Flux7

Driving Agility through IT Process Automation:
Challenges & Opportunities for Real Business Impact

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As CIOs lead the charge in digital transformation, agility, and automation, they can be the driving force behind tomorrow's innovation engine. Challenged with a growing skills gap, automation allows organizations to do more with less, better supporting business units that have themselves become automated. For CIOs looking to spearhead their organization's digital transformation, it increasingly means creating agility for their organizations through IT process automation in order to facilitate change at the pace of business.

Yet, the implications of this are vast for enterprises, as automation touches everything from technology, to IT processes and even the corporate culture. As boards of directors challenge CIOs to balance security, risk and resources with an open approach to digital business, automation becomes integral to solving today's business challenges while keeping an eye on tomorrow's opportunities.

Automation Isn't New, It's Evolving

Many people critique a renewed focus on automation, saying it has been around as long as IT itself has existed as a function -- or even longer, pointing back to Henry Ford and the assembly line. While automation itself may not be new, today's IT automation offers new and exciting ways to drive digital transformation that impacts business innovation and revenue-generating activities.

I'll explain using an anecdote about the "A-Enter Guy". This story comes to us from a former colleague of mine who worked at a previous employer with a person they called the "A-Enter Guy," a person whose job it was to walk into a room full of computers every morning, go to the first computer, type a command and press enter. He'd then go to the second computer and type the same command and press enter, until he'd gone through the entire room; to reach every computer would consume his entire day. To make himself a little more efficient, he aliased the command to the letter "A". So, rather than typing a full command and enter for each computer, he needed only type "A" and enter. Hence he became known as the "A-Enter Guy".

With new levels of sophistication in automation and digital transformation, CIOs are able to transform "A-Enter Guys", using their ingenuity for much more strategic, business-impacting work. Truly, there really is no need for human resources to be spent on something that's so streamlined and so easy to automate like copying files over from one computer to the next. These things can be fully automated, to the Nth degree, freeing the organization to focus on innovation and agility, instead of manual, rote tasks.

Technology won't stop providing mechanisms for automation, either. By jumping in now and beginning to automate key processes, CIOs will tee up their organizations to more easily take advantage of future automation opportunities. For example. as automation evolves, I believe we will start to see the use of artificial intelligence inside of IT processes themselves, being able to

detect what may have gone wrong and autoheal when needed. This will go beyond rule-based automation in IT. Be on the lookout for this level of automation within the next two or three years as it will transform how you run IT operations in the future.

IT Process Automation

While the world of IT Automation can be a big and broad topic, knowing where to start to reap the biggest dividends is important. Starting with the four core areas highlighted below will enable you to quickly integrate automation that will help rid your organization of technical debt while creating a positive cycle where teams are freed from manual tasks and able to deliver more and more strategic, business-impacting work.

1. Infrastructure as Code

Automate provisioning of new virtual machines, and everything below them with components, containers and templates. Managing systems with IaC not only eradicates human error -- and the downtime and problem resolution investment that comes with it -- but also allows you to make infrastructure changes quickly, easily, and safely. Many organizations are able to reduce provisioning times from days to minutes, while keeping developers hard at work as they no longer need to wait in queue for system resources to be spun up for them.

For example, Flux7 recently worked with a quick serve restaurant (QSR) where we helped them develop a service catalog offering where the data analytics team could -- with a single click -- spin up a data analytics cluster. The Flux7 team created a form for the QSR with a drop down menu, then the analysts only needed to select the amount of compute and storage they needed, and with the press of a button, had a fully provisioned data warehouse. While this process formerly would have taken days, now within five minutes, the data analytics team could access and use the cluster, all thanks to IT automation.

2. CI/CD of Code

Orchestrate continuous integration and delivery for code pipelines, with streamlined, automated processes to speed software release. CI/CD of code enables the easy, efficient delivery of quality software while speeding time to market. It reduces the cost of failure, decreases iteration time and improves continuity, all of which serve to optimize developer resources, in turn reducing the need to attract and train new, skilled programmers.

An example of this type of automation is Flux7's work with Rent-A-Center, with whom we worked to host its ecommerce platform in the cloud. For this retailer, we automated more than just provisioning, we also automated the process of managing their platform. That is, when a new code release is to be deployed, it is now a fully automated, streamlined process that does CI/CD of code. The system is set up such that it can use rule-based

automation to auto-scale. For example, if the system is running with five virtual machines and more traffic shows up, the system auto-scales up to accommodate the need and scales down when traffic decreases. Similarly, if one of the nodes stops working, it can automatically trigger a replacement. This system directly impacts business revenue as it, for example, serviced more than nine million hits over Black Friday without missing a beat.

3. Configuration Management

Consistently establish the software prerequisites that enable code to run. Provision resources to meet application requirements. Healthy configuration management processes keep your systems in a known, good state, reducing security issues, and increasing agility as when you know the state of your systems, it's faster and easier to detect and repair any issues that may arise. Configuration management also has positive impacts to other disciplines, such as making change management more effective and enabling GRC controls for streamlined audits.

4. Automated Compliance Checks

Security is defined as code, providing continuous integration and delivery of security rules, increasing compliance and reducing risk. Automation can enable compliance to regulatory and security policy by automatically conducting security and audit checks on elements as they move through the system. Together, these automated checks provide continuous auditing, ensuring that systems are consistently in a known and secure state. In this way, organizations are able to easily show auditors their systems for continuous compliance, reducing manpower needed for audit prep while reducing reputation- harming security issues.

Assessment

IT teams are challenged to deliver resources in time for business units or other teams as they aren't able to provision the computing resources in a timely manner. In these cases, the question often is, 'how do we do something we are used to doing in four months and do it in four hours" (or even less sometimes)? The first step is an analysis. While organizations come in every stripe -- from those 100% on bare metal and not even using virtualization, to those far into their automation evolution and looking for help with the last mile -- a basic assessment of People, Process and Technology is an important first step.

The first question to ask is, "does the organization have to have a desire to transform and learn?" This is important because the function can't be outsourced (more on that in just one moment), therefore the team must have the appetite for change. If the answer to this primary question is 'yes', evaluate where your technical practices stand, where your processes are, and the training levels across your various staffers.

With these answers in hand, choose a training project to start. We highly recommend that the project:
- Accomplishes specific teaching goals, and is
- Business significant, moving the needle from a business standpoint, and
- Offers the opportunity to present results in the near-term, ideally between 8 to 12 weeks.

Agility Can't be Outsourced

Given organizational pressures and challenges, it may be tempting to pick up the phone and simply outsource IT. However, agility is something that organizations have to gain for themselves, so that through practice, they can transform themselves -- from Development to IT Operations and even Security. Moreover, as technology becomes closer and closer to the business, IT organizations are increasingly expected to contribute to business revenues, e.g. consider our RentACenter example and the infrastructure contribution to Black Friday success. And when something contributes to revenue, it's not something you outsource; you just don't outsource your cash cow.

Learning to be Agile

Teach by example is a good mantra to have when learning how to apply IT process automation and agility within the organization. At Flux7 we have a specialist in adult learning on staff, and one of the first things he taught us is that adults learn something best when they need it right away. If you teach them today, and they need it next month, there's not going to be much value in it as they are much less likely to remember it.

So, in much the same way you learn a new card game, by playing a few open hands at first, Flux7 recommends learning through project-based lessons. By tackling a project teamed with an expert or specialist, others in the organization can learn and, in hands-on learning situations, immediately apply what they've learned. At Flux7, we assign scrum teams, built with a mix of Flux7 engineers and engineers from the customer, and we work together daily on a project. In this scenario, the customer's engineer(s) complete the project with the guidance of Flux7 engineers so that they can illustrate they they understand the agile practice and can apply it to complete the task. We have found this approach to be more effective than classroom training or other curriculum approaches as the knowledge is immediately used and applied in real-world situations. For example, at the end of a project, we will often shrink processes from days to minutes, teaching the team how to maintain this level of effectiveness moving forward.

From speeding time-to-market, decreasing technical debt, and improving the customer experience, IT process improvement can make profound impacts, creating tomorrow's innovation engine. Are you interested in help assessing your organization's people, process and technology in order to drive digital transformation? Reach out to us today at sales@flux7.com.

About Flux7

As DevOps and AWS experts, Flux7 offers a suite of solutions that help organizations design, build, own and manage IT modernization projects. Focused on architecting and optimizing their clients' AWS infrastructure and training internal IT teams to manage their own infrastructure, Flux7 solutions are rooted in DevOps best practices. Flux7 has delivered hundreds of agile, right-sized projects to satisfied customers across industries, creating a well-architected core from which these business can own and expand their IT modernization.

For more information, please visit http://flux7.com.