

# Toward Building the NextGen Digital Platform

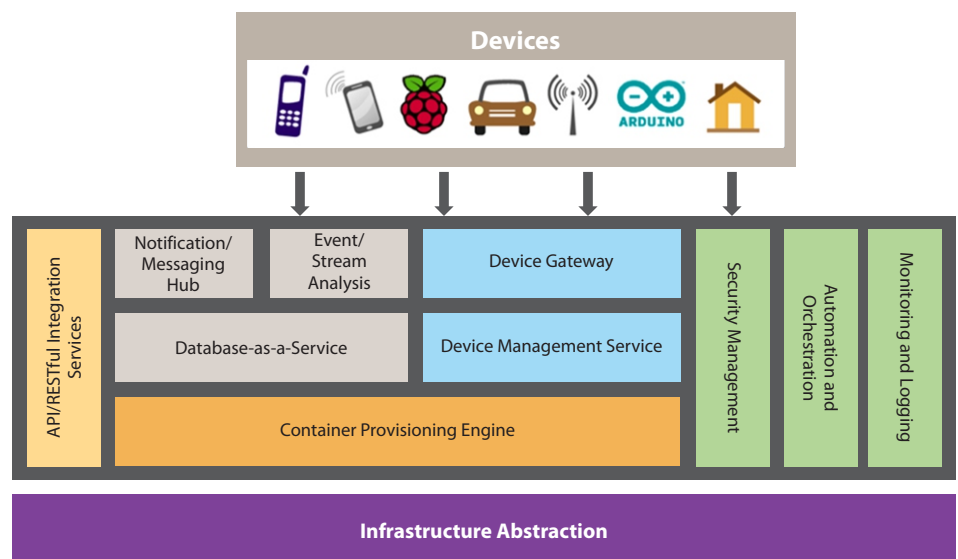
## Abstract

From a place to host applications, to providing integration services, to even performing digital analytics and number crunching for vast amounts of data—the Cloud is into it all. But what does this mean for us? What can the Cloud offer us with its disrupting trends, innovative tools, and platforms? Here is a look at what it takes to build NextGen digital platforms, and how the Cloud will help us reimagine our digital future.

## Introduction

Organizations, especially those centered on the manufacturing industry, are leveraging digital technology and platforms collectively to develop their NextGen digital platforms. At the core of the platform, lie two main components that essentially help glue the rest of the pieces together: Cloud and Microservices.

Cloud and microservices on their own provide a host of features and benefits, but in a nutshell, they can be collectively leveraged to build a platform that can cater to any industry's requirements.



*Digital Platform Overview*

## Harness the Power of Cloud

Cloud Computing is perhaps the most important layer that goes into building a NextGen digital platform. Most modern Cloud providers offer a variety of services to help organizations host, build, and scale applications quickly, at way lower costs as compared to traditional hosting services.

Add to that an assortment of choices, ranging from plain Infrastructure as a Service (IaaS) to Platforms as a Service (PaaS), and even Software as a Service (SaaS)—there's a lot that an organization can choose from when it comes to building a NextGen digital platform.

Organizations can leverage their existing on premise infrastructure to build secure Private cloud platforms and then extend them to Public Cloud to form a strong Hybrid Cloud strategy that blends benefits of both worlds: security and virtually unlimited scalability.

## Build Your Own Application

There are a vast number of PaaS platforms in the market to get started with, to develop and host cloud ready applications. Unlike IaaS, PaaS offers a unique and niche group of services that are more suited to modern application developers.

For starters, a majority of PaaS providers offer customers a 'Build your own application' (BYOA) strategy. This means that the PaaS platforms are no longer just vessels for hosting your applications where you simply deploy and forget, but you can also choose to develop your applications from scratch using a variety of tools, services, and integration mechanisms that a standard IaaS provider simply won't provide.

For example, any modern cloud-ready application would need to integrate with other mainstream technologies such as Mobility, Big Data analytics, or IoT. Modern PaaS platforms offer these services and much more in the form of extensible services that you can leverage all in one place using APIs and SDKs.

Therefore, leading manufacturers leverage PaaS to build their NextGen applications/platforms as it offers:

- Flexibility, rate of innovation, and increased productivity time
- Reduced building costs compared to traditional platforms
- Integration support to almost all major DevOps tools (Jenkins, Maven and Git)
- Better integration & interoperability among other ERP and analytical applications

You can now even streamline your continuous integration and delivery experience by developing the code in-house and pushing it directly to production on your favorite PaaS provider.

## Microservices for Building Modern Age Platforms

One of the most common enterprise use cases for any Cloud has been application hosting. However, when traditional applications, which are not designed with scalability in mind, are migrated to the dynamic Cloud environment—things start to go a little wary.

To make your application scale efficiently, you would need to decouple it—in other words break it up into smaller, more


The global market for PaaS is expected to reach US\$7.5 Billion by 2020 according to a study performed by Global Industry Analysts, Inc.<sup>1</sup>

Pivotal Cloud Foundry (PCF) and GE's own in-house PaaS platform called Predix, together, provide up to 10x in terms of overall cost savings and also help analyze hundreds of thousands of sensor data information all in a matter of minutes.<sup>2</sup>



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Microservices has gained a lot of importance with the advent of Cloud. With a Microservices platform, organizations are able to now react rapidly to market dynamics, and push out newer and better applications faster, driving down overall development costs.



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Manufacturers can reuse each microservice developed independently as each service is treated as an independent set of code. This drastically reduces the overall time to develop, test, fix, and integrate applications into production environments.

manageable chunks of functionality where each unit of code can exist as an independent, autonomous process. This is known as Microservices.

The entire idea revolves around designing your application such that each individual component or function resides in a logical container that can be updated with the latest app code without disrupting any other functions or the application itself to meet your independent scaling requirements.

Many Cloud providers support hosting Microservices-based applications using their own form of container-driven technology.

For example:

- Google has its own Google Container Engine that runs off their container orchestration platform Kubernetes.
- AWS has a similar service that allows you to deploy Microservices on containers and then scale each component independently called as Elastic Container Service (ECS) etc.

To help enterprises build a complete cloud-ready application, Cloud providers can offer additional services, such as dynamic load balancing, service discovery and registry, and DNS services.

With such services and frameworks, you get the flexibility and agility to design your application using not just one, but a variety of different programming languages, tools, and APIs—each leveraged to suite a particular requirement.

## In Real Life: On-Demand Scalability with Cloud

A major retailer wanted to introduce an Activity Center in a bid to increase store footfall, to basically increase sales and reduce inventory. Using critical data, such as demographics, SKU sizes, store location, etc., they benefited from a 5% increase in sales, and achieved business growth of \$54 million over 3 years.

## Conclusion

Digital alternatives are continually coming into the limelight—from PaaS services and platforms rising up to their IaaS counterparts, to the adoption of microservices-based architecture to develop cloud-ready applications, to even IoT and Big Data analytics on cloud.

By using Cloud and Microservices, industries ranging from the manufacturing sector all the way to the Banking and Financial services, are able to lower production costs by streamlining development and manufacturing processes, extract better insights from vast amounts of raw streaming data to help them make better decisions at a much faster pace.

## References

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[2] <https://blog.pivotal.io/pivotal/features/how-pivotals-big-data-solutions-provide-a-jump-start-to-ges-vision-for-an-industrial-internet>

## About The Author

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