



TOP 30

PROGRESSIVE WEB APPS

BENCHMARKING STUDY



Progressive Web Apps are becoming a promising new concept for web development which can rapidly improve the web experience.

At Divante, we decided to gather the best PWA implementations in one place and see what the results of implementing PWAs are. It appeared that most companies have observed positive effects after implementing PWAs - conversion rate growth, reduction in application weight, or an increase in the number of users.

We chose 30 PWA implementations, within 7 industries.

What exactly is a PWA?

A Progressive Web App is a web app that uses modern web capabilities to deliver an app-like experience to users.

Why is it the alternative to mobile?

- **Safety** for front-end, which is crucial for every business, especially if you have seasonal traffic peaks
- **Super fast front-end** wherein a customer has a feeling of immediate interaction, similar to well-built mobile applications
- **Off-line readiness** where the on-line store can be browsed by customers with weak or even lack of a network connection
- **Mobile-first experience** with no reloads of pages and animations
- **Cheaper than native apps** - they can be used by every possible smartphone user in the world

Is it necessary for the user to download anything before being able to use the PWA version?

No, from the user standpoint it is like browsing any website. Additionally, users can add the PWA site to their phone's Home screen, and after a quick download (~10 times smaller size compared to an app download) take advantage of app-like features (offline storage, listed in Apps installed list, Home screen icon, etc.)

Sources:

<https://developers.google.com>
<https://www.thinkwithgoogle.com>
<https://medium.com>
<https://www.mobify.com>
<https://www.similarweb.com>

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AliExpress™

Traffic (Monthly): **666.50M**

AliExpress.com is a marketplace offering products to international online buyers. Their mobile commerce is growing three times faster than eCommerce. The company couldn't build an engaging experience on the web that was as fast as their mobile app.

They looked at the mobile web as a platform to transition a non-app user to an app user.

Not everyone downloaded their app, however, and getting users to install and re-engage with it was challenging and costly. So AliExpress decided to build a cross-browser Progressive Web App to combine the best of their app with the broad reach of the web.

Results:

104%

more new users across all browsers

82%

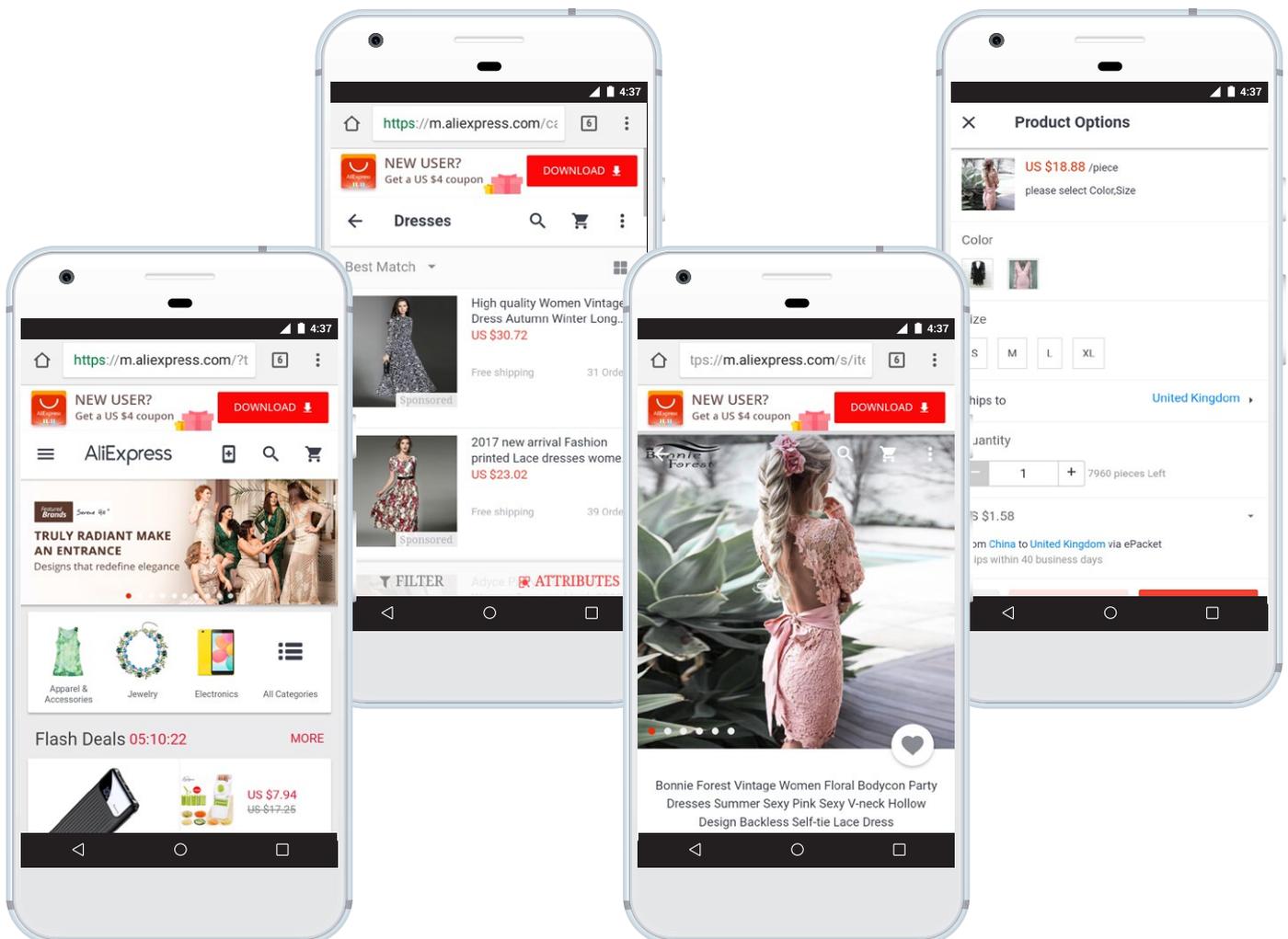
increase in iOS conversion rate

2x

more pages visited per session per user across all browsers

74%

increase in time spent per session across all browsers





Jumia.com.ng is a leading eCommerce website in Africa. In Jumia's main market, most of the mobile connections are on 2G networks. That's why users only have intermittent connectivity and visit the site from low-end phones with data limitations.

It's difficult to motivate users to download a data-heavy native app, leading to steep drop-off rates and high customer-acquisition costs, so Jumia decided to integrate PWA technologies to reduce friction.

Jumia Travel has enhanced and optimized all the various elements of their PWA experience. The company noticed a huge increase in conversion rates compared with the previous mobile website.

Traffic (Monthly): **5.6M**

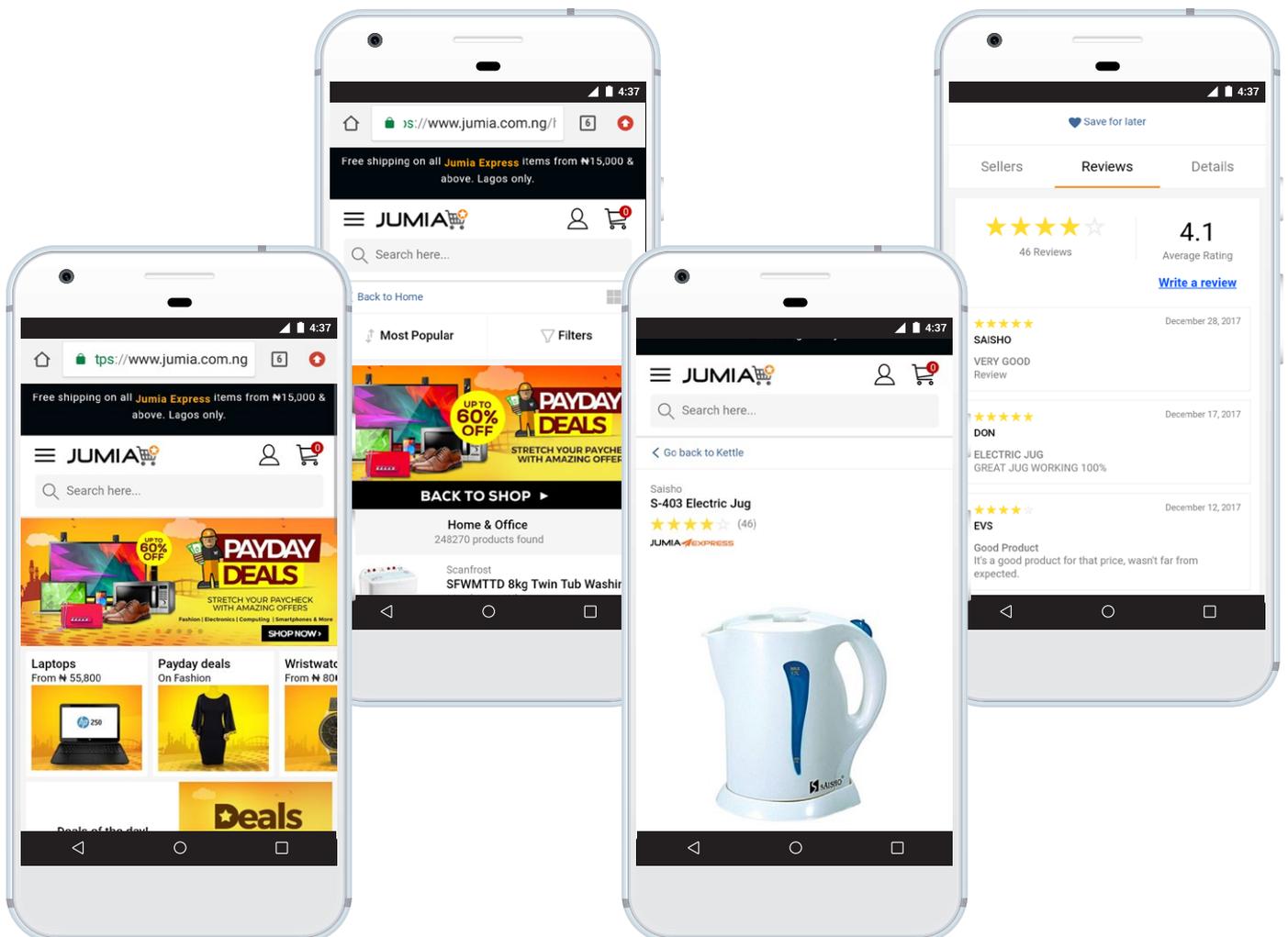
Results:

33% higher conversion rate

50% lower bounce rate

12x more users versus native apps (Android & IOS)

5x less data used





Alibaba.com is the world's largest online business-to-business trading platform serving 200+ countries and regions.

Mobile web is Alibaba's primary platform for discovery on mobile. The company has always focused on design and functionality, but they found it difficult to build an engaging experience for the mobile web.

The company recognized that they needed to understand how two different user segments used the service in order to build an effective mobile presence. Segments contained native app users and mobile web users who interacted with their business. After upgrading their site to a PWA, the company saw a huge increase in total conversions across browsers.

Traffic (Monthly): 155.6M

Results:

76%

higher conversions across browsers

14%

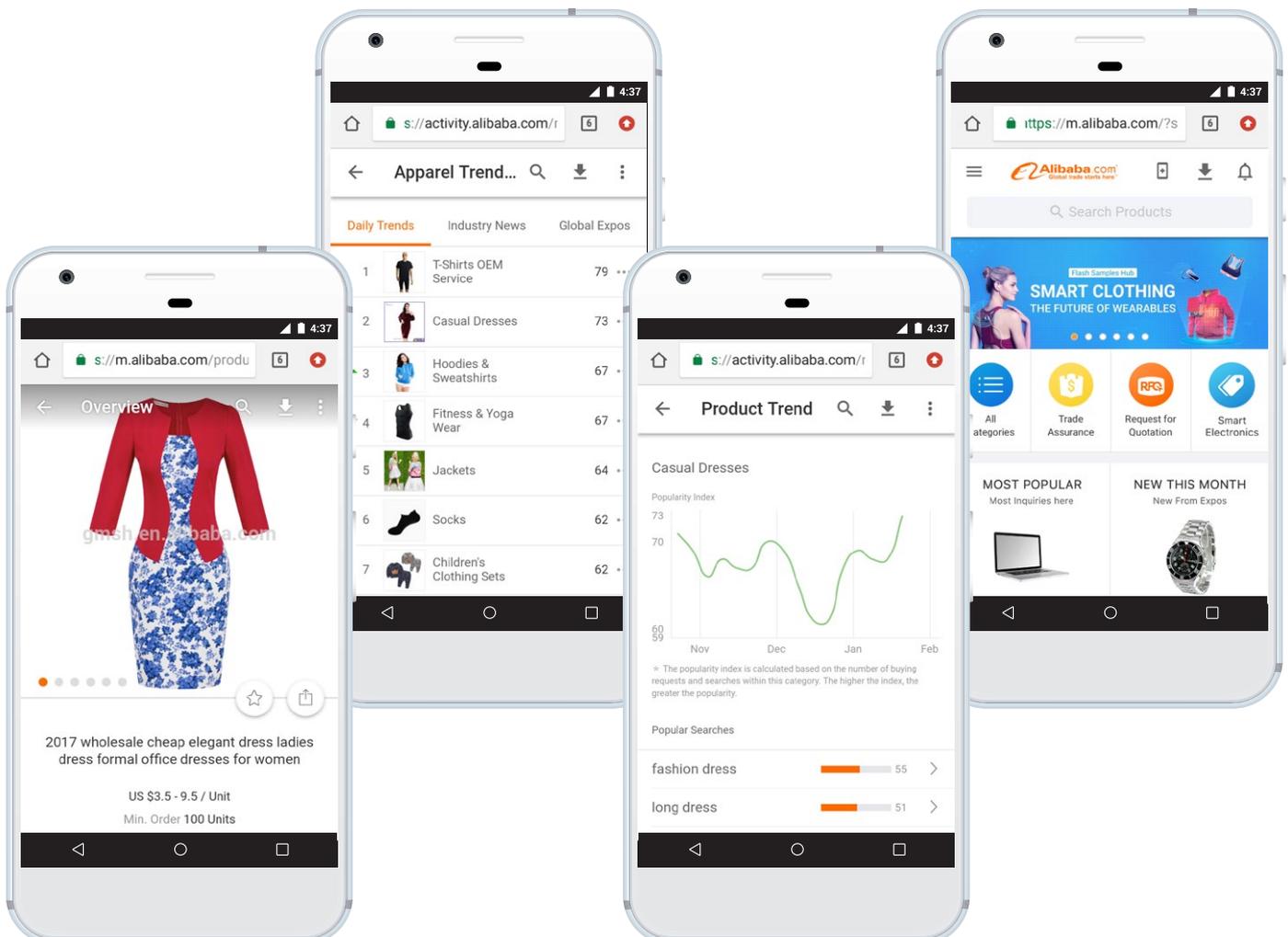
more monthly active users on iOS

30%

more monthly active users on Android

4x

higher interaction rate from Add to Homescreen



5miles[®]

5miles.com is a mobile marketplace, where shoppers can buy almost everything.

More than half of new shoppers discovered 5miles' online store via the mobile web, but the company had a problem to provide a mobile web user experience that was as fast and engaging as their mobile app. Because of the resulting high bounce and low retention rates, the company focused on encouraging users to download their native app, but getting users to install and re-engage was challenging and costly.

They decided to build a PWA to combine the best of their app with the broad reach of the web. The company wanted to re-engage their mobile web users just as they would with mobile app users.

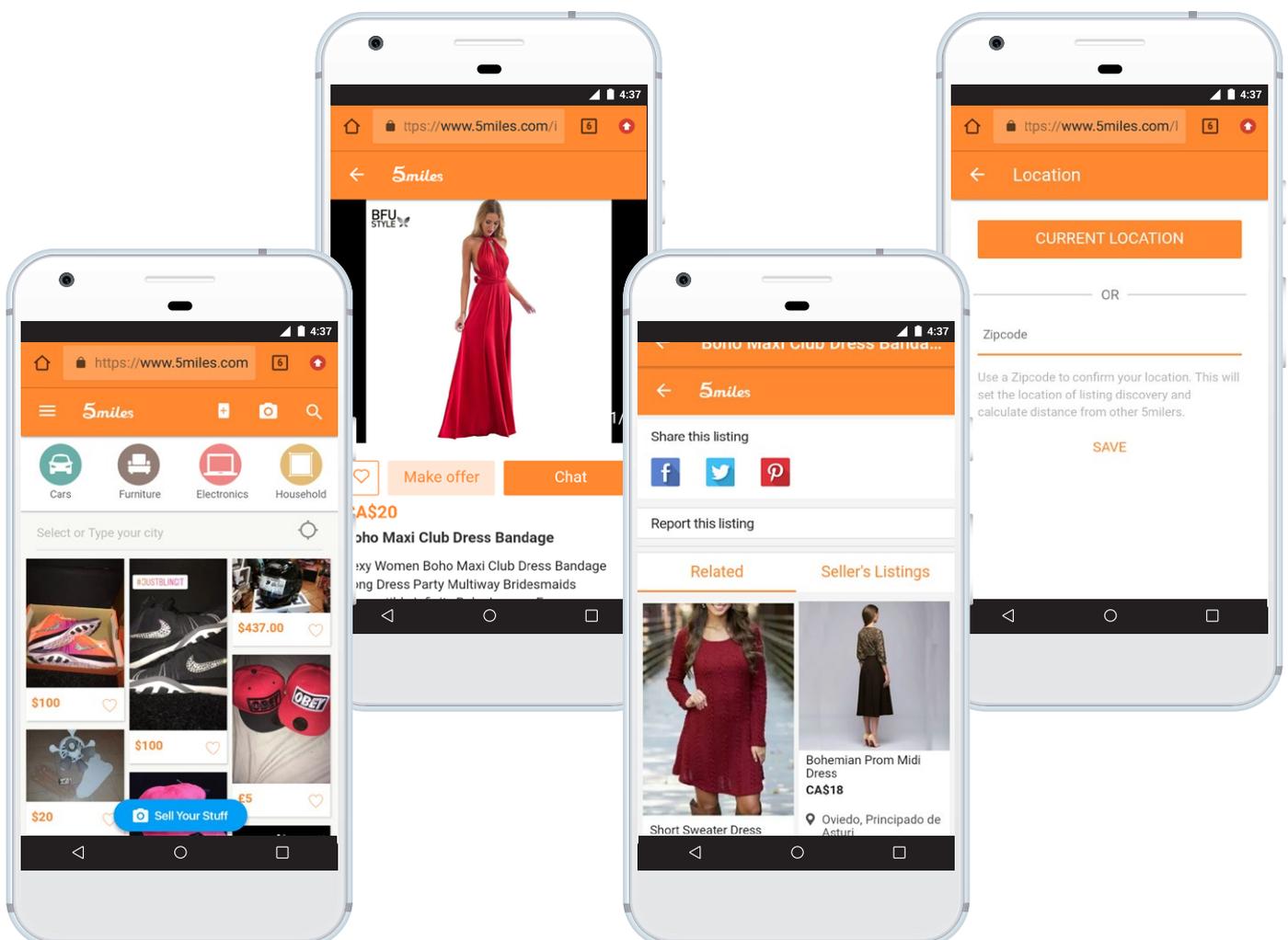
Traffic (Monthly): 2.0M

Results:

50% decrease in bounce rates

30% increase in time spent on site

30% better conversion for users who arrived via Add to Home screen





Traffic (Monthly): 258.4M

Flipkart.com is India's largest eCommerce site.

The company adopted an app-only strategy and temporarily shut down their mobile website. They found it hard to provide a user experience that was as fast and engaging as that of their mobile app. Flipkart decided to rethink their development approach. They were drawn back to the mobile web by the introduction of features that made the mobile web run instantly, work offline, and re-engage users.

Flipkart soon began building Flipkart Lite, a PWA that combines the best of the web and the best of the Flipkart native app.

They decided to combine their web presence and native app into a PWA, which has resulted in a big increase in conversions.

Results:

3x

more time spent on site

40%

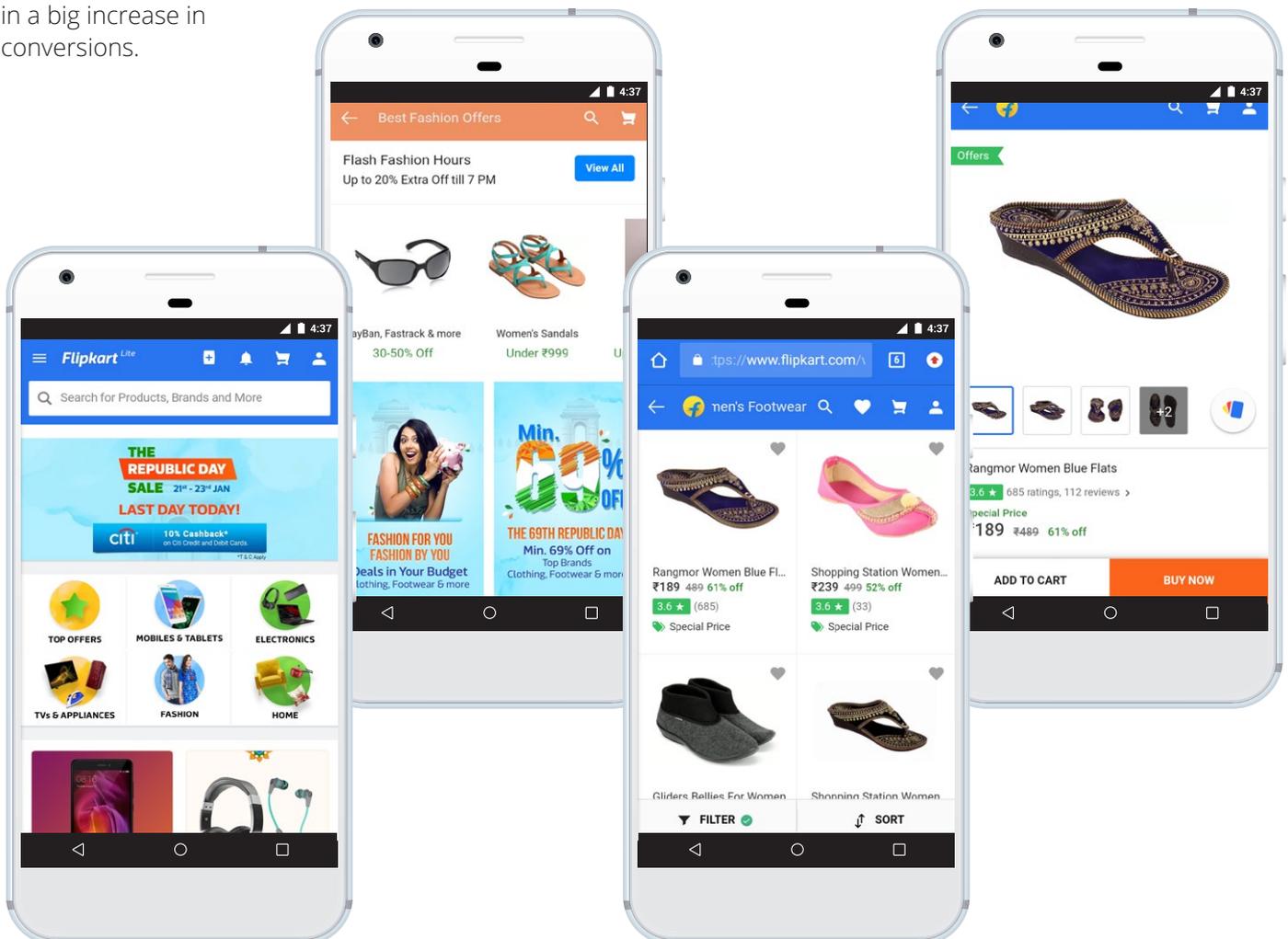
higher re-engagement rate

70%

greater conversion rate among those arriving via Add to Homescreen

3x

lower data usage





Olx.in is one of the largest online destinations for classified ads in India, which provides communities in high-growth markets with vibrant online marketplaces.

With declining desktop growth, OLX gets over 90% of their traffic from mobile devices. However, OLX noticed the fact that the majority of conversions were still happening on the native app. Their mobile-web bounce rates tended to be higher as well and they realized their mobile web experience was too slow.

OLX wanted to re-engage mobile web users, so they looked to PWA technologies to provide a faster-loading, immersive and app-like experience.

Traffic (Monthly): **40.7M**

Results:

23%

less time until page is interactive

80%

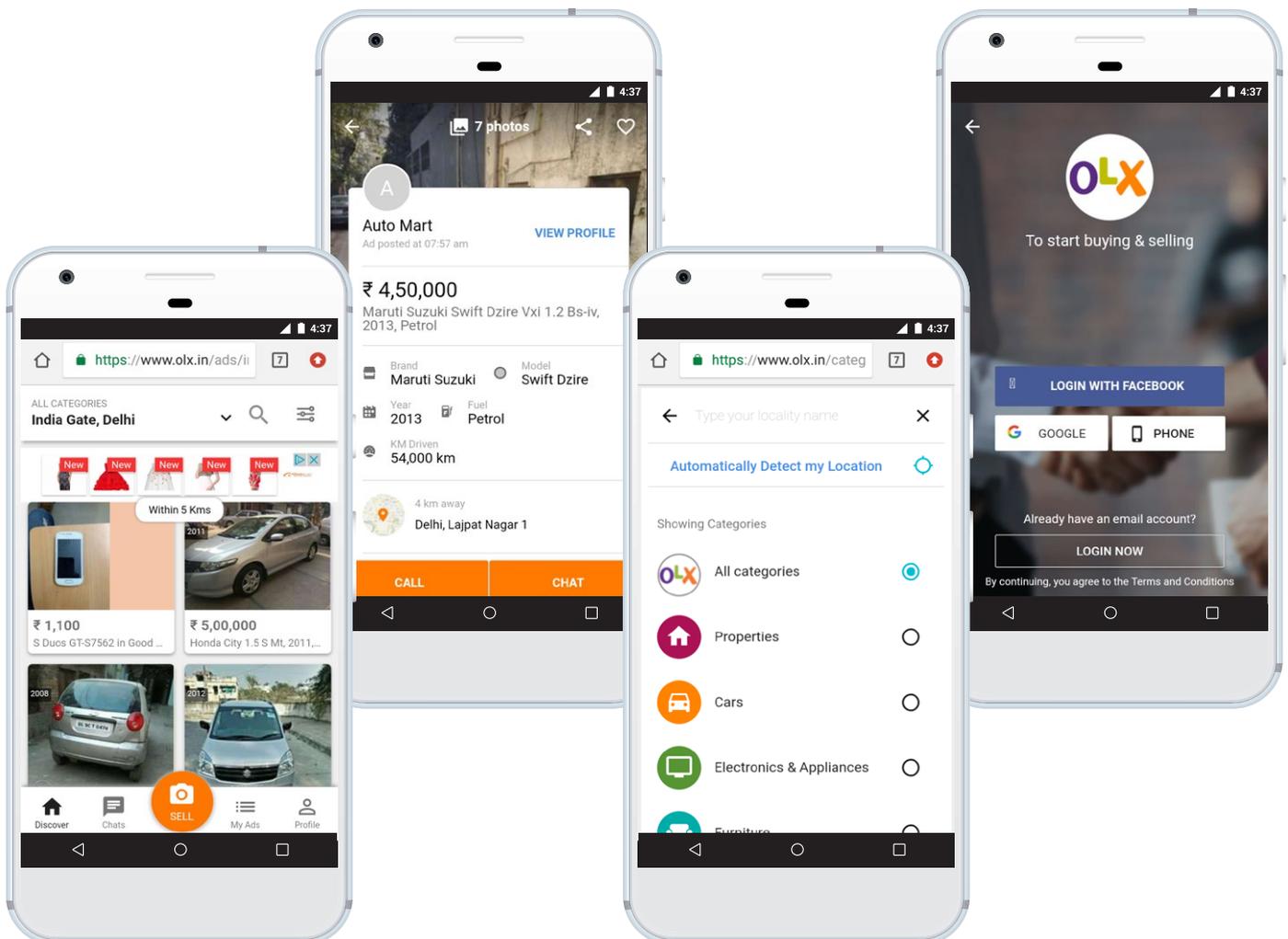
lower bounce rates

146%

higher CTR on Ads

250%

more re-engagement





Konga.com is a leading eCommerce website in Nigeria and its largest source of traffic and user growth is provided by mobile devices. Konga was developed as a native app, so users on mobile could work offline and re-engage. Their current and potential customers are very data-sensitive, and many hesitated to use data or space to download Konga's native app.

Konga wanted to provide all of their web users with the benefits of their app, including performance, the ability to work offline, and re-engage without the data cost.

Results:

92%

less data for initial load, vs. native app

82%

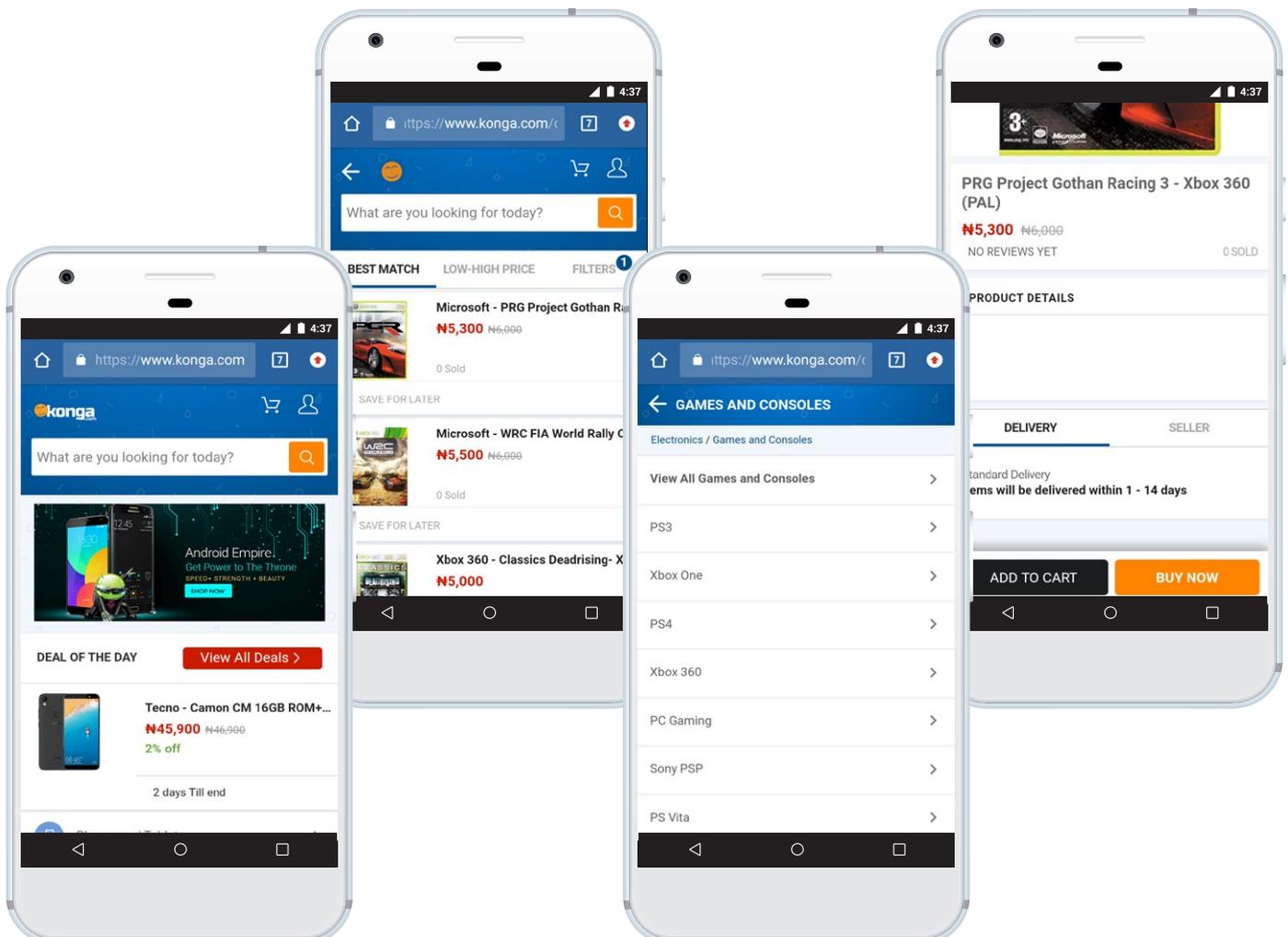
less data to complete first transaction, vs. native app

63%

less data for initial load, vs. previous mobile web experience

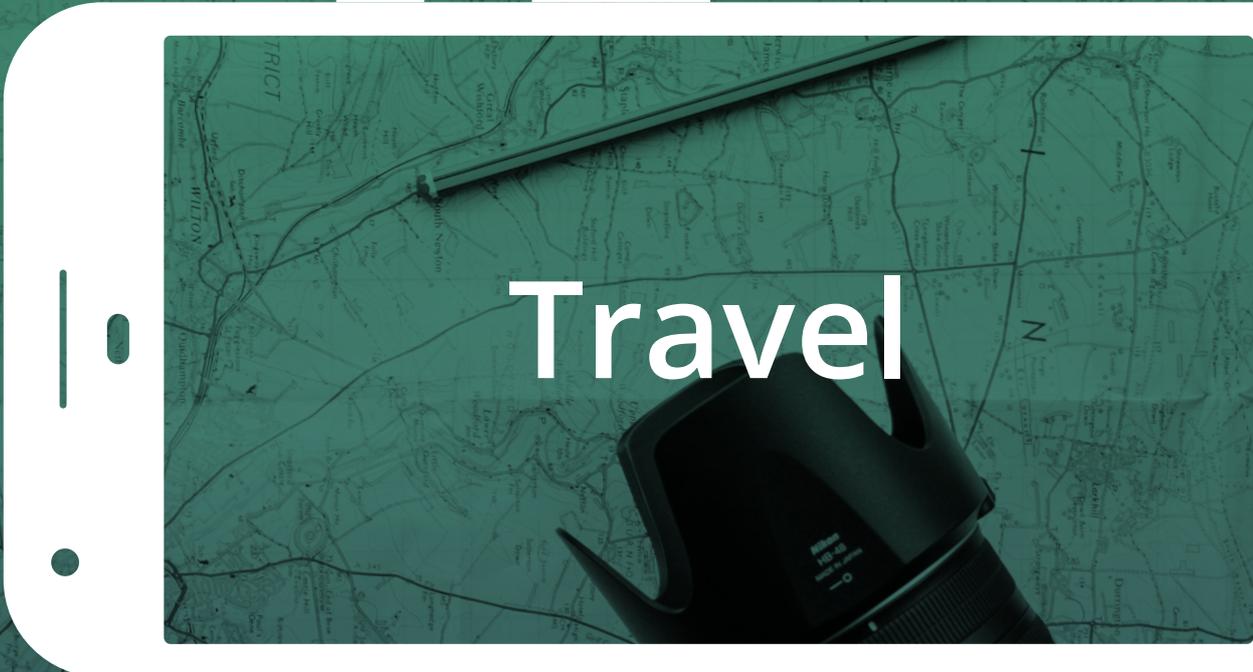
84%

less data to complete first transaction, vs. previous mobile web experience





FIELD NOTES
48 Page Memo Book
Durable Materials / Made in the U.S.A.



Travel

Ordnance Survey
New Forest
Showing Southampton, Ringwood
Christchurch and Bournemouth
1:50,000
45p



Makemytrip.com is a leading travel company.

Many potential users only have intermittent connectivity and visit the site from low-end phones with data limitations. The company found it hard to drive users to download a native app, leading to steep drop-off rates and high customer acquisition costs, but also to building an engaging user experience for the mobile web.

To reach the audience they wanted, the company needed a solution that merged the benefits of native apps and the mobile web so they could lower the cost of discovery and increase engagement rates.

MakeMyTrip developed a PWA that led to a fast, reliable and polished mobile-web experience.

Traffic (Monthly): 42.3M

Results:

3x

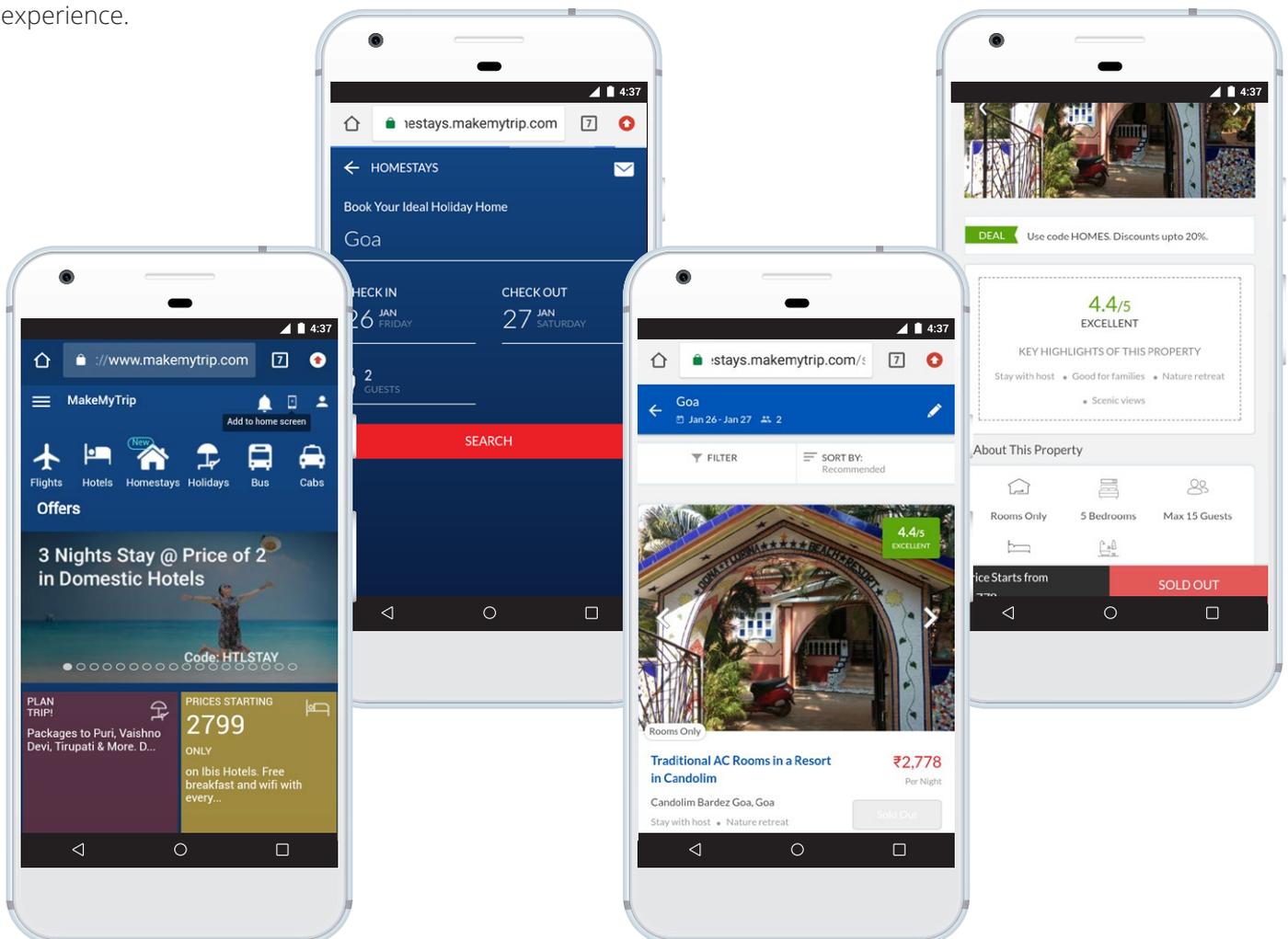
improvement in conversion rate

38%

improvement in page load times

160%

increase in shopper sessions





Wego.com is a travel search engine based in Singapore.

Wego's amp-install-service-worker creates a smooth transition into PWA. With the Credential Management API, users can access credentials saved in the browser.

Wego's PWA is built with Polymer. It opens in full-screen mode like an app and feels like a native app. The company noticed 26% more visitors and 95% more conversions, but also a 50% increase in conversions on iOS devices, and a 35% increase in average session duration. The PWA can be accessed from a homescreen icon and there is no install, no friction and no commitment.

Wego has built a successful AMP based PWA.

Traffic (Monthly): 4.0M

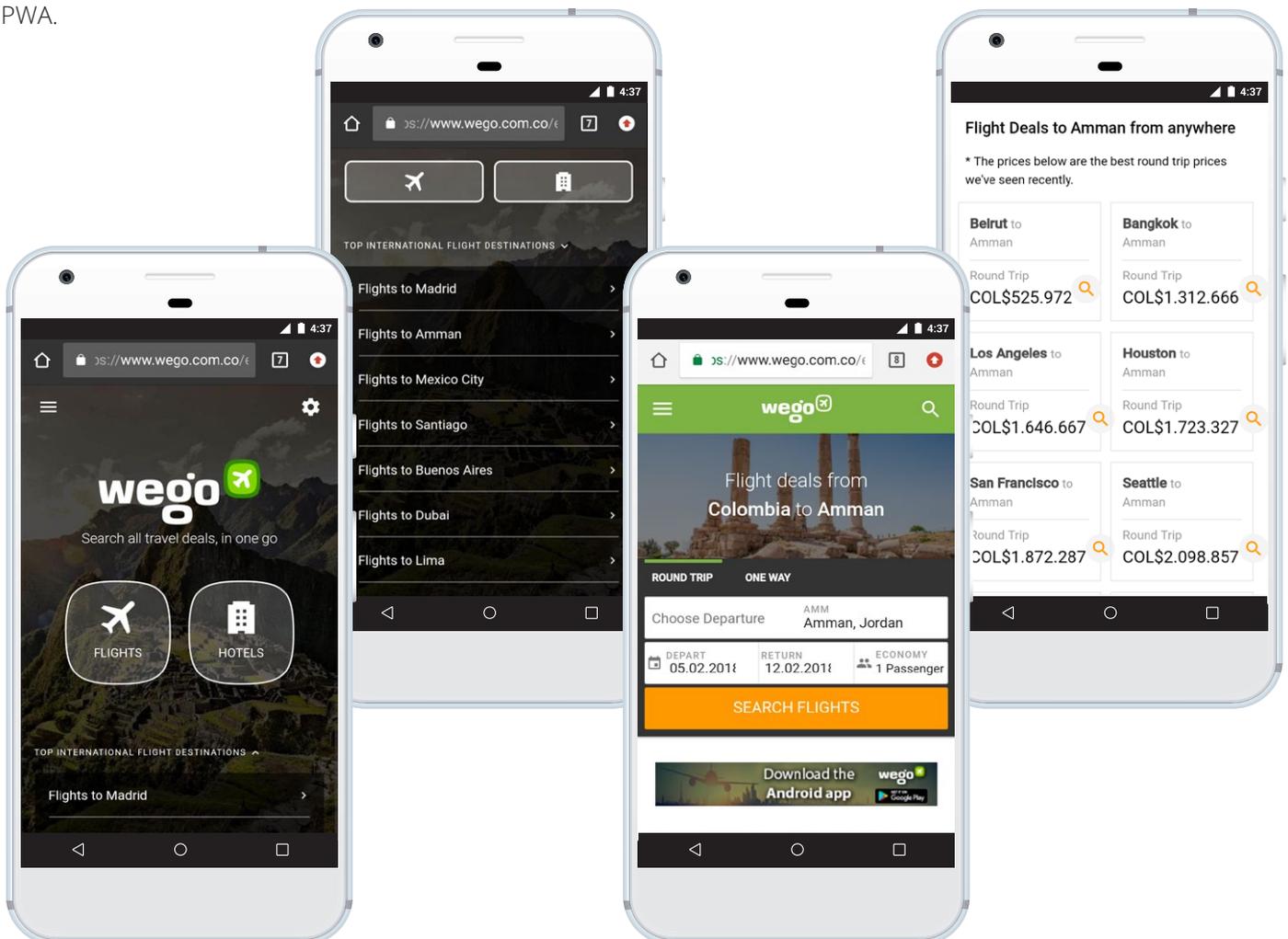
Results:

12% increase of organic visits

3x increase in CTR

20% drop in bounce rate

<1s Web page load in less than 1s instead of previous 12s





Trivago is one of the world's leading hotel search engines. More Trivago users access the service through mobile devices than on desktop and laptop computers. Users don't always accept the cost of downloading a native app just to find out if it provides the service they need.

Trivago decided to implement a PWA, a collection of APIs that allows mobile websites to provide much of the functionality of a native app, such as offline access, push notifications and homescreen shortcuts, while still being accessible through a regular mobile browser.

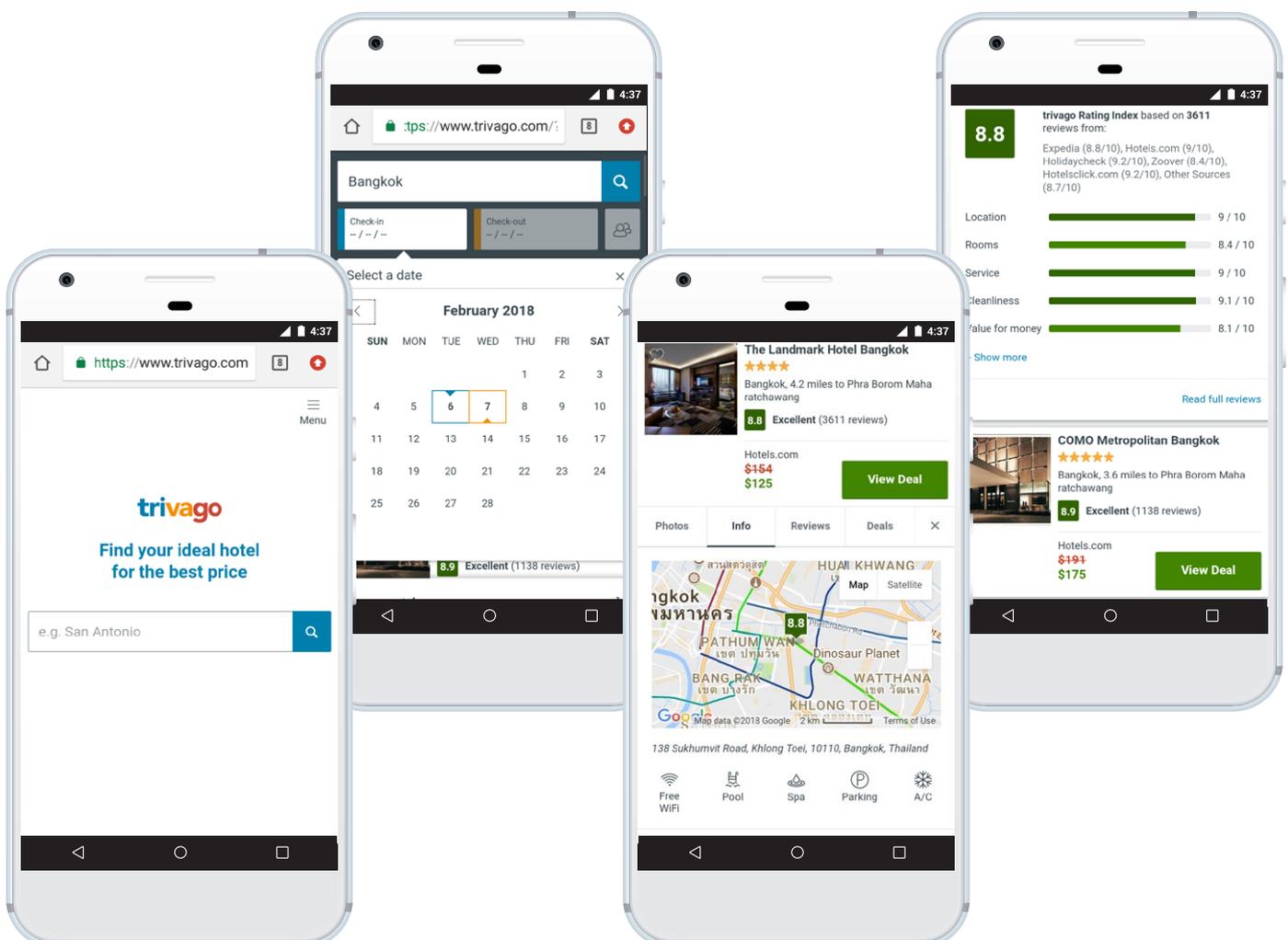
Traffic (Monthly): **1.7M**

Results:

150% increase in engagement

97% increase in clickouts to hotel offers for users of the PWA

67% of users who come back online continue browsing the site





Olacabs.com is the leading cab aggregator in India, completing more than a million daily rides.

People in cities served by Ola often deal with intermittent cellular connectivity and have low-end smartphones with low memory and slow processors. They are less apt to download and store native apps on their smartphones, so Ola needed a different way to reach these users.

The mobile web presented a solution which offers easy discovery and low friction. Other advantages include push notifications.

Ola built their mobile website as a PWA which delivered low data consumption. The PWA allowed the company to effectively re-engage with their previous app users and helped reach a broader set of users in new cities.

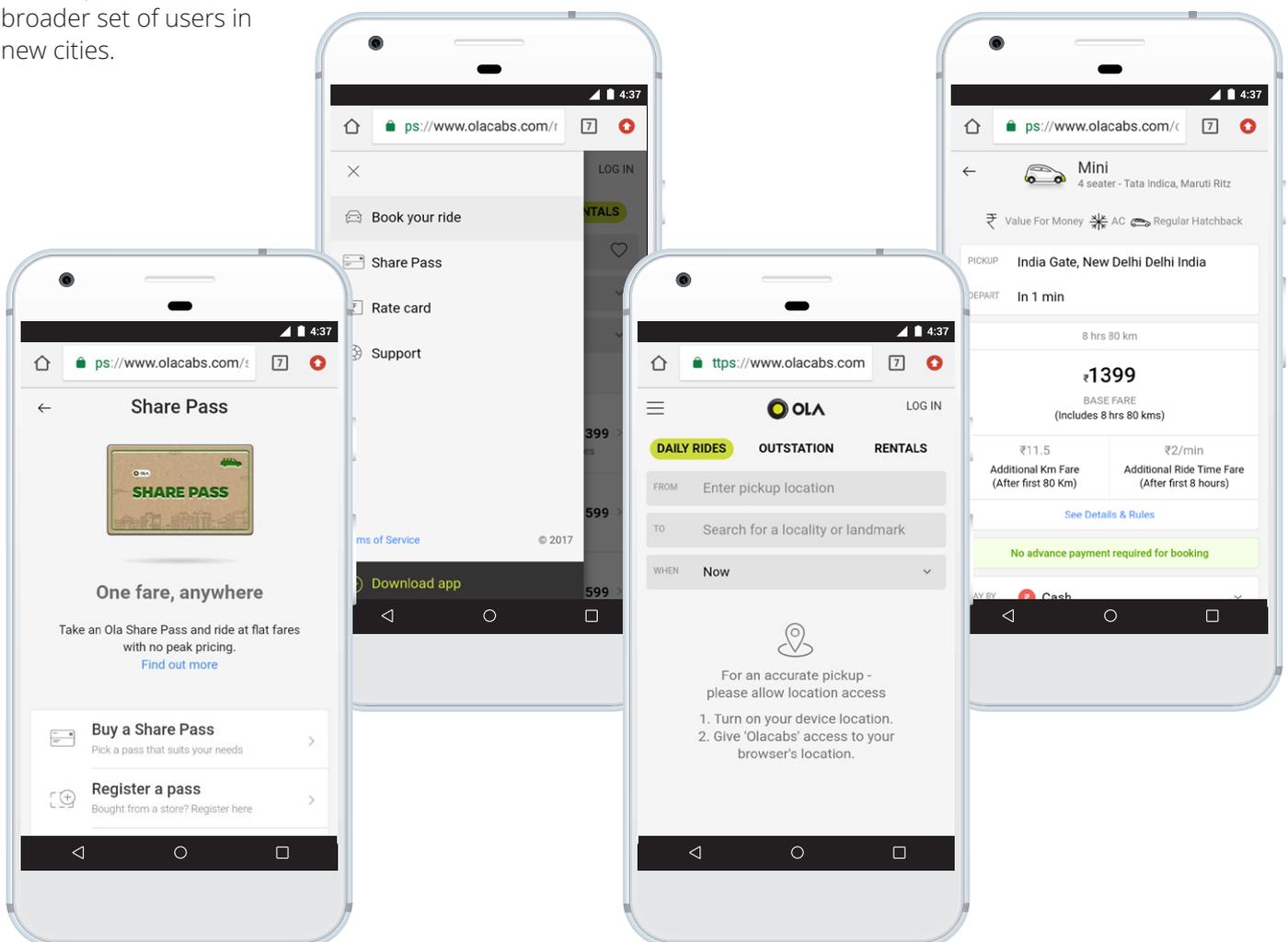
Traffic (Monthly): 6.1M

Results:

68% increase in mobile traffic

30% increase in conversion rates

20% of users who book in their PWA had previously uninstalled their app





Airberlin.com was Germany's second-largest airline and Europe's tenth-largest airline in terms of passengers carried.

Air Berlin was the first airline with a service which enabled users to access services, such as a boarding pass, at anytime and without an internet connection, after an initial web check-in. It was also one of the first in the travel industry to go down the PWA route.

The PWA means travellers could receive push notifications such as gate changes and access additional travel information, and it also enabled a browser-like experience.

Traffic (Monthly): **947.1K**

Results:

-  Travellers can receive essential travel information as push notifications
-  Low friction and the capabilities of the web





News

Forbes

Forbes.com is an American business magazine. Published bi-weekly, it features original articles on finance, industry, investing, and marketing topics.

PWA is making the whole experience faster than a mobile web site and helps to deliver visuals faster. It guarantees no friction. Forbes serve content that is desired by users. Once a user has installed the subject or topic, he receives interesting articles. Forbes can notify users about new content all the time.

Traffic (Monthly): **123.6M**

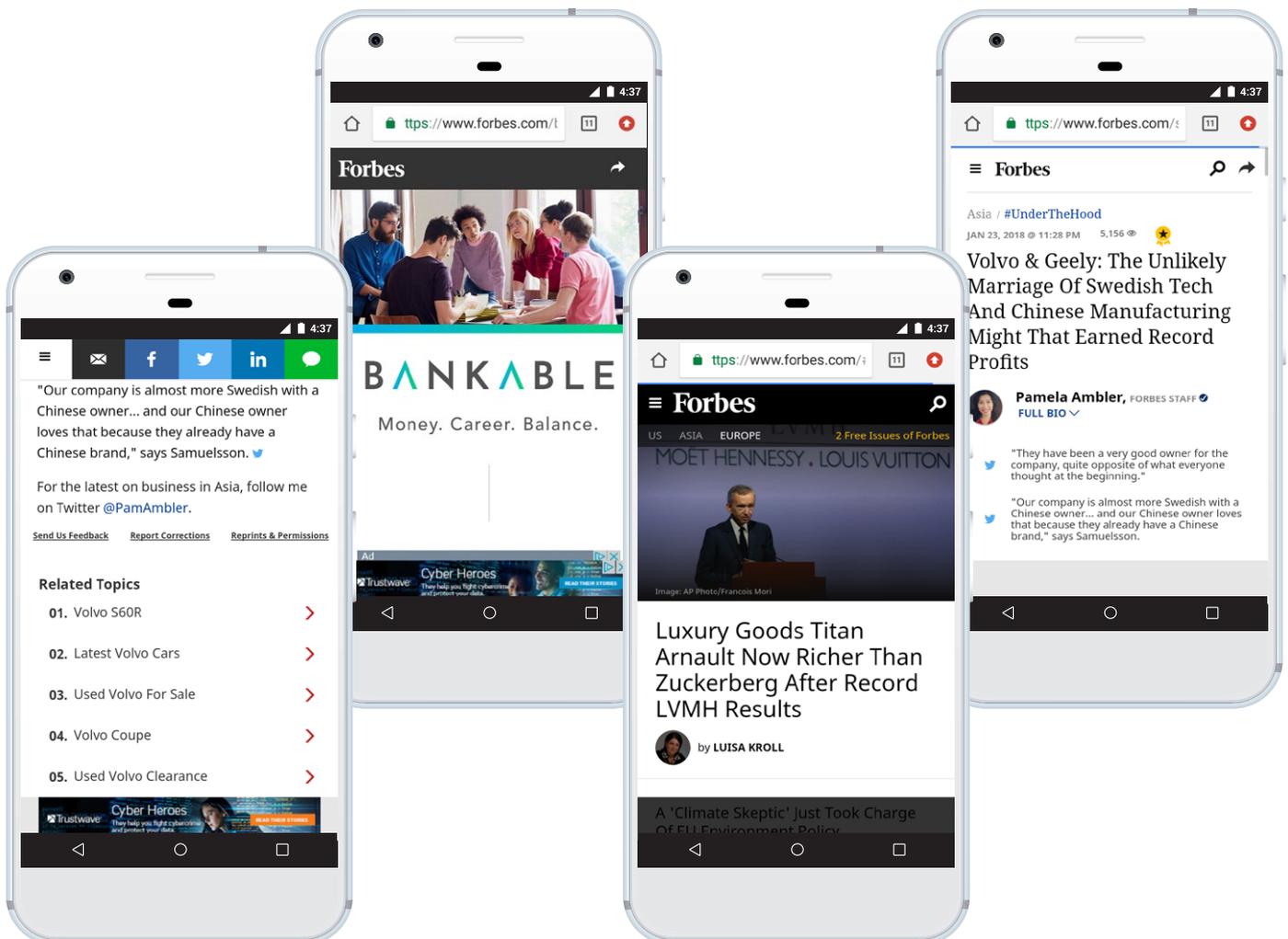
Results:

43% increase in sessions per user

20% ad viewability up

3x in scroll depth

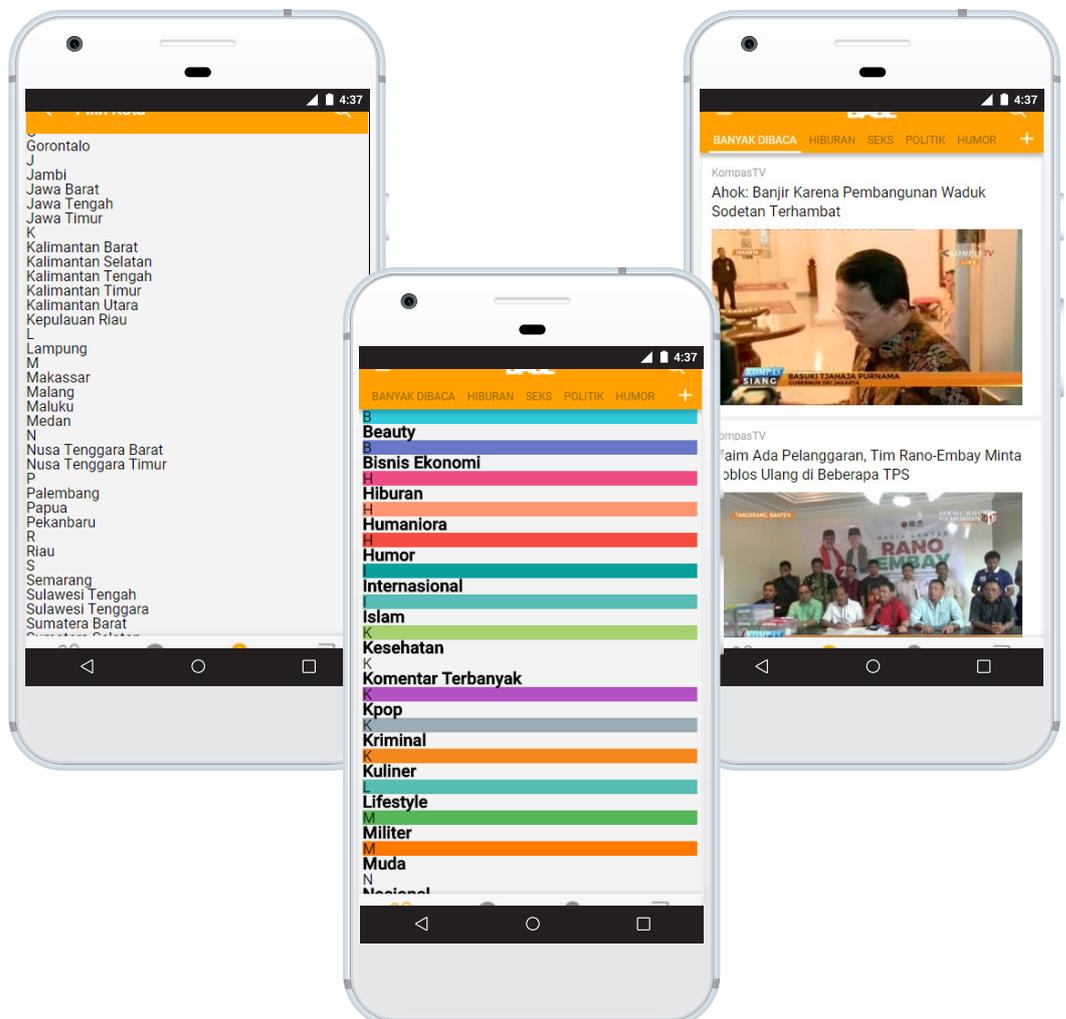
100% engagement





Babe.news is the largest news-aggregator app in Indonesia. It has been downloaded by more than a million people. Getting users to download their app has been a core challenge. When they expanded to target people outside the big cities, this problem only became more difficult. Several obstacles included poor internet connectivity and prevalent use of low-end devices. Together, these hindered their ability to scale.

BaBe built a PWA in order to combine the best of their app with the broad reach of the web. It leverages new, open web APIs to offer a mobile-web experience that loads quickly, uses less data, and re-engages users in multiple ways.



Traffic (Monthly): 1.0M

Results:

3 vs 3

Time spent on site comparable to native app: 3 minutes vs. 3 minutes per session

3 vs 4

Articles read on site comparable to native app: 3 vs. 4 per session

infobae

Infobae.com is one of Argentina's first major digital-only news outlets. With 38 million monthly active unique users, it's one of the most-read Spanish-language news outlets in the world, thanks to exponential growth in Latin America.

Android phones account for most of Infobae's total traffic. However, engagement rates on mobile haven't matched desktop ones. Desktop readers were deeply engaged - their session was almost 9 times longer than mobile readers. Despite a growing number of mobile site visitors, mobile bounce rates were much higher than on desktop. The company looked to PWA technologies for a solution.

Results:

230%

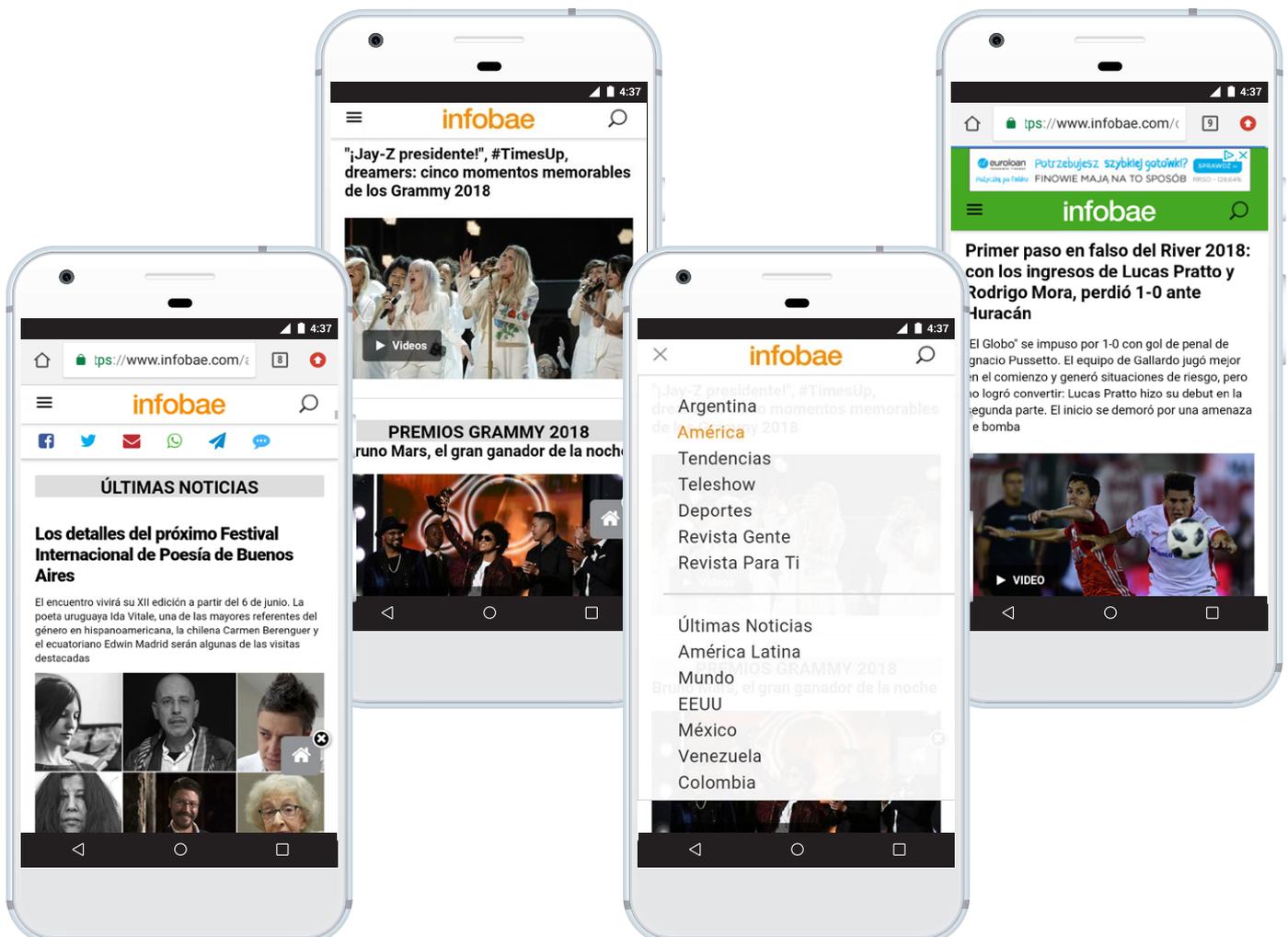
longer sessions than on previous mobile site

3x

more page views per session than on previous mobile site

5%

bounce rate versus 51% on previous mobile site



The Weather Channel

Weather.com has been forecasting since the 1980s and now serves people all around the world across many platforms.

On mobile, The Weather Channel has pushed vital information to their native-app users. Weather looked to progressive web app technologies for a solution. Being a site that focuses on immediacy, especially related to real-time weather notifications in severe situations, they implemented browser push notifications when severe weather hits. They also wanted to re-engage mobile users who hadn't downloaded their app.

To scale quickly, The Weather Channel implemented push notifications for mobile web users, which succeeded. Then they continued along this path to build a PWA.

Traffic (Monthly): 267.4M

Results:

62

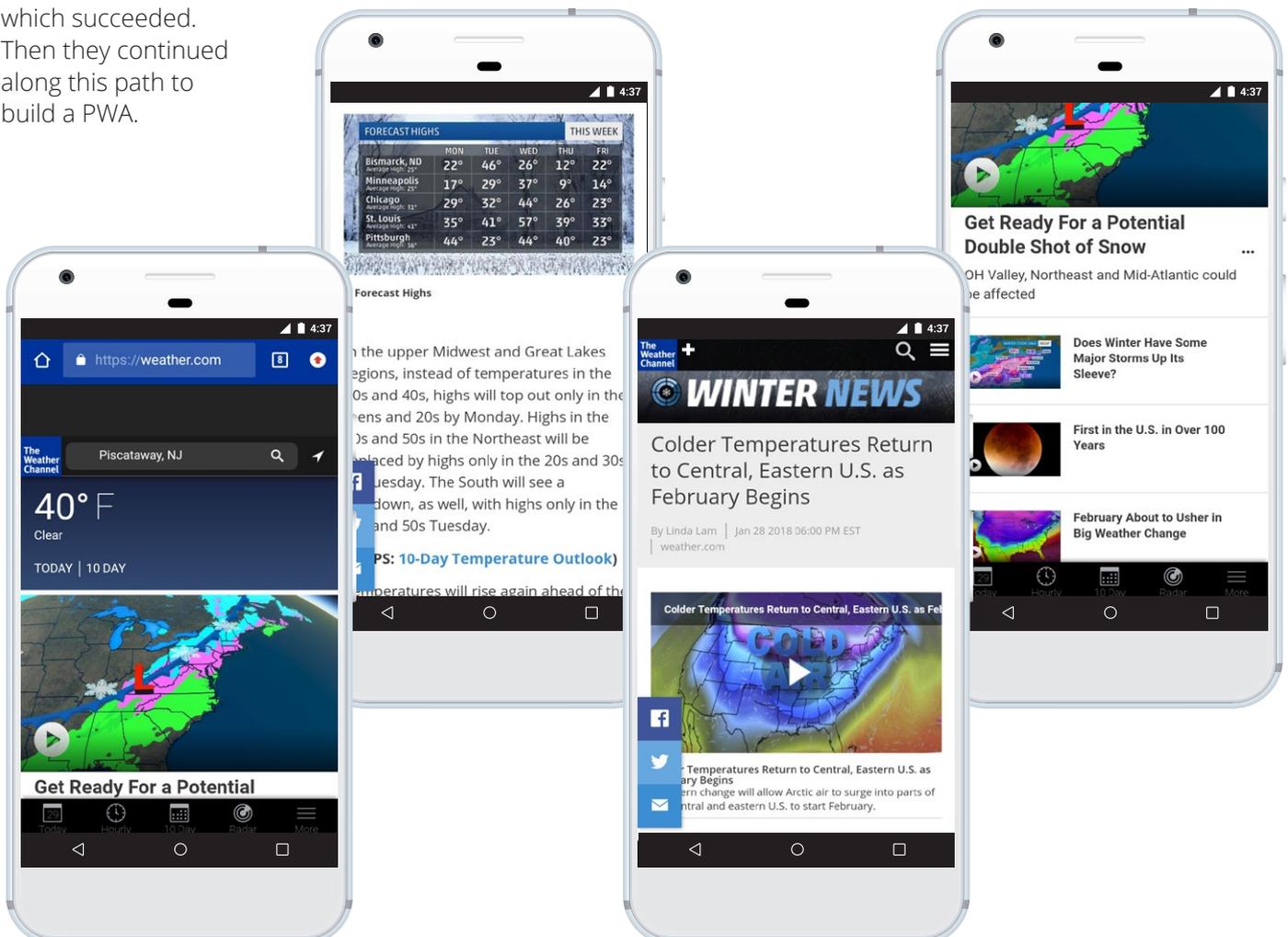
languages available

178

countries covered

80%

improvement in load time





Mynet.com is a service that provides news, video, gaming, financial, informational and entertainment content and services.

With most of their mobile traffic coming from the mobile web, Mynet's mobile website is an indispensable part of their strategy. However, they noticed that users spent 2X less time on the mobile site than users of their native app. Their mobile-web experience was too slow. Mynet needed to build an extremely fast, engaging mobile website, similar to what they could achieve with a native app.

Results:

25%

higher revenue per article pageview

4x

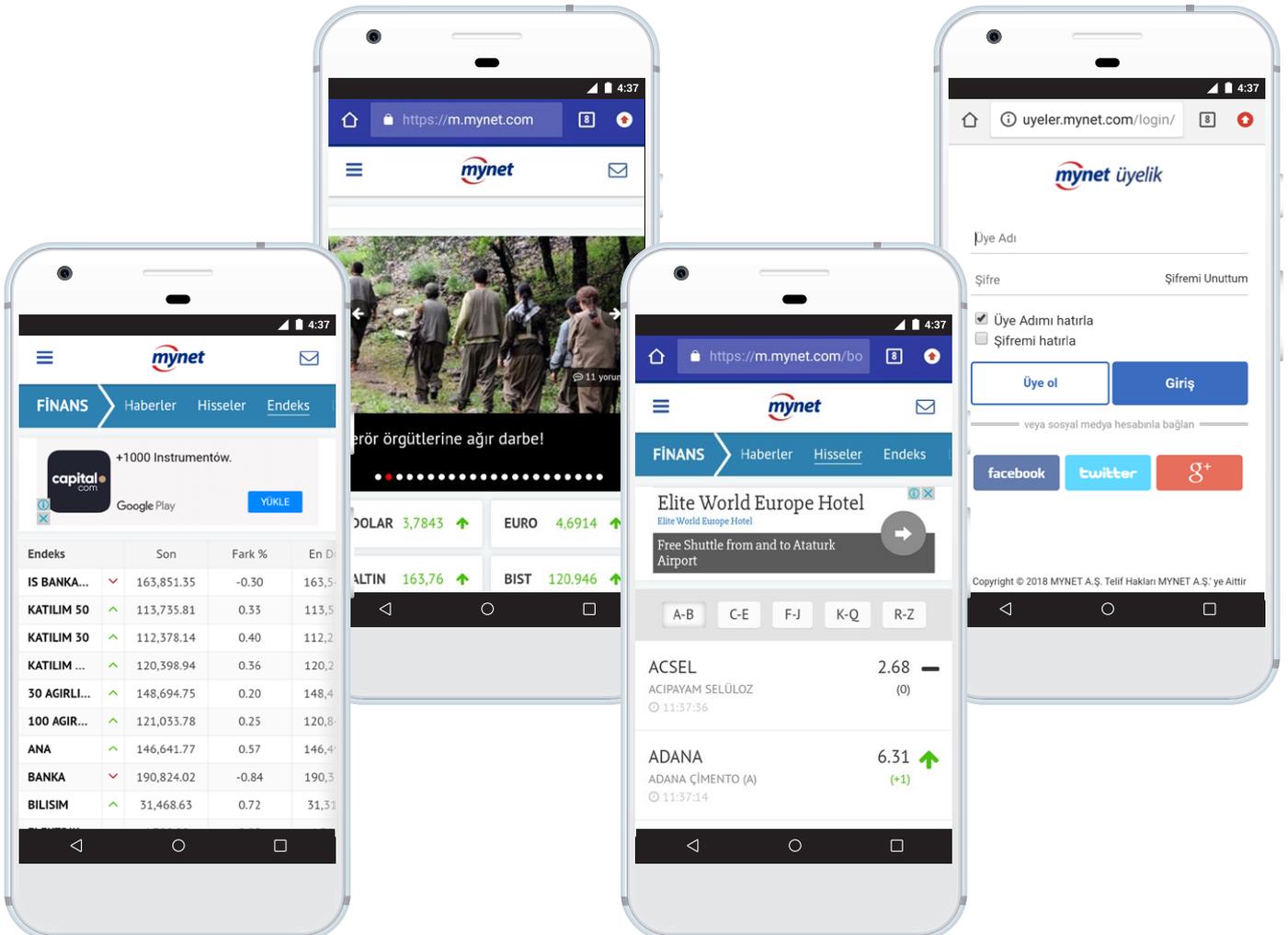
faster average page-load speed

43%

longer average time on site

34%

more page views per session



A person with short blonde hair is shown in profile, playing a large drum set on a stage. The scene is bathed in a green light, and there are bokeh light effects in the background. A white smartphone graphic is overlaid on the right side of the image, containing the text. In the lower right foreground, the silhouette of another person is visible, looking towards the drummer.

Social Media & Entertainment

bookmyshow

Bookmyshow.com is India's largest ticketing firm, with 50+ million monthly visitors.

The company has a growing mobile audience and most transactions happen on mobile. Their mobile web traffic is bigger than their desktop web traffic. Even with this growth in traffic, the company still encountered high bounce rates because their mobile website's load speed and user experience weren't optimal. Their native app also caused problems as it required heavy data and memory usage to be effective.

In order to improve speed and efficiency, BookMyShow launched a PWA to deliver the best mobile web experience possible to the majority of their users. They adopted cutting-edge solutions and built a truly powerful, technically-advanced web app that provides users with fast, reliable, and engaging experiences just like the native app.

Traffic (Monthly): 59.2M

Results:

80%+

increase in sessions per user

54x

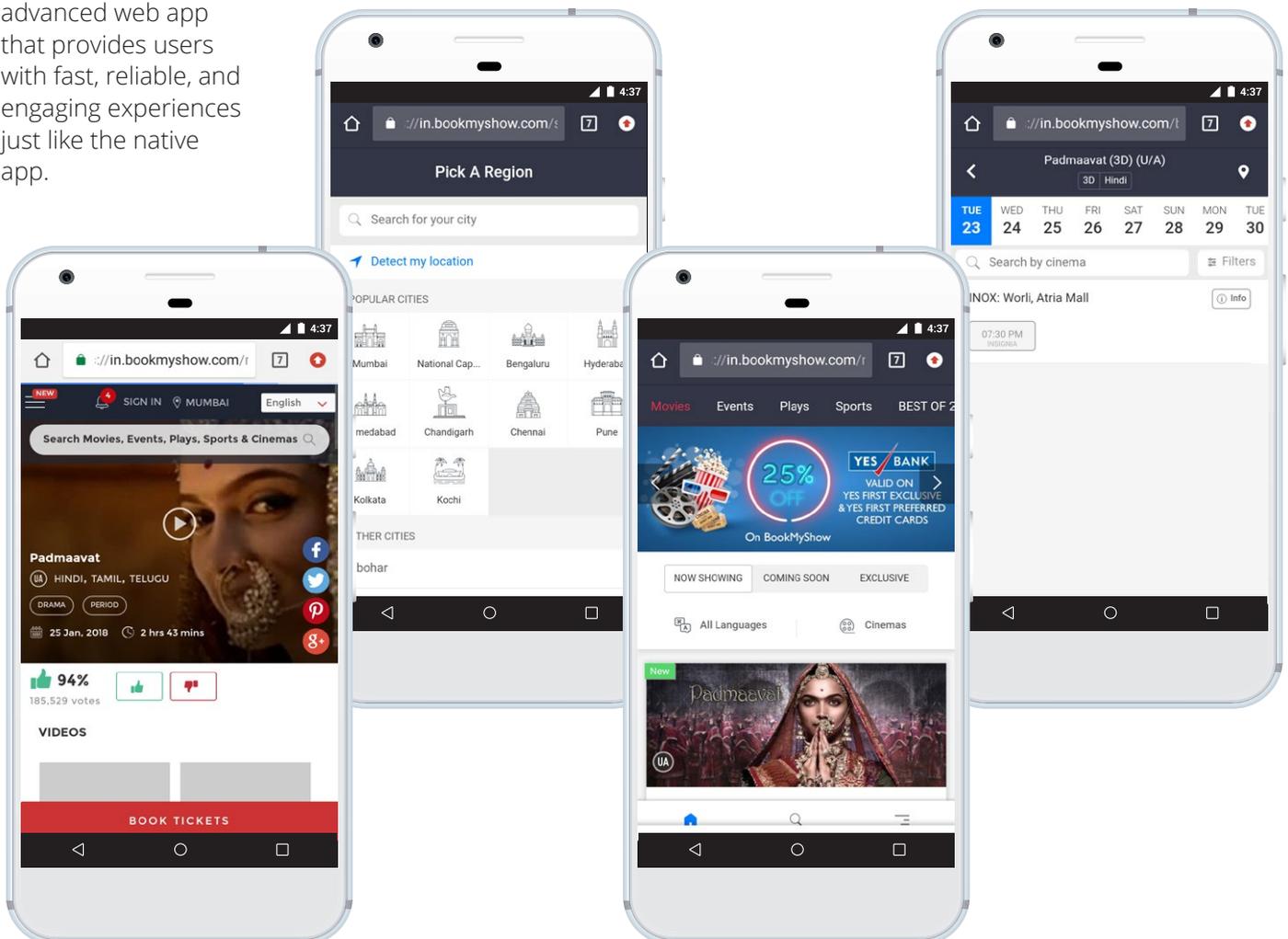
ad viewability up

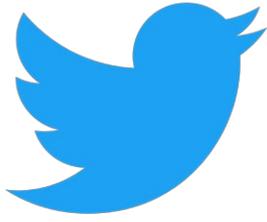
180x

in scroll depth

<2.94

less than 2.94 seconds to load and enables checkout within 30 seconds





Twitter.com is a platform to find out what's happening in the world. Twitter's aim was to re-engage users on the mobile web.

Twitter implemented web push notifications that work the same as those from native apps and arrive even if the user's browser is closed.

Twitter Lite uses less data by default, serving smaller media resources and relying on cached data as much as possible. The PWA also optimizes images to help reduce data consumption and its users benefit from data consumption savings. The data saver mode helps them preserve even more mobile data by giving them control over when Twitter Lite downloads media assets.

Twitter Lite helps reach this audience more effectively by making Twitter faster and easier to use in low-bandwidth conditions.

Traffic (Monthly): 4.3B

Results:

65%

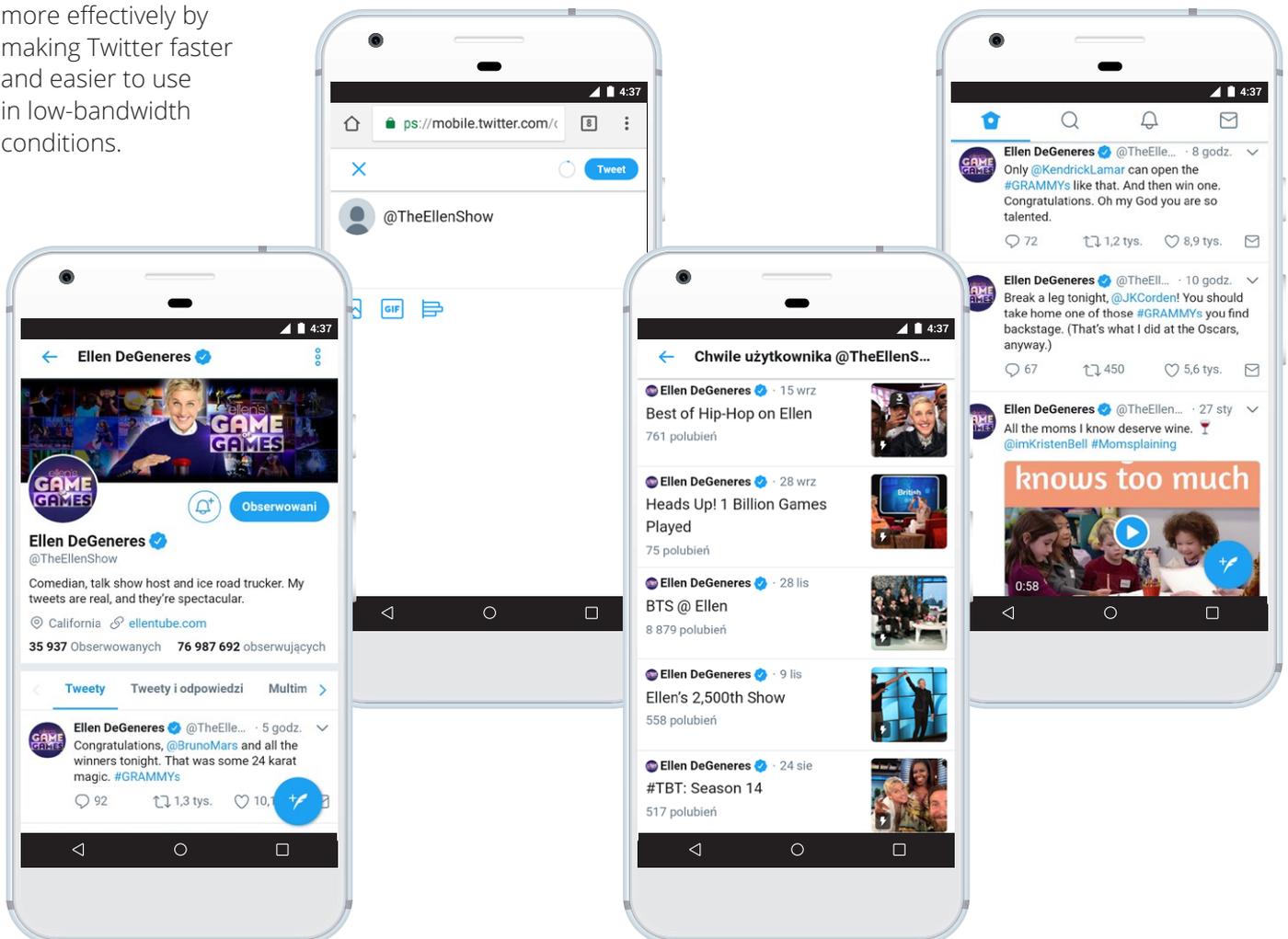
increase in pages per session

75%

increase in Tweets sent

20%

decrease in bounce rate





Voot.com is one of India's top video-on-demand products, available as both a native app and a mobile web app.

Most mobile Voot users access the Internet via metered 2G and 3G networks. Data transfer is expensive, so when users become highly committed to a video once it starts playing, slow load times lead to users giving up. Voot looked to enhance their site with PWA in order to address that challenge and increase mobile web usage.

Voot.com turned their site into a PWA to improve the overall user experience with features such as Add to Homescreen and a service worker. It helped to decrease load times. They also implemented the add-to-homescreen feature to offer a true app-like experience.

Traffic (Monthly): 58.3M

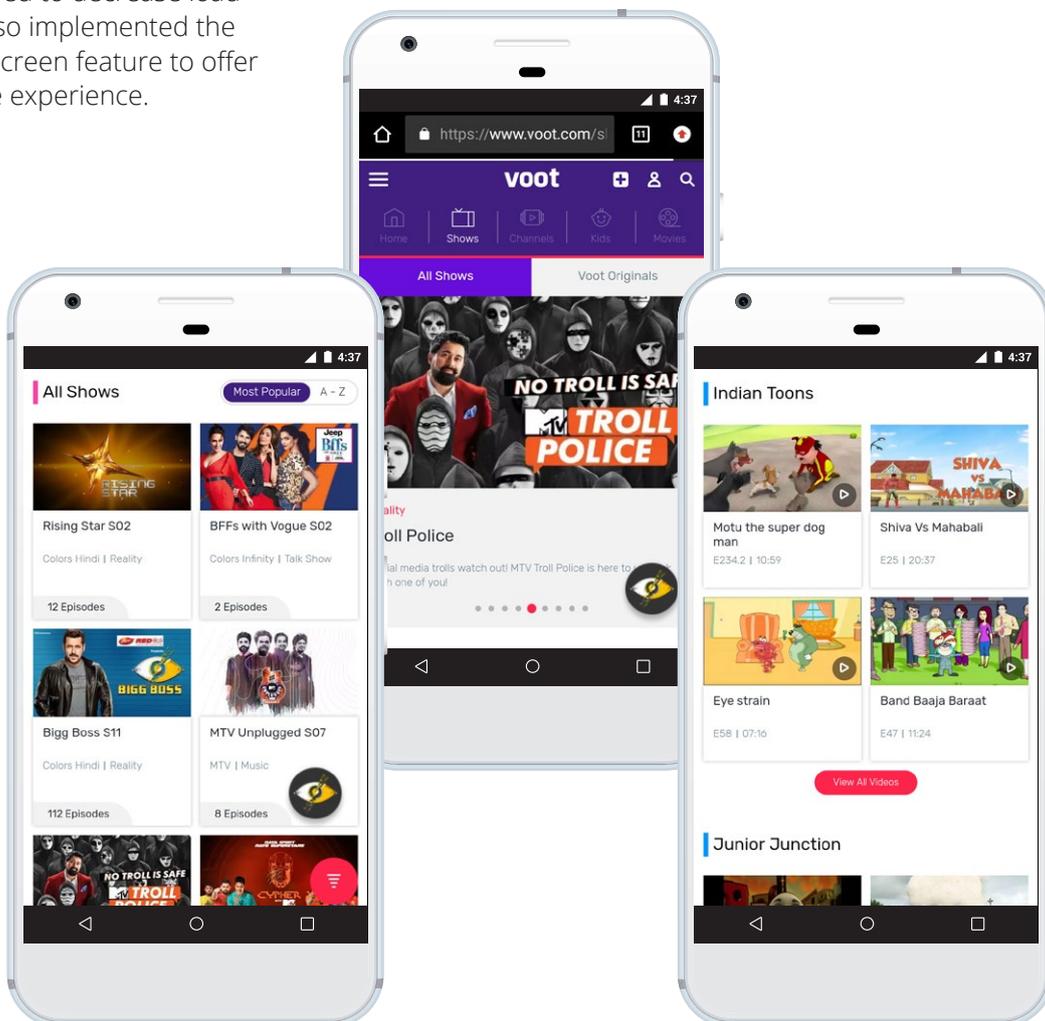
Results:

80% reduction in page load time

39% increase in session time per user

19% reduction in bounce rate

77% increase in conversion from visitor to video viewer



Santa Tracker

Santatracker.google.com is Google's holiday tradition. It's a large, interactive site with many unique Santa scenes. Santa requires Set and the Web Performance API, among others.

A responsive design that works well across phones, tablets and desktop is implemented on Santa. The company faced a few challenges like large multimedia resources for different Santa scenes.

Santa Tracker was converted rapidly into an offline PWA - enabling a reliable, engaging experience. It also leverages the company build system to perform efficient upgrades, invalidating changed assets only. While Santa is largely a custom-built solution, many of its principles can be found in the Polymer Project's App Toolbox.

Traffic (Monthly): **53.8M**

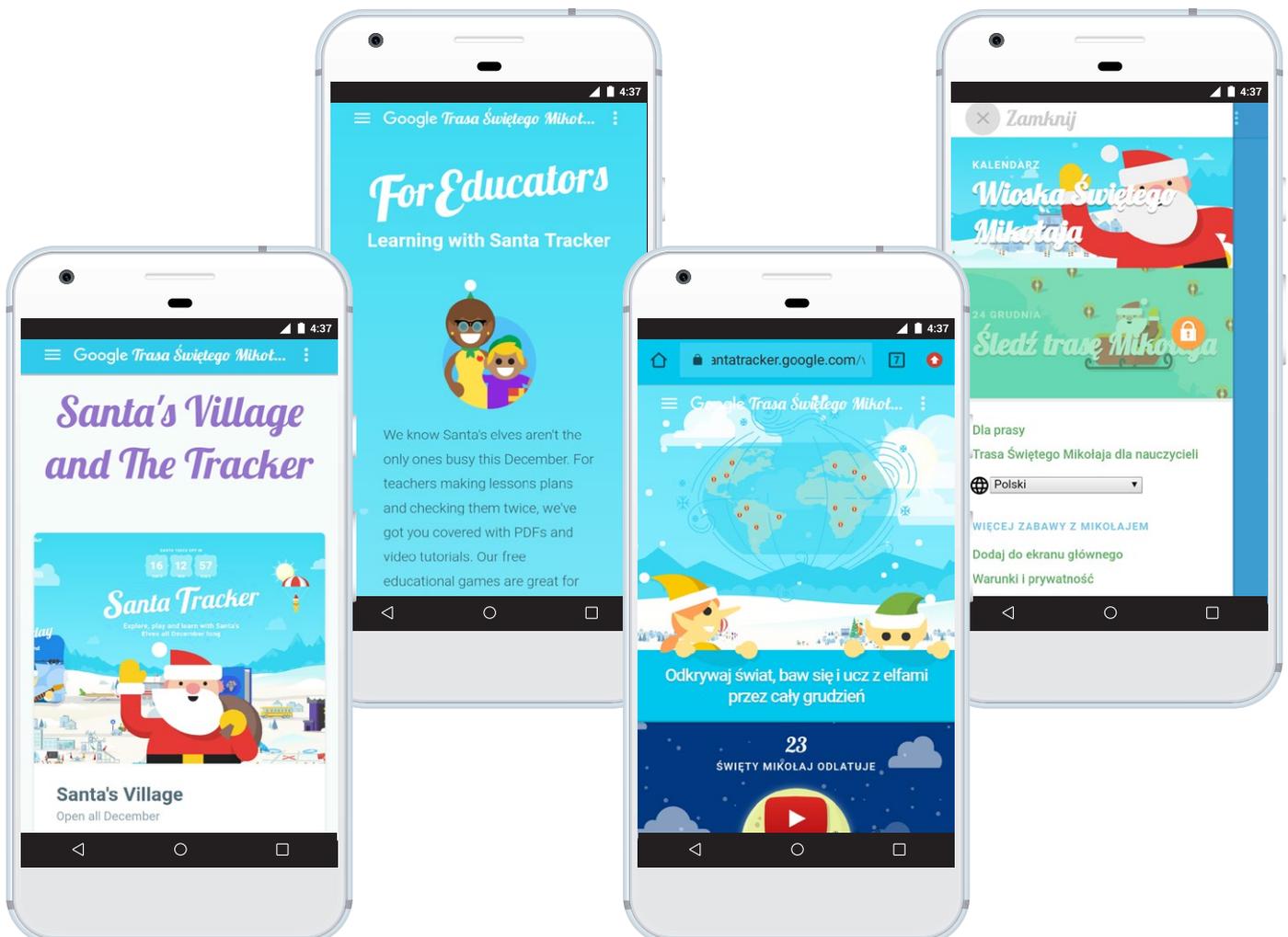
Results:

PWA

Santa is a PWA supporting add to home screen and offline

10%

of eligible sessions began via the ATHS icon





Pinterest.com is a web and mobile application company that operates a software system designed to discover information on the World Wide Web, mainly using images and on a shorter scale, GIFs and videos. After analyzing usage for unauthenticated mobile web users, they realized that their old, slow web experience only managed to convert 1% of users into sign-ups, logins or native app installs. The opportunity to improve led them to an investment in a PWA.

The Pinterest PWA loads code for new routes on demand, and the cost of additional code is amortized over the lifetime of the application. Subsequent navigations still don't cost as much data as the download of the app. Pinterest also uses a progressive loading technique for images in their PWA. To improve perceived performance, Pinterest also updates the selected state of navigation bar icons independent of the route.

Pinterest just deployed support for Web Push notifications and have also been working on the unauthenticated experience for their PWA.

Traffic (Monthly): 12.5M

Results:

40%

time spent on new mobile web and +5% comparing web/native

44%

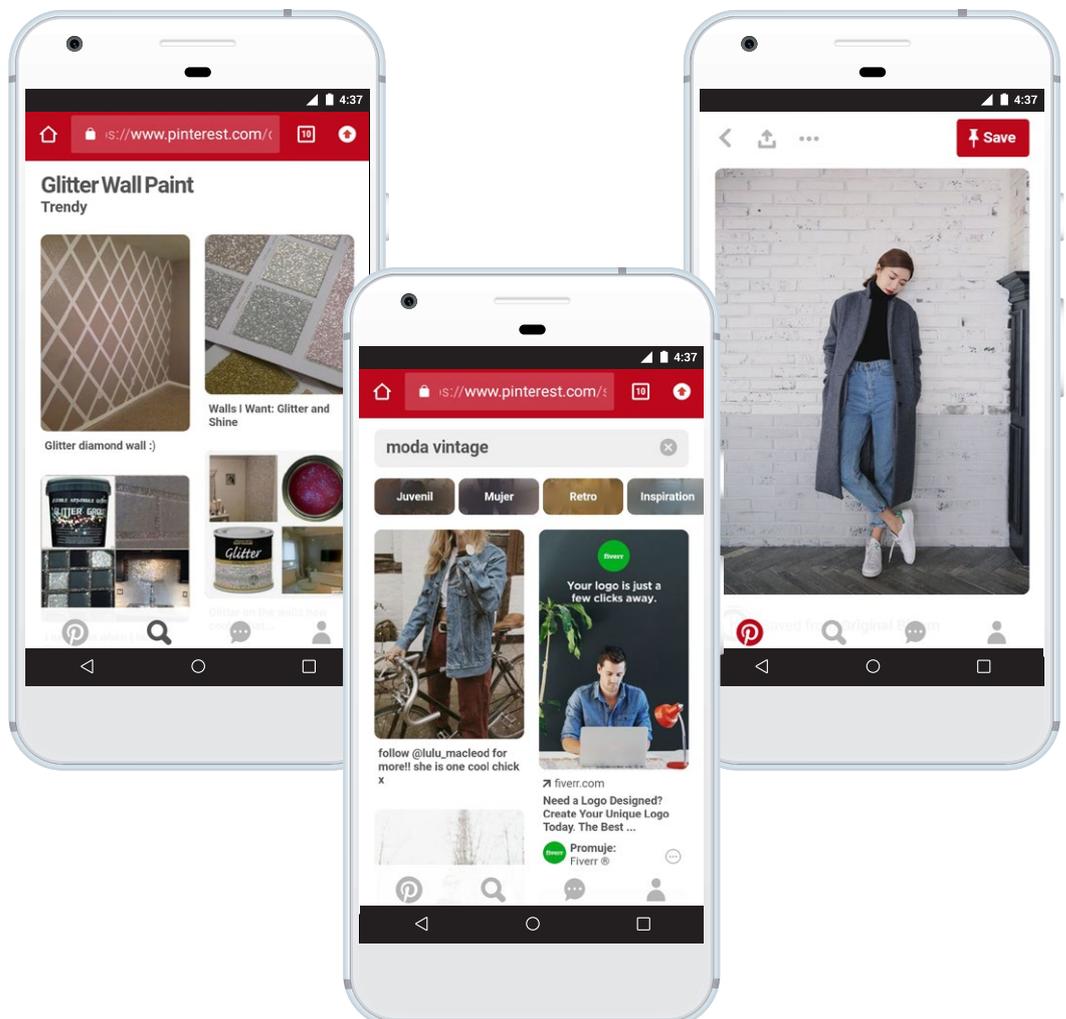
user-generated ads revenue on new mobile web and +2% comparing web/native

50%

ad clickthroughs on new mobile web

60%

core engagements on new mobile web





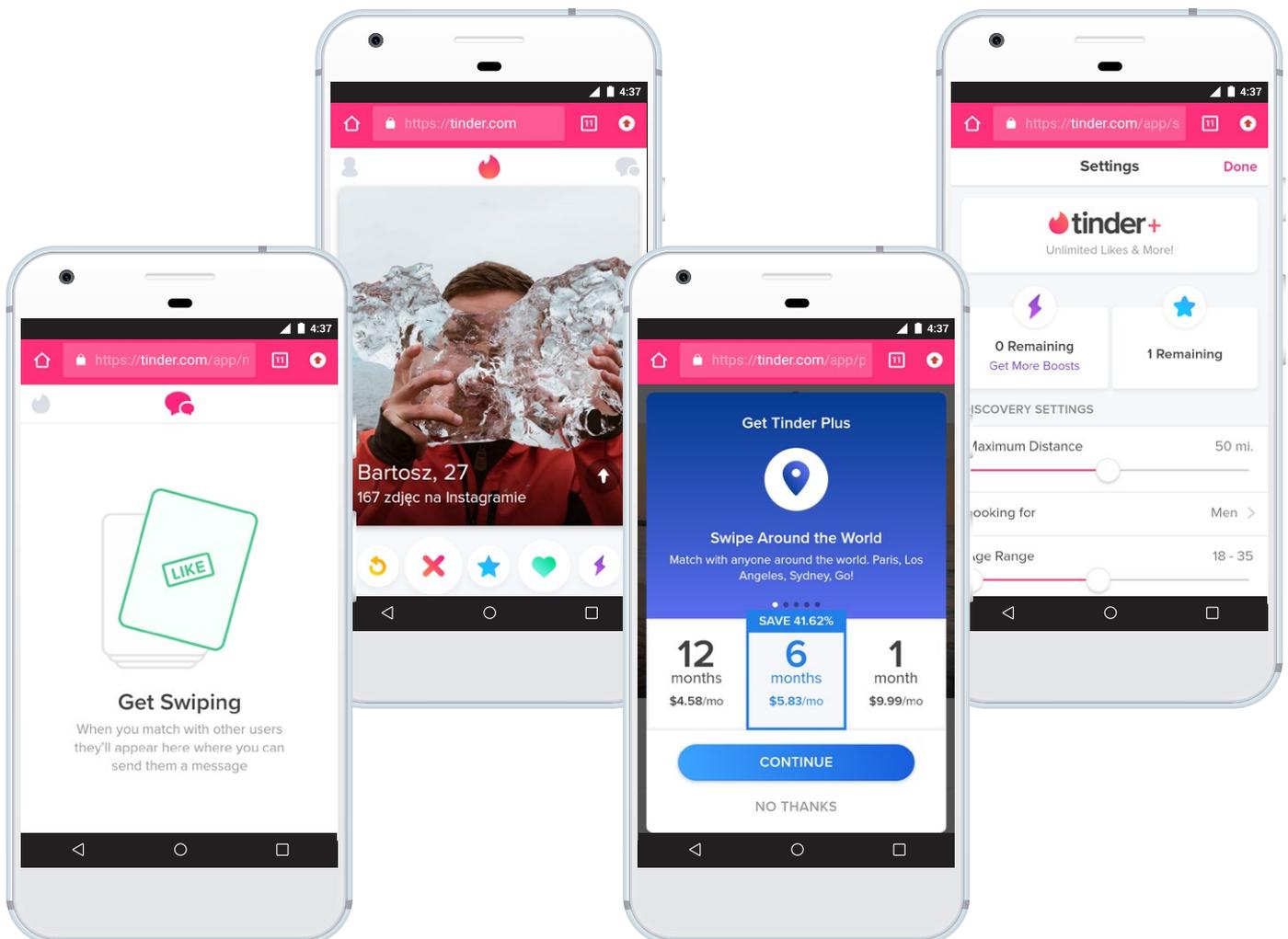
Traffic (Monthly): 43.2M

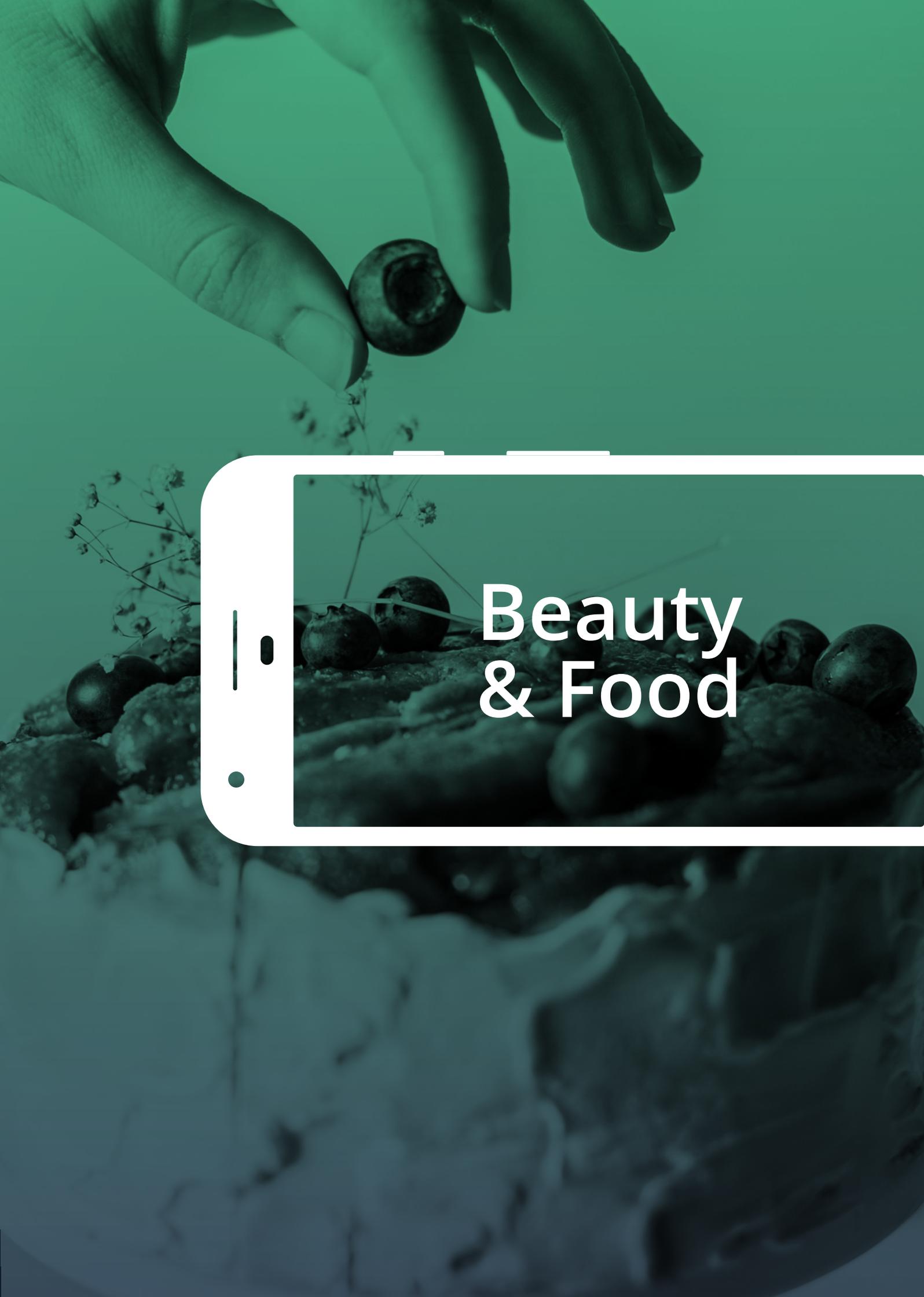
Tinder.com is a location-based social search mobile app that allows users to swipe left or right and to chat if both parties swiped to the right. The app is used as a dating app or hookup app, depending on the user's individual preference.

Tinder's new PWA is available to 100% of users on desktop and mobile, employing techniques for JavaScript performance optimization, Service Workers for network resilience and Push Notifications for chat engagement. Tinder noticed improved swiping, messaging and session length compared to the native app.

Results:

- ↑ Users message more on web than their native apps
- ↑ Users purchase on par with native apps
- ↑ Users edit profiles more on web than on their native apps
- ↑ Session times are longer on web than their native apps





Beauty
& Food



Ele.me is the biggest food ordering and delivery company in mainland China. Ele.me noticed an explosive growth which led to the growth of distinct business units within the company - each in charge of running its micro-service under the main domain. The company concluded that the decoupling of these individual services is best served by a multi-page app.

As a user browses around the PWA, different routes are loaded. Ele.me analyzed the critical routes that users care about most, created a webpack plugin to collect the dependencies of these critical routes, and then precached these routes when they install a service worker on the user's client browser.

Traffic (Monthly): 8.6M

Results:

11.6%

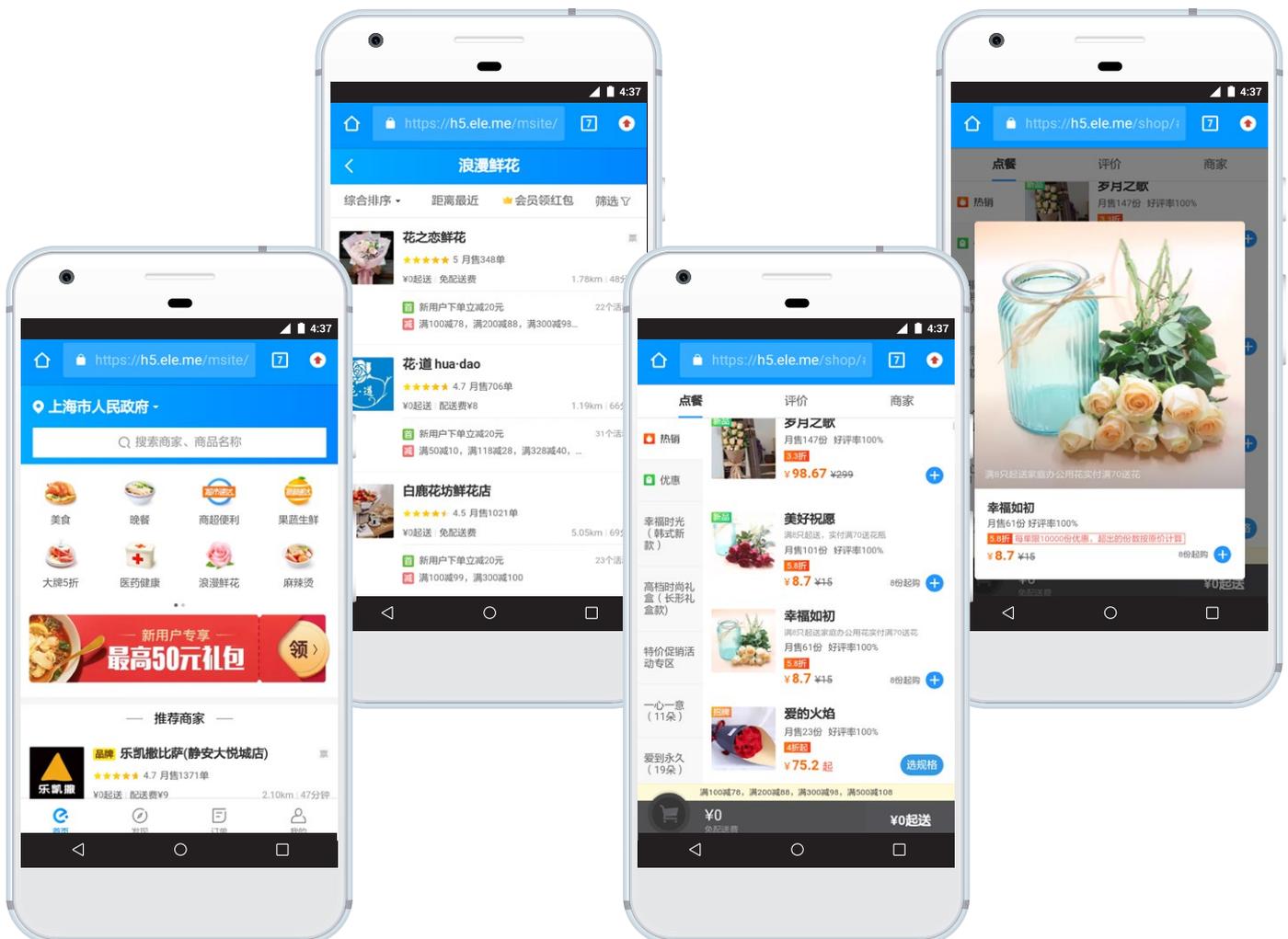
decrease in loading time across all pre-cached pages

6.35%

decrease in loading time across all pages

4.93

seconds - Time-to-consistently-interactive on a 3G network on first load





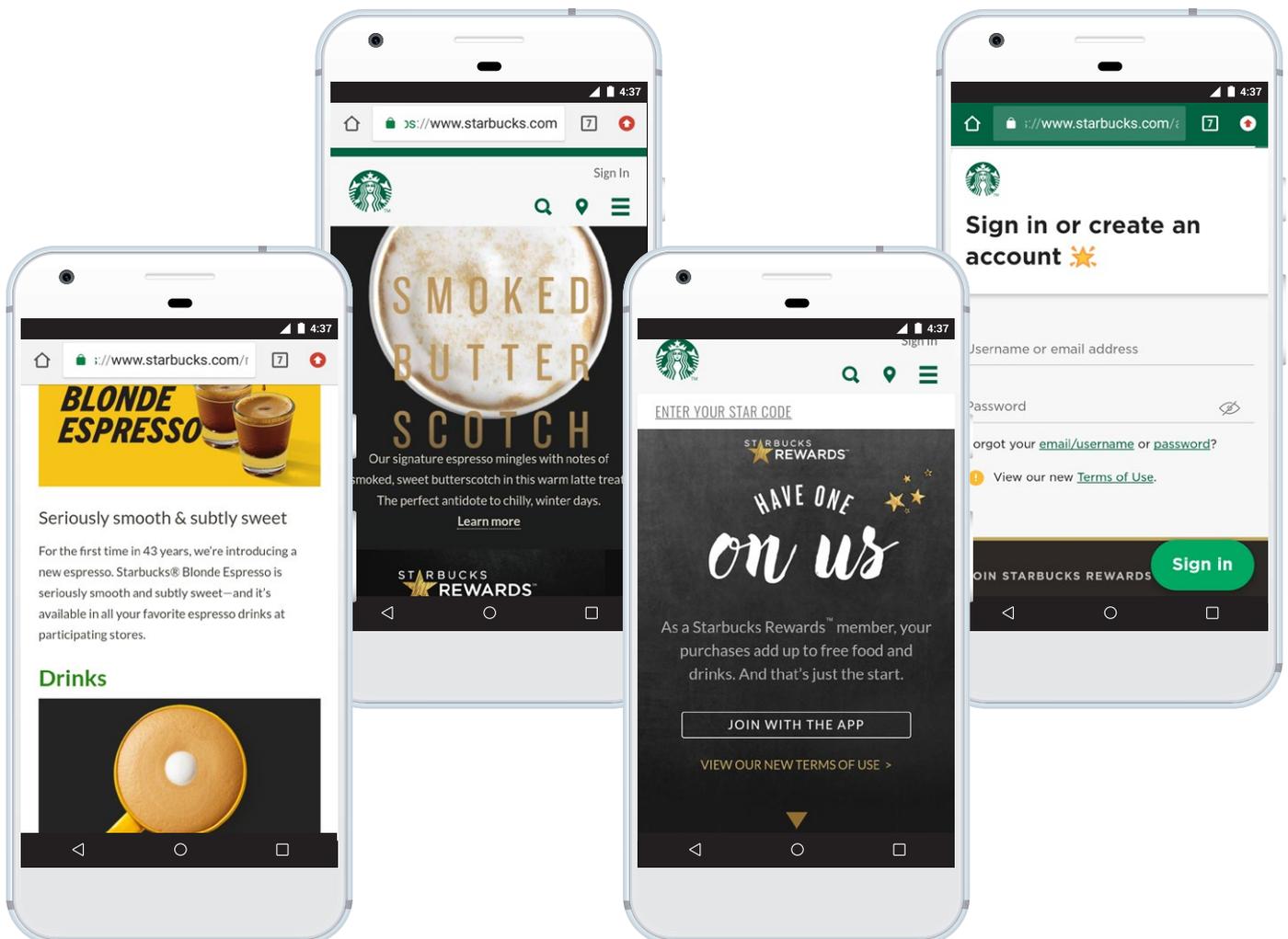
Starbucks.com is an American coffee company and coffeehouse chain. They released their mobile ordering app nationwide in 2015. When it came time to add ordering functionality to the Starbucks website, they wanted to create a system that would be universally accessible to both established and emerging markets.

Starbucks wanted to create a performant PWA with dynamic functionality that feels native, despite being on the web platform. They also wanted to build a user-friendly ordering system. The result is a fast, performant and intuitive PWA that looks and feels like a native app.

Traffic (Monthly): 36.3M

Results:

-  A fast, performant, intuitive PWA that looks and feels like a native app
-  Emerging markets will be able to utilize the new web app even without consistent internet access
-  Customers can customize their food and drink orders seamlessly





PureFormulas.com is the leader in the online health and supplement space – and one of the fastest growing e-tailers in the U.S. They were the first in their industry to implement a PWA. Mobile page loads on the PureFormulas site were taking too long and the checkout process was slow. This resulted in high cart abandonment rates and low conversion rates.

PureFormulas needed to create a faster, easier path to purchase on mobile. The company's starting point was an adaptive mobile site, as well as the encrypted HTTPS connection. They wanted to get specific about how this technology could truly improve their mobile customers' experiences.

PureFormulas set immediate goals to increase conversion rates and AOV, decrease cart abandonment rates and lower page load times. They also wanted to apply an app-like experience to the PureFormulas checkout flow.

Traffic (Monthly): 776.6K

Results:

23%

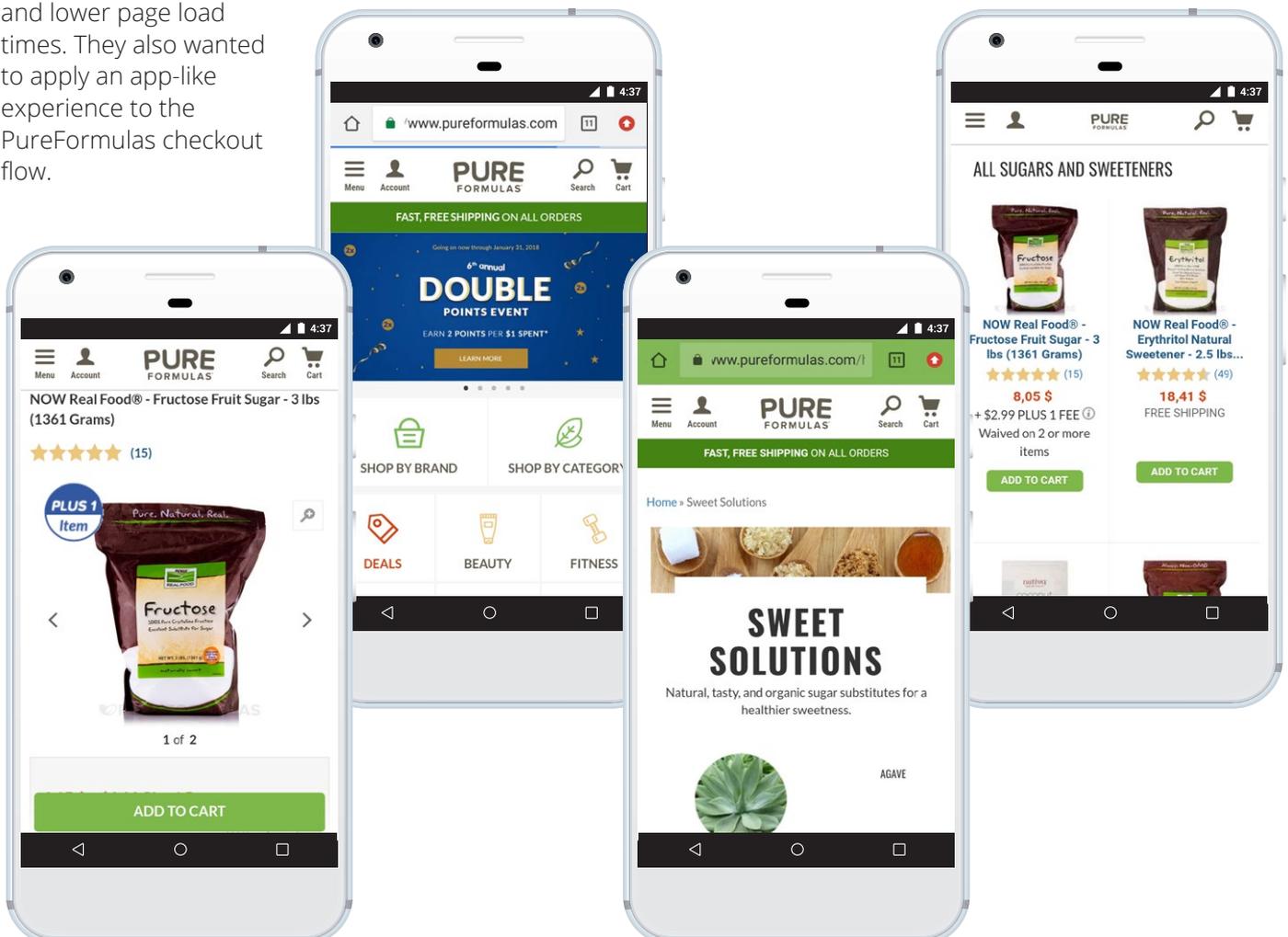
higher revenue per visit on the PWA

14%

increase in the conversion rate

9%

increase in AOV



LANCÔME

PARIS

Lancome.com is a French luxury perfumes and cosmetics house that distributes products internationally.

Despite a growing number of mobile site visitors, the company noticed that mobile conversion rates didn't match those for desktop. Consumers were experiencing significant obstacles when trying to purchase on mobile. Mobile web became a core focus area, so Lancôme aspired to build a fast and engaging experience for their mobile web shoppers.

Lancôme looked to PWA technologies to provide an immersive, app-like experience. The time until the page is interactive fell compared to their previous mobile experience, with a decrease in bounce rates.

Traffic (Monthly): **74.3K**

Results:

84%

decrease in time until the page is interactive

17%

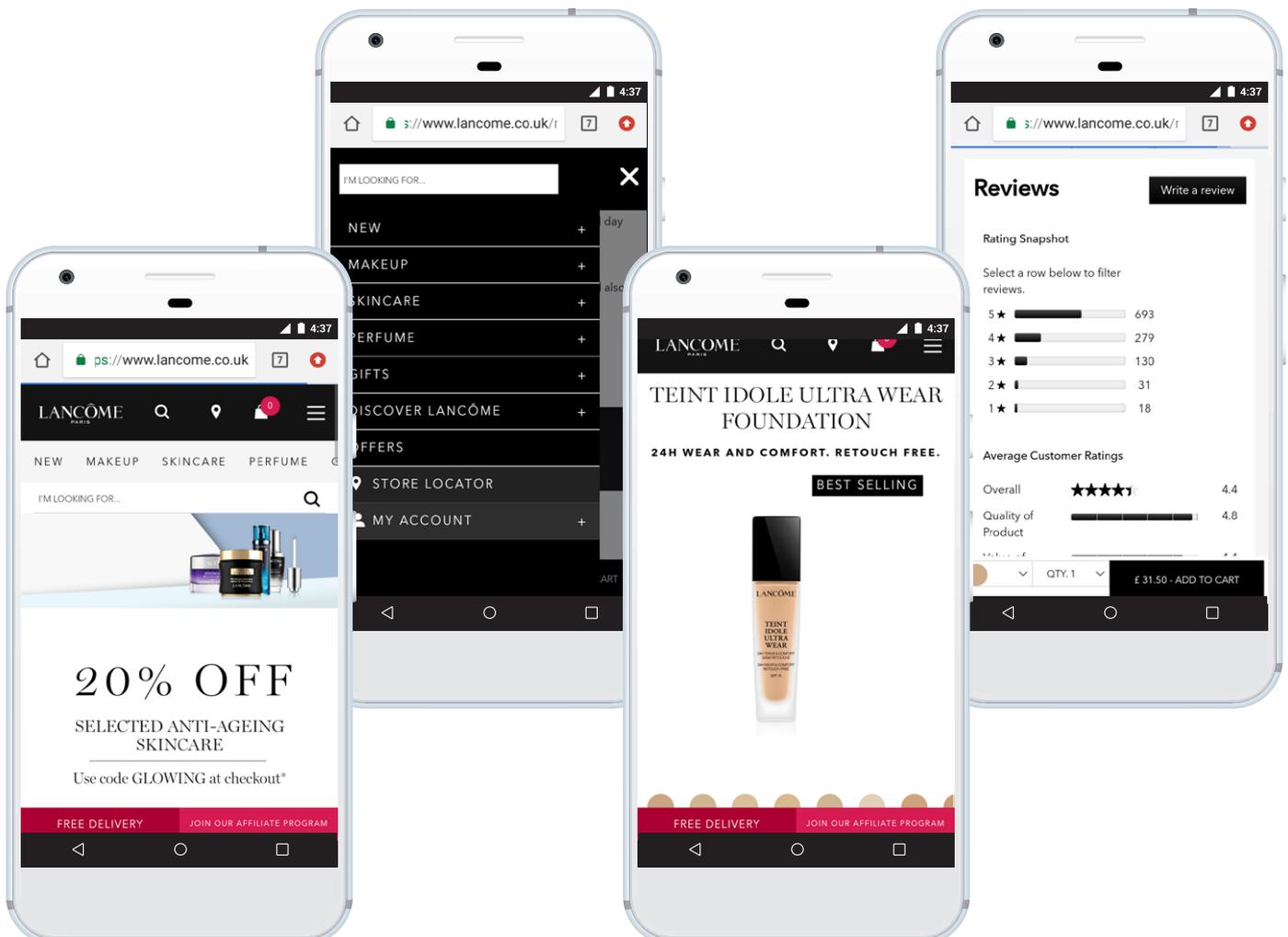
increase in conversions

15%

decrease in bounce rate

51%

increase in mobile sessions





Technology



Pint.com is an advanced web development and technical consulting agency.

PINT needed to reconfigure its site to take advantage of the new PWA technologies which would provide faster load times, better overall site experience, increased accessibility and stricter adherence to best practices.

The company reconfigured the PINT website as a PWA to give their users a better web experience. It helped them to have a more engaging, faster website.

PINT modeled their approach off the almighty Google and achieved their aim. They implemented infrastructure, custom html and platform changes. The company noticed many benefits like a faster site, fewer bounces, more time on site, more interactions and improved lighthouse scores.

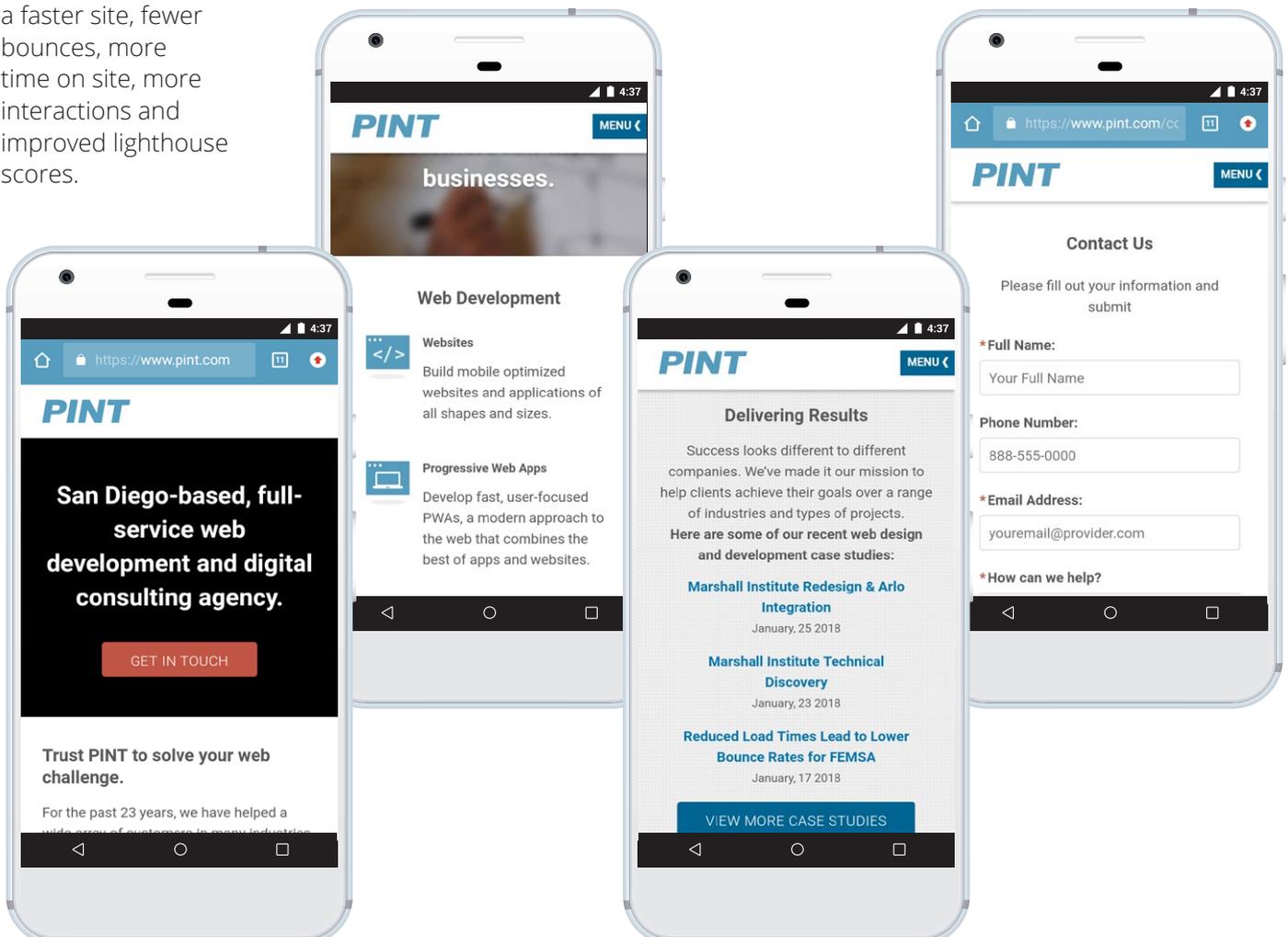
Traffic (Monthly): 15.9K

Results:

14% faster average page load

8% decrease in bounce rate

25% increase in average visit duration





Housing

settled

Settled.co.uk is real-estate website which supports a home buying and selling experience.

Settled aims to empower consumers so that finding, financing and selling a home is swift and straightforward. When the Settled team observed that the majority of users visiting their site were doing so on mobile devices, they prioritised finding a solution that would be fast, reliable and engaging for consumers.

Settled's aim was to provide a quick, accessible and easy-to-use way to manage property transactions, and to improve the mobile site experience. They adopted a mobile-first, offline-first approach using a PWA.

Traffic (Monthly): 22.3K

Results:

8%

increase in mobile transactions

23%

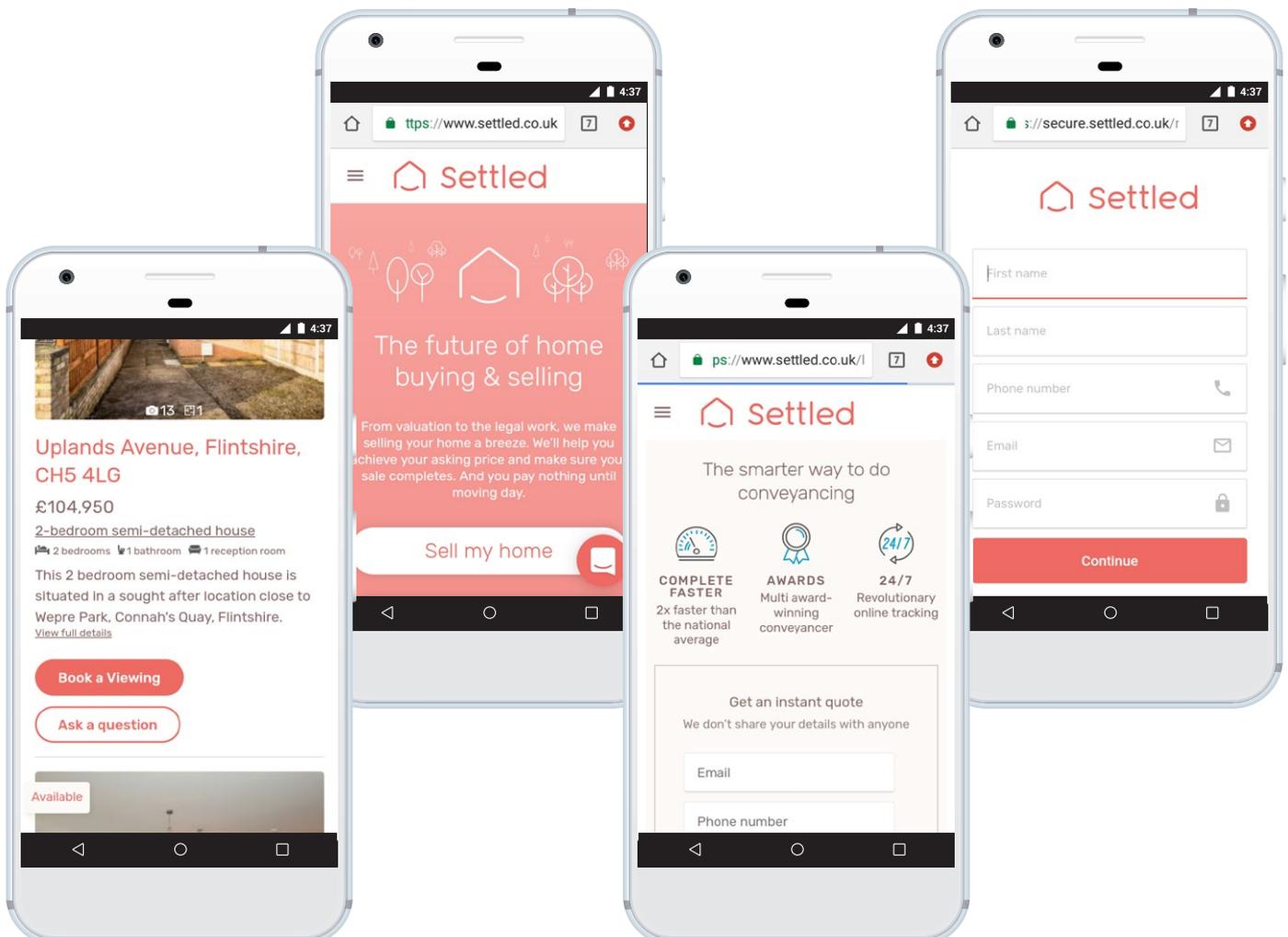
improve in mobile conversions

13%

decrease in mobile bounce rate

14%

reduce in overall cost per conversion





Housing.com is one of India's top startups. Housing.com knew their mobile users wouldn't tolerate slow load times, which significantly affect conversions. They measured the impact of users' average page-load time and found that even a one-second improvement brought a significant boost in the conversion rate.

Poor connectivity and the prevalence of low-end devices also hindered Housing.com's growth. They developed a native app so that mobile users could work offline and re-engage. The cost of Internet access was high, so potential and current customers were very data-sensitive and many of them hesitated to use data or space to download the native app.

Traffic (Monthly): 7.0M

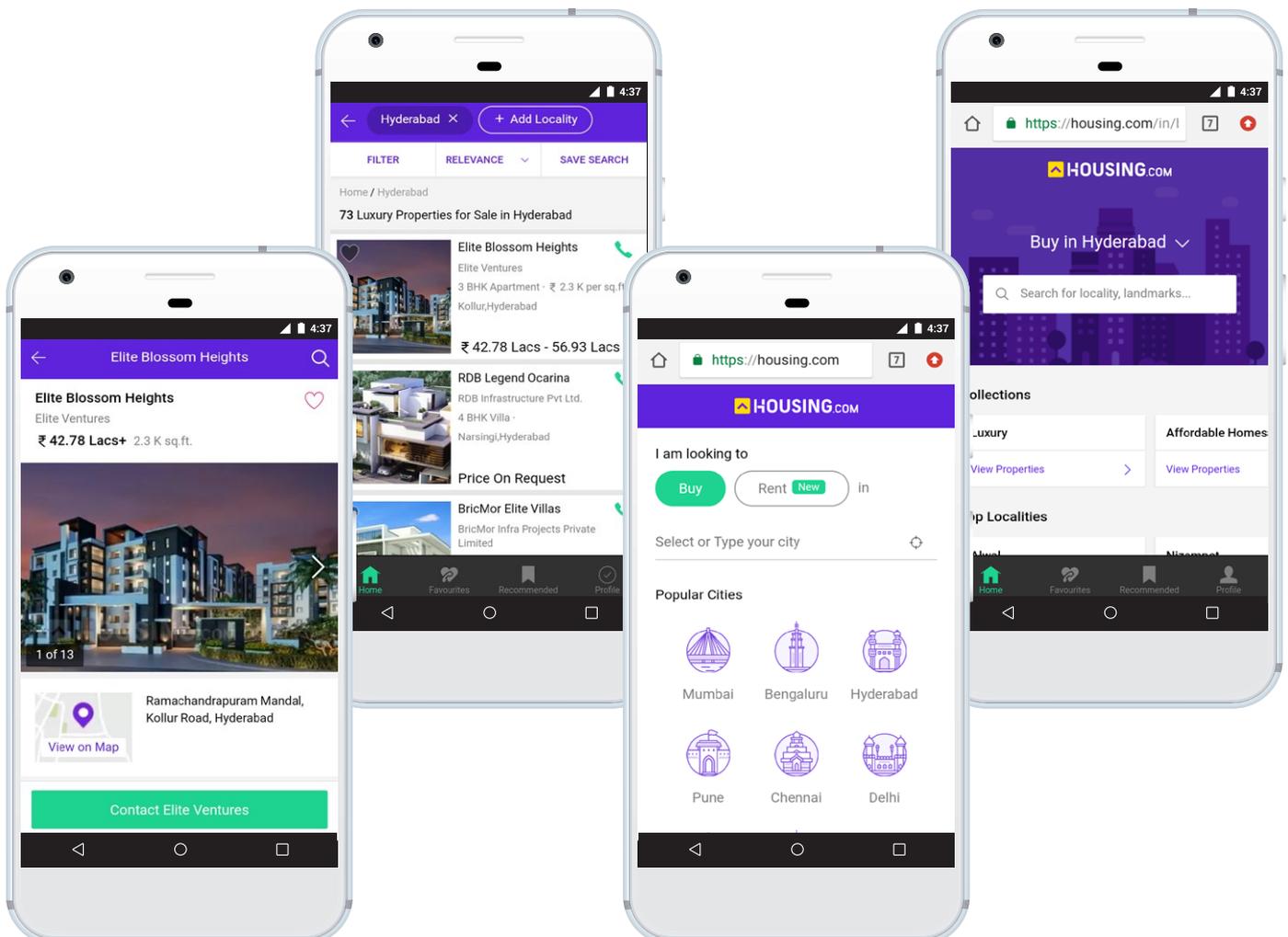
Results:

38% more conversions

40% lower bounce rate

10% longer average session

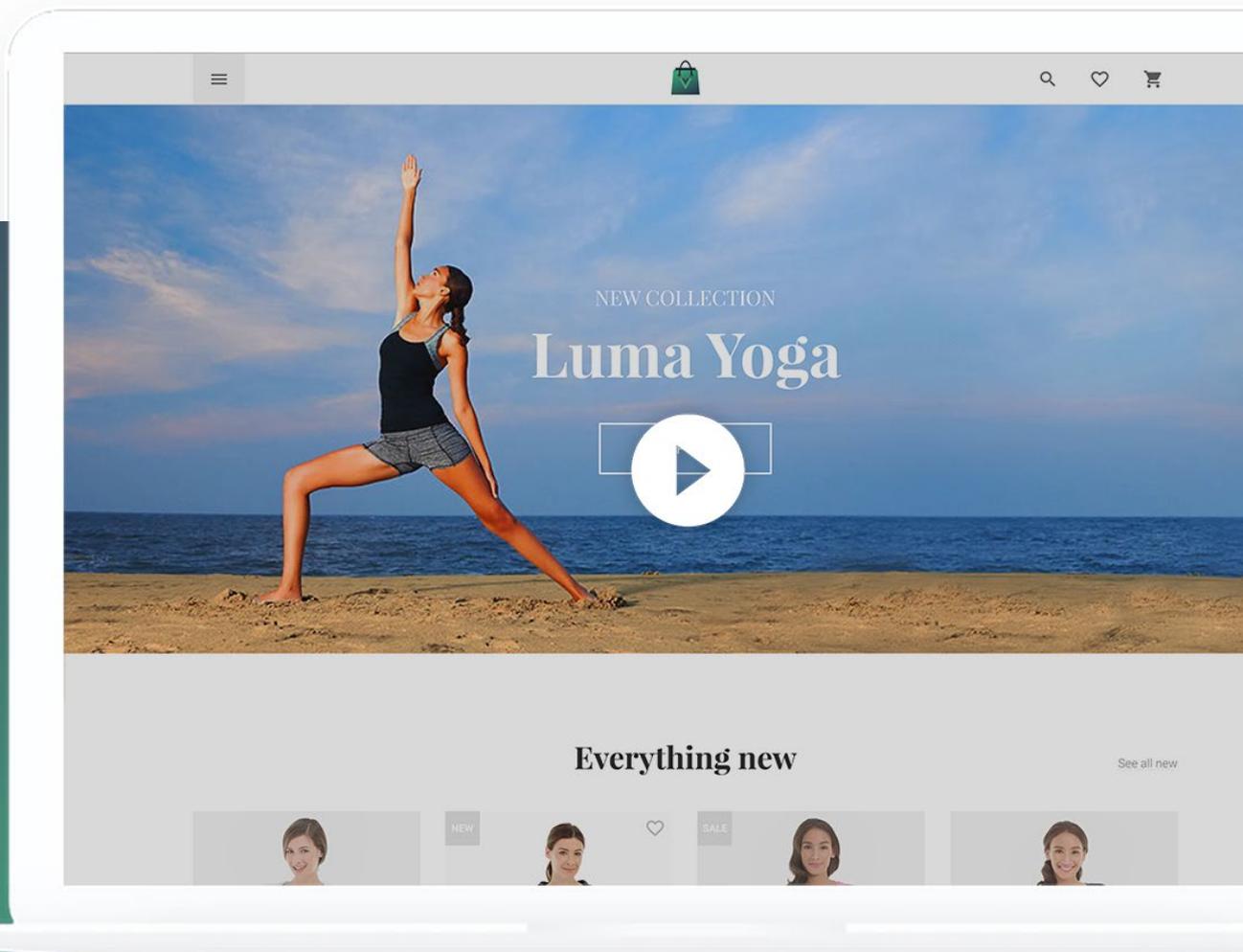
30% faster page load





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