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STATE OF **SOFTWARE DELIVERY MANAGEMENT** REPORT **2020**

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ABOUT THE AUTHOR

Sanjeev Sharma is a co-founder and Principal Analyst at Accelerated Strategies Group. He focuses on DevOps, Application Modernization, DataOps, and Cloud Adoption. Sanjeev is a practitioner by trade, and has served as Distinguished Engineer and CTO of DevOps Adoption at IBM and Field CTO at Delphix. He is the author of two best-selling books – DevOps For Dummies, IBM Edition, and The DevOps Adoption Playbook. Sanjeev is a sought-after analyst, advisor and consultant who works with senior executives leading large scale transformations and speaks often at technology conferences and online events. He also writes a popular blog (*http://sdarchitect.blog*).

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ABOUT THIS REPORT

This report, commissioned by CloudBees, is based on extensive research conducted by Accelerated Strategies Group to assess the current state of Software Delivery Management (SDM) and examine the impact of SDM adoption as a strategy. Accelerated Strategies Group fielded a survey and conducted one-on-one interviews with key industry leaders and experts to gather and further refine the data on which this report is based.

ABOUT ACCELERATED STRATEGIES GROUP

ACCELERATED STRATEGIES GROUP is out to democratize access to industry expertise and knowledge. Our expert analysts leverage their experience-based knowledge to deliver insightful, intelligent, and actionable information about digital transformation, DevOps, cloud-native and cybersecurity to IT and product organizations. Like open source software, we widely share our work products for free because we believe **Knowledge Wants To Be Free.**

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EXECUTIVE SUMMARY

THE ABILITY TO effectively and efficiently deliver software is a prerequisite for business success today. Organizations leverage software to deliver not just core business value to users and customers, but also as a mechanism to disrupt markets, compete for new customers and develop new revenue streams.

The ability to deliver high-quality software in a timely and cost-effective manner is not, however, a competency for most organizations. Most struggle with lean and efficient Software Delivery Management (SDM), primarily because of the sheer size and complexity of applications and systems, developed by distributed teams, leveraging multiple technology stacks, across poorly integrated, but highly interdependent application delivery pipelines. This complexity impedes agility and results in a lack of visibility into the application delivery pipelines and the work being delivered by practitioners. This, in turn, results in organizational leadership making investments into software delivery without the insights they need to make data-driven decisions.

In order to understand the current state of SDM in the industry, Accelerated Strategies Group conducted a research study surveying software delivery practitioners, leaders, and executives across the industry. This report presents the findings of the research, and the inferences and recommendations Accelerated Strategies Group has concluded from the data gathered.

SDM is still a new approach. Its practices are still evolving and gaining traction. However, our findings from this research study make a strong case for increasing SDM adoption in organizations looking to enhance their ability to deliver software. SDM strategies address the key challenges we found most organizations struggling with, including their maturity, agility and their ability to react quickly to market changes and competitive pressures. SDM gives organizations the necessary tools to leverage software delivery to succeed with their own digital transformations.

The key challenges SDM can address and mitigate include, first and foremost, organizations' inability to properly quantify the impact of investments in software delivery. This results in businesses investing haphazardly, without a clear breakdown of where the investments were adding value, or where additional, targeted investments could fill gaps in their capabilities. ›››

EXECUTIVE SUMMARY, CONTINUED

The second key area SDM can address is enhancing the ability of software delivery teams to communicate and collaborate as they deliver software. Even a decade after the DevOps movement highlighted the negative impact of functional and organizational silos in organizations, our research found that a majority of the organizations still have such silos; silos severely impact the ability of practitioners and teams to collaborate and communicate at scale.

Finally, our research showed that SDM can provide end-to-end visibility into the value flow across application delivery pipelines and software supply chains. Teams, and in many cases, teams of teams of software development practitioners, collaborate to create and deliver software. These practitioners, their managers, and business leaders need visibility into the data and insights not just across their own projects' application delivery pipelines, but in most cases, across multiple pipelines and value streams, to better perform their jobs and to make data-driven decisions.

The root causes of these challenges range from organizational silos, to software tool sprawl, to a culture that does not foster communication and collaboration and free flow of data.

This report explores how SDM can help organizations more effectively and efficiently manage software delivery, and, based on the results of our research, provides evidence that adopting SDM strategies can help mitigate the challenges, and improve your organization's ability to deliver software in a lean and agile manner.

Many organizations face multiple interdependent supply chains and value streams, deployed across hybrid and multi-cloud environments, developed and deployed by distributed teams of software developers using a variety of technology stacks that get in the way of effective, efficient software delivery.

ORGANIZATIONS must pivot and adapt quickly to changing conditions; agility, or lack thereof, is the difference between success and failure. Today, organizations old and new are embracing a process of digital transformation to help them win, serve and retain their customers.

Truly disruptive organizations understand that agile software delivery pipelines are at the heart of their digital transformation. However, while some organizations may understand this in theory, in practice the situation looks very different for most.

Many organizations face multiple interdependent supply chains and value streams, deployed across hybrid and multi-cloud environments, developed and deployed by distributed teams of software developers using a variety of technology stacks that get in the way of effective, efficient software delivery.

The complexity of managing these multiple, concurrent supply chains and value streams as well as the software development practitioners themselves, creates the polar opposite of agility. Not only are businesses unable to qualify and quantify where and how value is delivered, they're unable to properly determine where to make tactical and strategic investments that could address the inefficiencies in their software delivery processes as a whole.

For decades, Agile methodologies have been adopted to counteract the inefficiencies and obstacles inherent in the software development process; a decade ago, DevOps promised to do the same for the development and operations teams. While these two approaches have enabled significant progress in making software delivery leaner and more efficient, there remain critical flaws and gaps in most organizations' ability to deliver software, from a technology and skills perspective as well as at the organizational level, within team modeling structures and on cultural fronts.

Accelerated Strategies Group conducted this primary research to assess the current state of the software delivery management at organizations across company size, industry, and geographic location.

DEFINITION

The definition of SDM has evolved over time, focusing on enhancing the ability of practitioners, and the businesses and organizations they work for, to deliver software applications and systems in a lean and efficient manner. The author of this paper has the following simplified definition of SDM:

Software Delivery Management
(**soft**•wɛər di•**liv**•ə•ri **mæn**•idʒ•mənt)

The set of aligned processes, practices, and organizational structures that allow all teams to have visibility, share information, and collaborate better. This results in the delivery of software applications and systems in a more effective and efficient way with predictability and definable business value.

– Sanjeev Sharma, Principal Analyst, Accelerated Strategies

WHAT IS SOFTWARE DELIVERY MANAGEMENT?

SOFTWARE DELIVERY must be a core competency for any organization or team responsible for delivering business value via software applications and systems. Regardless of the technology stack, development platform (cloud vs. on-premise), and level of customization (completely customized vs. packaged, off-the-shelf technology), the ability to deliver these applications and systems cost-effectively and efficiently, with well-defined success metrics and key performance indicators (KPIs), is a core goal of all software organizations.

Businesses' ability to deliver software is now a prerequisite to compete effectively in the market. Hence, organizations have made significant investments aimed at enhancing their ability to deliver software. Software Delivery Management (SDM) as a term has evolved over the last few years to describe and represent an organization's ability to streamline processes, enable tighter collaboration, and provide universal insights, through shared information, into all aspects of software delivery.

WHY IS SDM IMPORTANT?

A WELL-DEFINED SDM STRATEGY can address the major challenges faced by the software delivery practitioners, IT management, product stakeholders, and executive leadership. The respondents to the Accelerated Strategies Group survey extended across the entire spectrum of stakeholders. The respondents highlighted several critical challenges that could be alleviated with the adoption of SDM.

These findings are symptoms of a larger problem: organizations are still early on their journey to adopt SDM. Progressing on their SDM adoption journey can help organizations tackle all of these challenges and accelerate digital transformation by addressing:

1. Technology rationalization and modernization
2. Process improvement
3. Organizational change and
4. Cultural transformation.

65%
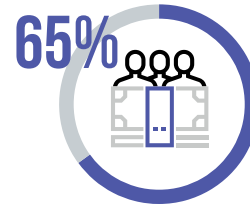
The significant majority (65%) of respondents are **unable to accurately quantify the cost** of feature delivery delays.

84%+
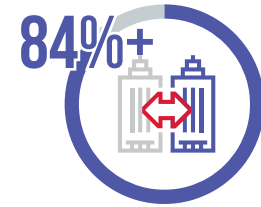
Organizational and functional silos **impede the free flow of information to practitioners and senior leadership.** More than 84% of respondents said the inaccessibility of information got in the way of their ability to do their jobs and/or make data-driven decisions.
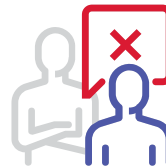
We found a **significant communication gap** between layers of management, indicating that information is not flowing vertically within organizations
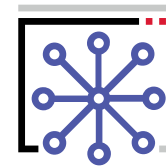
'Software sprawl' is rampant and also hinders data-driven decision making as multiple technology stacks, across multiple generations of technologies, remain in use across organizations. This also negatively impacts collaboration.
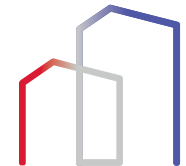
While the survey showed small organizations (1-99 employees) and large enterprises (5,000+ employees) have made progress implementing strategies to enhance the free flow of information across teams, **mid-sized companies' progress is not as evident.**

THE IMPACT OF SOFTWARE DELIVERY MANAGEMENT

WE HAVE SEEN EVIDENCE that many organizations have been able to tackle some of the facets of modern software delivery management, as evidenced by those listed here.

However, there is still a lot of room for improvement for most organizations, as they progress on adopting SDM strategies.

67%

A significant majority of organizations (67%) are able to **prioritize the development of features** based on expected business impact.

63%

Surprisingly, 63% of organizations today include **plans to 'promote and articulate' the value of new features** released to end-users.

61%

In addition, a majority of respondents (61%) said **SDM shortened lead time for feature delivery.** Lead time is a key metric for measuring the software delivery maturity of an organization, so this shows a positive impact.

HOW SOFTWARE DELIVERY MANAGEMENT CAN HELP

ADOPTING Software Delivery Management strategies addresses the gaps and inefficiencies in an organization's ability to deliver software.

Based on our research, we've identified three key strategies to help organizations increase their software delivery efficiency and effectiveness: organizations must quantify the impact of their investment in software delivery; organizations must enable software delivery teams to communicate and collaborate effectively and efficiently; and organizations must have end-to-end visibility into the value flow of their software delivery streams.
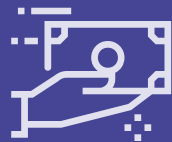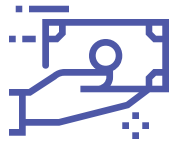
Quantify the impact of investment in software delivery

Capability of software delivery teams to communicate and collaborate

**End-to-end visibility into the value flow of software delivery streams**

QUANTIFY THE IMPACT OF INVESTMENT IN SOFTWARE DELIVERY

REGARDLESS OF ORGANIZATION SIZE, the research showed most software delivery teams are not able to quantify the impact of investments they have made to their ability to deliver software.

The inability to break down the costs of delivering software, the inability to quantify the monetary impact of software delivery delays, and the inability to trace the cost of defects to business impact all result in a lack of visibility into the software delivery value stream. Businesses are investing in software delivery without a clear understanding of where value is being added or subtracted. Without this information, they are unable to properly determine the benefits and/or drawbacks of past or future investments.

The ability to track what tasks developers spend time on – developing new features vs. fixing defects or retiring technical debt—is a key measure of the maturity of a team's ability to deliver software. It's also a measure of the maturity and quality of the software delivered itself. The research found that more than 50% of respondents do not compare developers' time spent on new feature development vs. time spent on retiring technical debt. Not being able to measure where your developer's time is being spent is, in and of itself, a blind spot that needs to be addressed.

Adopting effective SDM strategies addresses these issues, providing businesses the ability to effectively make decisions on where in the value stream to invest, and to quantify the impact of their investments.

50%+
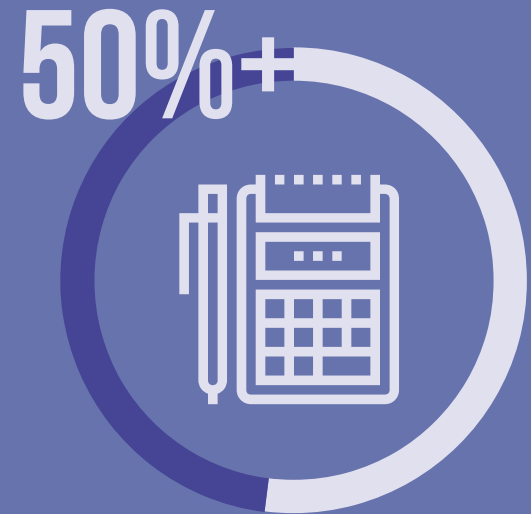
More than 50% of survey respondents

- Cannot break down the cost of application development by functional area.

- Are unable to accurately calculate the business impact of feature delays.

- Cannot measure the cost of defects found after release.

CAPABILITY OF SOFTWARE DELIVERY TEAMS TO COMMUNICATE AND COLLABORATE

SOFTWARE DELIVERY is a team sport. Teams, and teams of teams, distributed across geographies and time zones need to work together in small *squads* and larger *tribes* to deliver the distributed, complex systems that run modern businesses. SDM strategies facilitate this communication and collaboration of teams.

SDM can help organizations facilitate communication and collaboration across functional areas in software delivery pipelines, and across interdependent software delivery pipelines.

It's necessary for teams to work with development and delivery tools from across the spectrum of commercial and open source models, including SaaS. But that doesn't have to lead to sprawl or integration challenges; organizations should seek out best-of-breed suites and platforms that include vendor integration support and/or solutions that work seamlessly together out of the box.

Furthermore, SDM strategies can also transform organizational culture by introducing a joint sense of ownership and pride in delivering value, not just functionality, to end-users and customers.

60%+
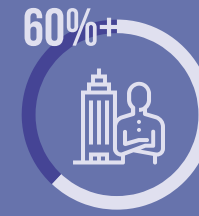
More than 60% of survey respondents said functional silos still exist in their organizations.

85%+
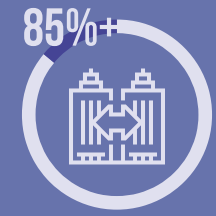
More than 85% of survey respondents said silos impede the free flow of information across the organization.

SOFTWARE SPRAWL is a major challenge. When asked to choose which of several software options were used in their organization's technology stacks, 31% of all respondents chose 'all of the above': commercial software, open source software, and software-as-a-service (SaaS). The problem is worse for large enterprises (5,000+ employees), with 44% choosing "all of the above."


All of the above
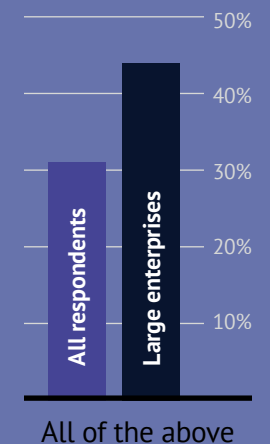
END-TO-END VISIBILITY INTO THE VALUE FLOW OF SOFTWARE DELIVERY STREAMS

SOFTWARE DELIVERY is now a data-driven activity, and data needed by software practitioners, by the leadership and executives should be accurate and freely accessible to allow them to more easily do their jobs, make data-driven decisions and provide the full picture of the current state of software delivery pipelines.

Our research tells us that data remains locked in tool-specific data stores and often isn't integrated with other tools in the software delivery pipelines. Even data extracted from these tools and stored in dashboards and data warehouses isn't often used efficiently or effectively. The primary cause of this is tool sprawl, and the secondary cause is organizational culture. SDM strategies address these issues through the emphasis on both adopting the right technologies to enable the free flow of data, and on cultural change to allow for the data to be accessible to the right practitioners and decision makers such that it can be used effectively to make data-driven decisions.

50%+
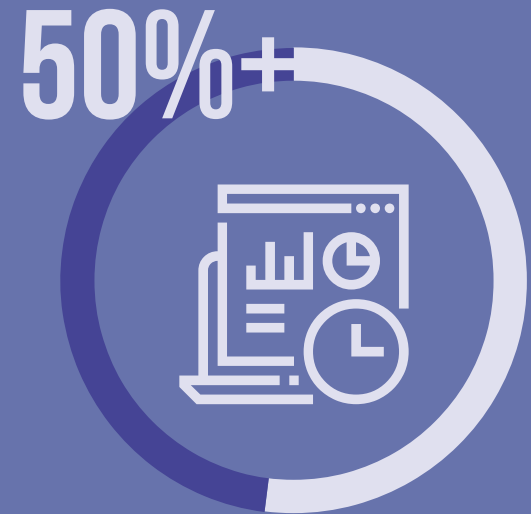
More than 50% of survey respondents

- Do not have access to good quality data from across the tool chain.

- Do not have access to data from tools across multiple applications and projects.

SURVEY DEMOGRAPHICS

The Accelerated Strategies Group survey for this research was conducted between April 19 and May 31, 2020. We gathered 153 completed responses.

Responses represented nine countries.

Respondents have a variety of roles and come from a broad spread of organizational sizes

47% of respondents came from small organizations (<1,000 employees)

35% of respondents represent large organizations (>5,000 employees)

39% self-identified as individual contributors

61% self-identified as managers or leadership (8% C-suite executives)

THE ACCELERATED STRATEGIES GROUP VIEW

TO SUCCESSFULLY EXECUTE a digital transformation strategy, it's imperative that organizations adopt SDM strategies. Our research, supported by extensive survey data, validates Accelerated Strategies Group's hypotheses that there remain critical flaws and gaps in the software delivery maturity of most organizations, and that SDM can remediate these flaws and fill in these gaps.

Organizations that have or are in the process of enabling SDM strategies are maturing at a much faster rate, and are clearly reaping the quantity, quality and efficiency benefits that SDM can provide across software delivery pipelines. We suggest that organizations adopt these practices, tools and cultural principles that enable effective SDM to bring their organizations a competitive advantage. We expect this to become more mainstream in the coming months and years, and that SDM will continue to grow as an organizational strategic imperative. That being said, SDM as a set of strategies and approaches is itself is still evolving and will continue to do so as the industry matures. With that maturity will come even more new technologies, more complexities, and greater nuances as to how they are adopted and leveraged.