



EMBRACING MACH ARCHITECTURE: THE KEY TO SURVIVING DISRUPTIVE TIMES



The Adaptable Enterprise is the New Normal

Business conditions the world over have been turbulent for various reasons in the last few years, and experts expect this constant disruptive state to be the new normal. So how can companies used to a steady state of working now adapt to this continuous change? Charles Darwin's famous words, "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change," has never been more applicable.

That's why companies are taking up digital technology to endure and flourish at a fast pace. **Infosys' Digital Radar 2023** found that over 90% of companies surveyed had at least one digital initiative going. While this finding encourages digital advocates, the transformation journey is not easy. A huge decision that challenges companies is about the underlying technology infrastructure that powers the enterprise. Of course, this infrastructure must align with the digital theme.

Why is that essential? The fast pace of market changes mandates companies to respond equally swiftly to stay relevant. In addition, customers expect enhanced and personalized experiences. For organizations, this means they should be able to scale, respond with speed, agility and flexibility and exhibit resilience. At the same time, executive leaders and investors expect increased productivity of resources and growth in revenues and profits. Going by this scenario, digital technology can make a massive difference in business performance.

But the reality is that while companies are keen to progress, they are held back by monolithic or single self-contained behemoths. In a monolithic system, all the application components are tightly coupled and cannot function independently. As a result, they tend to be less flexible, agile, reliable and resilient - clearly, unsuited for the dynamic changes that are so characteristic of these times.

The Infosys Digital Commerce 2023 study reveals the state of different architecture platforms today.

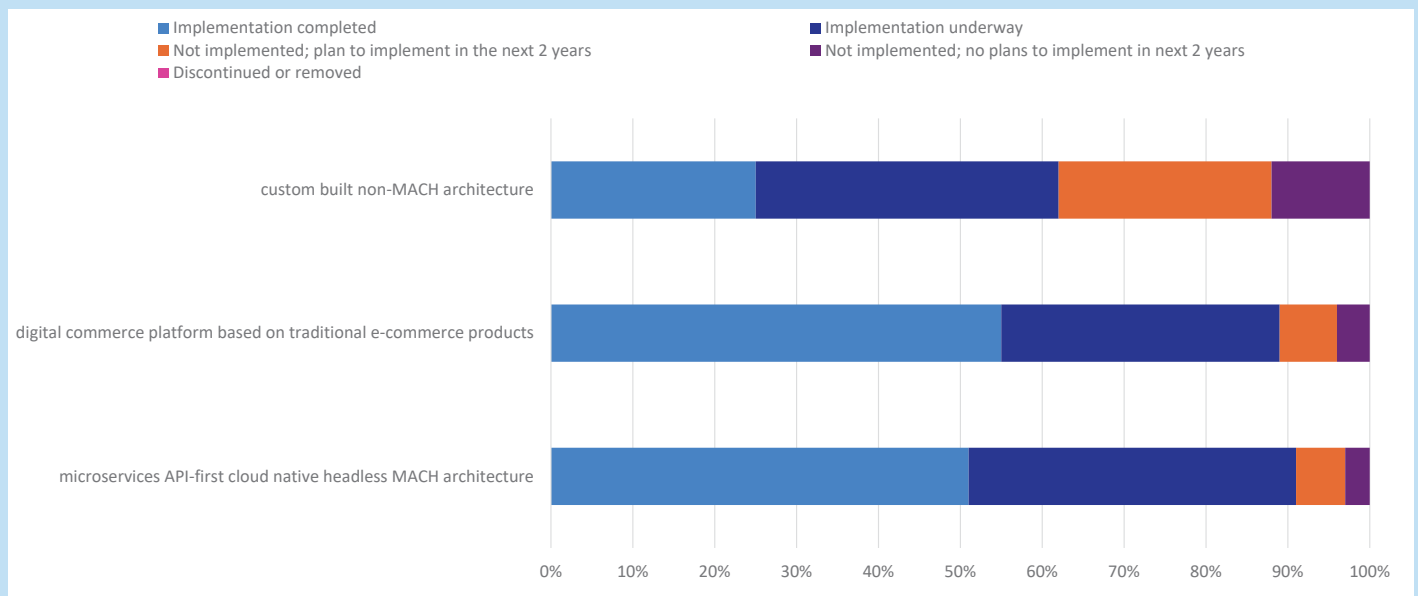


Figure 1 Implementation status of different platform design architectures Source: Infosys Knowledge Institute

However, for most companies, monolith legacy systems are, unfortunately, still a dominant force. As expected, 80% of companies have implemented monolithic (55%) or custom-built non-MACH (25%) digital commerce platforms.

Companies realize that is not the most conducive background to support digital transformation, enhance customer experiences and drive business growth. There has never been a better time to change and seek alternatives.

In this context, MACH architecture, Microservices based, API-first, Cloud-native SaaS and Headless can play a major role. It allows companies to break down their applications into smaller, independent services, making it easier to develop, deploy, and scale. It also enables greater collaboration and integration across different systems and technologies. So, with its support, organizations can build modern, customer experience focused, cloud-native, and scalable systems that can support digital transformation initiatives rapidly.



The Four Pillars that make MACH Architecture powerful

Microservice based architecture - individual pieces of business functionality that are independently developed, deployed, scaled and managed. So, businesses can quickly and easily update or replace specific services without affecting the rest of the system, making it more flexible and adaptable to change.

API Centricity - APIs are designed and developed before any user interface or other system components are built. They enable different services and systems to communicate and share data, making it easier to integrate different technologies and systems.

Cloud Native - MACH architecture is cloud-native, taking advantage of the scalability, reliability, automatic updating and cost-effectiveness of cloud computing. In addition, it is possible to establish multi-tenant SaaS that is provisioned on demand, self-serviced and consumed as a service.

Headless - the front end is completely decoupled from the backend and can be changed independently without disturbing the backend. Owing to this, businesses can create a more personalized and engaging customer experience by delivering content and functionality across multiple channels and touchpoints.

Thanks to its composable nature, MACH's distinct advantage is that it offers flexibility to business users to replace solution components in their system landscape in a plug-and-play manner, enabling them to quickly cater to ever evolving business needs. Such a fast response is almost unimaginable with a monolith. Moreover, monolithic systems imply vendor lock-ins, further restricting flexibility.

MACH vs Monolith

Consider a typical commerce platform with multiple capabilities, such as a digital experience platform, order management

system, payment, vouchers and promotions. Monolithic systems are typically single vendor platforms. All capabilities are built as an extension of this platform's base capabilities, limiting an enterprise's choice to what only the vendor offers. However, with a MACH based approach, enterprises can build next generation platforms with components from multiple vendors, each of which can be independently replaced if they are not able to keep pace with evolving business demands. So, suddenly, the system becomes much more flexible as each component is decoupled. Each component can be selected based on business demand and its capabilities. For instance, a commerce platform can integrate with an external search engine because it's API based and switch to another easily because it offers superior outcomes.

Another huge appeal of MACH architecture is that all components are SaaS based or cloud native. As a result, MACH architecture will reduce the infrastructure footprint that the enterprise needs to manage. They now have the bandwidth to build business capabilities instead of focusing on hosting needs.

MACH architecture offers several advantages over monolithic architecture. MACH is a more flexible and scalable architecture that enables faster and more frequent deployments, reduces dependency on a single technology stack by making integration and interoperability easier, allows for greater agility in responding to changing business needs, and promotes better overall system resilience.

It appears that enterprises must quickly shift to MACH platforms. MACH Alliance research showed that four-fifths of their respondents strongly intended to increase MACH elements in their architecture in the future as they believe that will help them get ahead of the competition. In addition, almost half the respondents desired completely composable platforms, while over 50% wanted completely cloud driven platforms.

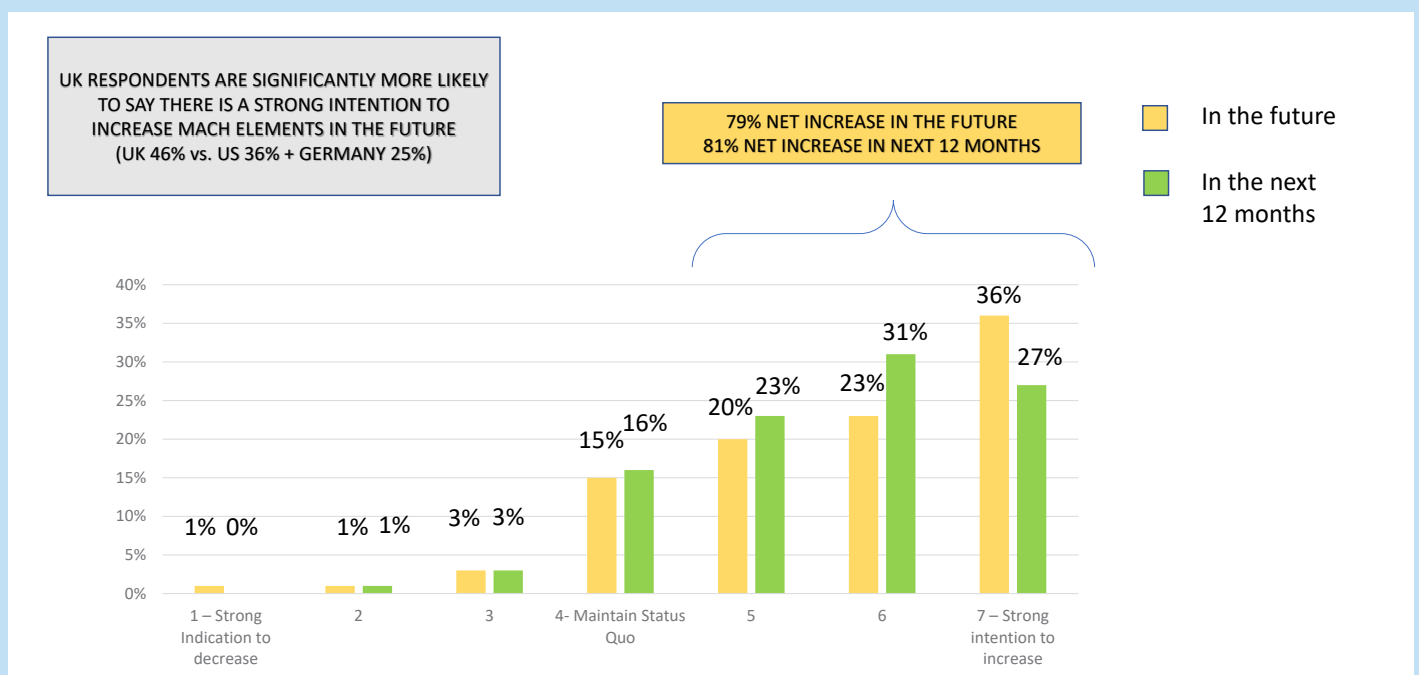


Figure 2 MACH is the future of architecture Source: MACH Alliance

The Infosys [Digital Commerce 2023](#) report expects all three types of architectures, namely custom built non MACH, digital commerce platforms based on traditional eCommerce products and MACH, to continue to coexist. But strong indicators point to uptake in MACH architecture as companies move towards flexible and technologically advanced options.

However, implementing a MACH architecture can consume significant time, resources and expertise based on the business needs. Moreover, the complexity will increase with a distributed systems layout. Therefore, the decision to shift from a monolithic architecture to MACH should involve a careful evaluation of the organization's goals, needs, and resources and a thorough assessment of the technical feasibility and costs of the transition. If the evaluation gives the go-ahead for a shift to MACH, then it's worth the investment.

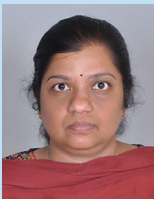
Global 2022 Research Shows MACH Adoption Is High On The Agenda for Tech Leaders (machalliance.org)

It's worth it

As we move forward, it is clear that the business environment will continue to be disruptive, and companies will need to be agile and flexible to survive and thrive. MACH architecture offers a solution to the limitations of monolithic systems, enabling companies to build modern, scalable, and customer-focused applications that can adapt quickly to changing business demands. With its four pillars - Microservices, API Centricity, Cloud Native, and Headless - MACH architecture is poised to become the go-to solution for companies looking to stay ahead of the curve. By embracing MACH, companies can break free from vendor lock-ins, reduce infrastructure footprint, and focus on building business capabilities instead of hosting needs. The shift to MACH architecture is not an easy one, but the benefits are clear - it is worth the investment

At Infosys, we are keenly aware of the issues that complicate the decision to shift to MACH architecture as well as the intricacies involved in the transition. With our support, companies that make the shift today will be well-positioned to thrive in the ever-changing business landscape of tomorrow.

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