FileMaker: Complete Platform to Create, Deploy, and Manage Custom iPad and iPhone Solutions for Business

Executive Summary

Business units and departments are developing custom iPad and iPhone solutions to perform specific tasks more efficiently. Increased employee productivity, cost savings and enhanced customer satisfaction are among the benefits businesses are gaining with custom iOS solutions.

There are many examples of custom business solutions and the benefits they are delivering: Recruiters for Berklee College of Music, in Massachusetts, use a custom iPad solution to keep track of thousands of applicants and link to recordings of their performances. The Austin Convention Center in Texas created an iPad work-

order solution enabling maintenance and technical services teams to spend more time on the show floor with customers instead of constantly walking to and from the service desk. In Vienna, the Mega Store for international retailer Benetton simplifies inventory management and access to point of sales information with a specially built iPad solution. (Figure 1).

Custom iOS solutions differ significantly from consumer-facing apps. They use forms, are data-driven, are shared by workgroups, integrate with existing business systems, and often have strict security requirements.
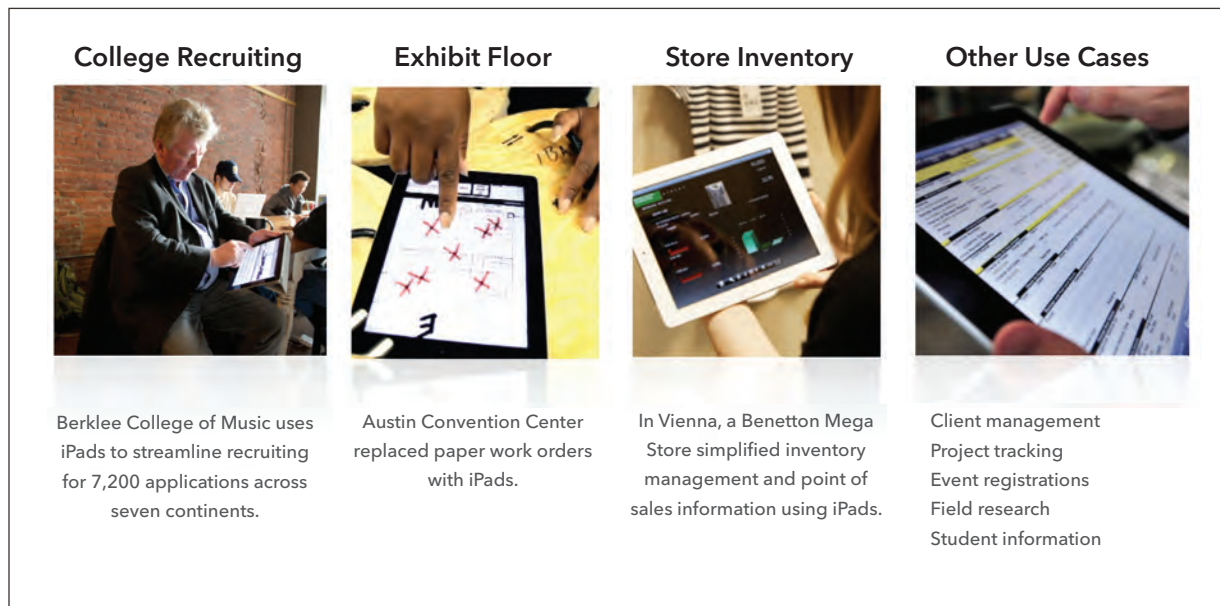
College Recruiting	Exhibit Floor	Store Inventory	Other Use Cases
Berklee College of Music uses iPads to streamline recruiting for 7,200 applications across seven continents.	Austin Convention Center replaced paper work orders with iPads.	In Vienna, a Benetton Mega Store simplified inventory management and point of sales information using iPads.	Client management Project tracking Event registrations Field research Student information

Figure 1 *Real-world custom iOS solutions powered by the FileMaker Platform*

Web development tools or traditional programming languages are not always practical for custom business solutions because of high developer costs, lengthy development cycles, and the time and expense of assembling custom libraries and APIs.

FileMaker, a wholly owned Apple subsidiary, provides a complete platform to design, develop and deploy custom iOS solutions. Using intuitive interfaces, you can:

- Design and build professional-looking solutions, even without previous design background or iOS programming expertise

- Integrate iPad and iPhone solutions with existing business systems and workflows

- Deploy, manage, and secure the solutions

- Instantly update solutions as business needs change, without requiring users to download new versions

Using the FileMaker platform avoids the confusion and overhead of purchasing and learning to use multiple design and development tools, APIs and libraries.

A Different Lifecycle for Custom Business Solutions

Developing custom iOS solutions for business tasks can be more involved than developing commercial, consumer-facing iOS apps. In addition to designing an attractive interface, developers need tools to integrate, deploy, manage, and continually evolve the solutions based on user feedback and changing business needs (Figure 2).

Developers need a platform that lets them:

- Stimulate user adoption by providing interfaces that are easy to use, attractive, and optimized for iPad or iPhone display

- Integrate with SQL sources, spreadsheets, and other data sources

- Connect to Microsoft Active Directory or Open Directory for user authentication

- Automate deployment to users' iPads and iPhones

- Push solution and data updates in real time, ensuring all employees are part of the same process and make decisions based on the latest information
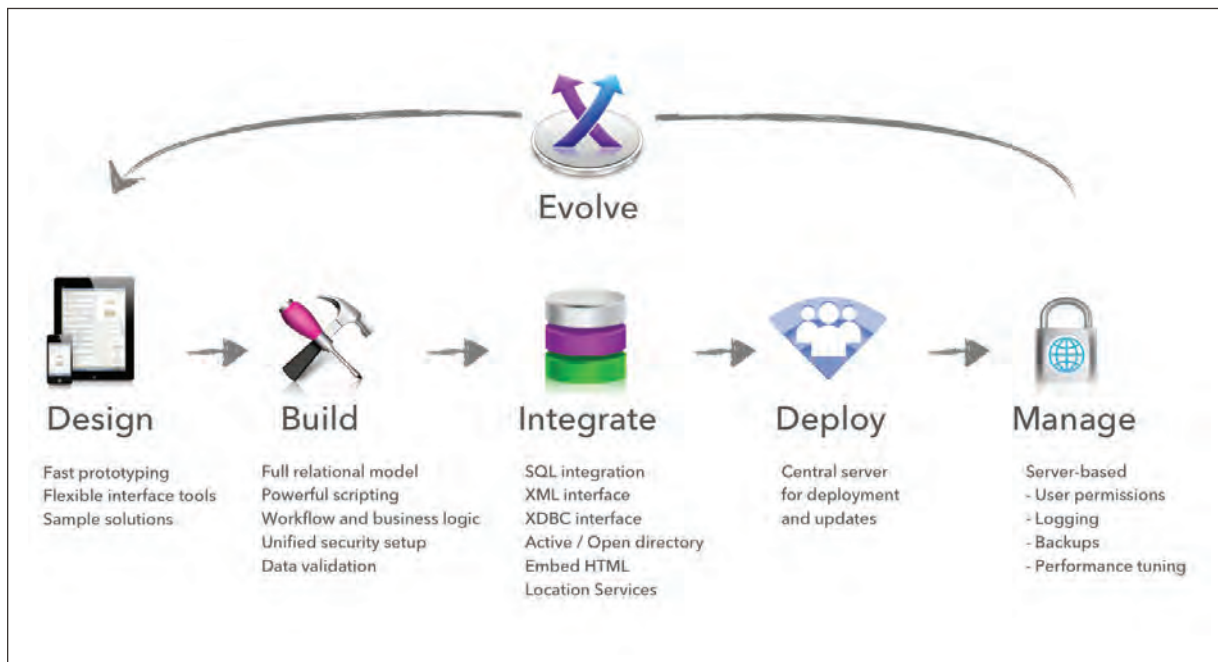

Figure 2 *Custom iOS Solution Lifecycle*

Other approaches to mobile development include web tools such as HTML5 and JavaScript, or native mobile platform programming tools. While highly flexible, these tools also have drawbacks for business solution development:

- Scarcity of skilled developers and their high costs
- Time-consuming development cycles
- Need to supplement code with open-source or commercial libraries for functions such as charting, PDF generation, or signature capture
- Difficulty of integrating with existing business systems
- Lack of easy-to-use management tools
- Lack of support for iterative development

FileMaker: complete platform for the iOS solution lifecycle

FileMaker provides an integrated platform for creating, deploying, and managing data-driven business solutions for iPad and iPhone. FileMaker is especially effective for streamlining business tasks that involve workflow, data management, data capture, and data distribution. Popular use cases include warehouse inventory, executive dashboards, sales and service route management, collection of field data, event registration, and replacing paper-based workflow management.

The platform consists of FileMaker Pro to design and build solutions, FileMaker Server to manage and deploy them, and FileMaker Go to run them on iPad, iPhone, or iPod touch (Figure 3).

Build solutions without coding or external libraries

With FileMaker Pro, developers can build solutions that include integrated workflow, business logic, searching and sorting, data validation, image, video and file storage, and integrated relational database capabilities – all without coding. Developers can start with data from an existing Microsoft Excel spreadsheet or a variety of SQL and other sources.

FileMaker Pro eliminates the time and expense of assembling libraries to provide key solution functionality because it comes with built-in features for common mobile tasks and to take advantage of iPad and iPhone unique capabilities.

Figure 3 *FileMaker Platform for iOS Solutions*

FileMaker white paper: Complete platform for iOS solutions

Figure 4 *Flexible tools let developers design stunning interfaces to meet users' expectations for iOS solutions*

Here are some of the capabilities included in the FileMaker platform.

Mobile business features

- On-device charting
- Report generation
- PDF generation
- Excel output
- Email integration

iOS-specific features

- Signature capture
- Location support
- Camera support
- Printing support

Role-based security does not require coding to implement in FileMaker. The developer simply selects individual tables, forms, or fields to restrict them to specific individuals or groups. Developers can manage privileges either with the FileMaker Server Admin Console or by integrating FileMaker Server with popular authentication systems.

Design: Native iPad and iPhone clients

Employees have high expectations for iPad and iPhone experience, so excellent design is essential to adoption. FileMaker Pro makes it easy to design great-looking solutions. And native iPad and iPhone client support provides the iOS look, responsiveness, and behavior that users expect, including support for gestures and essential iOS APIs. (Figure 4).

FileMaker's visual development environment facilitates rapid solution prototyping and building. Developers don't need expertise in graphics design to create professional-looking, visually appealing interfaces. Controls are sized to fit iPad and iPhone displays, and a single click applies attractive themes optimized for iPad or iPhone, including fonts, colors, and object styles.

Developers can save time using the included sample mobile solutions. These samples cover common business tasks and are working solutions – attractive templates with related tables, and basic reporting and charting – that can be easily customized, extended, and combined.

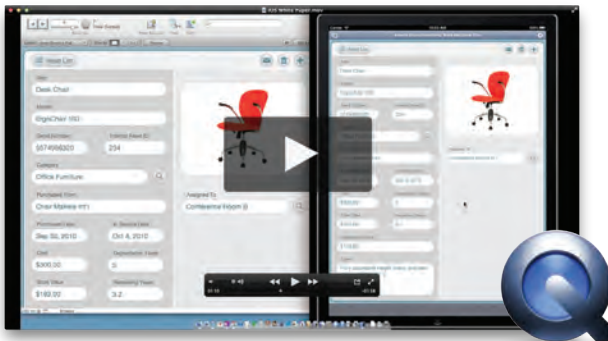### Integrate iOS solutions with business systems

Many custom iOS solutions need to exchange data with existing business systems, including SQL engines, spreadsheets, ERP applications, and other sources. An example is a dashboard for power plant employees that connects to operational databases, pull data as required, and display charts with up-to-the-minute metrics on power generation, system status, and outages.

FileMaker simplifies integration with business systems through built-in connections to External SQL Data Sources (ESS), including Oracle, MySQL, and SQL Server, and through support for open exchange formats, such as ODBC, JDBC, XML and PHP.

Developers can use HTML5 and integrate a browser-based solution right into a FileMaker database. For example, a sales solution might include a view into a web-based inventory system so salespeople can check stock before taking orders. HTML5 integration can also be used to link FileMaker solutions with public web data, such as a survey using Google maps to show where a survey took place.

Deploy and update in real time, with no action required from users

No matter what device FileMaker is running on, updates are immediate when connected to a FileMaker server. If you add a new form to track sales details, that form is instantly pushed to all connected iOS devices. Individual users do not need to download updates to the solution. *To see this in action, click on the "Video 1" image below.*

Video 1: *Instant solution updates in action*

Deployment begins when employees download FileMaker Go for iPad and FileMaker Go for iPhone from the Apple App Store, free of charge. These clients allow iOS devices to run solutions that are created using the FileMaker Pro desktop on a Windows PC or Mac.

The custom solution can be distributed in several ways. If a FileMaker Server is used, iOS users simply use FileMaker Go to connect to FileMaker Server and choose the database solutions they want. These are opened and data now flows freely. If the solution is changed, updates are automatically pushed to all connected iOS devices running FileMaker Go. When employees have intermittent connectivity, you

can a write a synchronization script that runs when a connection is established, moving records back and forth between the device and FileMaker Server. If you have a solution such as a product catalog, that mostly runs offline, you can distribute it directly to iOS users who have installed FileMaker Go. Simply email the solution to the clients, or post on a web site and have them click on the link. It will be downloaded (or updated if it is already installed), opened by FileMaker Go, and the user is ready to run.

Solutions developed with FileMaker Pro can also run on Windows and Mac desktops and in browsers. Data structure, business logic, integration, and security is all shared across multiple operating systems and devices. Developers can easily optimize screens for display on these platforms using the visual development tools in FileMaker Pro.

Manage and secure the solution

To protect confidential information, the FileMaker Platform supports encrypted communications between the server and iOS devices. Developers can also specify a timeout for inactive connections, after which users must re-authenticate.

When connecting to FileMaker Server, security is enhanced because the data resides only on the server and is never stored on the device. This means a lost or stolen iPad or iPhone does not compromise security.

IT teams use the FileMaker Server Admin Console to manage backups, update and deploy solutions, log activity, monitor users and usage, and tune performance. Built-in backup services protect data as well as the solution itself.

Organizations that already use Active Directory or Open Directory can easily integrate them with FileMaker solutions, avoiding the overhead of maintaining a separate directory.

Evolving your solutions

FileMaker supports iterative development as business needs evolve. Solution creators can quickly prototype and test incremental changes to the interface, functions, and look and feel. Changes are automatically pushed to all iPads and iPhones pointed to the server, so employees see the changes right away. They don't have to wait until the next time they log in.

FileMaker Platform in Action

Austin Convention Center: replaced paper-based work orders for 200% annual ROI

Situation: Previously, exhibitors at the Austin Convention Center in Texas specified booth requirements on paper. Then an employee manually input the order and printed out a paper record and booth diagrams.

FileMaker Solution: Internal developers developed a work-order solution for iPads in two days, by modifying an existing FileMaker Pro database billing system. The interface supports iOS gestures so that employees can navigate through orders and floor diagrams with one finger on their iPad.

Results: The solution is delivering a 200% return on investment by eliminating time employees spent walking back and forth between the convention floor and service desk to fulfill orders and retrieve diagrams. Customer satisfaction increased because the solution has practically eliminated booth setup errors.

Austin Convention Center has seen 200% ROI with FileMaker Platform.

Lee Medical: helped to reduce hospital-acquired infections, increase efficiency, and protect confidential patient records

Situation: Lee Medical is a regional contract vascular access specialist serving 60 facilities in Tennessee. Its nurses insert vascular access devices (VADs) used for delivering drugs, nutrition, pain control medication, and anesthesia. Tracking VADs throughout their lifespan is essential to help prevent infections.

FileMaker Solution: Lee Medical developed a custom iPad solution for nurses called VAST (Vascular Access Surveillance and Tracking). Nurses use it daily to receive their work orders, securely access patient medical records from FileMaker Server, and capture patient and equipment information before and after the procedure. This includes information that Lee Medical's hospital clients need to satisfy government regulations on reporting infections.

Results: VAST plays a role in Lee Medical's track record of fewer than 0.5 infections per 1,000 catheter days, compared to rates between 2 and 18 per 1,000 catheter days for many hospitals. The low rate of infections translates to healthier patients and millions of dollars in annual savings for healthcare providers.

Lee Medical saves millions of dollars using FileMaker iPad solutions.

Rampart Hydro

Situation: Rampart Hydro Services of Coraopolois, Pennsylvania is the world's largest hydro-demolition company (hydro-demolition utilizes high-pressure water to remove concrete, asphalt and grout). Keeping track of information from many jobsites was a challenge because technicians submitted data on spreadsheets, paper forms, and even handwritten notes.

FileMaker Solution: The company wrote a custom FileMaker iOS business solution for iPad or iPhone that technicians use to update the job-tracking info in real-time. Office personnel use FileMaker Pro on their desktops to analyze the data.

Results: The FileMaker Platform enables the company to maintain timely and consistent data from the field. Current use cases include tracking IT assets, project management, and helpdesk support. Future plans include automating employment applications, sales processes, and estimates.

Rampart Hydro Services solution runs on iPad and desktops.

Training, consulting, and developer resources

FileMaker offers extensive developer resources to help staff quickly get up to speed on developing iOS solutions, and to supplement internal staff as needed:

- A free worldwide developer program with more than 35,000 members

- Extensive training resources including a full certification program

- Over 1,100 consulting firms in FileMaker's Business Alliance are available for hire. These firms have extensive experience building, deploying, and managing FileMaker solutions

The FileMaker Platform is available in 17 languages worldwide, and developer programs and tech support are available in multiple regions and languages.

Conclusion

As an end-to-end platform for the total iOS lifecycle, FileMaker makes custom iOS business solutions a cost-effective option for individual business units and departments. Developers can design professional-looking iOS solutions and integrate them with back-end data sources – without coding. The FileMaker Platform provides all the capabilities needed for the complete lifecycle: design, build, deploy, integrate, manage and secure, and evolve.

For more information:

Read FileMaker iOS solution Platform case studies:
www.filemaker.com/solutions/customers/fmgo.html

Watch a webinar featuring a demo of the FileMaker Platform creating iPad solutions:
fmdl.filemaker.com/MISC/iOS_apps_platform_en_848x530.mov

Download the free FileMaker iOS Deployment Kit, with free trial of FileMaker Pro:
info.filemaker.com/US-en-US-iOS-Deployment-Kit-LP.html

Visit the FileMaker website:
www.filemaker.com