



# What is MACH Architecture?

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inveon







E-commerce applications were traditionally designed using monolithic based architecture—a single application that consolidates disparate business logic, user interfaces, and products in one large codebase. While monolithic architecture may be sufficient for some e-commerce applications, it can quickly become problematic when the amount of data, features, and product variety increases.

This is where new architectural structures came into the picture, as they bring in a lot of flexibility, scalability, and reliability, like MACH Architecture. In a nutshell, MACH is an architectural style based on atomic design principles leveraging four key concepts; Microservices, API-first, Cloud-native, and Headless approach.



MACH architecture is a structure that facilitates the implementation of multiple features to meet the challenges of modern development. For e-commerce businesses that are struggling to **keep up with the innovation** and the growing demand for personalized digital experiences; **MACH can be evaluated as the savior.**

So what MACH actually is, right? Let's start with the basics first:

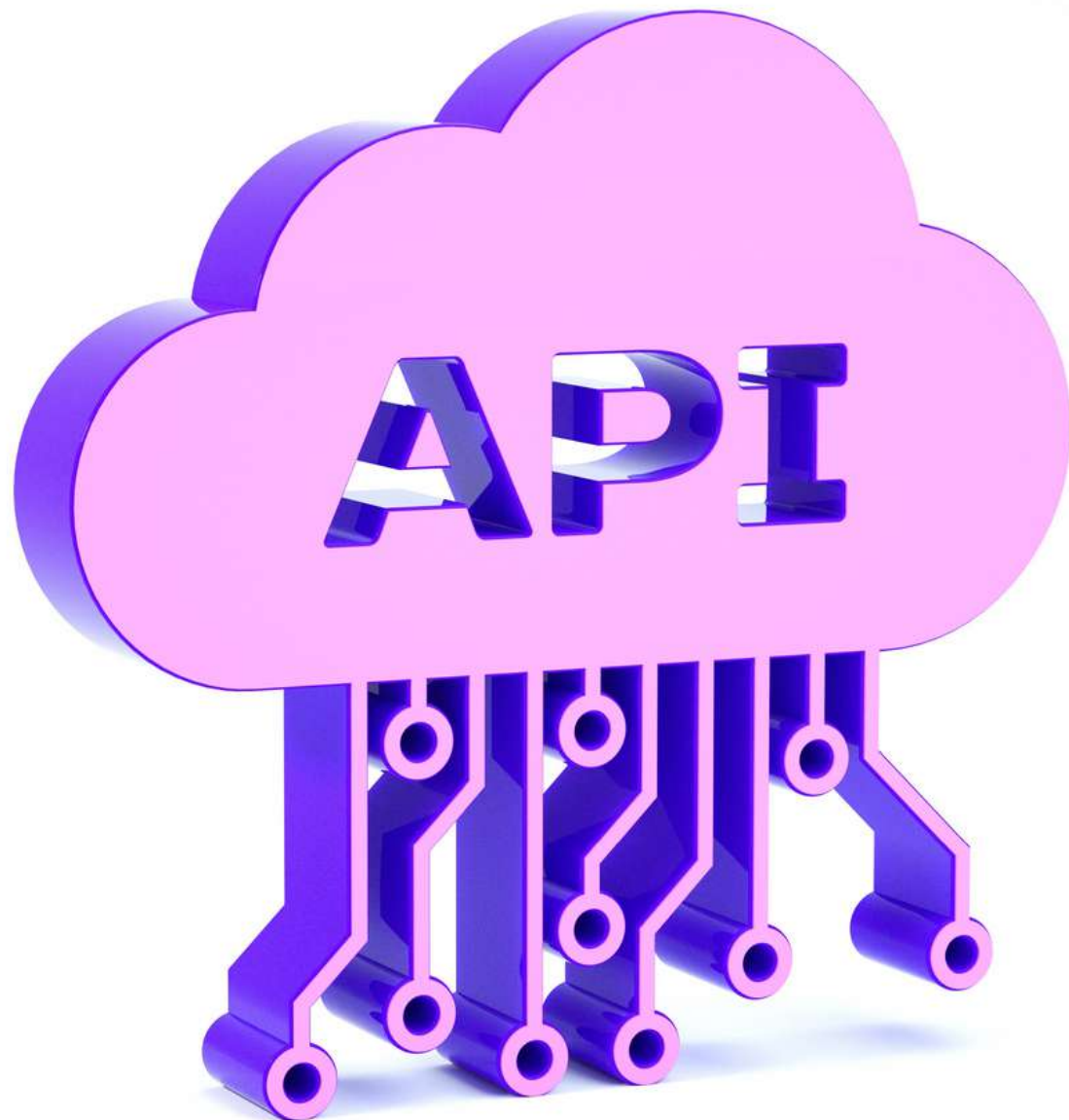


## >> Microservices:

Visual commerce does not only consist of custom-made content created especially for your brand, it can also benefit from **user-generated content** such as tagged photos, box opening & review videos.

The human brain is wired to process visuals 60,000 times faster than text. As a result, visuals **communicate more information** in a much faster, and more effective, way. When you convey a message or information as visual elements, it **makes it easier to understand, process, and remember.**





## >> API-first:

API stands for Application Programming Interface. An API is a set of programming instructions and standards for accessing software applications. It specifies how components should interact with each other. The e-commerce API allows developers to build integrations with their platforms without having access to the code base or database structure of their platforms. Instead of being added on as an afterthought, an API-first design approach suggests APIs are the driving force behind the application's design.

## >> Cloud-native:

Cloud-native is a set of principles for building applications that can be hosted on the cloud. These applications are designed to run on the cloud, leveraging cloud services and **elasticity in their architecture**. A cloud-native platform combines cloud technologies with the concept of microservices and was designed for the current digital age. Cloud-native e-commerce allows you to quickly and flexibly introduce new functions and features, adjust your business quickly, and respond faster to market changes.







## >> Headless approach:

A headless approach in e-commerce is a structure where the front-end and back-end are completely decoupled. This means that the system need not have a single layer in order to function properly. The presentation layer (front end) of the e-commerce entity is separated from the application logic and managing data (back end). This structure basically brings more freedom and flexibility in building out a strong digital presence.

# What are the benefits of MACH architecture?



Everyone loves technology, especially when it meets business goals. In the e-commerce industry, the challenges are almost limitless, however, the MACH approach overcomes some of the most crucial of these challenges. As e-commerce players strive to **stay ahead of their competition**, with the rise of new business models and innovations in the e-commerce space, there has been a paradigm shift in architecture towards MACH architecture.



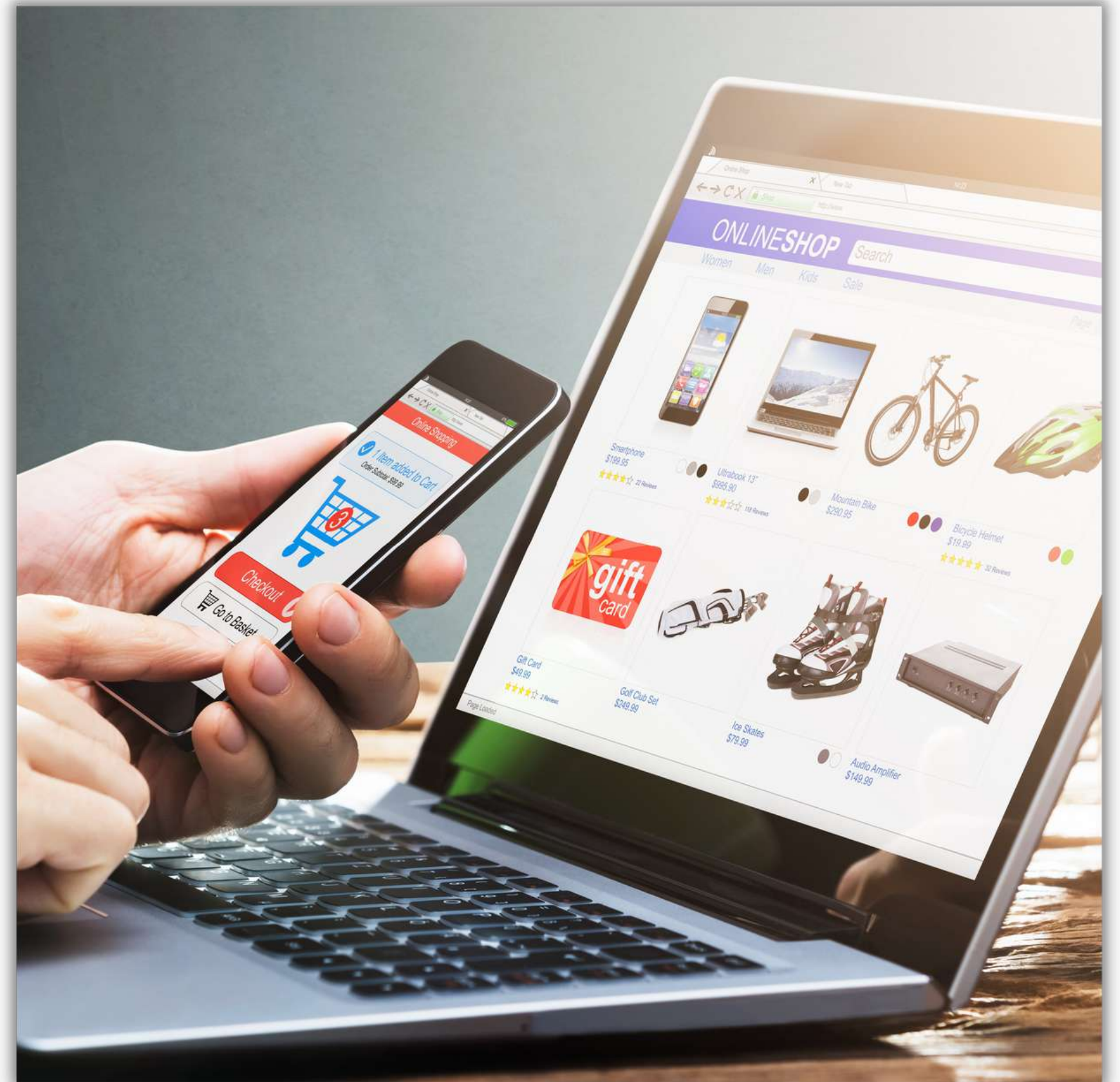


The microservices structure makes the application easier to understand, develop, test, and become more resilient to architecture erosion. It parallelizes development by enabling small autonomous teams to develop, deploy and scale their respective services independently.

It also allows the architecture of an individual service to emerge through continuous refactoring. Microservice-based architectures enable **continuous delivery and deployment**. It also eliminates any dependencies on a single framework, which increases the development velocity of any app or service within the organization.

When applied to e-commerce development, microservices allow teams to handle the constant changes in business requirements without interrupting e-commerce platform performance. The technology has enabled businesses to make required changes at the speed of light.

Enterprise e-commerce applications usually have much functionality. With this being the case, **flexible architecture** is required for the quick launch of the applications and desired customization level.





These days, more and more e-commerce businesses are adopting a headless architecture — which puts them at a **competitive advantage** in the age of change. Using an e-commerce product with a headless architecture should help you expand your business's features and capabilities. Thus, **eliminates the need to re-platform** because of a major trend shift or changing customer habits. Rather than relying on a server-side scripting language, the headless architecture uses a combination of APIs and front-end frameworks to interact with the e-commerce platform. This approach creates more powerful and innovative shopping experiences when combined with a strong backend like **the platform Inveon offers.**





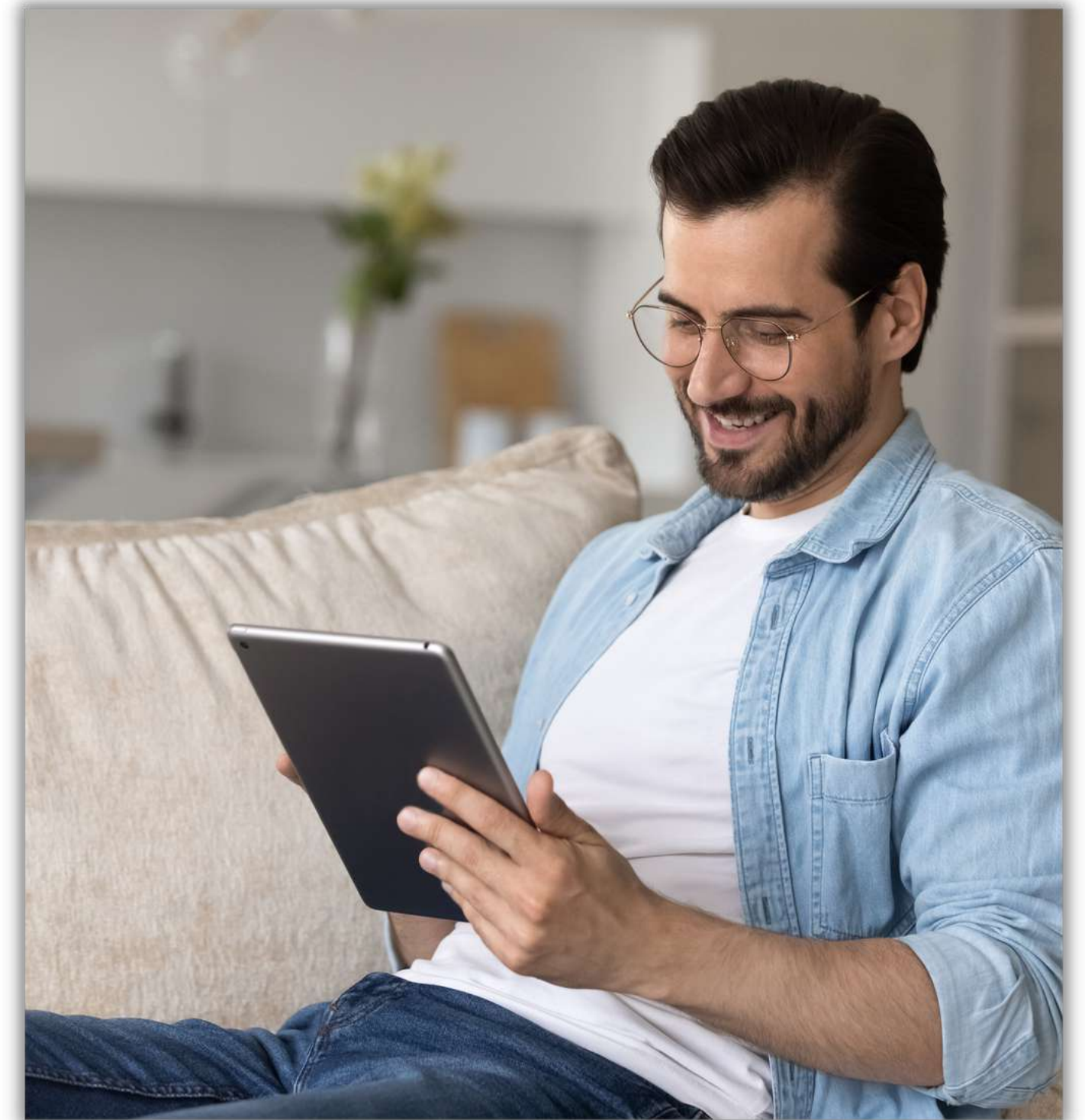
MACH architecture makes applications **easier to scale and faster to develop**, enabling innovation and accelerating time-to-market for new features. Thanks to their flexibility, they can also be **customized to suit the unique goals and image of your company**.



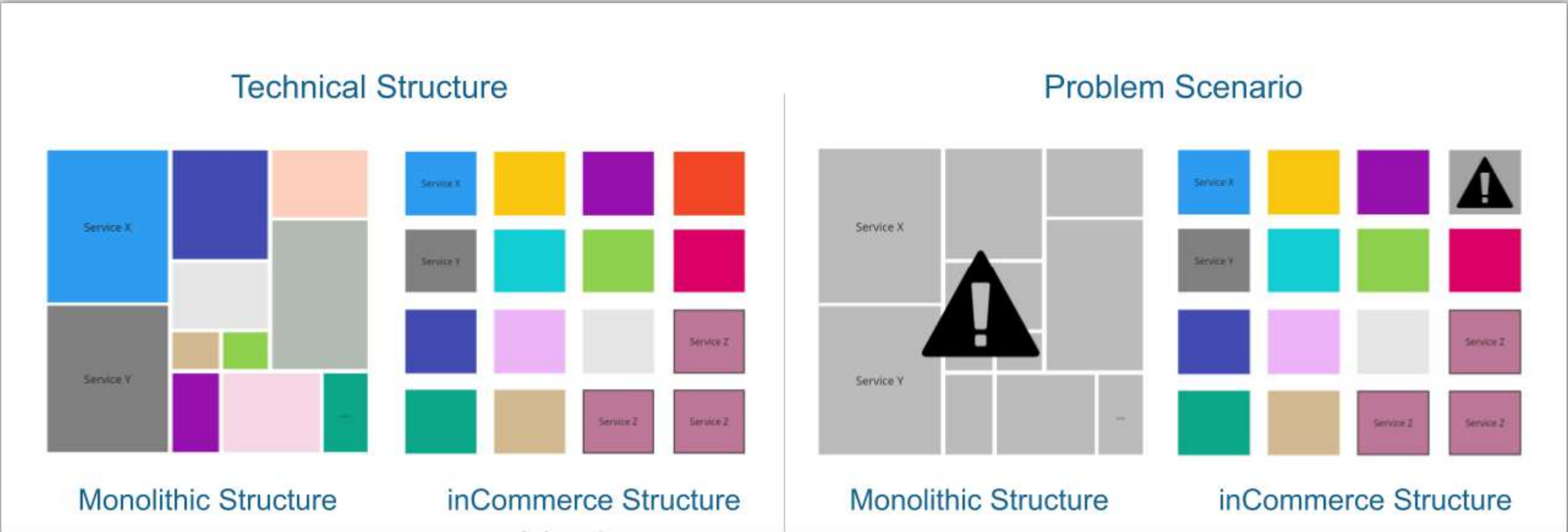
# MACH vs Monoliths

Surprise, surprise! Monolithic applications are not the best option anymore. We are living in complicated times; **users want everything faster and more straightforward**. There are challenges with scalability, reliability, efficiency, and agility.

It is no longer affordable to lose even a split second. Unlike monoliths, MACH platforms provide **advanced scalability** because each service can be scaled independently with one dedicated backend server allowing horizontal scaling as opposed to having multiple application servers you need to scale vertically. Furthermore, as the back end is a standalone application, any changes made to the front end do not impact the back end, or any problem that occurred in one function does not take all systems down.



# Monolithic vs Microservices Structure



Integrating with new technologies can also be difficult if you are using a traditional monolith architecture, whereas MACH provides APIs to create smooth integrations by utilizing standard interfaces.



# Modern commerce with MACH architecture

The ability to utilize MACH-based e-commerce solutions is now vital to creating a digital experience that resonates with customers across channels. With a strong focus on **flexibility, modularity, and scalability**; MACH architecture is uniquely positioned to enable enterprises to modernize their e-commerce platform and realize the benefits of cloud-based digital transformation.





In this article, we only touched on the basic points and the top layer of the MACH architecture. It may be difficult to fit all technical information about this multi-layered complex structure in short content, but it is quite easy to discover these platforms and their amazing benefits. **The Inveon inCommerce platform** has been carefully designed so that you can benefit from all the advantages of MACH architecture and offer the best possible digital experience to your customers.

One of the most exciting possibilities for e-commerce is now the adoption of MACH-based platforms. So, **request a demo of Inveon inCommerce** today and discover what the future of commerce will bring to you.





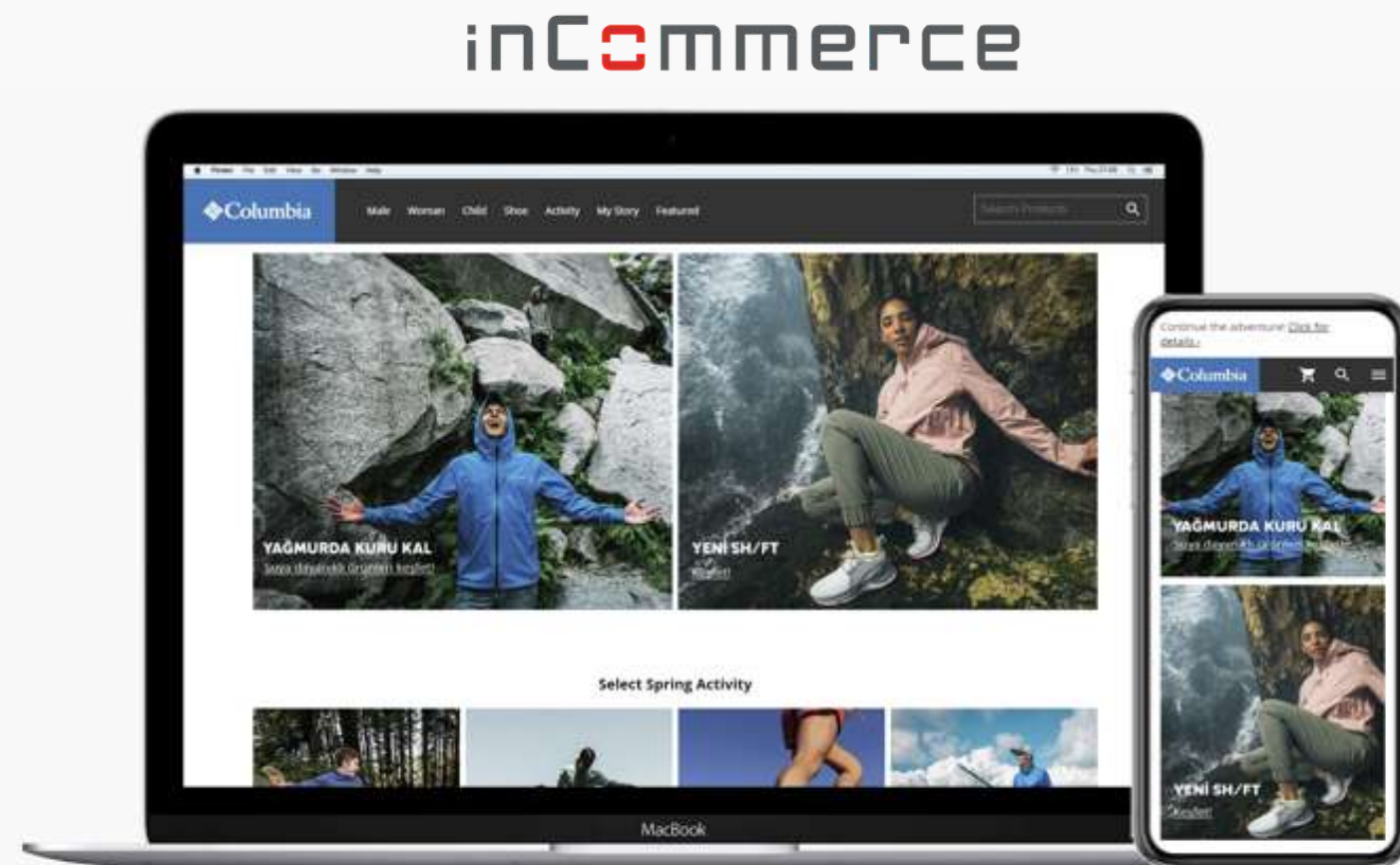
**Inveon helps you to stay one step  
ahead of the competition.**

Schedule a call with one of our e-commerce experts  
today.

**Get in touch!**

# A fulfilling digital commerce platform to deliver an exceptional customer experience

Inveon inCommerce is the agile way to build, launch and expand your e-commerce business across channels, marketplaces and partners.



Let's take your business to the next level!

## Microservice Architecture

Enjoy highly performed operations, ease of integrations and maximum speed through microservice architecture

## Omnichannel Promotion Management

Take a deep-dive into the world of promotion and discount management with an advanced promotion management module

## Headless Structure, Supreme Flexibility

Through inCommerce's headless structure, easily customize your platform and provide a seamless experience to your customers

## Advanced OMS

Effectively manage your omnichannel operations and eliminate operational complexity with inCommerce's strong order fulfillment algorithms

## Real-time Tracking & Insights

Master your data by tracking brand-specific consumer journeys and detailed data dashboards of the reporting module

## Mobile-first Operational Management

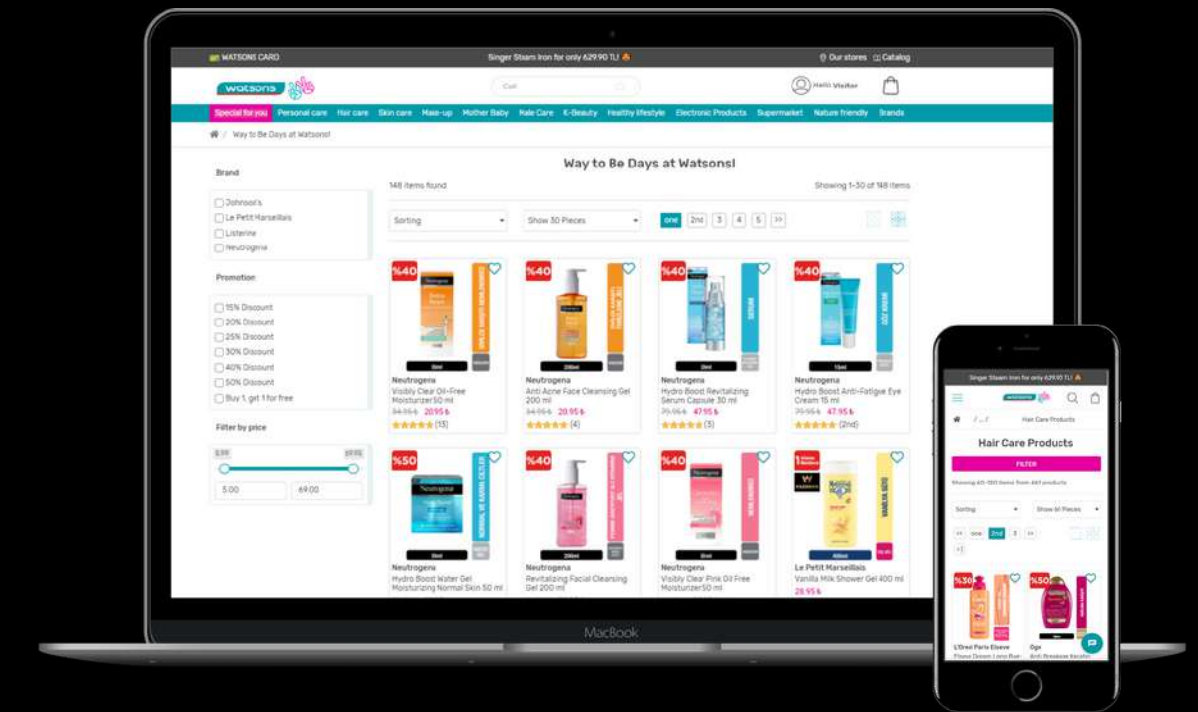
Utilize a comprehensive range of tools to excellently control your operations wherever you are with inCommerce's fully responsive and mobile-compatible admin panel



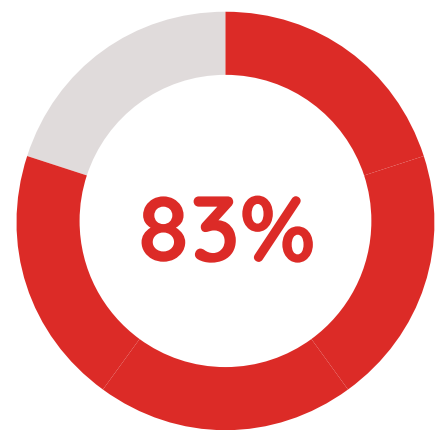


## Unlock growth potential & empower your brand: GrowthLab

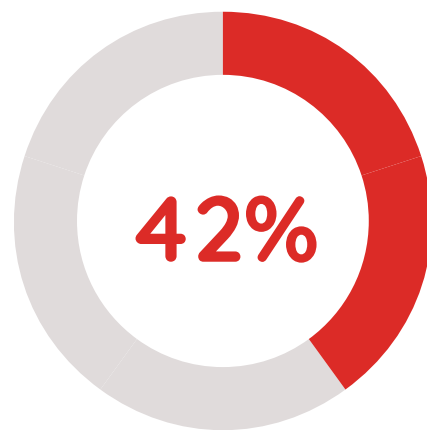
- Keep the pulse on your store with inCommerce's real-time data stream
- Uncover growth opportunities using behavioral segments
- Take the guesswork out of growth with our proprietary next-best-action methodology



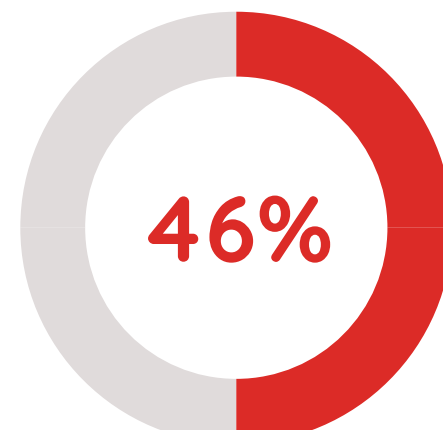
## After 12 months of working with Inveon, our clients achieved:



An average increase  
in revenue



An average increase  
in traffic



An average increase  
in conversion rates



## Highlights from our clients

- Offering products in 90 countries under a single platform and increasing global revenue by 400%.
- 5x increase in the number of visitors during the Singles Day Campaign. (Gold Stevie Winner for Online Marketing Campaign of the Year)
- Omnichannel revenue reached 1.5 times higher than e-commerce site revenue within 6 months.

# About Inveon

Inveon provides enterprise companies a unified & scalable digital commerce platform that enables sustainable growth.



## Our Offices

- Istanbul, Turkey
- London , UK
- Geneva, Switzerland
- Dubai, UAE



\$1B

annual e-commerce volume



60+

global customers



70M

online shoppers



15+

countries

For more information, get in touch with us

info@inveon.com

