Users often criticise the IT department for enterprise applications not being as simple to use as those they use in their personal lives. IT service management recognises the need to adapt so that corporate IT can have the look and feel of consumer-oriented services. In this 11-page buyer’s guide, Computer Weekly assesses how businesses can go about setting up an enterprise app store and integrating it with IT service management.
Today, many employees use their personal smartphones and tablets for work to access a variety of mobile applications and some companies are deploying mobile applications to interact with partners, suppliers and customers.

Companies often task security and risk (S&R) and infrastructure and operations (I&O) executives with managing and securing not just the device itself, but the work-related applications on them as well. Some IT executives are addressing the challenge by deploying app stores that provide a self-service, user-friendly channel to distribute corporate-approved mobile applications and services to employees.

IT departments use today’s corporate app stores primarily to distribute corporate-approved mobile applications to employees, partners or customers. However, during the next few years, these app stores will include expanded functionality such as content sharing, granular discovery, provisioning and reporting and monitoring services to support smartphones, tablets and even PCs.
Consumer app stores such as the Apple App Store and Google Play enable mobile device suppliers to distribute applications to individuals who use their mobile platforms.

Consumer app stores have been phenomenally successful at engaging consumers, creating expectations for how people discover and acquire applications and content. With the Apple App Store and Microsoft’s Windows 8 app store, analyst firm Forrester predicts app stores will become the main way for workers to obtain applications. App stores will go beyond distributing apps for smartphones and tablets to include PCs. Many app stores are enabling technology suppliers and service providers – such as AT&T, Cisco Systems, Salesforce.com, Samsung, SAP and Verizon – to distribute their mobile apps to customers.

Consumer app stores primarily distribute games, entertainment and sports applications and content; however, they also provide an increasing number of business-focused applications to enhance employee productivity, such as expense management, time management, note-taking and contact management.

Today, 35% of firms allow employees to purchase mobile applications from consumer app stores. However, consumer-focused apps pose significant challenges for S&R and I&O executives considering a corporate implementation. Most app stores are platform-specific, which poses problems for IT organisations that must support multiple platforms and device types. Consumer app stores don’t offer a realistic distribution channel for non-native applications or applications the IT department has developed in-house.

Transform employee engagement by deploying apps and content

Most IT organisations start their mobile initiatives with small, simple pilots that offer email and calendar applications on new platforms. The success of these puts pressure on S&R and I&O teams to quickly expand bring your own device (BYOD) programmes and offer a variety of applications for collaboration, expense management, document synchronisation and share and so on. To help address these issues, IT professionals are beginning to look to corporate app stores, which Forrester defines as: “Technology solutions that enable companies to selectively distribute approved mobile applications and services to internal and external users, including employees, partners, suppliers and customers.”

Today’s corporate app stores are purely internal distribution and engagement channels that allow IT organisations to distribute and manage mobile apps. However, they have the potential to do much more than that.

Corporate app stores enable IT teams to change how they support and deliver apps. With app stores, I&O teams can give users a self-service option and an intuitive interface to access corporate-approved mobile applications. S&R professionals are happy because they gain some ability to control mobile apps and manage access policies. Employees can also use the app store as a portal for accessing all the tools they need to do their jobs.

Leading firms use examples from consumer channels to change how the IT department engages with business. Neither users nor I&O teams enjoy today’s error-prone process of pushing out applications or installing them on PCs. As more users gain access to more tools, managing delivery across a broadening application landscape becomes much more complicated. Thus, progressive IT organisations aim to use app stores to distribute content and manage access policies. However, even progressive firms are only addressing users’ basic needs. In the future, users will expect access to all the applications they need, regardless of which device they’re using. S&R and I&O professionals must prepare for three stages of corporate app store evolution. To succeed in each stage, they must incorporate evolving feature sets and expand awareness among users.
Current corporate app stores support both custom-developed apps and corporate-approved consumer marketplace apps. Internal corporate app stores offer employees a self-service way to discover and use mobile apps approved by the business for their work activities. Such apps include custom-developed business applications, such as executive reports and dashboards, document libraries and enterprise application apps. These corporate app stores include links to web apps and approved business apps from consumer-focused app stores such as the Apple App Store.

**Use the right app for the job**

A corporate app store can provision apps to specific workforce segments. Simplified application development for mobile devices speeds development of a large number of applications targeted at specific workforce segments, lines of business and industries. App stores provide S&R teams with the ability to make collections of apps available to employees based on criteria such as region (for example, employees in Europe), function (for example, sales) and device (for example, iPad).

The corporate app store can control application configuration and distribution. Today’s internal corporate app stores help S&R teams control mobile app authentication, configuration and distribution. Application discovery functions highlight approved applications for each user, based on their unique role profile, device type and mobile operating system (OS) platform. S&R professionals can deploy corporate authentication, configuration and monitoring policies to track usage.

**Use the app store to tighten data security**

Finally, a corporate app store provides security features to control and protect mobile apps and data. These enable the S&R organisations to manage application inventory, identify approved applications and blacklist apps that may contain malware or other malicious content. For example, the IT organisation can block certain applications such as enterprise file-sharing for particular employees to avoid legal and security issues resulting from sending data to other devices through the synchronisation feature. S&R professionals can remove corporate apps from an employee’s device if he or she changes jobs or loses the device.

An increasing range of application types, development architectures and supported platforms is creating the need to streamline the delivery process for workforce applications while ensuring the security of sensitive data, such as intellectual property and the personally identifiable information of employees and customers. As app stores add more content management capabilities, they can provide self-service access. The corporate app store can become a one-stop shop for all the tools and data employees need to do their jobs.

This article is based on the Forrester report Build A Corporate App Store Into Your Corporate Mobility Strategy.
**What ingredients go into the successful app store?**

An enterprise app store should provide the controlled availability of apps for employees. Bernt Ostergaard looks at what is available for organisations to use.

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Apple launched the app store concept on 10 July, 2008. The Apple App Store allowed the company to control the quality of apps and to open a new revenue stream. Sales topped $10bn in 2013. With the launch of similar services by its major competitors – including Google, Amazon, Microsoft, Nokia and Samsung – the term “app store” now refers to any similar service for mobile devices.

Since then, app stores for a wide range of operating systems (OSs) – Android, Windows, Linux, Symbian, Windows, and so on – have sprung up, but all are consumer-focused and have proved difficult to manage from a corporate perspective. The US Federal Trade Commission went so far as to describe the Apple and Google marketplaces for mobile apps as “a digital danger zone with inadequate oversight”.

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**INGREDIENTS FOR A SUCCESSFUL APP STORE**

An enterprise app store should provide the controlled availability of apps for employees. Companies need to focus on individual user requirements and make sure their app store delivers the right tools for the right job.

**Does a corporate app store make sense for your organisation?**

Suppliers offer variety of options for building corporate app stores.
With the proliferation of mobile devices, bring your own device (BYOD) policies and the wide adoption of tablets in the enterprise, the need for enterprise mobile device management (MDM) and mobile application management (MAM) strategies became pressing. Companies needed to provision and control access to internally developed and commercially available mobile apps used in business settings.

An enterprise app store can provide the controlled availability of apps for employees and partners. Attempts at developing and deploying in-house mobile apps typically reached only 40–50% of the intended user population, and were a pain to maintain. So most companies look to external app store providers for on-site or hosted cloud systems.

### The Enterprise Apps Market

Creating an in-house enterprise apps store involves hardware, software and services (see diagram, right).

Apperian is an example of a company developing pure-play app stores. Apperian’s custom-built and third-party apps, links to public apps, web clips, hybrid apps, device profiles and email configuration profiles can be stored in the enterprise app store. Updates are distributed with alerts and policies can be applied to force updates.

Apperian provides a unified native app store experience for Android, iOS and BlackBerry, as well as a web-based HTML5 version. The app store can be completely configured and branded with a customer’s logo. It supports role-based access and Apple’s Volume Purchase Programme (VPP), so customers can buy and track bulk licences for apps in the iTunes app store. Connection to an enterprise authentication server provides single sign-on (SSO) for users.

### Selection Criteria for the Enterprise App Store

#### Type of apps to include

Which types of apps need to be included – public, custom or hybrid? Will the enterprise app store contain only apps that the enterprise itself created or will it also offer third-party apps? What are the requirements to pre-qualify the app for inclusion?

#### Location

Keeping it in-house allows for hands-on control (where the data is stored, version control, who gets access, and so on). It may also be a requirement of the company’s governance and risk policies – especially if the apps access personal or very sensitive data. The downside is all the maintenance that running the store entails. So companies looking for optimal functionality for the lowest cost will usually opt for an outsourced store. Companies that already operate a hybrid private/hosted cloud environment can maintain sensitive apps and data on their own site, while making the wider range of corporate apps available, and maintained, on the hosted site.

#### Support for multiple mobile OS

There is a constantly shifting range of phone and tablet OS versions that need access to apps. Corporate IT should ensure the provider they choose has the capability and demonstrated track record to keep up with these changes. Limiting apps to a specific OS risks alienating parts of the user base. However, it is an option to specify which operating systems a given app will run on.

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Good Dynamics’ pure-play app store is called GDSMP and provides access via corporate directory systems for the extended enterprise of contractors, ecosystem partners and distributors. The app store delivers a consumer-like experience with enterprise controls and dashboards to view performance metrics. Users are notified when new apps or updates for downloaded apps become available. It is designed to be highly scalable, and can handle hundreds of iOS, Android or HTML5 apps, as well as content such as documents, presentations, images and videos to tens of thousands of devices. Both the “managed distribution” and “redeemable codes” methods of the Apple VPP are supported.

Traditional hardware platform providers are developing server- and cloud-based stores with the necessary servers, gateways and firewalls. Besides antivirus functions and malware filtering, the app store should identify, prevent and take down apps that do not conform to the code of conduct.

**APP STORE SELECTION CRITERIA (CONTINUED)**

**Browser and native apps support**

It is sensible to allow apps to be downloaded on user devices via a URL or through an enterprise market app. Alternatively, the emergence of completely browser-based HTML5 apps is OS agnostic – but still rather unstable – and simplifies access significantly. The trade-off is that these HTML5 apps may lack some of the functionality of the OS-specific apps.

**Access control**

Many of the mobile software providers come from the MDM and MAM side, providing additional expertise in maintaining a database of users, devices and apps, including a matrix association (users have multiple devices, devices are used by multiple users).

Users’ access to the enterprise app store should be through the company’s identity access management (IAM) system, and the LDAP-compliant directory can be used to identify individual users’ access privileges. Similarly, app downloads should only be allowed over HTTPS or through VPN tunnels.

**OTA (over the air) updates and notifications**

Updates and notifications are important for bringing corporate apps up to date on users’ devices, installing patches and other maintenance-related fixes. The app store must be able to push out updates and notify users.

**Administration console, centralised management and usage encouragement**

The app store administrators must manage new apps, update existing ones and reject apps that do not meet the app store criteria. Maintenance also requires the ability to easily retire, archive and remove apps when necessary. There also needs to be a clearly formulated process for submission, approval and removal of apps.

**Malware filtering, reporting and analytics**

Besides the essential antivirus functions and malware filtering, the app store platform should provide a means to identify, prevent and take down apps that do not conform to the organisational code of conduct. Access behaviour needs to be logged and regularly analysed to identify aberrant user behaviour, and monitor usage levels of individual apps.
IBM recently formed a strategic alliance with Apple to provide vertical industry iOS systems. The IBM MobileFirst Platform offers a hardware infrastructure with a private app catalogue supported by analytics, workflow and cloud storage on IBM’s Cloud Marketplace, security and integration.

HP’s Access Catalogue offers a secure, private Android and iOS app store for employees to browse, search and download mobile applications and digital content onto mobile and tablets devices, as well as desktops. It is delivered via native mobile clients and a web interface that helps organisations reduce the cost and complexity of managing applications on company-issued and BYOD mobile devices.

**MDM and MAM tools**

Motorola RhoGallery is a component of RhoMobile Suite and part of RhoHub. It allows IT departments to manage and deploy mobile applications on Motorola servers. Apps are uploaded into a gallery and users receive a text or email invitation with a link to the gallery. All users in that gallery are automatically notified about app updates.

RhoGallery focuses on MAM and data used by enterprise users. It does not provide any MDM component. Software providers offer enterprise app store services that sit on top of their MDM and MAM tools.

The BMC App2Zone provides app vetting and curation of both in-house developed apps and externally sourced apps. It allows corporate volume and purchase order procurement process in both Apple and Google environments. Corporate IT can set access policies for site and individual app access and handles licence management.

VMware’s AirWatch integrates an enterprise app catalogue with public app stores, such as Apple, Google and Amazon, and with the Apple VPP for volume purchase and licence management. For organisations building custom internal applications, AirWatch offers software development kit and app wrapping for applying policy to applications.

SAP’s Sybase Afaria software platform delivers centralised control of all mobile devices and tablets, including iPhone, iPad, Android and BlackBerry, as well as the apps that run on them. Afaria offers enterprises the flexibility to deploy on-premise or partner hosted.

Microsoft released an update to Windows Intune last year. Windows 8 developers can install a “company portal” app from the Windows Store and then install apps made available by their company onto user devices if they are enabled for side loading.

**Align mobile services with business strategies**

Global system integrators provide mobile integration services aligned with corporate business strategies, in order to use mobile technologies as a catalyst to pursue new business models. Many resell Apperian or Good stores, but some take it a step further.

For instance, Atos has teamed with EMC and VMware to create Canopy, a global cloud service company that offers an enterprise app store service allowing customers to manage all their apps throughout the app lifecycle. As well as providing global guaranteed quality of service access to the enterprise apps, Canopy helps manage costs and ensure rapid deployment.

Some telcos now offer dedicated enterprise app stores as hosted managed services for their customers. Again, most telcos rebrand pure play systems, such as the BT Enterprise Mobility Portfolio with Apperian as the app store engine.

**The successful enterprise app store**

The success of an enterprise app store is measured in improved user productivity and motivation. The app store can facilitate a smoother work process, in a regulated and secure environment. However, enterprise management and the IT department must also be ready for significant changes in user online and mobile behaviour, both in traffic volume and user demands for additional apps.

Bernt Ostergaard is an industry analyst at Quocirca
Organisations have begun to ask why, given that the app store model is so popular with users, they can’t rethink their own application delivery mechanism. Like Apple’s App Store and Google Play in the consumer world, an enterprise app store offers users an easy way to choose and install the tools they need to do their jobs at the press of a button, from a wide selection of apps and services already approved by the organisation.

Daryl Wilkinson, head of group digital development at Nationwide Building Society, says people prefer mobile and web apps to traditional desktop applications because they look and feel better, and are easier to use.

“Now people’s expectations have been set, we need to deliver something that is at least as good. That’s why I want the organisation to have a compelling enterprise app store,” he says.

Nationwide is currently going through a procurement exercise and has so far whittled down an initial...
list of around 12 suppliers to just a handful. Wilkinson says he is erring towards a “contain-erised” cloud-based system with a ready-made ecosystem of software suppliers and apps, but the company is also piloting a number of apps for services such as email, calendar, task management and company news, delivering them via the app store capabilities in its existing Good Technology mobile device management (MDM) suite.

Whichever supplier Wilkinson selects, he expects Nationwide to have its full enterprise app store up and running by early next year, with a view to rolling it out to all of the company’s 17,000 staff who want it.

Indeed, according to analyst Gartner, a quarter of enterprises will have their own app store by 2017, not least because many already have the capability to deliver it through their existing MDM software, many of which have capabilities similar to those of app stores.

**Improving the user experience**

To succeed, however, Wilkinson believes businesses have to approach the task from the point of view of improving the user experience and giving people the choice they crave.

“In my personal life, I live on my tablet and smartphone, and I use them without them being locked down. Disabling a device’s functions or restricting certain applications doesn’t sit well with me. It smacks of Big Brother and can ruin the user experience,” he says.

“You need to strike a balance, but if you deliver state-of-the-art technology in the right way, cost-effectively, you’ll have a happy business and a highly engaged workforce. This sends out a massive signal to people about what sort of company you are.”

Gartner is similarly convinced that giving users more choice is critical. In its April 2014 report, *The Foundation of a Successful Enterprise App Store*, analyst Brian Prentice wrote: “If an app store doesn’t enable choice, it won’t be used.”

He went on to warn that enterprises must avoid replicating the retail experience of the old Soviet Union: “Soviet central planners were confident that citizens had a choice of products. However, when people were able to see the differences between the paltry offerings in their shops compared with those in the West, resentment towards those central planners rose and black markets flourished.”

At Severn Trent Water, CIO Myron Hrycyk is piloting an enterprise app store using VMware’s AirWatch product. He agrees it is key to focus on what users want. “The real turbo-charge to our digital strategy came when we approached it from the consumer point of view. We were already mature in our use of BYOD [bring your own device] and MDM technology, but it was not until we focused on building the sort of experiences that people expect in the 21st century that everything came together,” he says.

He mapped out a series of common “colleague journeys” – thinking about how employees needed to use technology in their various roles and canvassing them on the sort of apps they wanted.

“For example, we looked at how our work crews receive a job, travel around a region, do the work, close down the job, pick up the next job, and so on,” he says. “Then we delivered the apps they might need to help them on that journey – for instance, they might need one that lets them do a health and safety check on-site, one that turns their phone into a torch,
or one that lets them check whether any colleagues working nearby are carrying a particular part they need for a repair.”

Hrycyk says the Severn Trent app store will feature a combination of in-house and third-party apps, including the cloud-based expenses management app Concur and apps that hook into the company’s back-end SAP enterprise resource planning (ERP) and human resource systems. “For instance, you could get an app for placing a purchase order or raising a holiday request. Our strategy is to give colleagues these lightweight apps, rather than forcing them to wrestle with the traditional big, heavy-lifting ERP applications. We want IT to be warm, engaging and easy to use. For example, one of the things we can do is only present users with apps relevant to their particular job profile and the type of device they are using,” he says.

**Taking the Simple Approach**

Christine Ashton, senior vice-president of technology at Thomson Reuters, believes more suppliers of traditional applications need to work on providing simpler, app-style front ends.

“The thing apps do very well is focus on one or two key functions. They are clear and concise. Over the years, we have leaned towards big, bulky apps such as Word and SAP. I think users are tired of being presented with a vast compendium of functions and having to work things out,” she says.

However, Ashton adds that enterprises must be sure that introducing an app store doesn’t fragment the tools for the job and leave an organisation saddled with mediocre capabilities. While Thomson Reuters has not invested in a third-party enterprise app store service, Ashton says it has put a lot of its apps and approved software-as-a-service (SaaS) products on its corporate intranet to give its employees a single, official point of access.

Others highlight the potential operational benefits. Kingston University is using the RES IT Store to give users access to around 450 Windows and iOS apps, from a variety of sources. These range from in-house Oracle apps to Adobe Creative Suite.

“We felt it was the right time for us to turn our users into ‘service consumers’ and adopt more of a service provider role, rather than that of a traditional IT department,” says the university’s technical analyst, Daniel Bolton. “Allowing people to subscribe to services and applications eases the burden on service and helpdesks.”

Ultimately, enterprise app stores are all about allowing users to work faster, smarter and more easily, wherever they are.

Nationwide’s Wilkinson says: “Why force people to log on to big legacy systems when you can give them an app for expenses, purchasing and HR that removes all that complexity? When we surveyed employees at the beginning of the project, 68% said they saw a need for an enterprise app store and would definitely use one. There seems to be a real enthusiasm for it and I think that is because everyone recognises this is the future.”

For Severn Trent’s Hrycyk, far from making IT less relevant, the self-service digital culture embodied by enterprise app stores cements the function’s role as an enabler of innovation and business value creation. “We’re seeing some fantastic benefits from the pilot. Business colleagues feel they can do their jobs better,” he says.

“We have a phrase in IS now – ‘think big, start small, fail fast, scale soon’. We can think big in terms of strategy and vision; start small by creating apps in days or weeks, rather than months; fail fast by pushing something aside quickly if it is not working, which means we are not afraid to try new, innovative things; and scale soon when something does succeed. This has been a real boost and is fundamentally changing the dynamics of the IS department.”

“**Why force people to log on to big legacy systems when you can give them an app for expenses?**”

**DARYL WILKINSON, NATIONWIDE**