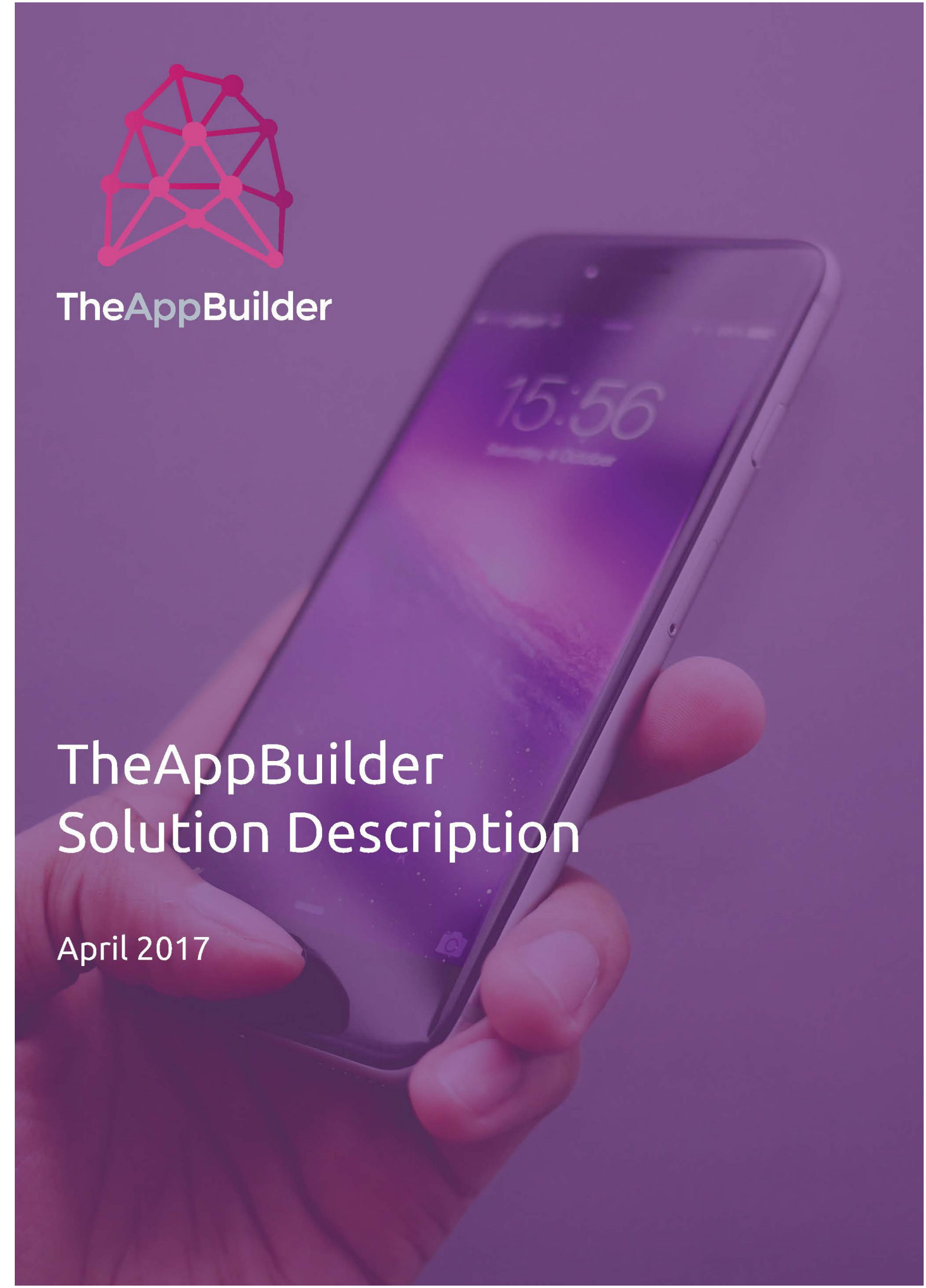
TheAppBuilder



TheAppBuilder Solution Description

April 2017

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1. Introducing TheAppBuilder

TheAppBuilder is an enterprise grade SaaS App platform enabling businesses to build, distribute and manage apps that facilitate improved work performance and enhance the daily experience of working within the business.

TheAppBuilder platform is backed up by our creative team of developers, designers, user experience designers, project managers and mobile enterprise experts who guide enterprises through the various stages of creating, releasing and consistently improving enterprise apps for a variety of purposes within their business.

By choosing TheAppBuilder SaaS Platform the following benefits are realised:

- Short project timeframe
- Multi-platform output
- Regular feature and design upgrades
- Distribution support
- Creation of multiple apps with varying functionality and purpose
- Simplification of OS updates
- Cost effectiveness
- Efficient scale across regions or divisions.
- Benefits from the experience of TheAppBuilder + other enterprises

TheAppBuilder team are committed to providing apps that are useful across multiple functions within an enterprise and that can evolve in line with an organisation's mobile strategy. As a result we do not limit our platform to delivering a single app type such as a comms app, event app or an HR app, but rather a rich suite of building blocks that can be assembled together in any combination. An excellent enterprise App platform is sufficiently flexible and a close fit with rapidly changing enterprise requirements.

2. Apps and App Content Management

TheAppBuilder provide a suite of native and web apps and a real time content management system (CMS).

TheApps

As standard TheAppBuilder provide 3 apps to cover virtually every modern mobile or static device. Using TheAppBuilder you will be able communicate across your employee population eliminating any digital divide. When an App Editor published content it is published instantly across all three apps.

Apps for Apple devices (iOS)

Our iOS apps are truly native apps for your Apple mobile devices. The apps are built to meet all industry standards and the app binaries are regularly assessed directly by Apple and meet their exacting standards. The iOS apps are compatible with both iPhone and iPad devices.

Apps for Android devices

Our native Android apps provide dedicated layouts for Android smartphones and Android tablets. The rapid proliferation of Android devices globally has caused there to be massive variation from device to device. This includes variations in screen size, processing power, operating systems and storage capacity. At TheAppBuilder we have expended significant efforts to elevate the quality of Android apps providing an excellent user experience right across the Android population. Our experience working with leading enterprises globally has driven us to develop our Android apps to be excellent performers even in the most remote and challenging environments.

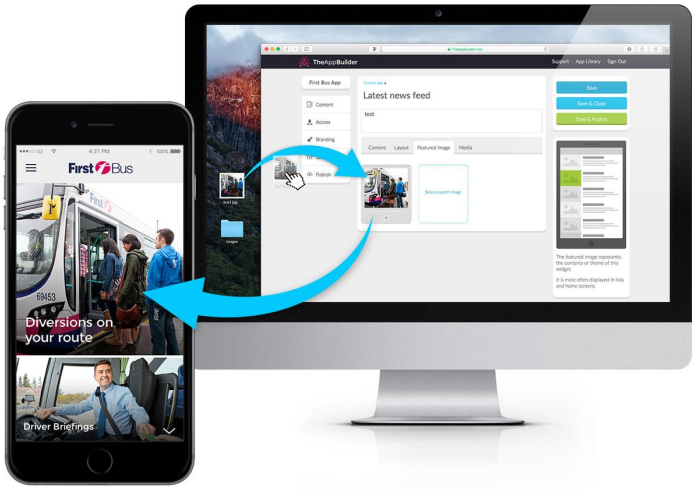
HTML5 Web app

A web app is one that resides on the web rather than ‘natively’ on a device. A web app is therefore accessed via a browser on an internet connected device. TheAppBuilder HTML5 web app provides secure access to your app content in any modern browser. This responsive output supports smartphones, tablets and desktop/laptop devices. This web app is Operating System agnostic meaning it will work comfortably on Windows, MacOS, iOS or Android devices.

TheAppBuilder Content Management System (CMS)

At TheAppBuilder the ability to manage the content of an enterprise App commands the same priority as the end user experience.

The ability to publish content easily and quickly is a key requirement for TheAppBuilder customers. This has led us to develop a Content Management System that non-technical content owners are capable of using and, in fact, enjoy using.



We believe the resulting app content is of a higher quality and is published in a timely manner when content editors enjoy using the CMS.

The complementary, tensioning challenge is that the platform is sufficiently sophisticated to be capable of achieving excellent performance, managing varying media types to an exacting standard.

TheAppBuilder ably combines an easy to use, enjoyable content management experience with sophisticated, regularly updated technology.

App Editors can access the CMS securely using any modern browser such as Chrome, Safari, IE11 or MS Edge. There is no requirement for any special software and editors can use Windows or Mac devices.

Publishing Method

TheAppBuilder CMS utilises a traffic light system to manage the published status of content.

- Red = **Unpublished**, this content does not currently appear in your app
- Yellow = **Published with changes pending**, there is a live version of this content in your app, however changes are pending publish
- Green = **Published**, this content is live in your app.

This system ensures that multiple App Editors can work independently on different aspects of an app without fear of conflict. App Editors are always confident of what is and isn't live in their apps.

App Building Blocks

The apps are constructed using a flexible range of building blocks which together support a huge range of media types including images, video, pdfs, html, web content and any document or file type used in your business.

1. **Lists**

Lists provide the main navigational structure for your app. Lists are similar in function to the folders on your computer in that they provide a simple means of organising your content. Lists can contain as many sub-lists as required for your app content. Lists can contain the full range of building blocks and media types. These building blocks are:

- Lists (yes you can have lists within your list)
- Pages
- Images
- Video
- Contacts
- File Downloads
- RSS
- Webpages
- Existing content

Each of these building blocks is discussed in detail below.

List Layouts

In contrast to folders on your computer, with TheAppBuilder you can choose from a variety of attractive layout options, mixing and matching as best suits

When designing the list layouts TheAppBuilder design team have focused not only on creating a great user experience but also on making it easy for content managers with no design experience to create and maintain great looking apps.

List Options

In addition to choosing the layouts of your lists you can select any combination of the following options on a list-by-list basis.

- Hero Items

Marking a list item as ‘Hero’ emphasises its significance by placing it prominently and enlarging the featured image representing it. A hero item can be selected for each list of items within your app if desired.

- Sort Order

Lists can be automatically sorted by date created, date modified or by A-Z. In addition for those wanting complete control, each list in the app can be manually sorted.

- Date Display

Items can have their date created or date modified visible for app users to provide context.

- Icon overlay

An Icon indicating the type of media included in the item can be added. These include icons for video, images, RSS, webpages and articles.

A note on data consumption and long lists

There may be occasions when you have very long lists of content. Careful consideration has been given to managing the app performance and data consumption, particularly in these cases.

As a rule only the first 20 items are presented to the user until they scroll further down the list. In this way the app performance is not impaired as a result of rendering long lists and the user remains in direct control of what content they wish to access on their device. For example, a user who views a long list but does not scroll through the pages will only be accessing the first 20 items on the page, even if there are many hundreds of items available to them, thus protecting from unnecessary transfer of data.

Our apps are stress tested using automatically generated lists of 1000s of content items to ensure high performance in the most demanding of publishing environments.

2. **Pages**

Pages within TheAppBuilder provide a flexible canvas onto which you can add your content. Each page can contain any quantities of the following in any order.

- Text blocks
- Images
- Videos
- File downloads
- HTML embeds
- Links to existing content

The wide variety of content types and the flexible layout ensure that **Pages** can be used for a huge range of use cases. Whether you are creating a news article, help file, employee survey, web portal or even reference library, the **Page** will give you lots of options.

3. **Text blocks**

To add text to a page we provide a simple to use, rich text editor. You either type directly or copy and paste your text into the editor.

When adding text you will recognise all the common controls to **bold,** *italicise,* underline and other formatting options such as bulleted and numbered lists. You can also add links to webpages in your text.

TheAppBuilder provides a series of preformatted settings to ensure you can quickly create attractive and user-friendly copy. These include a series of heading, quote and paragraph styles.

4. Images

TheAppBuilder provides a very user-friendly approach to image upload and presentation. Content managers are not required to resize or format images in a specific manner.

TheAppBuilder supports .jpg and .png file types and all images uploaded are automatically stored in TheAppBuilder Media Library for re-use where appropriate.

Images in pages

Any size of image can be added to a page and is presented in the app exactly as the App Editor has uploaded it. TheAppBuilder does not crop these images, therefore giving full control to the editor. A caption can be added to the image where appropriate.

Images in lists

To ensure that lists within the app look great using all the layouts, TheAppBuilder automatically crops images for lists to a 4:3 ratio. There is no requirement for the App Editor to prepare the images in advance.

5. Video

Videos can be streamed in the app directly from TheAppBuilder Media servers providing your own private, secure video channel. Videos must be uploaded in mp4 format.

In addition to privately streamed videos, you can embed any video from web channels such as YouTube or Vimeo. Embedding videos from enterprise hosts such as Vippy or Kaltura is also supported

Videos can be added directly to lists or into pages.

6. Contacts

Contacts are presented in an attractive profile style layout. From a profile page an app user can view any combination of the following:

- Name
- Title or other descriptor
- Profile pic
- Telephone number
- Mobile telephone number
- Email address
- Website
- Address

Additionally the design includes options to Call or Email the contact directly and to save the contact to the device address book.

Contacts can be used to provide individual person details or departmental details, such as 'Contact HR'

7. File Downloads

Files of any type can be distributed via TheAppBuilder. App users simply download the file and open it in the appropriate program. Common uses of this feature are to provide access to policy documents, process documents or to any MS Office files.

The files are presented with featured images or icons to ensure the look and feel of the app is not compromised by the inclusion of multiple file attachments.

Files can be downloaded directly from lists or from within a page.

8. RSS

RSS feeds including atom feeds can be used to present syndicated content from other sources. These are added to the app with the very simple insertion of a feed url. The App Editor can choose to present the RSS feed in any of TheAppBuilder list layouts.

Clicking on any of the RSS items will open the source content directly.

9. Webpages

Any publicly available webpage can be included in an app. This includes web-forms, social media sites, HR portals, Careers websites and much more. App users retain the structure of the app enabling them to view webpages and then continue to view other native content in the app.

10. HTML embeds

HTML can be added directly to any page within an app. TheAppBuilder supports the addition of complete HTML documents enabling users to control both the head and body components of the page.

This is primarily used to embed forms, polls, videos and other web widgets such as twitter feeds or searches.

11. Existing content

While the app is primary structured using lists it is possible to add any content item into multiple locations in the app. For example, an App Editor adding an article to a section about Health & Safety may also wish to add the same article to a general news feed, even if only for a short period of time. This is achievable at the click of a button.

Another example of using this feature might be where the same contact details are to be made available in different parts of the app.

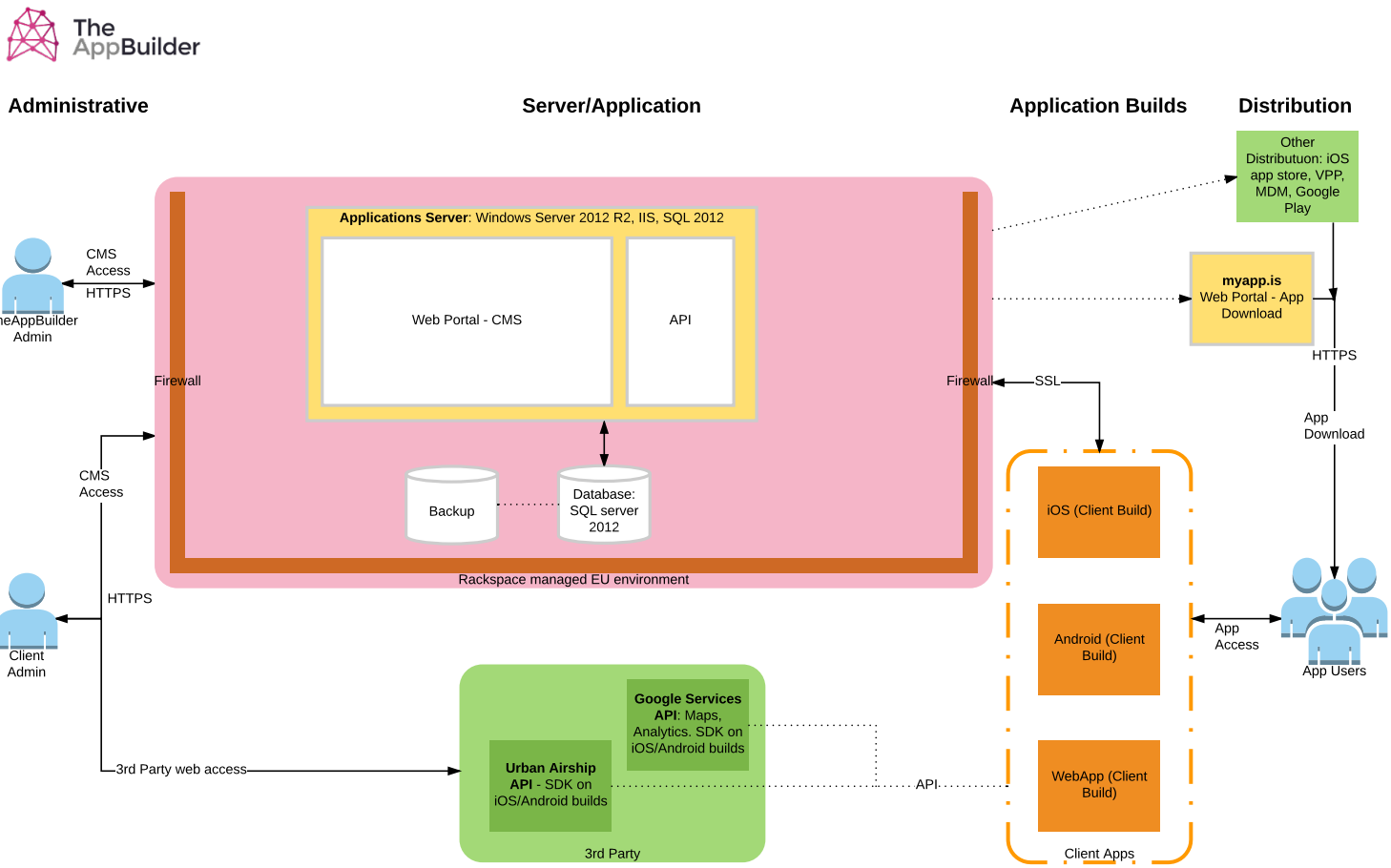
Attractive image and text-based links can be added from any page in the app to any other content within the app.

Push Notifications

TheAppBuilder provides the facility to send notifications to iOS and Android app users via a simple to use dashboard. The notifications themselves are in text format and can include emojis. In addition to sending a push notification to all users you can also send a notification to a specific group of users provided they have been previously segmented in TheAppBuilder.

When sending notifications you can also specify what happens when the user clicks the notification. The default action is to open the app home screen, however you may choose to open a specific page in the app, or indeed to open a page that can only be accessed via the push notification.

3. Technical Infrastructure



A note on security

Our software is developed using industry-recognized best practices to ensure system security. Static code analysis is used to detect common vulnerabilities. In addition, a suite of unit tests has been developed focussing on application security and these are run against each build of the software.

All communications between client and server use the https secure protocol to encrypt data as it is transmitted to and from devices. Client devices have successfully undergone penetration testing by an independent third party.
Our platform is hosted on dedicated managed hardware, which is isolated behind a dedicated firewall. The hardware has been hardened and includes managed security patching and managed anti-virus software.

Web-based CMS

The App Toolkit is a web-based application designed to enable non-technical people to create and update mobile apps. With typically 1 hour of online training, a new user will be equipped to create and update mobile apps.

Application Servers

TheAppBuilder Application Servers host the back-end Web Services, Application Logic and Database that together provide the 'glue' layer between the App Toolkit and Mobile App Clients deployed to end users mobile devices.

The underlying web services store and serve the app structure definition and content in a JSON based format. All changes made via the toolkit result in an update to the app definition and the web services manage these updates out to end users mobile devices.

Server Hosting and Data Location

Rackspace, a global leader in enterprise grade infrastructure host TheAppBuilder Servers in both the USA and EU (UK). We utilise dedicated servers and firewalls from Rackspace to retain complete control over our operating system and application stack whilst leveraging Rackspace's extensive security, physical network and support infrastructure. We are delighted to report we have not experienced any server downtime or security breaches since we began using Rackspace in 2011, resulting in our ability to offer a 99.9% uptime commitment.

In tandem with our dedicated servers we manage Quality Assurance versions of TheAppBuilder Platform on Microsoft's Azure cloud services. These instances do not contain any client data but ensure we are equipped to deploy with more granular regional data controls where the customer demand is evident.

API

A secure API (Application Programmatic Interface) to the Application Server is available upon request. This API will enable 3rd party applications to automatically update mobile app content without the need for human intervention via the App Toolkit. Use of TheAppBuilder API will assume technical development skills on the part of the client familiar with integration to Restful / JSON / HTTPS interfaces and the client's own internal systems which they will be responsible for interfacing with.

App Download Servers

Upon creation of a new native mobile app, or on issuing a major update, TheAppBuilder generates the iOS IPA & Android APK binary files required for distribution to end users mobile devices.

These binary files can be distributed in a number of ways:

- TheAppBuilder's Secure Download Servers hosted by Rackspace (in the USA or EU/UK)

- 3rd Party Mobile Device Management (MDM) solution such as AirWatch & Mobile Iron
- ‘Public’ App Stores from Apple and Google

TheAppBuilder Downloads Servers are secured via HTTPS/SSL with optional username/password protection on the download link.

In the case of Public App Store distribution, TheAppBuilder can restrict app access via username/password authentication.

Development Approach

TheAppBuilder is built using best of breed technology using recognised industry standard tools. Utilising an integrated Microsoft technology stack (Server, Database & Xamarin) TheAppBuilder Team are equipped to develop cross platform apps (iOS, Android, etc.) powered by our own powerful Content Management System. For product development we follow an agile methodology delivering regular updates to our platform for all users rapidly responding to evolving market needs and technology trends. In practice, this means that our resources are deployed very efficiently with the outcome that we are able to spend more time working in partnership with our clients to explore and define enhancements and future releases.

4. App Distribution

Working to industry best practice for native iOS and Android apps, TheAppBuilder provides a comprehensive menu of distribution options. The key to successful distribution is understanding the advantages and disadvantages of each method and in turn understanding the impact these choices make. The best fit can then be selected on an organisation by organisation basis.

Irrespective of which options are selected for distribution, TheAppBuilder provides a single, short branded url or an SMS facility for promotion to all users to ensure the App experience gets off to a great start and the user is guided along the path. An example of this would be https://myapp.is/mymag/

Options

- Apple Distribution - Public or Private options for
    - Public App Store example: https://goo.gl/nnHhjP
    - Private via the Apple Volume Purchasing Program http://www.apple.com/business/vpp/
    - Mobile Device Management (MDM) solution such as Airwatch or Mobile Iron.
    - Direct download page provided by TheAppBuilder
- Android Distribution
    - Play Store
    - Mobile Device Management (MDM) solution such as Airwatch or Mobile Iron.
    - Direct download page provided by TheAppBuilder
- Windows
    - Web App provided via short branded url
    - Web App can be pre-pinned on corporate devices
    - Web App via vanity url

How we make our recommendations

As a part of every App project we present the options and agree the best mix of distribution methods. Often different methods are used in parallel when distributing to both personal and corporate devices. Factors that influence the choices are:

- Make up of user population
    - Company vs Personal devices
    - Android vs Apple vs Windows
    - Geographic spread
    - Employee vs Contractor vs External Stakeholder
- Existing company infrastructure
- Existing customer or public facing apps in stores
- Intended future use cases

TheAppBuilder team guide clients through the options, laying out the nuances of distribution methods. We do not make a recommendation at the proposal stage, as the relevant information is rarely available.

A note of 3rd party registrations and cost

Depending on the options selected and whether the business is already registered or not, the business may be required to register with the various App Store providers. Current costs are:

- Apple Developer Program - public/private App Store - £79 per year
- Apple Developer Enterprise Program - Private non App Store - £249 per year
- Google Play Store - $25 one off registration fee

5. User Management

At TheAppBuilder a few user management principles ensure quality is paramount.

1. The end user experience should be excellent throughout.
2. User management dashboard should be simple to understand and easy to use.
3. Information Security and Personal Data protection must always be considered and standards agreed.
4. Automation or semi-automation should be achievable and effective
5. Industry best practice should be in evidence at all stages

With these grounding rules in place, a variety of options exist as to how users can be managed on TheAppBuilder Platform. The chosen method is largely dependant on the accessibility of an organisation's user register, the user population access to existing technology and the internal IT resource available.

In our experience it is very unusual for a large enterprise to have a single iteration of Active Directory or even an Active Directory forest encompassing the entire company. Even where an extensive Active Directory tree is accessible it is uncommon to have more than 30-40% of employees 'on domain'

This presents the common scenario where 30-40% of employees have email addresses and domain access while the remainder have no access to a company email address or device and may not have access to any intranet or other digital asset. This is the environment in which TheAppBuilder has excelled offering an inclusive solution available to 100% of employees on their personal mobile devices. In particular clients such as Heathrow Airport, Scottish & Southern Energy (SSE) and Amey have managed to onboard a high percentages of previously disconnected work forces via their App.

User Roles

There are 3 distinct roles within TheAppBuilder platform.

App User

An app user is an individual who is granted permission to access a specific set of content via an app. They are able to access the content through one or more of the following, iOS app, Android app, and Web app. They can interact with the content in ways specified by the App Editor and Org Admin

App Editor

An App Editor, in addition to accessing content as an App User can also access TheAppBuilder Content Management System via any modern browser. An App Editor can create and manage content in a given app or app(s). They can also be authorised to send Push Notifications.

Org Admin

In addition to all App Editor permissions, an Org Admin can also manage organisation settings within the app. These include enabling Push Notifications or social features. The Org Admin also manages user access with the app for both App Users and App Editors.

Onboarding and removing users.

The following options are not mutually exclusive and can be used in tandem to achieve 100% availability within an enterprise. Each of the options provides an automated or semi-automated process for the onboarding and removal of users. A facility is also provided for the manual addition and removal of users directly in TheAppBuilder, used in conjunction with each of the options.

In some cases an organisation may have existing manual procedures for starters and leavers in regards to IT systems. TheAppBuilder user management dashboard is very easy to use and will align with most manual procedures.

The options detailed below are designed to align with existing databases and as such no separate process would be required to cleanse redundant records. However if existing databases in the organisation are not considered to be accurate it is simple to remove users instantly within TheAppBuilder CMS.

Option 1 - Self registration - no integration required.

Providing a user friendly method for employees to self register on the app is both an efficient use of IT resource requiring little if any on-going IT involvement, and also a familiar process for employees who are accustomed to similar experiences in consumer apps.

Users without Email

Where users do not typically have an organisation email address or an Active Directory identity, TheAppBuilder provide a mechanism for users without email (UWEs) to register for the App using data extracted from the corporate HR database or other databases.

1. Enterprise provide a CSV file which includes a unique identifier + at least one other 'secret' which are available via an export of HR data
    a. This is typically encrypted and shared with TheAppBuilder via sftp or other secure file sharing process.
    b. Examples of unique identifier include employee id, payroll numbers or other known identifier.
    Examples of the 'secret' include a few digits from NI Number or Social Security Number, Date of Birth or other internal references.
    c. There is an option to require more than 1 'secret'
    d. Upload can be scheduled at an appropriate frequency
2. TheAppBuilder establishes and maintains a secure registration database consisting of the data included in the CSV
3. Users, upon accessing the App for the first time are prompted to register, entering the unique identifier + the appropriate secret(s) + a personal email address or mobile number and to create a password.
    a. Email or mobile number is required to enable the user to reset their password. This can be communicated on screen to provide some comfort.
    b. There is the option to use a One Time Password via SMS also.

4. User will now be logged into the app and can login using email address or other username and password in the future.
5. The user is now created on TheAppBuilder user table and administrators on TheAppBuilder Platform can manage their permissions.
6. Subsequent uploads of the CSV automatically cleanse the user table; access is instantly revoked for employees leaving the business.

Users with Email

For users who have a company email address the simplest way to verify their identity is with an email verification loop as follows:

1. Enterprise provide a CSV file which includes a list of approved email domains, i.e. @yourcompany.com This upload can be scheduled at an appropriate frequency
2. Users, upon accessing the App for the first time are prompted to register by entering their work email address and creating a password.
3. Assuming the email contains an approved enterprise email domain, a verification email is sent to the user to confirm they have current access to the specified email address.
4. Upon clicking on an activation link the user will now be logged into the app and can login using their email address and password in the future.
5. The user is now created on TheAppBuilder user table and administrators on TheAppBuilder Platform can manage their permissions.
6. Subsequent uploads of the CSV automatically cleanse the user table; access is instantly revoked for employees leaving the business.

Option 2 - Automation via API

Where an internal development resource is available the maintenance of the secure registration database or the user table can be automated via a REST API eliminating the need for CSV uploads.

As mentioned previously TheAppBuilder approach to automation is to replicate manual processes via the provision of a REST API. This applies to both content management and user management processes.

Option 3 - Single Sign On (SSO) with established cloud services.

Where required TheAppBuilder can provide the facility for users to login using their existing cloud based directory services. The supported services are Office 365 and Google for Work. Other services such as Workplace by Facebook will be monitored and the facility provided if and when the service is proven and the demand is sufficient.

Option 4 - Active Directory Integration

Where an enterprise has a sufficiently mature Active Directory infrastructure and the internal resources available to work in tandem with TheAppBuilder Team, Active Directory integration using SAML 2.0 is available.

Powerful user controls

A robust on-boarding, management and removal process is the bedrock that enables the possibility of powerful functionality. Whichever on boarding and removal options are chosen TheAppBuilder provides an easy to use dashboard for managing users access to content distributed via the app.

As standard TheAppBuilder platform supports:

- Simple profile creation and management by app users
    - Display name
    - Profile picture upload
    - Password management
- Control of which users / user groups can access specific content

Confident in the security of data and identify of the users, it is possible to progressively increase collaboration from a simple like / dislike function to rich commenting which can include images or video and eventually to moderated or pre-authorised content creation.

6. Metrics

TheAppBuilder platform leverages Google Analytics to provide very comprehensive analysis of how apps are used.

Google Analytics is a comprehensive platform tracking a vast array of different data, including new vs returning users, individual page views, flow through the app, what documents/videos etc. have been accessed, spread of use across various devices, mobile vs. desktop and a host of other information.

There are a variety of ways of consuming the data from Google Analytics. The options include creating dashboards, exporting data as csv files or visually as pdfs. You can opt for high-level graphical representations or granular, clickable tables. There are also mobile apps that you can use to track your stats on the move.

7. Support and on-going relationship

Support

TheAppBuilder provide direct support for all users of TheAppBuilder Platform who are in turn trained to provide support to end users of the app. Support is provided via a dedicated helpdesk. Optionally, TheAppBuilder can also provide direct support for end users in addition to supporting the platform users.

Professional Services

As with all leading SaaS platform providers, TheAppBuilder team provide a range of professional services that can be tailored to customer requirements. The responsibilities shared between TheAppBuilder team and each client can be thought of as a sliding rule; there are certain steps that each side are always responsible for, however there are many items that an organisation may choose to manage internally. These flexible items include asset and content design, app structure creation, content planning and population. Each step of the way TheAppBuilder team can provide services to scaffold and support the client endeavours or to work on their behalf.

Project Delivery

Rapid, high quality delivery of enterprise apps is a core capability of TheAppBuilder team. The extent of Project Management required varies on a project-by-project basis; nevertheless TheAppBuilder assigns an experienced project manager to every client delivery project. TheAppBuilder Project Manager will lead a team of consultants, content editors, and designers as necessary to successfully deliver the project. Additionally the project manager has direct access to TheAppBuilder Development Team where each client app build is incorporated into the existing agile development process.

Relationship Management

Beyond the day-to-day support of the platform, the Client Services team provide a point of contact and relationship for each client. The Client Services manager will lead regular app reviews and provide on-going guidance at a strategic and tactical level ensuring TheAppBuilder is meeting and exceeding business requirements. They will also be the point of contact for extension and renewal of licences and other commercial discussions.

Product Development

At TheAppBuilder our approach is always collaborative and customer focused. As a result clients have direct access to our Product Owner who leads TheAppBuilder Product Team in specifying and delivering product updates.

Clients of TheAppBuilder are considered to be part of the wider product team and are invited to engage with TheAppBuilder through a variety of channels including:

- Client Forums that include offline and online events.
- Access to beta releases of new features
- Occasional surveys
- Conference calls with the Product Team

In short our clients ideas and feedback are the most significant influence on the Product Roadmap and as such we work hard to create and maintain a high trust, high respect relationship with all our clients.