

Growing Bigger and Smaller with Microservices

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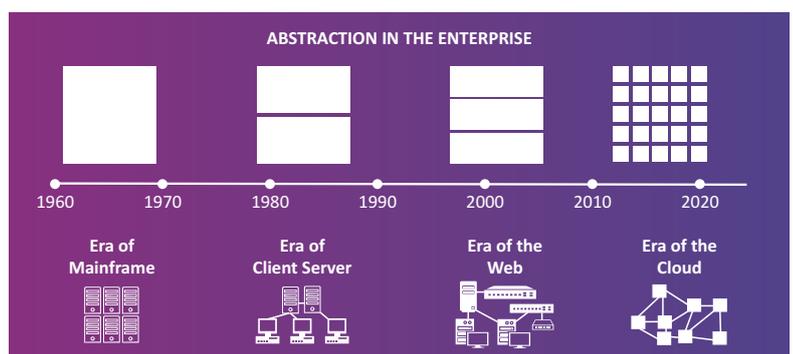
There is an era of abstraction that leans over a **legacy** for something **bigger and smaller - Microservices**.

As digital architectures are built along with legacy systems for two-speed IT, clouds of interconnected applications begin to expand into the design of the organization's communication structure much to Conway's pleasure. The companies that don't fit in would carefully decode the monolith and reconstruct their mission into contracts of independent business functionalities. Microservices were thus born and would be allowed to die a silent transitory death without being a martyr to the cause of organizational constraints.

IT infrastructure has seen a multi-dimensional metamorphosis over the years and has now achieved a new standard of abstraction with cell divisions being universally adopted. Google, Facebook and Amazon have embraced this for over a decade.

The transformation is a clear reflection of the dynamic business needs that are to be addressed:

- How do we build modern software architectural frameworks for improved agility?
- How do we operate and scale services for global customer reach sans local deployment?
- How would greater resource utilization be brought about for reduced costs?



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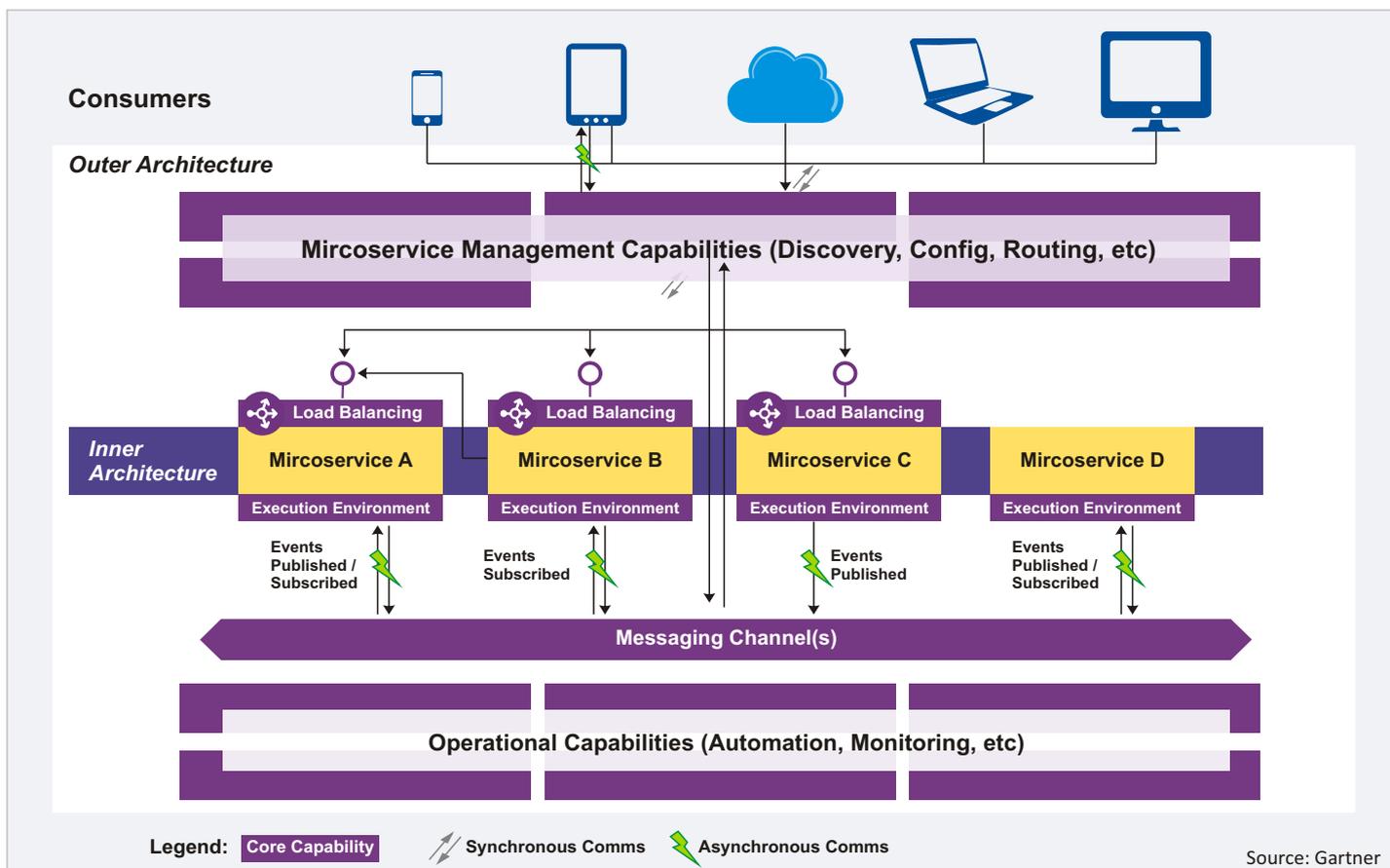
Modernizing Software Architecture with Microservices

IDC estimates that at any point of time, **enterprises are actively evolving only 25% of their application portfolio**. The primary focus of organizations should be the adaptability to light-weight infrastructure to augment agility within the enterprise.

It all boils down to being able to develop a working prototype with reasonable success and iterate the process to meet future business demand. Microservices offer advantages of a **business scenario approach** through independent decoupled services and standard interoperability service contracts.

Applications are gaining autonomy with the three building blocks: **Containers, APIs and Flexible Cloud Infrastructure**. The standardized frame of containers for services brings in huge relief when abstruse integrations in heterogeneous environments were the order of the day. APIs have made communications more standardised while the cloud infrastructure helps delivering services to scale for operational efficiencies. It smacks of SOA and its principles of heterogeneity, distribution, modularity.

The diagram shows 4 microservices with possibly different inner architectures deployed and working in tandem with the outer architecture. Data persistence and logic are integral to the Microservice fabric.

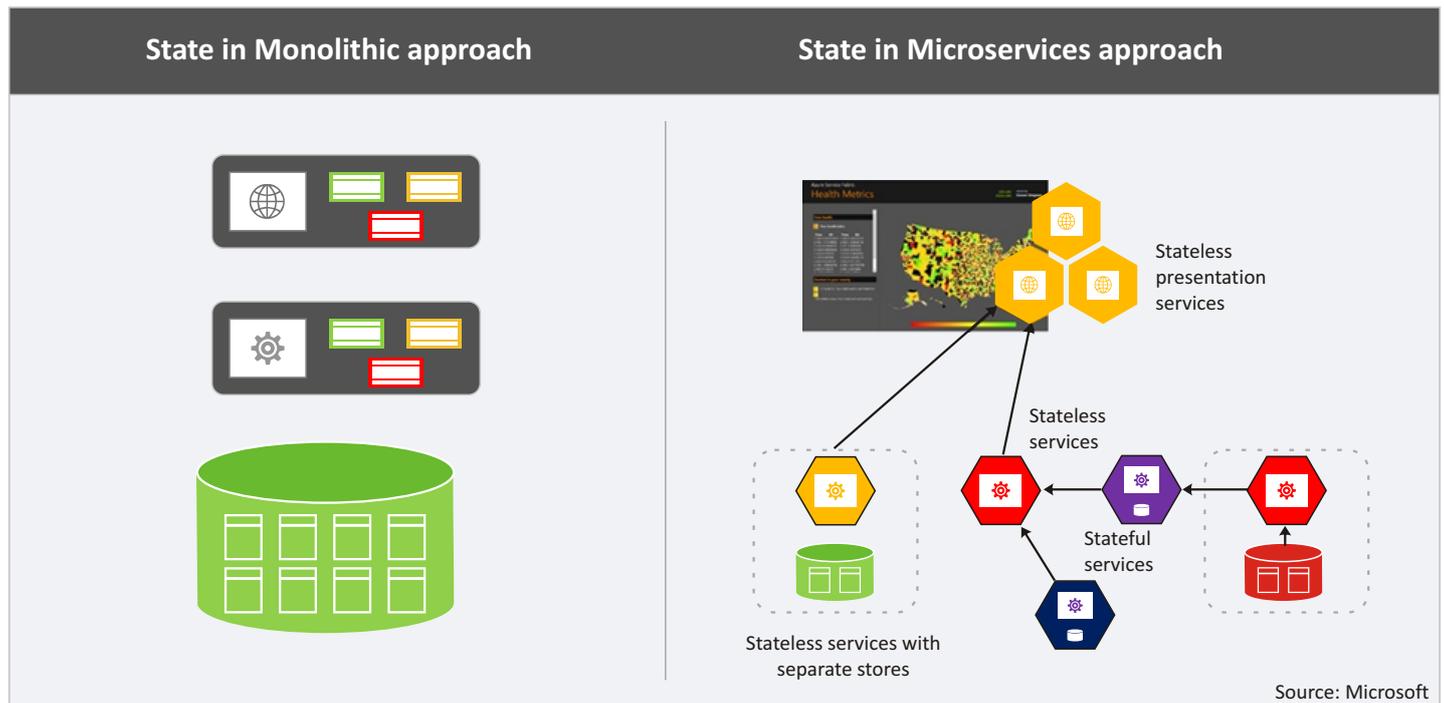


Benefits of Microservices

Every transformation comes with its own set of hurdles and microservices are no different. Fittingly, **Diligence** must be in place so that developers are not creating duplicate services. **Quality** is another important aspect so that the consistencies of performance are maintained. **Access** for smooth integration and information exchange across services is also paramount.

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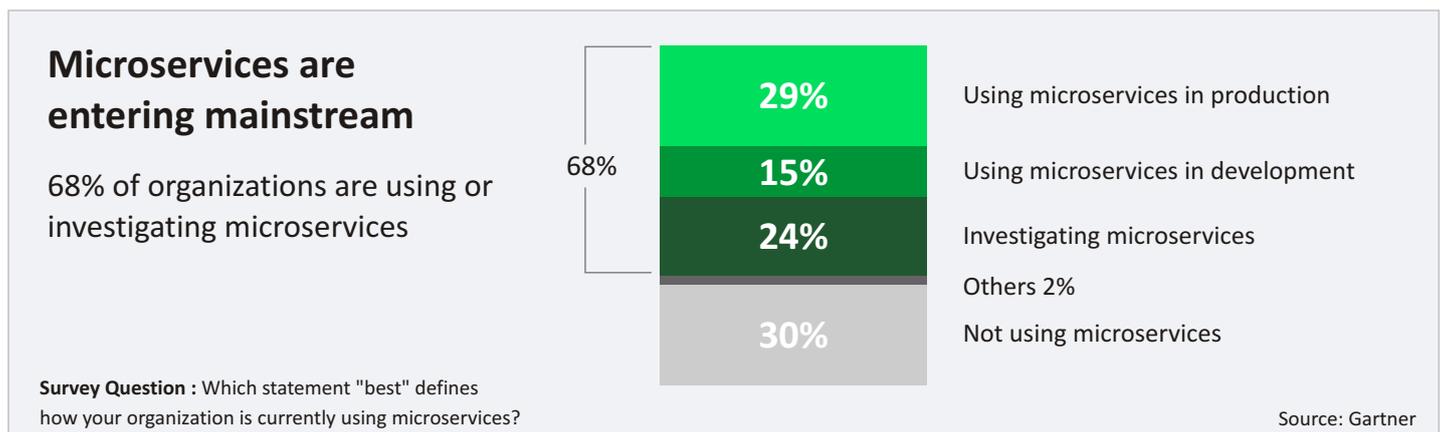
Microservice applications can be written in any programming language and the state can be independently versioned, deployed & scaled. Tools that are focused on Continuous Integration/ Continuous Delivery (CI/CD) and DevOps will fortify the Microservices ecosystem. The Cluster Manager is a distributed system that the microservices talk to for maximizing the overall resource utilization. While the state in a Monolithic application is defined by the tables in the single database, the Microservices approach has services manage their own state that builds resiliency. Recovering a state in a microservice brings in the aspect of consistency.



Evolution of Microservices

Danny Brian, Research VP from Gartner spoke about the stages of Technology Evolution. When it's applied to Microservices, every stage seeks to reinforce eventual democratization. Decoupled services are a prerequisite for distribution that Microservices enable through scalability and resilience.

Just as Netflix, Amazon and eBay have taken to microservices to deliver streamlined software development, other enterprises are following suit to embrace this new culture of abstraction. According to the "2016 Future of Application Development and Delivery Survey" with responses across the spectrum of 1800 IT professionals, Microservices are entering the mainstream with 68% of organizations using it or investigating into it.



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The failure of the SOA Movement teaches us to be prepared for technology obsolescence with business harmony the only goal to live by. Microservices leave a lasting impression of patterns and principles to weave the narrative of digital transformation into the fabric of the enterprise.

REFERENCES

1. <https://azure.microsoft.com/en-in/documentation/articles/service-fabric-overview-microservices/>
2. <https://cloudramblings.me/2015/03/20/microservices-martin-fowler-netscape-componentized-composable-platforms-and-soa-service-oriented-architecture/>
3. <http://blogs.gartner.com/gary-olliffe/2015/01/30/microservices-guts-on-the-outside/>
4. <https://www.stackbuilders.com/news/the-hidden-costs-of-microservices#fn1>
5. <http://martinfowler.com/articles/microservices.html>
6. <http://www.tibco.com/assets/blt5e7395756f8aca05/wp-five-microservice-initiatives-for-digital-business.pdf>
7. <https://smartbear.com/learn/api-design/what-are-microservices/>
8. <http://blogs.wsj.com/cio/2015/10/05/innovate-or-die-the-rise-of-microservices/>
9. <https://azure.microsoft.com/en-us/blog/microservices-an-application-revolution-powered-by-the-cloud/>
10. From Macrosystems to Microservices, IDC
11. <http://blogs.gartner.com/danny-brian/three-ds-of-technology-evolution/>
12. <http://www.tibco.com/assets/bltfe82115f20683092/wp-microservices-fast-path-to-digital-business.pdf>
13. <http://www.infoworld.com/article/3080611/application-development/learning-from-soa-5-lessons-for-the-microservices-era.html>



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