

How to choose an enterprise mobile app solution?

The choice dilemma: Commercial off-the-shelf options (COSO) versus Custom Mobile Solutions (CMS)



hedgehog lab

Introduction – the available alternatives



The phenomenal growth of mobile platforms has in turn promoted a rise in the number of apps being developed and opened up new avenues to access information for consumers as well as enterprises.

Employees can now easily access the most recent information; network with colleagues; enhance productivity in everyday tasks and, of course, shop for merchandise from anywhere using mobile devices. All this is possible thanks to the advent of so-called apps, which allow people to get more done in less time through making valuable resources available at the touch of a button.

Indeed, the 'digital wave' seen in the last decade has led to a surging market for smartphones and tablets, impacting all kinds of organisations, with employees using them often for commercial and enterprise purposes. This, of course, begs the question: how should an enterprise manage its tasks to survive this ongoing wave?

Our research indicates that design, development and deployment of enterprise apps are key considerations for any organisation looking to manage its work effectively, especially when it comes to the latest breed, which manage the likes of innovation, customer satisfaction, work culture and competitive advantage. And with the rise of portable computing devices, the demand for enterprise apps is bound to accelerate further.

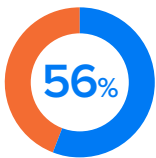
For businesses, then, the main dilemma centres on making the choice between Commercial off-the-shelf options (COSO) and Customised Mobile Solutions (CMS). Effective deployment of enterprise apps also requires a complete understanding of the business needs and research into the available solutions. The two most popular choices can be roughly defined as follows:

- a. Commercial off-the-shelf options (COSO):**
Generally, these include a broad set of features, lending themselves to adapt to a certain degree to meet the needs of an individual business and are widely available on all commonly used marketplace platforms.
- b. Custom Mobile solutions (CMS) -** These are specifically designed and written for a particular organisation, or a group of users in which they will be deployed for a number of different purposes. Often robust and holistic in their approach, they tend to have strong security features and are built to prevent external hacks.

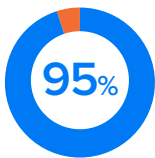
This white paper outlines the opportunities presented by mobile apps in this arena, detailing both the merits and demerits of the above options for enterprises. Our hope is that it will enable businesses to make informed decisions, ultimately choosing the option best suited to requirements.



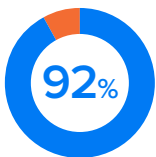
Introduction – the available alternatives



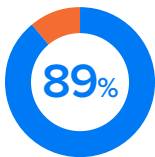
Of people aged 31 - 40 used mobiles to access work-related apps



Of U.S. smartphone users use search engines on their phones



Of those users seek local information



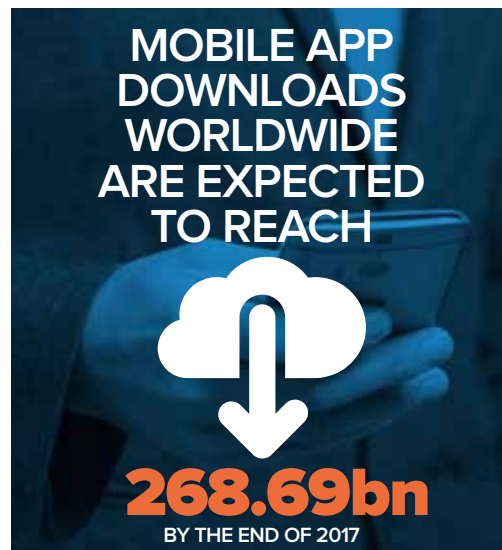
And 89% of those users act on their findings

95%

Of organisations were using smartphones to connect to their enterprise networks

A window of opportunity – Mobile Enterprise Applications

Recent research by Statista, a knowledge platform known for crunching numbers across various sectors, has pointed to significant potential growth in the number of people using smartphones to access the internet. In 2016, the estimate was 225m. By 2020, however, it is predicted this will have risen by around 20%. The research likewise suggests that the number of people accessing the internet exclusively through smartphones will increase from 31.1m to 42m.

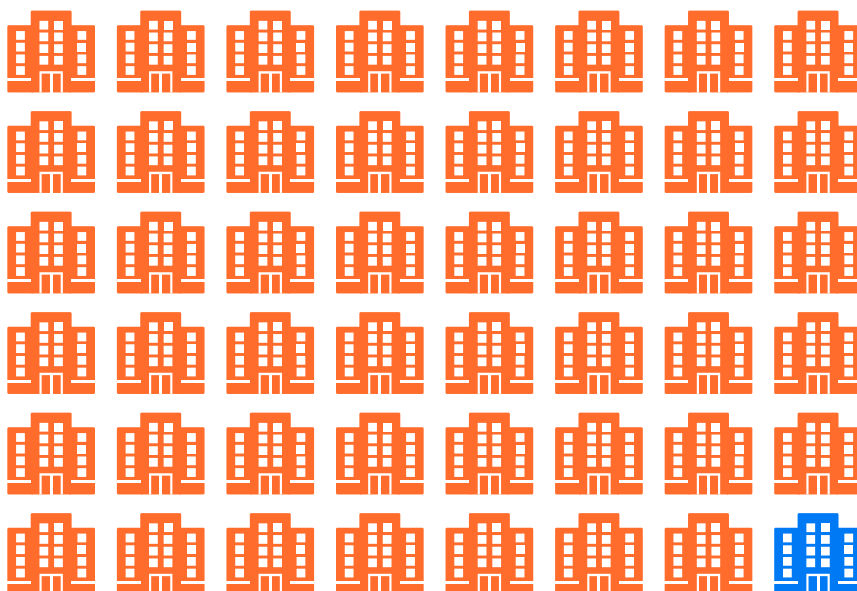


A survey conducted by Dimensional Research in 2014, similarly, found 95% of organisations were using smartphones to connect to their enterprise networks, as the BYOD (bring your own device) and BYOA (bring your own app) phenomenon gained sway. Indeed, three quarters of organisations participating in the survey said they supported the former approach. Clearly, then, mobile apps present a huge opportunity for digital enterprises, helping users drive sales, strengthen brand image and motivate employees to become more productive - Some insights from both Statista and CDW strongly support the theory:

- Mobile app downloads worldwide are expected to reach 268.69bn by the end of 2017
- Pew research estimates that around 69% of the 189m smartphone users in the US use their devices at work
- Age determines how many apps a person has on his or her smartphone, the average varying between a dozen and two dozen at any given time. A survey by Statista likewise showed 56% of people aged between 31 and 40 used personal mobiles to access work-related apps
- Google estimates 95% of smartphone users in the U.S. use search engines on their phones, with 92% of those seeking local information and 89% acting on their findings
- The spread of mobile apps is not confined to developed regions, with adoption rising rapidly in Asia, for example, where smartphone use is spreading quicker than it is in North America.

The above indicates that enterprises operating globally have a great opportunity to seize when it comes to boosting productivity through embracing enterprise apps.

Enterprise apps also spell the end of staff being tied to their desks, since they facilitate remote working and the opportunities presented by it. Chief among them is the chance to communicate and consume the same wealth of digital content on the move that would be possible on a desktop.



Enterprise opportunities - deciding between Commercial off-the shelf options (COSO) and Customised Mobile Solutions (CMS)

When selecting mobile apps, enterprises should consider both their objectives and the complexity of the tasks they undertake. Apps are usually employed across a number of different business segments, the complexity of which vary significantly.

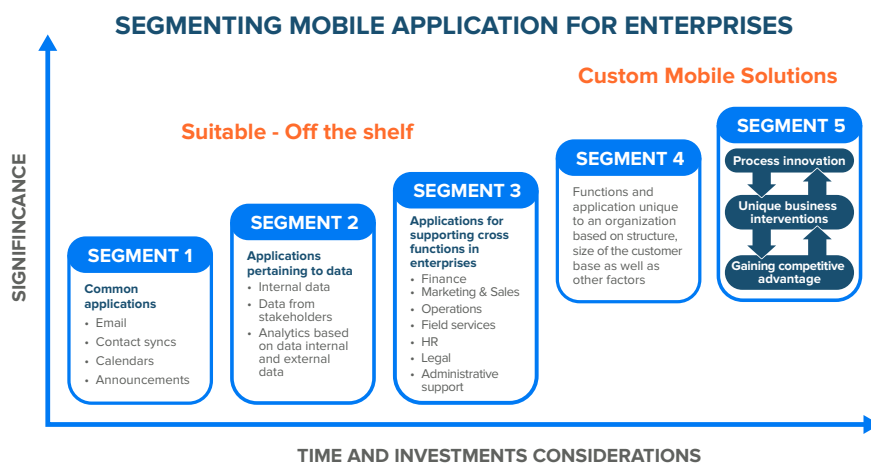


Figure 1 – Segmenting tasks for mobile applications.
Source: Mobilizing enterprise with off the shelf apps and custom mobile solutions.

Figure 1 outlines different tasks and the segments associated with them. Segment one, to start, is comprised of basic tasks focused on both internal and external communications, including emails, contact syncs, calendars and common announcements. Segment two, meanwhile, considers data analytics, including access to internal data, dashboard and external data pertaining to vendors and suppliers. In segment three, then, are tasks that typically aid the different divisions of an enterprise, including sales, finance, HR, field service, marketing, legal, IT and administrative support. The nature of such tasks is fairly straightforward, meaning organisations hoping to enhance productivity in these areas can rely on COSO options.

Organisations aiming to enhance workflow through business process engineering and to gain competitive advantage using innovation would look to segments four and five.

Tasks associated with these segments may differ depending on an organisation's size, customer base and other variables that point towards its stature in its sector. Custom mobile solutions are usually suited to businesses of this kind, since they are capable of minimising cost and risks while improving project delivery times.

What advantage do Commercial off-the shelf options (COSO) offer?

Organisations that usually undertake tasks in segments one to three would typically find 'off the shelf' apps a more useful option. These are often seen as consistent, are built with industry requirements in mind and offer the following advantages:

- Ready availability
- Low acquisition cost in some cases
- Suited to most users

Commercial off-the shelf apps are available on common marketplace platforms and hence tend to gather feedback from the user community, allowing developers to work on gaps and launch improved, updated versions. Cost, likewise, is usually lower than that for custom-built apps as they are standardised and spread across many different users.

What advantage do Custom Mobile solutions (CMS) bring?

Custom mobile solutions (CMS) will rule the roost when organisations prioritise improved market dominance. They provide a great opportunity for business process improvements and can enhance workflows across verticals. Research also indicates CMS can increase efficiency, raise productivity, facilitate remote working, help leverage partner relations and aid the sourcing of new customers.

CMS can play an overarching role to leverage relations with partners and to source new customers. It can offer great competitive advantage in terms of acquiring data, enabling the organisation to succeed in its vision and mission. As Matthew Barksdale, president of Engage Mobile Solutions, put it: "The key is not building an app but rather understanding what the app must do and what data is needed to positively impact the organisation."

Enterprise opportunities - deciding between Commercial off-the shelf options (COSO) and Customised Mobile Solutions (CMS)



Over and above this, CMS offers the following advantages over COSO:

- Allows updates and enhancements in line with market transformations
- Customised user interface (UI) tailored to the organisation's eco-system
- Binds organisational outcomes with process systems
- Allows scope for scalability
- Bespoke functionality to suit organisations' missions and objectives

Factors for consideration

The decision on whether to adopt and embrace COSO or CMS depends on factors ranging from the business's mission to the stakeholders involved in it and the alternatives available. This section looks at what organisations should consider before settling on a singular option.

Functionality

App functionality is a crucial issue when it comes to choosing the best option, with businesses either looking to resolve problems with greater ease or to add value to existing operations. When it comes to the basic tasks reflected in segments one to three, Commercial off-the-shelf options may be the way forward, since such tasks are common to most organisations.

COSOs also tend to improve over time due to marketplace feedback. When this doesn't happen, however, businesses are left with archaic apps, incapable of meeting growing requirements. This, of course, begs the question of how such tools can be best maintained to cater for evermore dynamic companies as they face an unknown future.

Organisations hoping to move on a progressive trajectory, meanwhile, will likely focus on innovation. Hence protecting IPR (intellectual property rights) becomes a priority - and CMS can help in this arena.

OS (Operating System) Compatibility and UI (User Interface)

Two trends bound to impact decisions on adopting enterprise apps are BYOD and BYOA. The former refers to employees bringing their personal devices to the workplace, presenting security challenges and data access issues, while the latter refers to adoption and use of apps by employees, teams and strategic business units (SBUs). No doubt, growing networks like 4g and Wi-Fi will ensure the spread of both across enterprises globally - which, in itself, presents a challenge since each approach can potentially hamper business productivity, compromise safety and create inefficiency in terms of costs.

Comparison between COSO and CMS

	COSO	CMS
Functionality	Useful for basic tasks – emailing, contacts, calendars and announcements	Built for the next generation – supports innovation, enhances competitiveness and propels growth
Operating System	Organizations may need to buy different apps for different OS	Customized and built to suit various OS from the beginning
Backend Integration	Provides limited space for integration	Possess high levels of back end integration
Performance	Good at handling fewer tasks	Robust and agile to handle several tasks
Security and Cost	Not quite secure Economical to procure	Highly secure Upper price range spectrum
User Interface	Standardised UI	Built after keeping in mind individual preferences
Deployment	Immediate	Weeks to months

Enterprises looking to embrace COSO will need to bear in mind the compatibility of apps across various devices and OS platforms. In the case of CMS, organisations get to choose what platform the app is released on, the devices it can work with and the level of long-term maintenance as the APIs improve.

Most COSO apps have a standardised UI and aren't tailor-made to meet the requirements of employees, customers and stakeholders. CMS, by contrast, can be customised to create a UI that matches individual preferences; this could help boost productivity and therefore justify costs.

Enterprise opportunities - deciding between Commercial off-the shelf options (COSO) and Customised Mobile Solutions (CMS)

As organisations expand, the challenges faced can grow exponentially. Thus, enterprise app solutions must be able to bring resolution to an ever-developing list of problems

Backend integration and performance

Organisations with a high level of backend integration will likely be more attracted to CMS than to COSO, since the former provides space to integrate databases and leverage use of existing infrastructure. Those using COSO, on the other hand, usually resort to third party applications or to middleware to support backend integrations.

App performance is another major factor that needs to be considered. This varies considerably from one app to another in terms of ability to perform tasks smoothly, impact on battery life and managing network access. Generally, while COSOs can be good at handling one or two variations, CMS designed and developed in consultation with decision makers are usually robust, agile and integrated to help enterprises meet their goals under different circumstances.

Support and Scale

In the case of COSO, support tends to take some time as developers continue to release updates or modified versions following feedback. This, in turn, can hamper productivity - and indeed results - until any issues are resolved. With CMS, however, the organisation can hold developers responsible for abiding by maintenance contracts and can expect swifter problem resolution.

As organisations expand, the challenges faced can grow exponentially. Thus, enterprise app solutions must be able to bring resolution to an ever-developing list of problems. Most COSOs can handle problems well at the generic level, but by increasing the load of users can lower turnaround time on tasks and increase frequency of crashes. CMS, on the other hand, is suited to dynamic businesses, the load of which can vary. In such cases, solutions can be tested at various stages prior to deployment, ensuring consistent outputs in any situation.

Security and Cost

Data privacy and security are central concerns for any business - especially since hacks and leaks have become increasingly rampant, with criminals leaving no stone unturned in exposing app vulnerability. Here, CMS has the upper hand as developers can constantly monitor aberrations and discrepancies, tackling these with strong encryptions, code updates or the use of proper SSL libraries.

In the case of COSO, developmental costs are usually spread across several users, generally making them cheaper than the CMS alternative, which could impact time and effort spent on security when compared to CMS. Organisations, however, must look beyond mere acquisition cost, and consider the benefits they could gain from going with the latter. The heftier price tag reflects design, development, deployment, training, security and upgrade costs.

Deployment tenures

Deployment of COSOs tends to be almost immediate, since these apps perform common functions and solve common problems. CMS, on the other hand, can take weeks to months to deploy, since these solutions are built on request to help undertake more complex tasks and solve challenging problems at scale.



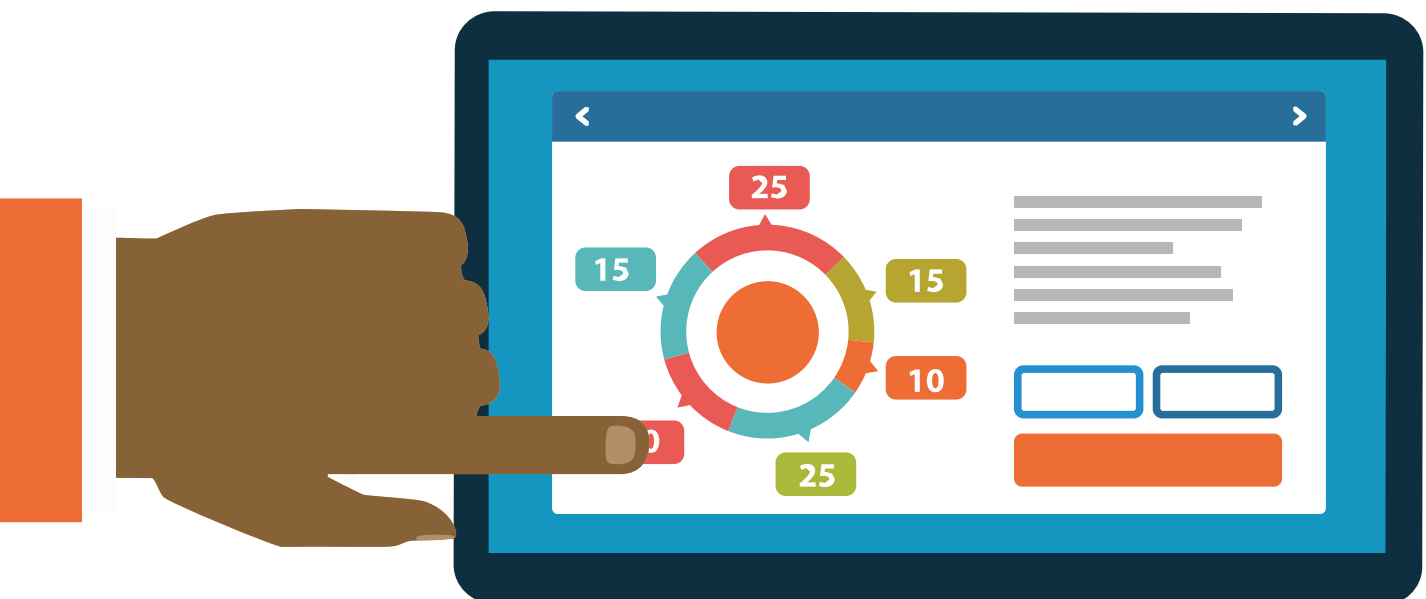
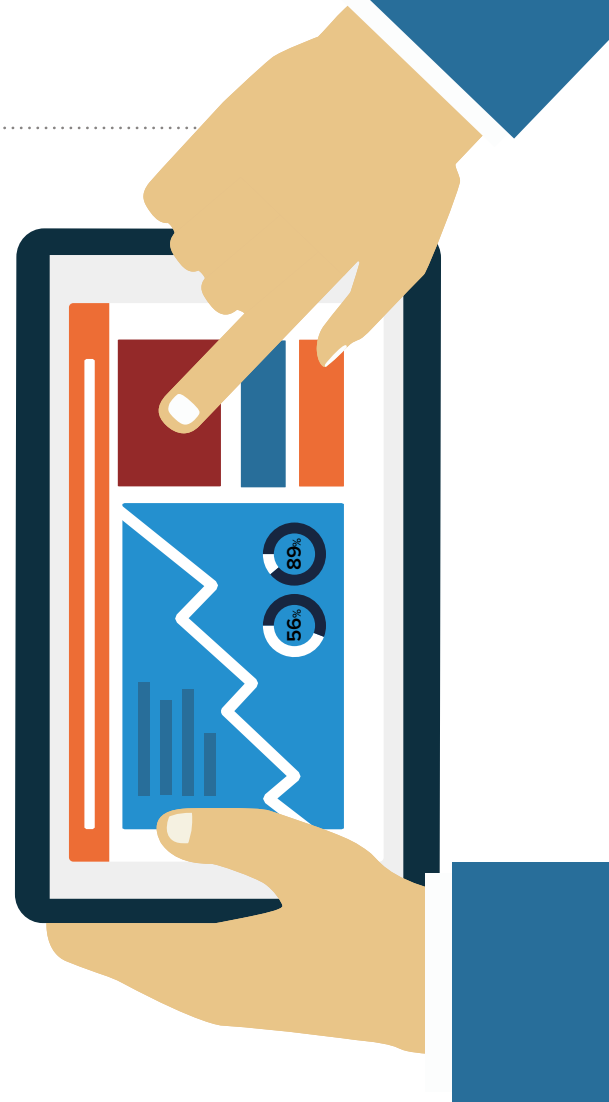
Conclusion

Organisations engaged in the basic segments outlined above can start with COSO, while those seeking competitive advantage through business process improvement (BPI) or innovation engineering might gravitate to CM

The advent of smartphones and tablets has made it easier for people to produce, consume and share information. Research indicates 90% of people tend to be connected almost 24-hours-a-day. It is therefore vital for businesses to prepare to embrace trends like BYOD and BYOA, which are only bound to grow. Indeed, their entire eco-system - from customers to competitors to employees - will expect mobile apps to take centre stage in their dealings.

Organisations engaged in the basic segments outlined above can start with COSO, while those seeking competitive advantage through business process improvement (BPI) or innovation engineering might gravitate to CMS. This is because the latter brings significant advantages in terms of features (which can be customised to requirements), security, scalability, annual maintenance contracts and strong backend system integration.

Investing in a robust enterprise mobile management system is clearly the way forward since the numbers indicate a valuable window of opportunity at this juncture. Enterprise apps will open new frontiers for those who embrace them, in the long run propelling revenues, competitiveness, productivity and, importantly, customer satisfaction.



About us

hedgehog lab is a global software consultancy that specialises in multi-platform software and connected device innovation. We architect, design, develop, and market apps, augmented reality, virtual reality, mixed reality & other digital solutions for phones, tablets, TV, kiosks & other post-PC devices.

We help brands & enterprises prepare for a future dominated by post-PC technologies. We specialise in working with our clients on Innovation & R&D on mobile & emerging platforms.

Founded as a pure play post-PC consultancy in 2010, and with offices in London, Newcastle Upon Tyne, Boston, Austin, India & Copenhagen, hedgehog lab has a team that is growing rapidly by focusing on delivering great post-PC experiences and campaigns to clients across the UK & abroad.

hedgehog lab has architected and developed mobile solutions and software for clients like News International, Channel 4, Financial Times, Booths, Societe Bic, East Coast Trains, AkzoNobel, B&M, Mitsubishi, CBRE, England Rugby, NESN, Northumbrian Water, Camping and Caravanning Club, HULT, Thinking Digital and Grainger plc.

With smartphone sales accelerating at a rapid pace and tablet technologies being spear-headed by the iPad, we have bet our future on a completely post-PC world where mobile devices, smart connected devices and touch screen technologies out-pace fixed desktop PC devices.

We are one of the leading smart phone & tablet application developers in our region, working with cutting-edge mobile platforms like the iOS, tvOS, WatchOS, Android, Augmented Reality and Virtual Reality.



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