

AGILE

*development meets IT operations
– in the cloud*

**Take your application strategy
to the next level by extending
collaboration across the enterprise**

HP white paper





Executive summary

Collaboration is the recurring theme in the application lifecycle. In pre-production, Agile methodologies are facilitating collaboration among development teams, QA, and business analysts. And in production, IT operations teams are collaborating more closely to optimise application monitoring and management practices.

So here's the question. Why do so many development teams and IT ops teams still have so little interaction with each other? After all, each has insights that could directly benefit the other. Yet all too often, they don't know how the other team works and they don't communicate well – or at all.

For most companies, there's a two-word answer: 'It's complicated.' Developers are still struggling with their own set of challenges (some of which, ironically, have to do with the complexities inherent in Agile development), and IT ops employees are so often overwhelmed with 'keep the lights on' tasks they cannot contemplate yet another layer of complexity in their work.

However, the opportunities and advantages of increased collaboration between these two groups should far outweigh any short-term inertia – and cloud computing initiatives can serve as the catalyst for bringing development and IT ops together.

This paper outlines how companies can begin to integrate traditional development functions with traditional IT operations functions, and thereby create something completely non-traditional: the ability to respond to change quickly and efficiently. Closer cooperation can lead to a smooth flow of information and insights between these teams that results in higher-performance, easier-to-manage, easier-to-fix, more cost-efficient, anytime/anywhere IT services.

Please note that the approach described in this paper applies equally well to Agile and non-Agile (waterfall) development. And while the cloud model is a natural proving ground for this approach, the collaborative approach described here also works well with on-premises and hybrid models.

The cloud: new mindset, new methods

Clearly, cloud computing is no longer fluff. Real-world organisations are attaining new levels of efficiency, flexibility, and cost savings by deploying cloud-based services. That is why so many enterprises are now on the road to the cloud model. Forrester forecasts that the global market for cloud computing will grow from US\$40.7 billion in 2011 to more than US\$241 billion in 2020,¹ and 48 per cent of organisations now report using or planning to use cloud computing, according to a recent survey by Electric Cloud.²

However, the cloud model demands a new mindset about how applications are developed, deployed, monitored, and managed.

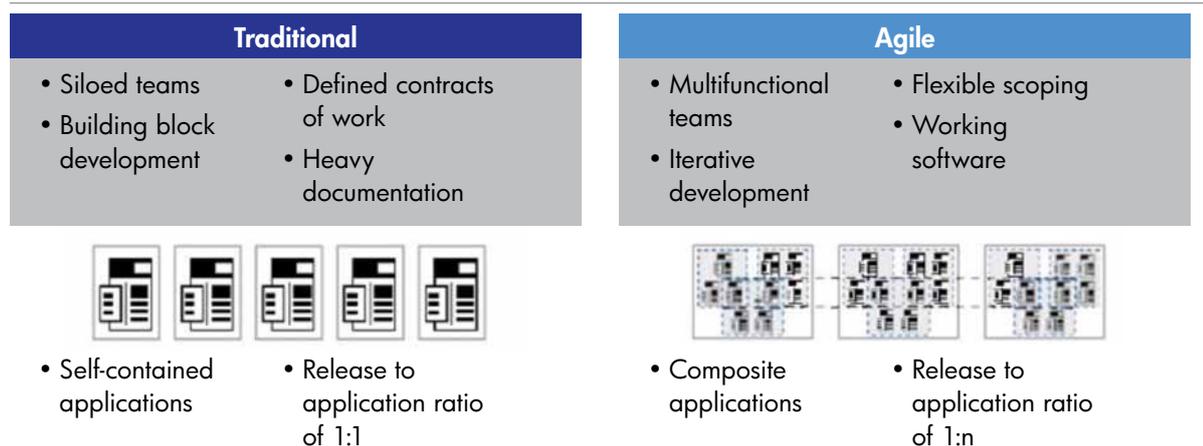
As you move toward the cloud model, the benefits – and the requirements – of collaboration increase. For example, with the cloud model you may be trying to monitor resources that you may not actually own, so it is even more important to have rigorous monitoring practices to identify the exact root cause of problems that occur. It can also be very difficult for developers to diagnose and fix cloud-based application issues without performance data and end-user information from IT ops monitoring teams; and it can be difficult for IT ops staff to interpret and resolve end-user issues without insight into the original business requirements that led to the application's design.

As organisations adopt the cloud model, whether through virtualisation, hybrid models that blend on-premises and cloud deployment, private clouds, or public cloud services, they discover that the cloud model combined with Agile requires increased cooperation between development and IT ops because releases are more frequent and the target infrastructure more varied. The next sections describe how this new level of collaboration can be achieved.

Agile: starting point for instilling the value of collaboration

The rise of Agile software development practices has already created a greater sense of collaboration within development teams. With Agile development, all stakeholders are actively involved team members rather than siloed specialists. These multifunctional teams develop software in a manner that is incremental, iterative, and adaptive, and this approach allows comprehensive functional, performance, and security testing – which reveals risks and defects earlier. Moreover, Agile teams work in expectation of change, so flexibility is built in.

Figure 1
Agile adoption yields positive improvement for development.

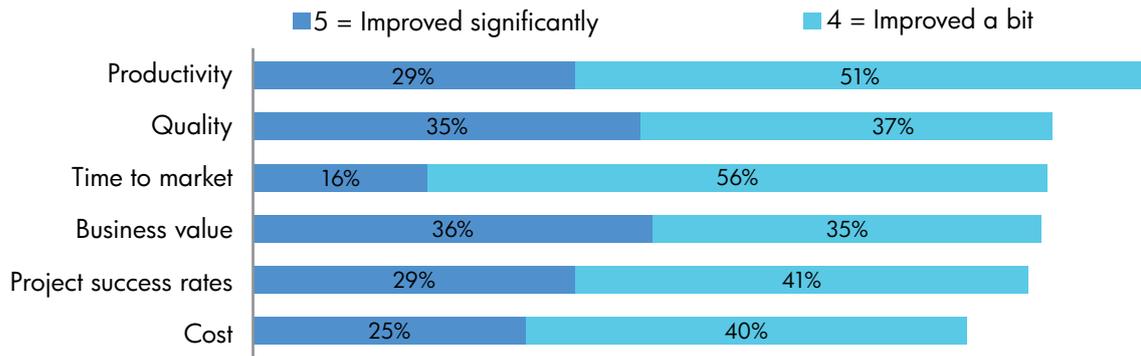


When done right, the Agile approach delivers business value sooner and accelerates return on investment (ROI). And by promoting teamwork, frequent reviews, multiple iterations, self-organisation, and accountability, Agile best practices allow for rapid delivery of high-quality software, and a business approach that aligns software development with customer needs and company goals.

Figure 2
Agile adoption yields positive improvement for development.

'What effect has agile adoption had on the following development characteristics?'

(4 of 5 responses shown, based on a 5-point scale where 1 = Deteriorated significantly and 5 = improved significantly)



Base: 113 IT decision-makers with insight into budgeted modernisation activities currently using agile development approach

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Agile methodologies also foster greater collaboration between the business and development team to ensure that applications are built based on business use cases. However, application management is typically not included as a use case. Many times, the way the application will be managed and the process for resolving application issues is an afterthought. IT typically does not get involved with management requirements until the application is ready to be deployed into production – or worse, when the application has been rolled out and is failing. With applications rolling out faster and more often, it is becoming increasingly important to include application management as a use case in Agile development best practices.

Simply put, there is now a pressing need for IT ops to collaborate more effectively with development teams – so that developers think about manageability requirements before the application rolls out to operations.

Moreover, working with the development group is important in determining the best route for the application in operations. IT ops may not have the resources to support a new application; hence they may deploy the application in the cloud, which could impact the development and the management aspects of the application.

Thus, Agile development and cloud computing are catalysts for earlier collaboration between development teams and IT operations teams. Through greater collaboration, applications roll out faster and IT is more efficient in monitoring these applications and faster in resolving application issues.

The next section provides more specifics about where the issues are and what needs to change to bring a greater sense of collaboration to bear.

There's nothing like the real thing

Developers have knowledge and information that should be of high value to application monitoring teams on the IT ops side. They have business-level understanding of the design and performance requirements, and they have implementation specifics that impact real-world performance issues.

On the other side, IT ops monitoring teams have access to something that should be vital to developers: real user data (click-stream traffic, page performance, application errors, visitor sessions on Web-based applications, and so on).

This is important data because as developers know all too well, pre-production applications do not always perform as expected once deployed into production in the cloud environment. The reason: Real users do unexpected things. How do developers know what usage scenarios to test if they don't have visibility into real end-user behaviour?

Likewise, if IT ops teams lack the application knowledge to repeat the conditions that cause performance problems and isolate performance issues in a controlled manner, that lack of collaboration costs you time, money, and talent.

Until recently, getting user-behaviour data in production has been at best impractical and at worst impossible. However, new application performance management tools enable the production team to directly monitor real-user session information of all users to understand how the application is performing for them. If performance is poor or users behave in unexpected ways, the system can generate test scripts from this behaviour to feed back into the preproduction development and testing process. This feedback ensures that lessons learned from user interaction enhance the testing process, which results in applications that perform better in the real world.

Similarly, a collaborative, comprehensive approach to application performance management can benefit both development and IT ops teams. For example, using a shared set of diagnostic and monitoring tools, teams could see a common, detailed view of applications that quickly detects, definitively diagnoses, and effectively repairs performance problems.

The road to collaborative IT: best practices

No two organisations are alike and none have the same starting point for moving to a more collaborative development and monitoring model, but a few guidelines and principles apply broadly:

- 1. Identify a champion at the executive level.** Any new initiative that impacts business-critical processes requires not only support but proactive, energetic impetus from senior management. The success of this initiative will depend on the champion's ability to prove the value of the new approach over the limitations and challenges of the traditional siloed approach.
- 2. Create accountability for cross-team collaboration.** One of the first tasks for the executive-level sponsor should be to designate a leader or group of individuals whose mission it is to facilitate collaboration and information sharing between development and IT ops. This new 'dev/ops' team should have a variety of members from different roles so that they can understand the complex challenges faced by IT staff.
- 3. Communicate the growing importance of collaboration across teams.** Communication is a prerequisite to collaboration, and step one for the cross-functional team is to communicate why increased collaboration is necessary, how each team will benefit, and how day-to-day responsibilities will be impacted. Simply put, the executive sponsor needs to clearly articulate how the new initiative changes life for applications and IT staff.
- 4. Establish a consistent, repeatable methodology.** As part of a collaborative IT environment, you need to ensure that the right people are using the right products at the right time, so that all key assets, such as scripts, monitoring data, and configuration data, are reusable. The goal is to create a bidirectional flow of information to and from development and IT ops so that duplication of effort can be reduced and the sharing of ideas, information, and insights can be promoted.

- 5. Select toolsets that contribute to cross-functional collaboration.** It is now possible for the applications group and IT ops personnel to use integrated toolsets that facilitate collaboration and information sharing throughout the application's lifecycle. For example, HP offers integrated pre-production solutions, including HP LoadRunner, HP Performance Center, and HP Quality Center/Application Lifecycle Management (ALM) Suite software, and production monitoring solutions such as HP Application Performance Management software, to assist in optimising the application performance and availability in production.

HP software also integrates with software from other network and systems management vendors and can augment their system or infrastructure monitoring with the ability to provide end-to-end application monitoring. More importantly, the same scripts that you develop in testing can be used in production for application and end-user monitoring. In addition, many companies can leverage their existing HP licenses and skill sets as they make the transition. This is just one part of a comprehensive ALM solution; ALM includes all aspects of the life of an application, from planning to testing to management. For details see the HP business white paper entitled 'Integrated Application Performance and Lifecycle Management,' or visit www.hp.com/go/apm.

HP: We're here to help.

Wherever you are on your road to cloud computing – or if you remain committed to the on-premises model or a hybrid model – a higher level of collaboration between development and IT ops will help you produce and maintain higher-quality applications and services.

HP is ready to offer assistance through its broad portfolio of Application Lifecycle Management (ALM) and Application Performance Management (APM) products, solutions, and services. HP also has software-as-a-service (SaaS) offerings to help you quickly add the services you need.

Our service offerings can help you identify and deal with the myriad of political considerations for your implementation, so that your project achieves improved effectiveness with minimal disruption. By using our experts and pre-deployed infrastructure, you can realise the value of your investment in a matter of weeks.

Customer examples

Blue Cross and Blue Shield cut infrastructure issues and incidents. With a member base of four million people, Blue Cross and Blue Shield of Florida depends on technology to deliver services to members and physicians. By implementing HP Application Lifecycle Management best practices, HP Application Performance Management software and fostering greater collaboration between development and IT Ops teams, the company reduced business-critical incidents by 90 per cent and saw an 80 per cent improvement in incident resolution times.

'By changing our processes and procedures, implementing HP Application Performance Management, and utilising Application Lifecycle Management best practices, we've substantially reduced the number of incidents affecting our business-critical applications. It's good for our business, but the real benefit is to our customers, because when our applications are up and running, we can deliver the service they expect and deserve.'

–Victor Miller, senior manager of systems management, Blue Cross and Blue Shield of Florida

Seagate quickly triages cloud-based availability and performance issues. Seagate Technology, the world's leading provider of storage devices, is using HP products and increased collaboration between development and IT ops to quickly diagnose and fix performance issues in its cloud-based computing services. End-user experience data, gathered with HP Application Performance Management software, validates that cloud services are performing as expected and enables the company to manage cloud computing SLAs by quickly determining whether issues originate within house or cloud provider systems.

'We could not successfully manage our cloud initiative without HP Application Performance Management. It's absolutely critical because with third-party cloud computing we can't monitor the infrastructure. We have to rely on gathering data on the end-user experience. HP Application Performance Management gives us the best-in-class tools we need to ensure that our cloud applications are meeting our service levels and that any problems are triaged quickly and effectively.'

–Steve Katz, senior manager, performance test and monitoring, Seagate

Learn more.

For more information about HP solutions that can help you make the move to more collaborative, efficient, and effective application development and monitoring in the cloud, please visit the following websites:

www.hp.com/go/agile

www.hp.com/go/APM

www.hp.com/go/ALM

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1. Sizing the Cloud, Forrester Research, Inc., April 21, 2011.
2. <http://www.techjournalssouth.com/2011/01/survey-says-many-companies-not-fully-using-their-cloud-infrastructure/>.

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