from the business to suspend or delay processing, or the regular changes to schedules needed to support business operations, change is fluid and unpredictable.

As we embrace cloud services, we need to maintain operational control, retaining the capability to stage changes to scheduling, test, and see the impact before promoting those changes into production. Moreover, we need to react to the varying needs of the business, such as suspending a specific process, placing it on hold, or manually releasing processing as the status demands. A failure in any area here and the consequences to the business are significant.

The difficulty is that the operational functionality offered by cloud providers is basic and dedicated to their domain: they simply supply a cloud service and provide a basic means for it to be executed. Ultimately, business automation is not their specialism.

It is vital therefore that operations retains complete command and control of the end-to-end processing. Failure to do so can quickly result is diminished service performance, service disruption, and the resulting dramatic spike in operational expenses.



AutoSys gives real-time operational control over all your workload, multi-cloud (private and public), as well as hybrid environments. Allowing operations to react to events quickly, reducing MTTR in a consistent and controlled manner with full auditory compliance.

3 Be Cloud Agnostic

Portability of services operating in the cloud is essential. To enable the seamless transfer of workloads, your automation capability must be abstracted to enable frictionless movement between providers.

No cloud provider wants you to move your processing, but it should be a critical consideration for you and your organization. Reliance on individual cloud providers enforces vendor lock-in and diminishes the flexibility to switch between vendors as price or functional value shifts. Moreover, no-one can be certain the vendor we choose today will remain 'best-in-class' next year, let alone next month.

The ultimate aim of adopting an open cloud strategy is to enable business services to be executed across any of the chosen providers, eliminate vendor lock-in, and ensure emerging technologies can be embraced quickly, even allowing for seamless vendor switching.

Often the only way to cause execution is through the automation facilities of your cloud provider. These solutions provide an open API to integrate their processing. By abstracting the API to the cloud provider's automation technology, you can absorb future cloud solutions by changing that abstraction and not rebuilding your processing from scratch.

From a business perspective, you execute the same workflow – and that workflow integrates to each cloud provider's automation platform. With this approach, automation does not change when you move a service between providers.

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Why companies use multiple public cloud infrastructure(IaaS) providers:

Improving Availability	37%
Avoiding Lock-in	25%
Selecting Best-of-Breed capabilities	34%
Satisfying compliance requirements	34%
Improving competitive pressure in negotiations	26%

— Gartner[2]

AutoSys enables you to abstract the various cloud providers APIs establishing a consistent workflow. The process remains constant when switching to another cloud provider; AutoSys manages the different API calls from the new vendor.

2 Gartner©, Emerging Technology and Trends: The Future of Cloud Will Be Dictated By Customers, Ed Anderson , Michael Warrilow, June 30, 2021

4 Ensure Business and IT Service Levels are Met

You have invested heavily in defining, managing, and improving the service we deliver to the business. SLAs help ensure that reliable, predictable delivery and that must be maintained.

As processing is moved to the cloud or combined with on-premises and cloud services, your SLAs are sacred. They define the level of service you expect, laying out the metrics by which service is measured, as well as remedies or penalties should agreed-upon service levels not be achieved. It is a critical component of any cloud contract.

If processing is segmented into distinct cloud vendor automation platforms, there is no central point of control, no critical path across the process, jeopardizing the ability to maintain or improve our SLAs.

With business processes increasingly made up of tasks that have dependencies across legacy on-premises, SaaS and hybrid, public/private cloud infrastructures, it is even more critical to have end-to-end monitoring and visibility into SLA delivery that impacts the business.

It is not just a matter of recording SLA delivery either. Operations needs the advanced mechanisms to predict outcomes and alert the team to risks in delivering services, allowing sufficient time to enact a resolution before the business is impacted.

Automic Automation Intelligence complements AutoSys by providing predictive SLA monitoring and critical path analytics for mission-critical business processing. Machine Learning techniques applied across all your workloads give the time to resolve issues before impacting the business. Improve servicing delivery, decrease SLA breaches and reduce the cost of operations by being proactive.

3 IT Infrastructure Tools' Disruption in the Wake of Digital Transformation and Application Modernization, Enterprise Management Associates® (EMA) 2020

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61%

Agree or Strongly Agree that the number of scheduling problems and outages directly affecting business outcomes is increasing

— EMA[3]

5 Manage a Hybrid & Multi Cloud Environment

If your strategic intent is to implement a multi-cloud strategy, you should anticipate a multiplying impact on your operations.

Many companies are embracing multi-cloud strategies – using multiple public and/or private clouds to avoid lock-in, minimize expenses, and optimize performance. According to recent research, 76% of respondents indicate they already use multiple cloud provider.

When it comes to automation, however, this multiplicity of cloud environments multiples the risk factors affecting success.

It is critical to maintain the transportability of services between cloud providers while simultaneously enabling the seamless adoption of new cloud providers as they enter the market. This can only be accomplished by using enterprise automation to abstract away the specific cloud vendors integration points.

As outlined earlier, each cloud vendor provides sufficient functionality to run the processing in their cloud. Using this siloed approach, very little industrialized operational control exists and integrating to other cloud providers is manual – you have to build the bridges. This is complex, expensive, and time-consuming, as you need to build an enterprise solution on top of the basic facilities provided.

Enterprise visibility becomes a major challenge in a multi-cloud environment. Unchecked cloud growth can quickly result in fragmented automation services, spiralling cost of operation, and a significant drag on your quality of service.

AutoSys provides an expanding set of capabilities to integrate with cloud-based applications and services and a dedicated web service job type that allows you to integrate with any web service. Combining different processing environments, like cloud and on-premise, into a cohesive stream provides unified design and monitoring.

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Gartner's 2020 Cloud End-User Buyer Survey,

76%

of respondents indicated they use multiple cloud providers.

— Gartner[4]

4 Gartner©, Emerging Technology and Trends: The Future of Cloud Will Be Dictated By Customers, Ed Anderson , Michael Warrilow, June 30, 2021

6 Enable the Business with Self-Service

You do not want to constrain the consumption of cloud services, but you do need to keep sprawl under control. The answer lies in self-service.

Our business users are consumers; they expect the same level of speed that they experience in their everyday life. It falls on the shoulders of IT operations to manage that complex expectation.

Each cloud provider has different entry points to their technology. For business efficiency and to maximize value, you need to publish a common access point (or self-service) to the business. At the same time you have to maintain technical consistency, corporate policies, and audit and compliance rules.

The users in your organization cannot maintain detailed knowledge of each cloud provider's way to do something, whether it is to run this report or provision this server.

To enable that level of self-service you need an enterprise orchestration solution that can support the delivery of reusable, object-oriented, and parameterized process flows. Assembled by your domain experts and published to your user community for consumption.

By adopting self-service, you can maintain standards: what the user instigates is what IT has mandated should happen and all actions are consistent and audit ready.

AutoSys provides the ability for IT and business teams to integrate into service desk and ITSM tools. With granular role-based security, you can be confident you have the flexibility needed to allow self-service without sacrificing compliance or audit.

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Drive collaboration across business and IT teams by democratizing access to automation through self-service automation capabilities.

— Gartner[5]

5 Gartner©, Market Guide for Service Orchestration and Automation Platforms, Manjunath Bhat, Daniel Betts, Hassan Ennaciri, Chris Saunderson, August 10, 2021

7 Control Consumption of Cloud (IaaS)

Infrastructure is the heartbeat of every organization's cloud strategy: the ability to rent computing power and direct it at speed to benefit the business.

It's getting cloudy everywhere. From supporting everyday critical business demands, through to development, testing and everything in between, almost every organization is consuming the elastic nature of the cloud in ever-greater volumes.

All cloud providers supply an easy-to-use portal to manage this demand, whether it is to spin up servers or provide insights into usage. Of course, it's in their interests to do this, as it forms the basis for the bill each month.

Educating staff on how to use this portal is not particularly challenging. What is difficult is having the processes in place for those same people to take down what they no longer need, to have a record of what they requested and why.

These services are but a RESTful web service call away. By incorporating them into your enterprise automation, you can provide self-service facilities for any approved user to request.

The experts still determine your standards, and the automation policy you define can include the decommissioning cycle. Moreover, you can define placement based on your rules, using lower-cost cloud providers for development but real-world platforms for performance testing.

The bottom line? Opening the cloud account to a broad, uncontrolled set of people quickly leads to significant waste and ever-increasing monthly cloud costs.

AutoSys allows your IT experts to define the standard life-cycle of infrastructure and then deploy this by providing user templates and well defined security controls to the company. Guaranteeing a consistent consumption of cloud services that includes de-provisioning to manage costs.

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Ease of cloud service provisioning: The easy access to point-and-click web consoles and APIs in absence of capacity constraints can lead to "resource sprawl" and, consequently, unexpected charges.

— Gartner[6]

6 Gartner®, Solution Path for Implementing a Public Cloud Adoption Framework , Elias Khnaser, Douglas Toombs, May 6, 2021

8 Maintain Security, Governance and Compliance

Traceability is essential in our business. Understanding who did what, where, and when is critical to proving compliance and avoiding an unpleasant 'chat' with the regulatory authorities.

Granular role-based access control over who can do what and where is a great start for a compliance strategy. However, the information concerning governance and compliance in every execution needs to be centralized. Who was involved in its execution, for example, when did it happen, and what was the outcome? Without consolidation, we lose the solid foundation of our governance and auditory compliance submissions.

With each cloud provider holding audit and compliance information locally, often in insecure formats like log files, we're back to the familiar 'islands of automation' scenario. You will need to create bespoke processes to centralize insights when using the cloud provider's automation service. This includes execution statistics, logs, access rights, and human interactions with the jobs.

It could take days or even weeks to assemble everything required for audit and governance control. Even then, auditors may be concerned that the insights were correlated manually and not collected at source. By contrast, enterprise automation automatically centralizes these routines. It's responsible for requesting the execution and is therefore the point of audit. Enterprise automation will also recover and record job outputs and human interactions with the job as part of standard processing.

AutoSys central repository stores the activities and outcomes of all automation, combined with granular role-based access controls providing the traceability required for audit and compliance across on-premises and private and public cloud environments.

7 The Great Scheduler Migration, Enterprise Management Associates® (EMA) 2019

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32%

of companies experienced audit and compliance concerns using non-WLA point automation tools

— The Great Scheduler Migration[7]

WITH AUTOSYS YOU GAIN

- One place to monitor and control all your workload
- Secure role based access with centralized audit, compliance and reporting
- Predictive analytics for all your workload to improve SLA delivery
- Intelligent alerting and dynamic critical path to reduce MTTR
- Increased Operations efficiency reducing cost of operation
- Reduced time to market to absorb new technologies

Drawing It All Together

Basic scheduling services supplied by a cloud provider may not appear as a line item on the invoice, but there will be a price to pay for both operations and the business.

Cloud is the future for all organizations. It is the cornerstone for innovation, customer experience, cost control, and much more. Your ability to continue delivering high-quality services to the business depends on managing automation in this hybrid world. Do it right and you can embrace new technologies with incredible agility and drive both top and bottom-line growth in your organization.

Whether it is AWS Batch, Azure Scheduler, Google Workflow, Composer, Azure Logic Apps, Apache Airflow, or any of the other myriad of cloud-based automation add-ons, there is a cost implication from choosing a basic scheduling service from a cloud provider. What may first appear as 'free' may, in reality, prove to be an expensive mistake.

While every cloud provider provides basic functions to automate their technology, these islands of automation fragment the operational view, ultimately increasing the lag time in adopting new technologies. The increased cost of operation through reduced visibility and restricted command and control is one area many people understand. But the broader business cost of missing SLAs through the fragmented execution of workload across the estate will typically result in significant unnecessary cost.

The problems with relying on cloud providers' scheduling services don't end there. Building the connection points between applications in the cloud is time-consuming and denies resources to other critical areas of operation. The connection we create is often built for success. When anything unusual happens – causing these bridges to fail – we ultimately deliver the wrong result to business, magnifying the cost.

One final drawback: The cost of re-establishing the security, audit and compliance aspects of our operations is high. By contrast, using enterprise automation to automate cloud processing maintains a solid foundation for operational excellence, eliminates disconnected business processing, and enables a gradual transition to the cloud(s).

Abstracting away the individual cloud providers' automation capability creates an efficient operational model that delivers high-quality services with incredible agility – and avoids long-term cloud vendor lock-in. Indeed, the use of service orchestration and automation platforms creates a solid foundation for the future of your IT operations.

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