



TECHNOLOGIES

MOBILE STRATEGY

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Over the past decade mobile device usage in businesses has grown from a nice-to-have to a top priority. Municipalities and private utilities are no exception. The underlying business processes that support infrastructure asset management require daily collaboration between departments and enhanced office-to-site integration. This presents complex challenges for the enterprise. These can only be overcome through the application of a well-conceived mobility strategy.

This document lays out IMQS's strategy for developing mobile applications. This includes the browser-based IMQS Web application, viewed from either desktop or mobile devices, and also native mobile applications.

MOBILE WEB APP

With IMQS's service-oriented architecture, mobile is always first. Users can access the IMQS Web interface from any standards-compliant web browser. This means that users with Internet-enabled devices (tablets and smartphones) can access and modify data away from the office. This flexibility allows for superior operational performance, primarily in:

1. Process automation
2. Productivity improvements
3. Improved decision-making

DESKTOP WEB APP

Some IMQS product interfaces such as the Asset Register Editor were designed with a large viewport in mind. While tablet and phone screen sizes are limited, desktop users will have large screens, and they would want to utilize the mouse and keyboard. This table of IMQS product environments shows which products are recommended for which devices.

PRODUCT CLASSES	PRODUCT	RECOMMENDED ENVIRONMENT			
		DESKTOP WEB PLATFORM	MOBILE WEB PLATFORM	NATIVE MOBILE APP	(DEPRECATED) STANDALONE DESKTOP APPLICATION
VIEWER	TECHNICAL VIEWERS (BIG ⁶)	✓	✓		
VIEWER	ASSET REGISTER LITE	✓	✓		
EDITOR	ASSET REGISTER EDITOR	✓			
EDITOR	PROJECT CONTROL SYSTEM	✓			
EDITOR	ASSET CAPTURE AND VERIFICATION			✓	✓
EDITOR	ELECTRICITY EDITOR				✓
EDITOR	ALBION				✓
EDITOR	INCIDENT LOGGER LITE	✓	✓		
EDITOR	INCIDENT MANAGER	✓			
EDITOR	RESOURCE MANAGER	✓			
EDITOR	WORKFORCE MANAGER	✓			
EDITOR	MOBILE LOGGER			✓	✓
EDITOR / VIEWER	REPORTS	✓	✓	✓	✓

NATIVE APPS

Asset Capture and Verification are critical tasks in the asset management lifecycle. Poorly captured data leads to bad decisions and a lot of extra work. By isolating individual tasks in business workflows, users can achieve greater focus, make fewer mistakes, and provide better data. With native mobile apps we can create focused applications for discrete tasks, and provide high impact solutions for common problems.

In addition to appealing user interaction capabilities such as swiping styles, pinch and zoom, etc., mobile devices offer features such as GPS location services, file system access, cameras, and temperature and humidity meters. These features are typically only available to native mobile applications.

Tasks such as asset condition assessment via imaging or asset capture via barcode scanning require access to low-level device functionality. With native mobile apps we can integrate these features as endpoints in the IMQS architecture, and so extend the automation of tedious and error-prone data input tasks.

Another benefit of native applications is their ability to function offline. When users are in the field and Internet access is unavailable, applications can still allow data capture and provide input validation.

	DESCRIPTION	SUITABILITY CRITERIA	USABILITY
DESKTOP WEB PLATFORM	<p>Web based environment that can run in all major browsers including mobile platform browsers.</p> <p>This allows the application to be available independently of the operating system or mobile device.</p>	<p>Best suited for high intensity data applications.</p> <p>Supports high intensity data capturing with complex user interface screens.</p> <p>Not suitable to use this in a mobile environment.</p>	<p>Large display screen size.</p>
MOBILE WEB PLATFORM	<p>Web based environment that can run in all major browsers including mobile platform browsers.</p> <p>This allows the application to be available independently of the operating system or mobile device.</p>	<p>Best suited for low intensity data applications</p> <p>Supports low intensity data capturing (editing)</p> <p>Suited for viewing data in GIS, tabular data and reports required on-site.</p> <p>Not suitable for using the native capabilities offered by mobile devices.</p>	<p>Small display screen size</p> <p>Limited keyboard compatibility; only touch screen input available.</p> <p>Hardware limitation that impacts responsiveness</p>
NATIVE MOBILE APPLICATIONS	<p>Runs on the native operation system of the mobile device.</p> <p>Access to the native capabilities such as GPS, photo, audio, video, barcode scanning and motion sensing.</p>	<p>Best suited for users that need to perform specific tasks in a mobile capacity (on-site), where contextual data such as GPS, photo, video, audio and motion sensing is required.</p> <p>Offline capability, where no connection is available.</p>	<p>Small display screen size</p> <p>Limited keyboard compatibility; only touch screen input available.</p>
(DEPRECATED) STANDALONE DESKTOP APPLICATIONS	<p>Runs as an application in the desktop operating system environment.</p>	<p>Best suited for users that need to edit large data sets where robust hardware resources are not negotiable.</p> <p>Offline capability, where no connection is available.</p> <p>Example: data intensive GIS editing and analysis.</p>	<p>Large display screen size.</p> <p>Hardware resource intensive</p> <p>Primary use of input devices such as keyboard and mouse.</p>

All IMQS applications integrate with the same back-end product services across our architecture. These services follow the RESTful standard for publicly available APIs. This means we can create native apps on existing product services in relatively fast turnaround times.

Android OS has become the dominant mobile development platform. By building on Android's Java-based SDK, IMQS applications benefit from well-planned foundations, and can be ported to alternative platforms with relative ease. Our native mobile applications are all available through Google Play Store. As will all our products, authentication and authorization are required to access the full functionality.