

Principles for the design, development and deployment of mobile apps

Final

June 2018

v1.0.1

PUBLIC

Document details

Security classification	PUBLIC		
Date of review of security classification	June 2018		
Authority	Queensland Government Chief Information Officer		
Author	Queensland Government Chief Information Office in collaboration with the Department of Housing and Public Works		
Documentation status	Working draft	Consultation release	<input checked="" type="checkbox"/> Final version

Contact for enquiries and proposed changes

All enquiries regarding this document should be directed in the first instance to:

Queensland Government Chief Information Office

qgcio@qgcio.qld.gov.au

Acknowledgements

This version of the *Principles for the design, development and deployment of mobile apps* was developed and updated by Queensland Government Chief Information Office in collaboration with the Department of Housing and Public Works.

Feedback was also received from a number of agencies, which was greatly appreciated.

Copyright

Principles for the design, development and deployment of mobile apps

© The State of Queensland (Department of Housing and Public Works) 2018

Licence



This work is licensed under a Creative Commons Attribution 4.0 International licence. To view the terms of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. For permissions beyond the scope of this licence, contact ggea@qld.gov.au.

To attribute this material, cite the Queensland Government Customer and Digital Group, Department of Housing and Public Works.

The licence does not apply to any branding or images.

Information security

This document has been security classified using the Queensland Government Information Security Classification Framework (QGISCF) as PUBLIC and will be managed according to the requirements of the QGISCF.

Contents

1	Background.....	4
1.1	Purpose	5
1.2	Audience.....	5
1.3	Applicability.....	5
1.4	Scope	5
2	Principles for the design, development and deployment of mobile apps.....	6
2.1	Customer Experience	6
2.2	Governance and management.....	11
2.3	Development considerations.....	11
2.4	Publishing and distribution	15
2.5	Effectiveness measures and improvement.....	17
3	Internal government use of mobile apps	18
4	Mobile app checklist.....	18
5	Review	18
Appendix A	Definitions	19
Appendix B	Mobile apps checklist	22

1 Background

For Australians, the mobile phone is the most popular and most frequently used device to go online (84% of adult internet users), followed by laptop computers (69 per cent), desktop computers (54 per cent) and tablet computers (50 per cent). Communication apps (such as Facebook, WhatsApp, Skype, Snapchat and FaceTime) also prove popular with 88 per cent of online Australians using apps to communicate via either messages or voice or video calls, particularly with family and friends¹.

The growth in smartphone and apps usage presents an opportunity for governments to better engage with customers to make their interactions with government simpler and more efficient. The Queensland Government has already developed a number of apps to make it simpler and faster for customers to access services such as Housing Assist Qld, QSchools, MyTranslink and Policelink Queensland. Recent research also suggests that “Australians are suffering from ‘app fatigue’” with consumers having on average around 24 apps on their smartphones but only using a quarter of them on a daily basis. Two-thirds of Australians surveyed agreed that they had a significant number of ‘dormant’ apps². Therefore it is important that the mobile apps that are being created are personalised, contextual and provide value to the customer.

Customers will use [mobile apps](#) that are relevant and make life easier thereby enhancing the customer’s experience. A mobile channel does the following:

- provides the Queensland Government with the potential to engage with their customers in real-time, by location with profile information
- makes it simpler, more efficient for customers to contact the government and offers tools to make their life easier while using products or services
- uses geolocation and beacon technology to push notifications and promote products and services
- provides customers the mobility to do the same things they would traditionally have done sitting at their desks, but on their mobile devices.

The Principles for the design, development and deployment of mobile apps aligns with the Queensland Government’s DIGITAL1ST Strategy enabling the vision to make government services simpler, clearer and faster for Queenslanders.

This Principles document covers the key considerations for making a decision to use mobile apps for service delivery, and the key implementation considerations for the design, development and deployment of mobile apps. .

A [Queensland Government Channel Management Strategy](#) has also been developed to support the delivery of efficient and effective customer centric channels.

¹ <https://www.acma.gov.au/theACMA/communications-report> (2016-17)

² EY Sweeney – Digital Australia: State of the Nation: The 2017 Edition <https://digitalaustralia.ey.com/>

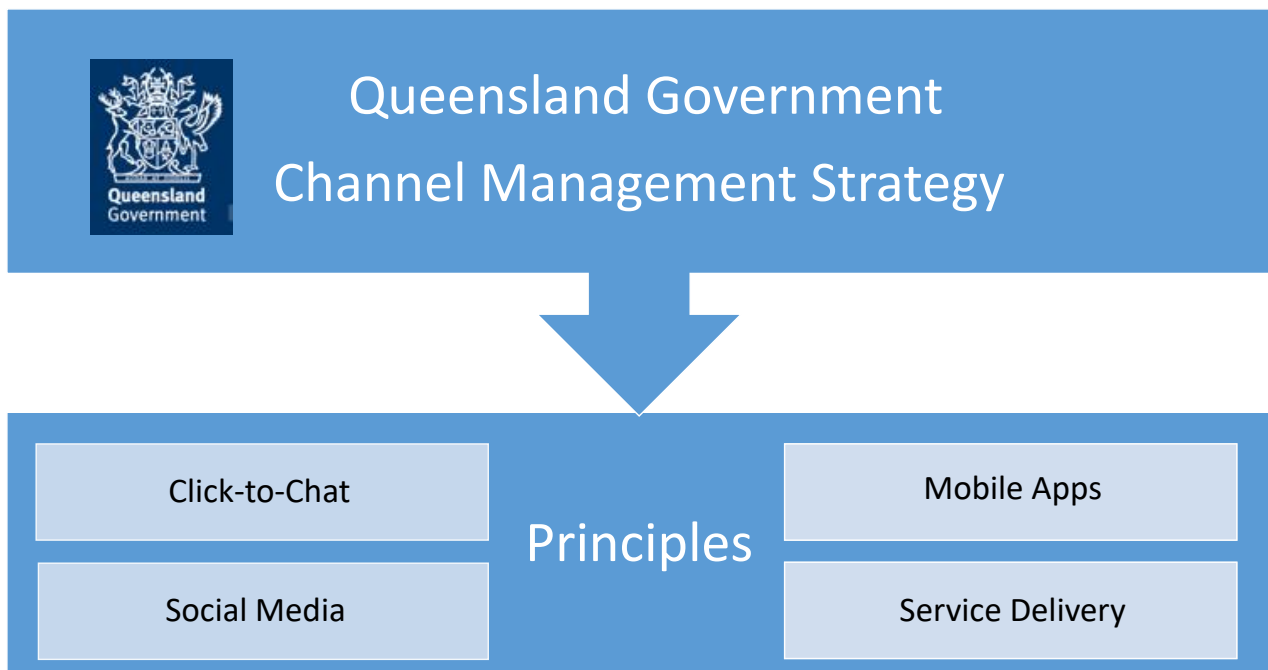


Figure 1

1.1 Purpose

This document provides the guiding principles to support a consistent Queensland Government approach for the design, development and deployment of mobile apps to make it easier for customers to access government information, services and campaigns. The principles are whole-of-government overarching principles and agencies should use them as a guide when: deciding whether to use mobile apps for service delivery, and for designing, developing and deploying mobile apps.

1.2 Audience

This document is primarily intended for:

- business owners delivering services
- business analysts
- project managers
- service delivery providers
- software developers including mobile app developers.

1.3 Applicability

These principles apply to all Queensland Government departments (as defined by the [Public Service Act 2008](#)). Accountable officers (not already in scope of the Public Service Act 2008) and statutory bodies under the [Financial and Performance Management Standard 2019](#) must have regard to these principles in the context of internal controls, financial information management systems and risk management. Please see the [Applicability of the QGEA](#) for further information.

1.4 Scope

This document relates to the following Queensland Government Enterprise Architecture (QGEA) domains:

Classification framework	Domain
Technology	T-2.1.3 Applications development tools and environments T-3.3.2 Tablet PCs T-3.3.3 Handheld devices T-3.4.9 Mobile data computers

Table 1: QGEA domains

References to the Queensland Government website and www.qld.gov.au includes all franchises including Business and Industry Portal (BIP) www.business.qld.gov.au.

2 Principles for the design, development and deployment of mobile apps

2.1 Customer Experience

2.1.1 Services are delivered through the most appropriate channel for that service

Rationale	<ul style="list-style-type: none"> Not all services are suitable for delivery across each and every channel. It's important to ensure the appropriate channel(s) are chosen to deliver the service to ensure the best outcome for the customer and the agency delivering the service.
Implications	<ul style="list-style-type: none"> The information provided in a particular way may not be suitable for delivery via that channel. The customer may not receive the best experience. It's important to note when deciding what channels are best suited to deliver the services, customer preference should also be considered and choice offered to complete the service. Refer to 'Attachment 1 – Channel choice guidelines in the Queensland Government Channel Management Strategy' to assist in determining the suitability of the channel for the services to be delivered.

2.1.2 Customer Centric approach to be used

Rationale	<ul style="list-style-type: none"> The Queensland Government customer-centric (or human-centered design) approach to service delivery should be used when designing, developing and deploying mobile apps.
Implications	<ul style="list-style-type: none"> Mobile apps should be managed according to four customer experience principles: be clearer; be helpful; make it easier; and do what you say. Mobile apps should not replace other official channels but complement them. Mobile apps content should align with that available through other channels. It should be customer-centric and form part of an omni-channel/cross-channel service delivery to create a unified experience across channels and services, that enables customer transactions to be started in one channel and completed in others. Interactions with customers should follow Customer Experience standards and conform to agency complaint management protocols.

2.1.3 Mobile-optimised website before mobile apps

<p>Rationale</p>	<ul style="list-style-type: none"> • A mobile app should only exist if it is the best way possible to help people complete tasks better and faster. An alternative such as creating a mobile-optimised website is easier to adapt to changing technology and future needs. Websites designed to adapt to mobile use can perform many of the same functions as apps, while reaching a greater audience.
<p>Implications</p>	<ul style="list-style-type: none"> • A customer's experience on a mobile device is extremely important as it allows the government to stay connected to its customer. Therefore it is essential to deliver a mobile-optimised website to ensure the customer can access information that is easy to read and navigate on a mobile device. • The default position is to use mobile-optimised websites for the provision of government services before considering mobile apps. All agencies should be delivering online service content through www.qld.gov.au which is a mobile-optimised website. • There are generally three types of mobile apps to consider for development: hybrid, native and web (see 'Appendix A: Definitions'). A hybrid mobile app is preferred to a native mobile app as it generally provides increased flexibility and scalability and requires lower development and maintenance costs. A web app (like a website) may be more appropriate when there is no need to use the core hardware attributes of a mobile device (e.g. accelerometer, fingerprint scanner, etc). See 'Appendix A: Definitions' for understanding the difference between the different types of apps. • There is no one correct channel to implement digital services, i.e. website or mobile app. Industry research supports either approach. Customer centric 'fit for purpose' is the primary consideration for Queensland Government (see section '2.1.4 Mobile apps are fit for purpose'). • In some cases requiring a customer to find an app, download it and then engage with it may be too much to ask, creating a bottleneck for engagement and resulting in a high abandonment rate. Often, linking to a web-based service may be the path of least resistance, resulting in a more consistent customer experience and a higher level of engagement. A mobile app also requires a significant amount of effort to build and maintain. The best 'fit for purpose' channel should be assessed on a case-by-case basis to determine the right approach and based on customer research (see also section '2.1.5 Justifiable need evidenced in exploratory research'). • Key considerations for assessing whether mobile apps are fit for purpose are further detailed in section '2.1.4 Mobile apps are fit for purpose'. • The decision to develop mobile apps should be adequately justified, clearly documented and presented when scrutinised.

2.1.4 Mobile apps are fit for purpose

Rationale	<ul style="list-style-type: none"> Customers will use the mobile app if it is relevant, provides value and makes it easier, thereby enhancing their experience and usage rates.
Implications	<ul style="list-style-type: none"> The mobile app needs to be customer-centric fit for purpose, i.e. meets the customer's needs (based on customer research, see also section '2.1.5 Justifiable need evidenced in exploratory research') whilst maintaining or reducing operating costs. Government mobile apps should perform some unique role or offer some unique insight that only the government can offer. They should not merely present static information. Agencies shouldn't create apps out of data third parties could release and develop (see also section '2.3.1 Market develops before government develops'). Key considerations for determining whether mobile apps are fit for purpose include: <ul style="list-style-type: none"> Customer research supports a need and level of demand for a mobile app. A mobile app enhances the customer's experience by making it simpler and more efficient to access information and services and complete transactions. It allows the customer to engage with government at a time and place convenient to them. It has a value add for the customer, eg. the ability to use their phone's inbuilt camera or Global Positioning System (GPS). It connects the customer deep into the service and can provide a more personalised and timely service for the customer. It adds intrinsic value to the customer, where repeated use is frequent, high value and high reward (e.g. features such as push notifications, fulfilment tracking, real-time information, location based context etc. can contribute to the repeated and continued use of the app). Finding, downloading and installing the app is simple and easy and does not act as a blocker to engaging with the service.

2.1.5 Justifiable need evidenced in exploratory research

Rationale	<ul style="list-style-type: none"> Development of a mobile app has been identified as a customer need through customer research. It is imperative that the app has been co-designed with customers and user tested to ensure sufficient take up by the customers and government return on investment.
Implications	<ul style="list-style-type: none"> Agencies will conduct appropriate exploratory market research to identify the need for mobile app development i.e. consumer research, co-design and user testing within the government and in the market that address similar business needs. This provides a level of confidence that there will be sufficient customer take-up to warrant government investment. A decision to continue development despite these similarities should be adequately justified, clearly documented and presented when scrutinised.

2.1.6 Agencies should work together to use existing mobile apps and sometimes develop mobile apps, to improve and enhance the customer experience.

Rationale	<ul style="list-style-type: none"> Working collaboratively with agencies to provide the best experience for the customer by using and enhancing existing mobile apps.
------------------	--

<p>Implementation guidance</p>	<ul style="list-style-type: none"> • The choice of how to implement an app should be the result of a clear decision process that is best for the customer and best for government (e.g. budget considerations, device/platform specific requirements and enhancements, time to market). • Agencies should work together to develop mobile apps with similar and relevant information based on their audience rather than developing multiple standalone apps. • No two Government mobile apps should ever serve the same purpose. To avoid this, assess all ideas first against the existing government mobile apps (both internal (See section '3 Internal Government Use of Mobile Apps') and external to government (see section '2.2.2 Government-developed mobile apps should be registered on the Queensland Government mobile apps register'). Agencies should consider approaching the relevant owners of that app to discuss any possibilities for collaboration or re-use. The aim is to reduce, wherever possible, duplicated effort, time and resources.
---------------------------------------	---

2.1.7 Compatible and consistent with other channels

<p>Rationale</p>	<ul style="list-style-type: none"> • Service design needs to be considered for the mobile channel along with existing channels to ensure consistent delivery of information and services.
<p>Implementation guidance</p>	<ul style="list-style-type: none"> • Mobile as a channel should be considered for delivering services if it is the most appropriate channel for that service. When designing or redesigning services, whole-of-government personas as identified in the Customer Experience Strategy should be used as well as the guiding principles: Be clear; Be helpful; Make it easier; and Do what you say to ensure enhanced customer experience. A Human-Centered Design Toolkit is also available by emailing ossxcx@dsiti.qld.gov.au. • The mobile app needs to be process mapped and developed in conjunction with existing service delivery channels to ensure alignment and consistency with business logic. For example, the app description text within the app store (Apple, Google Play or similar) should use consistent government editorial style guide and language to that used at the service outlets, in the phone scripts, and on www.qld.gov.au. • Ensure the app is designed for the intended device. • A minimal viable product (MVP) methodology should guide and inform the design, development and release policy of the app – rather than a single ‘big bang release’ event. The guiding principles of an MVP is to deliver early, deliver well and improve and enhance over time based on analysis and feedback. If the app fails early, it does so quickly and cost effectively and allows for incremental change in user requirements or change in business processes. An MVP release policy enables a mobile app to be released in a phased, cyclical, three-phased approach of ‘build, measure, learn’. • Ensure the mobile app complies with QGCIIO Information Standard 26: Internet accessibility requirements (and leverage wherever possible additional accessibility features provided within Apple iOS and Google Android that relate specifically to the customer/target market). • Agencies should also refer to the design guidelines provided by Apple and Google when designing their mobile app.

2.1.8 Mobile apps are free by default

Rationale	<ul style="list-style-type: none"> • Supports the public good, particularly if the same services are available online for free. If the app is free, it's also more likely that it will be downloaded and used.
Implementation guidance	<ul style="list-style-type: none"> • By default, all government mobile apps can be downloaded and installed on a device at no charge to the customer. • Agencies will have the autonomy to charge for service transactions e.g. licence and registration fees. However, these are charged as part of the exchange of products and services i.e. the licence. There should be no charge for downloading, installing and running the mobile app. • Any variations to this charging model will require strong justification. • Current Queensland Government pricing policies and principles will be consulted when considering these variations. See Full Cost Pricing Policy: A Queensland Government Policy Statement (Queensland Treasury 2010) and Queensland Government principles for fees and charges (December 2012) (Queensland Government employees only).

2.1.9 Customers should be informed of device data risks

Rationale	<ul style="list-style-type: none"> • It's likely that data captured by the customer's device may remain on their device or become property of government. This should be made known to the customer.
Implementation guidance	<ul style="list-style-type: none"> • Customer data captured by the mobile app may be used by the customer for other purposes, such as photos, calendar events, contacts etc. Wherever possible it should be made known to the customer that personal data captured for the purpose of engaging with government (through use of the app) may remain on their device and may expose personal information to others unknowingly. For example, taking a photo of a sensitive medical record may be instantly and unknowingly shared with family members if photo sharing within iPhone/iPad is turned on. Similarly adding a personal Community Services case worker contact to the device address book may be shared with others using your shared Android contact list. • Personal data may also be updated to other third parties' storage such as cloud storage services. Data may also be backed-up to a personal computer with shared access (e.g. backing up an iPhone or app specific data through iTunes). • Any mobile app that requires a customer interaction should include an offline syncing function to ensure regional and rural customers can continue to access and use the mobile app. • Any content or data that may be retained or become property of government should be made known to the customer. Any customer content or data that is captured by government will be managed and maintained appropriately. • Consideration should be given to the storage, ownership and accessibility of all data and the customer informed wherever possible showing clear instructions how to opt out or mitigate the data being stored on their device.

2.2 Governance and management

2.2.1 Apply appropriate governance

Rationale	<ul style="list-style-type: none"> Ensures effective use of government resources and funds by reducing duplication of resources and funds.
Implementation guidance	<ul style="list-style-type: none"> Appropriate governance should be applied to the development of any mobile app. This should be in accordance with the lead agencies' internal processes and corporate structure. The establishment of a project board, working group and/or technical advisory group should be considered to add transparency and rigor to the development process, ensuring implementation of the necessary customer service and technical standards and guidelines. The justification for the decision and necessary approvals must be clearly documented and presented when scrutinised.

2.2.2 Government-developed mobile apps should be registered on the Queensland Government mobile apps register

Rationale	<ul style="list-style-type: none"> Queensland Government mobile apps can easily be located.
Implementation guidance	<ul style="list-style-type: none"> All government mobile apps (both internal to and external to government) should be registered on the Queensland Government mobile apps register to support easy discovery and streamlined exploratory research for all agencies. A list of current Queensland Government mobile apps for customer download can be found on the Queensland Government website. Email online@qld.gov.au to register the Queensland Government mobile app. Also refer to sections '2.3.8 Apply appropriate analytics for monitoring the mobile app to gauge engagement and customer behavior' and Section '2.5.2 Measuring and reporting mobile apps customer engagement'.

2.3 Development considerations

2.3.1 Market develops before government develops

Rationale	<ul style="list-style-type: none"> Market developed mobile apps provide economic benefits (growth and job creation) through enabling innovative services and solutions and promotes new thinking. Agencies shouldn't create apps out of data third parties could release and develop.
Implementation guidance	<ul style="list-style-type: none"> The government actively collaborates with market partners before considering in-house mobile app development. The Queensland Government supports the market in the identification, development and deployment of mobile apps to address government business needs. The government should give consideration to the demarcation between the provision of service delivery (e.g. an app) and the end-to-end customer experience of the government service (e.g. the business of government). A government service should not be unintentionally divested from government by producing a mobile app. Documented due

	<p>diligence should be demonstrated to clearly define the roles and responsibilities of all stakeholders, vendors, external cloud hosted systems (e.g. Software as a service) and the like to clearly illustrate service delivery and business continuity (mitigation strategies in the event of technical change, organisational restructure or similar) that may affect the service experienced by the customer.</p> <ul style="list-style-type: none"> • A decision to continue development despite work-in-progress in the market or strong appetite in the market to address the business need, should be adequately justified, clearly documented and presented when scrutinised. • Consideration should also be given to the ongoing costs, support and resources required to maintain the mobile app. • There are many options available to promote external mobile app development using open data and exposed application programming interfaces (APIs) such as: <ul style="list-style-type: none"> - Premier's competition - Appfest - GovHack - Queensland Government app competition - Partnerships with universities - Partnerships with external companies - Internal public servants • These methods should be used when a mobile app has been identified as fit for purpose as per section '2.1.4 Mobile apps are fit for purpose' and where '2.1.5 Justifiable evidenced in exploratory research' has been conducted.
--	---

2.3.2 Actively address security and privacy concerns

Rationale	<ul style="list-style-type: none"> • Customer trust is essential to maximise uptake of digital channels and any failure on any single channel could reduce trust and jeopardise digital transformation, innovation and online service delivery.
Implementation guidance	<ul style="list-style-type: none"> • Mobile apps will seek the least amount of privileges on the device that it is installed on. For example, write access to the device's data store should not be sought unless it is essential for the mobile app to perform its functions. • Mobile apps users should be given clear, specific and complete notice on how the agency will use and disclose personal information collected by the mobile app, including the device features (eg camera) the app requests access to and the reasons for seeking these permissions. Strategies for giving an effective notice include using short form notices where possible, putting important information up front with links to more detailed explanations, or using graphics, colour or sound to draw attention to notices. • Personal information can only be transferred outside Australia (for example, storing or backing up data in a cloud environment hosted overseas) in circumstances permitted by the Information Privacy Act 2009. A relevant permission is that the mobile app user expressly consents to the transfer.

	<ul style="list-style-type: none"> • Development of mobile apps should be conducted in a fully transparent manner to assess the privacy impacts of mobile apps at the development stage to identify and plan in line with the public service code of conduct and relevant legislation such as the Information Privacy Act 2009 which promotes government accountability and public trust. • The Queensland Office of the Information Commissioner (OIC) has developed guidelines regarding Privacy and mobile apps which all agencies should consider. • It is important to design a mobile app with privacy in mind from the outset. Mobile apps should protect information during collection, transfer and storage and have security controls and testing practices, supported by a strong information governance framework. Information Standard (IS18) Information Security should be adhered to when accessing data (e.g. personal health information compared to non-identifiable information). • A Privacy Impact Assessment (PIA) should be completed to enable agencies to identify personal information they intend to collect and consider how they will manage it. The PIA is a living document as agencies should reassess the privacy impacts of the mobile app regularly, for example, when they update the app or release new features to identify vulnerabilities and manage their privacy obligations. • Agencies should ensure that personal information collected from mobile apps is protected against: loss; unauthorised access, use, modification or disclosure; and any other misuse. This includes testing each app for vulnerabilities before deploying it and at key stages of its life.
--	---

2.3.3 Develop and publish authentication and data APIs for government services

Rationale	<ul style="list-style-type: none"> • To enable market participation and innovation, agencies should consider likely future requirements to publish authentication and data APIs for government services.
Implementation guidance	<ul style="list-style-type: none"> • Queensland Government open data should be used when appropriate. • Agencies should consider the sharing of authentication and data APIs as appropriate for future requirements to support the 'Market develops before Government develops' principle (section 2.3.1). • It will be possible for vendors to create API code for re-use and contribution for the benefit of all stakeholders. • Government and market-developed mobile apps should access government data through established, appropriate and secure authentication and data APIs.

2.3.4 Develop for a wide range of platforms by considering the mobile app audience

Rationale	<ul style="list-style-type: none"> • To ensure flexibility of the different platforms available for use.
Implementation guidance	<ul style="list-style-type: none"> • All mobile apps should at the very least, be deployed on Apple's iOS and Google's Android platforms. • Agencies will consider its audience's mobile device usage when deciding on which platforms to support. • The architecture/platform for the mobile app should be designed for reusability.

- Users unable to take advantage of a mobile app must not be disadvantaged and must be able to get the relevant information or service through other channels.

2.3.5 Mobile app intellectual property is open source by default

Rationale	<ul style="list-style-type: none"> • Fosters innovation with its ability to be modified and improved.
Implementation guidance	<ul style="list-style-type: none"> • By default, the Queensland Government will apply open source licenses to its mobile apps. For further information see the QGEA Open source software policy. • Departmental discretion should be applied if any of the following are prohibitive or pose a risk to customers or government: <ul style="list-style-type: none"> – Intellectual property rights – Vendor contractual obligations – Licensing issues – Classification restrictions based on Information security policy (IS18:2018). • Any variations to this Principle including any discretionary reasons should be documented.

2.3.6 Consider government branding

Rationale	<ul style="list-style-type: none"> • This portrays a consistent, holistic and seamless government experience.
Implementation guidance	<ul style="list-style-type: none"> • By default, the Queensland Government will publish its ownership of its mobile apps on the relevant app stores and mobile app description. • When designing the visual look and feel of the mobile app, the user interface will primarily be influenced by one of the following three existing visual guides: <ul style="list-style-type: none"> – Mobile single website experience (SWE) at www.qld.gov.au and Business and Industry Portal (BIP) – Community engagement campaigns (e.g. join the drive campaign) – Non-government (behavioural change outcomes) (e.g. quit smoking, sun safety etc.). • Further information can be located on the Queensland Government corporate identity website. • Any variations to this require documented justification to be presented when scrutinised.

2.3.7 Consider offline syncing

Rationale	<ul style="list-style-type: none"> • The app has been developed with network connectivity issues in mind. Customers may engage with the mobile app in and outside of network coverage and the app development should give thought to this.
Implementation guidance	<ul style="list-style-type: none"> • The mobile app will be developed in a way to cater for offline activity and reduce wherever possible frustration for the customer being outside a mobile coverage area. For example, if a customer completes a form within the mobile app without network connectivity they should be able to submit the form as soon as they return to network coverage. If the service is based on their geolocation and lack of network coverage prohibits this happening automatically, the customer should be able to manually select their location and be provided with contextual information (which should

be updated with live data if possible when they return to a network coverage area).

2.3.8 Apply appropriate analytics for monitoring the mobile app to gauge engagement and customer behaviour

Rationale	<ul style="list-style-type: none"> To enable monitoring of the mobile app when it goes live, it is important to set up analysis to monitor the mobile app (see also Section '2.5.2 Measuring and reporting mobile apps customer engagement').
Implementation guidance	<ul style="list-style-type: none"> Agencies should apply appropriate analytics for monitoring the mobile app. To do this agencies should have fit-for-purpose monitoring and analysis code applied within the app that meets their business need. In addition, it is recommended that the Google Analytics 360 is also implemented and tested. This additional tracking analysis code will feed into central business intelligence data, helping to assist in designing improved, cross-channel services for customers. Agencies should consult with the Channel Improvement team at online@qld.gov.au to discuss their measurement requirements

2.4 Publishing and distribution

2.4.1 Agencies should use official 'Stores' for public app distribution

Rationale	<ul style="list-style-type: none"> To ensure safe and secure distribution of apps, official app stores should be used for public app distribution.
Implementation guidance	<ul style="list-style-type: none"> It is recommended that apps are distributed using official channels. At the time of writing, the following app stores are the official distribution channel for their respective platform/operating system: <ul style="list-style-type: none"> Apple: 'App Store' (https://developer.apple.com/app-store/) Google: 'Google Play' (https://play.google.com/store) Microsoft: 'Store' (https://microsoft.com/store)
	<ul style="list-style-type: none"> The practice of 'sideloading' should be avoided at all costs to prevent viruses, phishing and other serious security breaches.

2.4.2 Agencies should consider using 'Enterprise Stores' for internal app distribution

Rationale	<ul style="list-style-type: none"> Enterprise mobile apps, developed or purchased for enterprise use (i.e. business of government, not provision of public facing services) should not be distributed publicly using an app store.
Implementation guidance	<ul style="list-style-type: none"> It is recommended that agencies setup an Enterprise Store to manage their internal mobile apps for the following benefits: <ul style="list-style-type: none"> Privacy and security: ensuring internal apps and associated information is not in the public domain. Expedite release cycle: apps can be updated and distributed quickly without lengthy review systems (e.g. Apple reviews apps each time an update is submitted for release) Financial consolidation: in addition to mobile device management (MDM) and additional Mobile application management (MAM) with Apple, Google, Microsoft (or a third-party aggregator), paid apps can be managed and deployed from within corporate networks.

2.4.3 Agencies should use the same developer account for all mobile apps

Rationale	<ul style="list-style-type: none"> Customers should easily be able to find other apps by the developer.
Implementation guidance	<ul style="list-style-type: none"> It is recommended that agencies use the same developer account to enable the customer to find other apps developed by the same developer. Agencies are encouraged to use the official “Queensland Government” developer account available in either the Apple Store or Google Play App Store by sending an email to the Online Products mailbox at online@qld.gov.au. Specific agency development accounts are common, however this practice will become fractured over time through machinery of government changes where agency names and remits change over time. It also makes it difficult for customers to easily access other relevant Queensland Government apps when published across different agency development accounts. Wherever possible, using a shared development account or naming convention should be considered to maximise customers being able to search for and find official Queensland Government apps within their store of choice. Multiple developments within the same agency is also considered poor practice (e.g. two Apple developer accounts, both publishing apps into the store) as well as having different naming conventions across multiple app stores (e.g. different naming conventions across Apple and Google stores).

2.4.4 App store descriptions should be fit for purpose

Rationale	<ul style="list-style-type: none"> Customers should have a very clear understanding of what an app does, how it will benefit them and why they should download and use it.
Implementation guidance	<ul style="list-style-type: none"> Each app store provides functionality to promote their app effectively. Design thinking and customer first principles should be applied to the strategy, content, design and customer journey of the app store content. For example: <ul style="list-style-type: none"> Consider the device the app will be found on such as smartphone, tablet, digital media player, smartTV or computer. Each platform has different design and content constraints and should be researched and considered (e.g. Apple and Google app stores have design variations across devices which impact on the way content is presented to the customer). Consider the platform the app will be found on such as Apple, Android or Microsoft. Each app store has variation in content options, layout and presentation – equal weight should be applied to each platform and fit-for-purpose. Screenshots should match the current iteration of the app and be consistent across platforms. If video is available (e.g. video preview of the app functionality) it should be considered to enhance the customer’s value proposition. Customer journey mapping should be applied to content design. Consideration should be given to the following: <ul style="list-style-type: none"> Why and how the app augments and improves the existing service offering

- How to contact the app project team for support (not just a marketing or home page)
- How to make a suggestion, provide feedback or make a complaint

2.5 Effectiveness measures and improvement

2.5.1 Continuous improvement

Rationale	<ul style="list-style-type: none"> • Like all government services, mobile apps are not developed and forgotten. All mobile apps should form part of the continuous improvement plan for the multi-channel/omni channel delivery of the service.
Implementation guidance	<ul style="list-style-type: none"> • Special attention should be applied to mobile apps within a continuous improvement plan due to channel specific dependencies and influencing factors that may create discourse with service delivery and create a poor customer experience. • The Queensland Government website www.qld.gov.au is updated on an ongoing basis by the Queensland Government to cater for platform and browser technology updates. Smartphone platforms, operating systems and browsers are also updated frequently (which may impact the functionality of a mobile app), however these changes will not automatically be updated within the app unless vendors are contractually obligated to do so. This should be addressed prior to the development of the app and documented. • Any changes in service delivery need to be considered contextually for each channel of delivery. Any improvement should be considered within the mobile app and be supported by quantifiable research and customer insight feedback. • Section '2.5.2 Measuring and reporting mobile apps customer engagement' will also assist in the continuous improvement of the mobile app. • Provide options for customer feedback within the mobile app where possible.

2.5.2 Measuring and reporting mobile apps customer engagement

Rationale	<ul style="list-style-type: none"> • Measurement of mobile app engagement should be conducted regularly to help inform and determine improvements to mobile service delivery. Analysis should be both quantitative and qualitative.
Implementation guidance	<ul style="list-style-type: none"> • At the very least, platform analytics should be reported through Apple iTunes Connect (iOS) and Google App Analytics (Android). Analytics should report how many customers visited the app store promotion pages, how many customers downloaded the app, and the customer rating on the App Store and Google Play. • Mobile app reporting should occur at least annually and should be included in the Department's benefits tracking and realisation plan. • Mobile app reporting can be augmented with additional analytics platforms (such as Google Analytics 360, Adobe Marketing Cloud etc.) to establish insight into end-to-end customer journey. The use of funnels, goal completions and usage (e.g. time on page), can highlight

	<p>weaknesses that can identify areas of improvement (e.g. bounce rates, abandonment points, how many remained active over time etc.).</p> <ul style="list-style-type: none"> Agencies should consult with the Channel Improvement team at online@qld.gov.au to discuss their measurement requirements.
--	---

2.5.3 Marketing and communication considerations

Rationale	<ul style="list-style-type: none"> Marketing and communication of the mobile app should be considered to ensure the app is downloaded and used.
Implementation guidance	<ul style="list-style-type: none"> Consideration should be given to marketing the mobile app once it has been launched in consultation with departmental marketing and communications unit. Agencies could promote other agencies mobile apps via their own social media channels (and other appropriate channels). For example, Queensland Police Service (QPS) Facebook page could promote the State Emergency Services (SES) app during floods.

3 Internal government use of mobile apps

Mobile apps can be developed for internal government use by officers who for example, work out in the field. This ensures efficiencies, productivity and reduction in operating costs.

Mobile apps developed for staff allows the staff member uninterrupted access to tools and vital information for use in the field. This allows them to be more productive without the need to come to the office to complete and/or lodge paperwork. For example, a Community Recovery Worker might use a mobile app to lodge claims for financial assistance and link people in need with essential services from the field whilst reporting in real-time.

The above principles should also be used for the development of mobile apps for internal government use available at www.forgov.qld.gov.au.

4 Mobile app checklist

During the research, planning, scoping, developing, distribution and marketing of a mobile app, it is possible for key activities to be missed or not fully explored. [Appendix B: Mobile app checklist](#) has been developed to facilitate this.

5 Review

The mobile apps principles should be reviewed annually with input from all Queensland Government agencies and entities, including Franchise Teams.

Appendix A Definitions

Name	Definition
Application Programming Interface (API)	<p>An application programming interface (API) is a set of programming instructions and standards for accessing applications and data. Examples: Mobile app developers can access Amazon’s product information because Amazon released its product API. When someone buys a movie ticket online and enters credit card information, the movie ticket website uses an API to verify credit card information.</p>
Enterprise Mobile Application	<p>An enterprise mobile application is used when mobile apps are created or bought by individual organisations for their workers to carry out functions required to run the organisation (e.g. staff training, human resource functionality, corporate document management, job processing or case management).</p>
Hybrid mobile app	<p>A Hybrid mobile app is part native app and part web app. Like native apps, they live in an app store and can take advantage of the many device features available. Like web apps, they rely on HTML being rendered in a browser, with the caveat that the browser is embedded within the app.</p> <p>Hybrid applications are cross-platform and do not require different versions for iOS and Android. The development process is simple, which makes the speed to market fast.</p> <p>Hybrid mobile app content updates are available in one of two ways – when the app is updated and/or when the web content is updated. Maintaining a hybrid app is simple and can be done regularly.</p> <p>Developing hybrid apps is considered less expensive than native apps, as they require skills that build up on previous experience with the web.</p> <p>Example: QTenders, Health and fitness age calculator, VacciDate</p> <p>(source: https://www.nngroup.com/articles/mobile-native-apps/)</p>
Mobile app	<p>App is short for ‘application’. It can be defined as a software designed for use on mobile devices such as smartphones and tablets.</p> <p>The functions of a mobile app can be loosely categorised as <i>information retrieval</i> such as the QSchools app which allows a customer to locate the nearest Queensland school and contact details, <i>transaction-based</i> to support a customer’s experience in accessing goods and/or services (Crime Stoppers Queensland, SES, GraffitiSTOP) or <i>behavioural change/educational</i> such as the anti-bullying app, The Allen Adventure.</p> <p>Generally, mobile apps can be classified into the following types: hybrid mobile app, native mobile app and web app.</p>
Mobile-optimised website	<p>Also known as ‘responsive website design’. A website that has been designed and formatted to adapt dynamically across a range of computing platforms including desktops, tablets and smartphones. Mobile-optimised websites usually accommodate three screen layouts (i.e. states) to provide the best user experience across a wide range of screen sizes – smartphone, tablet and</p>

	<p>desktop. This is achieved by design elements and content being re-ordered, re-sized, removed or replaced to optimise the experience to the intended device.</p> <p>Mobile-optimised websites are not downloaded as an app from an app store and do not 'live' on a device. As the name implies they are HTML based websites that load and are viewed within the web browser on the mobile device (e.g. Safari, Chrome etc.). Mobile-optimised websites will only work within network coverage areas. Mobile-optimised website updates are available to everyone as soon as the website is updated on the internet.</p> <p>Responsive websites are able to determine the platform and device size when viewed and adapt their look and feel to best suit the user experience.</p> <p>Example: QParents; Queensland Government</p>
Multi-Channel	The provision of services by various channels in a connected and coordinated way, allowing access to government services and information.
Native mobile app	<p>Native mobile apps live on the device and are accessed through icons on the device home screen. Native apps are installed through an application store (such as Google Play or Apple's App Store). They are developed specifically for one platform, and can take full advantage of all the device features, eg. camera, GPS, accelerometer, compass, list of contacts, gestures, and notifications. Internet connection is not required for native apps to work.</p> <p>Native mobile apps provide fast performance and a high degree of reliability. However, native app content updates are available only when the app is updated within an app store. Games are usually native mobile apps.</p> <p>Native apps are considered more expensive than other types of apps as they require specialised expertise and more time to develop them. They are also complicated to maintain as ongoing changes to native apps require new versions to be developed and placed in the app store. Users are also required to keep downloading updates.</p> <p>Example: The Allen Adventure</p> <p>(source: https://www.nngroup.com/articles/mobile-native-apps/)</p>
Omni-channel	Service delivery across channels and services for example, provide the customer with a seamless experience whether the customer is shopping online from a desktop or mobile device, by telephone or face to face.
Sideloaded	Sideloaded is the process of transferring files between two local devices, in particular between a computer and a mobile device such as a mobile phone, smartphone PDA, tablet, portable media player or e-reader.
Web app	<p>Web apps are not real applications – they are websites that look and feel like native or hybrid apps but are run by a browser and accessed by selecting a URL (web address). A web app may be used when there is no need to utilise the core hardware attributes of a mobile device (e.g. accelerometer). By their very nature of being a 'web' app they will only function with internet connectivity.</p> <p>Web apps have high discoverability. A web app may also offer a more streamlined customer journey within a web browser (instead of the customer having to go to an app store, find the right app, download and install it).</p>

Maintaining a web app is simple and can be done regularly. Developing web apps is considered less expensive than native apps, as they require skills that build up on previous experience with the web.

Web apps are developed using tools, languages and code libraries that are typically used for website development. For example: HTML5, JavaScript or CSS. Device APIs are limited (e.g. geolocation).

Example: Gmail, Google Docs, Dropbox, Internet banking

(source: <https://www.nngroup.com/articles/mobile-native-apps/>)

Appendix B Mobile apps checklist

Research and planning

- Mobile app is the best channel for delivery of the service and is fit for purpose for the service delivery, the device and the intended audience/customer.
- Customer research has been conducted to assess the need and level of demand.
- Check online at <http://www.qld.gov.au/services/mobile/> to ensure the mobile app does not currently exist or is being progressed by another agency and could be leveraged off.

Fit for purpose – Key Considerations

- Mobile app is simple and easy to use to access information and services and complete transactions.
- Mobile app adds value, i.e. allows the customer to engage with government at a time and place convenient to them; ability to use their phone's inbuilt camera or GPS.
- Mobile app connects the customer deep into the service and can provide a more personalised and timely service for the customer.
- Mobile app adds intrinsic value to the customer, where repeated use is frequent, high value and high reward (e.g. features such as push notifications, fulfilment tracking, real-time information, location based context etc. can contribute to the repeated and continued use of the app).
- Finding, downloading and installing the app is simple and easy and does not act as a blocker to engaging with the service.

Customer centric design

- Mobile app has been co-designed with customers and user testing conducted.
- The Customer Experience guiding principles: Be clear; Be helpful; Make it easier; and Do what you say, were taken into consideration during the design.
- Mobile app is process mapped and developed in conjunction with existing service delivery channels.
- Mobile app is free by default.

Development

- Give consideration to the development/promotion of mobile apps using open data and exposed APIs.
- Consistent government editorial style guide and language used to that used in existing service delivery channels.
- Government branding is considered using the following three visual aids:
 - Mobile single website experience (SWE) at www.qld.gov.au
 - Community engagement campaigns
 - Non government.
- Consider Apple and Google design guidelines.
- Mobile app considers a wide range of platforms.
- Ensure the mobile app integrates with existing systems and processes.
- Consider offline syncing to enable access to data and content.
- Ensure thorough testing of the mobile app, inclusive of customers who may have limitations such as vision, hearing, speech, dexterity and cognition.

- Consider updates to the smartphone platforms, operating systems and browsers and ensure it is addressed contractually with the vendor prior to development.
- Capability to advise the customer if the customer's data is likely to be captured and may remain on their device or become the property of the government.
- Assess the privacy impacts at the development stage to identify and plan how the agency will meet the requirements of the *Information Privacy Act 2009* (Qld).
- Document how the agency considered privacy at key stages of developing and operating their mobile apps, for example, by completing a Privacy Impact Assessment.
- Ensure appropriate security measures are in place.
- Ensure appropriate reporting has been set up for the mobile app to enable monitoring and tracking to inform and determine improvements to mobile service delivery.
- Ensure monitoring and analysis code (such as Google Analytics 360) has been implemented, and tested. For further information email the Channel Improvement team at online@qld.gov.au.

Publishing and Distribution

- Ensure public facing apps are published on the appropriate official stores such as App Store, Google Play or Store.
- Ensure internal government facing apps are not published on official stores, but through an Enterprise store.
- Ensure apps are published using the same developer account 'Queensland Government' for all apps.
- Ensure store descriptions promote the app.

Prior to go live

- Ensure staff across all channels are aware of the app and have undertaken training of the mobile app and can assist customers if required.
- Reassess the privacy impacts of the app regularly, for example, when they update the app or release new features.

Marketing

- Consider how to market, promote and communicate the mobile app to ensure it is downloaded and used.

Post go live

- For public facing mobile apps, register the mobile app by email to: online@qld.gov.au for inclusion on the Queensland Government mobile apps register at <http://www.qld.gov.au/services/mobile/>.
- Mobile apps for internal government use should be added to www.forgov.qld.gov.au by emailing For Government at forgovcontent@dsiti.qld.gov.au.
- Conduct performance measures on the mobile apps to ensure its meeting the desired expectations.
- Ensure the mobile app is updated and maintained as required.