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WHY HEADLESS IS AN ESSENTIAL COMPETENCE OF COMPOSABLE

The business leader's guide to a headless commerce strategy

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WHY HEADLESS IS AN ESSENTIAL COMPETENCE OF COMPOSABLE

Traditional eCommerce software platforms (think Oracle, Adobe Magento, IBM WebSphere and Demandware/Salesforce) were built in the 1990s as an all-in-one solution for buyers and sellers using desktop computers for eCommerce. They were appropriate for their time and were designed as a single, integrated application, often referred to as a monolith. These monolithic commerce platforms are inherently rigid and were created with a fixed set of rules, from user experience to supported channels. Fast forward to today with mobile devices, internet-based devices, industrial machinery, and even automobiles being viewed as revenue streams and it's clear that the rules have changed dramatically. Rigid platforms negatively impact responsiveness to market shifts and consumer buying needs. By contrast, a Modern Commerce Architecture™ is a more flexible approach. It puts the marketing team in charge of the brand and customer experience and enables the IT team to meet the demands of the business quickly. In short, Modern Commerce Architecture powers modern commerce business.

One of the principles of Modern Commerce Architecture is that the front-end or user interface is separate from the commerce functionality to enable maximum flexibility and control over the customer experience no matter the device or channel. In this so-called "best of breed" approach, marketers and IT teams can select the best user experience solution to meet their **needs**.

We refer to this approach as 'headless commerce' where the front-end (the head) is separated from the back-end functionality.

One of the principles of Modern Commerce Architecture is that the front-end or user interface is separate from the commerce functionality to enable maximum flexibility and control over the customer experience no matter the device or channel.
In this so-called "best of breed" approach, marketers and IT teams can select the best user experience solution to meet their needs. We refer to this approach as 'headless commerce' where the front-end (the head) is decoupled from the back-end functionality. Although, headless commerce is perhaps a misleading term. These solutions may in fact have many modular, interchangeable heads that control various aspects of the digital experience. Headless commerce solutions promise to enable very rapid, business-driven commerce and new, engaging ways to serve and sell to customers.

This approach, first developed by commercetools, has been embraced by major global enterprises and growing digital-native brands alike. No matter what you are selling, having the ability to control and quickly change the buyer journey on any and all touchpoints has become a must-have for digital teams.

This Playbook discusses considerations business teams must make for a Modern Commerce Architecture including:

- Choosing a front-end
- Capabilities needed in the commerce solution
- What a migration from monolith to Modern Commerce Architecture looks like

Since headless commerce is a major part of this approach, we'll start with a quick overview of why all business leaders should be moving towards headless commerce

"Adopting MACH and composable commerce enables our customers to respond to market forces faster and more effectively, from managing an ever-increasing number of channels to speeding up time to market. It allows them to really innovate, differentiate and scale their business operations in a way they previously couldn't. Their tech teams benefit from a much more flexible architecture and their business teams can work in an agile and collaborative way to deliver much more value to their customers."

Emily Godfrey,
Senior Solutions Consultant,
Amplience

FIVE BUSINESS BENEFITS OF HEADLESS COMMERCE

If your strategy revolves around growing your brand and staying relevant for digital consumers, consider these five benefits for embracing headless commerce.

01. Customization

When using a headless solution, you're not tied to monolithic software that prescribes how a front-end should be structured. This freedom means you don't have to stick to a specific template system or train your employees to follow exact rules laid out by a software vendor. Instead, you have full control over what happens on the front-end and can follow your UX design principles to shape your brand's identity without having to adhere to a templated layout that makes your sites and apps look and feel like everybody else's.

What you gain:

- Brand recognition
- Higher conversion rates and LTV

02. Freedom to experiment

In a headless environment, you can conduct user experience (UX) experiments without the risk of jeopardizing the whole ecosystem. You can A/B test specific parts of your website, or try to build an Alexa skill, without affecting the back-end operations if you run into errors. By contrast, a traditional commerce architecture would force you to modify front-end and back-end code simultaneously – sometimes requiring a shutdown of the entire application for maintenance.

What you gain:

- Learn faster (faster feedback on ideas, promotions and programs)
- Less dependence on IT/ Development
- A culture of innovation

03. Speed and agility

You can implement new UX changes faster since you don't have to redeploy a back-end system when working in a decoupled environment. Development becomes much more efficient when teams can work in parallel and UX changes can be made without having to test all the core back-end logic.

What you gain:

- Freedom to push seasonal, flash or trend-seizing promotions
- Efficient software maintenance
- Ability to adapt fulfillment logic quickly to changes in demand and supply

04. Scaling

In a best-of-breed environment, the front-end and back-end can be scaled independently so that even if the front-end receives a lot of traffic, the commerce functions are not impacted.

What you gain:

- Faster time to value
- Efficiency

05. Easily add new touchpoints

In a headless scenario, multiple front-ends can connect to one API and underlying system. In other words, if you want to add social channels, kiosks, mobile apps, or in-car marketplace shopping, you can do so easily and quickly. Now you won't have to build a business case for a new back-end every time you want to add a new front-end.

What you gain:

- Ability to launch new touchpoints ahead of competitors
- Loyal fans who perceive your brand as relevant to their lifestyles

Headless commerce promises these five business benefits, but what companies are finding out is that there are different types of front-ends once you decide to go this route. Let's look at each of the three major types and things to consider for each.

HEADLESS FRONT-ENDS

How to choose and what to look for

Headless commerce is all about the customer experience. Legacy commerce platforms had presentation layer technology tightly embedded into the commerce platform itself resulting in a commodity experience - where one website looked and felt like any other. Brands couldn't differentiate. The experience layer was controlled by IT, mainly for the purpose of exposing commerce data & functionality to the user, and so it was difficult to create unique experiences.

Today, the emphasis is on the buyer journey. Marketers and site merchandisers want to be in control and build emotionally engaging experiences that convert. The better the customer experience, the more customers will enjoy interacting with your brand, ultimately leading to higher margins. The primary prerequisite for all of this is to decouple the presentation layer from the commerce engine itself.

This is the basic concept behind headless commerce (also often referred to as composable commerce).

Another key driver for headless is the proliferation of customer touchpoints. Not confined to traditional desktop web, customers want to shop and interact with your brand across a wide variety of touchpoints including mobile apps, in-store kiosks, wearables, voice and social media.

Here's a look at each of the three major categories of front-ends: digital experience platforms, front-ends as a service and custom.

"At Fluent, we believe in the power of flexibility. MACH gives companies the flexibility of which software to use in each category to build their own technology ecosystem. Equally important is the ability to extend and represent their unique differences within each piece of software. Buy and Build.

MACH technology allows businesses to keep innovating, adapting, and to remain truly agile. It gives them the ability to make quick changes to parts of their architecture without the expense and upheaval of starting from scratch.

Going MACH is the only way for companies to totally future-proof their architecture."

Jamie Cairns,
Chief Strategy Officer, Fluent

Digital Experience Platform

The digital experience platform, or DXP, has the richest set of functionality and business user tools. Typically, these solutions combine page rendering & layout management with powerful Content Management & Personalization capabilities - and may include advanced features such as Digital Asset Management and A/B Testing.

The DXP suite contains a comprehensive set of features, with business user tools that put merchandisers and marketers in control. Tools such as What You See is What You Get (WYSIWYG) layout management give business users an exact look at what their commerce site will look like across a variety of device types.

Many DXP solutions evolved from the Content Management Systems (CMS), so they include comprehensive content management tools, enabling business users to author a wide variety of content types to enrich the web experience, and powerful workflow tools to drive approval processes.

These solutions may include Machine-Learning powered personalization capabilities, tools for managing digital assets such as images & video, and other advanced capabilities such as A/B Testing

Since these suites come pre-built, you can get to market quickly.

When considering a DXP, business stakeholders should consider the following:

- Technology fit within your architecture – you want to make sure the solution has staying power
- Suite approach – down the road, it may be difficult to swap out specific components of the system later on
- Cloud or On-Prem – some DXP solutions are deployed as Software-as-a-service (SaaS) while other are on-prem. Work with your IT department to ensure best fit.

2 Front-End as a Service (FaaS)

Front-end as a service is a somewhat newer category, which provides page rendering and layout management, and secondarily some lightweight content management and sometimes, digital asset management as well.

These solutions take care of hosting and managing your page rendering layer and offer some lightweight business user tooling and Content Management. It may take a little more time to implement than the full DXP, and they may not have the rich set of business user tools that a full DXP would have.

These solutions provide a front-end framework that your developers can work in, but they don't provide all of the flexibility of a fully custom front-end.

3 Custom Front-End

Some organizations opt to have their front-end developers build out the page rendering layer using popular frameworks such as Node JS & React or develop front-ends unique to different touchpoints: one for the web, another for mobile apps, etc.

A custom front-end doesn't have any business user tooling, other than those you build yourself, so it's often a good idea to incorporate a headless CMS to enable your business users to build rich experiences.

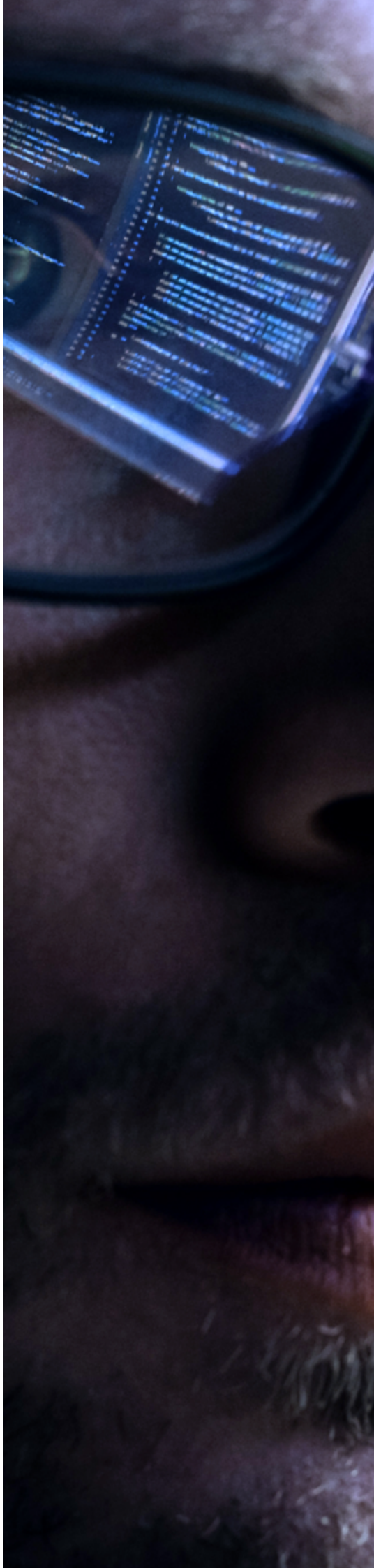
A custom front-end gives you maximum flexibility but there are a few things to consider.

CMS - you should strongly consider a Headless Content Management System to provide asset management and content management for your business users

Speed – headless content management systems are typically deployed as SaaS solutions so they are fast and easy to deploy

There are many front-end software vendors on the market today. While commercetools does not sell front-end software, we have strong technology relationships with most vendors. For a complete list of commercetools' front-end technology partners, please refer to

https://marketplace.commercetools.com/



A composable approach allows for our customers to transform their monolithic architecture that delivers a good enough, not really differentiated set of functionalities into a competitive advantage built out of best-of-breed elements selected and assembled specifically to address the market opportunity they are pursuing. Moreover it gives them the agility and flexibility to quickly respond to market or strategy changes by adapting, improving or changing elements of the stack. Teams deliver value more often as they become more nimble and specialized.

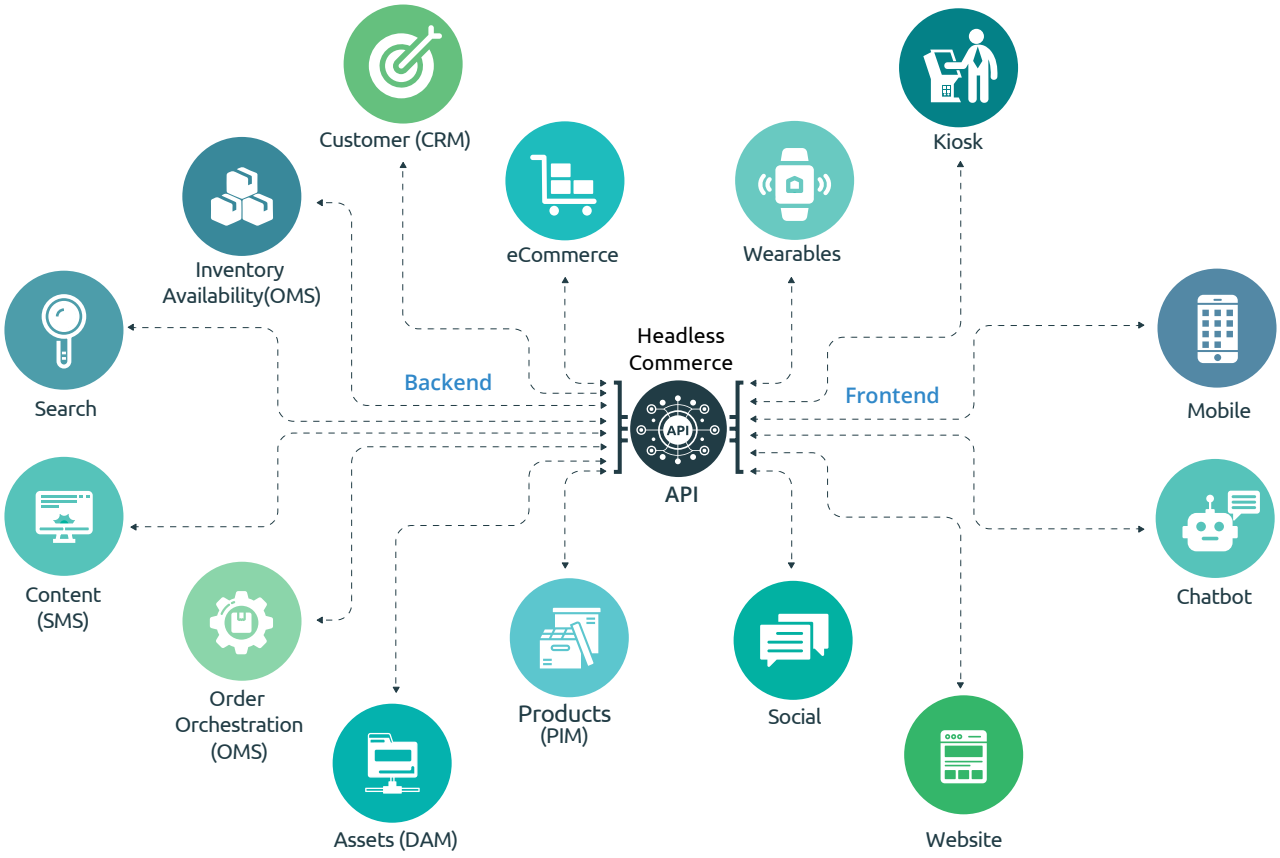
David Barth,
Sr. Director Global ISV Partnerships, Algolia.

THE COMMERCE FUNCTIONALITY

To stick to the metaphor, let's talk about the body, the counterpart of the head. The so-called "back-end" is the operational layer containing all the business logic. It invisibly runs in the background and is responsible for all the heavy lifting and the data crunching.

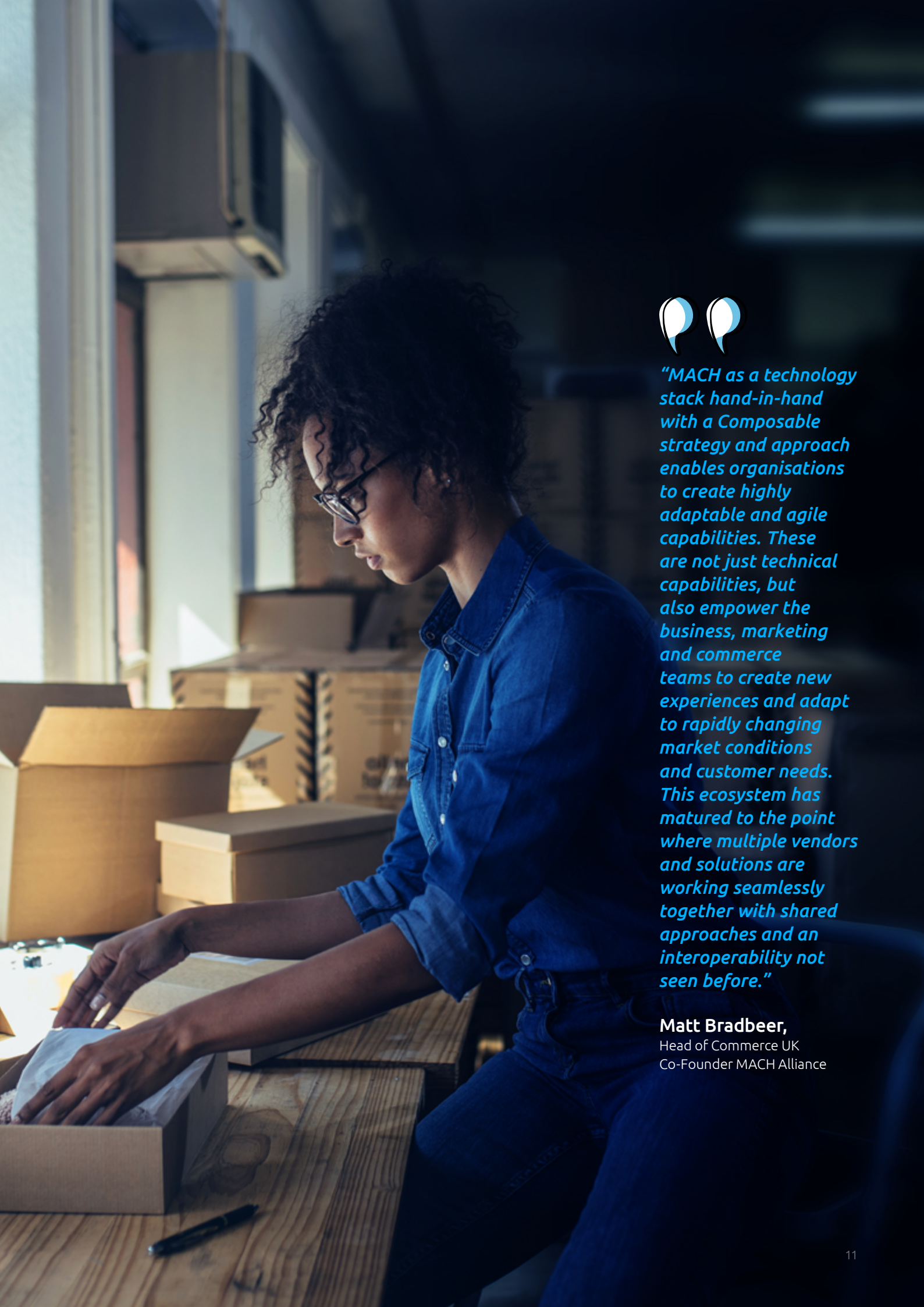
Some of the functions in digital commerce are:

- Infrastructure (Cloud-based vs.on-premise)
- Security
- Catalog data and product search
- Inventory
- Pricing and taxation
- Customer information, customer groups
- Discount logic
- Checkout
- Cart calculation
- Order and return processes
- Rights management
- Management console/business user interface



As you might have guessed already, those functions are entirely separate from the respective front-end interaction. If an order originated in an online game, a VR app or a traditional webstore - the back-end is (almost) blind to all of this and does what it can do best: store and process data.

To pass data from the front-end to the back-end fast and reliably, an API (Application Programming Interface) is used. This is a layer which works as the glue between front-end and back-end and through which all information travels. It is like a Swiss army knife for applications, making sure that all applications get all the data they need. It's important to understand whether a commerce solution is built natively using APIs or whether APIs were added on to a monolithic platform later.



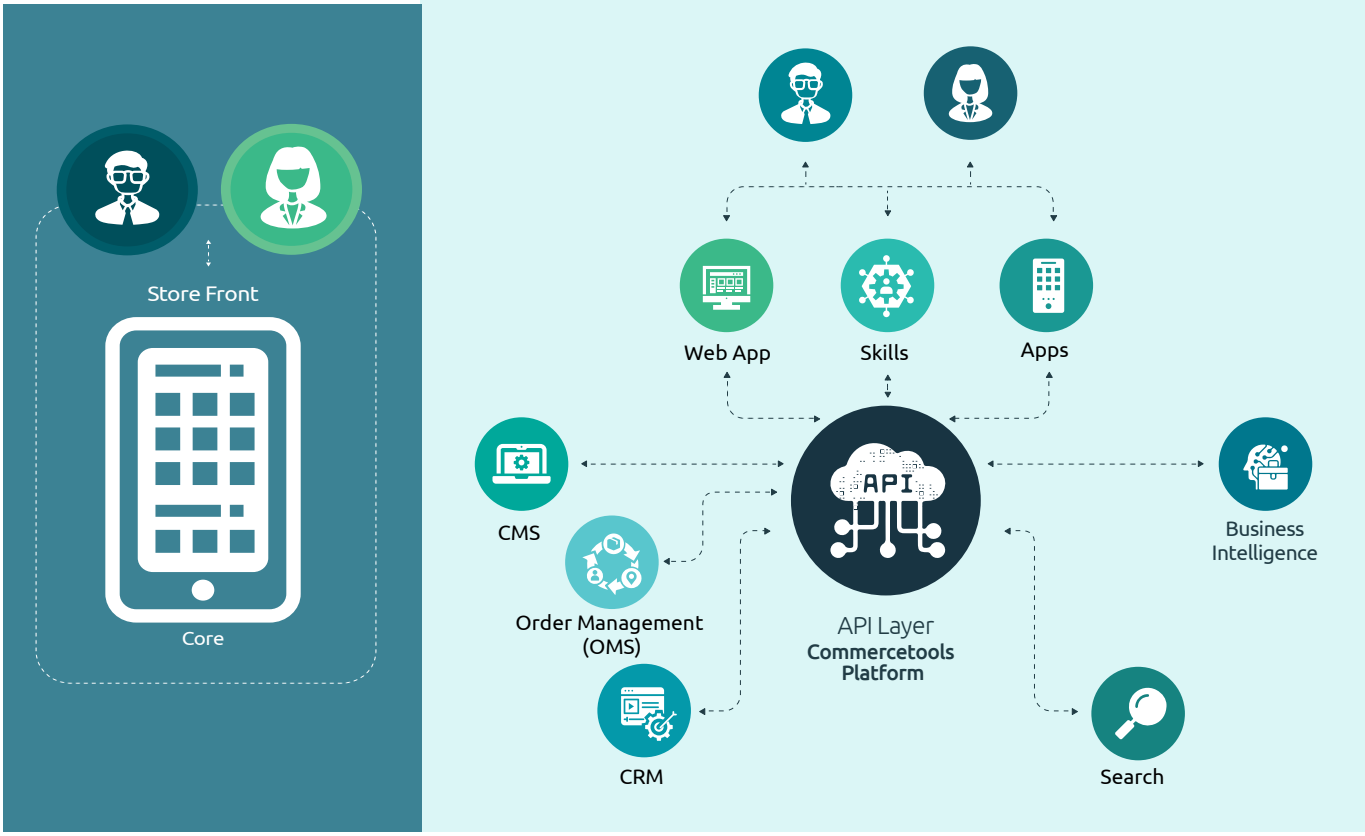
"MACH as a technology stack hand-in-hand with a Composable strategy and approach enables organisations to create highly adaptable and agile capabilities. These are not just technical capabilities, but also empower the business, marketing and commerce teams to create new experiences and adapt to rapidly changing market conditions and customer needs. This ecosystem has matured to the point where multiple vendors and solutions are working seamlessly together with shared approaches and an interoperability not seen before."

Matt Bradbeer,
Head of Commerce UK
Co-Founder MACH Alliance

SAY NO TO REPLATFORMING

Migrating to a Modern Commerce Architecture

Commerce technologists and business users that have been involved in eCommerce "replatforming" projects during their careers, have first-hand knowledge of the complexity, time and resources required to decommission one system and launch another. For those who have not experienced this, changing out such a critical and revenue-driving system can seem daunting and risky. Gaining an understanding of the "no replatforming" approach advocated by commercetools will help alleviate fear and help business users work together with their IT teams to create a blueprint for migrating. The approach involves dividing an existing platform into business domains and transferring the respective functionality and data out of the legacy platform to either the front-end system or the back-end systems with commercetools as the core commerce functionality. Integrating these systems is done by APIs – a method first used by Facebook to connect software and services to their social platform and now widely used as a way for different software to speak the same language.



Unlike commerce software replatforming of the past, a phased migration is recommended, and more manageable with a headless solution.

The idea is to disturb operations as little as possible and mitigate risks as much as possible.

Five Steps to Migrate to a Headless Commerce Platform

While this playbook is not intended to be a technical manual, it is important for digital marketing teams and business leaders to understand the migration process and how they will be expected to contribute to the migration planning. With that in mind, below are the five key steps in a migration to a headless commerce platform, as well as considerations for digital teams.

Discovery and gap analysis:

This is an opportunity to take stock; to list what the current platform offers (especially in the overall customer journey), what it doesn't offer, and to setpriorities. It's also a good idea at this stage to set up or reconfigure digital marketing teams to support the new platform during and after the launch

Building the migration roadmap:

There are a few critical decisions to be made in this step including selecting the front-end experience. At what point does the organization want to migrate to a new front-end – ahead of the commerce platform switch, during, or after? There are arguments for all three. Other decisions at this stage include how and when to move data like product catalogs, user profiles, and orders. Of course, no roadmap plan would be complete without pinning down some priority milestone dates. For marketing teams this could be seasonal or based on a new regional launch, the desire to roll out a mobile or POS app, or the launch of a new channel or product set.

Extracting the data:

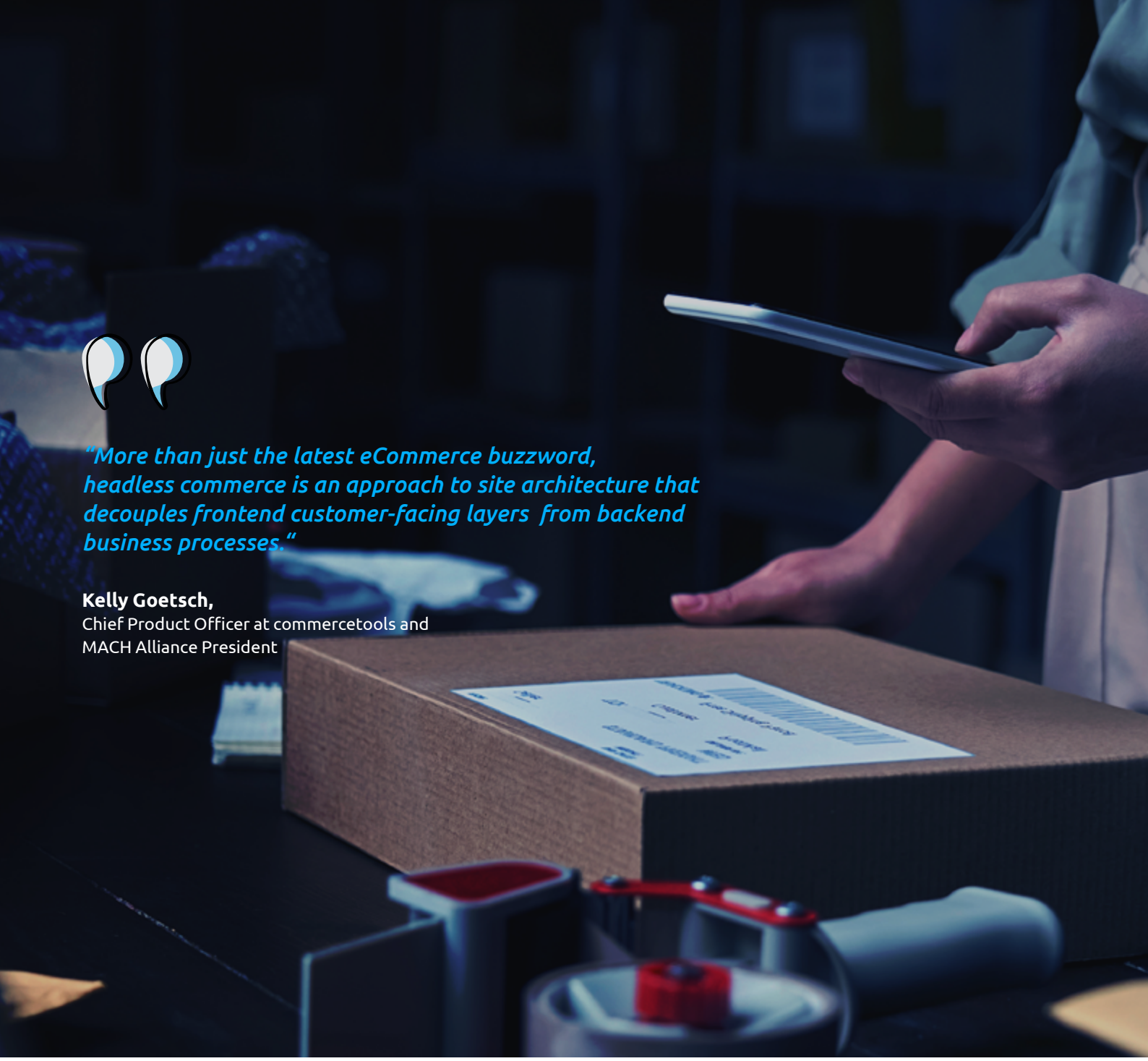
While the actual data handling will be done by the technical team, digital marketing teams need to have a stake in the data modeling including objects, sub-types, and attributes. A pet food company may have an object called "dogs" while a clothing retailer might have "shirts" and "jeans" product types with different subtypes, and a digital product might have object attributes like "download count."

Importing and verifying the data:

Primarily a technical function, there should be digital marketing owners assigned to verify the data into the new system as this will ultimately impact how the day-to day business processes are conducted.

Building custom extensions:

Custom extensions are opportunities to build efficiency into the new commerce platform as the old platform is being phased out. This includes things like synchronizing product data between old systems and new systems.



"More than just the latest eCommerce buzzword, headless commerce is an approach to site architecture that decouples frontend customer-facing layers from backend business processes."

Kelly Goetsch,
Chief Product Officer at commercetools and
MACH Alliance President

Day-to-Day Impact for Commerce System Stakeholders

As with any new software solution or platform, a headless commerce implementation will require changes to how digital teams' interface with the system. In the case of commercetools, that interface is called Merchant Center. The commercetools Merchant Center is an intuitive interface that helps commercetools platform users handle their most critical data and processes while keeping up with changing market conditions. It lets users manage product data, orders, and customer data for all retail channels. Additional functions, such as configurable forms and batch processing, speed up repetitive tasks.

"The pressure to perform at peak operational efficiency while also keeping costs low has been a forcing function for IT leaders and the c-suite to consider the ways they can be doing things differently. That has led companies to explore MACH architecture and the ways it can help them innovate faster and perform better than monolithic suites allow for,"

Kelly Goetsch,
Chief Product Officer at commercetools and MACH Alliance President

IMPLEMENTATION CONSIDERATIONS

Implementing a modern digital architecture with a decoupled front-end, API-based integrations, and microservices does have more moving parts than the equivalent monolithic architecture on a single DXP platform. There are three approaches that enterprises take when planning and executing the move to modern.

DIY – some organizations with a dedicated team of software architects and developers elect to manage the entire project themselves.

DIY+ - In this model, support is provided by an implementation partner for specific elements of the project.

Integration Partner – in this model, an implementation partner is commissioned to fully support the migration and provides full-service capability and support including consulting.

SOURCE

- https://blog.boldcommerce.com/what-is-headless-commerce-we-asked-the-people-who-invented-it
- https://www.computerweekly.com/blog/Open-Source-Insider/The-speed-of-software-MACH-Alliance-hits-30

CONCLUSION

As covered in this Playbook, there are a few things to consider when migrating from monoliths of old. Perhaps the most important of all is your ability to pivot quickly to support both the needs of your customers and the strategic plan for the business. Moving to a Modern Commerce Architecture means that no one solution is the be all and end all when it comes to eCommerce. It's about bringing together best-of-breed solutions that are designed and built to address specific aspects of commerce and composing these into the right solution to meet the need now and into the future.

About commercetools

commercetools is the world's leading platform for next-generation B2C and B2B commerce. To break the market out of being restrained by legacy suites, commercetools invented a headless, API-first, multi-tenant SaaS commerce platform that is cloud-native and uses flexible microservices. Using modern development building blocks in a true cloud platform provided by commercetools, customers can deliver the best commerce experiences across every touchpoint on a large scale. commercetools has offices across the US, Europe, and Asia Pacific, with headquarters in Germany. Since 2010, commercetools software has been implemented by Fortune 500 companies across industries, from retail to manufacturing and from telecommunications to fashion.

To learn more, visit
www.commercetools.com

About Algolia

Algolia provides an API platform for dynamic experiences that enable organizations to predict intent and deliver results. Algolia achieves this with an API-first approach that allows developers and business teams to surface relevant content when wanted — satisfying the demand for instant gratification — and building and optimizing online experiences that enhance online engagement, increase conversion rates, and enrich lifetime value to generate profitable growth. More than 10,000 companies including Under Armour, Lacoste, Birchbox, Stripe, Slack, Medium, and Zendesk rely on Algolia to manage over 1.5 trillion search queries a year. Algolia is headquartered in San Francisco with offices in New York, Atlanta, Paris, London, and Bucharest.

To learn more, visit
www.algolia.com

About Fluent Commerce

Fluent Commerce is a global software company focused on distributed order management for omnichannel retail. Fluent Order Management is a cloud native, fully managed and highly flexible platform. It includes the essential components for unified, headless commerce: Distributed order management, in-store pick and pack, inventory and location management, customer service, fulfillment optimization and reporting. This enables retailers and brands to enhance all their customer touchpoints whilst increasing their profit on every order.

Fluent Commerce works with global and regional brands such as JD Sports, L'Oréal, GrandVision, Aldo, Ted Baker and Marks & Spencer.

To learn more, visit
www.fluentcommerce.com

About Amplience

Amplience is a commerce experience platform that gives B2B and B2C commerce companies the freedom to win in the modern experience economy. Amplience is developer-powered and business-enabled and built on a MACH architecture which delivers a force multiplier in terms of speed, agility and scalability for creating digital experiences. More than 400 of the world's leading brands use Amplience including Crate & Barrel, Traeger Grills, Ulta Beauty, Coach, OTTO Group, GAP, Currys, Argos and Very Group. Amplience has 200 global employees and has raised $180 million from investors including Farview Equity Partners, Sixth Street and Octopus Ventures.

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Capgemini is a global leader in partnering with companies to transform and manage their business by harnessing the power of technology. The Group is guided everyday by its purpose of unleashing human energy through technology for an inclusive and sustainable future. It is a responsible and diverse organization of 325,000 team members in more than 50 countries. With its strong 55-year heritage and deep industry expertise, Capgemini is trusted by its clients to address the entire breadth of their business needs, from strategy and design to operations, fuelled by the fast evolving and innovative world of cloud, data, AI, connectivity, software, digital engineering and platforms. The Group reported in 2021 global revenues of €18 billion.

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