2021 Global Headless Report

Insights and Strategies to Power
Omni-channel Customer Experiences

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Embracing the Headless Commerce Revolution

As ecommerce continues to grow unabated, both merchants and developers are pushing technology boundaries to deliver seamless customer experiences across any device or browser. More than this, they want to retain creative freedom, while reducing friction between internal stakeholders, and enhancing conversions and revenue as the business scales.

Adopting a headless ecommerce infrastructure is a path to achieve these goals.

Empower your team
Monolithic commerce applications, by their very nature, warrant time, expertise and effort to maintain. As your business grows, upgrades, new integrations and more will need to become regular tasks. Brittle, monolithic applications make this task cumbersome and risky, and can cause significant friction between internal teams that inherently wish to move at different speeds.

Enhance Core Web Vitals scores
Google is demanding more of your website with regards to performance and user experience in order to maintain your search rankings. Core Web Vitals are here to stay, and headless solutions can play a major role in reducing delivery time and improving scores, leveraging tactics such as static page generation, cache delivery and more. In turn, faster page speeds and a flawless user experience mean customers get to see more of the catalog and are likely to buy more.

Customize and Personalize the Experience
With the front end and back end decoupled, marketing and design teams can focus on brand, conversions and user experience, while engineering teams can maintain stability and consistency on the back end.

Scale as you Grow
With a decoupled front and back end, embracing new technology advancements can be significantly simplified. Headless architectures paired with Progressive Web App (PWA) technology, for example, alleviates many of the pain points merchants face around mobility, search and performance.
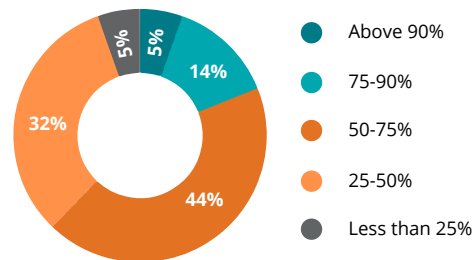
Summary of Findings

We surveyed 1604 ecommerce merchants, across 20 countries and 18 industries, including fashion and apparel, health and fitness and home and garden. Many are actively considering a headless approach, while some are still in the evaluation stage and others are unsure about the need and benefits. We also surveyed digital agencies, focused on the ecommerce segment, about the expectations of their customers and their reasons for considering the transition. The below graphics summarize the key findings.
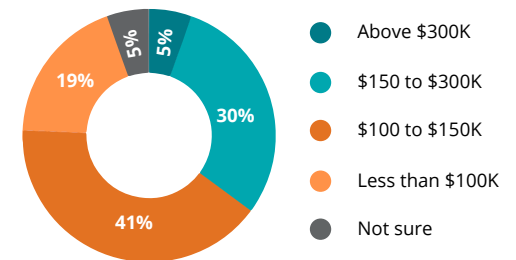
Digital Agencies

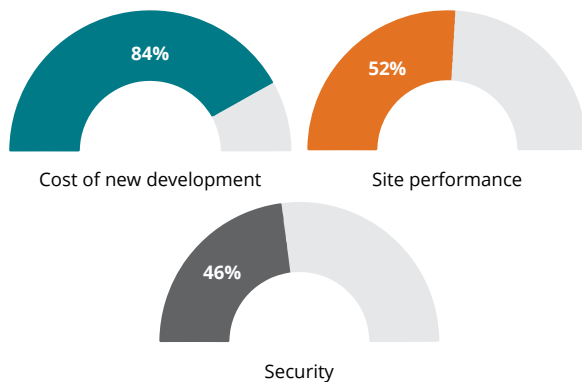### Headless is the number one tech trend today in the world of ecommerce

- 52% Fully agree
- 27% Mildly agree
- 16% Not sure
- 5% Do not agree
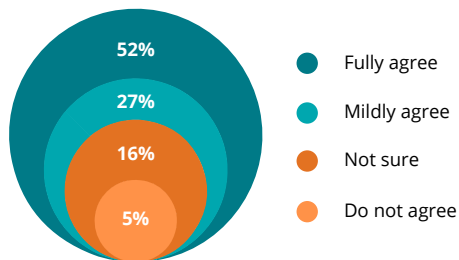
% of clients exploring a headless strategy in the next 12-24 months

- 14% Above 90%
- 5% 75-90%
- 44% 50-75%
- 32% 25-50%
- 5% Less than 25%

Average investment clients are budgeting for headless projects

- 30% Above $300K
- 5% $150 to $300K
- 41% $100 to $150K
- 19% Less than $100K
- 5% Not sure

Top three concerns of clients when considering a headless strategy

- 84% Cost of new development
- 52% Site performance
- 46% Security

#1 business value clients are targeting with a headless strategy
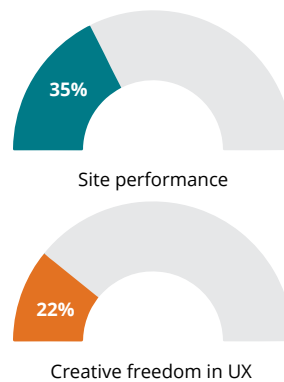
- 35% Site performance
- 22% Creative freedom in UX

Most favored front end/back end combination in headless projects by clients

Front end

React

Back end

Magento

Least preferred front end/back end combination in headless projects by clients

Front end

Back end

BIGCOMMERCE

SAP
SAP Commerce Cloud
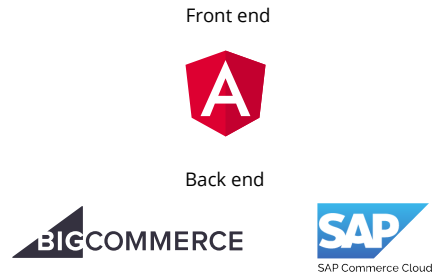
What % of clients are interested in a rip and replace strategy while going headless?

- 10%
- 19%
- 44%
- 27%

- Above 75%
- 50-75%
- 25-50%
- Less than 25%
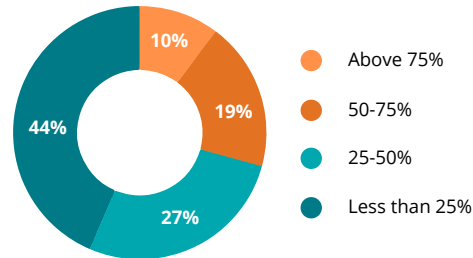
Do you have a headless/PWA solution or accelerator?

YES **51%**

NO **49%**

Merchants (planning to go headless)

Headless is the number one tech trend today in the world of ecommerce

- 46%
- 37%
- 17%

- Fully agree
- Mildly agree
- Not sure
- Do not agree
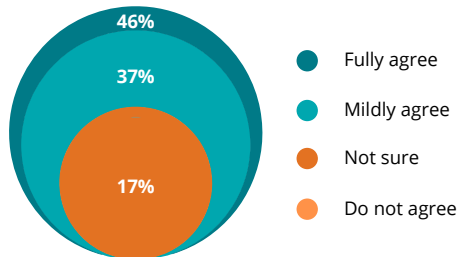
How soon do you plan to go headless?

- 8%
- 4%
- 3%
- 20%
- 34%
- 31%

- Already headless
- In less than 3 months
- 3-6 months
- 6-9 months
- 9-12 months
- 12-18 months
- Not now
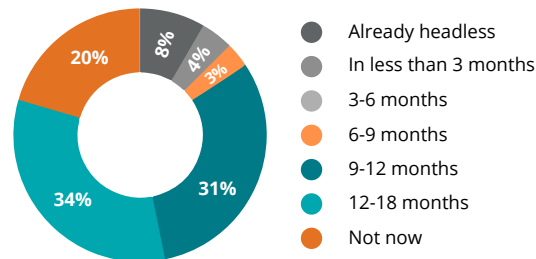
Average investment budgeted for your headless project

- 10%
- 10%
- 30%
- 50%

- Above $300K
- $150 to $300K
- $100 to $150K
- Less than $100K
- Other
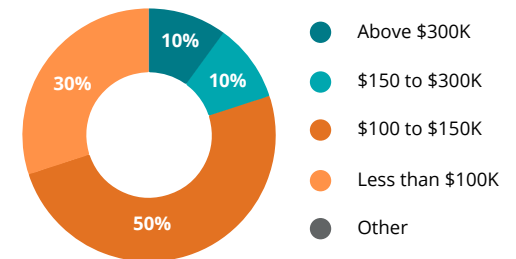
Top three concerns you have when considering a headless strategy

80%
Cost of new development

60%
Site performance

56%
Security
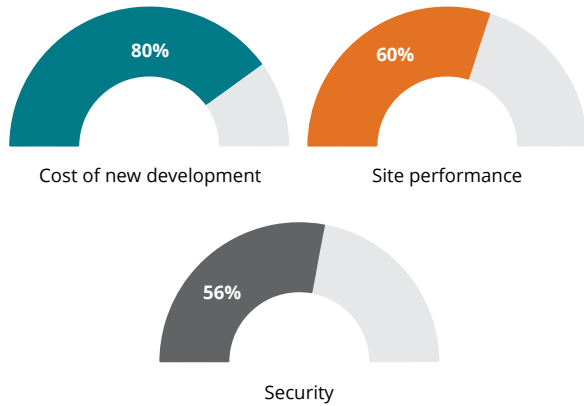
#1 business value you are targeting with a headless strategy
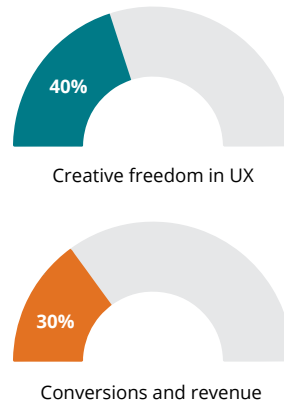
40%
Creative freedom in UX

30%
Conversions and revenue

Your most favored front end/back end combination in a headless project

Front end

Vue.js   React

Back end

salesforce commerce cloud   SAP Commerce Cloud

Your least preferred front end/back end combination in a headless project

Front end

A

Back end

shopifyplus   ORACLE COMMERCE   HCL Commerce

shopware   BIGCOMMERCE

Would you approve a rip and replace strategy while going headless?

YES   **30%**

NO   **70%**

Choosing your digital agency for going headless

51%   **49%**

● Would go with my current digital agency

● Would engage a new digital agency with headless/PWA expertise

06
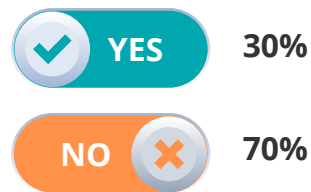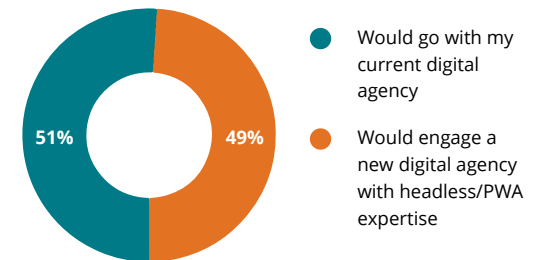
Merchants (already headless)

Top three concerns you had while going headless

78%
Writing off past investment in ERP and CRM

65%
Site performance

32%
Hosting
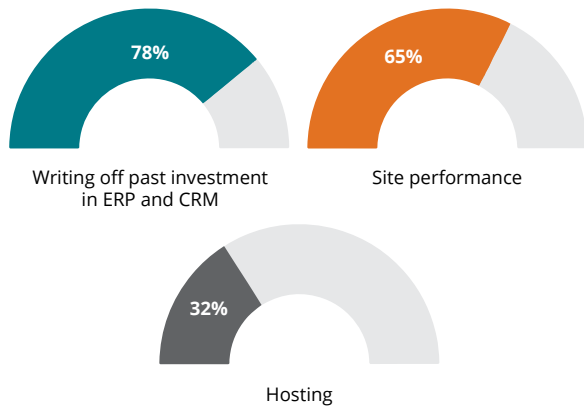
#1 business reason for going headless

72%
Reduce friction between marketing/sales and development/IT teams

28%
Site performance

Choosing your digital agency for going headless

52%
48%

● Engaged a new digital agency with headless/PWA expertise

● Engaged my current digital agency
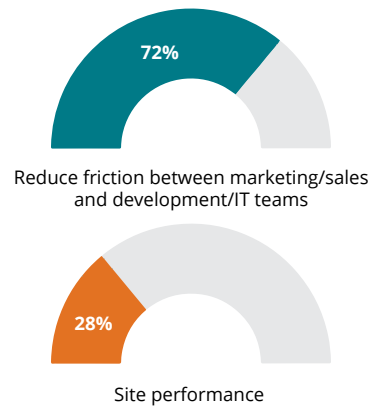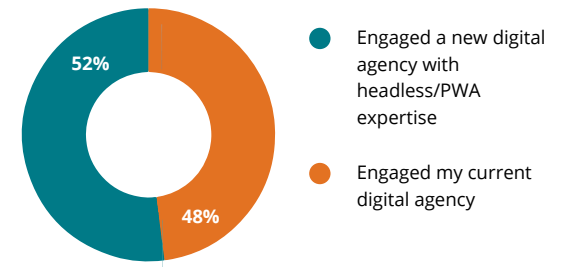
The front end/back end combination in your headless project

Front end

Vue.js   A

Back end

Magento 2   Woo COMMERCE   SAP Commerce Cloud

Average investment incurred for your headless project

5%
50%
45%

● Above $300K
● $150 to $300K
● $100 to $150K
● Less than $100K
● Other
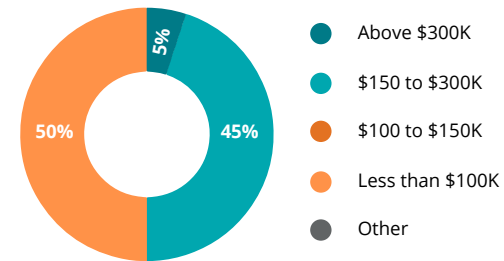
Source: Webscale Global Headless Commerce Survey 2021

Headless – The Future of Ecommerce?

Consumers have become disloyal and their user experience is the key to their continued attention. As a result, the world of modern commerce is increasingly embracing an omni-channel strategy of multiple consumer touchpoints across a buyer's journey. A headless build is at the forefront of this transformation because of its flexibility, and its ability to break apart the monolithic applications of the past. Merchants can deliver any user experience, to any device, with the user interface decoupled from the back end ecommerce application and with the agility to provide new features and functions, as often as they need to, while remaining relevant to the fickle buyer.

Creative storytelling and engaging content experiences are what will distinguish a brand in the crowded online marketplace, and many merchants agree, with **40% of those surveyed** stating this is the number one business value they see in taking the headless path. An enhanced brand experience across all touchpoints, such as desktop, mobile, PWA, or IoT, means greater conversions, higher retention and more revenue.

Traditional monolithic ecommerce platforms are brittle, painful to update, and likely to incur downtime for even the most routine of deployments. With a monolithic application, your front end team is hamstrung, restricted by the complexity of the back end, which isn't helping you bring in new customers or sell faster. A new recommendation engine however, or a great marketing promotion and social connections will, so you need those aspects to be agile and easy to change, often.

Modern commerce focused businesses are adopting best practices with regards to their code deployments and infrastructure to support their new found agility from going headless.

Continuous integration/continuous delivery (CI/CD), for example, allows front end, back end, new features and other code deployments to become automated processes, reducing manual intervention. The use of containers also introduces rigorous quality control, while enabling zero-downtime deployments.

While headless is not a new technology concept, in ecommerce it is a fairly recent development and more than **50% of the digital agencies we surveyed** agreed it is the number one trend they are seeing across their customer base.

While any ecommerce merchant can go headless, it is a significant investment. Moving to a well-managed headless environment, or building a one-off PWA is expensive, to the extent that it is mostly medium to large sized businesses that have taken this path so far, as they have the scale to harness the benefits, and the financial strength to bring on a team, be it in-house or external, to manage it.

However, with the benefits that merchants can enjoy around enhanced performance, security and deployment, we predict the appeal of headless will begin to permeate through to all types of ecommerce businesses.

Advantages of Headless

Enhanced functionality and flexibility: Headless technologies are API-first, enhancing functionality and flexibility as changes can be made on the fly without impacting the back end, or origin, since they are decoupled, improving integration possibilities and eliminating downtime. Marketing and engineering teams will have the autonomy to move ahead at their own pace, achieving new levels of efficiency and synergy.

Speed: Nearly 90% of all websites are not ready for Google's new Core Web Vitals standard that raises the bar for what merchants must do to deliver great user experiences. Poor scores can impact search rankings and directly affect revenue. Simplifying the platform, reducing chattiness in the code, moving assets and compute resources closer to users reduces network transfer time, improving performance. Image management reduces the size of that content, as well as costs to deliver it. With Core Web Vitals taking center stage, performance, security and automation have to stretch to the "edge." With a front end that can be deployed anywhere, and therefore close to end users, headless builds can have a significant impact on performance scores.

Personalization and omni-channel experience: The decoupled structure of headless commerce allows merchants to distribute content more effectively across devices and browsers, whether online or offline, ensuring a seamless brand experience for customers, regardless of the touchpoint.

Disadvantages of Headless

Slower time-to-market: An average headless build can take 4-6 months, so merchants need to make a significant time commitment. As more agencies develop accelerator programs and more out-of-the-box solutions become available, we expect to see this timeframe reduced.

High cost of development and maintenance: As we wrote earlier in this report, there is a high price tag with headless today. It requires a complete overhaul of the front end experience, and 3rd party integrations are still an evolving landscape, potentially causing some maintenance headaches down the road. Expertise is currently limited and as always, working with great partners is critical.

Building a Robust Headless Infrastructure

There are many headless point solutions becoming available, yet many advocate a rip and replace strategy for merchants wanting to go headless. According to this survey, the vast majority of merchants and developers **(70%) agree** that this is not the best approach from the merchant's point of view, given the disruption, uncertainty and cost.

A headless strategy should adopt a "best-of-breed" approach in place of an "all-in-one" solution. This is what defines true flexibility.

Many merchants have already made significant investments in an ecommerce platform, ERP, and other systems, and as our survey results show, writing off these investments is one of the key concerns of merchants wanting to go headless. An ideal headless approach will need to provide the type of flexibility that allows merchants to leverage existing technologies and incrementally move forward in their headless journey, taking advantage of the very best tools available for specific aspects of their business.

Tech Stack: Avoid the disruptive and wasteful expenditure caused by discarding existing platforms, ERPs, CRMs, product information management (PIM) systems and more for "rip and replace" headless solutions. Choosing a leading headless content management system (CMS) however is a good investment, as it will enable easier management of the front end.
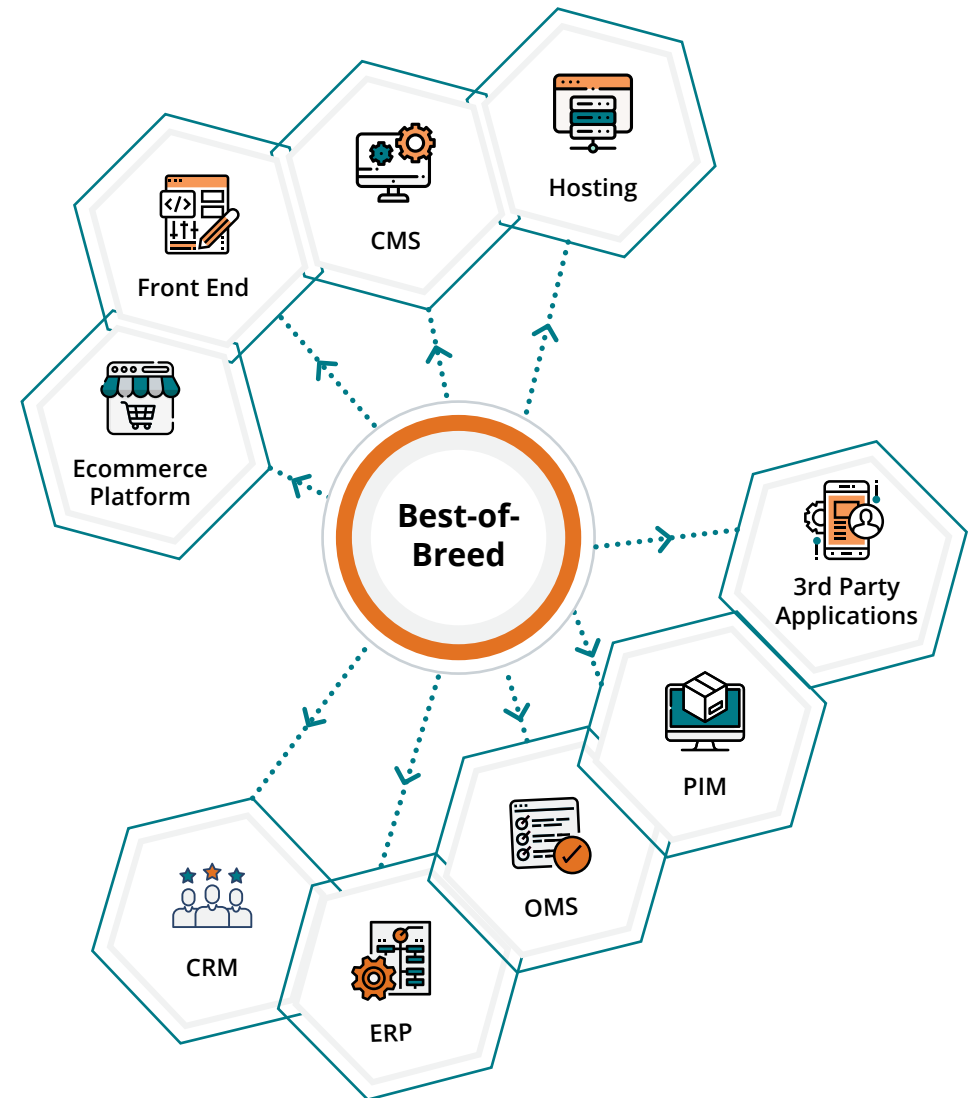
Cloud delivery: An important aspect to consider is delivery of your storefront in the cloud. Choose a provider that has ecommerce and specifically headless expertise, has invested in automation and machine learning to offer you deep visibility and insight into your traffic and infrastructure, and above all, understands the time criticality of support.

In-house or outsource: Cloud and DevOps talent is in short supply and many companies struggle to find the right personnel. Engaging a specialist digital agency in this situation will help ensure the success of your project. Webscale works with a global ecosystem of digital agency partners experienced in developing headless and PWA storefronts, and makes recommendations frequently to merchants embarking on these projects.

A decision for today and tomorrow
While making decisions on what components of your tech stack should be used or replaced, be realistic about the total cost of operations (acquisition/development plus maintenance) and be conscious of technical debt. Making good decisions today will deliver the best return on investment in the years to come.

Headless Commerce Starter Checklist

{Ecommerce platform} for product management and shopping cart

1

{Headless CMS} for content management

2

{Front end application} for customizing UX

3

{Digital agency} partnered with Webscale for front end or full stack development

4

Webscale for cloud delivery with laser focus on performance, security, availability, and ongoing success

5

How Can Webscale Help?

Webscale is a technology powerhouse, learning daily from managing hundreds of merchants, thousands of storefronts, millions of users worldwide and billions of dollars in revenue every year.

Our cloud platform delivers on the current, and future needs of ecommerce merchants, whatever their choice of application, toolchain or cloud provider.

As such, Webscale offers tailor-made cloud delivery infrastructure designed around the needs of headless storefronts and PWAs, with complete visibility into how the performance and availability is impacting the user experience across multiple devices. Combined with the Webscale CloudEDGE CDN, the benefits to merchants include enterprise grade security, incredible performance and scalability at every layer of the application.

Webscale Headless Architecture Highlights

- **Decoupled data plane and control plane**
  Webscale delivers ecommerce infrastructure via a decoupled data plane and control plane, which enables the efficient management of all the infrastructure pieces needed to deploy and deliver the entire application or just the headless/PWA front end connected through APIs, while increasing the security, performance, and uptime of the overall application.

- **Architectural freedom**
  With Webscale managing your infrastructure, agencies and merchants have the freedom to be more nimble in building and evolving the presentation layer, refreshing their brand, accelerating end-user experiences, securing their storefront from cyber attacks, and scaling the capacity of the site to handle varying user demand.

- **Platform flexibility**
  Webscale supports all front end CMS technologies in use for headless deployments and back end ecommerce platforms for critical functions. The ability to deliver these applications across any geography meeting governance and compliance requirements is critical for the merchant of the future.

- **Webscale CloudEDGE CDN, Dynamic Site Cache and Site Splice**
  These advanced features allow agencies and developers to easily route device-specific and functional needs to the appropriate services dynamically, and in turn, cache the responses, making application development and user experience faster and without third party bottlenecks. The deployment of the CloudEDGE CDN propels the site forward in all performance and security rankings.
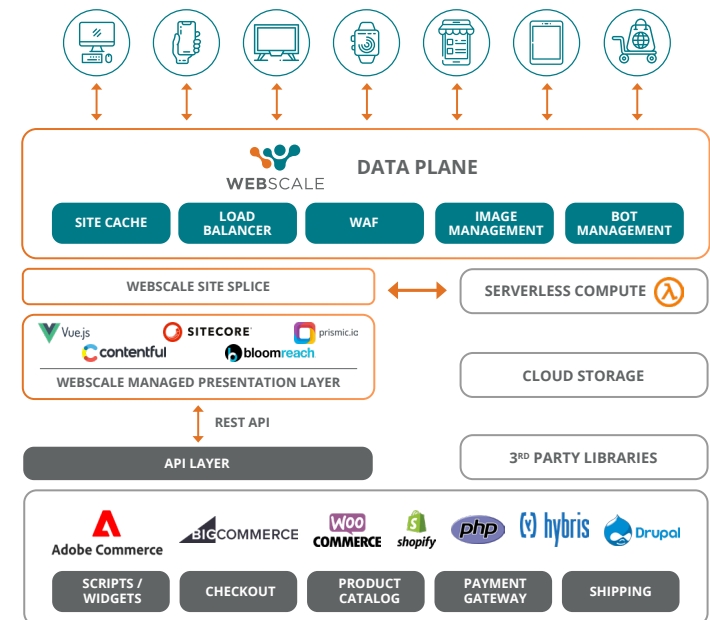
Download the Datasheet

Your Headless 'Moment of Truth' is Now

A message from Webscale's CEO, Sonal Puri

In the last 12-15 months alone, headless solution providers have raised millions of dollars in growth capital financing. Nothing could underline more succinctly how hot headless is right now.

The real value of a headless strategy is in facilitating the front end and back end pieces of the system to evolve and scale at their own pace. A single back end can power any number, and type, of front ends: desktop, PWA, mobile, wearables, kiosk, and more. Headless commerce can future proof a business and deliver "commerce everywhere" on any device or browser, from any location.

For far too long, the monolithic approach delivered by traditional ecommerce platforms has prevented merchants from offering the ultimate user experience, especially when it comes to site performance. It is a cruel joke, that in an increasingly mobile first world, popular ecommerce platforms and their monolithic approach, have remained firmly mobile second.

Google's Core Web Vitals is going to challenge the entire segment to up their game, to get mobile-ready and to put customer experience at the top of their priority list. Failure to do so will impact search rankings, sending visibility, traffic, and revenue into a downward spiral. A static generated front end, coupled with any commodity back end that is able to serve capacity requirements, is a reliable path to achieving good Core Web Vitals scores, if well executed by experienced partners.

Headless infrastructure is also paving the way for PWAs, which make great sense for businesses wanting to accelerate their path to mobile, while controlling their total cost of operations (development plus maintenance costs).

At Webscale, we have been delivering, managing and securing headless storefronts on the public cloud for years. Our decoupled architecture has been designed to offer extreme flexibility, up and down the technology stack, and ensure that merchants can maintain flawless user experiences, regardless of their choice of ecommerce platform, cloud provider or toolchain.

We'd love to support you in your journey, so reach out to me at ceo@webscale.com.

The Digital Agency View

For the merchants we talk to, headless is still in the future. The tooling is fairly new, and a real cost benefit analysis is needed, because to start from scratch and rethink everything, then custom build it and launch – it's going to be a long journey with a lot of hurdles. For some, it may well be best to retain what's working today, and replace what's not with a best-of-breed microservices approach.

If you are doing a fully customized build, then headless makes a lot of sense, but there is a lot of efficiency and functionality inherent in modern ecommerce platforms that you can lose by going this route.

> Don't bite off more than you can chew!

TJ Gamble
Founder and CEO, Jamersan

Our approach has always been to find the right solution – sometimes it's headless and sometimes it's not. For example, if it's a relatively simple B2B storefront, I don't think headless is a great fit. In the B2C space too, this is not for everyone. If an ecommerce merchant's differentiation is UX and telling a compelling story, then headless is perfect. We also see some B2C merchants flipping the opposite direction – they are headless now but with tools maturing in monolithic platforms, they want to return.

If it's a furniture business and the benefit of going headless is that it can now do in-room visualization that enhances the user experience and becomes a key differentiator, then it's a great case to make one for igniting the sales journey. But if a business is winning on margins, then they may not need one (or maybe they cannot afford one)!

We believe that finding the right solution and partner is key for us to be able to deliver value for our customers. Partnering with Webscale has been great – we rely on their auto-scaling, security and responsive support team.

> If an ecommerce merchant's differentiation is UX and telling a compelling story, then headless is perfect.

Ryan Muir
Director Business Development, Human Element

In the markets we operate, 80-90% of traffic to B2C commerce sites originates from mobile. So PWAs make real business sense for merchants as they offer an app-like experience, and site performance is great, leading to customers spending more time on the site and higher average order value. In my view, there is no reason why anyone should not be looking at a PWA, and a headless infrastructure is the best way to get there.

75-90% of our customers are discussing headless and want to move in that direction in the next 12-24 months. We are seeing budgets in the range of $150-300K. Most of them are on Magento – either planning an M2 re-platforming and hence wanting to look at having a headless PWA. Or they are already on M2, and witnessing sudden surges in traffic due to the pandemic, so wish to invest in enhancing the user experience.

75-90% of our customers are discussing headless and want to move in that direction.

Hashid Hameed
Founder and CEO, Codilar

codilar

Based on our conversations around headless with over 100 clients, there is definitely a lot of awareness around the subject, but also some scepticism that it's the right path for them. 25-50% of our clients are considering going headless in the next 12-24 months and most of them are budgeting inside of $100K. Cost of new development, time to go live and site performance are the major concerns we are hearing.

I believe headless commerce is not a silver bullet for every ecommerce business; it comes with additional cost and needs extra resources to manage the new infrastructure. My observation is that merchants who have a good sense of ROI and are committed to elevating the customer experience usually end up going headless.

We are partnering with Webscale to address some of the key concerns of ecommerce merchants while going headless especially around site performance, security and cloud delivery.

25-50% of our clients are considering going headless in the next 12-24 months.

Piyush Lathiya
CEO, Aureate Labs

AURE ATE

The Merchant View

We were having a tough time managing the friction between internal teams stuck in an inflexible tightly held monolithic environment. It was affecting our productivity and efficiency. So we decided to explore a headless deployment.

We built the new site with React.js as the front end on AWS and Shopify Plus as the back end. Our search for a solution partner who could offer headless architectural expertise, routing for the Shopify storefront, comprehensive security and reliable 24x7 support ended with Webscale. We have never had an outage that was due to Webscale and that has always been the #1 business benefit.

> We were having a tough time managing the friction between internal teams stuck in an inflexible tightly held monolithic environment.

Ty Smith
CTO, oVertone

OVERTONE

We launched our store on Magento which is one of the best ecommerce frameworks available, but has its own limitations – monolithic architecture, slower APIs and restrictions to use technology stacks for the front end. Our goal was to outgrow our competitors in user experience and speed, and for that the monolith had to be broken down into smaller components. We were convinced a PWA was the way forward. It was certainly a big decision for us as we had to consider the cost of a new development, writing off past investments in ERP and CRM, and the time to go live. Implementing the PWA on React.js with Magento back end has increased our site performance and development speed. Now we also have the flexibility to choose the best technology available.

The engagement with Webscale has been good so far. Maintaining cloud infrastructure and DevOps is a nightmare if you don't have prior experience. For us it was hard to keep track of site failures and attacks. We were also having trouble with scaling and security. We needed support and expertise to tackle these issues so that we could focus on our development and user experience. Our search led us to Webscale and I believe it was the right choice.

> Implementing the PWA on React.js with Magento back end has increased our site performance and development speed.

Manish Kumar
CTO, Dentalkart

DentalKart.com
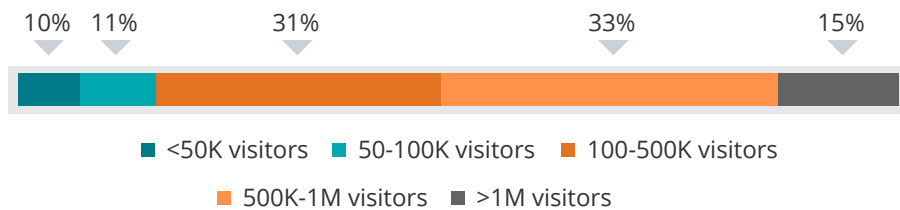
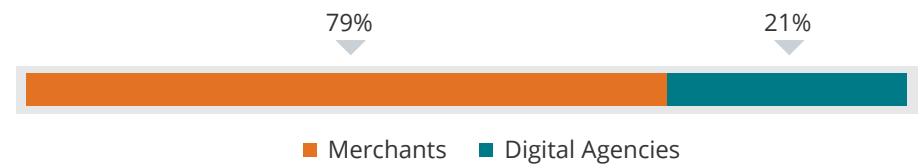# About the Report

Demographics of Respondents

20 countries

Canada, The Netherlands, Sweden, Germany, Turkey, UK, France, Spain, Portugal, United States, Mexico, Brazil, Argentina, South Africa, United Arab Emirates, India, Singapore, Kingdom of Saudi Arabia, Australia, New Zealand

18 Industries

Fashion and Lifestyle, Health and Fitness, Home and Gardens, Banking and Financial Services, Food and Drink, Industrial and Hi-tech, Technology and Computing, Travel and Hospitality, Media and Publishing, Consumer Packaged Goods, Energy and Utilities, Chemicals, Telecom, Automotive, Arts and Entertainment, Family and Parenting, Electrical and Electronics, Hobbies and Interests

Website Traffic of Merchant Respondents

10% | 11% | 31% | 33% | 15%

- <50K visitors
- 50-100K visitors
- 100-500K visitors
- 500K-1M visitors
- >1M visitors

Number of Respondents

1604 Executives

Type of Business of Respondents

79% | 21%

- Merchants
- Digital Agencies

Role of Respondents

26% | 42% | 18% | 5% | 9%

- Senior Developers
- Digital/Ecommerce titles
- IT titles
- Sales/BD/Marketing titles
- Founder/CEO/COO/Board titles
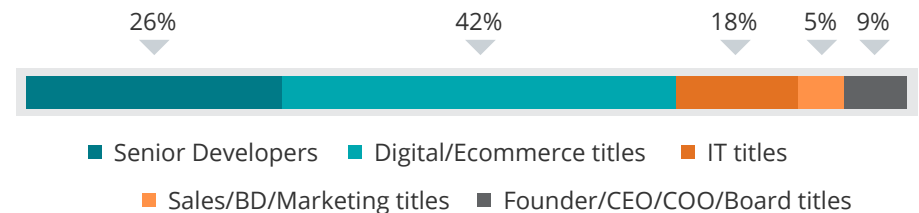
Sources

Number of digital buyers worldwide from 2014 to 2021

Number of smartphone users worldwide

Average order value by device in 2020

2021 Global Headless Report

Published in September 2021 by Webscale Networks, Inc.

About Webscale

Webscale is the world's only cloud platform for the successful delivery of modern commerce applications. Offering enterprise-grade security, predictive scalability and blazing-fast performance, the Webscale SaaS platform leverages automation and DevOps protocols to simplify the deployment, management and maintenance of infrastructure. The platform supports omni-channel use cases across a variety of ecommerce platforms and architectures, including headless, progressive web applications, self-hosted and fully hosted commerce clouds. Deployed in multi-cloud environments, including Amazon Web Services, Google Cloud Platform, and Microsoft Azure, Webscale powers Fortune 1000 brands including Dollar General, Unilever, Swarovski, Olympus, Regal Cinemas and thousands of other B2C, B2B, and B2E ecommerce storefronts across 12 countries. Webscale has offices in Santa Clara, CA, Boulder, CO, San Antonio, TX, Bangalore, India and London, UK.

Webscale Global Headquarters

5201 Great America Parkway, Suite 232, Santa Clara, CA, 95054.

Want to go Headless?

Drop us a line at info@webscalenetworks.com to talk to one of our ecommerce specialists.

www.webscale.com