



# How Alpha Anywhere Changes the Way People Work

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Delivering the 4 Critical Factors for  
Mobilizing Task-oriented Business Apps:  
UX, Offline, Integration, Security

# When Task Oriented Mobile Apps Work

There's a new generation of mobile enterprise apps on the horizon – task-oriented experiences that extend business ecosystems. Often developed by tech-savvy business analysts with little IT or programming support, these apps enhance employee effectiveness and productivity. With these apps, firms increase profits, cut costs, and drive business value by mobilizing the moments of engagement -- the points of contact where work gets done.

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## Expediting Connections

Task-oriented apps, sometimes called operational apps, capture information (including image, video, and sound) at the source and integrate with backend systems to change the ways people work. Consider these examples.

A large municipal agency is modernizing its elevator inspection and repair services by replacing proprietary mobile devices with Android-powered tablets. After downloading their daily schedules from an asset management system, inspectors work offline without network connections. They trouble-shoot problems, record results, note follow-up actions, and log times at job sites. Back in the office at the end of the day, they upload their activities to the enterprise reporting system. When deployed, this mobile experience will make elevator inspections more comprehensive, timely, and efficient.

A lifeguard staffing company is introducing a smartphone app for lifeguards to log their hours at 3,000 commercial pools across the US. The app recognizes

lifeguards' locations, clocks their work times, and seamlessly connects to the time-tracking system. The app also supports job scheduling and swapping. Once deployed, this digital experience will collect more data, faster, with less effort, and with greater accuracy than the current system.

Notice how these apps mobilize activities that once took added human effort, collect content in context, and connect to existing systems. Both are developed with Alpha Anywhere, a low-code, offline capable, rapid mobile application development and deployment platform from Alpha Software.

## Business Benefits of a Low-code Platform

What are the business benefits of Alpha Anywhere as a low-code platform? As Forrester Research, a recognized IT research firm, describes it, next generation tools such as Alpha Anywhere are coming to market that “rely on faster development techniques — visual development, automatic configuration and deployment, or user interface transcoding — [that] can speed delivery compared with coding.” Forrester goes on to explain, “We call these products low-code platforms and define them as: Platforms that enable rapid application delivery with a minimum of hand-coding, and quick setup and deployment, for systems of engagement.<sup>1</sup>”

Forrester recognizes an essential element of today's digital age: mobile work is a fact of business life. Companies must leverage their investments in web-based applications. They must enhance and extend the capabilities of their underlying business systems.

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<sup>1</sup> See: Clay Richardson and John R. Rymer, *New Development Platforms Emerge For Customer-Facing Applications*, Forrester Research, June 9, 2014, p.

It's no longer sufficient to simply shrink the experiences designed for full-screen web browsers into the smaller form factors of mobile devices. Successful mobile enterprise apps should not simply mobilize the full-screen experiences of legacy applications. Rather, business analysts and developers need to go back to the drawing boards, identify the critical steps in business processes, and mobilize value-adding tasks. Task-oriented apps are going to leverage various processes and activities within the legacy applications.

## Four Requirements for Mobile App Development

This is where a low-code platform accelerates the development of task-oriented apps. Alpha Anywhere delivers the capabilities in the four areas identified by Robert Desisto at the Gartner 2015 Application Architecture and Development Conference in Las Vegas<sup>2</sup> as base technical considerations for mobile app development:



### **User experience (UX)**

Focusing on performance and native capabilities, and encompassing both the tools and a development environment to rapidly produce intuitive and affordable mobile apps with little or no hand coding.

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<sup>2</sup> <http://www.alphasoftware.com/blog/gartner-oultines-fundamental-requirements-in-mobile-application-development-see-how-alpha-stacks-up/>

**2**

## **Offline**

Defined by data isolation and data synchronization, where support for offline work includes smart conflict resolution capabilities when network connections are reestablished.

**3**

## **Integration**

Combining backend API's with real-time access to enterprise databases, applications, and services, to ensure the seamless information flows between mobile devices and backend systems.

**4**

## **Security:**

Combining data sensitivity and backend protection to secure the multiple facets of mobile experiences, from devices to backends and the communications among them.

As a cost-effective platform designed for rapid application development, Alpha Anywhere delivers the mobile experiences where workers create value. Here's how and why.

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# A Framework for Task-oriented App Development

A blue circular graphic containing the white number '1', indicating the first step or point in the framework.

## Delivering at the Speed of Digital Business

Task-oriented apps need to be developed at the speed of digital business – quickly, iteratively, and at an affordable cost. Business analysts and business leaders are in the driver’s seat – after all, they are on the front lines and know what’s required. They can identify the mobile opportunities for fast ROI.

Alpha Anywhere features the capabilities for rapidly developing mobile apps once and ensuring deployment on iOS, Android, and Mobile Windows powered platforms. There is no need to maintain platform-specific development teams, and/or to separate mobile app design from development.

Alpha Anywhere can transform user experience (UX) designs and wireframes into running apps, and provide the bi-directional connections to backend resources. The design tools for prototyping user experiences also generate the templates,

procedures, and programmable logic for mobile apps. Agile approaches to app development ensure continuous enhancements to business solutions.

Professional developers, enterprise IT staffers, and both technical and non-technical business analysts can use Alpha Anywhere to build mobile enterprise apps quickly. Working together, they can easily design and develop the frontend experiences, as well as script the information flows with backend services.

- While Alpha Anywhere is designed to let most aspects of an app or even the entire app to be built in a codeless way, developers can always drop down and add code to either the frontend or the backend services.
- IT staffers and technical business analysts can tailor the Alpha Anywhere platform to the current enterprise architecture and security protocols. They have the skills and know-how to modify scripts, add operational parameters, and develop task-specific routines.
- Non-technical business analysts with domain knowledge can then use these purpose-built functions and edit attributes as needed to develop mobile enterprise apps for their organizations.

Alpha Anywhere thus supports a collaborative development environment, which is critical for delivering task-oriented apps. As a low-code platform, it provides the framework for structuring design and development activities that solve business problems.

## Apps for Snacking and Dining

Alpha Anywhere is inherently flexible in another way as well – it's ability to adapt mobile experiences to device capabilities and work contexts. Certainly there are important differences between smartphones and tablets. Yet screen sizes are only the tip of the iceberg. In fact these devices are often used in different ways and optimized for different tasks.

Consider the contrast between snacking and dining. On the go and juggling many things, a snack often suffices. Being in one place, and having the time for a meal, a dinner is more satisfying and perhaps healthier as well.

There is a similar situation with task-oriented mobility.

- Sometimes workers are multi-tasking and just need to quickly answer questions, check on a few facts, or report on immediate situations. They are app snacking and expect simple experiences to complete tasks. App snacks are often optimized for devices that are always on, always connected, and always accessible. Today these are usually the smartphones in our pockets and handbags, connecting through both cellular and Wi-Fi networks.
- Sometimes workers are focusing on the core tasks that are essential parts of doing their jobs. They are app dining and need purpose-built experiences that support their roles. App dinners place a premium on presentation, usability, and usefulness. Workers are expecting to drill down and complete assigned activities. These rich touch experiences are

frequently optimized for tablets, and often rely only on Wi-Fi networks to connect to business systems during the work day. Of course, they need to be able to continue working when network connections are unavailable.

Demonstrating its power as a mobile application development and deployment platform, Alpha Anywhere supports both snacking and dining from the same code base. It features responsive app design where screen layouts adapt dynamically to contextual cues. For instance, as shown in Illustration 1, a digital form displayed on a smartphone as a linear list of fields can be automatically formatted for a two-dimensional display on a tablet, with related fields positioned adjacent to one another. This makes for a more intuitive and usable experience.



**Illustration 1.** Alpha Anywhere supports both app snacking and dining from the same code base. The screen layout automatically adapts to the device and app context.

With Alpha Anywhere, mobile apps can easily include images, location coordinates, and other types of sensor data captured by mobile devices. Alpha Anywhere features “ink” capabilities to support handwriting, sketching, and free form annotations within mobile apps. As a result, Alpha Anywhere can produce digital forms that are optimized for touch and for workers who work standing up. Workers can replace hard copy note taking with clipboard style mobile apps, recording a wide range of information in the field and on the job, as shown in Illustration 2. With the large screen sizes of tablets to optimize touch experiences, these clipboard style apps are going to improve information capture and enhance productivity.



**Illustration 2.** *Workers in the field can replace hard copy note taking with clipboard style mobile apps than can connect as needed to backend information sources.*

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## Supporting Offline Work



### 2

#### Network Connectivity

When relying on mobile apps, workers expect essential information to be readily at hand. But network connections are not always assured. Workers may be working in locations where mobile data connectivity is unavailable, or they may be using Wi-Fi only mobile devices and unable to connect to Wi-Fi networks.

**Continuing to Function:** Whether they are optimized for smartphones or tablets, task-oriented apps must continue to function by supporting offline work. They must continue to access and process information locally and offline. Once network connectivity is reestablished, these apps need to easily and simply synchronize local changes with backend systems.

**Savings on Data Plans:** Another factor driving businesses to focus on equipping field workers and workers who work standing up with Wi-Fi only devices is the cost savings from not having to pay for data plans. For example the data-plan savings on a task oriented mobile app that is designed not to require a data plan would be in the \$1million per year range for a 1000 person work force.

## Data Isolation and Data Synchronization

Alpha Anywhere includes built in support for offline work, featuring both data isolation and data synchronization.

- Mobile apps continue to function on smartphones and tablets even when they are not connected to the network and backend systems. Alpha Anywhere features support for local storage, and can manage as much storage as is available on individual devices.
- When reconnected to the network, Alpha Anywhere synchronizes the data between mobile apps and backend systems. Workers are only involved when necessary to resolve conflicts.

Workers are able to operate effectively offline and complete their tasks without any loss of productivity. They can either snack or dine, as their tasks require – exploiting smartphone or tablet experiences, and synchronizing with backend systems once reconnected to the network.

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# Integrating Business Systems and Applications



## 3

### Seamless Information Flows

Whether they are snacking or dining, mobile workers are part of an overall business environment. Their firms are already investing substantial resources in databases, applications, and web-related technologies.

Task-oriented apps must exploit, enhance, and extend these existing systems and services. They must mobilize workers' presence at the points of interaction. Mobile apps must ensure the seamless flow of information across the organization, integrating with business systems and applications as required.

### Database Integration and Performance

Alpha Anywhere supports bi-directional integration with backend systems. Application developers have the flexibility to access and retrieve just the right data, and present information snippets within decision-oriented contexts. At the same time, mobile devices generate their own information -- tracking users'

locations, capturing images, and recording data from various sensors – that is incorporated into business applications.

Developers can easily query and update server-side databases, including Oracle, MySQL, DB2, Postgress, Microsoft Access, Microsoft SQL Server, and Microsoft SQL Azure through prede-fined APIs. They can produce task-oriented apps that preserve investments in existing databases and applications.

Moreover, many firms have already invested substantial resources developing stored procedure calls that centralize the business logic for database queries. With Alpha Anywhere, developers can design their mobile apps to access these stored procedures. They can optimize the mobile app performance by minimizing the network traffic and latency associated with retrieving data from, and updating data to, server-side databases.

## Connecting to Remote Web Sources

Task-oriented apps are not limited to data managed within server-side systems. They can shape experiences by aggregating content from disparate Web-based sources. When it comes to mobilizing targeted tasks, these apps frequently mashup information from external sources with data from internal business systems.

With Alpha Anywhere, developers can enrich task-oriented apps with content from enterprise applications such as SAP, SalesForce, Microsoft Dynamics, Microsoft SharePoint, and remote Web resources. Alpha Anywhere supports RESTful API calls, including the Open Data Protocol (OData), a RESTful data access protocol for both relational and non-relational databases. When data is formatted

as XML or JSON, Alpha Anywhere has the XML and JSON parsers to quickly explore the structure of the data and integrate it into a mobile enterprise app.

As a result, Alpha Anywhere leverages web services and varied web resources within an enterprise IT environment. For example, developers can rapidly develop a mobile tracking app for inspections that combines company-specific warranty and service information, stored in a server-side application, with manufacturers' product datasheets and repair guides, accessed from manufacturers' web sites.



***Illustration 3:** Workers can rely on a tailored mobile enterprise app to perform tasks and easily add data to operational systems.*

## Flexible Storage Options

With increasing frequency in today's digital age, task-oriented apps incorporate rich media experiences – such as capturing photos and high definition videos

while troubleshooting field maintenance problems, or viewing video snippets that describe steps in repair procedures while at job sites. Mobile workers come to rely on these just-in-time experiences for recording and visualizing their tasks.

But mobilizing rich media assets is a challenge. It often requires added storage with high performance access and low latency, beyond the capabilities of server-side databases.

With Alpha Anywhere, developers have the flexibility to manage storage for all types of information running on mobile devices – including data within relational databases, unstructured content, and rich media assets. Alpha Anywhere features storage running either “on premises” or “in the cloud.” Alpha Anywhere can configure storage for multiple infrastructures to leverage cloud-computing capabilities. It supports direct connections between mobile apps displaying rich media assets and Amazon Web Services, to ensure high performance access and low latency. Thus developers can focus on developing task-oriented apps with rich media experiences, and rely on Alpha Anywhere to optimize the storage environment.



**Illustration 4:** Alpha Anywhere seamlessly manage storages both on premises and through Amazon Web Services. Developers can deliver task-oriented apps with rich media experiences, and rely on Alpha Anywhere to optimize the storage environment.

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# Securing and Managing Apps Across Multiple Devices



## 4

### Twin Challenges of Enterprise Mobility

When workers rely on task-oriented apps to do their jobs, firms face the twin challenges of enterprise mobility:

- Managing specific apps deployed across multiple mobile devices, some provisioned by companies and others owned by employees.
- Securing mobile data, both when at rest on the devices as well as when in transit between the apps and backend systems.

Alpha Anywhere addresses both challenges by providing the platforms and tools for managing mobile apps and securing access to sensitive business data across mobile devices -- whether deployed to smartphones or tablets, and whether provisioned by companies or owned by employees.

## Mobile Application Management

Alpha Anywhere tightly integrates with Apperian, an industry-leading mobile application management (MAM) platform and enterprise app store. Apperian makes it easy to secure and deploy task-oriented apps to smartphones or tablets, running iOS or Android. Apperian delivers the framework for maintaining multiple mobile apps within an enterprise – distributing updates when produced and disabling apps when workers leave the firm.

Apperian wraps task-orient apps with a management envelope to deliver fine-tuned security and policy controls, without requiring additional code modifications or SDKs. Apperian provides:

- Corporate authentication
- Data-at-rest (DAR) encryption
- App-level virtual private network (VPN)
- Copy/paste protection
- Data wipe
- Jailbreak and root protection
- App expiration
- Run-time integrity check
- Self-updating app
- Crash log reporting

To balance risks with usability, firms can tailor security and policy controls to how they need to mobilize particular tasks.

Apperian supports apps hosted on both corporate-owned and worker-owned devices. Firms can decide on the mobile management options that make business

sense – investing in purpose-deployed devices for high-value tasks and/or adopting “bring your own device” (BYOD) policies for operational activities.

For instance, a restaurant chain might adopt a mobile strategy for its workforce and provide different mobile apps for employees in different roles. Chefs might rely on a menu management app running on company-owned tablets to plan menus and place food orders while they are at work; waiters and waitresses might use the company’s time-tracking app, running on their personal smartphones, to clock their hours and shift schedules and to communicate with the restaurant managers, whether they are on the job or at home. The chain can rapidly develop the relevant task-oriented apps with Alpha Anywhere – integrating with existing backend systems and Web-based resources as required; the firm can then provision and maintain these various mobile experiences with Apperian.

## Securing Mobile Data

Regardless of how apps are hosted on devices and managed, mobile data security remains an issue. It is essential to verify the identities of workers seeking access to backend business systems, and then to control the permissions to the information they are authorized to view and/or modify.

Alpha Anywhere delivers a rich security framework, designed to support both authentication and authorization for mobile data, and manage the flow of information between mobile devices and backend systems.

- Alpha Anywhere includes a fully integrated login/logout component for authenticating mobile workers from task-oriented apps. It features new user registration as well as multiple password administration and

verification capabilities. Alpha Anywhere also supports third-party authentication and credentialing by Google or LinkedIn.

- Alpha Anywhere can track users, groups, and pages to ensure that only authorized individuals can access appropriate data. Alpha Anywhere supports field-level access controls. It tests every page and file request so that developers do not need to write any code or place any code on individual pages.
- Alpha Anywhere can encrypt data in transit between mobile devices and backend systems with SSL (Secure Socket Layer) support and HMAC (Hash-based Message Authentication Code) support for web services. This is useful for verifying file uploads and downloads, for digitally signing and encrypting email, and for signing e-commerce documents as required by sites such as Amazon.

With Alpha Anywhere, developers can easily secure access both to the backend systems and to the data managed within these systems.

Business requirements and risk profiles drive data security capabilities for task-oriented apps. For developers and business decision-makers, Alpha Anywhere provides the flexibility to deliver security in depth and protect the multiple facets of mobile experiences.

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# Calculating the Business Value of Alpha Anywhere

## Reduce Costs, Increase Business Benefits

Let's consider the consequences of adopting a low code platform. Alpha Anywhere raises the bar for achieving the promise of enterprise mobility for certain classes of business problems – those driven by shared databases, web services, and enterprise applications. Alpha Anywhere cost-effectively untethers workers from fixed locations; it enables employees, contractors, and business partners to capture and utilize data while doing tasks – away from their offices and workstations, standing up or in coffee shops, while on the go. These task-oriented apps – enabled by the mobile revolution and powered by smartphones, tablets, as well as devices yet to be popularized -- are transforming how people work.

Alpha Anywhere delivers the essential capabilities for data-intensive mobile experiences. As a low-code platform, it provides both technical decision-makers and executive sponsors with the four key elements for task-oriented apps: user experience (UX) for multi-channel rapid app development, offline capabilities to ensure continuous experiences, easy integration with business systems and web resources, and flexible app security tailored to the risks at hand.

Alpha Anywhere reduces the costs of mobile application development and deployment, while increasing the business benefits and workers' productivity. Working together, developers, IT staffers, business analysts, and business leaders can rely on Alpha Anywhere to tailor the mobile solutions that deliver business value. Moreover, developers have the option to drop down and add code as needed. They can add or extend functions when required, and are not constrained by this low-code platform.

In short, the collaboration environment powered by Alpha Anywhere has far-reaching results for enterprise mobility. Line of business leaders can collaborate with IT and developers to produce essential mobile experiences within an enterprise. These teams can focus on the tasks that leverage investments in companies' existing databases, enterprise applications, web services, and web-based resources to mobilize how work gets done. When all is said and done, the business results are going to fall right to the bottom line.

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## **About Alpha Anywhere**

No other platform comes close to the speed with which Alpha Anywhere lets you build enterprise class apps with offline support. Alpha Anywhere's 'coding-optional' and complete back-end and front-end approach allows developers and business professionals to leverage existing corporate data sources and build secure, cross-platform mobile apps. Alpha Anywhere meets the key enterprise mobile apps criteria laid out by Gartner: Data integration, Security, Robust transactional offline capability, and Usability. For over a decade, tens of thousands of developers in over one hundred countries have built and deployed robust enterprise applications with Alpha Software products.

For more information, visit [AlphaSoftware.com](http://AlphaSoftware.com) or follow us on Twitter at [@AlphaSWCorp](https://twitter.com/AlphaSWCorp).