Improve Infrastructure Agility — A Story for a New Era

By George Spafford, Daniel Betts, Hassan Ennaciri, Roger Williams
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Initiatives: Infrastructure and Operations Leaders

I&O leaders are under huge pressure to improve agility, but little guidance exists about using agile practices to deliver infrastructure services. This research fills that gap with actionable advice and, even more important, a linked story distilled from thousands of client interactions.

Overview

Key Findings

- I&O does not fully understand customer requirements and tends toward technology push.
- Interruptions and a lack of visibility of workflow lead to delays, errors and budget overruns.
- I&O leaders are under pressure to adopt agile development practices, such as Scrum, that can't be applied indiscriminately to I&O.
- Temporary initiatives to improve agility rarely work because organizations approach them as projects.

Recommendations

I&O leaders must:

- Strengthen their understanding of customer needs and their ability to meet them by improving communications and introducing customer journey mapping.
- Improve the flow and efficiency of activities by implementing Kanban boards and approaches to reduce interruptions.
- Enhance the delivery of infrastructure capabilities by tailoring agile practices to accommodate the unique situations found in I&O.

- Optimize capabilities over time by instilling the foundations of learning and continual improvement.
Introduction

Do Yourself a Favor — Download Our Fictional Story!

Been told to adopt agile practices but don't know where to start? You’re not alone. Read our story about a fictional I&O leader facing the same issues. Our story tells you what you need to know and includes quick-start templates. Click the link below, NOW.

What are you waiting for? Download our story NOW.

More than 60% of respondents to a Gartner survey ranked accelerated product delivery and better alignment between IT and the business among their top three objectives for adopting agile methodologies. Established I&O organizations are being told to implement agile methods with little or no guidance as to what that means. And much confusion exists about how to apply agile development methods to I&O situations.

What I&O leaders are actually being asked to do is to improve agility — the ability to respond to changes — and not to try to implement a particular agile development approach verbatim. Examples of the latter include Scrum, XP, Disciplined Agile Delivery and Large Scale Scrum.

But some guidance exists. Study the Manifesto for Agile Software Development, which highlights what it means to be “agile.” In many respects, agile is a mindset, not just a firmly codified set of practices. (See Note 1 for more on the rebalancing that the Manifesto stresses.)

To clarify the ambiguity I&O leaders face, this research details four recommendations for starting the agile journey. However, even more important is our linked story.
Go on, read our story NOW!

**Analysis**

**Improve Communications and Introduce Customer Journey Mapping**

The goal of I&O is to provide capabilities that optimize value, cost and risk for customers, regardless of whether those capabilities are called products, platforms, services or something else. That means I&O leaders must engage customers more effectively to better understand their needs and then work with them over time to evolve those offerings.

To improve communication:

- Attend sprint planning meetings.
- Pair an I&O representative with a customer “buddy.”
- Begin a journey toward enabling self-service.
- Create a community of practice.
What are you waiting for? Open our story!

Improve understanding of the customer experience through journey mapping:

- Create a customer journey map with stakeholders involved with the workflow.
- Work with the customer to further refine the documented customer journey.
- Work with I&O stakeholders to integrate their perspectives into the map.
- Finalize the findings with the customer.
- Engage a cross-functional team to identify minimum viable improvements and begin continual improvement.

Implement Kanban Boards and Approaches to Reduce Interruptions
Interruptions prevent flow and increase the risk that results will not be delivered when needed. Kanban is an approach to enhancing workflow by improving visibility of work and putting rules in place to limit waiting and interruptions. Our story highlights the key steps to successfully implement the Kanban approach. We've included sample templates as appendixes to our story to aid adoption.

Also:

- Use the customer journey map as a starting point to understand the workflow.
- Engage with the team and identify interruptions.
- Design the initial Kanban board, keeping it as simple as possible.
- Enhance the board to make work visible while improving throughput of the workflow.
- Capture benefits and market the value to increase adoption.
Tailor Agile Practices to the Unique Situations in I&O

Optimizing the delivery of customer value relative to cost and risk is part of an agile approach. This means improving operational activities that can reduce interruptions to higher-value planned work. Interruptions can be insidious because of the switching costs incurred. When a person or team needs to switch tasks, they must tear down, or stop, what they are doing. Next, they must set up and prepare to do the new work and then execute it. After this, they must tear down and try to set up and get back to what they were doing. These switching costs cause problems, but the disruption to continuity of thought and emotional state can be problematic as well — the person or team may never be as productive as before the interruption. I&O leaders must seek approaches to reduce the probability of, and impacts from, unplanned work.

To reduce interruptions caused by incidents to planned work:

- Implement “blameless postmortems” to learn and avoid recurrence.
- Evolve change management to properly balance speed and risk.
- Improve monitoring to reduce interruptions.
- Enter incidents in the I&O backlog for the I&O shift operations manager to filter and prioritize.

In addition, consider the creation of cross-functional teams to work together to provision infrastructure:

- Implement a provisioning team.
- Use an agile coach to help the team members learn as they work.
- Standardize builds and move away from custom manual builds.
- Introduce new ways of working, including sprint events, having a backlog, a list of tasks for the sprint and the release of the sprint.
- Pursue continual improvement.
Instill the Foundations of Learning and Continual Improvement

Few things are static. Indeed, most clients describe their environments as complex and rapidly changing. To counter constant change, I&O leaders must enable their organizations to continually learn and improve. All efforts should seek to optimize value, cost and risk on behalf of customers and prospective customers.

Instill the foundations of learning and continual improvement:

- Celebrate successes to reinforce the changes.
- Implement metrics that help track progress that customers care about.
- Implement only metrics that matter (data collection is one thing and reporting another).
- Create opportunities for people to create, transfer, retain and unlearn knowledge.
Expand efforts by speaking with customers and prospective customers about how efforts will help them achieve their goals. In short, appeal to mutual success.

We began this research by describing an agile approach as a journey. We've introduced some high-level concepts. Now read our linked fictional story to help make them relevant.

This is your last chance — read our story!

Figure 5. Aren’t We Done?

Evidence

1 We conducted the 2019 Gartner Agile in the Enterprise Survey online from 3 June through 25 June 2019. The participants were 130 members of the Gartner Research Circle, a Gartner-managed panel of IT and IT-business professionals. The qualified participants included business end users with either an IT or IT-business focus as their primary role. Eighty-seven percent of participants used agile approaches for at least some of their application development.

2 Manifesto for Agile Software Development, agilemanifesto.org.

The authors fielded 1,976 inquiry calls on Agile, improving agility and DevOps from 1 November 2019 through 2 December 2021.
Note 1: How to Balance Factors When Starting the Journey to Agility

Table 1 shows the key factors to balance when starting the journey to agility. The items in the middle column matter, but those in the left column matter even more.

Table 1: How to Balance Factors When Starting the Journey to Agility
(Enlarged table in Appendix)

<table>
<thead>
<tr>
<th>Factors That Carry More Weight</th>
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<tbody>
<tr>
<td>Individuals and interactions</td>
<td>Processes and tools</td>
<td>People working together can develop innovative solutions to complex problems. An overemphasis on processes and tools can constrain potential solutions at the outset when the least is known about how to optimize value, cost and risk for the customer.</td>
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<tr>
<td>Working software, product or platform</td>
<td>Comprehensive documentation</td>
<td>The original wording reflects the agile approach's roots in software development, but we can just as easily insert terms such as &quot;solution,&quot; &quot;product&quot; and &quot;platform.&quot; Some organizations put too much emphasis on documentation that was hard to create, maintain and of dubious value, instead of delivering a product to the customer that worked. This hindered such organizations from optimizing value, cost and risk. It also made it more difficult for them to learn what was needed than if more/better functionality had been included.</td>
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<td>Customer collaboration</td>
<td>Contract negotiation</td>
<td>Contracts have their place, but traditional approaches to customer contracts have huge problems. They typically mandate that all requirements be identified before work can start. But this is the point at which everybody, including the customer, understands the least about what is needed. Instead, there must be collaboration and movement toward a shared goal.</td>
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<td>Responding to change</td>
<td>Following a plan</td>
<td>Change must be able to happen as learning happens, and as the environment and situation change. Rigidly following an obsolete plan won't help optimize value, cost and risk, nor will it advance organizational learning.</td>
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Source: Gartner (January 2022)

Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

Improve Operational Agility With These Top Five Methods

Modernize ITSM to Meet the Demands of DevOps and Product Teams
Quick Answer: How Should I&O Leaders Introduce Software Engineering Skills to DevOps Platform Teams?

Video: How to Build and Use a Customer Journey Map

Ignition Guide to Building a Customer Journey Map as a Product Manager

6 Steps to Implement Infrastructure as Code

Why DevOps Success Requires Platform Teams

Ignition Guide to Creating Agile Communities of Practice

Choose Kanban When Scrum Doesn't Work

Guidance Framework for Applying Scrum

Overview of Agile Development Methodology
Table 1: How to Balance Factors When Starting the Journey to Agility

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Source: Gartner (January 2022)
Actionable, objective insight

Position your IT organization for success. Explore these additional complimentary resources and tools for I&O and IT leaders:

**Resource Center**
*Infrastructure & Operations Leaders*
Discover insights, advice and tools to help address your top challenges.

**Roadmap**
*2021-2023 Emerging Technology Roadmap*
Make technology investment decisions with confidence.

**Tool**
*IT Score for I&O*
Evaluate I&O capabilities to drive better business outcomes.

**eBook**
*2022 Leadership Vision for Infrastructure & Operations*
Explore a data-driven view of 3 strategic priorities I&O leaders must act upon.

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