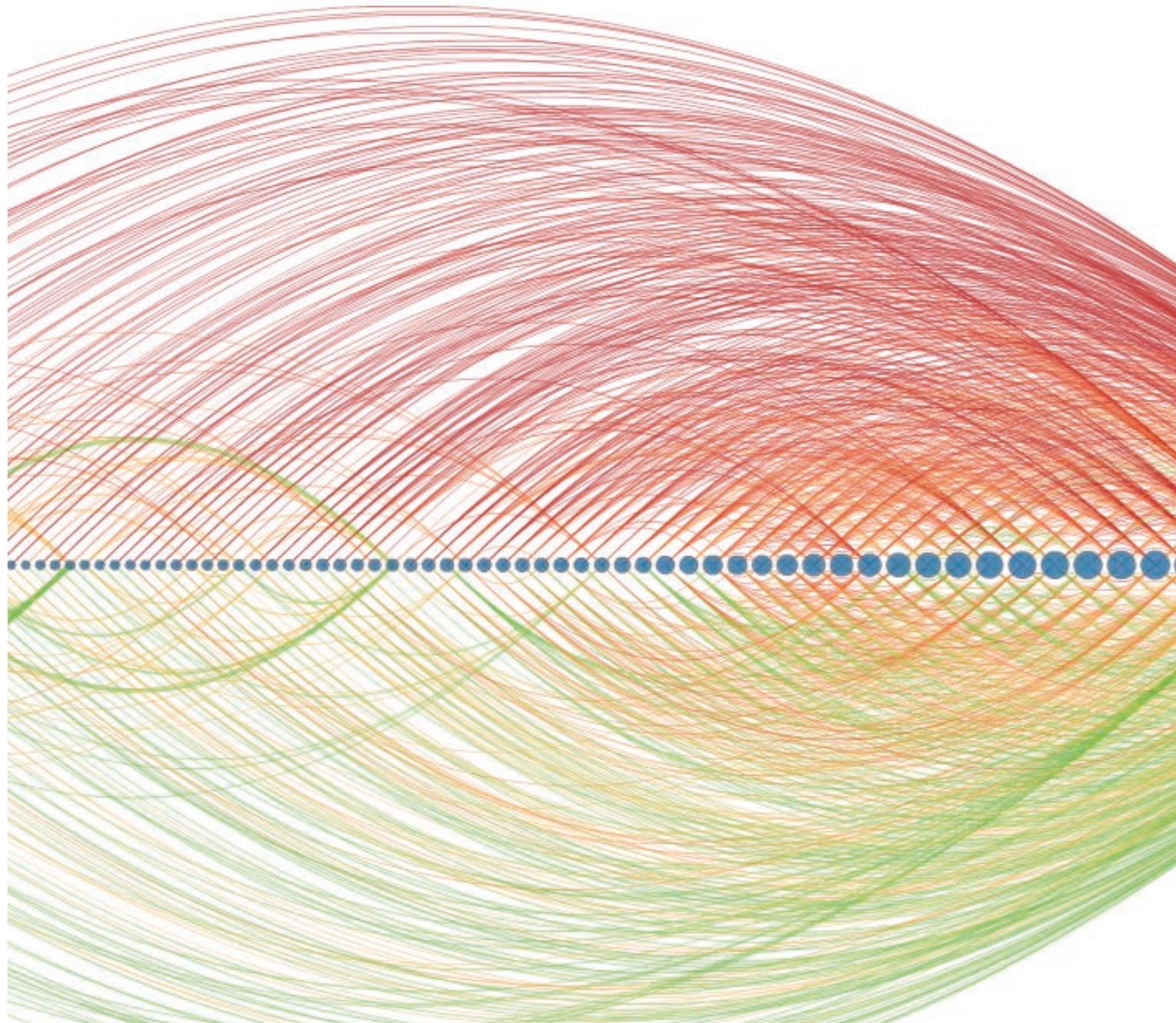


The Platform Approach to Mobile Apps

The Secrets to Quickly Creating Business Apps Code-Free



MICROSTRATEGY MOBILE

The Revolutionary Opportunity

“A truly *disruptive* technology appears and causes major changes to business, society, or economies.

It yields non-linear effects, on so many levels, and at such a grand scale that it's very hard to grasp the scope until the dust settles.”

-Michael Saylor, *Chairman and CEO of MicroStrategy, Inc. and author of The Mobile Wave*

Mobile Manifesto

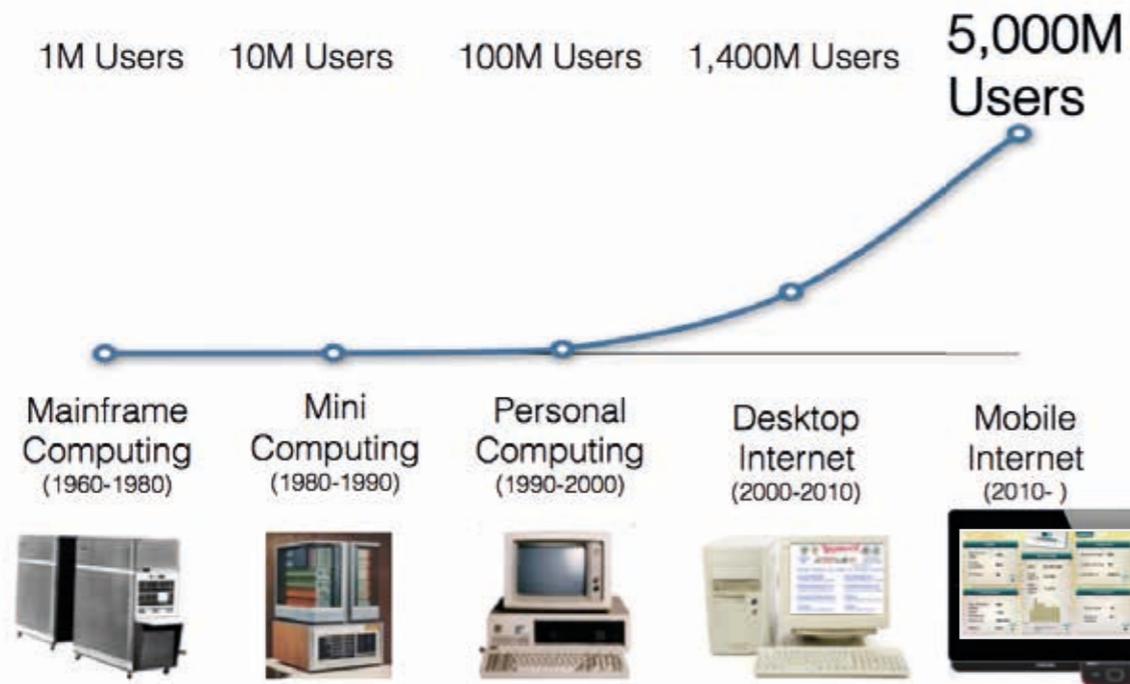
In the near future, mobile apps will be needed for every customer-facing process and every internal business process.

Computers have followed an inexorable trend toward greater amounts of computing power in ever-smaller devices. For example, mobile smartphones and tablets deliver more computing power in the palm of your hand than a typical supercomputer generated in 1985. Improved processing power, cheaper memory, miniaturization of components, and extended battery life have all contributed to a sudden explosion of mobile

devices that provide far more than just voice and calendaring capabilities.

According to *The Mobile Wave: How Mobile Intelligence Will Change Everything*, mobile technology is the fifth wave of information technology. With the current generation of smartphones and tablets, software has moved from the mainframe, to the desktop, and finally, mobile handheld devices.

Mobile is the Fifth Wave of Information Technology



Mainframe Computing	Hugely expensive, basic computers
Mini Computing	Smaller, cheaper machines containing chips, integrated circuits, and transistors
Personal Computing	Automation of office processes and the advent of the spreadsheet led to widespread personal use
Desktop Internet	Streamlined personal productivity and gaming, household use became more widespread
Mobile Internet	Accelerated by lithium-ion batteries and flash memory, computing reached more people than ever before

Because of this rapid evolution, consumers expect to have 24/7 access to businesses and services. Business users expect these mobile devices to cater to their professional needs in the same way that laptops and desktops helped them run their business in 2009.

This has created a new model for information, migrating from a browser-based web model to an app-based model that customizes the user experience, automatically updates important content, and caches critical data for offline consumption. This has improved the user experience for consumers, but has also enabled business executives to access their critical business information with the fidelity and speed they demand. Where software runs, who runs it, and how it's used, is all changing.

Mobile computing surrounds people with software, replacing everything they write, carry, and touch. It is redefining industries, and transforming how, when, and where decisions are made. Mobile will have a greater impact than any of the previous IT waves because consumers and business users will have immediate access to information at any time, from anywhere.

Across all organizations and enterprises, there exists a need for new, intelligent, information-driven mobile apps that combine transactions, multimedia, and analytics to address dynamic

issues in the business world. Companies will require hundreds of new mobile apps and mobile front-ends to existing applications. This will enable them to better engage their customers while maximizing enterprise efficiency.

To address the dynamic need for mobile technology, the MicroStrategy Mobile App Platform simplifies and expedites the process of developing, deploying, maintaining, and monitoring your mobile apps to ensure that your business remains at the forefront of technology. Built to optimally source your data, wherever it lies, the MicroStrategy Mobile App Platform is a highly-scalable solution that gets the right information, to the right person, at the right time. Furthermore, the Mobile App Platform allows you to leverage greater benefits from your existing CRM and ERP systems, by seamlessly connecting to your pre-existing data sources.

Apps are a compelling, exciting, and flexible way to deliver information to the masses. Because of the improved user experience, they will completely replace former definitions of computing. Moreover, apps are enduring, and can last companies anywhere from 5 to 7 years—and will last even longer if they are maintained. Therefore, app construction efforts expended today will be rewarding in the long term.

Apps *can* and *will* transform your business. Start building yours today.

The Mobile Wave

Spotlight on Michael Saylor:

Chairman, CEO, Technologist, Author

The Mobile Wave: How Mobile Intelligence Will Change Everything argues that the changes brought by mobile computing are so widespread that it is impossible for us to see all of the ramifications, even though we are all immersed in it. Saylor explains that the current generation of mobile smartphones and tablet computers has set the stage to become the universal computing platform for the world. In the hands of billions of people and accessible anywhere and anytime, mobile computers forever alter all industries and economies.

In the very near future:

- **Cash will become virtual software and crime-proof**
- **Cars, homes, fruit, animals, and more will be “tagged” so they can tell you about themselves**
- **Buying an item will be as easy as pointing our mobile device to scan and pay**
- **Land and capital will become more of a liability than an asset**
- **Social mobile media will push all businesses to think and act like software companies**



Gallery 1.1 We Wrote the Book on Mobile

The Mobile Wave



The Mobile Wave: How Mobile Intelligence Will Change Everything by Michael J. Saylor, CEO of MicroStrategy.



The Platform Approach to Mobile Apps

"Mobile is a clear example of MicroStrategy's innovation and tendency to be on the forefront of offering new BI functionality based on leading edge technologies."

-Dr. Carsten Bange, *BARC*, The BI Survey 10



Who Are We?

Hundreds of companies have built MicroStrategy-powered apps. We'll teach you how to build yours.

As the largest independent, public business intelligence vendor, MicroStrategy, Inc. has a strong history of providing mission-critical enterprise software solutions, with a strong focus on mobile technology.

MicroStrategy has consistently ranked highly in the Gartner "Leader Quadrant" for business intelligence platforms, and is known for its integrated mobile, cloud, social, and business intelligence solutions. Founded in 1989, there are now over one million business users of MicroStrategy in over 3,500 organizations, and direct operations in 41 cities in 23 countries around the world.

The MicroStrategy Mobile App Platform was first introduced to address the growing need for mobile apps in the business world. Most recently, a variety of analysts have ranked MicroStrategy Mobile as #1 overall by a wide margin, scoring #1 in seven of the eleven major capabilities and has been the only vendor to receive an "outstanding" score for product viability.



MicroStrategy is a leader in Mobile Enterprise Software

Product Recognition

Analysts agree.



Gartner
MicroStrategy Mobile #1



DAS Advisory Services
MicroStrategy Mobile #1



OVUM
MicroStrategy Mobile #1



BIScorecard
MicroStrategy Mobile #1

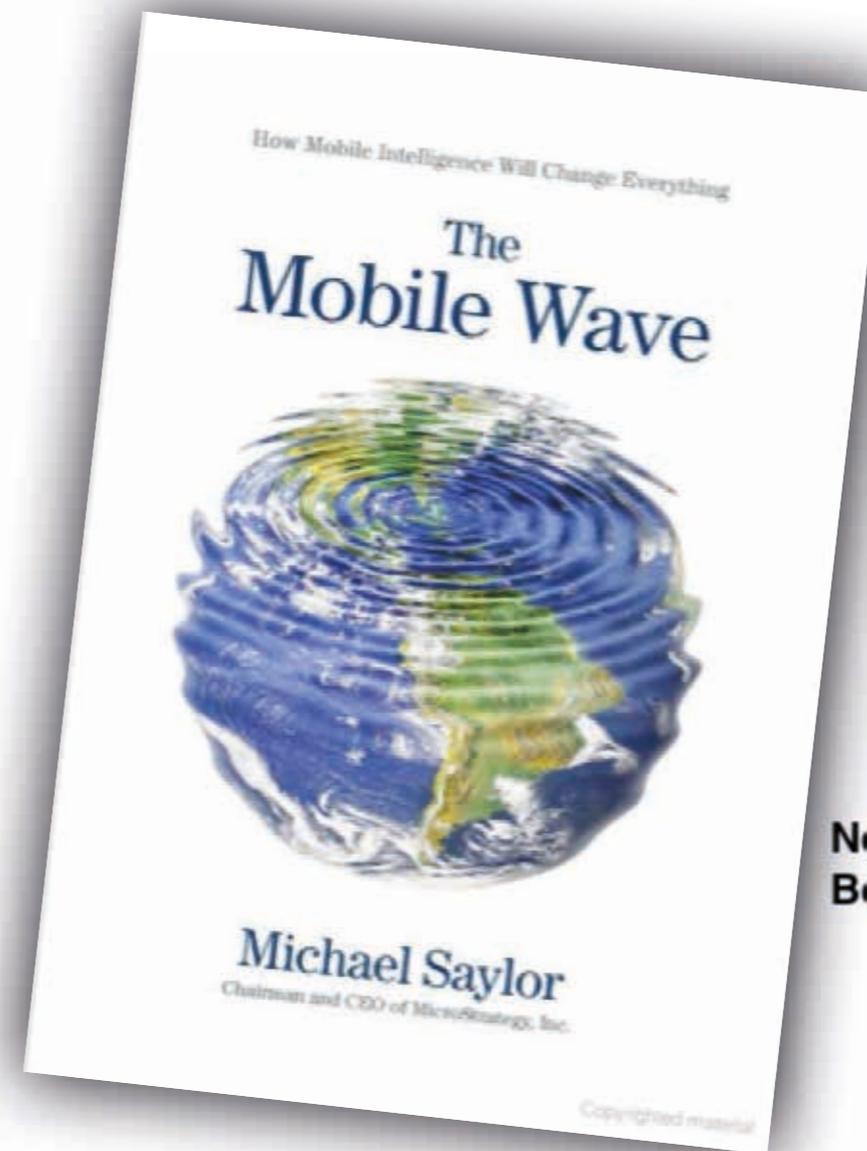


BARC
MicroStrategy Mobile #1



iTunes
Best iPhone Business Apps

Thought Leadership



**New York Times
Best Seller**

Approaches to Developing Mobile Apps

In the coming years, the sheer number of mobile apps that organizations will need to create is enormous, which makes the ease and rapidity of app development, deployment, maintenance, and monitoring a huge priority.

App Development

Due to the underlying work required to develop, deploy, maintain, and monitor mobile apps and the fragmentation of the mobile operating system landscape, three main ways to build mobile apps have evolved:

- **Native Code Development**
- **Platform Code Development**
- **Platform Code-Free Development**

Native Code Development

Native Code development mandates that developers need to start from scratch every time an app is built. This approach can be extremely time-consuming and often requires a great deal of manpower and advanced development expertise, which equates to greater expense and less scalability.

Platform Code Development

Platform code development occurs in an Integrated Development Environment (IDE). These environments use specialized code (usually Java or HTML5) to create a new branch of code for each operating system and device onto which the app is being deployed.

Platform code developers usually take a hybrid approach with respect to developing apps for different operating systems and screen aspect ratios. First, they develop apps in a cross-platform IDE, and then second they must continue coding in the native language to add platform-specific capabilities.

There are 3 main ways to build mobile apps:

- **Native Code Development**
- **Platform Code Development**
- **Platform Code-Free Development**



Chapter 2, Section 2

This translates into a huge expenditure of resources to modify the code for specific platforms, not to mention the astronomical effort required to maintain all of the different branches of code.

The downsides of platform code development are that app developers must still be able to program, yet the code generated is no longer fully-native to the device. The drawbacks to this methodology are further exaggerated when developing apps for multiple operating systems.

Platform Code-Free Development

Because of the difficulties inherent in both native code and platform code development, the MicroStrategy Mobile App Platform was designed to be a code-free development environment. This facilitates scalable and rapid app creation by enabling any user to extend the company's grids, graphs, enterprise reports, and dynamic dashboards to his or her mobile device—without requiring any additional coding or development expertise.

Pre-populated with an array of features designed to help new and experienced users rapidly design and deploy app after app, the MicroStrategy Mobile App Platform makes app development intuitive and scalable.



What are MicroStrategy Mobile-Powered Apps?

Apps mobilize everyday processes, remove costly bottlenecks, and accelerate businesses. MicroStrategy apps reside at the intersection of great user experience and great development infrastructure.

The MicroStrategy Mobile App Platform enables organizations to build a wide variety of essential mobile apps that deliver workflows, transactions, mobile operations systems access, multimedia, and business intelligence in compelling, custom native apps.

Native Apps provide users with the most optimal device-specific experience.

Compelling Workflows gracefully present any business process in an intuitive manner.

Contextual Apps empower users to input location (GPS), barcode (camera), device orientation (rotation), and user preferences (personalizations) to drive the app experience.

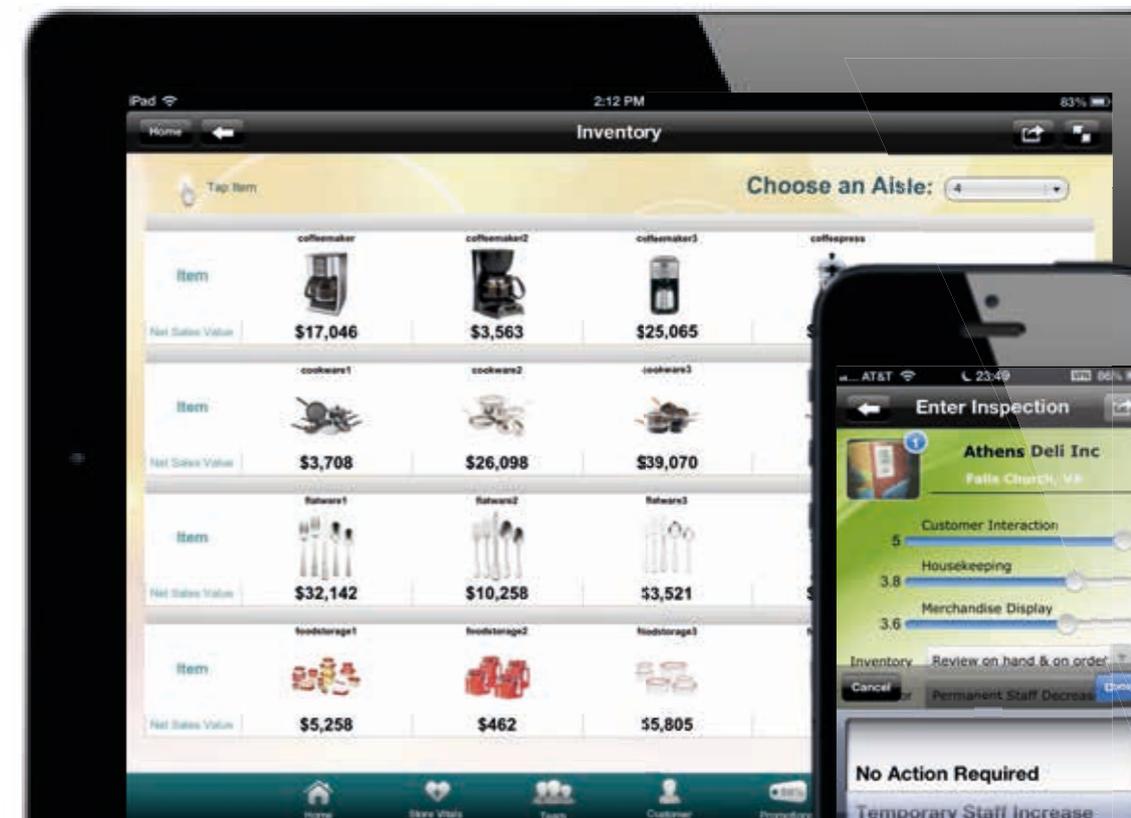
Highly Secure Apps protect your data with a combination of sophisticated security capabilities—ensuring that data transferral, reception, and storage is secure.

Systems Apps enable you to transact with any operational system so apps can be built for any new or existing business process.

Integrated Native Mapping plots geo-locational data directly onto integrated native maps.

Fast Apps handle the most complex questions and transactions from thousands of users concurrently.

Offline, Online Capabilities optimize the user experience for the varying levels of connectivity (strong 802.11 a/b/g/n Wi-Fi, LTE, intermittent 3G, or offline).



How Platform Code-Free Development Saves You Time and Money

MicroStrategy has invested countless hours and dollars to ensure that we provide you with the best Mobile App Platform. We want to save you time and money.

We started by creating an infrastructure that allows you to configure a BI system that then gives you thousands of reports without writing custom code. By using the MicroStrategy Mobile App Platform, users can develop and configure great mobile applications.

As stated before, mobile is changing the way businesses are run. In the near future, everything will be mobile and companies who have not adopted a mobile strategy will lose out to those who have.

Mobile and web provide a vastly different user experience. Figure 2.1 shows the difference between PC and mobile usage, highlighting the benefits of mobile. Figure 2.2 shows how much time MicroStrategy can save you building apps.

	PC Usage	Mobile Usage	Impact
Mapping	Point and click mouse controls	Gesture navigation	30 Seconds vs. 2 Seconds
Data Capture (URL or SKU)	Keyboard data entry	QR Codes, NFC, barcode	15 Seconds vs. 1 Second
Address	Type in address, street, city, zip	GPS Lookup	20 Seconds vs. 1 Second
Image Capture	Camera and wires and sync.	Built-in camera	Infinitely Better
Readability	Nobody reads novels on a PC	iBooks / Kindle / Nook	Infinitely Better
Accelerometer	Not available	Any movement as input	Infinitely Better
Availability	At a desk	Anytime, anyplace	Infinitely Better

Figure 2.1: PC vs. Mobile Usage

Chapter 2, Section 4

	iOS Development	Android Development	Total Development Time	MicroStrategy Mobile Configuration
Layout and Workflow	500	500	1,000+	30
Visualizations	5000+	5000+	10,000+	30
Content Management	500	500	1000+	8
Transaction Controls	500	500	1000+	8
Offline Support	5000+	5000+	10,000+	0
Internationalization	5000+	5000+	10,000+	4
Security	10,000+	10,000+	20,000+	8
Life Cycle Tools	500+	500+	1000+	4
Analytical Engine	10,000+		10,000+	30
Alerting and Content Engine	5000+		5000+	30
Transactions Gateway	2000+		2000+	8
Monitoring Infrastructure	10,000+		10,000+	4
Multi-source Engine	5000+		5000+	8
Caching Engine	10,000+		10,000+	4
Personalization Engine	5000+		5000+	4
	74,000+ hours	74,000+ hours	101,000+ hours	180 hours

Figure 2.2: MicroStrategy Mobile can save you thousands of hours

The App Lifecycle

Ultimately, every business app that you deploy to your executives will receive two responses: praise and requests for additional content and functionality.

Because of the second requirement, you will need to have a platform in place that will enable you to constantly make changes and instantly push new content to your users. Further, the avenues of updating your content need to be friction-less.

Updating content in a native code or platform code development environment is an onerous task, as developers need to manually update the information for every operating system and device. Even in a platform code-free environment, this process can be very difficult.

Ideally, you would want to configure the app and then deploy it instantly to all supported platforms, without have to make any code modifications. Because of this, many other companies that employ Platform Code-Free Development fall into a common trap: the use of rigid templates.

While outwardly it seems like a good idea to use rigid templates to facilitate development, the reality is that your apps are forcibly boiled down the lowest common denominator.

Furthermore, rigid templates simply do not make visually-appealing or effective apps. Rigid templates are inherently limiting as they constrain the number of displays, do not match company workflows, and their color and feel do not match the corporate culture.

To resolve the issues of reusability and ease of app design, the MicroStrategy Mobile App Platform has one huge competitive advantage over all other companies: metadata.

Data. Meta-Data. Information about Information

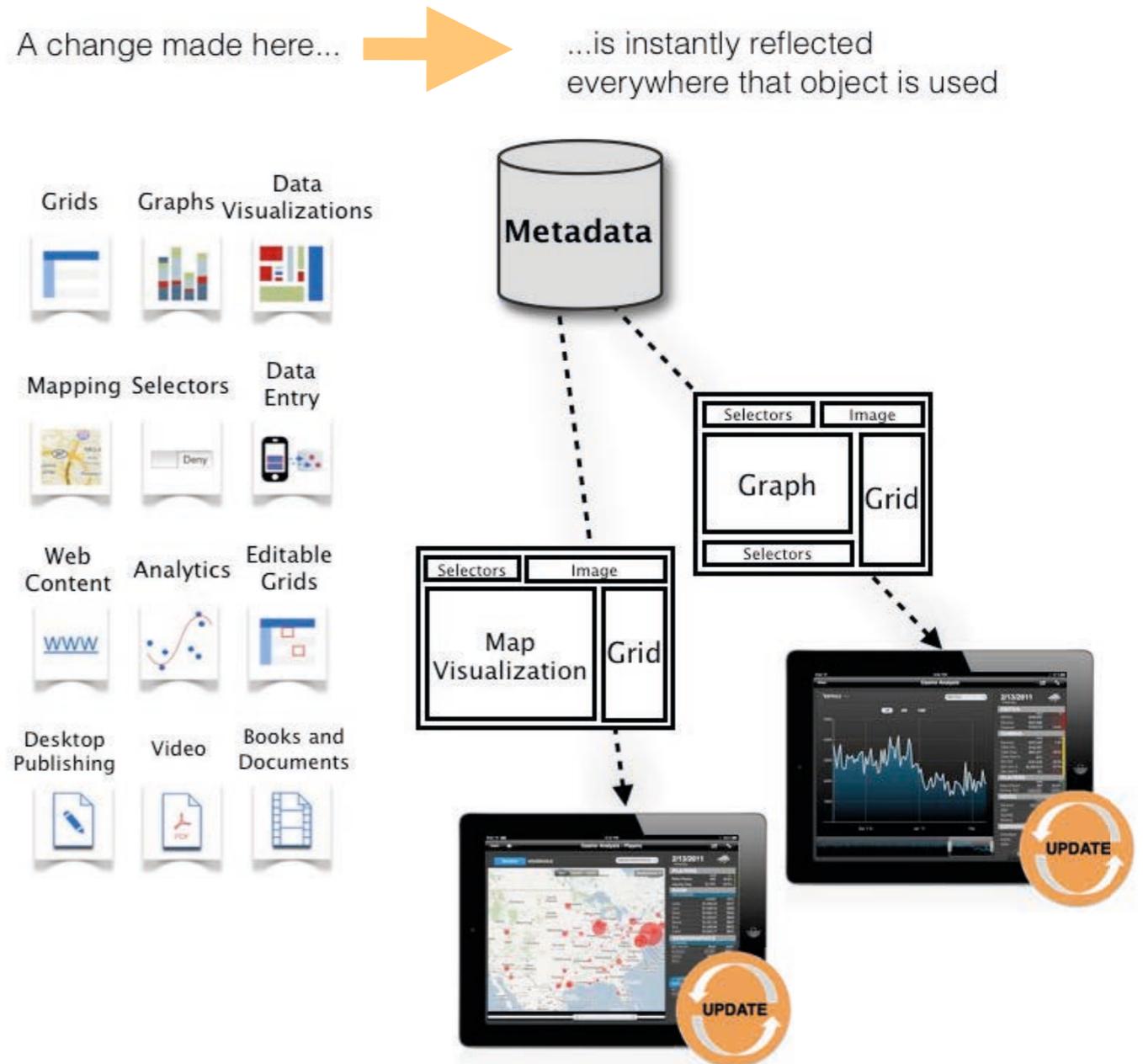
The key to the lowest total cost of ownership and app development efficiency is the metadata abstraction layer, which allows for extensive object re-use.

The metadata is the hub of the Mobile App Platform. The metadata is information retained about your information, and describes every object that is surfaced in-app.

Chapter 2, Section 5

Most importantly, anytime a change is made to an object, this changes the metadata, which is instantly reflected on your mobile device and in the object definition. Since these objects are reusable, the changes will be surfaced in any app or document in which the object is used.

The Mobile App Platform is able to circumvent the rigid template trap and provides users complete flexibility of design because of its ability to instantly update content. This ensures that the apps are developed and updated rapidly, that the device's native abilities are fully utilized, and that the app look-and-feel matches your company's messaging.

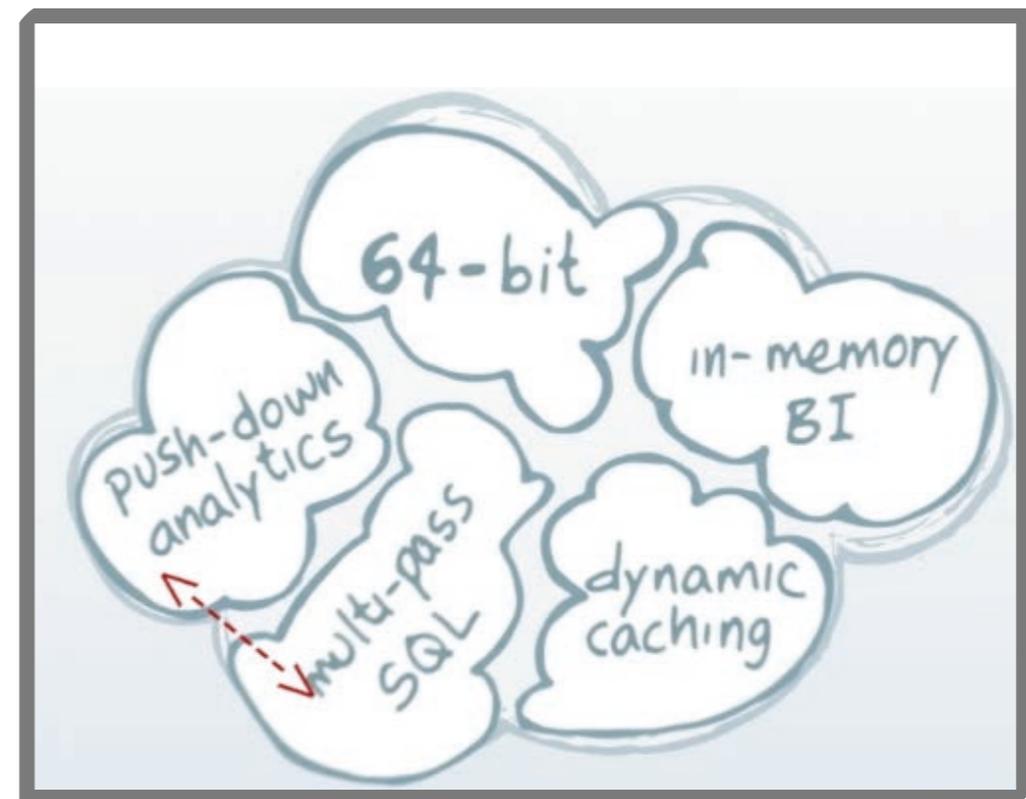


Hosted in Our Cloud Or Yours

The Cloud has revolutionized how data and resources are managed. More and more businesses are moving their analytics and mobile apps to the cloud. It's faster, cheaper and easier. Along with investing in strong business intelligence (BI) and mobile capabilities, MicroStrategy has created its own cloud platform. MicroStrategy Cloud brings together world-class enterprise BI, analytical databases, and integration capabilities in one integrated service.

Businesses are able to install server pieces and development tools in their own secure cloud environment or in MicroStrategy's Cloud Platform. Our Cloud Platform uses revolutionary Direct Connect Technology to connect your On-Premise Data to our Platform on the Cloud. MicroStrategy's Cloud-optimized architecture includes features like a 64-bit computing platform, in-memory BI and dynamic caching, push-down analytics and multi-pass SQL. This minimizes the network traffic between our Cloud and your data so that we always deliver lightning fast performance, no matter where your data lives. Other cloud platforms require you to move your data onto the cloud, making your existing databases obsolete and causing you to lose the

millions you've already invested in your on-premises databases. Only MicroStrategy Cloud gives you the option to house your data wherever you choose, whether on the cloud or on-premises.



App Design

“MicroStrategy’s integrated platform delivers comprehensive reports and analyses that can serve as critical tools for companies committed to improving operational efficiencies and enhancing business performance.”

- Sanju Bansal, *Vice President of the Board and Executive Vice President at MicroStrategy*



App Storyboarding

The MicroStrategy Mobile App Platform has simplified the technical process of developing apps to the point where the most difficult step is deciding on the app storyboard.

Research and Develop a Use Case

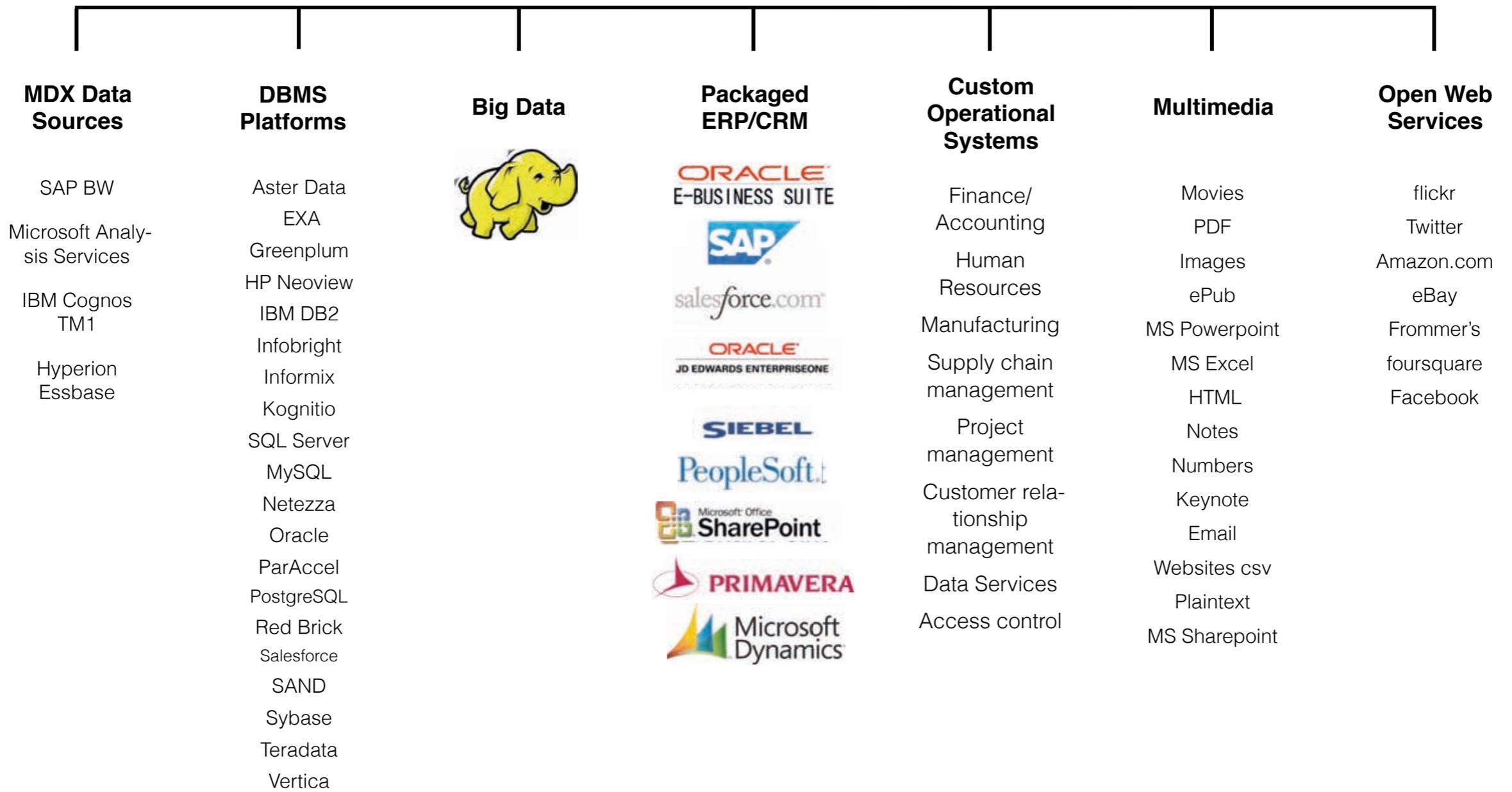
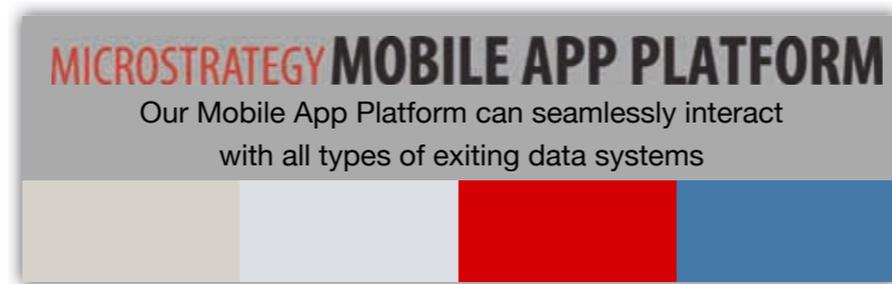
Before you learn how to design MicroStrategy Mobile applications for your mobile devices, you should understand the requirements, context, and expectations of your audience. Start by researching and discussing your application's purpose, and learning every facet of the current business process that you are trying to capture. Identify primary users, tasks, desired features, and areas in need of improvement.

Find the Right Information

Once you have an idea of the use case behind the app, the next step is to decide on what kind of data you need. The Mobile App Platform was originally designed to be used by customers with complex products that reference a large amount of information. This is because the platform can interact effectively with existing sources of information, enabling you to quickly conceptualize and develop applications. The platform, however, can also effectively roll out apps that deal with simple products and less infor-

mation. One of the most important features of the mobile app platform is that it can seamlessly interact with your existing data sources including ERP and CRM systems.





App Storyboarding Checklist

Research:

- ✓ What is the current business process?
- ✓ What do you want to see in the application?
- ✓ In what order is information accessed?
- ✓ What is the corporate color scheme?

Use Case:

- ✓ Who will be using the application and what is their role?
- ✓ Who/What will be affected, reviewed, or observed by the app?
- ✓ How do users currently access information?
- ✓ When and where will the application be used?

Information:

- ✓ When is the information currently accessed?
- ✓ How is data currently stored?
- ✓ How is the data used?

Strategy and Workflow:

- ✓ Why have certain features been requested?
- ✓ Why place this information on a mobile device?
- ✓ Why is information currently accessed in this order?

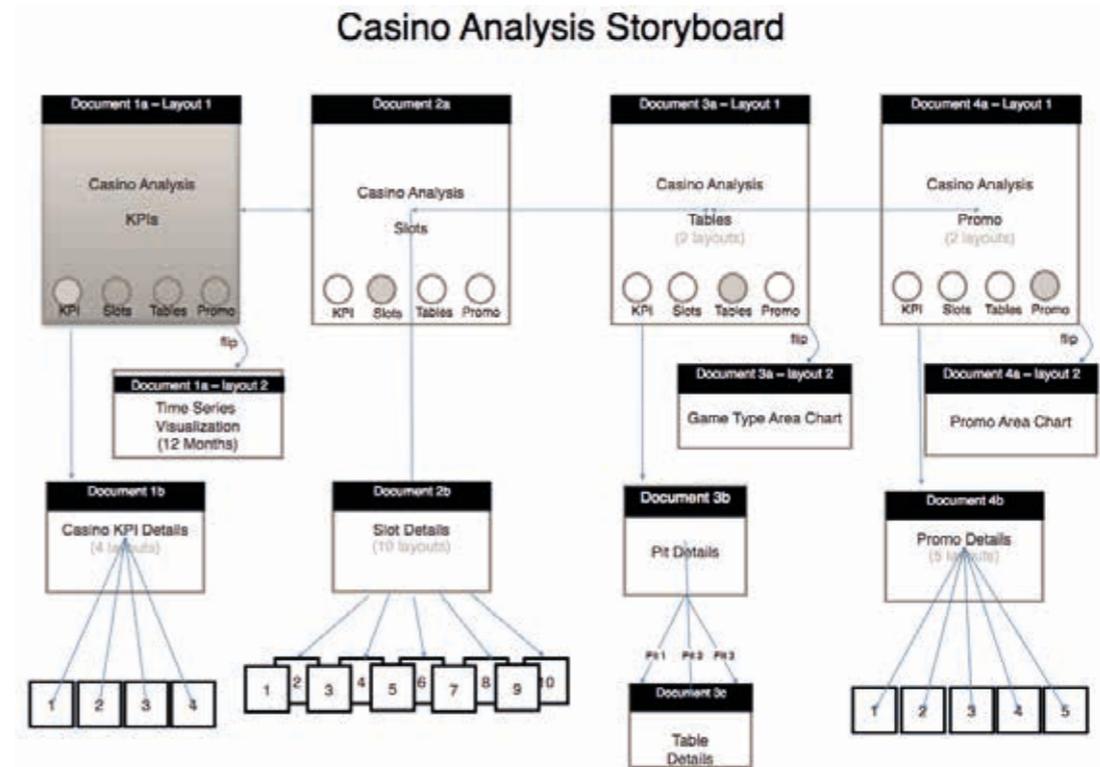


Diagram the Right Workflow

Mobile apps require workflows or storyboards that describe the app in detail. The app begins as a wireframe mockup with placeholders, showing the app process flow and designs for each individual screen. Once you have the foundation, you can create all the required reports and charts required for the app. Once the app is complete, you can substitute actual screenshots of the reports and charts for the wireframe placeholders, and begin assembling the app.

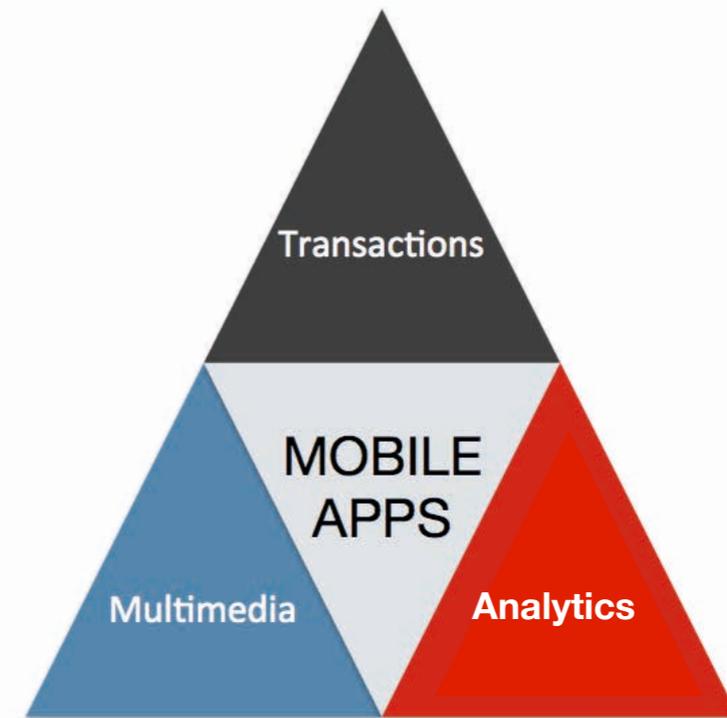
App Strategy

Now that you have an idea of your app's focus and workflow, it is time to decide on the best way to present your information. Information forms the backbone of successful decision-making.

Apps deliver business acceleration and optimization software to employees, customers, and decision-makers. Moreover, they are compelling, exciting, and thus highly-adopted by the user base.

Because of the diversity of users and information, you must utilize different strategies to effectively impart meaningful, tailored apps. To accomplish this, the best apps combine varying degrees of three core Mobile capabilities: Transactions, Multimedia, and Analytics.

Transactions enable you to update databases and operate ERP systems using SQL for database write-back or XQuery for Web Services applications. With Transactions, we open up the scope of the type of applications you can build using our platform, as you can now take action and make decisions based on the data at your fingertips.



From Insight to Action

Multimedia enables you to access unstructured information, such as links to web content and email, and also allows you to share information, like PDF files and ePubs. This enables you to present information more dynamically.

Analytics give you the ability to explore and manipulate information, in tabular, graphic, and widget formats. Sophisticated data-mining and alerting capabilities provide apps with a richer level of intelligence to impart to the user.

Apps with Transactions

Transaction capabilities give employees at all levels the ability to instantly traverse from insight to action by entering data, approving requests, adjusting forecasts, adding comments, uploading photos, scanning product SKUs, and more—all from the palm of their hand.

The ease with which information can be shared and updated leverages your ability to quickly complete work while on the go. This highly-scalable solution stores thousands of user transactions, triggering new business processes, reallocated resources, and accelerated business activity.

Transaction capabilities can be embedded into your mobile apps, enabling you to submit and update data and images in ERP systems, CRM systems, and operational databases.

To implement transaction services, a secure connection is initiated between the device and the backend transaction systems and databases, and information is written to them from the mobile device. SQL is used to drive database transactions, while XQuery is used for Web Services applications.

When completing transactions using Web Services, you use the Simple Object Access Protocol (SOAP) or the newer Representational State Transfer (REST) protocol. SOAP and REST are object-access protocols that are used in web services architectures.

Design your app Using a Wide Array of Transaction Input Types

- Text Inputs
- Number Inputs
- Calendar
- Camera
- GPS
- Switches
- Steppers



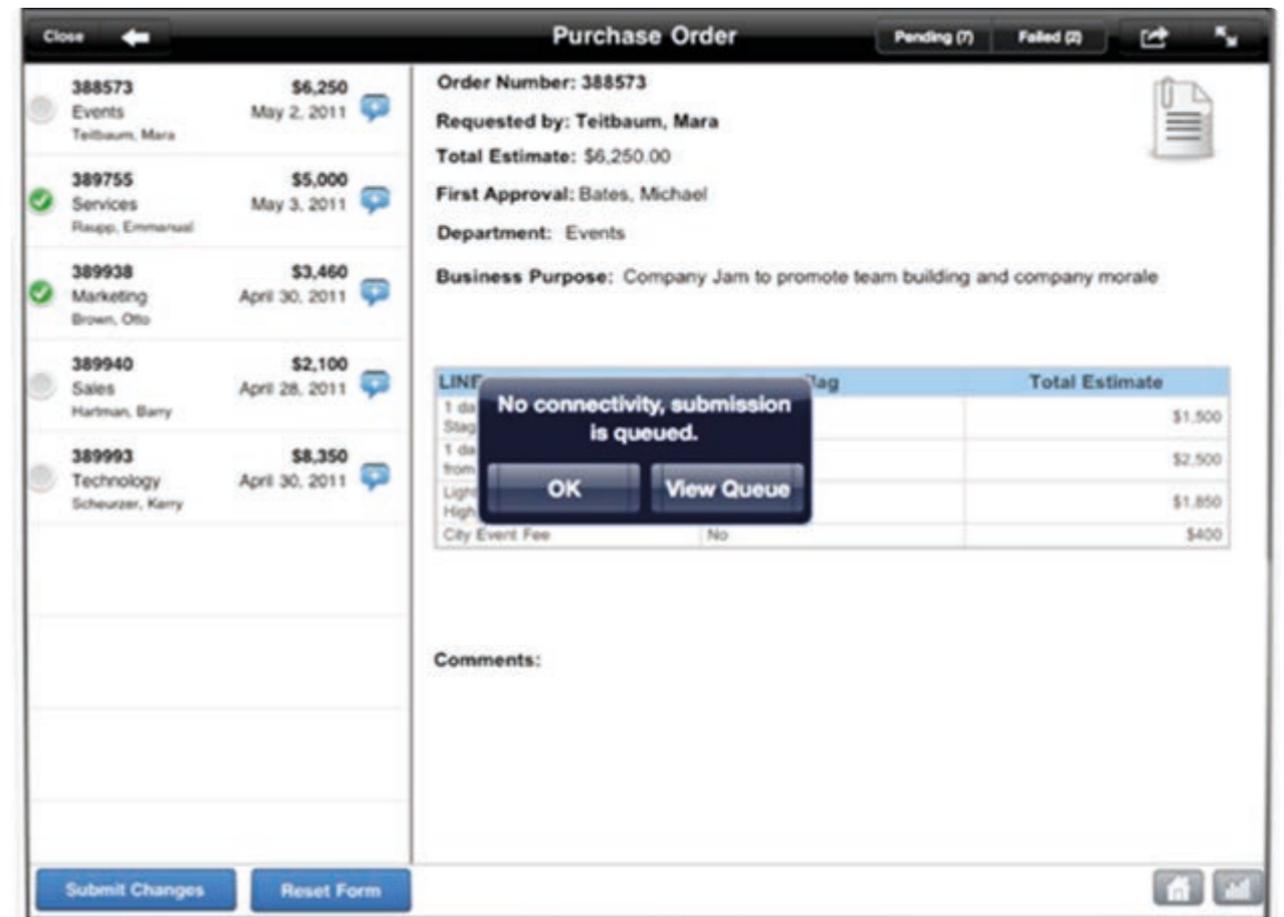
Chapter 3, Section 3

With flexibility to use either protocol, organizations can build transactional apps that take advantage of their existing Service Oriented Architecture (SOA). XQuery leverages existing Web Services so that the transactional systems already in place can be quickly surfaced in new, exciting Mobile apps. Early planning as to how transactions will be routed will save time and promote future efficiency.

One huge selling point of transactions is that they enable mobile device users to submit transactions while offline. When transactions are submitted offline, a message is displayed indicating that the transaction will be queued and resubmitted when connectivity resumes.

Mobile technology eliminates the enormous time delay created when data needs to be written to a database and there is no internet access nearby. Adding transactions to your apps is the best way to ensure that your workforce is truly mobile.

Gallery 3.1 Offline Transactions Workflow



When transactions are submitted offline, a message is displayed indicating that the transaction will be queued and resubmitted when connectivity resumes. At the message, you can tap **OK** to accept the message or **View Queue** to display the Transaction Queue.



Data entry



Approval mgmt.



Payments



Editable Grids

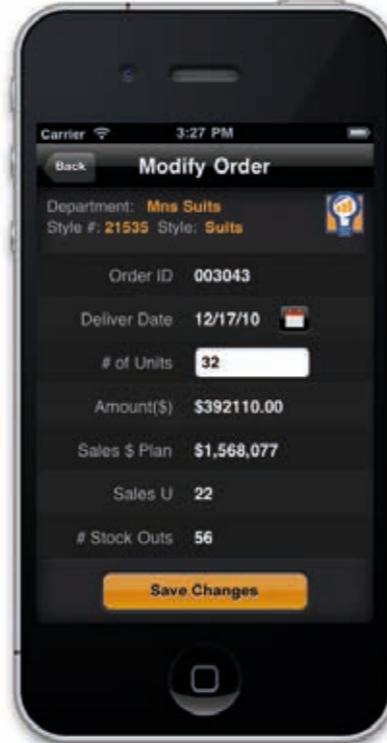
MicroStrategy offers a myriad of transaction capabilities



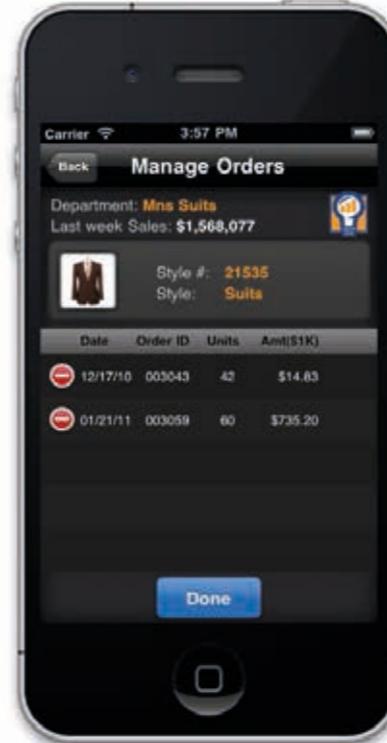
Update a Value



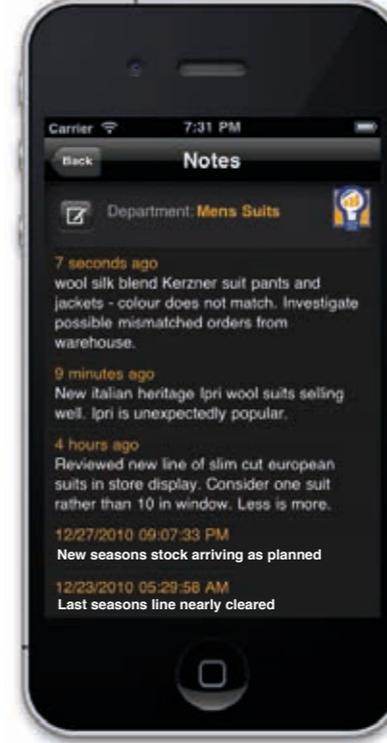
Make a Note



Edit a Form



Cancel an Order



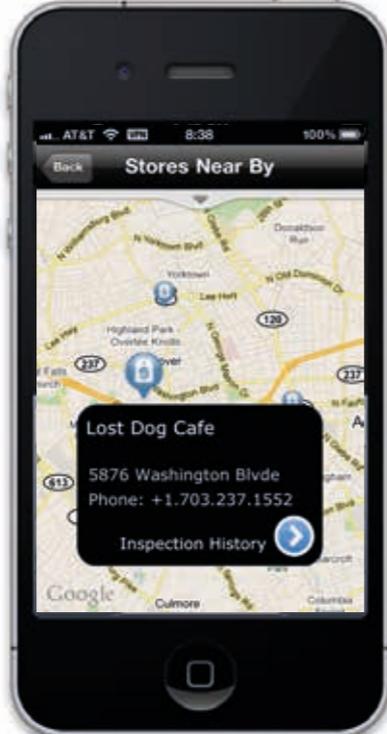
Review Activity



Capture a Signature



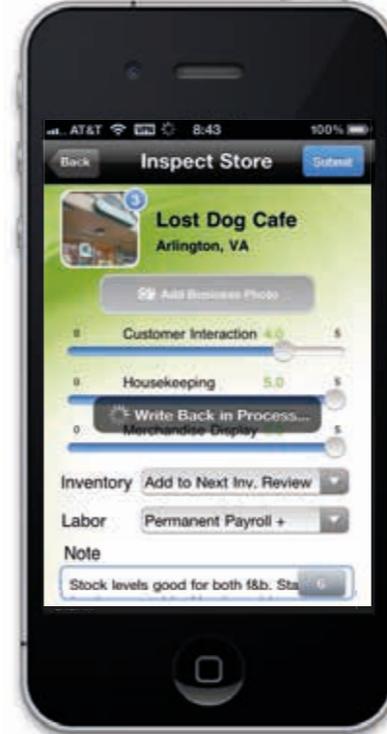
Enable GPS



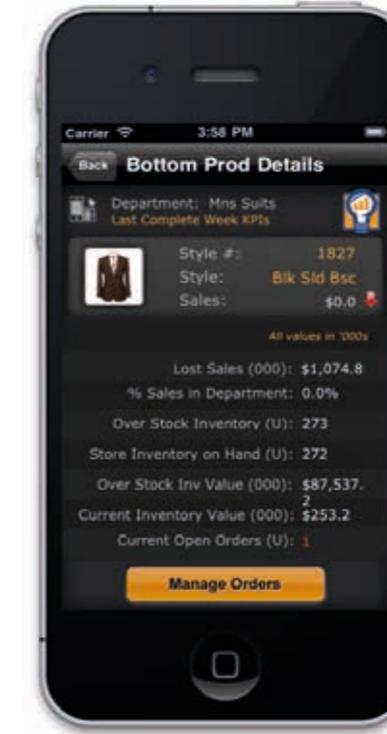
Find your Location



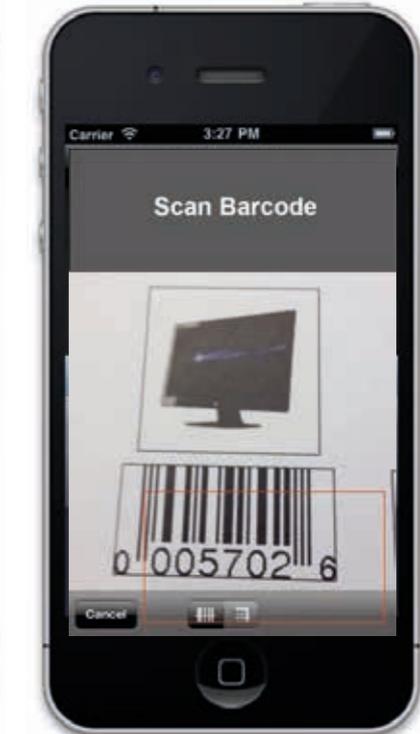
Upload a Photo



File a Review



Manage Inventory



Scan a Barcode

Apps with Multimedia

Use Multimedia to Engage and Inform.

Adding multimedia to your mobile apps increases your ability to engage your audience. By directly delivering any type of multimedia, from your latest promotional videos, commercials, and product endorsements to training brochures and presentations, users are able to access files immediately.

You can also equip your mobile workforce with instructional videos and product manuals; and, they will be able to access all of this information without ever leaving the app.

Some examples of multimedia capabilities are the in-app PDF reader, email, and browser. For greater interactivity, HTML containers and ePub integration can also be utilized.

There are two ways to include multimedia in your apps:

Freeform multimedia allows you to access multimedia on the fly using either HTML containers or URLs.

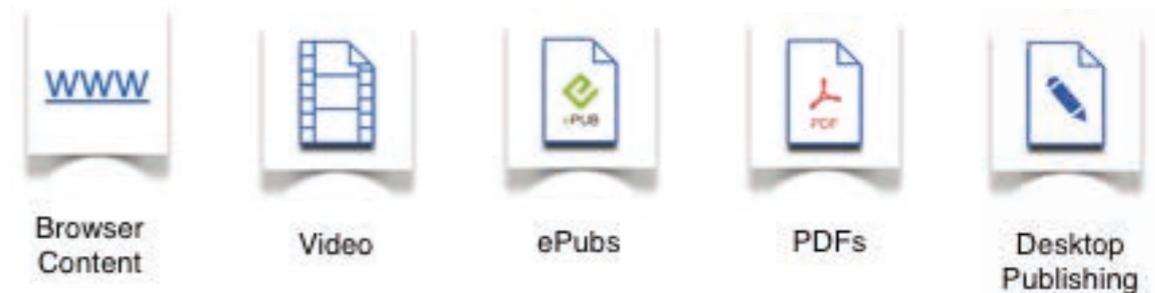
HTML containers enable you to access any content that is available on the world wide web, and place it in an iFrame

directly into your app alongside your other content. URLs provide links to pull-up entire documents or web pages.

Plug & Play allows you to employ an out-of-the-box multimedia widget, or alternatively browse any set of webDAV folders.

The out-of-the-box multimedia widget simplifies using multimedia, as it gives you a framework in which you can download, consume, and store multimedia files.

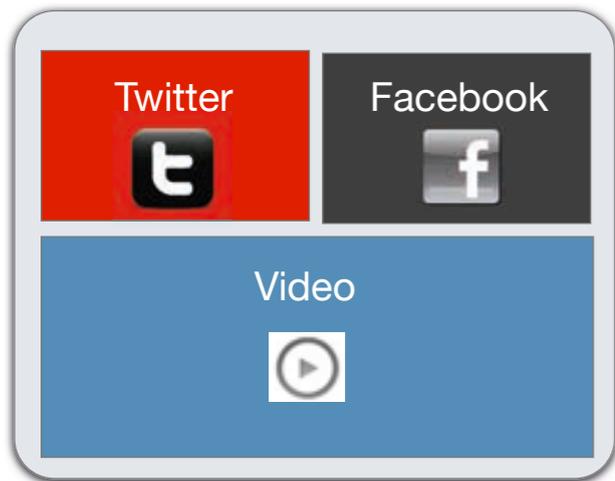
WebDAV folder integration enables users to browse and view existing files and folders in a webDAV folder. When viewed on an iPad or iPhone, the widget lists available files in a grid layout along with the file name, the last-modified timestamp, and the file type.



Freeform Multimedia

iFrame-based

Multimedia is stored in an HTML Container, which is resource-intensive but allows for extensive formatting and content reusability.



HTML

URL-based

Gives you in-app access to unstructured media, such as videos, email, browser, and PDFs. ePubs can be opened in third-party programs.



URL

Plug & Play Multimedia

Multimedia Widget

Underlying report is referenced using SQL or XQuery to surface multimedia. Prompts, filters, and selectors can be used.

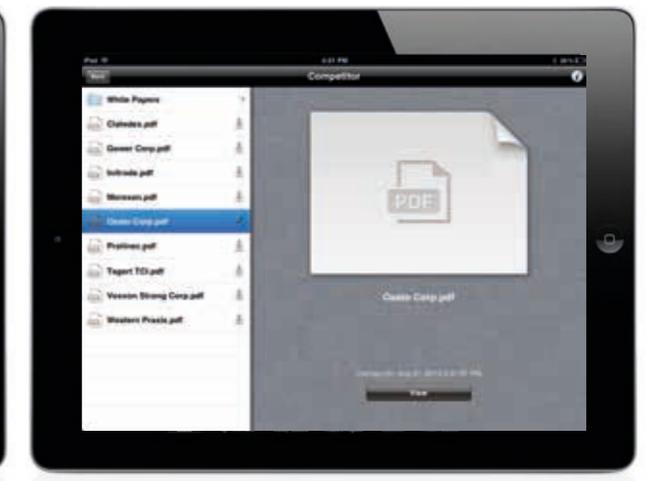


SQL

XQuery

WebDAV Integration

Folder structure is created and referenced in-app. Users will only be able to see documents for which they have permissions.



SharePoint

EMC

Oracle ECM

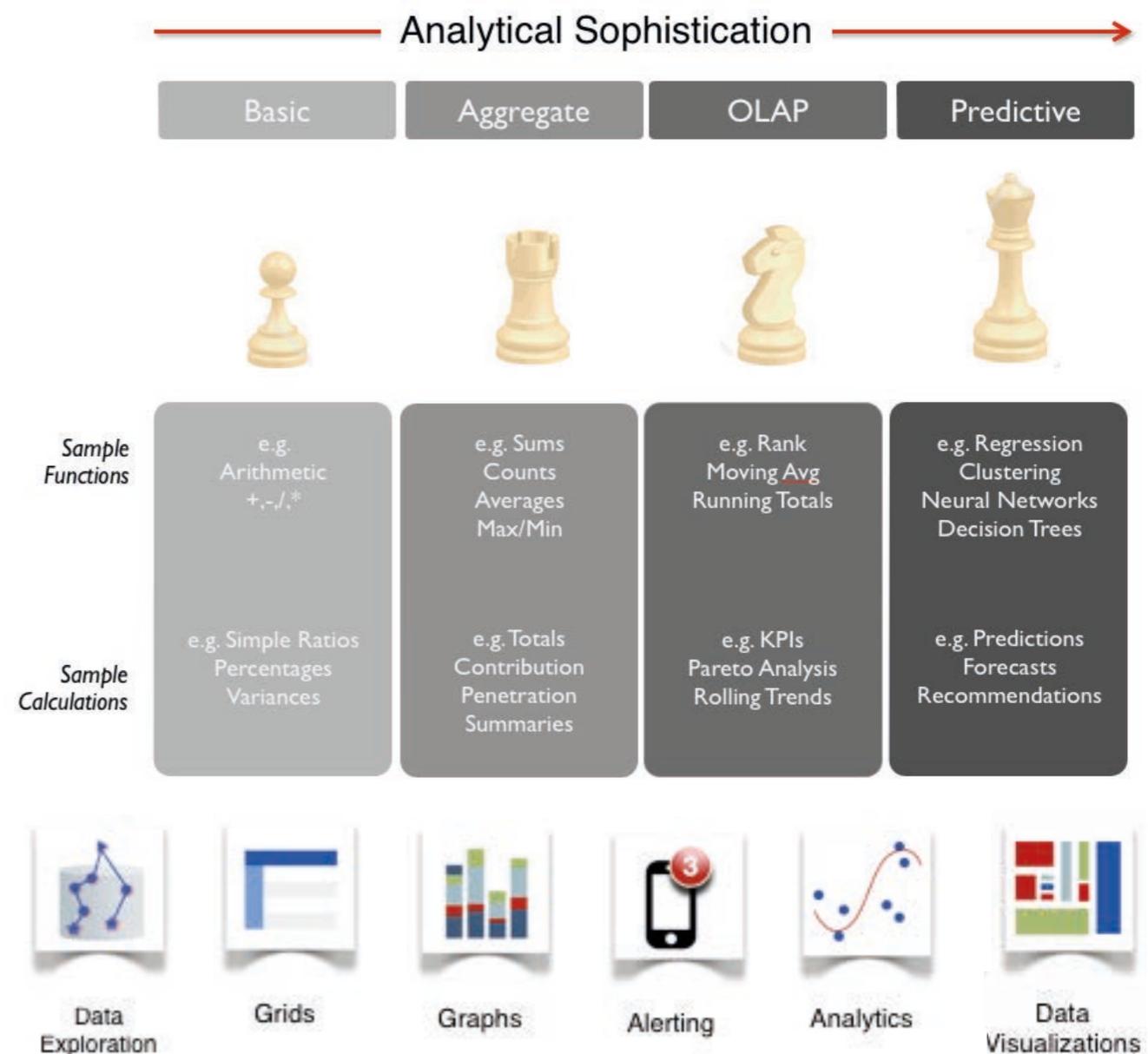
Apps with Analytics

MicroStrategy's twenty-plus years of experience and investment in business intelligence software enables you to easily harness powerful analytics, impressive data visualizations, and intuitive data exploration. Furthermore, the 64-bit architecture, linear scalability, and optimized SQL delivers a premier analytical experience.

In addition to utilizing standard MicroStrategy grid, graphs, and documents, you can also employ widgets that have been designed specifically for the iPhone and iPad interfaces. Mobile apps use natural inputs that change context to meet the needs of the query: swipe to page through information, rotate for a different viewpoint, photo capture for barcode, GPS for location, microphone for voice. These diverse abilities enable you to create apps for a multitude of business needs.

You can also take advantage of these analytical capabilities when offline. Apps, and their supporting information, can be stored securely and locally on the device.

Powerful Analytics for Decision Making

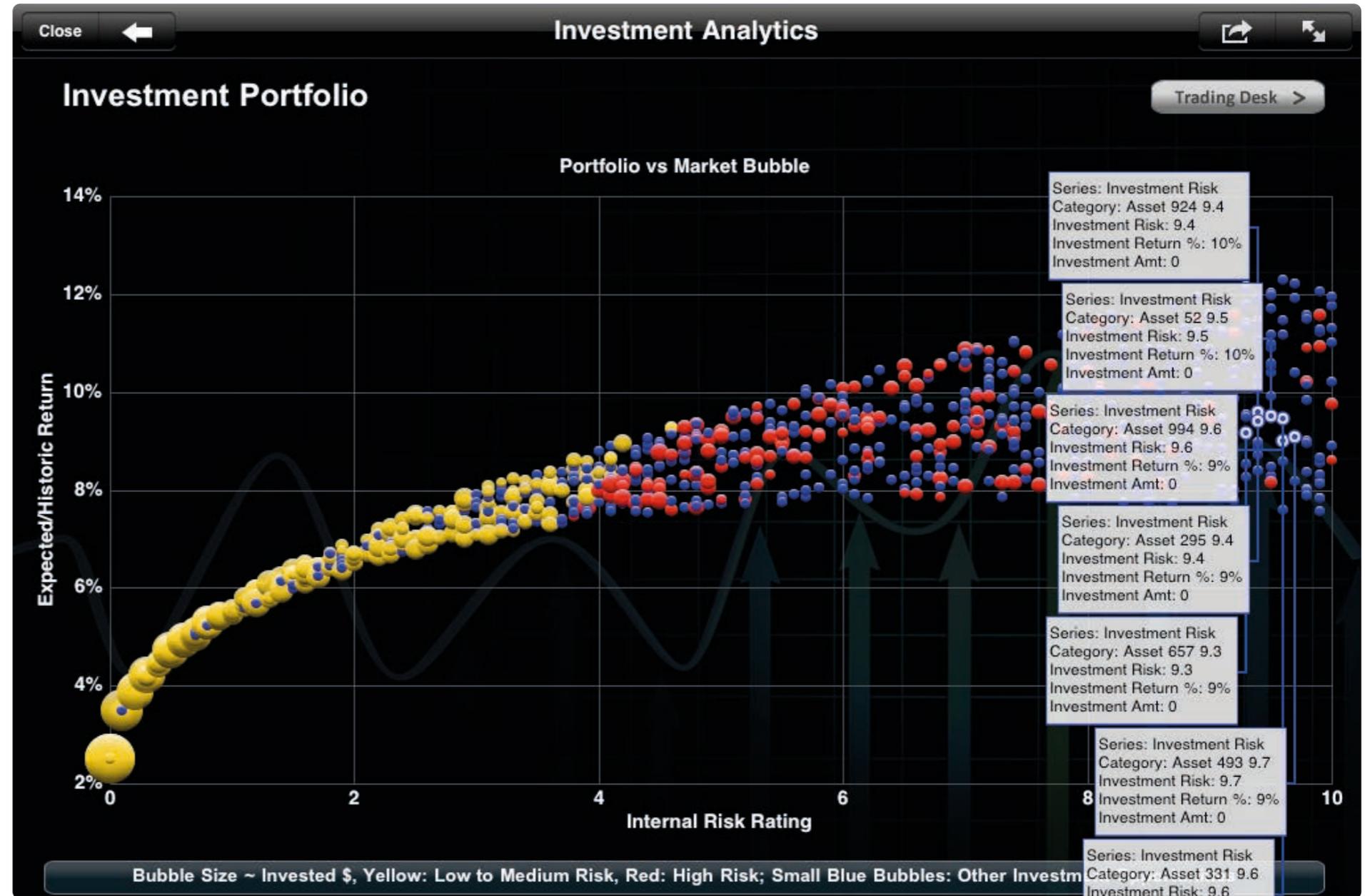


Chapter 3, Section 5

Gallery 3.2 Compelling Grids and Graphs

Use advanced analytics in your apps, leveraging the following features:

- Touch-optimized Selectors and App Controls
- Advanced Data Visualizations
- Data-driven Alerting
- Sensor inputs
- Adaptive Mobile Caching
- User and Data Scalability
- Performance Enhancement
- Automatic data updates when new information is available



MicroStrategy's traditional grids and graphs can be used as powerful data visualization tools.



Gallery 3.3 Advanced Data Visualizations



The Density Map Widget allows users to view population density on an easily-editable map.

App Development

"What was really a turning point and unbelievably impressive was sitting down with a MicroStrategy beta consultant, and two days later, playing with an app on my iPhone that I could show to our executives."

-Guillermo Ramas, *VP of Strategy and Product Development for Information and Data Services at Novation, a VHA Subsidiary*

Our Design Philosophy

Great apps are **Consequential**

Apps increase the velocity of decision-making

Great apps are **Durable**

Apps embedded with insight withstand the test of time

Great apps are **Hot**

Apps are equal parts powerful and beautiful, fascinating, and captivating

MicroStrategy's highest priority is the success of your app, and we are committing to helping you succeed.

Make the App Indispensable

The goal behind apps built using the Mobile App Platform is that not only will they be compelling, visually-appealing, and helpful, but also that they will become so integral to your company that your business users and customers will reference them multiple times per day. Our 'User First' philosophy enables users to seamlessly develop, deploy, maintain, and monitor their mobile apps, which leads to pixel-perfect design, improved business

decisions and extensive, detailed analyses that were previously unavailable.

Not only does the Mobile App Platform give you the opportunity to create compelling and exciting apps that change the way your business is run, it also increases user engagement and leverages existing system ROI.

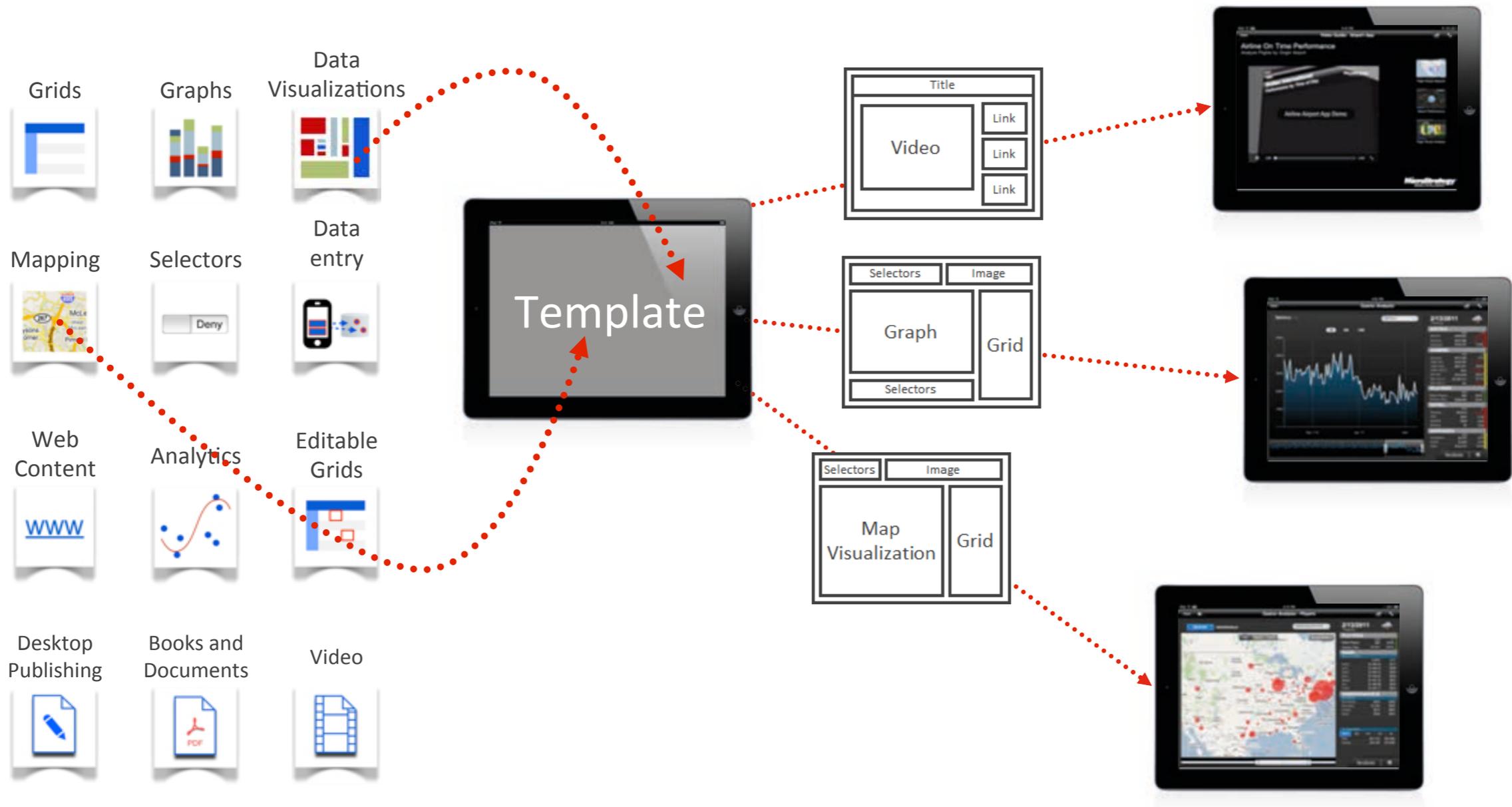
Make the App Your Own

Although most of our customers begin with an empty canvas, there are a collection of out-of-the-box templates that you can use to get started. A template is a pre-formatted document that can be custom-created and re-used for fast app development. Customers tend to be most successful when they depart from the templates and imbue the app with their company's corporate look and feel as well their unique workflows. Once you have decided on a design scheme that works for you, you can even create your own customized templates to facilitate future development.

Ultimately, MicroStrategy provides the design palette and tools to create any information-driven mobile app you can imagine.

MicroStrategy Design Tools are **Highly Flexible and Code-Free**

- 1** Select from a range of design objects
- 2** Drag objects to templates and define interactivity
- 3** Save the resulting App and share it instantly and securely

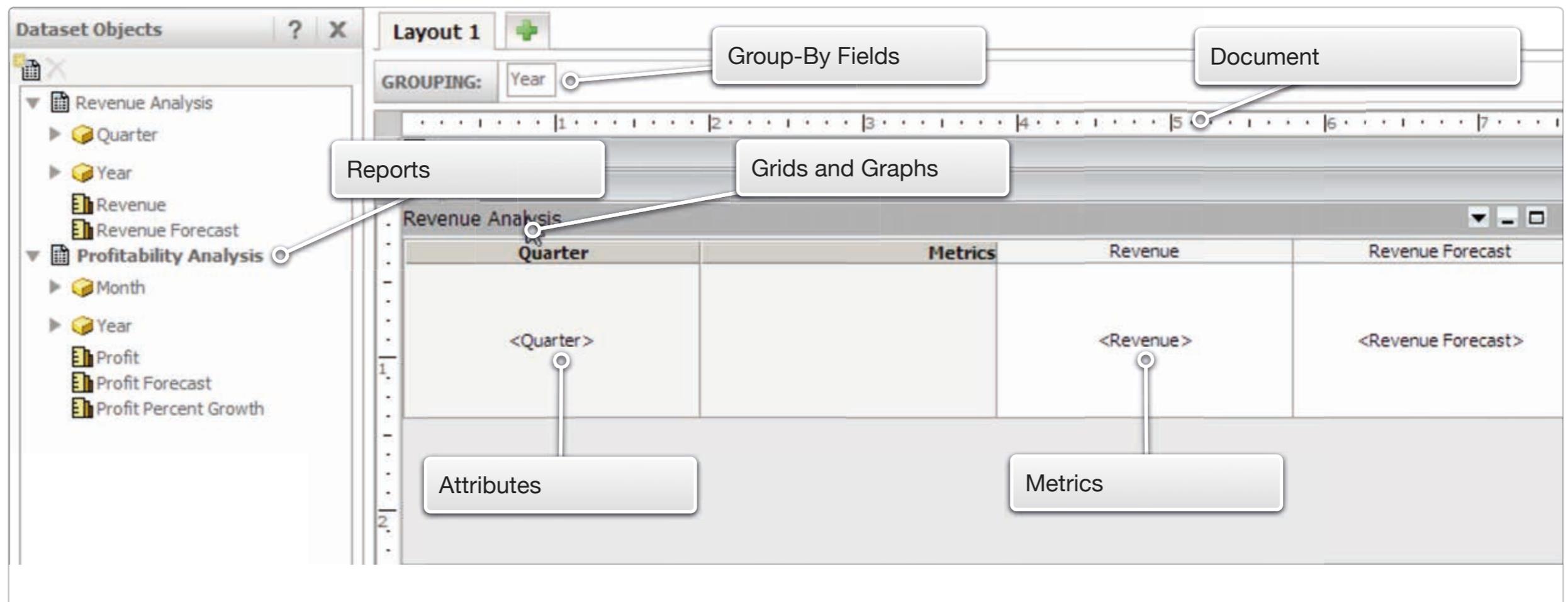


App Construction

The building blocks of any project are created inside of the MicroStrategy Web interface. If you are an existing user of MicroStrategy products, know that you already have the required

skills to develop incredible apps. For first-time users, have no fear, we can teach you how to create an app from scratch in four short steps.

Interactive 4.1 MicroStrategy Web App Editor Interface



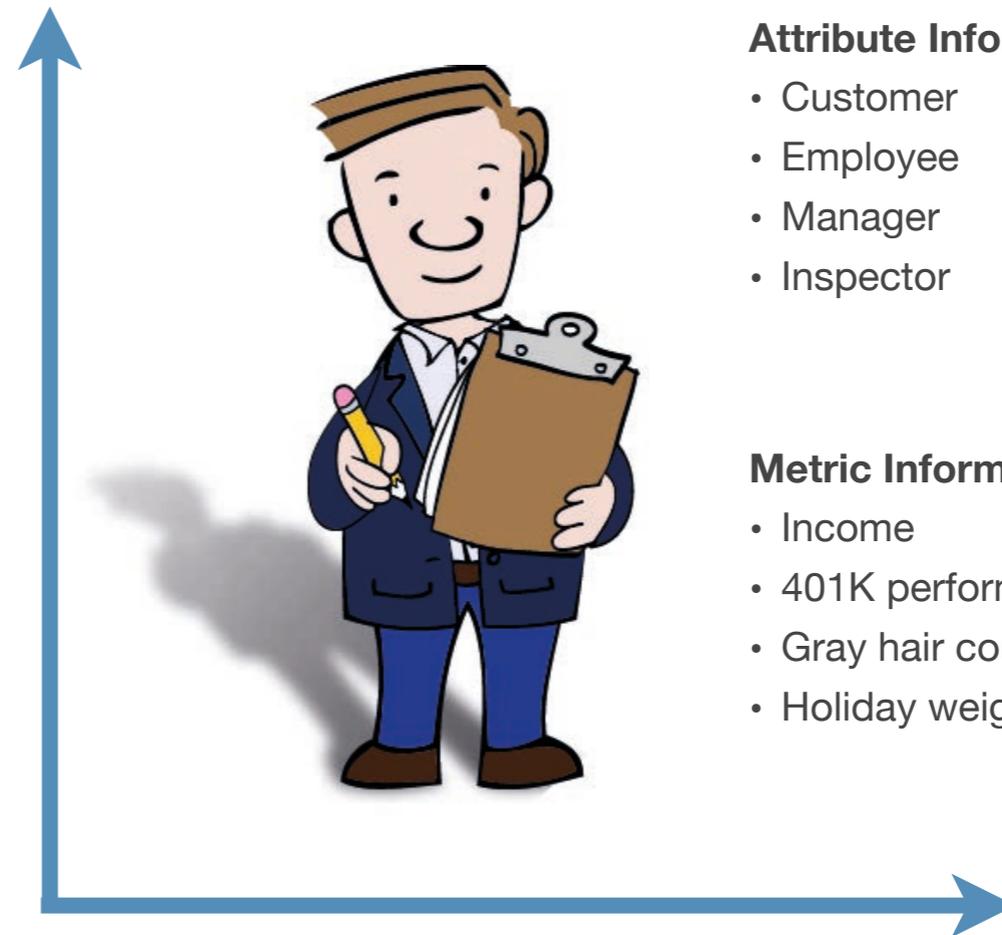
Step 1: Assemble your Dataset

Deciding which attributes and metrics to include in your analyses is the most important step toward creating a fully-functional, insightful app. Attributes and metrics are the building blocks of any analysis because attributes define where you look for information, while metrics define the information and calculations you will require.

A **Dataset** is a collection of attributes and metrics.

- **Attributes** are descriptive information, providing information about the customer, product, geography, and time. They give business context and define the summarization levels for calculations
- **Metrics** are quantitative information, such as business measures and analytical calculations.

For example, when looking at the man to the right, here are some examples of attribute and metric information that you may see.



Attribute Information:

- Customer
- Employee
- Manager
- Inspector

Metric Information:

- Income
- 401K performance
- Gray hair count
- Holiday weight gain

Step 2: Create a Report



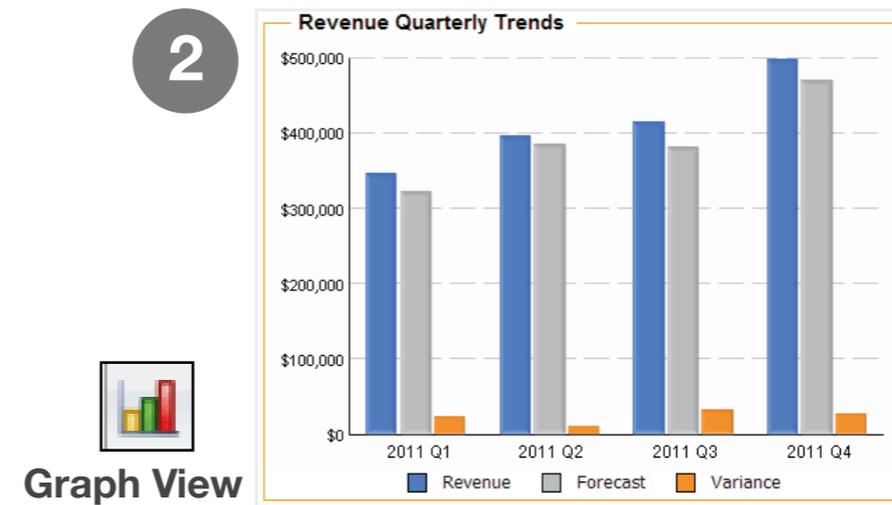
A **Report** is created when you place the attributes and metrics you chose for your **Dataset** into the Report Template. This will act as the underlying query to your data source.

Attributes

Metrics

Attributes		Metrics	
Year	Quarter	Revenue	Revenue Forecast
<Year>	<Quarter>	<Revenue>	<Revenue Forecast>

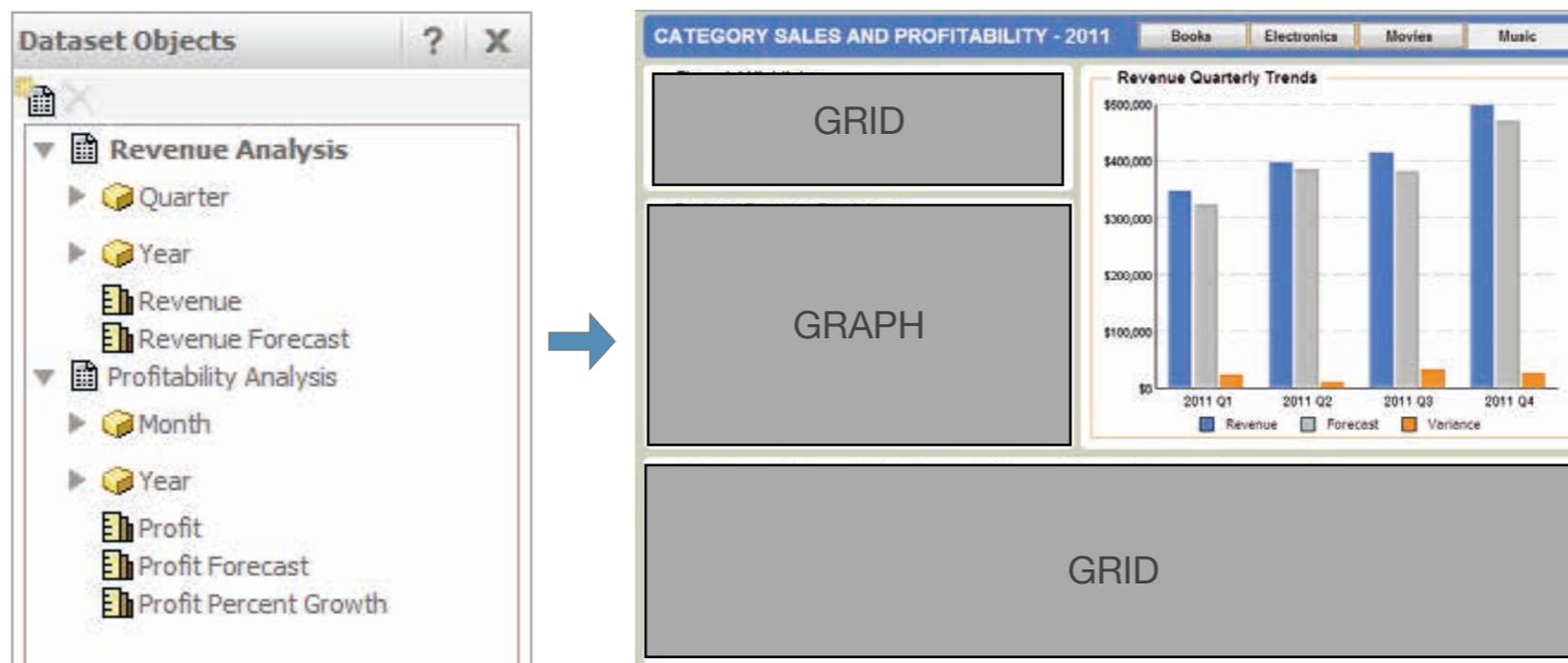
Once you execute a dataset report, there are two ways to view the populated results: grid or graph view.



Step 3: Build Your Document

MicroStrategy's drag-and-drop design interface simplifies document creation

A **Document** contains one or more reports. The existence of multiple reports enables you to mix and match your analyses, using grids or graphs, and present a variety of information. This is the formatting stage where grids and graphs are arranged the way you would like to view them on your mobile device.



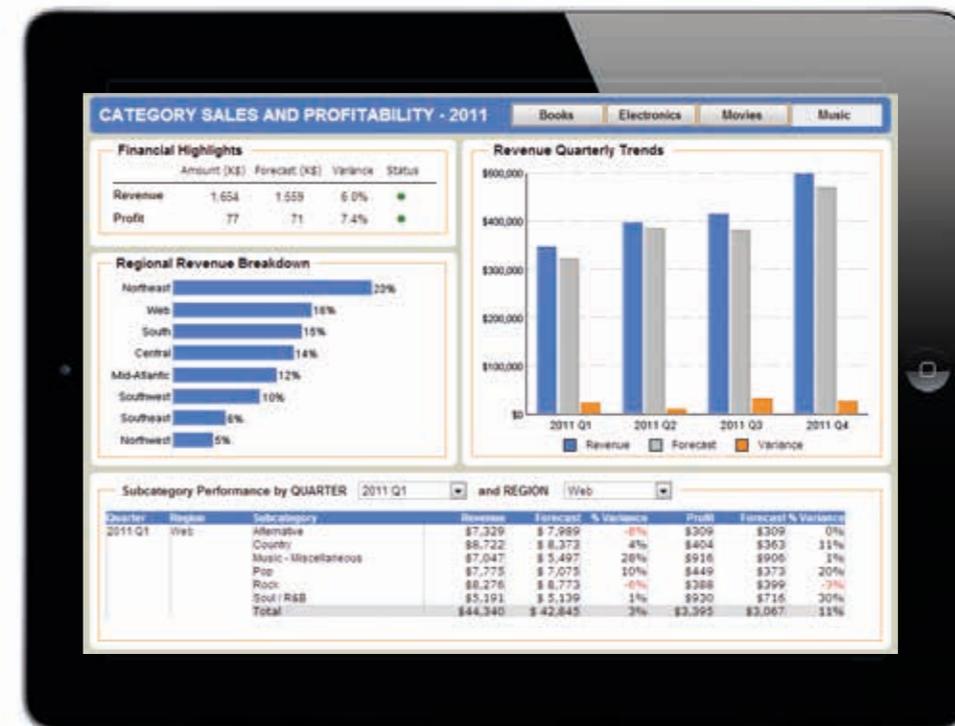
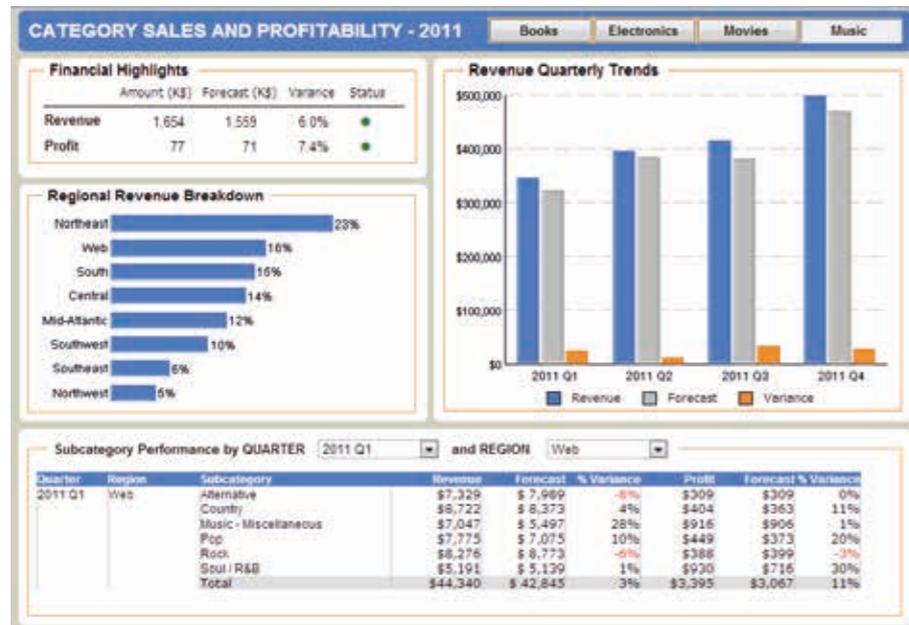
A Note on Widgets

Widgets are essentially advanced grids and graphs. They are created, formatted, and placed into documents in the exact same way. These advanced visualizations deepen the analysis gleaned from grids and graphs. Some widgets that we viewed previously include Density Maps, Network Visualizations, Heat Maps, Timelines, and more. Refer to page 29 for more details.

Step 4: Deploy to a Mobile Device

It is that easy to develop and deploy your own mobile app.

Once your grids and graphs have been assembled into an appropriately-sized document, you can then deploy your document to your mobile device. Because this process is instantaneous, it greatly aids the revision process, enabling you to check your work at any time.



Apps are comprised of multiple documents linked together, and are designed to help the user perform specific tasks or achieve specific kinds of insight. The competitive advantage of the Mobile App Platform is that it enables you to quickly create and deploy professional-grade apps to a mobile device—without writing a single line of code.

Linking, Swiping, Rotating, and Using Gestures

Now that you have deployed a dashboard to a mobile device, you have essentially created a simple app. Now it is time to add complexity to the app and increase its value.

Using the app storyboard that you created, the first step is to create links which will quickly and intuitively form the groundwork of a MicroStrategy Mobile app. There are many ways to surface links in-app, as links can be placed on images, text, graph points, documents, and more. Here are some of the most common strategies employed by savvy developers:

- Link by Swiping
- Linked Menu Bars
- Linked Panels
- Linked Drilling

Swiping is the simplest way to link documents and panels, but it becomes unwieldy if there are too many app components.

Linked Menu Bars are the most common way to navigate throughout an app, often involving placing a link over an explanatory image or text.

Linked Drilling is best when analyses are directed in a single direction, as each step enables you to access more detailed data.

Linked Panels provide more summary level data while also allowing detailed analysis via app panel stacks or embedded panel stacks.

You may also diversify your analysis by toggling the portrait and landscape views of your app to add rotational abilities and by using the native app gestures.

Tablet vs. Smartphone Design

Keep in mind that a single app deployed on a tablet device tends to possess more complex abilities, due to greater screen real estate. Apps deployed on smartphones tend to be simpler, more directed apps that address one or a few business processes.

Link by Swiping

The most basic way to connect two documents is to link them by swiping.

At the bottom of the app, you can see the docked toolbar. The two dots at the bottom of the page signal the number of pages, while the highlighted dot shows your progress or position.

You can link as many documents together as you like, just keep in mind that this mode of navigation may become unwieldy if there are too many pages.



Linked Menu Bars

1

Daily KPIs



2

Slots Performance



3

Tables Performance



4

Promotions



Use a menu bar with links on images to quickly navigate between screens.

Linked Drilling and Panel Stack Architectures

Linked Drilling and Linked Panel Stack architectures are more advanced ways to gain insight and to structure app workflows.

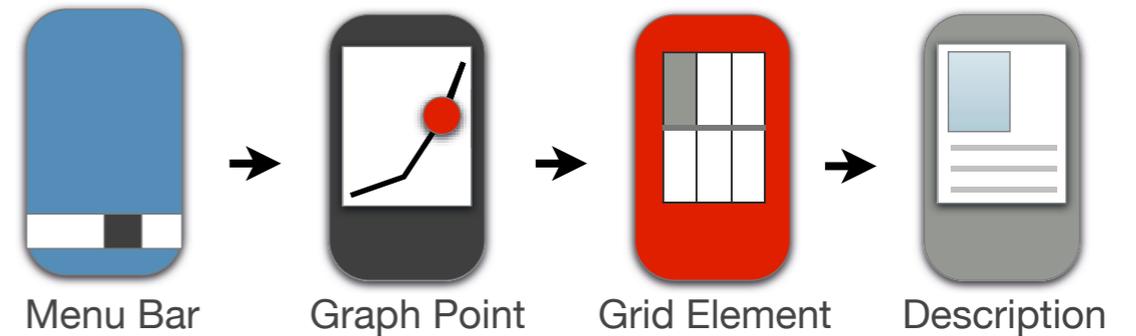
Linked drilling lets you move seamlessly between different screens, enabling you to instantly access more specific information, while linked panels allow you to approach data at a more summarized level.

Panel stacks, like documents, are container objects that may contain any number of editable panels you desire. In order to create either an app or an embedded panel stack, you need to drag a panel stack onto your Document design template.

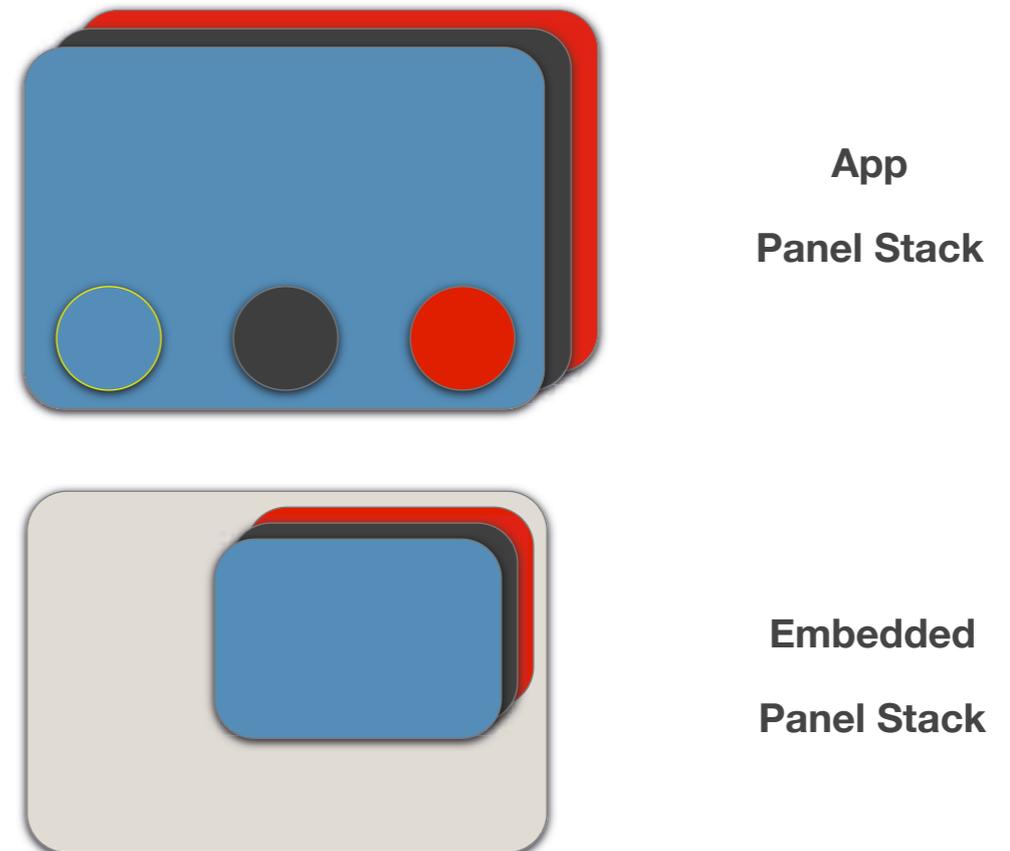
An app panel stack takes up the entirety of the app screen, while an embedded panel stack only takes up a portion of a page. The embedded panel stack strategy is most often used in tablet development, due to greater screen real estate.

Linked Panel Stack architectures are one of the most efficient ways to structure an app. It is different from what we have seen before, as each app screen is actually a different panel in a panel stack—not a separate document, as we have seen previously. Like apps that are created using linked documents, oftentimes a linked menu bar of some sort is used to navigate the app.

Linked Drilling



Linked Panel Stack



Rotation

Rotation adds another layer of interactivity to mobile apps. To enable rotation, a document needs to be assigned two views that correspond to the app's orientation:

- Portrait view
- Landscape view

Once these views are assigned, simply rotating the device will cause the correct view to be displayed. For example, you can have a grid visualization show in the portrait view, while a graph or widget is displayed in landscape mode—or whatever fits your data.

In the case of smartphones, rotation leverages limited app design space. On the iPad, rotation can improve app versatility, or even just offer the same app options if the user would like to hold the device in a different orientation.



The symbol at the bottom left of the screen lets you know that a landscape view is available if you rotate the device.

Using Gestures

Because the Mobile App Platform does not use rigid templates, you are free to take advantage of any and all gestures native to your device.

Data exploration gestures on iOS devices include:

- **Tap:** select or drill down
- **Swipe:** move between screens or panels
- **Pinch:** zoom in and out
- **Annotate:** comment, circle data
- **Type:** make notes using the keyboard that automatically populates

Taking advantage of these gestures will allow users to interact more fully with the information on their device.

Movie 4.1 Annotation Video



Use these gestures to take advantage of your device's native gestures and capabilities.

Offline App Experience

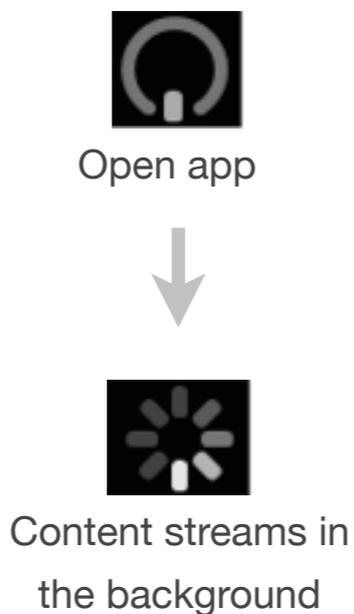
Unlike desktop and laptop computers, an app's usefulness is not limited to when it is connected to Wi-Fi. There are three main caching strategies and offline indicators that serve to improve the app's offline experience for business users and customers: Automatic Caching, Pre-caching Folders, and Adaptive Mobile Caching.

Automatic Caching is essentially like email. Devices check for new and updated content that is set to be available offline and syncs content to the device in the background. Check the synchronization status by using the MicroStrategy Mobile loading bar —which can be enabled in the Mobile Server settings at the Mobile Configuration level.

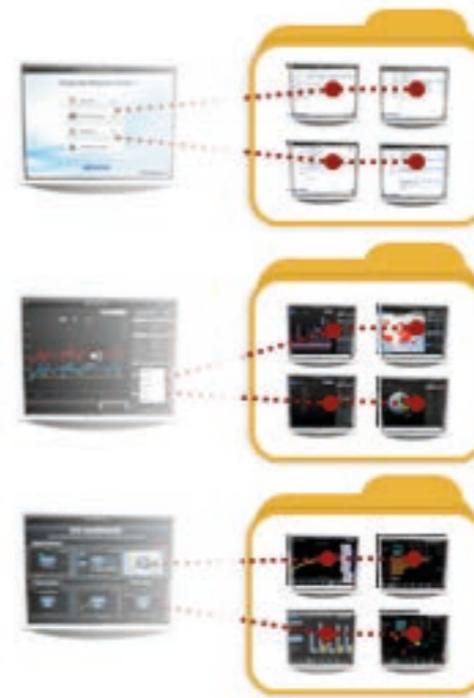
Pre-caching Folders enables the mobile administrator to define a set of objects to be pre-cached by the

mobile client when the app starts. On the Home Screen page of any Mobile configuration, administrators can define any folder, report, or document to be pre-cached at startup. This feature enables you to stream app content faster to your device and view content offline, improving app interactivity. This caching

Automatic Caching



Pre-Cache Folders



Adaptive Caching



Chapter 4, Section 4

strategy provides enhanced app performance to the user and more extensive offline exploration.

Adaptive Mobile Caching enables you to cache and preload sets of reports and documents onto a mobile device upon initially launching the MicroStrategy mobile app. The app prioritizes the background cache loading based on where the user is, so the app intuitively downloads content that the user might want so that it is ready before the user taps.

Updating Caches

Documents are updated as soon as new or updated content is available. To avoid having the user “check” unnecessarily for new content by pushing some type of ‘refresh’ button, the checking for cache and the pushing of new cache content is managed by the app designer. The app designer can specify how often, in milliseconds, the app checks with the Mobile Server for new or updated content.

The designer can also create schedules at the server level for updating the cache so that content—especially content that is recently requested or shared across users—is refreshed by the ‘cache update subscription’ setup on the Intelligence Server.

Offline Document Link Indication

If an image is used as a document link, and the document is available in the the local cache, the user can tap on the image to link to the button. However, if the document is not cached locally, a transparent gray shade is applied to the image link, to indicate that the document cannot be accessed at this time.

For example, if you view the iPad App Store app home page in airplane mode, apps not available in offline mode have the thumbnail grayed out.

Deployment

“The difference between getting a laptop out of sleep mode, starting the browser, entering a URL, waiting for the download, versus a single tap on the iPad and [waiting for] a handful of seconds is immense.”

- Mark LaRow, *Senior Vice President of Products at MicroStrategy*

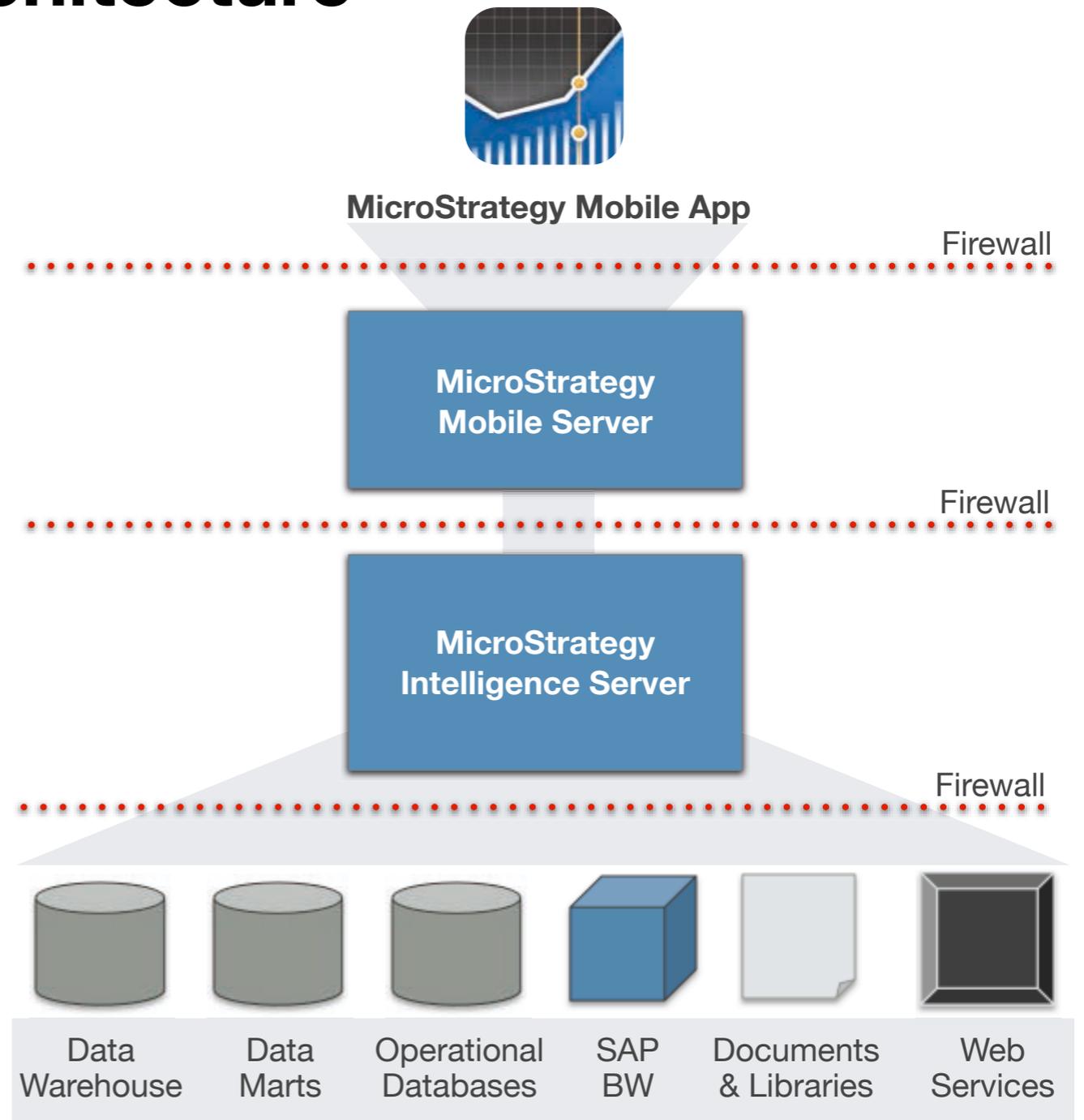


Mobile App Platform Architecture

The Mobile App Platform offers several possible deployment strategies. Underlying these strategies are an array of time-saving abilities that allow administrators to configure, control, and secure the app user experience. But in order to effectively administrate your environment, you must first understand the architecture.

The architecture of the Mobile App Platform is actually rather simple. The Intelligence Server is the foundation of the Mobile App Platform, as it is the hub between your metadata and your existing data sources. The Intelligence Server formats data so that it can be read by the Mobile Server. The Mobile Server then manages the secure transmission of documents to your app.

To look at this from an app administrator's perspective, every change that is made to the metadata would be registered by the Intelligence Server. The Intelligence Server would then instantly read the changes and push them through to the Mobile Server, which would update the app. This seamless process ensures that you are always viewing the most updated version of your information.



MicroStrategy Mobile App Platform Architecture

Deployment Strategies

The Mobile App Platform has simplified the deployment process by offering deployment strategies that can be tailored to fit your timeline and application needs. There are two main ways to deploy MicroStrategy Mobile app:

- Download MicroStrategy Mobile from the Apple App Store
- Enterprise Deployment (recommended)

Each type of deployment has its benefits, but Enterprise Deployment is strongly recommended as it equips the user with greater administrative capabilities.

Download the app from the Apple App Store:

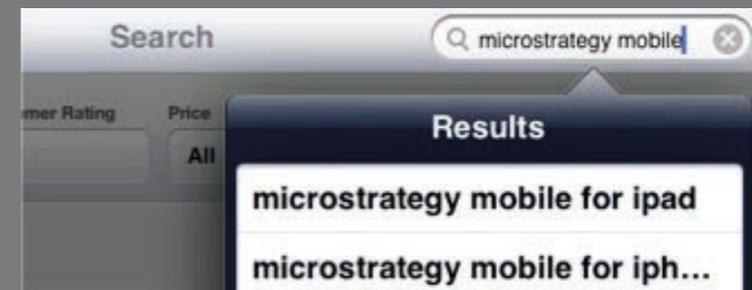
The simplest way to access the Mobile App Platform is to download the MicroStrategy Mobile App for iPad and iPhone from the App Store. Downloading the app from the App Store ensures that you are referencing the latest version of the app, which undergoes rigorous back-compatibility testing for your convenience. While this option is cost-free, please bear in mind that this type of deployment is most often used to explore functionality and test workflows, and is not recommended for a production-level deployment.

How to Download App from the Apple App Store:

1. On your iPad or iPhone, launch the **App Store** app



2. In the App Store app, in the Featured, Genius, Top Charts, or Categories tabs, tap the **Search** box.



3. In the Search box, type **MicroStrategy**.
4. In the list of apps, tap **MicroStrategy Mobile**. Tap **FREE**.



5. Tap **INSTALL**. Enter iTunes credentials. Tap **OK**.
6. In the iTunes Password window, enter your iTunes credentials.
7. Tap **OK**.

Chapter 5, Section 2

Enterprise Deployment

Enterprise Deployment is designed to provide effective and scalable app solutions in all app development environments. The features that distinguish Enterprise Deployment from downloading MicroStrategy Mobile from the App Store are the following:

- You control when users upgrade to the latest code, and can roll back to previous versions when necessary.
- Deployment can be done from a single link on a webpage of choice, usually an intranet or shared location, or the App Store.
- The App code comes directly from MicroStrategy, so there is no Apple Certification delay.
- App re-skinning enables you to add your corporate logo and colors to your app.

App Re-Skinning Options

Once you have decided on Enterprise Deployment, you can further tailor your app by choosing a re-skinning option. App re-skinning is important as it enables you to infuse your company's unique look and feel.

The mode in which you re-skin and deploy your apps are usually dependent upon the group to which you would like to deploy your app.

- 1) Re-Skin the app and deploy it to the App Store
- 2) Re-Skin the app and deploy it internally

The first option of deploying to the app to the App Store is usually utilized if the app is being deployed to the general public. Because consumers have limited access to your environment, the App Store provides an effective framework through which you can track downloads and present consistent corporate messaging.

Internal deployment makes mass app deployment to employees much easier, as the end user will only have to click on a 'Configuration Link' to launch and fully access the apps they need. These 'Configuration Links' can be stored on any webpage that the employees have access to or can be sent in email form. When sent as an email, the user simply has to click on the link which will initiate the configuration process via the internet on the desired device.

Your Data. Secured.

MicroStrategy delivers robust device security, data security, authentication, authorization, and transmission security to protect sensitive data in mobile applications. Microstrategy protects your information in the following ways:

Device-Level Security

- iOS Hardware Encryption of App Data
- iOS's "sandbox" protects App data from other apps
- AES encryption for all traffic
- VPN, HTTPS, WPA2 (128-bit encryption), SSL support
- Locally-stored data purged upon close
- Apps are signed to ensure the app is authentic
- Runtime checks enforce App Security
- AES encryption for App credentials:
 - digital identities
 - usernames
 - passwords
- Passcode required after timeout or suspended state
- Single sign-on support
- LDAP, Kerberos, Tivoli, NT Integration

Architecture and Data Transmission Security

- Secure communications across firewalls
- No database connection from the Mobile Server
- Single port control for data access
- No external remote procedure calls
- Encryption of communications between server components

User Authorization Security

- RIPEMD-160 hashing algorithm for storage of credentials on the server
- AES encryption for passwords
- Access control lists (ACLs)
- Application functionality privileges

Database Data Security

- Cell-level security control with security filters
- Native database security integration
- AES encryption for caches

Information Personalization

The Mobile App Platform empowers administrators to dictate permissions at the functionality, object, and user levels.

Functionality Controls

Users fall into various categories, such as casual user, power user, application developer, and administrator. Functionality privileges should fit the needs for their roles. For example, app developers will require the ability to create and edit objects; however, you run a considerable risk if you allow casual users to do the same.

Access Control Lists

On the object level, you can create Access Control Lists to govern the ability to read, write, delete, use, and execute specific objects. For example, there are certain metrics that executives would like to see in their apps that they don't want to make available to casual users. You can quickly change the privileges to the metrics, and those metrics won't even show up on the casual users' devices, even if they are still part of the report.

Security Filters

Security filters limit the data that a user or a group of users can access. The results of every data request by a user—including documents, reports, and prompt lists—are filtered based on the user's permissions. For example, a regional manager will need to see granular information for his specific region, as well as high-level information about the company's overall performance.

Most companies offer only the security filter functionality, and do not provide security at the object and functionality levels. Furthermore, the Mobile App Platform's security filter strategy is much more secure. Most companies make the mistake of using hand-coded, static SQL queries to capture this functionality. The Mobile App Platform also uses a SQL query, but includes a 'wildcard' that dynamically inserts the proper user security conditions at runtime. This allows you to personalize the information that your employees routinely access, and helps create a powerful security strategy.

Ensure the right information is given to the right person at the right time.

The MicroStrategy Command Center Puts You in Command

In addition to helping you create world-class information-driven apps, MicroStrategy-powered apps can help power the easiest and most inexpensive command center ever created. Businesses can now use a bank of iPads to drive and control a wall of HDTV screens. Users control the information from any iPad in the cluster, and all iPads instantly reflect selections on the wall.

MicroStrategy Command Center for mobile devices will change how you run meetings. Using a single device, you can control the views on multiple devices with a single tap of a button.

You can now turn your CEO's wall into a mission control center for the business or turn boring conference rooms into data-driven command centers—all for the lowest cost imaginable. With the powerful MicroStrategy Intelligence Platform hosted in the Cloud, all you need are iPads, AppleTVs, and HDTV screens to deliver a revolutionary touch-enabled command center.

Further, MicroStrategy integrates with Apple TV, so you can go to meetings armed with data and easily share insights with the entire conference room.

Movie 5.1 MicroStrategy Command Center

iPads

With the MicroStrategy Command center you are able to instantly turn a wall of HDTV screens into your personal command center.

Chapter 6

Maintenance



Maintenance

The Mobile App Platform is the most sophisticated and malleable piece of software you will ever use.

App Redesign

Earlier we discussed our rationale behind selecting a platform code-free environment for an app development space. However, nowhere is this decision more important than during the process of maintaining your apps.

When using native or platform code, every time you want to move an object, you have to specify the pixel location and recompile the code before you can see the change. This is a time-consuming and largely inefficient process.

On the other hand, the Mobile App Platform's drag-and-drop interface gives you the freedom to move items whenever and wherever you want, and you can see the results instantly.

The same principle of instant updates also applies to the objects themselves.

Leveraging the Metadata

While the Mobile App Platform's metadata makes app development a breeze, it is also vitally important during the maintenance process.

As mentioned previously, the metadata stores a unique definition for every object and enhances object reusability. Any change to an object will be reflected instantly in the metadata and will automatically update every instance of the object. This is critical during app maintenance, as every change you make will instantly be reflected in-app, speeding the app refinement and redesign process.

This simplifies the deployment and maintenance process as objects can constantly be edited and updated if changes are made to the workflow or objects within the app.

Additionally, these instant content updates require no code submission to Apple, which has traditionally proven to be an area of gridlock for other companies.

Monitoring

“[The iPad] has changed the way I work...before, I had to wait until I reached my desk [to make decisions]. Now I can start making decisions when I’m not tethered to my desk.”

- Hugh Owen, *Director of Mobile Marketing at MicroStrategy*

End-to-End Mobile App Monitoring

Gain insight into usage by gathering Mobile Client Statistics

In order to properly administrate an app, you need to have a 360 degree view of your app implementation at your fingertips. The Mobile App Platform, with the help of the time-tested Enterprise Manager product, can help you to obtain vital insight into app activity by monitoring mobile client statistics. These statistics arm you with data that will help you refine your app.

End-to-End Monitoring helps optimize efficiency and identify errors before they occur by providing granular insight into mobile device, usage, and performance information. These statistics are vitally important to dictating in-app changes (report availability, user personalization, identifying under-used sections) and honing the offline app experience (caching, transaction queueing).

Device- Specific Data

- Device information (smartphone, tablet)
- Operating system and version
- MicroStrategy app versions
- Use GPS to pinpoint where apps are being accessed

Performance Data

- User wait time, click time, rendering finish time, manipulation render time

Usage Data

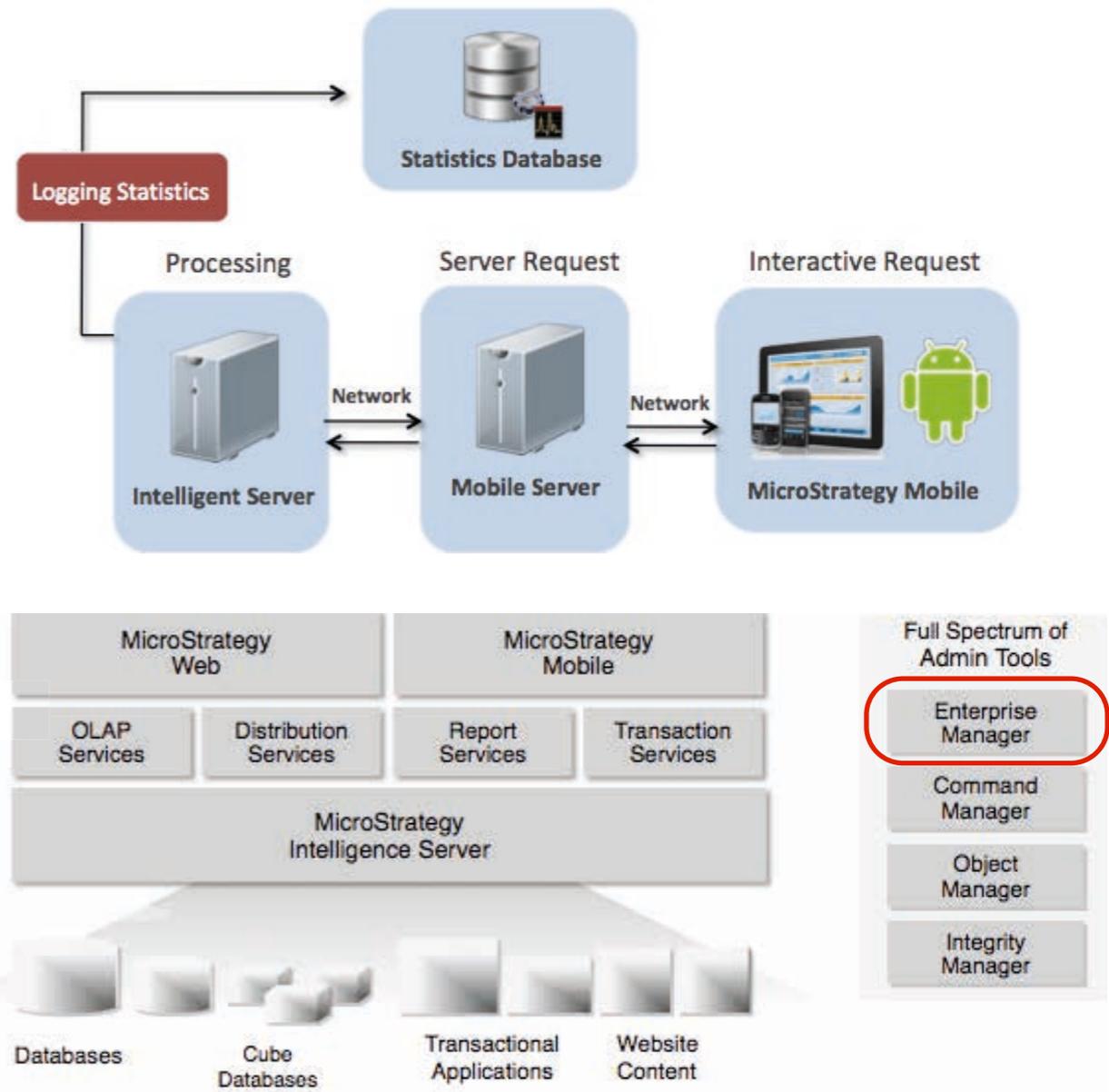
- Top-viewed reports at the group, user, and role level
- User view times (determining if any reports are under-used)
 - peak usage times
 - how long report was viewed
- User manipulations (how many, what kinds of actions)
- Multimedia 'hits' and transactional data
- Offline transactional usage (list of popular documents that are viewed, queued, and cached)

MicroStrategy Enterprise Manager

The Mobile Client statistics collection is based on the time-tested Enterprise Manager product. The MicroStrategy Enterprise Manager originated as a business intelligence application designed to measure the success of BI projects. However, it has now become a powerful app-refining tool, measuring device and app activity.

Enterprise Manager logs statistics on app usage for every user. From there, it places a MicroStrategy Business Intelligence project called “Enterprise Manager” on top of the statistics so that you can dynamically ask questions of your app usage data. Furthermore, it come pre-loaded with reports and dashboards that allow you to monitor system, user, and group activity—helping people at all levels of your company.

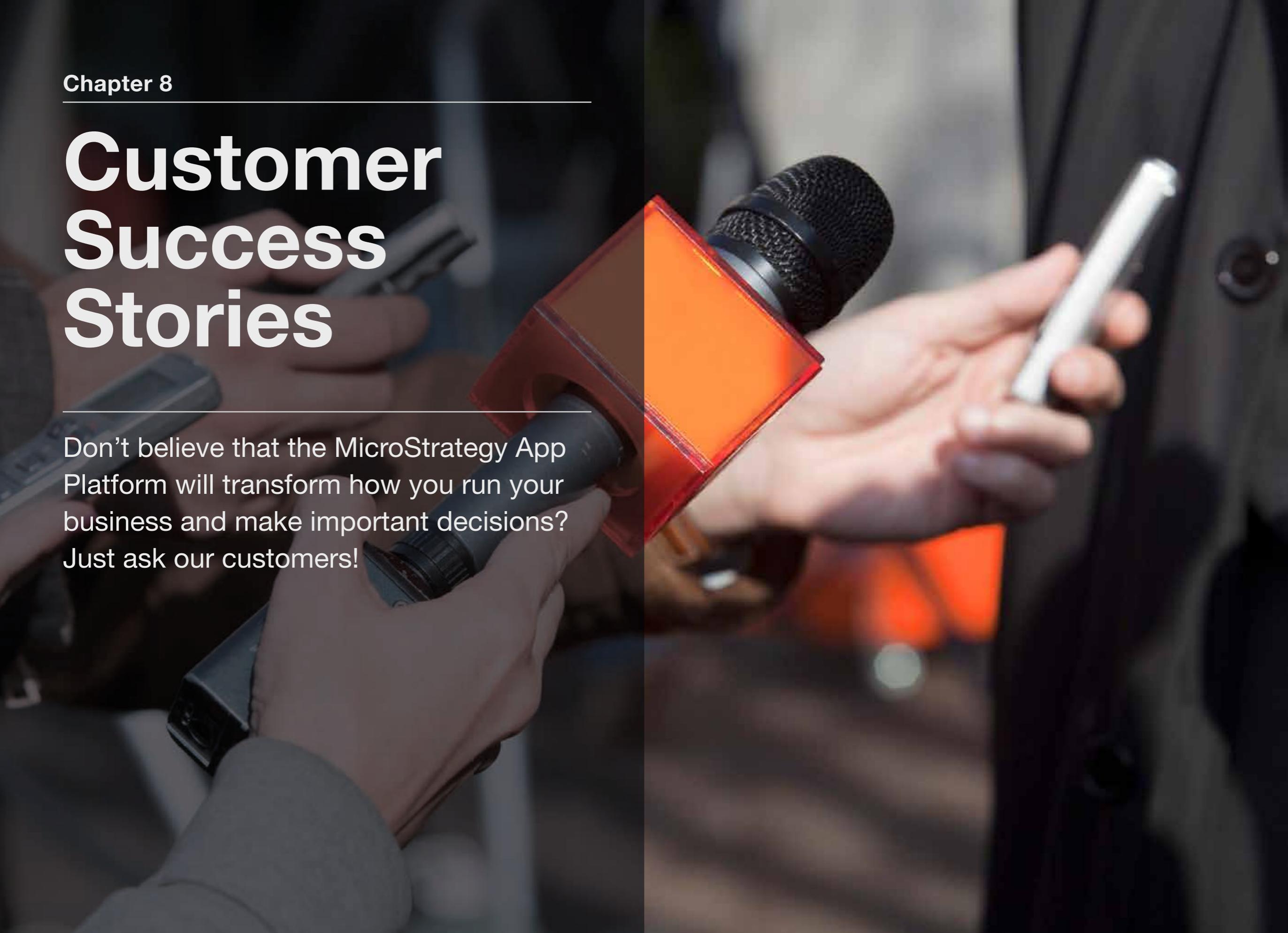
Developers benefit from analyzing the use of objects by users and projects to create plans for future development and real-time maintenance. Project managers monitor the development and use of their applications to predict and manage growth. Administrators examine system activity to ensure that the appropriate resources are available at high use times and that they are utilized optimally.



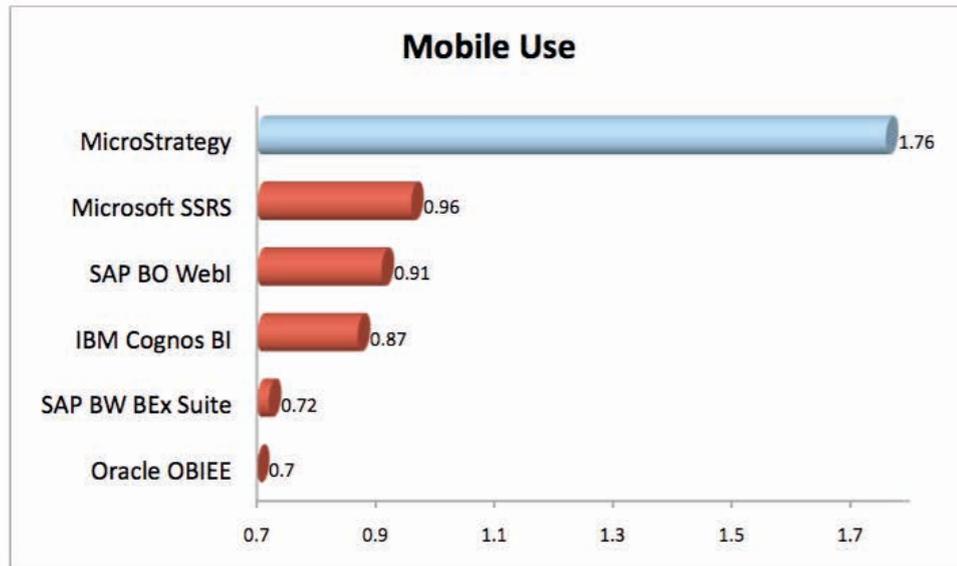
Leverage the existing BI platform to streamline your mobile solution.

Customer Success Stories

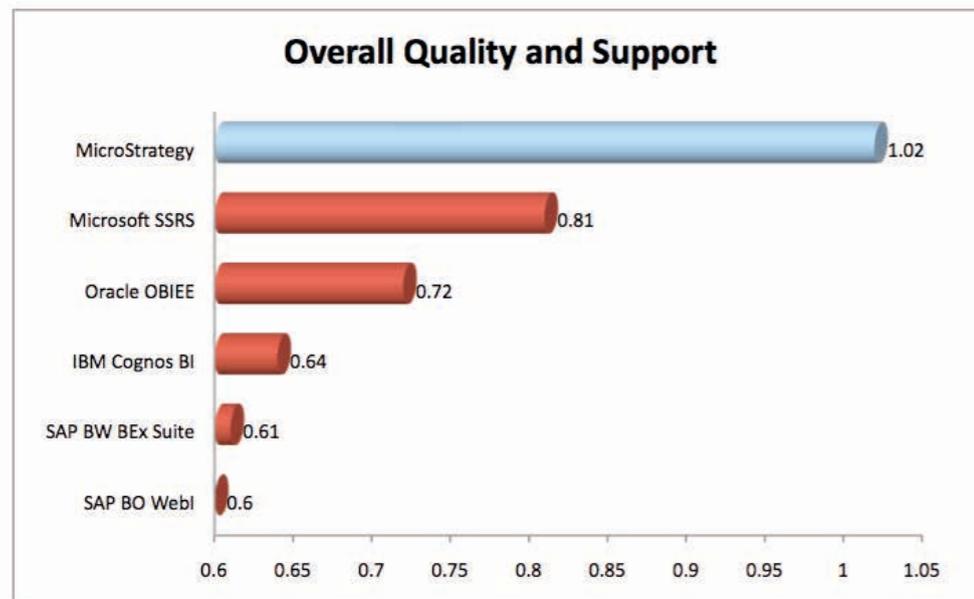
Don't believe that the MicroStrategy App Platform will transform how you run your business and make important decisions? Just ask our customers!



Market Leadership by MicroStrategy Mobile Customers



Source: The BI Survey 10 KPI Dashboard
Key: Normalized score relative to the weighted average of 1.0 for all products; higher numbers indicate greater overall score.



Source: The BI Survey 10 KPI Dashboard
Key: Normalized score relative to the weighted average of 1.0 for all products; higher numbers indicate greater overall score.

In every industry, executives and sales teams are adopting the iPad and mobile business apps at a lightning-fast pace, and at an impressive scale:

- At **GUESS**, executives, store managers, regional directors, and merchants analyze sales performance using an iPad app.
- Store Team Leaders at **Whole Foods** stores in the U.S. and UK have deployed a MicroStrategy-built iPad app focused on sales and department performance.
- In healthcare, **Novation** built VHA's powerful supply chain iPad application using the Mobile App Platform to provide product availability and price structure information.
- At **MetLife**, over 150 MetLife annuity sales representatives are selling better and closing deals more quickly, using their MicroStrategy-powered mobile sales application.
- The **Edmunds.com**, marketing analysis iPad app provides information about consumer behavior, competitor preference, and purchase patterns to create better advertising and marketing plans.

Every day, the trend of iPad and mobile BI adoption gains momentum, and shows no sign of stopping. For this reason, we decided to highlight some customer stories to help guide you as you develop your very own mobile solutions.

GUESS?, Inc.



“We are seeing our business in a whole new light. Deploying MicroStrategy Mobile to our executives is the next achievement in delivering actionable, accessible, and visually compelling information.”

– Bruce Yen, *Director of Business Intelligence at GUESS, Inc*



Photo Credit: Sara Liu



Company Overview

GUESS, Inc. is one of the most widely recognizable apparel companies across the globe, with over 1,421 GUESS and GUESS accessory retail stores in over 90 countries worldwide. A company known for its innovative style, GUESS continues to dress and accessorize the world with fashion-forward apparel, handbags, watches, shoes, and more.

Early Adopters

In 2008, the GUESS BI team wanted to ensure that their executives, corporate directors at headquarters, and regional directors in the field were receiving critical information regardless of their location by delivering timely information to their RIM BlackBerry devices.

In order to achieve their growing mobile needs, GUESS selected MicroStrategy to develop a mobile business intelligence initiative that would deliver operational information to end users'

Movie 8.1 GUESS Success Story Video



Learn more about GUESS's mobile solution--in their own words.

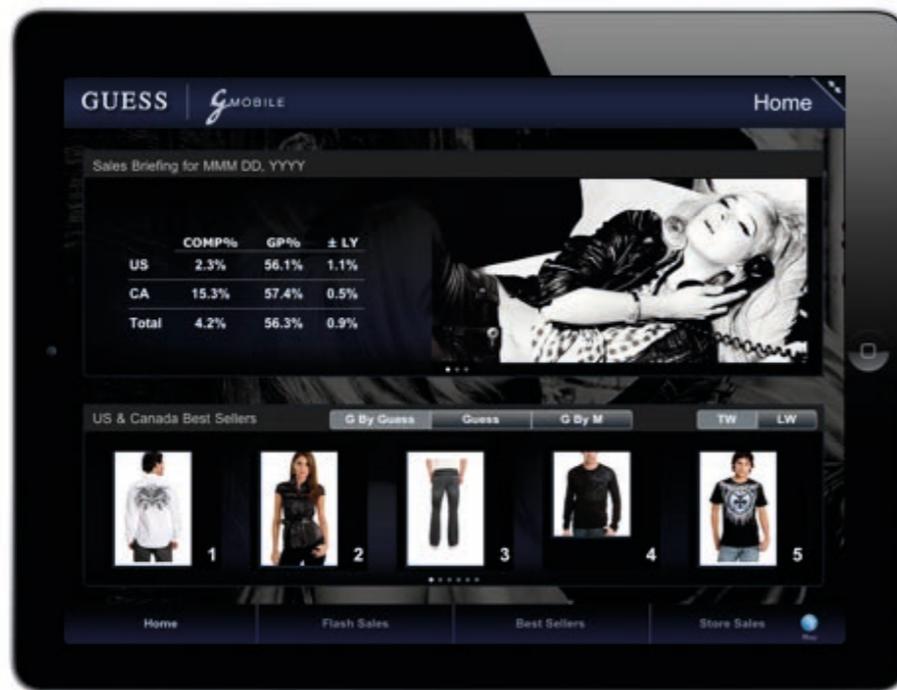
smartphones. Instead of receiving cumbersome spreadsheets, they could open up a PDF document on their BlackBerry devices, get a snapshot of the business, and make immediate decisions that would impact sales and revenue growth. GUESS soon decided to deliver the same insight to the iPad. In 2010, GUESS chose MicroStrategy Mobile to develop an iPad app that allows its executives, designers, and merchants to analyze sales performance.



One App with Multiple Business Workflows

GUESS has outfitted its iPad users with multiple windows into its data: Merchant and Sales. The app allows both a high-level and detailed view of the data, depending on the user. Executives can quickly view graphs and charts on the business, and see data at a weekly, monthly, or yearly level. From there, it is a simple matter to assess the sales at the company level or drill down to the store level with a few swipes and taps.

Merchants can see best sellers across multiple levels of detail and drill down to a specific store, view inventory or sales on a

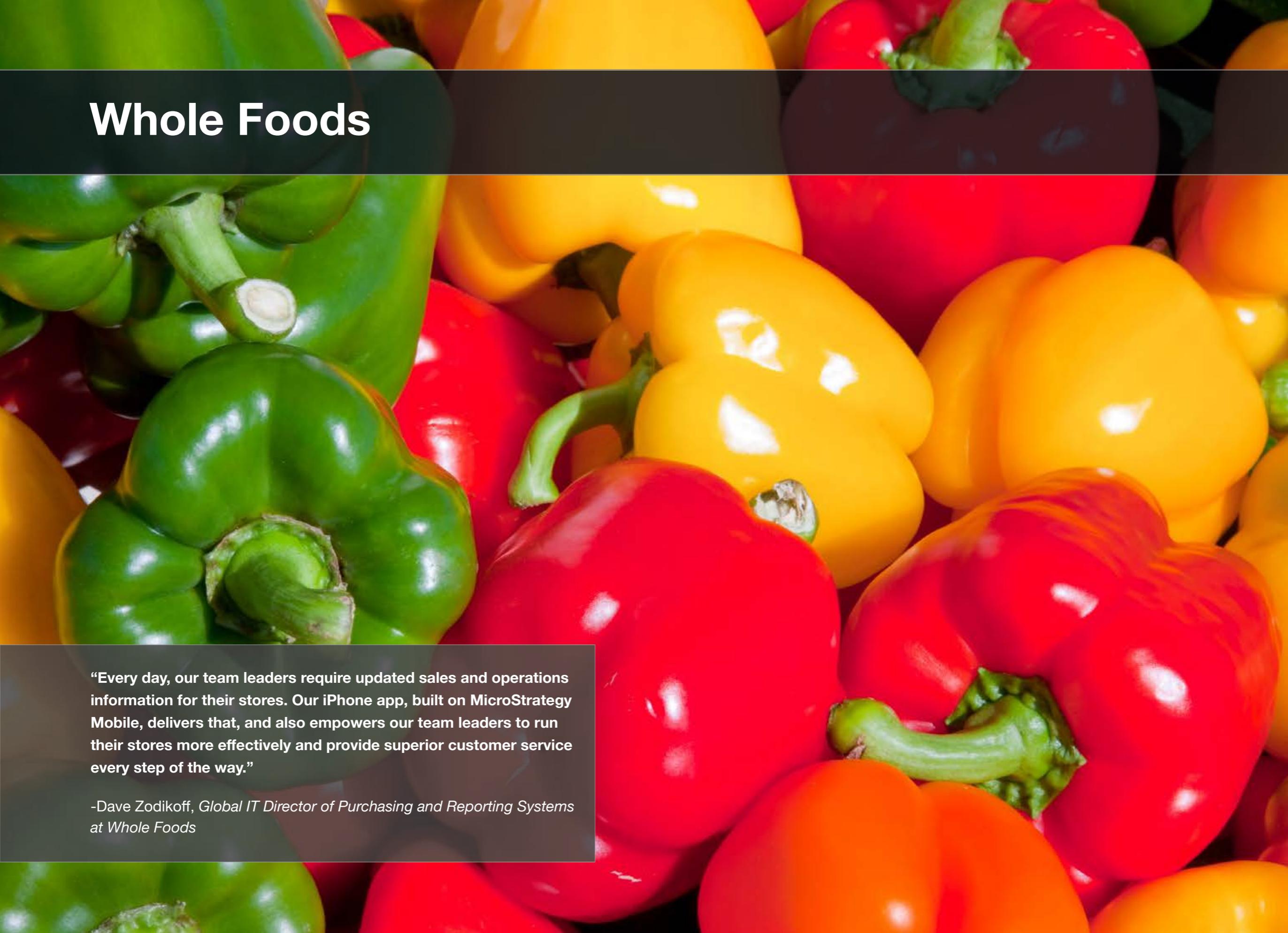


map, and look at detailed information by style, down to the size level with over four months of history. The app allows merchants to be able to make quick and informed decisions based on current trends, and they can analyze this information while at home, while traveling, or even when visiting stores. They can perform a virtual store visit before visiting the store, compare sales of each style to the sales at other stores, and pull up any style and view its selling history.

Mobile BI Meets High Fashion

Whether designing clothes or adopting a new technology, GUESS is a very design-focused company. iPad screens had to reflect GUESS's fashion-forward corporate culture. Since some members of the GUESS design staff aren't used to grids or graphs, the graphic designer worked with MicroStrategy Mobile consultants to incorporate more visual elements into the screens that a typical GUESS employee could relate to.

Once the app went live, feedback was overwhelmingly positive in terms of design and ease of use. The app simplified everyday decisions for GUESS executives meeting in conference rooms, designers checking their designs, and the merchants and planners analyzing store performance.



Whole Foods

“Every day, our team leaders require updated sales and operations information for their stores. Our iPhone app, built on MicroStrategy Mobile, delivers that, and also empowers our team leaders to run their stores more effectively and provide superior customer service every step of the way.”

-Dave Zodikoff, *Global IT Director of Purchasing and Reporting Systems at Whole Foods*



Company Overview

Whole Foods Market is the leading natural and organic food retailer in the United States. As America's first national certified organic grocer, Whole Foods Market was named "America's Healthiest Grocery Store" by Health magazine. In addition, Whole Foods has been ranked as one of the "100 Best Companies to Work For" in America by FORTUNE magazine for 14 consecutive years.

Supporting a Fast-Paced Retail Environment

At all times, Store Team Leaders (managers, or STLs) must keep constant tabs on the pulse of overall store performance, as well as the performance of individual departments. Having sales and operations information in the palm of their hand is a necessity.

From the beginning, Whole Foods Market wanted to involve their STLs in the brainstorming and research process involved with building a mobile app. They worked closely with MicroStrategy to



create a "pilot group" of STLs and other employees to identify use cases and test the app.

Their STLs made it clear that having intuitive, high-level KPIs was critical to effective decision-making.

Throughout the development and deployment process, Whole Foods Market listened to feedback from their STLs. This ensured that their new iPhone app would change the way managers conduct their business every day.



Information at their Fingertips

Whole Foods Market deployed a new iPhone app across the wide majority of their stores. The app, known as “i-STL” (i-Store Team Leaders) is used by STLs throughout its 300+ stores in the United States, Canada and the United Kingdom.

STLs begin their workday by accessing the app and keeping tabs on their store’s most important operational and sales metrics. They can evaluate store performance down to individual “sub-teams” (that is, departments), such as Seafood and Produce. These key performance indicators are evaluated for several time periods, including the previous day, week-to-date, and month-to-date.

The iPhone app focuses primarily on three main categories of key performance indicators and information: Sales, Margins, and Labor.

During the brainstorming and development of the app, STLs made it clear that they needed to have a high-level view of store operations and performance that was easy to grasp. The iPhone app succeeds in doing this. In the very first screens of the app, STLs see a summary of the most important daily operational metrics. Green, yellow, and red performance indicators reveal how each team is performing across various KPIs.

Due to the interactive nature of the iPhone app, a manager can quickly see how store departments are performing in terms of daily sales or profit, and can quickly compare those key performance indicators to other teams. Managers can even see key performance indicators focused on labor statistics, such as the percentage of overtime hours worked by employees.

The app drives healthy competition between the STLs of different stores, as each manager can compare his or her store’s performance to other stores throughout the company. This aspect of the app helps drive widespread adoption in the near and long-term. This ensures that there is a shared, broad understanding of the most important performance metrics across all of Whole Foods Market.

“We’re delighted that we chose MicroStrategy Mobile as the platform on which to build our new iPhone app for our STLs. Everyone who’s used the app, from executives to STLs, are impressed with it, and we’re excited about developing more apps focused on other areas of the business.”

-Dave Zodikoff, Global IT Director, Purchasing and Reporting Systems

MetLife Annuities

“We’re a global company. We have senior management all over the world. I want them to have the annuity information at their fingertips. And, I believe that the need for mobility now is greater than it ever has been before.”

-Rashid Ismail, *Vice President of Annuity Operations at MetLife Insurance*





Company Overview

Metropolitan Life Insurance Company, or MetLife, for short, is the largest global provider of insurance, annuities, and employee benefit programs, with 90 million customers and around 55,000 employees in over 60 countries.

MetLife Reporting in its Infancy

Before MicroStrategy, reporting took up a great deal of time and effort. Erick Flores, BI Manager of Annuity Ops, said of the experience: “Basically it was me and a couple other guys just writing SQL. When someone would send in a request, I would package it up in Excel and send it out via email. The experience was not optimal.” To remedy this difficulty, MetLife chose MicroStrategy for their BI solution, and from there moved on to embrace MicroStrategy Mobile.

Replacing Laptops with iPads

To achieve mobility, ease-of-use, and high presentation quality, MetLife began replacing laptops with iPads. The target of the application was initially the sales engineers and sales managers.

Because they are on the road most of the week, sales representatives had very little time to plug in and use a laptop to view individual or group performance as well as market penetration information. The ease with which they were able to instantly access and analyze information eased the transition to the point that senior managers who had never even used a laptop quickly became accustomed to using the iPad.

Apps in the Sales Force

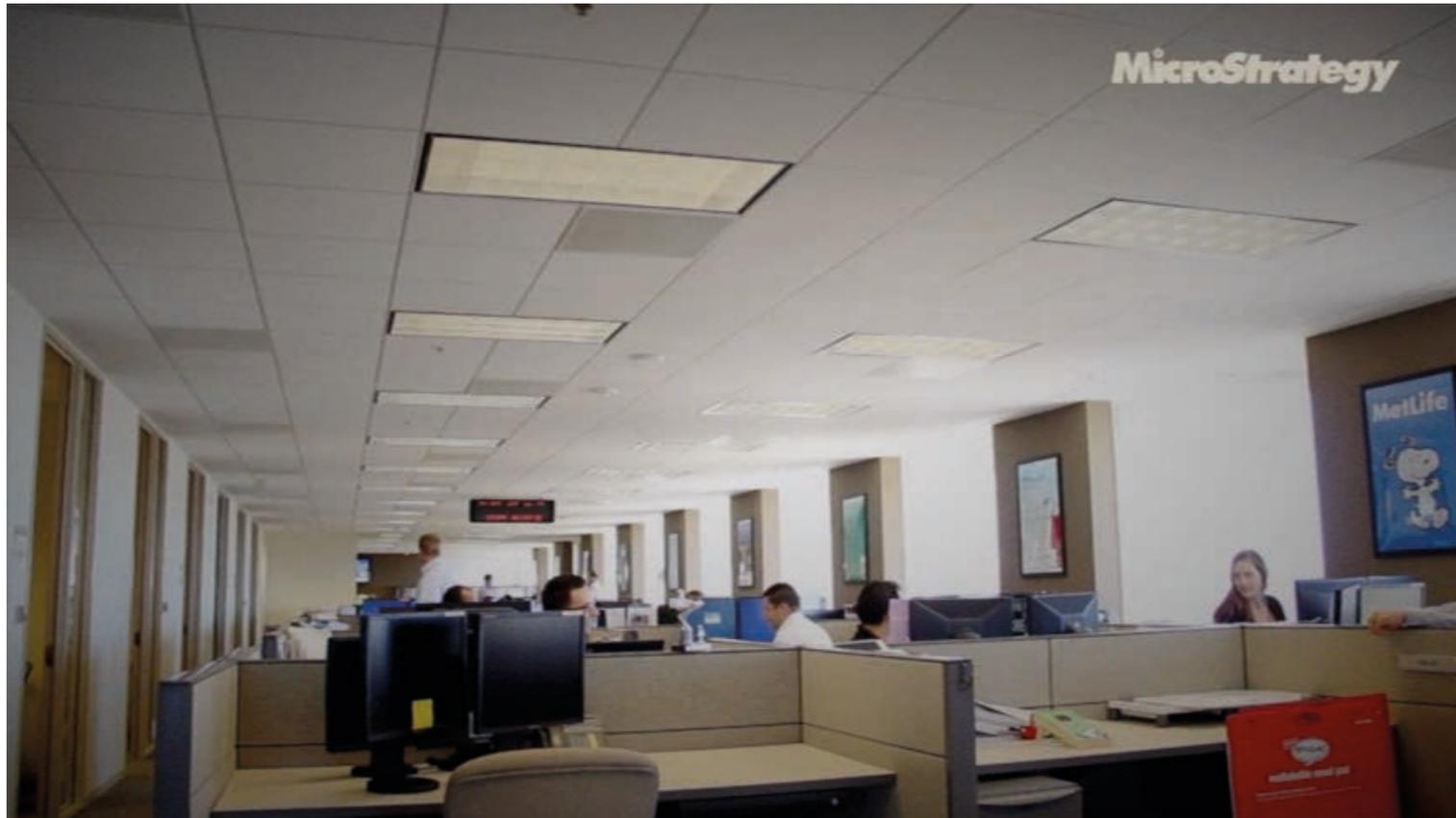
MetLife’s MicroStrategy Mobile app has been a tremendous competitive differentiator for MetLife, helping the company shrug

“We were so impressed with what MicroStrategy had to offer, from a BI perspective, that we chose them as our mobile provider as well...When I wake up in the morning, I can see sales information and activity information by firm, by broker, and by zip code, and any manner that I want to.”

-Rashid Ismail, Vice President of Annuity Operations, MetLife Insurance



Movie 8.2 MetLife Mobile Success Story Video



Click here to watch MetLife representatives tell their MicroStrategy Mobile Success Story in their own words.

off competition. The immediacy of the app is impressive, but the granular analytics are what help to seal the deal with brokers.

By May 2011, over 150 MetLife annuity sales representatives were selling better and closing deals more quickly, using their MicroStrategy-powered mobile sales application. In meetings with brokers, sales representatives can bring up the app and

immediately display updated sales and product performance data, not giving the broker a chance to react or counter. They can also display a broker's entire book of business, and explain why MetLife's annuities would be a great fit. Because of this, the iPad app has become the only weapon they need to close sales and maintain great customer relationships.

Future of Mobile at MetLife

Rashid Ismail, the Vice President of Annuity Operations at MetLife, is leading the mobile charge at MetLife. He says, "We're a global company. We have senior management all over the world. I want them to have the annuity information at their fingertips. And, I believe that the need for mobility now is greater than it ever has been before."

MetLife's iPad is only one part of MetLife's multi-year technology roadmap with mobile technology at the forefront. MetLife plans to deploy an Operations dashboard iPad app and an app that will enable hundreds of thousands of wholesalers to track their own sales performance.

Novation VHA

“The speed with which our member hospitals are accessing the mobile app, capturing savings opportunities, and interacting with all the charts and graphs on the iPhone and iPad is unbelievably fast. We're clearly excited about delivering a much more useful and intelligent BI experience to our member hospitals and sales reps in the field.”

-Guillermo Ramas, *VP of Strategy and Product Development for Information & Data Services at Novation, a VHA subsidiary*



Novation creates powerful supply chain applications using the MicroStrategy Mobile App Platform that provide product availability and price structure information, enabling price benchmark analysis and considerable reduction in costs.

Company Overview

VHA Inc., based in Irving, Texas, is a national network of not-for-profit health care organizations that work together to drive maximum savings in the supply chain arena, set new levels of clinical performance, and identify and implement best practices to improve operational efficiency and clinical outcomes. VHA formed in 1977, and serves more than 1,400 hospitals and more than 28,000+ non-acute care providers through its 16 regional offices.

Reducing Hospital Supply Costs

VHA's PriceLYNX application is a powerful supply chain application powered by MicroStrategy that gives buyers the information they need to compare prices on thousands of items needed in hospitals, from latex gloves to knee implants. With the

recent adoption and use of iPhones and iPads across hospitals, VHA decided to bring their PriceLYNX application to a mobile platform. In July 2010, they rolled out a Mobile app to give member hospitals a clear view of their supply chain on-the-go, as well as graphical snapshots of pricing information hospital buyers need to make smart purchases.

PriceLYNX users, on their iPhone or iPad, can see what they are buying through a particular catalogue from a specific manufacturer. Guillermo Ramas, VP of Strategy and Product Development for Information & Data Services at Novation says, "Hospitals, under constant pressure to offset declining margins and shrinking reimbursements, now have mobile access to continually retrieve and monitor important information on supply prices, and also compare that price to market trends." Ramas adds, "From the perspective of the buyer, more actionable information means speedier analytical decisions to serve patients, improve operational efficiencies, and implement new savings opportunities. The more information a hospital has access to, the more power it has to make decisions that improve the bottom line."

After a year in use, VHA members have realized an average savings of more than \$4 million per facility using VHA PriceLYNX,



which pulls information from the industry's largest product database. Currently, the VHA database covers 1,100-plus hospitals. Across these hospitals, C-level executives, service line managers, physicians, and clinicians use a combination of desktop, iPhone, and iPad. Of this mix, Ramas envisions iPad use will become dominant as it rolls out to more member hospitals.

Rapid Deployment

Officials at VHA have witnessed a growing demand for mobile apps, and they believe a variety of mobile apps will be easy to deploy with MicroStrategy Mobile's rapid deployment strategy. According to Ramas, full application build time was two to three weeks, and that included development time as well as time to set up servers, security, firewall, and prototype work. "What was really a turning point and unbelievably impressive was sitting down with a MicroStrategy beta consultant, and two days later, playing with an app on my iPhone that I could show to our executives," said Ramas. Mobile BI is now a key part of the development process at VHA.



Endless App-ortunities with MicroStrategy Mobile

Mobile BI has quickly revolutionized health care pricing and negotiation processes for hospitals. Field reps visiting hospitals will have important information available on their iPhones and iPads as they drive up to a hospital, thanks to GPS mapping and geolocation functionality. Without having to look up key contact information or run reports as one would typically do on a desktop, the field rep can access relevant reports for that hospital, recent purchases, as well as savings opportunities based on contracts, contact information for key people, recent email exchanges, and more.

Edmunds.com



Thanks to MicroStrategy, Edmunds.com continues to set itself apart as the clear leader in providing actionable analytics for our clients. With the rapid design and delivery of a mobile app, MicroStrategy made our key web metrics come alive with an intuitive and elegant iPad application.

- Keith Reynolds, *Director of Business Analysis at Edmunds.com*



Company Overview

Edmunds.com, Inc. publishes websites that empower, engage, and educate automotive consumers, enthusiasts, and insiders. Edmunds.com launched in 1995 as the first automotive information website, and is the premier online resource for automotive information. As part of their offering, they provide pricing information about new and used vehicles, post results of car reviews and road tests, and offer search capabilities that allow users to explore dealer inventory and availability in their area. If users are considering selling their current vehicle, they can check what it is worth, to see what an appropriate market price would be.

Their mobile site, accessible from any smartphone, makes car pricing and other research tools available for car shoppers at dealerships. Edmunds.com Inc. also publishes InsideLine.com, the most-read automotive enthusiast website, and AutoObserver.com, an insightful look at the automotive industry, providing commentary and analysis.



Constant Insight into Consumer Preferences and Marketing Effectiveness

Edmunds.com has worked with MicroStrategy to produce a highly intuitive and visually appealing app on consumer research and shopping patterns for their target audience of auto



manufacturer executives, decision makers, car dealers, and Edmunds.com account directors. Edmunds.com's app leverages their existing "Report Card" and "Cross-Shop" web metric data and MicroStrategy applications. Business users will be able to analyze "Report Card" and "Cross-Shop" dashboards and filter the data by make, model, and segment, as well as analyze dealer market area information. Using the Report Card tab, users can seamlessly transition through Edmunds.com's key web metrics: Consideration, Favorable Opinion, Purchase Intent, and Leads. The ability to analyze these consumer patterns and behaviors is a powerful tool for users to help optimize marketing and advertising plans.

App Availability

The Edmunds.com mobile apps are now available for the iPad, iPhone, and iPod Touch on the App Store and the Android app can be downloaded from the Android Market. These apps facilitate the process of buying a new or used car, as consumer reviews, buying incentives, and pricing information can be accessed instantly on handheld devices. The mobile offering has streamlined the highly involved process of locating the correct car, contacting dealers, and obtaining price quotes to the point where it can now be done in a matter of hours rather than days or weeks.

The Shift to Mobile

Like many companies, Edmunds.com wants to make BI as accessible, portable, and intuitive as possible, especially for executives who are always on-the-go and need to be able to react quickly and make intelligent decisions based on the most recent information. Solomon Kang explains, "There is clearly a need for a mobile BI strategy and we are excited about our partnership with MicroStrategy as we continue to develop and refine the application."

"As soon as the iPad was introduced, our CEO explained the potential of having Edmunds.com data on it and challenged us to create something that was visually appealing, interactive, and informative. In addition, we wanted to provide our account directors with a more effective way to communicate the value of our data using a tool that would resonate well with clients on many levels."

-Solomon Kang, *Director of Client Analytic Services at Edmunds.com*

Chapter 9

Get Started



Mad About Mobile? Learn More and Get Started!

Download the Mobile Suite

10 named users = FREE
Training and support = FREE
Community access = FREE

MICROSTRATEGY MOBILE

Take a Class in your Area

Build a smartphone and tablet app in a day

Complete relevant code-free exercises

Learn new concepts and features

Intro *2* **Mobile App Platform**

Schedule a Mobile QuickStrike

10-day intense mobile-focused engagement with app experts

Create a production-level app

Complete app design storyboard

Film a video of process

Download the MicroStrategy Mobile SDK

Easy Management and portability of customization

Open, functionally rich API

Download the MicroStrategy Mobile App

Access business driven apps that we have created for a variety of industries

Use the app to deploy apps you have created with our Mobile App Platform

Browse the MicroStrategy Mobile YouTube Channel

Watch **HERE**

View Upcoming and On-Demand Webcasts

View the schedule **HERE**

Download the MicroStrategy Mobile Suite



MicroStrategy Mobile Suite™

MicroStrategy's award-winning business intelligence software and mobile app development platform are now available in a convenient free software suite, designed for departments to start building and using mobile apps, dashboards, and reports quickly and easily and at no charge.

Essential End-User Reporting	MicroStrategy Suite
Access reports and dashboards through both MicroStrategy Web and MicroStrategy Mobile	✓
Interact with data in detailed tabular grid reports	✓
Self-Service Data Exploration through interactive and compelling visualizations	✓
Act immediately upon business insight through data input and write-back capabilities	✓
Change view mode between grid and graph or view as grid-and-graph	✓
Format grid reports using a choice of built-in styles	✓
Discover data patterns and forecast using predictive analytics built with sophisticated data mining algorithms	✓
Context sensitive right mouse click menus	✓
Run ad hoc reports, selecting report data by answering prompts	✓
Save personal prompt answers for reuse	✓
View and add notes in reports for collaboration	✓
Export reports to Microsoft Excel, HTML, PDF or text formats	✓
Run interactive reports from IBM WebSphere, Oracle WebLogic, Microsoft SharePoint, and SAP NetWeaver	✓

Download the Mobile Suite from the MicroStrategy Website [HERE](#) or via Amazon [HERE](#) (Recommended)

Sign up for and Attend an Intro 2 Mobile Class in Your Area For Free

Movie 9.1 Intro 2 Mobile Classes



These one-day, hands-on workshops will introduce you to MicroStrategy's Mobile App Platform, Architecture and Design. Learn how to rapidly, without writing a single line of code, build smartphone and tablet apps to access information, anytime, anywhere.

Find and Sign Up for a Class **HERE**

The MicroStrategy Mobile QuickStrike Engagement

10
DAYS

Focused professional services engagement designed to accelerate your mobile app strategy.

1
MOBILE APP

A world-class app that mobilizes existing systems, business processes and data.

2
EXTRAS

App storyboard and **app video** to help you refine your business case and share your success.

Accelerate your mobile strategy in 10 days

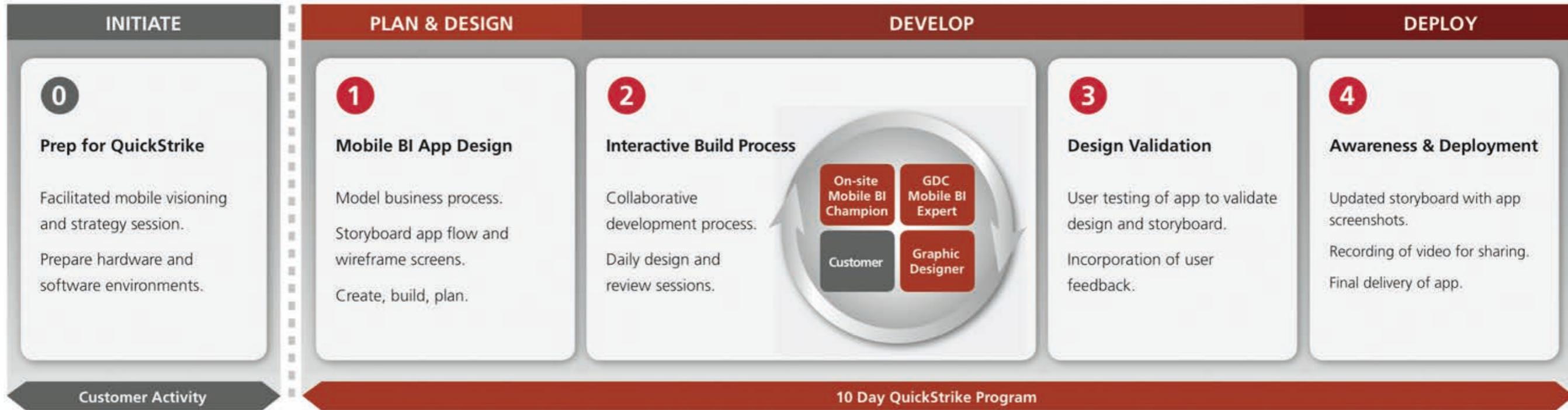
Your MicroStrategy Mobile app will incorporate your unique business processes and data and will deliver an intuitive, interactive user experience. It can leverage context-gathering mobile device sensors: photo for barcode, GPS for location, accelerometer for rotation, and more.

As your mobile strategy partner, MicroStrategy will help you develop the vision for your app, define the app's requirements and

workflow, and build the app. A Mobile expert will be on-site to ensure the app meets your business and user requirements.

In addition to building your mobile business app, MicroStrategy will provide additional deliverables, including a detailed app storyboard and app video, to help you drive project excitement, adoption, and success.

From Vision to Action



Deep Mobile Expertise

MicroStrategy has successfully implemented mobile solutions for customers across a variety of industries. Our Certified Mobile Champions—experts in mobile app solution design and deployment—are ready to help you develop and implement your mobile strategy while guiding you to a smooth application deployment.

Each QuickStrike team includes a dedicated on-site Mobile expert, supported by our Mobile BI team at MicroStrategy’s Global Delivery Center. In addition, a graphic designer is available to review the design and ensure a consistent, high quality user experience.

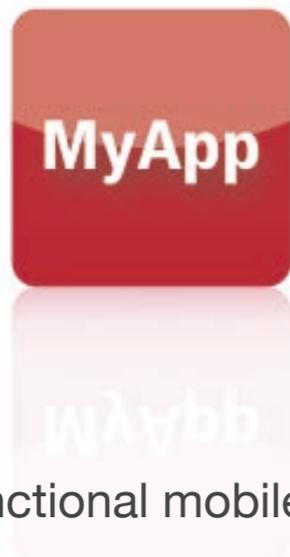
Powered by MicroStrategy Mobile

The MicroStrategy Mobile App Platform enables organizations to build a wide variety of essential mobile apps that deliver workflows, transactions, mobile operations systems access, multimedia, and business intelligence in compelling, custom native apps.

MicroStrategy Mobile takes full advantage of the unique capabilities of the iPod touch, the iPhone, the iPad mini, and the iPad. MicroStrategy Mobile delivers fast, easy development using a point-and-click, metadata-driven paradigm, and offers enterprise grade security, performance and extensibility.

3 Essential QuickStrike Deliverables

Mobile App



A fully-functional mobile app based on your data, design, and systems

Built just for you. A purpose-built app, designed to guide users through their data to analysis, discovery, or decision

Expressive interface design. Includes a customized home screen and workflow incorporating a rich selection of grids, graphs, and data visualizations

App Storyboard



A detailed, fully documented application design

A model for your app. A wireframe mockup showing app process flow and designs for each individual screen

Essential details. A description of the app that includes objectives, use cases, and user profiles

App Video



A video recording of your app, designed to share your success

Complete coverage. A two to four minute video demonstrating the full capabilities of your Mobile app

Narrated. Includes voiceover describing key functionality and business value

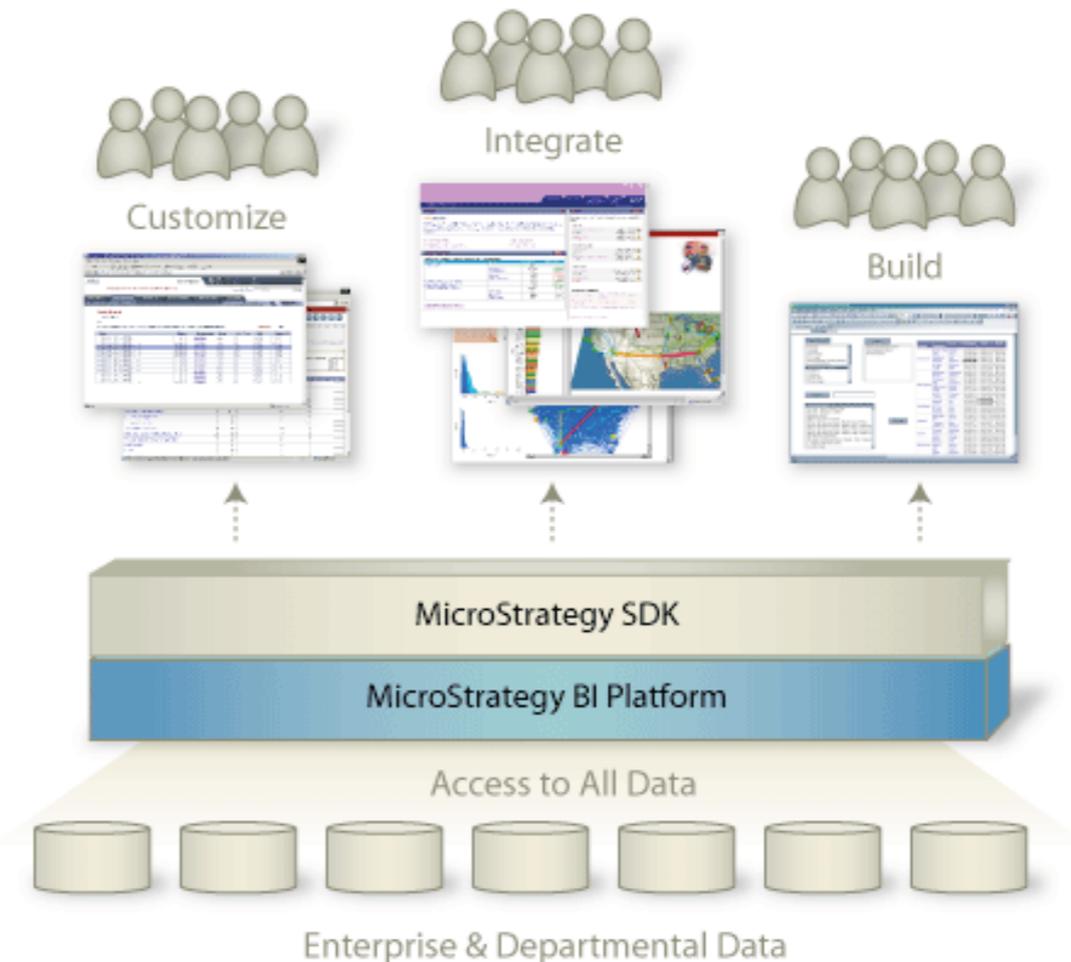
Shareable. Designed for easy sharing within your organization

MicroStrategy Software Development Kit

MicroStrategy SDK (Software Development Kit) is a comprehensive development environment that enables easy customization and integration of the MicroStrategy BI platform with enterprise business applications. Through documentation of the application programming interfaces (API), sample code, utilities and developer tools, the MicroStrategy SDK empowers developers to implement highly customized, functional and powerful Web reporting BI applications, meeting all of your organization's BI requirements.

Powerful Development Environment

The MicroStrategy SDK is a comprehensive software development kit that enables developers to extend out-of-the-box MicroStrategy functionality and build powerful, custom applications using the MicroStrategy platform. Using the MicroStrategy Developer Library, developers can quickly learn the necessary architecture and API references to build custom applications, and use sample code to jumpstart their customizations. With the MicroStrategy SDK, developers can create solutions that provide relevant, timely information to



The MicroStrategy SDK provides developers with all of the necessary resources to customize the look-and-feel of MicroStrategy, integrate MicroStrategy into a broad range of IT applications, and build new products and applications using MicroStrategy BI technology.

business users at all levels in concise and visually-compelling web-based presentations—solutions that let them successfully drive their businesses with critical, informed decision-making.

Easy Management and Portability of Customizations

MicroStrategy Web provides a framework for plugging in customization changes as a piece of software (called a plug-in) into the application. With this architecture, no compilation or modification of the source code is required to deploy the customization changes. MicroStrategy SDK includes the Web Customization Editor which, with its intuitive, easy-to-use interface and its comprehensive scope, works together with the MicroStrategy plug-in architecture to simplify and streamline the customization process and to ease upgrades.

Open, Functionally-Rich API

Developers have access to the entire range of MicroStrategy BI platform functionality through the various APIs that comprise the foundation of the MicroStrategy platform. The Intelligence Server API exposes all the functions needed to build data models and reports, implement security, and administer the system. Using the Web API, developers can build custom web-based BI applications that provide the full range of application functionality

available in MicroStrategy and more. The MicroStrategy Visualization SDK allows developers to use Flash to build any type of visualization and Rich Internet Application, and include it in their applications. Other MicroStrategy APIs include the Web Services API and Office API, which allow application developers to develop and deploy Web Services-based applications or design integrated Microsoft Office applications, respectively.

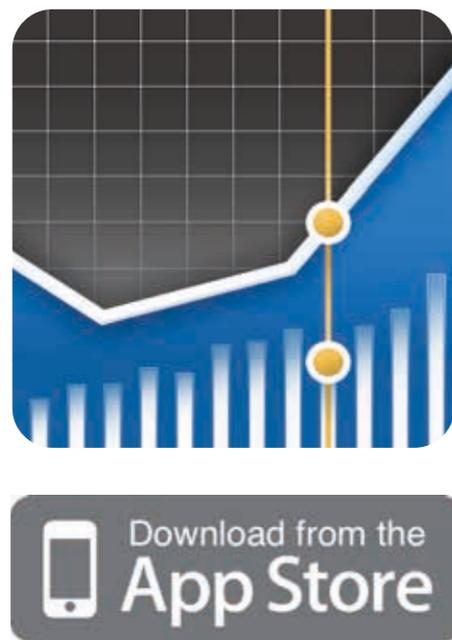
Access MicroStrategy Functionality from any Client, and any Protocol

MicroStrategy tasks are well-defined operations in MicroStrategy Web that are packaged as Web-accessible services. Developers can use the wide variety of pre-built tasks, and extend or build custom ones in order to easily access data from any client, using any protocol.

Adherence to Industry Standards

By supporting industry standards such as XML, Java, COM, MDX, Adobe Flex, and Web services, the MicroStrategy SDK provides various levels of rich API support for development on multiple platforms. In addition, developers can use the Web Services Development Kit to expose and deploy MicroStrategy functionality as highly-functional Web Services.

Download the MicroStrategy Mobile App from the Apple App Store



Download the MicroStrategy Mobile App from the Apple App Store to demo some of the information-driven apps we have created. Search “MicroStrategy Mobile for iPad or iPhone.”

Download the app **HERE**

MICROSTRATEGY **MOBILE**