

# To PaaS or Not, There really is no question



## **SWIFT AND AGILE** response to market demand for **CLOUD COMPUTING**

### **Platform-as-a-Service, An Essential Enabler to IT Agility**

#### **The Case for IT Agility**

In our increasingly digital world, software is clearly a significant competitive weapon that businesses need to master well to thrive or even survive. Take a look at companies like Uber, Airbnb, and Netflix; these companies are using software to disrupt their respective industries and succeeding. In their book, *Leading Digital: Turning Technology into Business Transformation*, George Westerman, Diddier Bonnet and Andrew McAfee go in depth for the need of companies to achieve digital mastery. Burberry is an example of digital master with its pioneering effort in fusing its online and retail customer experience. The importance of continuously building great software has never been more critical especially with the following workloads: digital assets, any customer, partner or front-line facing applications, and other systems of innovation and differentiation.

So what does it take to build great software? Enterprise IT needs to achieve a much higher degree of agility. It is about increasing the velocity of IT delivery from requirements to releases. Quarterly releases are not sufficient; more frequent, smaller releases become the norm. Leading companies do hundreds and even thousands of deployments a day. It also means being nimble, quickly learning and adapting to user feedback and competition. This requires insightful, instant feedback loop and culture of experimentation using capabilities like A/B testing.

**People matter, results count.**

## What is IT Agility?

Building IT agility requires Enterprise IT to significantly transform its current delivery model that has been fine-tuned for yesterday's applications, control and stability. Its model needs to be changed and optimized for rapid and continuous innovation. Doing this transformation is a journey and will take time to achieve. The initial steps that enterprise need to take include:

- 1. Adopt more loosely coupled architecture using micro-services:** Architecting and deploying applications in a monolithic fashion results in long duration release cycles. With a more loosely couple architecture and micro-services, an application can be chunked to enable parallel tracks of development and testing. A failure in one chunk does not necessarily delay the progress in other chunks. Smaller chunks also means easier and quicker to debug and test. Also, chunks can be re-used by other applications. As a result, more frequent and smaller releases become possible.
- 2. Remove operational roadblocks:** Most enterprises are bogged down by the time it takes to provision environments, perform builds and deployments, do restarts and refreshes, and scale an application. Doing these activities in days or weeks is no longer acceptable. Even worse is when developers spend up to 80% of their time dealing with these activities versus coding. The new norm should be completing these tasks in a matter of minutes or a few hours.
- 3. Embrace DevOps:** DevOps is movement and practice that's has a lot of buzz as of late and rightfully so. It is about having a high degree of teaming and integration among the various IT delivery stakeholders (developers, QA, operations, release management, and business) to achieve higher IT speed and business goals. It is a transformation with people, process and technology components. It is about having the right culture and aligns all stakeholders and team members towards shared goals. It means changing the work environment to be more trusting, collaborative, and transparent. The right organization structure, incentives, and team spirit need to be in place. It also requires high velocity process and methodology that drives small, fast releases and experimentation. And finally process and methodology must be automated and standardized to the extent possible to achieve the desired quality and speed. DevOps is a key enabler to make Agile work. A lot of companies have adopted Agile but have not realized it's full potential because the delivery end-to-end flow and speed are constrained, especially with downstream activities like integration testing and release management.

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## Introducing PaaS, A Foundational Enabler of IT Agility

Taking these initial steps require a more revolutionary application development platform. Platform-as-a-Service (PaaS) is such a solution. At its core, PaaS enables IT to develop, deploy, scale and manage software delivery more quickly and reliably. It provides developers an abstraction of the technology and infrastructure stack supporting an application and its data.

*PaaS a solution built by developers for developers. It enables developers to focus on coding and less on build, deployment and operational activities. In addition, it goes beyond boosting developer productivity. It allows operations to automate and streamline many operational activities in provisioning, deploying and managing environments. It also enables an application to run on any environment, whether it is a public cloud, private cloud or on-premise or hosted environment. It can be configured and managed to deploy an application to the best environment depending on performance, availability, security and data considerations.*

A PaaS solution typically has three major components:

- One area is how it supports applications and micro-services with its corresponding programming language, frameworks, runtimes, and libraries. It can run a wide

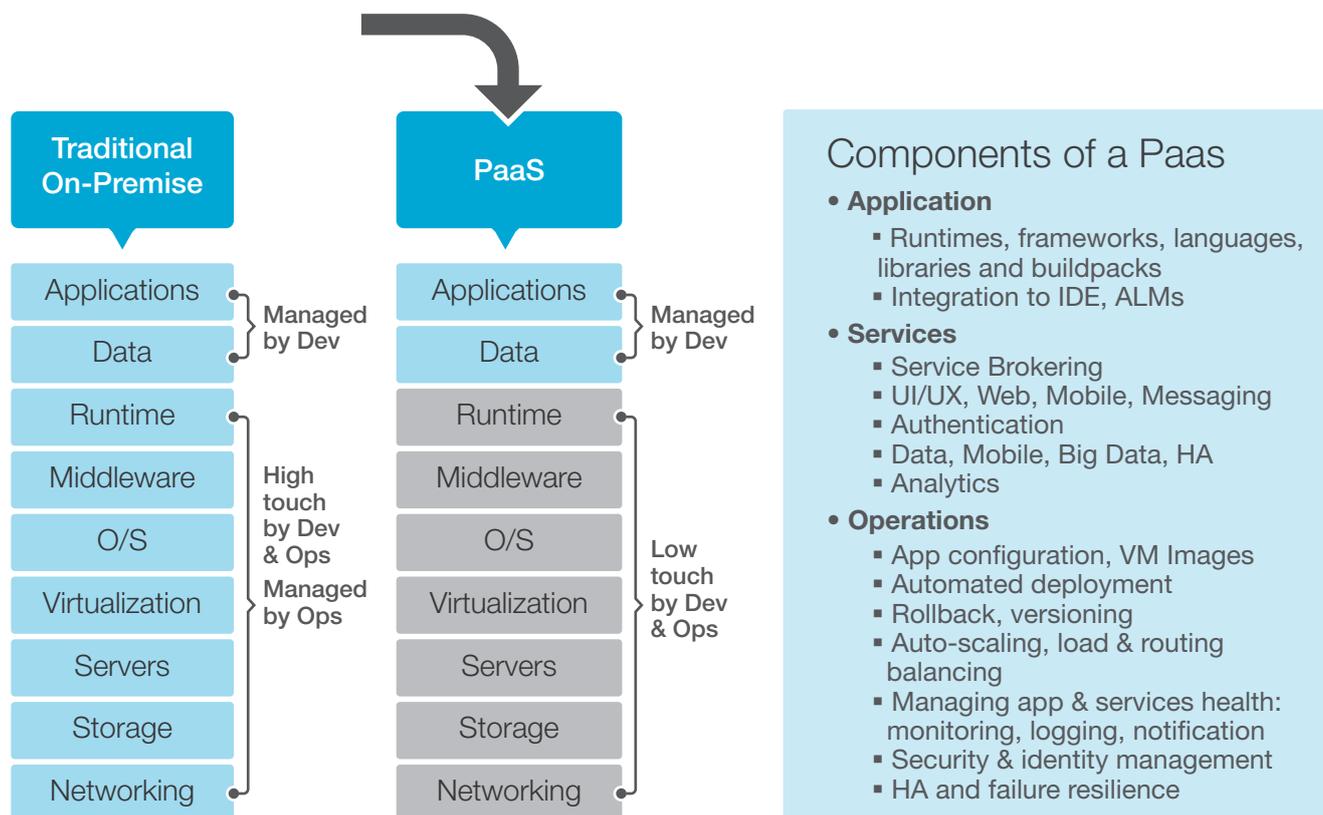
variety of workloads that are built with multiple languages and frameworks.

- Second it fully enables implementation of loosely couple architectures through its services capabilities– availability of readily available services, ability to ingest open source or custom services, and easy way to ingest and bind services to applications and containerization. Its a huge component.
- Third, it automates and facilitates many operational activities, from managing infrastructure as a code, click-to-build and deploy, dynamically scaling and changing the environment, monitoring it, and minimizing downtime.

Force.com, Google App Engine, IBM BlueMix, HP Helion to name a few. Which one is the right depends on a number of factors:

- Desired development environment (framework, language, middleware) and flexibility
- Security and multi-tenancy requirements
- Availability of desired services
- Application portability, vendor lock-in considerations
- Support for critical functionality and services (for developers and operations)

PaaS is an application development and operating platform that abstract an application from its technology stack and underlying infrastructure



## How to Get Started in Adopting a PaaS

As mentioned earlier, achieving IT agility is a journey. It typically starts with a proof-of-concept (POC), identifying a workload and/or a set of services that would benefit highly from using a PaaS. These workload and/or services may need to be updated and deployed more frequently or quickly. Or there are significant operational and DevOps issues that can be addressed by using a PaaS.

Aside from choosing a workload and services to do a POC, deciding on the appropriate PaaS is also an initial activity. There are a number of options; Pivotal Cloud Foundry, Heroku,

- Environments to provision: public cloud, private cloud, hybrid, and/or on-premise

Taking a POC approach provides an opportunity to learn how to best use a PaaS solution and determine a roadmap to extend and scale to other workloads. Also, as part of POC, it would be good to define key IT agility metrics:

- Time between new business requirement or change request to deployment
- Time to build, integrate, test
- Time to approve, promote
- Time to deploy, release

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