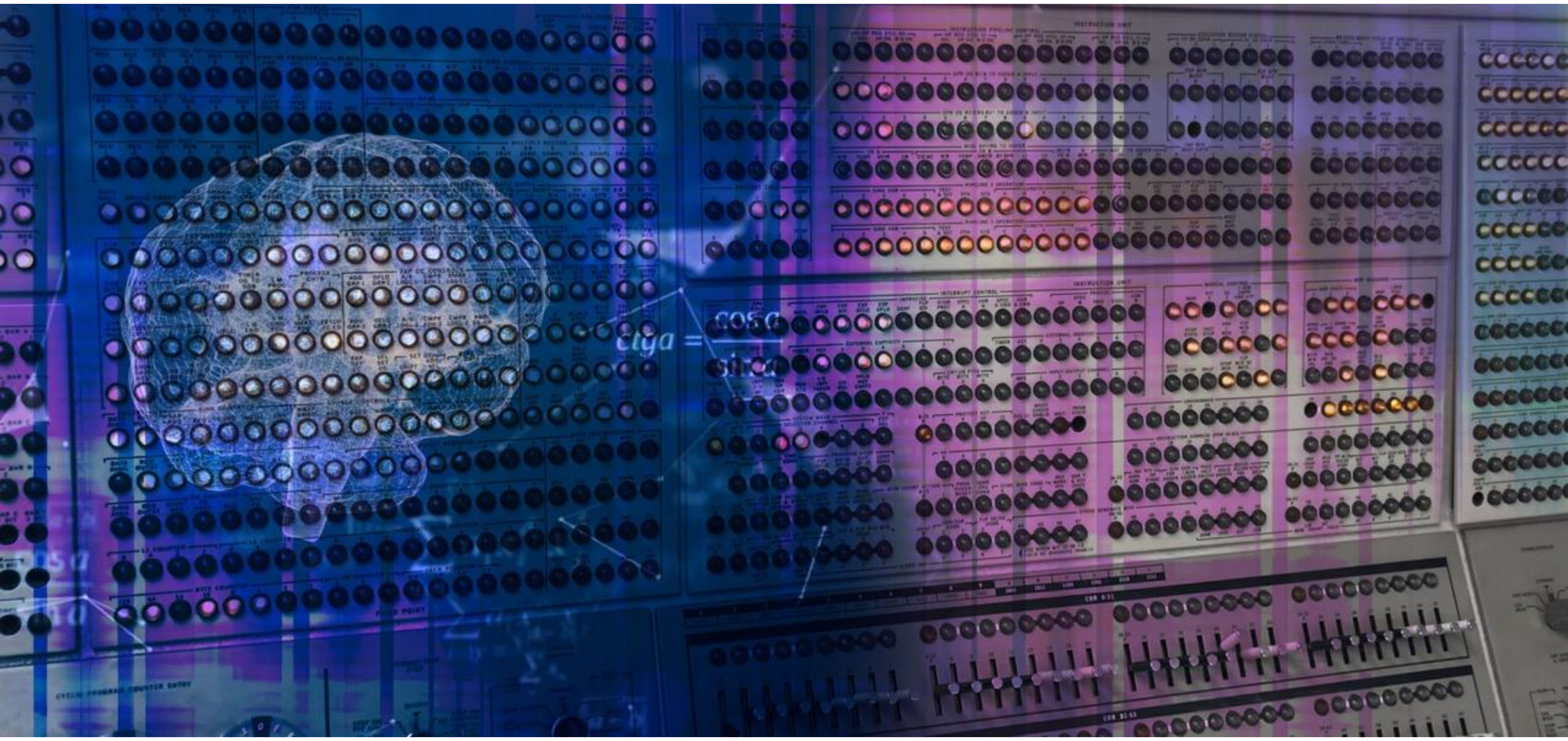


White Paper

The Myth of Autonomous Teams

Jason Bloomberg
President, Intellyx

July 2020

A small, crack team of software development professionals working autonomously, free from the burdens of bureaucracy, may be the perfect arrangement for startups and other small companies – but in large organizations, autonomous teams are largely a myth.

The challenge is governance: how can enterprises ensure multiple concurrent software projects properly coordinate and align with the business need, while maintaining strict compliance and security controls? And how can the organization achieve these priorities without slowing the teams down?

The multifaceted answer includes changes to how the organization handles people, process, and technology. Managers must become better leaders, providing the necessary governance constraints while empowering teams to adapt governance to each individual project need.

Automation technologies must also transform software development and governance processes, bringing speed, agility, and greater visibility to members of individual autonomous teams.

The goal of these efforts is achieving the business value the organization requires from its software. Managing the value streams that connect individual software development activities to these goals is critical to this effort.

As a result, Value Stream Management (VSM) is particularly important for balancing the adaptive governance that autonomous teams require in order to achieve the goals of the business, while simultaneously maintaining leadership's constraints – without slowing the software development effort down.

Don't all Teams Want to be Autonomous?

In 1943, the U.S. Army's Air Tactical Service Command (ATSC) made an unprecedented request of defense contractor Lockheed Martin: design and build the first US fighter jet. Furthermore, the jet had to be ready in a blisteringly fast 150 days.

To accomplish this monumental task, Lockheed Martin spun off an autonomous team: the original Skunk Works. This hand-picked, multifunctional group of engineers and mechanics worked in secret, outside the traditional Lockheed bureaucracy.

Free from the red tape of a large organization, the team delivered the fighter seven days early. And the allies, of course, won the war.

Today, the Skunk Works has become legend, and the myth of autonomous teams continues in organizations of all sizes. Free up a team from conventional bureaucracy, especially the governance constraints that slow work down, and watch the magic – or so the story goes.

Today, the Skunk Works has become legend, and the myth of autonomous teams continues in organizations of all sizes. Free up a team from conventional bureaucracy, especially the governance constraints that slow work down, and watch the magic – or so the story goes.

Enterprise software development teams in particular aspire to bring a bit of Skunk Works magic to their efforts. Given the dynamic business environment for enterprise software – rapid market change, customer pressure, technology innovation, and more – working autonomously to provide Skunk Works-style time-to-value is an appealing prospect.

Nevertheless, autonomous teams in large organizations remain largely mythical.

Certainly, the Skunk Works' focus on delivering a product vs. running a project is a model for modern software development. Nevertheless, enterprise IT is a complex, multifaceted beast that must keep the entire organization running, maintain adequate security and compliance, and simultaneously meet key performance indicators like profitability and customer satisfaction.

Is there any hope for autonomy in such a world?

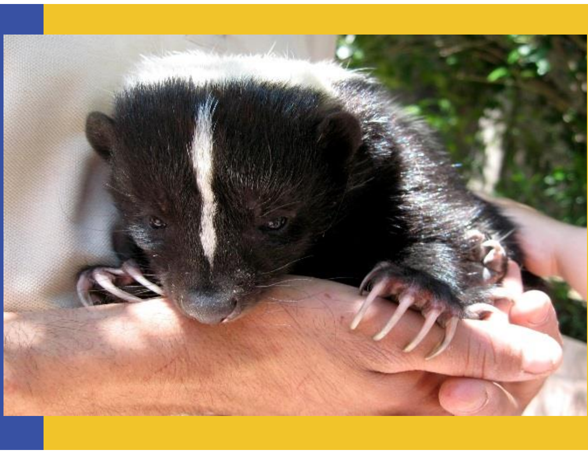
Are Autonomy and Governance at Odds?

Lockheed Martin's Skunk Works team physically isolated themselves from the rest of their organization, limiting all interactions with the top brass and everyone else.

Such isolation is generally unrealistic in an enterprise scenario. On the contrary, scaled out enterprise development efforts involve multiple multifunctional teams working simultaneously, pulling from a common set of human and technical resources – difficult to accomplish in isolation, even in the work-from-home era.

Appropriate governance and coordination are also necessary to keep multiple teams from devolving into chaos. Their efforts must all align with the goals of the organization, while playing by the same security and compliance rules.

Traditional approaches to IT governance that are top-down, uniform, and inflexible are able to keep a multi-team effort aligned with these goals, but at substantial cost: such governance slows everything and everyone down. We can call this effect the *governance bottleneck*.



Traditional approaches to IT governance that are top-down, uniform, and inflexible are able to keep a multi-team effort aligned with these goals, but at substantial cost: such governance slows everything and everyone down. We can call this effect the *governance bottleneck*.

The solution to this bottleneck is to rethink how enterprises approach IT governance. They must provide sufficient guardrails to ensure teams align with the goals of the organization while simultaneously encouraging autonomy within individual teams.

Such a broad rethink of governance impacts all aspects of the IT organization across people, process, and technology.

Executive management is the starting point for such change. Managers must recast themselves as leaders, pushing decision making down into the teams while simultaneously focusing on ensuring those teams have the resources they require.

Such leadership requires relinquishment of traditional bureaucratic control – especially in terms of governance. Such relinquishment is a tall order, but done correctly, the result is an adaptive approach to governance.

No one approach to governance fits all situations. Instead, governance must adapt to the circumstances that individual teams face – while still providing the guardrails that keep all teams on track.

The Gateway to Effective Autonomy: Automation

Changing leadership styles is only part of the equation, however. Process and technology are every bit as important.

In large organizations, especially when multiple teams work in parallel, organizational and system dependencies create numerous bottlenecks to efficient operations, as one team inevitably waits for another to complete its work.

Dependency management, especially in software change and release processes, is a particular area ripe for innovation. In fact, automation – shifting the responsibility for processes from people to technology – is the missing element necessary for resolving such dependencies.

The secret is to resolve dependencies while simultaneously providing teams with autonomy, thus offering a solution to the governance bottleneck.

Whenever a traditionally manual IT governance task threatens to slow down an autonomous team, automate the task. Automating governance by embedding governance tasks directly into the software development workflow eliminates delays and remove onerous activities engineers may need to perform.

Managing the Software Value Stream

This automated approach to governance frees autonomous teams to be nimble, so that they can deliver value to customers, while simultaneously managing the risk of accelerating software delivery.

Automated governance is essential to managing the software value stream. Such value streams comprise every activity across the software lifecycle necessary to deliver software products and services to customers. The greater the value of software to customers, the greater its value to the business overall.

Value Stream Management (VSM) is particularly useful when organizations are looking to resolve the challenges inherent in scaling autonomous teams within the context of enterprise software deployment. In essence, VSM points toward what's important – customer value – at every step in the software lifecycle.

Value Stream Management (VSM) is particularly useful when organizations are looking to resolve the challenges inherent in scaling autonomous teams within the context of enterprise software deployment. In essence, VSM points toward what's important – customer value – at every step in the software lifecycle.

VSM depends upon two core capabilities: *measurement* and *automation*. Following Peter Drucker's "you can't manage what you can't measure" motto, VSM provides the visibility all participants in the software value stream require in order to determine if a particular action will move the project at hand toward its business goal, or whether it's a wasted effort – one that might even lead the project away from customer value.

VSM then empowers each team to leverage automation as appropriate to achieve the business goals. Automation in isolation might very well lead an organization astray – after all, automating a poor process simply means the poor process runs more quickly. With VSM, in contrast, the team is able to determine which automations will move the project forward.

VSM also provides visibility into software metrics across teams. Such cross-cutting visibility clearly empowers leaders to manage the overall software effort – but it also gives members of individual autonomous teams the information they require to coordinate their efforts with parallel efforts from other teams.

For teams to be autonomous, especially in large organizations, the individuals on those teams require access to the right tools to do their jobs and the ability to use those tools to align with the business goals of their efforts.

Value Stream Management and Adaptive Governance

VSM not only provides the automation necessary to accelerate the software lifecycle; it also provides the visibility necessary for autonomous teams to make the right decisions – without the need for the bottleneck of bureaucratic governance.

Perhaps the most confusing part of this transformation is the revamping of IT governance necessary to achieve the goals of the business. How can we forego traditional, bureaucratic governance without increasing the risk of compliance breaches, security vulnerabilities, or poor quality software?

The answer is to understand that governance should be more bottom-up than top-down.

Leadership delineates the proper constraints for the software development organization, but then gets out of the way. Individual, autonomous teams then take up the governance mantel, leveraging VSM and other automated software development technologies to ensure they are complying with leadership's constraints while the individual software efforts align with the goals of business value.

Following this bottom-up approach leads to inherently adaptive governance, as each team may end up taking a different approach for achieving its goals given the specifics of the project at hand.

After all, some software projects are more mission-critical than others. Some are more dynamic. Some are customer-facing while others are employee-facing. Many software efforts have web and mobile interfaces, but others do not. Who best to understand the specifics of these differences in requirements than the individual teams themselves?

Leveraging VSM, teams can adapt governance requirements to their workflow while ensuring they meet requirements before moving forward through each stage of the pipeline.

In this way, teams can adapt governance to the particulars of each individual project by leveraging automation and a common set of metrics that help autonomous teams coordinate and collaborate with each other to align with common goals and business value – no bureaucracy required.

The Intellyx Take: The Real Value of Autonomy

Enterprise leaders need the value that autonomous teams provide — but the value isn't solely in their autonomy, it's in their speed and agility. If anything, the priorities of DevOps and other modern application development practices place the role of autonomy into the greater context of collaboration, empowerment, and business value.

Fundamentally, today's enterprise software teams may aspire to autonomy, but they are nevertheless not Skunk Works efforts. While a fighter jet is a discrete deliverable that functions on its own, the same cannot be said for enterprise software.

Given the broad hybrid context of modern enterprise IT, no application works in isolation. Instead, the enterprise software landscape consists of a complex, interconnected mesh of capabilities – capabilities that are always in flux.

Autonomy does play a role in this modern software landscape – but only within the proper constraints of governance and VSM overall. The good news: we are able to strike a balance between oppressive, bureaucratic governance on the one hand and chaotic, uncontrolled software delivery on the other.

The dichotomy between these two extremes is a false choice – and the power of VSM tools like Plutora drive the speed and agility that balancing autonomy and adaptive governance bring to the enterprise software initiative.

About the Author: Jason Bloomberg

Jason Bloomberg is a leading IT industry analyst, author, keynote speaker, and globally recognized expert on multiple disruptive trends in enterprise technology and digital transformation.

He is founder and president of Digital Transformation analyst firm Intellyx. He is ranked #5 on Thinkers360's Top 50 Global Thought Leaders and Influencers on Cloud Computing for 2020, among the top low-code analysts on the Influencer50 Low-Code50 Study for 2019, #5 on Onalytica's list of top Digital Transformation influencers for 2018, and #15 on Jax's list of top DevOps influencers for 2017.

Mr. Bloomberg is the author or coauthor of five books, including *Low-Code for Dummies*, published in October 2019.

About Plutora

Plutora, the market leader of value stream management solutions for enterprise IT improves the speed and quality of software development by capturing, visualizing, and analyzing metrics throughout the delivery process. Plutora manages and orchestrates releases across mixed methodologies, manages hybrid test environments, and manages go-live events. The Plutora Platform ensures organizational alignment of software development with business strategy with complete visibility, control, and contextual analytics, guiding continuous improvement through the measured outcomes of each effort.

Website: www.plutora.com