

Maximizing the ROI of Enterprise Mobile Solutions Through Full-Stack Customization

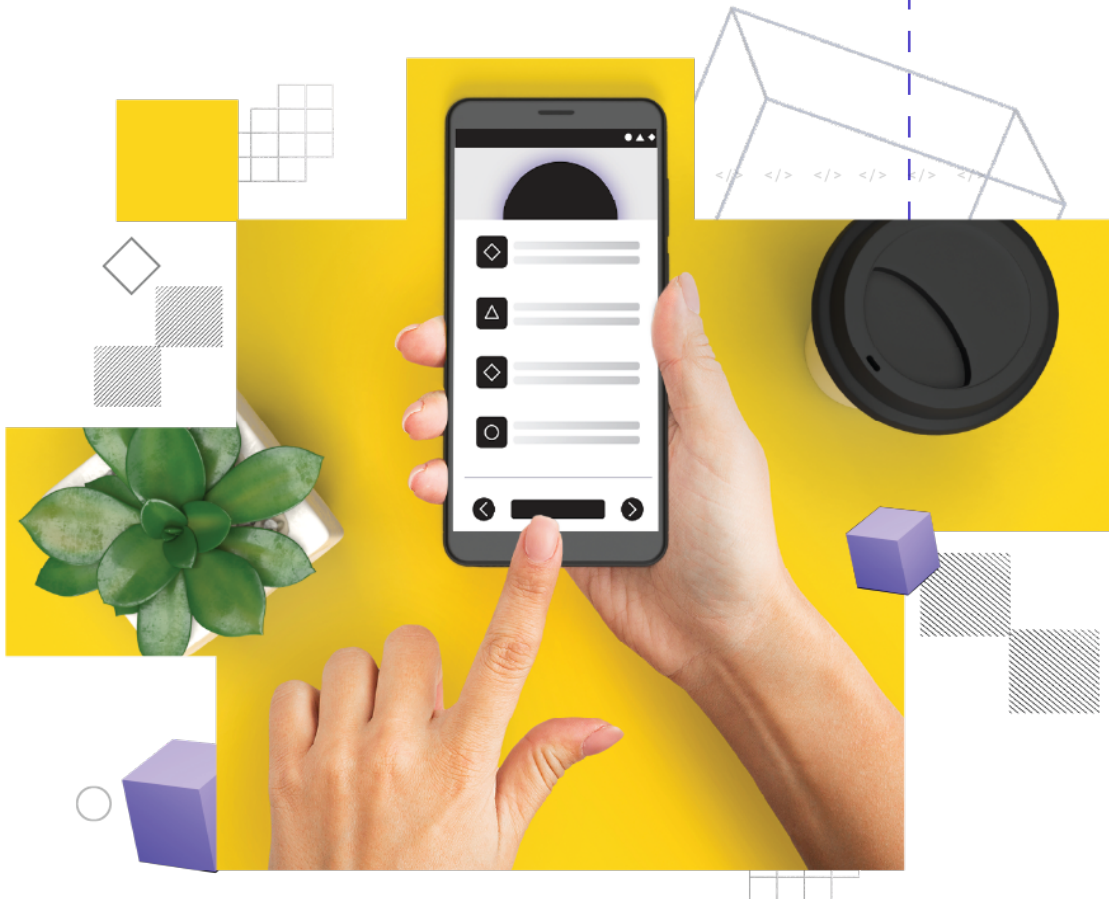
WHITEPAPER 2/2022



The fastest way to take smart devices from idea to end user



Whether building a single-use device from scratch or scaling a smart product line, with Mason faster and less costly to build, deploy and scale. The Mason Smart Device Platform is the only fully managed infrastructure for developing and delivering dedicated devices. It frees innovators to focus on what matters: application development, feature specification and UX. Organizations of all sizes rely on Mason to bring innovations and hundreds of use cases to market without reinventing the wheel.



Introduction

Most businesses today are aware of the rich opportunities for building custom mobile applications. They routinely create mobile apps not just to serve customers, but also to drive internal business operations. It's easy to understand why: custom enterprise mobile applications can [boost ROI by up to 35 percent](#) while also [improving employee satisfaction and retention](#).

Yet custom enterprise mobile software is only part of what it takes to optimize the mobile experience for employees, internal stakeholders and customers. Businesses can double-down on the value of customization by also taking advantage of the ability to deploy mobile hardware that is tailored to their specific use cases, security requirements, and other priorities.

By investing in custom mobile software and then shoehorning it into generic mobile devices designed for consumer use, businesses shoot themselves in the foot. They fail to gain the full flexibility and agility that they can achieve by customizing the entire enterprise mobile lifecycle – from hardware design to software development to mobile infrastructure management.

This whitepaper explains how to solve this challenge by taking a “full-stack” approach to enterprise mobility. It explains why conventional enterprise mobile strategies, which focus mostly on application customization, typically fall short of delivering maximum value. It then describes a full-stack approach to mobile app deployment and management as well as its impact on business value.

In other words, the following pages explain how to upgrade your enterprise mobility strategy from one that is “just OK” to one that maximizes agility, adaptability, and business value. You'll learn how to think outside the box when it comes to mobile app creation and management in order to set your business apart and reap even greater rewards from enterprise mobile software.

What you'll learn

- 1 Conventional Enterprise Mobile Strategies
- 2 A Full-Stack Approach to Mobile App Deployment and Management
- 3 Achieving a Full-Stack Mobile Strategy with Mason

SECTION 1

Conventional Enterprise Mobile Strategies

For businesses today, whether to implement an enterprise mobile strategy is no longer the question. The widespread adoption of mobile technology by employees, combined with the pressure to enable a remote, distributed workforce, means that most businesses today recognize the importance of developing mobile software solutions.

Yet, while creating an enterprise mobile strategy can be a very powerful investment, organizations have tended to make a key mistake that undercuts the value of that investment: they focus just on customizing mobile apps, not the devices they run on.

An enterprise mobile strategy that customizes only applications rather than the entire mobile infrastructure that those applications depend on falls short for several reasons.

Consumer Devices Aren't Optimized for Enterprise Use Cases

Without custom mobile hardware, most businesses are left to depend on consumer mobile devices that were not designed for enterprise mobility. Those devices lack features that businesses may value, like special security and tracking protections or the ability to operate reliably under special conditions – such as on factory floors or in harsh outdoor settings.

Software Customization Only Gets You So Far

The extent to which developers can customize mobile software is strictly limited by the hardware features of the devices on which applications run.

For example, if your business requires a locked down device or apps with a certain display size but no consumer device supports that resolution, a custom mobile app won't get you very far. Or, if you require functionality like the ability to take precise temperature readings or wellness monitoring within an application, you'll struggle to develop a custom mobile app that can do so if the app is deployed on consumer-grade mobile devices, which typically lack highly accurate temperature sensors.

Thus, custom mobile software falls short of delivering a complete custom mobile solution for businesses. Without custom mobile infrastructure to power your apps, you can leverage only a fraction of the full potential of enterprise mobility.



Poor Support for Dedicated Devices

In some cases, enterprise mobility requires dedicated devices, which are designed to serve a very specific and narrow use case.

For instance, your business may want to deploy mobile kiosks where customers can check in or request information. Dedicated devices could also be used for payment processing or inventory tracking, among other examples.

While it may be possible to address use cases like these by deploying custom apps on consumer mobile hardware, doing so is rarely the most efficient or secure approach. Consumer hardware is likely to include more features than you would need for narrow use cases like these, which means you'll be paying for hardware resources you won't use. From a security perspective, it's also more difficult to lock down consumer hardware in order to ensure that it can serve just one purpose.

Lack of Security

More generally, custom enterprise mobile apps running on consumer devices are less likely to be secure in any type of use case. Without custom hardware, it's challenging to leverage advanced security features, such as biometric authentication, that is more reliable than the basic fingerprint logins supported by mass-market mobile devices. Nor can you take advantage of security features like hardware-level data encryption or built-in device tracking sensors that can't be disabled within the mobile OS.

Software Bloat

In addition to including software features that you may not need, consumer mobile devices often come pre-configured with software that is extraneous to enterprise use cases. You either have to remove that software before deploying devices to your users, which adds logistical complexity to the deployment process, or keep it and accept the bloat, security risks, and performance degradation that your devices may face by running unnecessary software.

Device Fragmentation

The consumer mobile device market is highly fragmented. With over 15 billion mobile devices worldwide, there are hundreds of combinations of mobile devices and operating system versions that could run on them.

For businesses that rely on mobile devices to deliver their product or service, it's easy to end up with a highly fragmented enterprise mobile strategy.

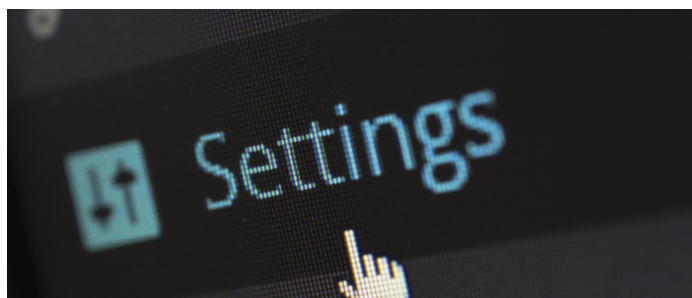
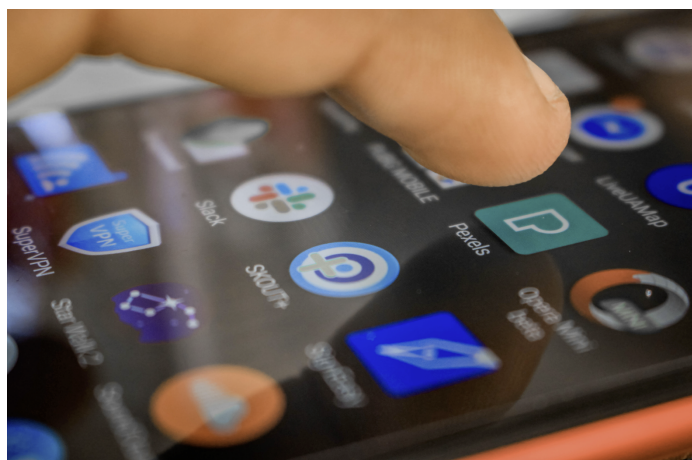
Bring-your-own-device (BYOD) models or even sourcing your own consumer devices means your business will end up with a variety of different types of mobile devices, each with unique configurations. Fragmentation creates steep challenges for managing and securing those devices, and eventually for scaling your mobile strategy.

With custom mobile hardware, you can avoid fragmentation risks by deploying a uniform set of purpose-built devices with standard configurations that you choose.

Deployment and Management Challenges

Regardless of how fragmented your business's mobile hardware infrastructure is, managing all aspects of device deployment and management logistics can be a headache if you base your mobile strategy on consumer devices. You'll have to acquire the devices, provision them for your users, ship them to users, certify them for compliance requirements or other standards, back up their data, and so on.

Extending your mobile strategy to include custom hardware can simplify these challenges. With custom devices, you can build device acquisition, provisioning, and fulfillment into the device development process and avoid the complex logistics required to turn consumer devices into reliable enterprise mobile solutions.



SECTION 2

A Full-Stack Approach to Mobile App Deployment and Management

Enterprises can avoid the pain points described above by adopting a full-stack approach to enterprise mobility. A full-stack approach means one in which businesses can customize all layers of their mobile strategy – from physical mobile devices to mobile operating systems to mobile apps and the logistical processes that power mobile operations. By enabling full control over all aspects of enterprise mobile resources, a full-stack approach unlocks a range of key benefits.

Build the Ideal Product from the Start

With full customization of the mobile solution stack, businesses can build the exact products they need from day one. Instead of trying to adapt custom mobile apps to devices that were not designed specifically for them, they can tailor their application features, interface, and the overall user experience to their specific business needs from the very start of the mobile lifecycle.

Scale Easily

When you leverage purpose-built mobile infrastructure, software, and logistics services, you can scale mobile operations with ease. The complexity of acquiring, provisioning, and deploying consumer devices no longer stands in the way of adding new devices to support additional users or use cases.

Enable Special Business Use Cases

A customized mobile infrastructure supports a much wider set of use cases than consumer devices. From remote patient monitoring to collecting sensitive data in industrial settings to providing connectivity to employees, customers and other stakeholders in rugged conditions and beyond, custom hardware allows you to achieve business value in ways that consumer devices just can't support.

Maximum Security

When you have full control over your devices and the software environments running on them, you can minimize the potential for attack in order to maximize security. Eliminate unnecessary software components that increase your attack surface and take advantage of hardware-level security features to provide protections that can't be disabled through applications or the OS.

Maximum Compliance

Along similar lines, maximum control over mobile infrastructure, software, and data translates to a maximum ability to meet compliance requirements while still enjoying the flexibility of mobile infrastructure. Mobile solutions that would be impossible to deploy with consumer devices due to their inability to meet security or other compliance standards can be enabled with custom hardware.

Pay for Only What You Need

In several ways, mobile device customization ensures that you pay only for what your business actually needs. It eliminates the cost of hardware and software features that you don't require.

At the same time, the ability to lease custom mobile hardware if desired can reduce capital expenses while also allowing you to pay for the devices only during the period that you actually use them, then return them to the vendor when they are no longer necessary.

Enjoy Peace of Mind

By allowing you to deploy consistent devices tailored to your business's needs, full-stack mobile management means you will enjoy peace of mind around device continuity, reliability, and support. You can say goodbye to the headaches of having to support a highly fragmented mobile fleet or worrying that your devices will fail to deliver the longevity and reliability you require.



SECTION 3

Achieving a Full-Stack Mobile Strategy with Mason

In contrast to mobile solutions providers who offer only custom mobile software development, Mason helps businesses take full control of every layer of their mobile stack.

With Mason, you can design mobile devices tailored to your business's unique requirements. From display size to compute and memory resources to special security features and beyond, Mason makes it easy to obtain devices that do exactly what you need them to do – nothing more, nothing less.

At the same time, you can use Mason's custom Android operating system, allowing you to tailor your Android mobile environment to meet performance, security, or other special requirements. You can eliminate the bloat of running Android services and libraries that you don't use while also managing OS upgrades on your own terms instead of being subject to Android's upstream upgrade cycles. With extended hardware lifecycles of 5+ years, you don't need to worry about business or product continuity or device and OS fragmentation, giving you the ability to scale your product while delivering your ideal customer experience, right out of the box.

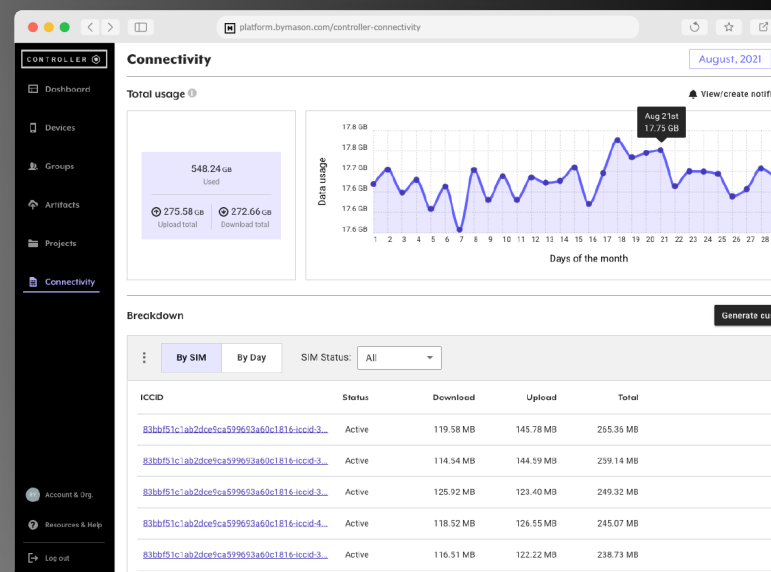
At the application level, too, Mason provides [end-to-end development and customization services](#). Our developers will help you design, implement, and deploy the apps that are optimized to your enterprise use cases.

What's more, Mason supports remote debugging of Android devices in order to troubleshoot issues in the field. Mason's tools also integrate with CI/CD pipelines, making it easy to bake Mason into your existing development processes without having to rebuild your development strategy from scratch.

Mason also provides mobile device logistics services to help you scale and deliver your product and services as required by your business. These services include kitting, provisioning, fulfillment, global certifications, shipping, connectivity and more. With Mason you can scale operations while delivering user experiences that align with your enterprise's priorities – all without having to worry about managing the complex mobile logistics in-house.

Finally, Mason's flexible financial models – give you the ability to buy devices outright or or rent them on a fixed-term basis. Unlock the power of the infrastructure stack with a license and leverage integrated services including device logistics on a usage basis – ensuring you can maximize the power of your enterprise mobile strategy even from a financial perspective.

[Schedule a demo](#) to learn more about Mason's unique approach to enterprise mobile management and see how we can help build mobility solutions tailored for your organization.





[Sign up for a Mason Account to get started](#)

Once your Mason account is created you can **Order A DevKit** to begin testing.