

Managed Microsoft Azure Service Fabric Platform as a Service

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Overview

Outline of the PaaS Azure Service Fabric by Atos

Azure Service Fabric for app developers, powered by Microsoft

- ▶ Simplify microservices development and application lifecycle management
- ▶ Reliably scale and orchestrate containers and microservices
- ▶ Data-aware platform for low-latency, high-throughput workloads with stateful containers or microservices
- ▶ Run anything – your choice of languages and programming models
- ▶ Run anywhere – supports Azure and Azure Stack
- ▶ Scales up to thousands of machines
- ▶ Atos solution includes: Service Management, PAAS, IaaS, DevOps, security and network



In summary

Digital
Transformation
Factory

devops
the journey
of a continuous delivery
implementation



combining
public and
private clouds
together with
business applications

AtoS
AtoS
AtoS
AtoS
AtoS
AtoS
AtoS
Prescriptive
Security
Operations
Center



The value of Green Field Application Cloudification with Platform Services

PaaS Platform Services Value

The **Managed Microsoft Azure Service Fabric solution** focusses on greenfield application development: it is unique in supporting the full **DevOps** application lifecycle: from **application development, test and deployment into the cloud**, including:

- ▶ **full service management**
- ▶ **the hybrid Azure infrastructure runtimes of your choice**
- ▶ **the digital network cloud connectivity**
- ▶ **enterprise security**

It **saves up to 50% of the application lifecycle cost** and **increases the time to market by 40%** through faster application development cycles and quick deployments.

Atos is the only one offering Managed Greenfield Cloudification using this unique fully-managed cloud stack

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The situation

Advancing in The Digital Journey by moving Applications to the Cloud

Start the Digital Journey

- ▶ Cloud offers a platform for tech experimentation, rapid development, deployment, and distribution.
- ▶ It supports the agile development methodology
- ▶ Cloud helps you innovate like a start-up and deliver like an enterprise
- ▶ In addition, the cost of infrastructure and application management can be reduce significantly
- ▶ Atos Canopy is the cloudification partner for many organizations

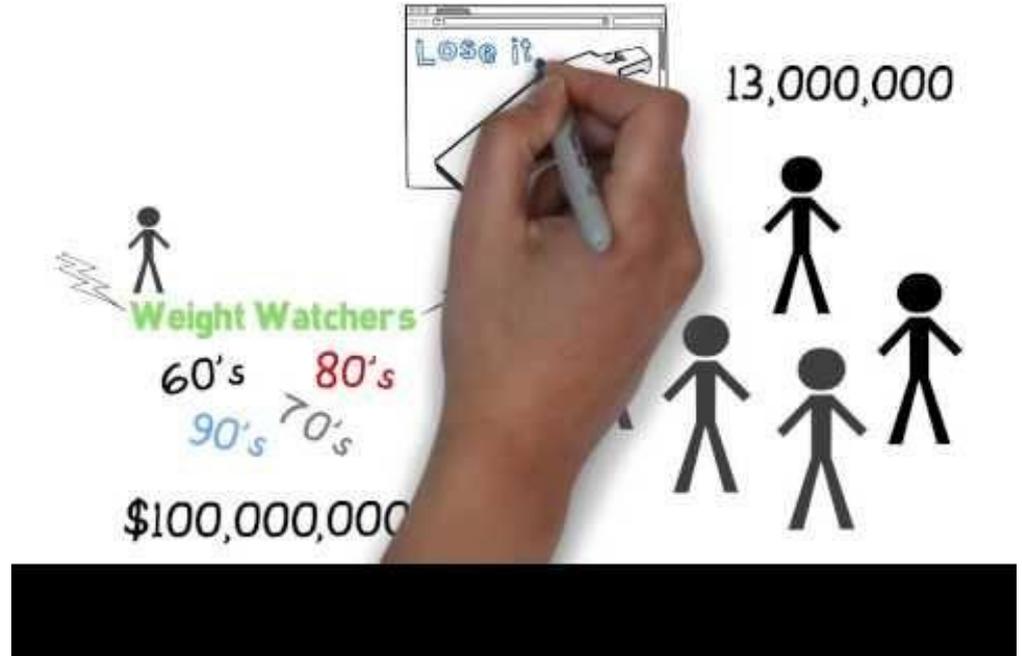


Build and operate always-on, scalable, distributed apps, to become the digital disrupter

Become the digital disrupter

- ▶ Cloud computing fuels digital disruption, and enables the business to pursue digital transformation.
- ▶ Cloud model acts as a catalyst for innovation. While adapting their business models to the digital arena or building new business models, organizations need agility, ability to scale up and down, efficiency, elasticity and cost optimization. Cloud platforms provides all this and more
- ▶ Atos pushes you to the edge of *your* market

3 minute digital disrupter movie



Analyst views acknowledge that applications move to the cloud

Analyst views

Forrester's 2018 cloud computing predictions	
1	Don't expect any new global megaclouds, and plan for lock-in.
2	SaaS vendors transform into platform providers and expand deployment options.
3	Cloud fragmentation outside North America heralds more-focused solutions.
4	Kubernetes will win the war for container orchestration dominance.
5	Cloud security becomes integrated with — and integral to — cloud platforms.
6	Azure Stack sparks a jump in private and hybrid cloud spending.
7	Private cloud gets new life as an app creation and modernization platform.
8	Hybrid cloud management solutions will be sold in parts or included for free.
9	Enterprises will shift 10% of their traffic from carrier backbones to other providers.
10	Immersive training programs will skyrocket to drive cultural change.



- ▶ “IaaS and PaaS are rapidly becoming a continuous cloud platform offering. Most of the comprehensive PaaS suites, including AWS and Microsoft Azure, feature IaaS in their platform portfolios
- ▶ Microservices-based is essential to web-scale agility and continuous innovation
- ▶ Microsoft has a solid presence in the enterprise and good momentum in the cloud. Its vision seems to be mostly for the cloud-dominated platform environment and for the remaining enterprise data centers to simply run a software version of their cloud platform (Azure Stack)

Gartner PaaS Hype Cycle Technology view.

Application related PaaS is a reality in 2018 - 2019

Figure 1. Hype Cycle for Platform as a Service, 2017

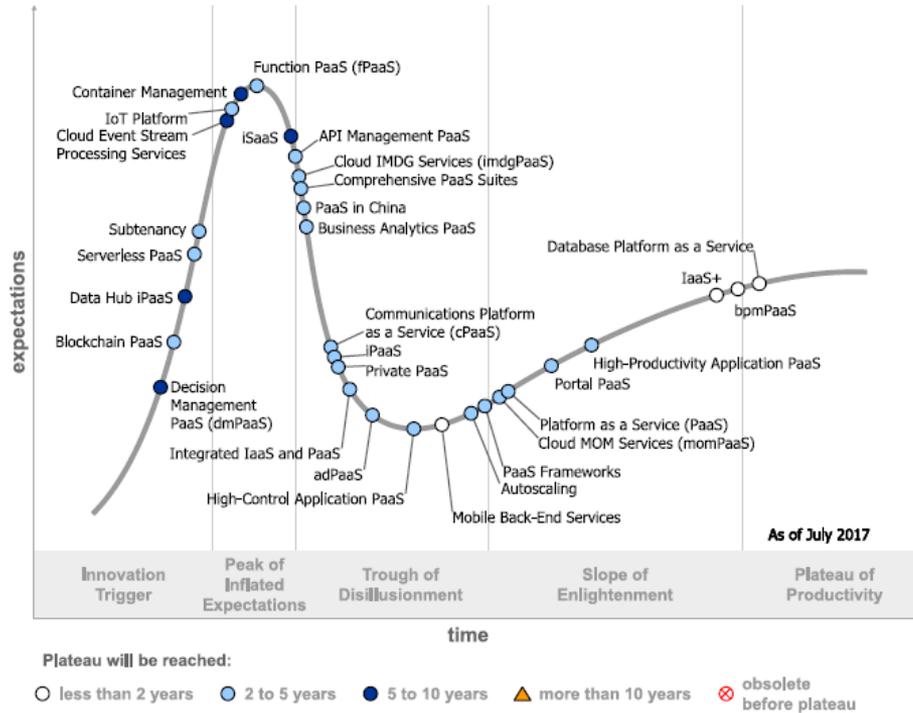
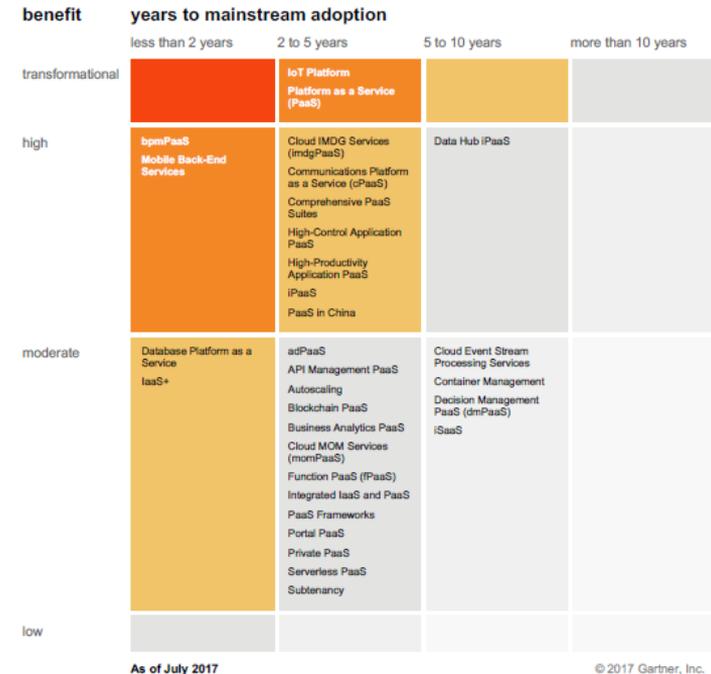


Figure 2. Priority Matrix for Platform as a Service, 2017



Source: Gartner (July 2017)

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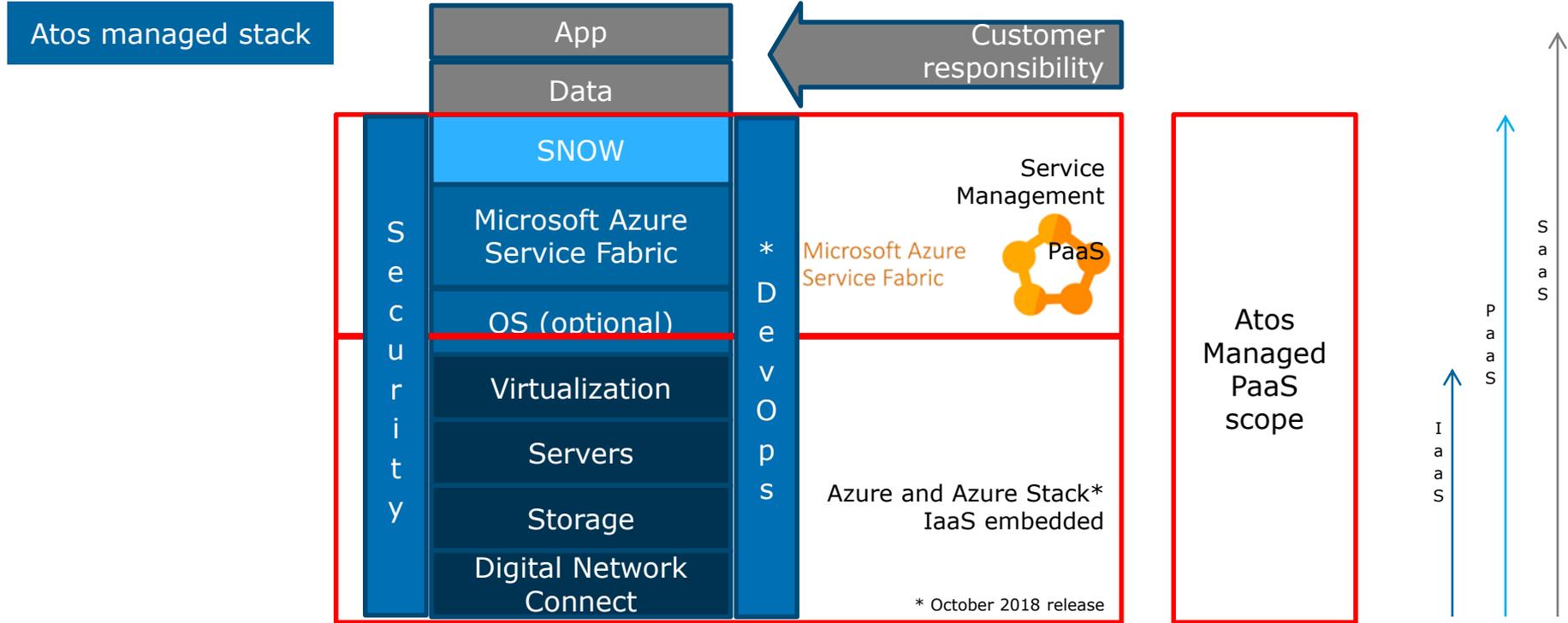
Cloudification is a complex thing, many PaaS companies are trying to take market share

... however Atos created a simple best in class managed PaaS usage model

- ▶ Running, maintaining and operating an enterprise PaaS to ensure that all of the consumer benefits are realized is a complex thing to do and something that will slow the time to become productive.
- ▶ In addition the business value of an enterprise PaaS is not in the running of it but in the consumption of it.
- ▶ It is our belief that most enterprises shouldn't have to learn how to run a complex PaaS system in order to derive this benefit. Just consume and focus on the benefits derived from developing and running modern application services
 - benefit from the Migration Services and Enterprise Service Levels and integrated Service Management
 - simply use embedded Infrastructure as landing place for the applications based on your policies
 - support the full Application lifecycle for new and existing apps, including transformation
 - policy driven, control an increasingly complex hybrid IaaS environment
 - empower developers to do more
 - powerful and flexible out-of-the-box capabilities with a composable service add-on model
 - align IT with business innovation goals, providing a competitive edge in a software-driven world



Atos is embedding Service Fabric into a fully managed PaaS stack

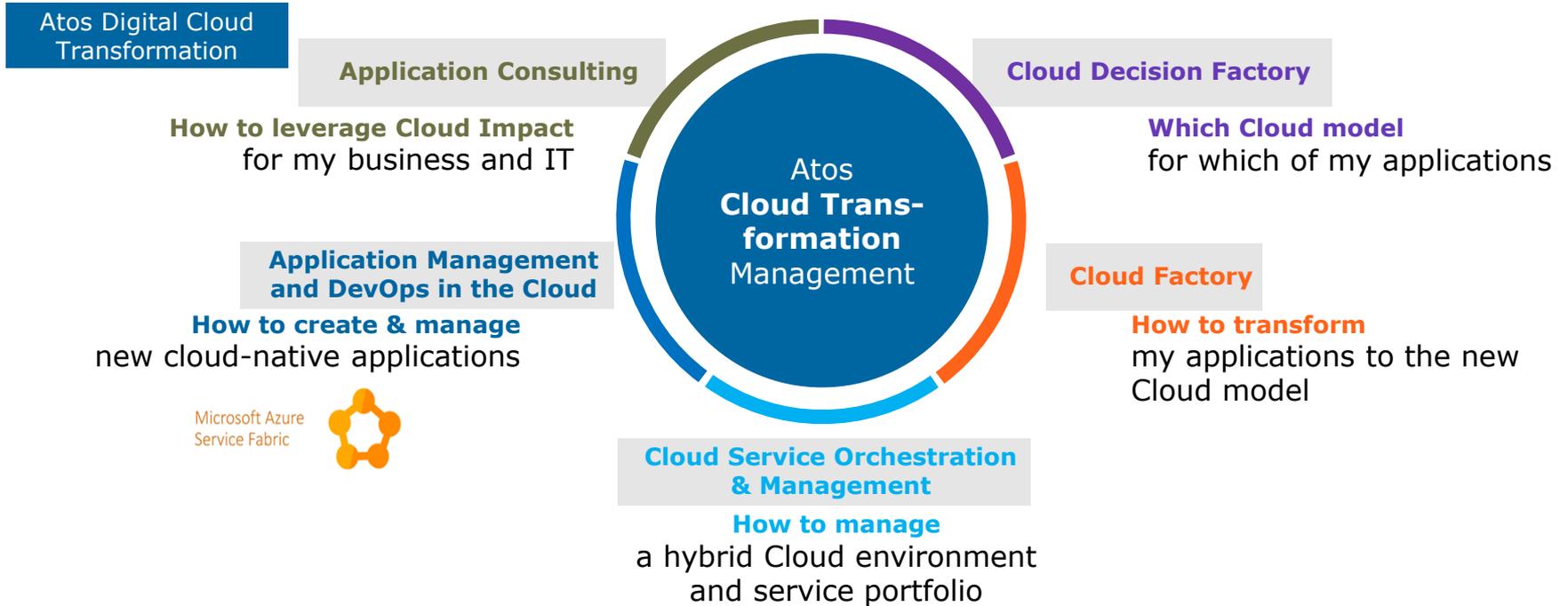


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The services

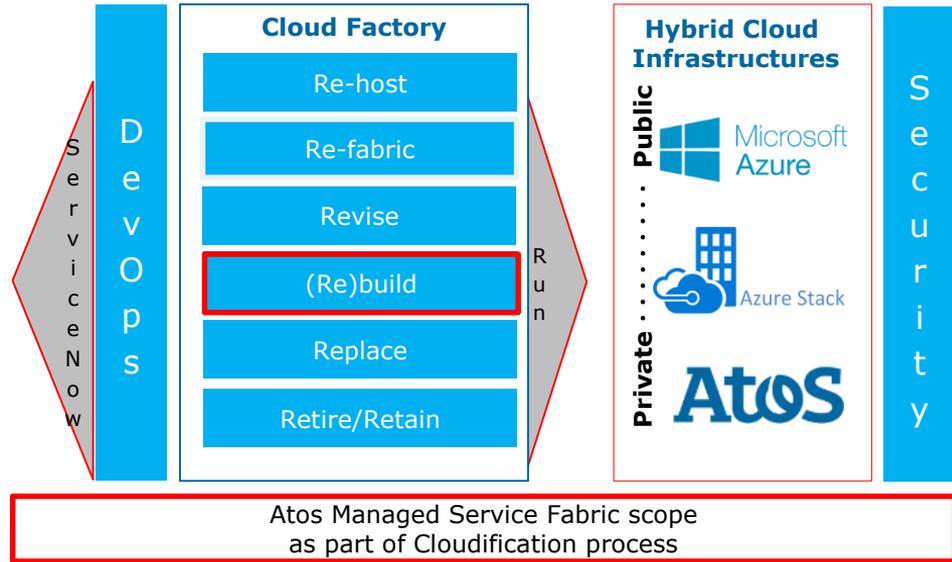
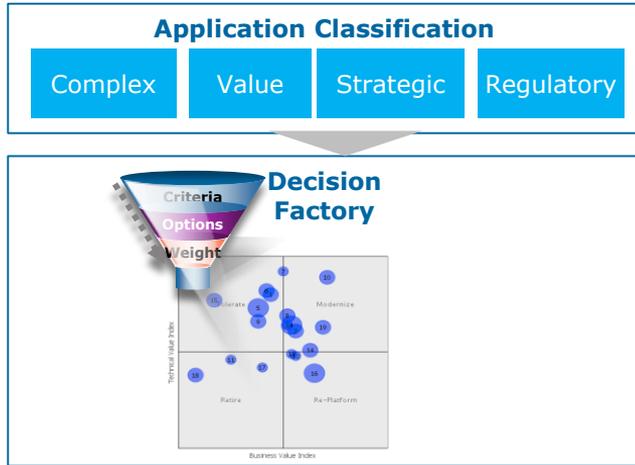
Platform Services for End-to-End Cloudification

Supporting Cloud Transformation and Application Management



Atos Managed Azure Service Fabric manages the full Application lifecycle in the Cloud

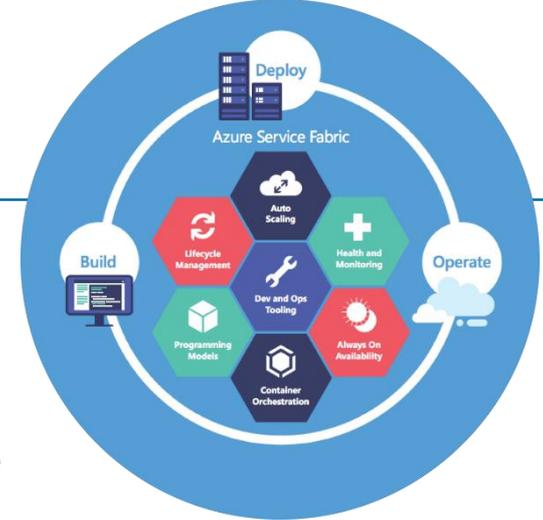
Wider application orchestration scope



'The Fabric' services outline

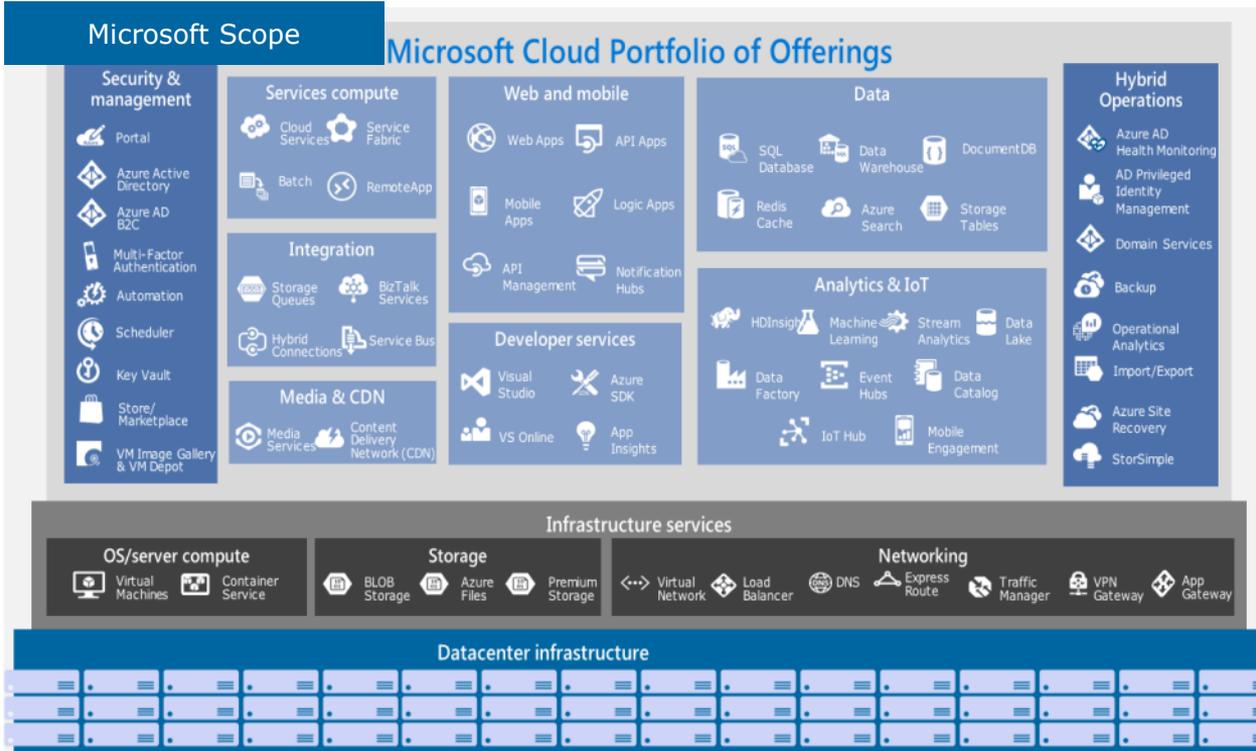
Service Fabric functionality

- ▶ Azure Service Fabric is meant for development, deployment and management of highly scalable and customizable applications
- ▶ Fabric = framework, a layer that understands the binding between microservices and the underlying infrastructure.
- ▶ Apps created in the Service Fabric environment are composed of separate microservices that communicate with each other through service APIs
- ▶ Microservices scale individual components of an application separately, without infrastructure problems.
- ▶ Most web services are composed of multiple microservices, which include things like protocol gateways, user profiles, web proxies, databases, shopping carts, caches and inventory processing.
- ▶ Microservices may be stateful or stateless. Most apps involve both; and Service Fabric supports both:
 - Stateless does not maintain information about a particular transaction
 - Stateful maintains information about all transactions
- ▶ Each microservice is given a uniquely identifying name; microservices run at very high densities on shared pools of machines known as Service Fabric clusters. Azure's infrastructure is based on Service Fabric
- ▶ Service Fabric powers many Microsoft products including Azure SQL Database, Azure DocumentDB, Azure IoT, Cortana, Power BI, Microsoft Intune, Event Hubs and Skype.

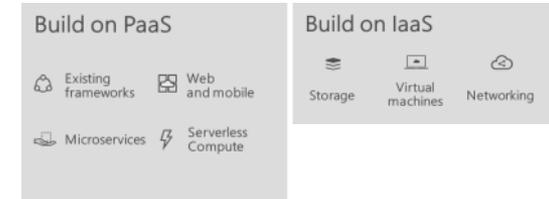


Microsoft Azure

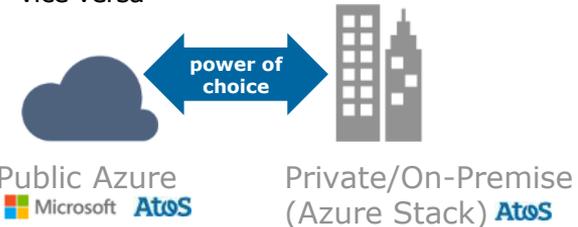
Product and service overview



- ▶ **Rich, powerful Microsoft Azure Service Fabric** to build microservices
- ▶ **Seamless integration** capabilities which allow e.g. native mobile apps seamlessly

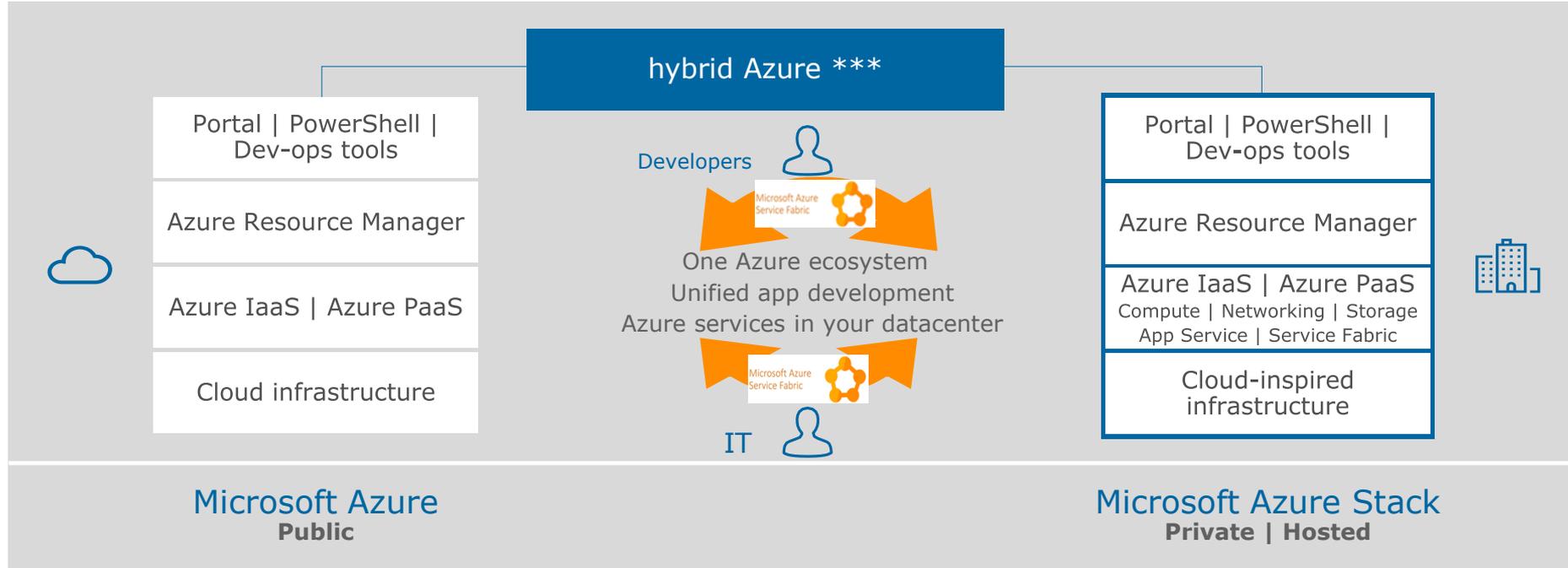


- ▶ **Interchangeability** – moving from cloud to on premise implementation & vice versa



One Hybrid Cloud Platform

Provided by trusted partners



*** Azure Stack enables hosting of Azure in NON Microsoft Data Centers

Microsoft Azure Service Fabric will be used to develop new “greenfield” applications

Build new applications

Value Delivery



Greenfield
Cloud
Native
(10 -
100s)



Atos multi PaaS offering
ensuring apps are running on
“best fit” platform whether
new cloud native or **existing**
applications

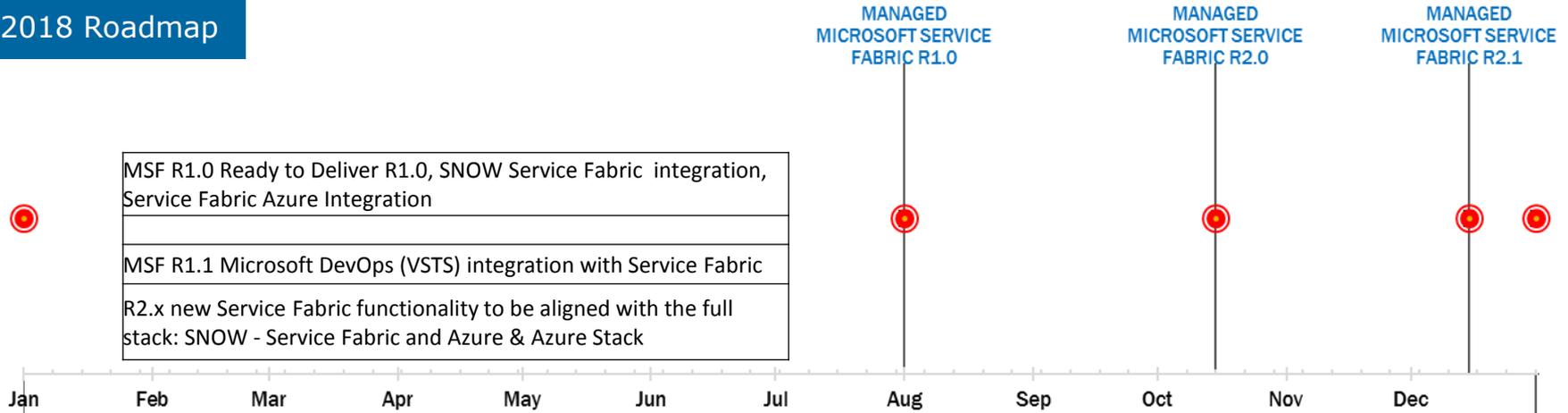
Brownfield App Cloud Platform
Existing Apps (100 - 1000s)

Hybrid Cloud Infrastructure

→ # of Supportable Applications

PaaS Microsoft Azure Service Fabric enrich over time, you can experience the advantages now

2018 Roadmap



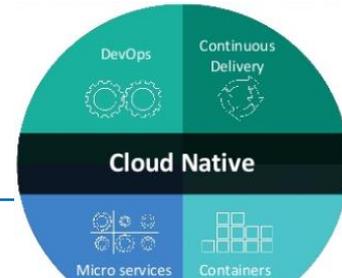
Get a Demo, buy a Proof of Value and experience the advantages, now

Get a demo and do a Proof of Value (build 3 - 5 apps using Atos managed Service Fabric Services), before you train your developers to build all your applications on a PaaS

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Benefits

Cloud Native business benefits



Speed time to market for new products

- Focus on building features that add business value to your application, without the designing and writing additional code to deal with issues of reliability, scalability, management or latency
- Enable continuous integration and development practices and accelerate delivery of new features by architecting fine-grained microservice applications
- Deliver upgrades without downtime, automate scaling, integrate health monitoring, and provide automatic recoveries. Orchestrate microservices and container-based apps, gain insight into application health and performance, and enable services that scale

Reduce IT complexity and cost

- Container and service orchestration in the same environment: Bring your containers and run them reliably at scale alongside other workloads and services. Take advantage of Azure Service Fabric's container hosting, cluster resource management, and workload orchestration capabilities.
- Flexibly deploy the same application code on Azure (Stack) using consistent platform services and the same application programming models, with a choice of host operating system

Build modern Microservices using Visual Studio

- Build stateless or stateful microservices—an architectural approach where complex applications are composed of small, independently versioned services—to power the most complex, low-latency, data-intensive scenarios and scale them into or across the cloud with Azure Service Fabric
- Quickly and easily build, test, debug, deploy, and upgrade Service Fabric applications in single-box, test, and production environments using Visual Studio Tooling and command-line support.

Capture new revenue opportunities

- As enterprises undergo digital transformation, custom software has become the competitive currency. It is the key asset enabling organizations to unlock new revenue streams and drive meaningful transformation for themselves, their industries, and society
- A superior platform for building and delivering software; one that makes your developers more productive, maximizes your IT investments, and enables faster innovation

EU General Data Protection Regulation

Conformity support

Atos commits to keeping personal data secure

Regarding the EU General Data Protection Regulation (EU GDPR), by:

1. Building privacy and security into our offerings by design
2. Explaining how personal data will be protected as standard, and the optional services we recommend you take, if personal data is being processed
3. Notifying our clients in the event of a suspected or an actual data breach
4. Executing requests from our clients to provide, change or erase personal data
5. Providing transparency on transfers of personal data outside of the EU
6. Providing transparency on which sub-contractors are used to support Atos for the specific offerings you take from us
7. Explaining any restrictions on our ability to support your obligations as a data controller
8. Ensuring our subcontractors partners are following the same rules

Atos and its clients have responsibilities for protecting personal data as defined by the EU General Data Protection Regulation. Should any of the Atos Service Offering(s) process personal data, such data shall be processed in accordance with the documented instructions received from the Customer who, unless otherwise stated by Atos, will be the data controller and Atos as a Supplier will be the data processor.

Atos offers governance risk and compliance consulting services to assist clients to assess their level of conformance, and to identify risks and priorities for remediation, in accordance with industry specific regulations, including EU GDPR. Atos provides cybersecurity services that can be combined with other Atos offerings to provide enhanced protection for sensitive data. Please contact your Atos account manager for further information.



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Experience

What customers say – Dutch Government office

**Microsoft Service Fabric supports
fulfilling our Cloud First strategy:
building and running microservices in
the Cloud**

**Atos builds an embedded Microsoft Service Fabric solution which is
perfectly positioned to help us”**