

# Headless Commerce

## Differentiating Your Approach To Experience Commerce Strategy

A white paper by

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Two heads are better than one, or so the saying goes. But what if those two heads are pulling in different directions? What if one of those heads thinks only of emotions and the other only of functionality? This is the challenge facing brands that wish to engage with their customers across multiple touchpoints. Monolithic IT platforms were built for an era when people shopped in defined channels. Integration was achieved up to a point but ultimately the user experience (UX) was independent from the operational IT architecture. Headless Commerce, as the name suggests, decouples the customer experience from the back-end technology infrastructure enabling brands to deliver a truly customer-centric experience. So, why is Headless Commerce more important for brands now than ever before?

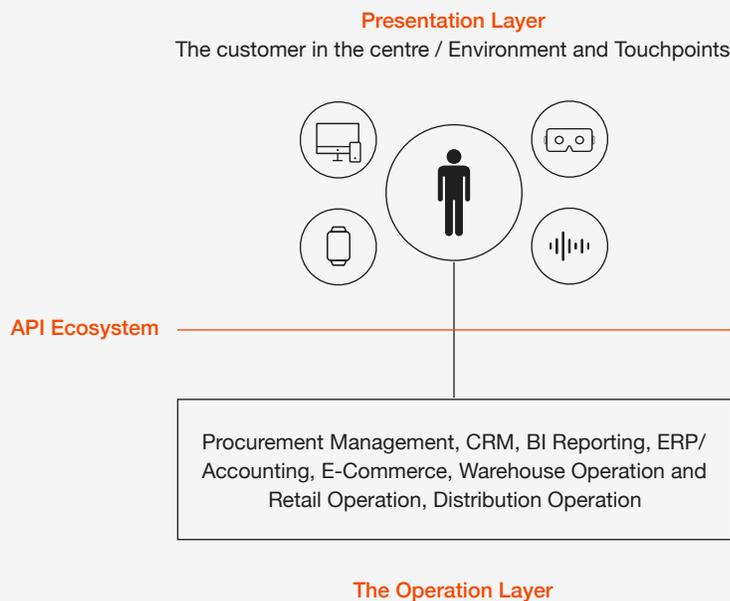
## Headless Commerce is not a buzzword; it reflects the way in which we now shop.

People no longer buy brands, they join them. Nor is the path to purchasing products linear. Shoppers engage with their favourite brands across multiple touchpoints on multiple occasions on their own terms.

Brands need to capture these customers when their intent to purchase is at its highest. They can only do this by putting the customer at the centre of their business and having a technology infrastructure that allows them to serve the customer seamlessly across every touchpoint.

### An illustration of the Headless Commerce model

Figure 1



#### Presentation Layer

The touch point where the customer engages with the brand, and relationships are built.

#### API Ecosystem

The technical definition of the communication channels between a brand's business applications and touch points.

#### Operation Layer

The business applications that support the customer experience and business operation.

Traditional approaches to eCommerce have tended to deploy a single, integrated platform. Although these applications enabled brands to get to market quickly and penetrate a single Web channel, they had significant drawbacks, not least of which was their inability to integrate Content Management Systems (CMS) and eCommerce platforms in a seamless way.

At a time when people’s engagement with brands is fluid across numerous touchpoints these clunky and cumbersome platforms are no longer fit for purpose. Headless Commerce provides a more agile approach to integrating the front-end user content with the back-end technology by allowing the two ends to work together in harmony.

By putting the customer at the heart of its philosophy Headless Commerce is a compelling way for brands to build a flexible technology infrastructure that can deliver an outstanding customer experience within the new digital economy.

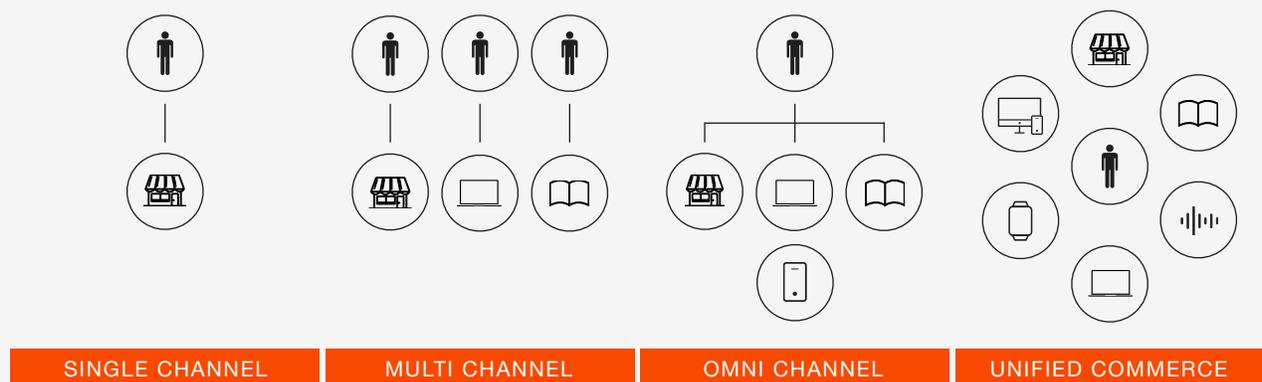
## Retail strategies are **evolving constantly** as the way people shop changes.

First we had Single Channel strategies, then Multi Channel and more recently Omni Channel. Now, the entire channel mindset is being called into question as businesses look to provide a unified experience where every interaction is on the customer’s own terms (figure 2).

This shift in strategic focus has created a customer experience curve whereby the relationship with the shopper starts out as a linear one within one channel and ends with the customer at the centre of multiple touchpoints linked to the brand.

### Evolution of eCommerce strategies

Figure 2



What hasn't changed is retailers' desire to make the customer experience as seamless as possible. The more the customer expects a joined-up experience, the more platforms evolve to adopt more features that smooth the path to purchase. This inevitably leads to platforms moving away from their core competency in order to provide an exhaustive list of features that cover every conceivable shopper need. There's no doubt this is a worthy endeavour but in practice it creates challenges. The modern consumer expects a brand to treat them as a single entity across all touchpoints so that their shopping experience is perfectly consistent whether in-store, on a mobile phone, or a home computer. Traditional eCommerce platforms, with their large applications and complex integrations, struggle to deliver this level of fluidity. That's why more brands are looking to develop a more service-based or distributed architecture that gives them the flexibility and, as importantly, the scalability to meet rapidly changing consumer demands by seamlessly joining up systems and channels.

What does having a distributed architecture mean in practice? It means that retailers can provide enhanced functionality like voice activation, AI assistants, and wearable technology such as feature-rich smart watches, and do this in a way that merges seamlessly across consumer touchpoints to enhance the customer experience.

There are three main pillars that define a successful customer experience: **Emotional, Functional, and Tangible** (figure 3).

Retailers need to design and implement a strategy that delivers against all three if they are to provide their customers with the quality of experience they expect.

## Emotional

The **emotional** pillar focuses on the need to create immersive experiences that engage and excite the consumer. It's about brands telling stories that resonate with shoppers on a personal level through memorable content. Social network posts, videos, images and 3D models are just some of the elements that, when properly designed, drive emotional attachment to the brand.

## Functional

The **functional** pillar is all about convenience – making interactions with the customer as easy and as fast as possible. Time is an increasingly valued commodity in our fast-paced world. Your customer won't wait for you to get it right. They demand speed in browsing and selection, payment and transaction, and delivery and service.

Failure to deliver convenience will increase the risk of abandonment and reveal itself in a low order conversion rate.

## Tangible

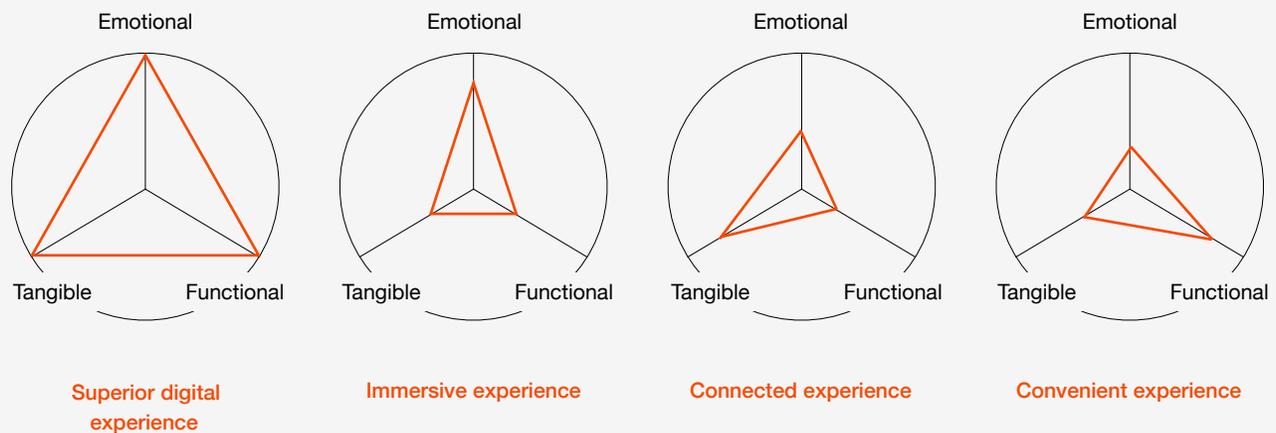
The **tangible** pillar relates to physical or virtual interactions between brand and consumer – the touchpoints that are rapidly replacing channels in the retail lexicon.

These can be individual contacts at distinct points in the path to purchase – an exchange over social media perhaps or a one-to-one conversation in-store. When combined, these discrete interactions must create an iterative, dynamic process which flows right the way from initial browsing through to purchase and after-sales service.

The adoption of digital technologies has significantly increased the number of possible touchpoints between customer and brand. Brands see this as a chance to build stronger, more connected relationships with their customers by offering innovative, immersive experiences such as augmented reality product view, voice shopping or chatbot services. However, every new customer service capability brings with it new technological and operational pressures.

### A superior digital experience is strong in all three pillars

Figure 3

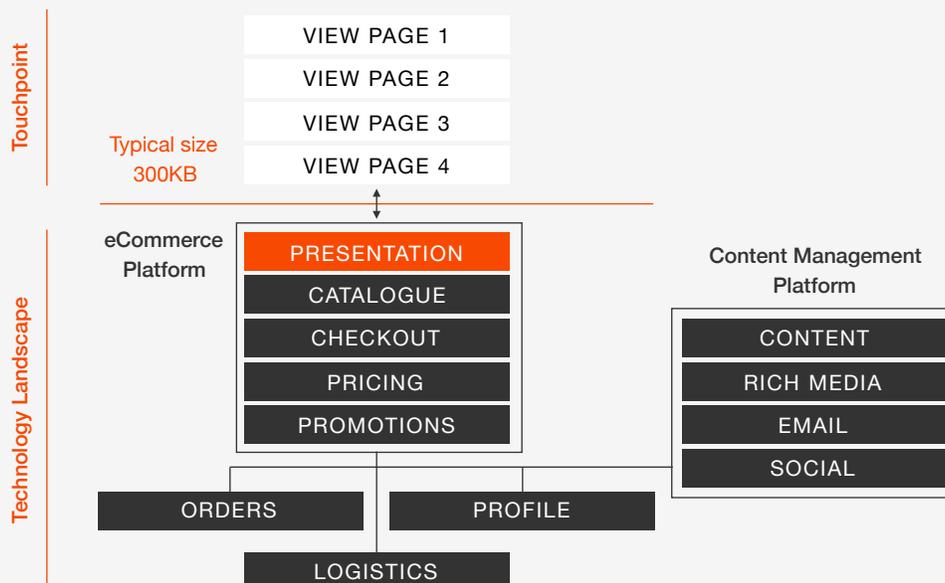


In order to successfully deliver against the pillars of customer experience, retailers must build a technology ecosystem that supports all three.

In practice, this means having an eCommerce platform that addresses functionality and convenience. It means employing a CMS that drives the emotional and immersive side of the experience. And it means adopting a services-based approach to reduce technological complexities and help deliver consistent, connected touchpoint experiences. Conventional eCommerce platforms provide retailers with their main commercial functionality such as the shopping basket, session management, catalogue and transactions. Such platforms can either be custom built or externally bought. They can provide significant out-of-the box capabilities, and are ideal in cases where speed to market is important. However, like most generic solutions, they can restrict a brand’s ability to exploit the more unique elements of its proposition and limit the scope for future experimentation. What’s more, the length of time taken for server-side generated HTML to be downloaded and rendered on the browser can make mobile internet a challenge. The next generation of eCommerce platforms – including the likes of Salesforce Commerce Cloud, SAP Hybris and Magento – are helping to solve such challenges by providing comprehensive API capabilities for modern touchpoints like native mobile apps, in-store kiosks, voice devices, smart homes and other third-party integrations.

**Monolithic architecture approach:**  
**An eCommerce-led customer experience model with a focus on convenience and speed**

Figure 4



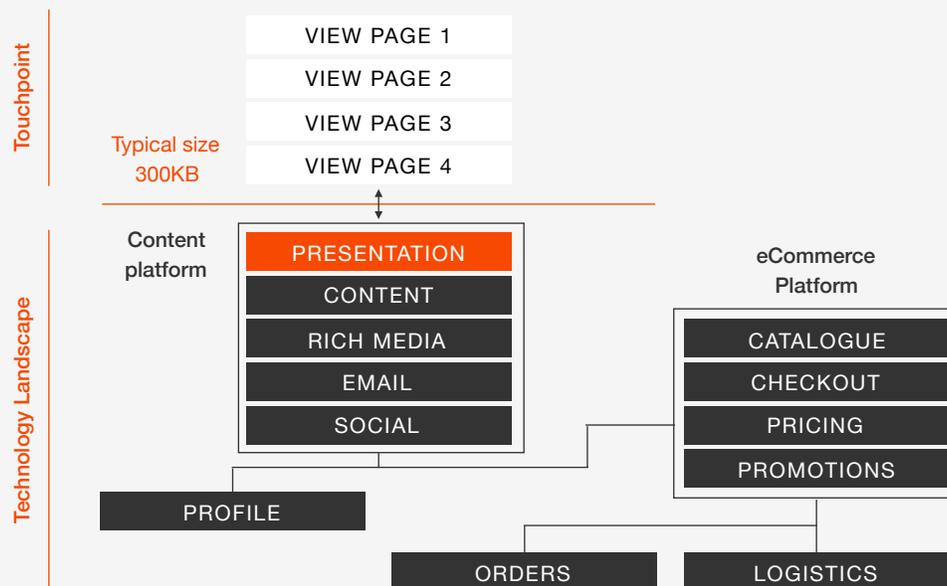
Most modern touchpoints, such as iOS and Android apps, Alexa and Google Home, have their own ecosystems and presentation requirements. This allows for better UX design that is dictated by the touchpoint rather than the server-side. The same applies to website touchpoints – modern website technologies allow the HTML to be generated on the browser instead of on the server-side enabling a much faster response to customer actions.

Optimising digital functionality is only half the battle won. If brands want to offer genuinely immersive experiences they need to **explore rich content approaches**.

Historically, a CMS designed to build an emotional attachment between brand and customers has involved a trade-off between the ease of creation with the speed of experience. These platforms – either custom built or off-the-shelf – provide easy content management solutions and allow brands to build attachment by telling stories in different formats. But in their desire to provide flexibility in configuring unique content, they often lack some of the speed and agility that modern retailers require. They can also face challenges in generating touchpoint specific content such as iOS layout and Amazon Echo Show screens that customers are increasingly demanding from their devices because their presentation layer uses outdated website technology where HTML is generated on the server-side.

**Monolithic architecture approach:**  
**A CMS-led customer experience model with a focus on brand experience**

Figure 5



Brands that want to offer an **exceptional experience** across all touchpoints need an eCommerce platform and CMS that combine the best of functionality and rich content.

At some point in their digital evolution, brands will inevitably find themselves needing to connect different touchpoints and platforms in a seamless way. This is where API and Services technologies are so invaluable. They recognise there is a need to configure the different systems and technologies to create a consistent, connected customer experience.

Every business is unique. A retailer's technology architecture should be based on its specific needs while being flexible enough to respond to the constantly-changing digital landscape. The latest CMS and eCommerce platforms are responding to this challenge by also providing a rich set of APIs.

By moving to an API-first approach brands can achieve a clear separation between the operational layer and UX touchpoint presentation layer in their technology architecture which allows for more "plug-and-play" of new devices.

Brands are increasingly looking to deliver against all three pillars of customer experience in order to provide a coherent digital experience. With this comes the challenge of integrating CMS and eCommerce platforms simultaneously as they need to determine which platform is going to hold the presentation layer.

A monolithic architecture approach has two downsides: not only is the brand UX design influenced by the lead platform, but some of the capabilities of the secondary platform are also suppressed. For example, in CMS-led presentation the recommendation engine or promotion engine of the eCommerce platform could be suppressed due clashes with the CMS customer session.

One way to overcome these challenges is to have a presentation layer and UX dictated by the touchpoint and the brand rather than by the technology platform. This allows the brand to exploit the platform's APIs and take control of the UX. To achieve this will, in all likelihood, require a reconfiguration of the brand's technology architecture.

**This is where 'headless' architecture comes into play.**

Headless Commerce has long been considered the key to unlocking a truly customer-centric experience, but legacy technology architectures have made it difficult to adopt.

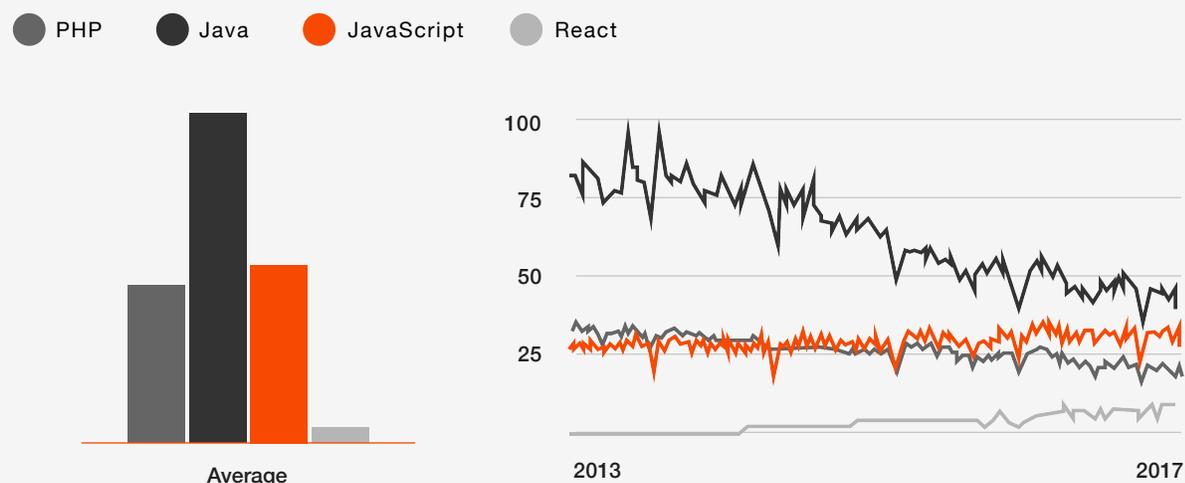
The emergence of modern API-based devices has helped push Headless Commerce into the mainstream. Most consumer touchpoints require it by default with the result being that most brands are ending up with a kind of hybrid headless architecture where new touchpoints are integrated in headless mode while the website remains dictated by the platform’s presentation layer.

Website technology itself has undergone significant improvement in recent years driven by the leading browsers such as Chrome, Safari, Firefox, as well as the W3C (World Wide Web Consortium) community. In particular, we are witnessing a shift away from server-side towards browser-side generated HTML as evidenced by the introduction of the likes of Service Workers, Web Components, Manifest JSON, ReactJS and PolymerJS.

The table below from Google shows a clear decline in interest in Java and PHP programming languages – both key representatives of monolithic IT systems. Meanwhile, the trend for both JavaScript and React – representative of headless front-end based systems – shows a consistent increase in interest.

Trends of main programming languages behind business operation & presentation technologies

Figure 6



Worldwide. Past 5 years. Web search. Source: Google Trends.

By adopting API-first elements from the CMS and eCommerce platform and decoupling the UX interface layer from the platform, the volume of data the network has to handle is significantly reduced. This in turn means that the network speed can be massively increased.

By designing the customer experience around a specific touchpoint brands also benefit from the immersive experience delivered by the pre-defined device ecosystem.

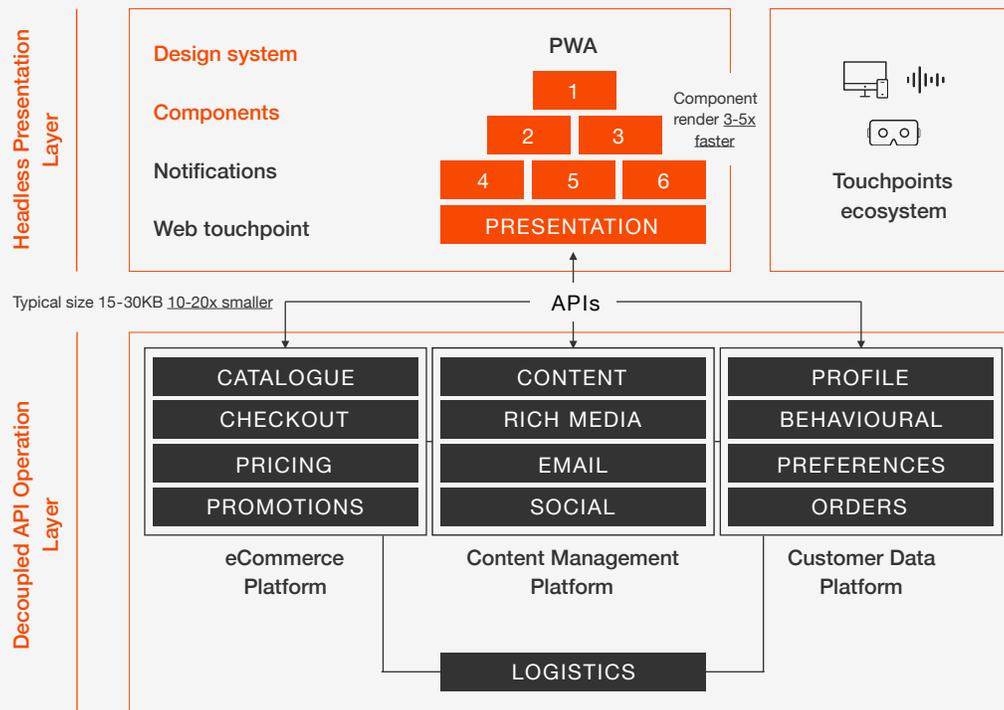
The presentation layer moves closer to the customer touchpoints meaning experiences are not designed in one main platform that then needs to travel over the Internet; they are designed in the touchpoint itself, hence their description as ‘headless’.

This architecture allows brands to construct an Open Innovation platform with flexible and easy API based plug-and-play services. This ‘Experimentation as an Innovation’ approach becomes cheaper as businesses adopt more microservices or cloud-based serverless functions.

### Headless Commerce Decoupled Architecture

Figure 7

Experience design is delivered on a touch point rather than on a centralised backend application by utilising API technologies.



## Businesses and brands need a single, centralised view of customer data in order to create a 360 degree customer experience – made possible through Headless Commerce.

Doing so will enable them to capture the benefits of new technologies such as Artificial Intelligence which is driving the revolution in ‘big data’. Companies with more data at their fingertips have an even greater responsibility to store that data in a secure way.

With new, tighter regulations coming into force in Europe in the form of the new GDPR (General Data Privacy Regulation) and a proposal for new ePrivacy regulation to build trust in the Digital Single Market, the onus is on businesses to adopt a centralised approach to handling customer data that gives them better oversight and control over how that data is used within the organisation.

## The requirements of a Headless Commerce strategy

Having decoupled the presentation layer from the CMS and eCommerce platform and put in place a robust data management system, the next step in the journey to Headless Commerce is for brands to define their own UX system of principles, processes and artefacts that will allow them to build their values and vision into the UX design process. In practice, this means creating a Design System that includes Design Principles, Usability Testing, Style-guide and UI Toolkit.

Once a technology architecture is in place that follows Headless Commerce principles a set of specific Design Principles should be established to support a productive UX designing process. These can be based on generic design approaches like [Material](#) and [Atomic](#) Design and enhanced with specific touchpoint design guides such as [iOS Human Interface Guidelines](#), [Alexa Voice Design Guide](#) in line with the brand’s values and vision.

A second, and just as important step is Usability Testing. Customer expectations are constantly shifting and it’s vital that businesses test their UX before implementation to ensure it meets consumer needs. Undertaking A/B testing during the development lifecycle will naturally require some upfront investment, but it will prevent brands incurring significant cost when faced with solving usability problems further down the line.

Most brands communicate with their customers in a way that conveys a clear identify and core set of values that drives the brand. It is essential, therefore, to define a design language as part of the whole Design System so that the brand is 100% consistent in its use of visuals, voice tone, motion, and accessibility.

[Airbnb Design Language](#), [Salesforce Lightning System](#) and [BBC Global Experience Language](#) are useful examples of effective Style-guides that communicate a unified message.

Last, but by no means least, it is critically important to build a UI Toolkit with reusable components. Failure to do so will ultimately prove a drain on productivity when the whole UX design is governed by the brand.

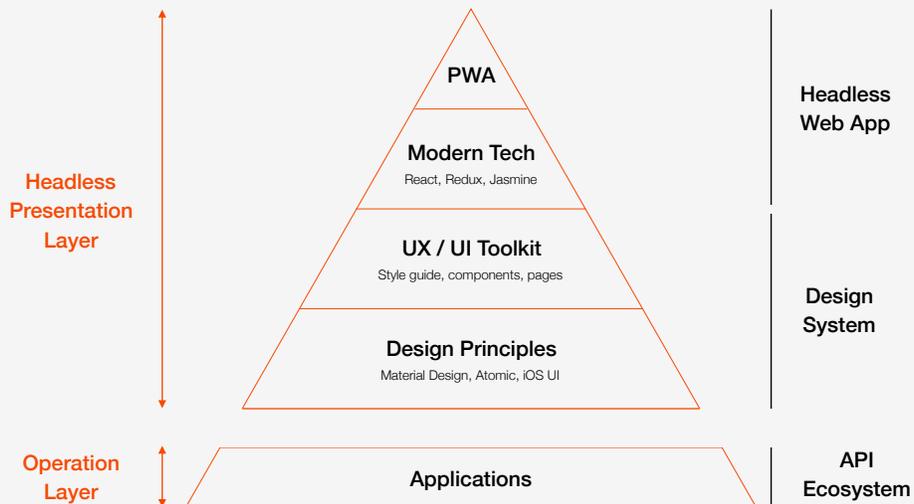
## Now that we know what a **Headless Commerce approach** involves, how can it benefit a brand in practice?

Let's take websites as an example of a common consumer touchpoint. Websites are still one of the largest and oldest digital channels and so aligning it with a Headless Commerce approach requires a reconfiguration of the technology landscape. In recent years, website technologies have evolved significantly. New capabilities have been adopted such as Push Notifications, Offline and Geolocation. New front-end based technology frameworks have emerged like ReactJS, VueJS, Polymer and Redux. And new mechanisms like Isomorphic and AMP have enabled 'Start fast, stay Engaged' experiences.

Google, Microsoft, Firefox and Samsung describe the next level in website UX as Progressive Web Apps (PWA). Essentially, these are regular web pages or websites but with the added benefit to the user of providing a mobile native app like experience. The adoption of modern technologies has accelerated the transition towards the PWA experience. And as we've already discovered, these new technologies are easier to adopt via a Headless Commerce approach since the presentation layer is independent of specific monolithic applications (figure 8).

Requirements of a Headless Commerce strategy

Figure 8



**Operation Layer and Business Applications**

Supports the customer experience and business operation.

**API Ecosystem**

The technical definition of the communication channels between a brand's business applications and touch points.

**Design System**

Processes and tools to support a brand's unique experience design approach.

**Headless Touchpoint App**

The application deployed on a touchpoint that represents the brand's experience.

**Moving forward, Headless Commerce will become the means for creating engaging consumer experiences.**

Why? Because Headless Commerce enables the monolithic technology landscape to be reconfigured in a way that creates synergy between platforms and drives the customer experience in a functional, emotional and tangible direction. It allows a superior customer experience to be achieved by leveraging monolithic applications in a service-oriented way and moving the execution of the presentation layer closer to the customer's touchpoint. Crucially, this gives brands control over the UX design, enabling them to foster their own unique identity. And in giving brands oversight of their data Headless Commerce is the foundation upon which they can build customer relationships and deliver long-term sustainable growth.

## Glossary

### **Presentation Layer**

The touch point where the customer engages with the brand, and relationships are built.

### **API Ecosystem**

The technical definition of the communication channels between a brand's business applications and touch points.

### **Operation Layer**

The business applications that support the customer experience and business operation.

### **Monolithic Architecture**

A single-tiered software application in which the user interface and data access is combined into a single program from a single platform.

### **Operation Layer and Business Applications**

Supports the customer experience and business operation.

### **Design System**

Processes and tools to support a brand's unique experience design approach.

### **Headless Touchpoint**

The application deployed on a touchpoint that represents the brand's experience.

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## About Isobar

Isobar is a global digital agency of 6,500 people across 45 markets, united by our mission to transform businesses, brands and people's lives with the creative use of digital. Informed by our consultancy practice, we deliver digital transformation, solving complex business challenges through our marketing, ecosystems and products offering. Isobar has won over 300 awards in 2017 including Asia-Pacific Digital Network of the Year. Key clients include Coca-Cola, adidas, Enterprise, P&G, Philips and Huawei. Isobar is part of the Dentsu Aegis Network, a wholly owned subsidiary of Dentsu Inc.

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