THE ANATOMY OF A MOBILE APP

8 KEY LAYERS YOU NEED TO KNOW

salesforce

INTRODUCTION: BUILDING A BUSINESS APP PEOPLE ACTUALLY WANT TO USE

Did you know that the typical smartphone has an average of 65 apps, but only 15 are used daily? Did you know less than half the people who download an app will open it more than once?

Yet people want to do more – be more productive, be more available, be more informed, and be more active – through their phones.

So how can you deliver an "app experience" that people don't just open once, but every day? How do you create an app that is used because people enjoy using it while being productive?

One obvious answer is an easy-to-use interface that lets users find and work with information, immediately and seamlessly. But delivering that kind of amazing experience means thinking through everything that lies behind that interface. And everything that brings it to life.

That's why, with Salesforce1 Platform Mobile Services, we've divided the decisions that should be considered in building a mobile app into 8 "layers." Thinking carefully through each of these layers will allow you to optimize them all and build a compelling mobile app that people feel great about using.

Amazing apps begin with amazing APIs.

The Salesforce1 Platform was designed API-first so developers can create apps faster and connect anything to everything. More complete, totally open, they make it easier to access any data needed. Which is only one reason why Salesforce is the fastest path from idea to app.

Every $1 spent on mobile for business returns $1.67.

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THE BACK END, THE FRONT END, AND EVERYTHING IN BETWEEN.

A mobile app is best understood, first, as consisting of two halves. A front end, meaning data and functionality that lives on and is controlled through the device itself; and the back end, meaning the data and functionality that comes to the device through a wireless network or wi-fi.

This book will take you through each half, layer by layer (starting with the back end) to help you understand what to think through when building a mobile app to deliver an amazing mobile experience to your employees, partners, or customers from the get-go.
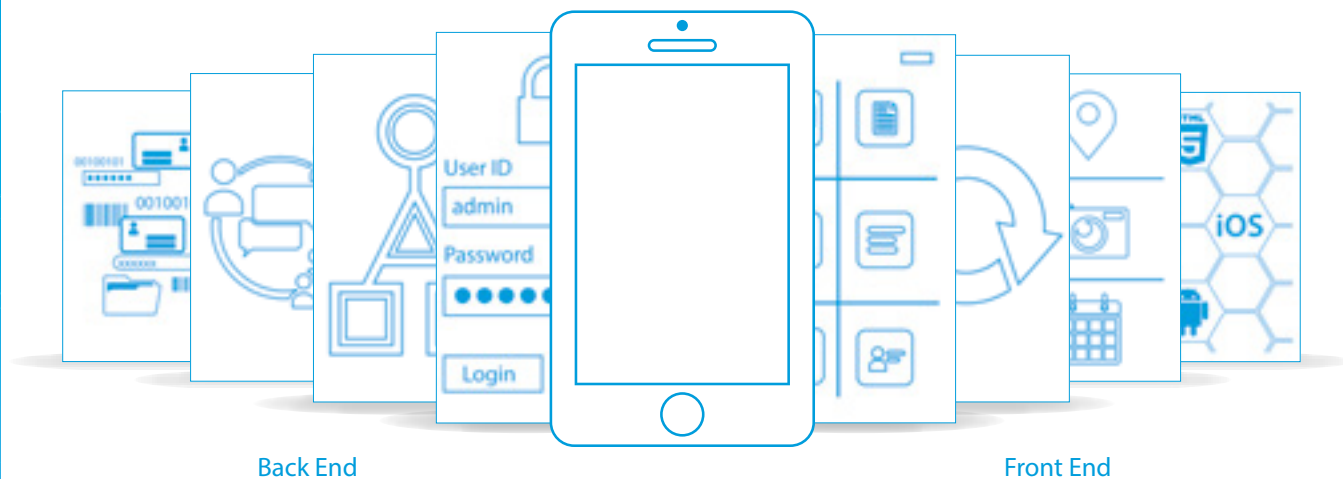
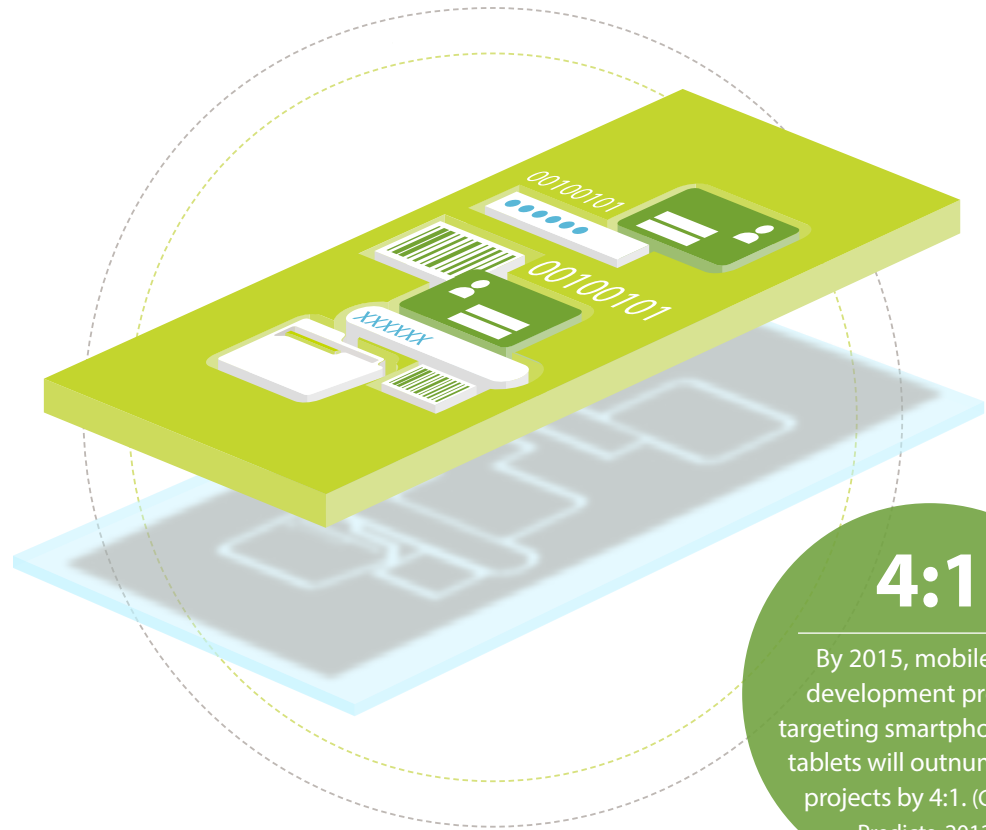Back End   Front End

1. BACK-END DATA

It all starts with the information your app needs to draw on. To get the app to do what you want, will it need to access legacy databases in your datacenter, data from the public cloud, or partner data?

Will the data have to be accessed and processed in real time?
Is it structured? Unstructured? Video? Files?

4:1

By 2015, mobile app development projects targeting smartphones and tablets will outnumber PC projects by 4:1. (Gartner Predicts, 2012)
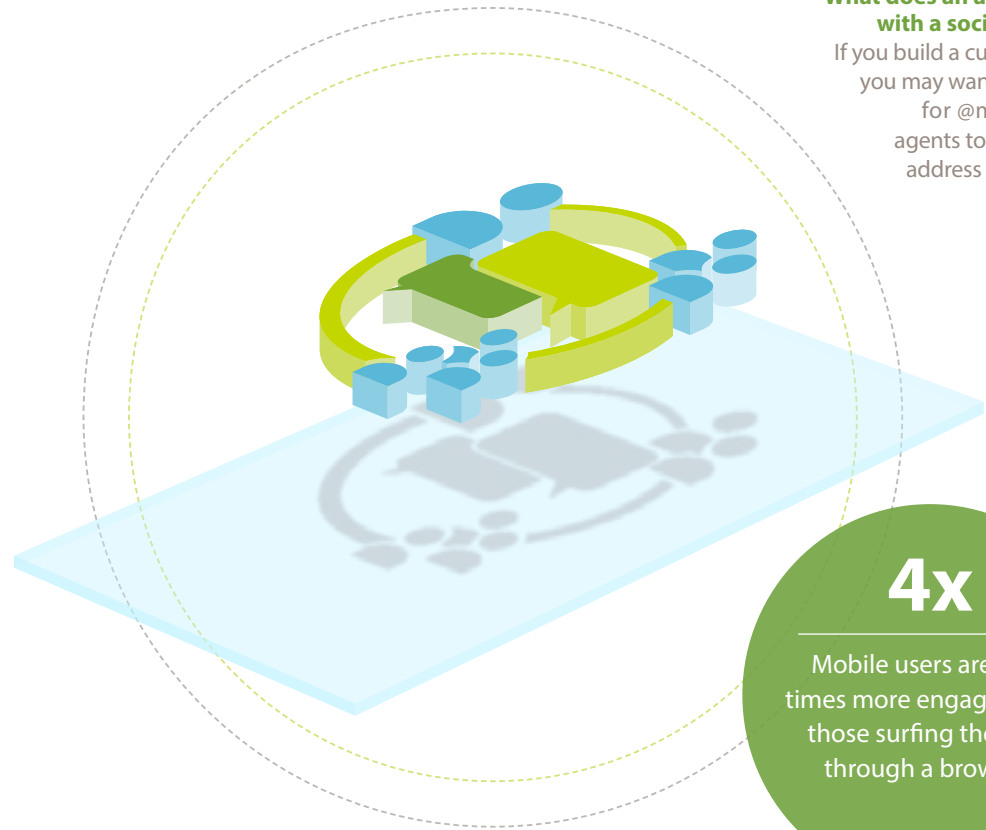
2. COLLABORATION

If your app needs to be useful for more than one user at a time, you need to think about collaboration early on. What groups or departments (Sales? Marketing? HR?) will use the app?

If you build an app for a customer to use, should your employees see and collaborate on it? Should it integrate social networks?

What does an app that integrates with a social network mean?
If you build a customer service app, you may want to monitor twitter for @mentions that alert agents to issues they need to address immediately – from wherever they are.

4x

Mobile users are four times more engaged than those surfing the web through a browser.

3. BUSINESS LOGIC

This establishes the rules the app will follow to use information and keep the business moving. For line-of-business stakeholders, this means predicting and defining the workflow, as well as what business objects will be relevant for the app (budget records, PDFs, PowerPoint presentations, movies). For IT, this means understanding what business rules the app will follow — like should the app allow users to get approvals in the app (or not)?

Let's say you're building a recruiting app. Do you need to be able to circulate a resume in the app before an interview? Do you want to be able to automatically trigger a background check from the app?
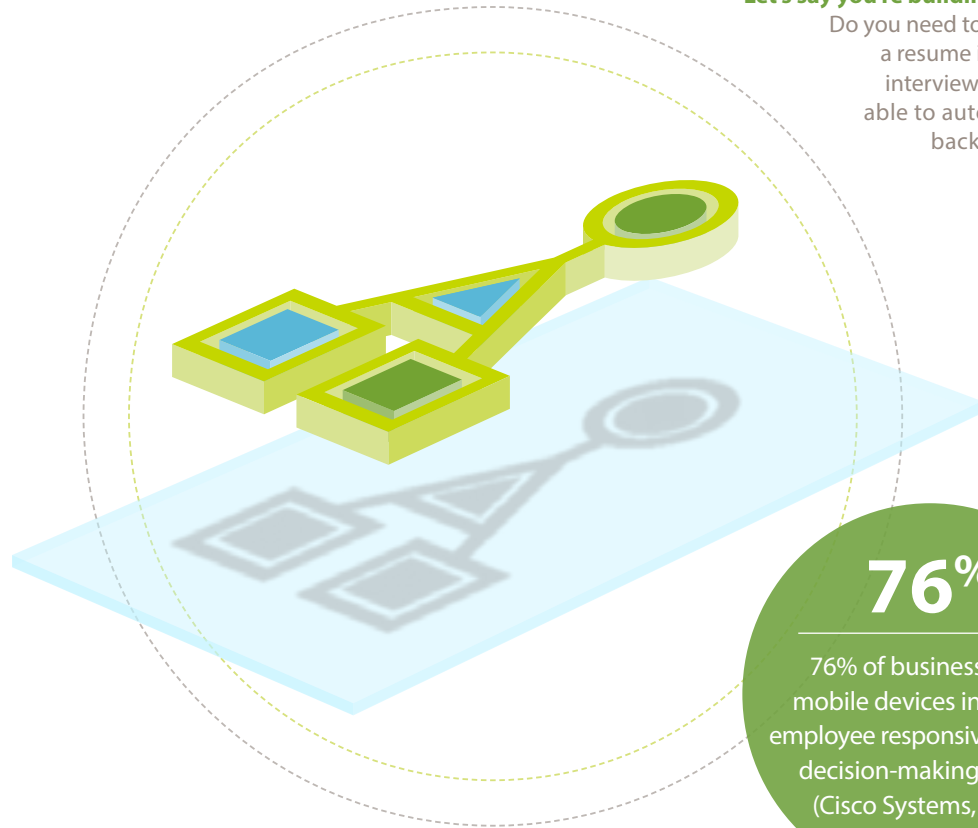
76%

76% of businesses say mobile devices increased employee responsiveness and decision-making speed. (Cisco Systems, 2012)

4. SECURITY

If you've worked through the previous layers properly, you should have a clear picture of how sensitive your security needs to be. What user profiles will use the app? What access controls will be needed? What regulatory requirements apply? Is single sign-on an issue?

The upshot: IT should be aware that if security is too stringent, the app may be too onerous to use. Line-of-business stakeholders need to understand that information should be properly protected.
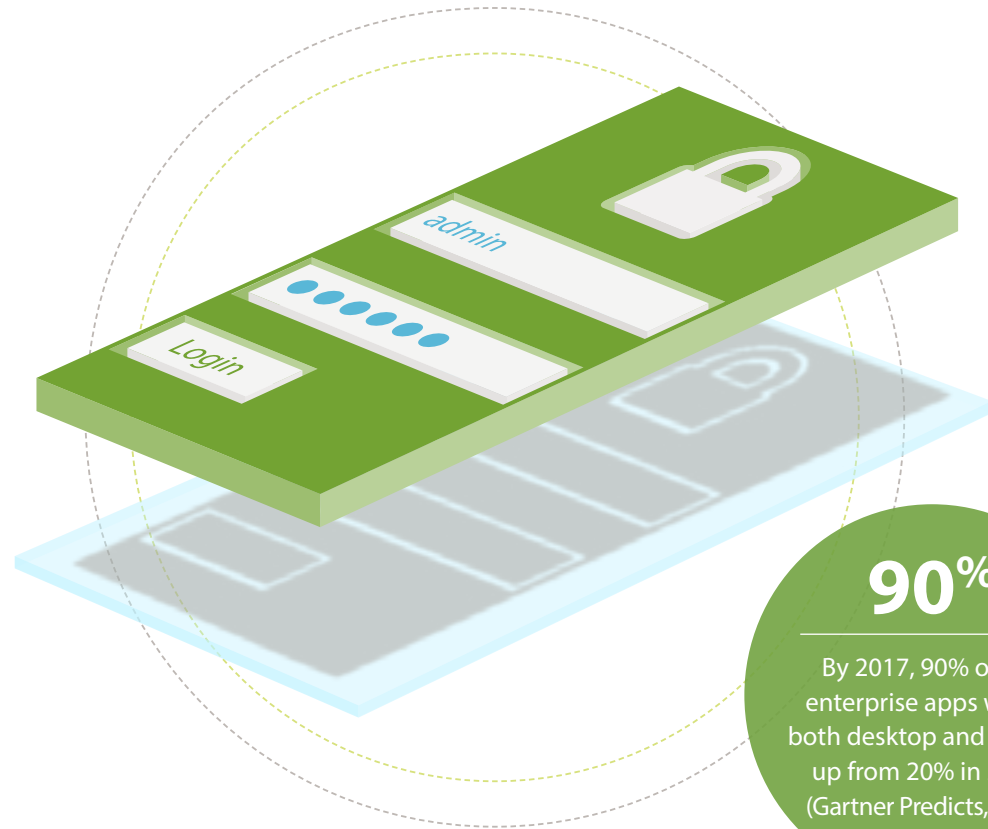
90%

By 2017, 90% of the enterprise apps will be both desktop and mobile, up from 20% in 2013. (Gartner Predicts, 2012)

5. CONTAINER

The "Container Layer" is the foundation of the app on the mobile device itself. Think of it as the place where back-end data, collaboration, and business logic meet and interact with the actual mobile device. The container governs whether you build your app using a native, HTML5, or a hybrid approach.

- Is a native app experience and tight integration with the device OS desired?
- Is app distribution handled through a browser? A public or private app store? Can you meet that store's requirements?

Native Apps: Running on a device's operating system, these apps usually access the device's capabilities like GPS and camera. It is also specific to the device.

Web Apps: HTML5, or web apps, are delivered through a web browser. Generally less expensive to create, they allow information updates without downloading a new version.
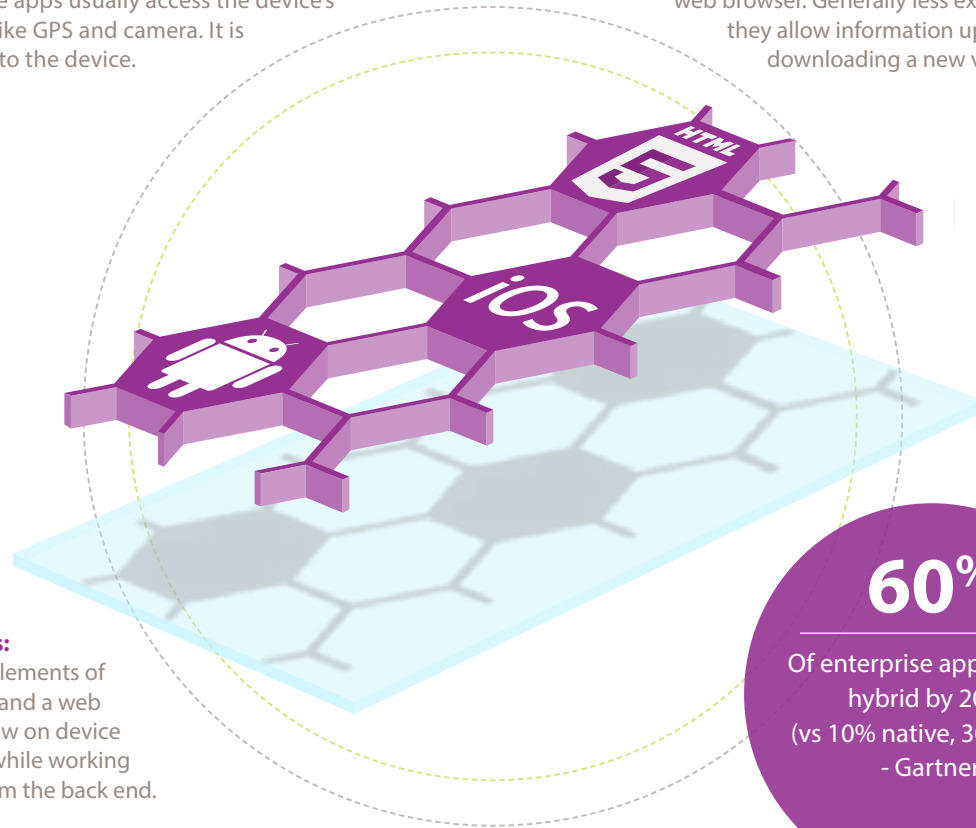
Hybrid Apps: Combining elements of a native app and a web app, they draw on device capabilities while working with data from the back end.

60%
Of enterprise apps will be hybrid by 2015
(vs 10% native, 30% web)
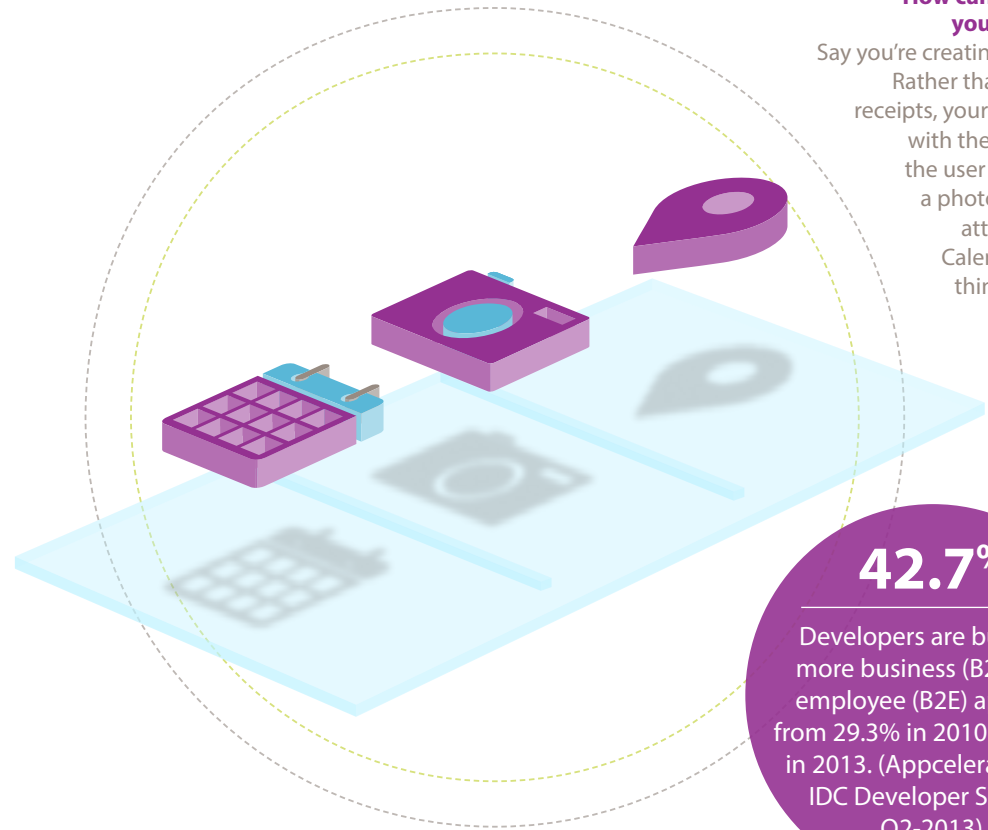- Gartner

6. DEVICE DATA LAYER

Understanding what kind of "device created" data will be needed by the app changes the way you build it. What data captured locally will be relevant for the app?

Do local contact and calendar info need to be accessed? Photos? GPS? What news/alert/feed updates are required?

How can the device enrich your app experience?
Say you're creating an "expense app." Rather than ask users to scan receipts, your app could connect with the device's camera so the user could simply shoot a photo of the receipt and attach it to the report. Calendars are also good things to connect with on the device.

42.7%

Developers are building more business (B2B) and employee (B2E) apps, up from 29.3% in 2010 to 42.7% in 2013. (Appcelerator and IDC Developer Survey, Q2-2013)

7. OFFLINE SYNCING

Phones connect us to everything, but even these days there are times when there is little or no network coverage. This is why it's important to think through how your app should work when the device is offline. (Think about email: Even when you aren't connected, you can write an email and your email app will send the note later when you are online.) What functions and formulas should operate when the app is being used offline? What client-side processing is required? How is business logic mapped to app execution?

Leveraging the device itself to process information even without service is very useful. For instance, if you needed to capture a signature, the device could get it regardless of whether or not you're connected to the Internet and submit it later, automatically.

The majority of workers use smartphones to read or view documents, spreadsheets, or presentations, but are much more likely to use tablets for editing activities. (Cisco Systems, 2012)
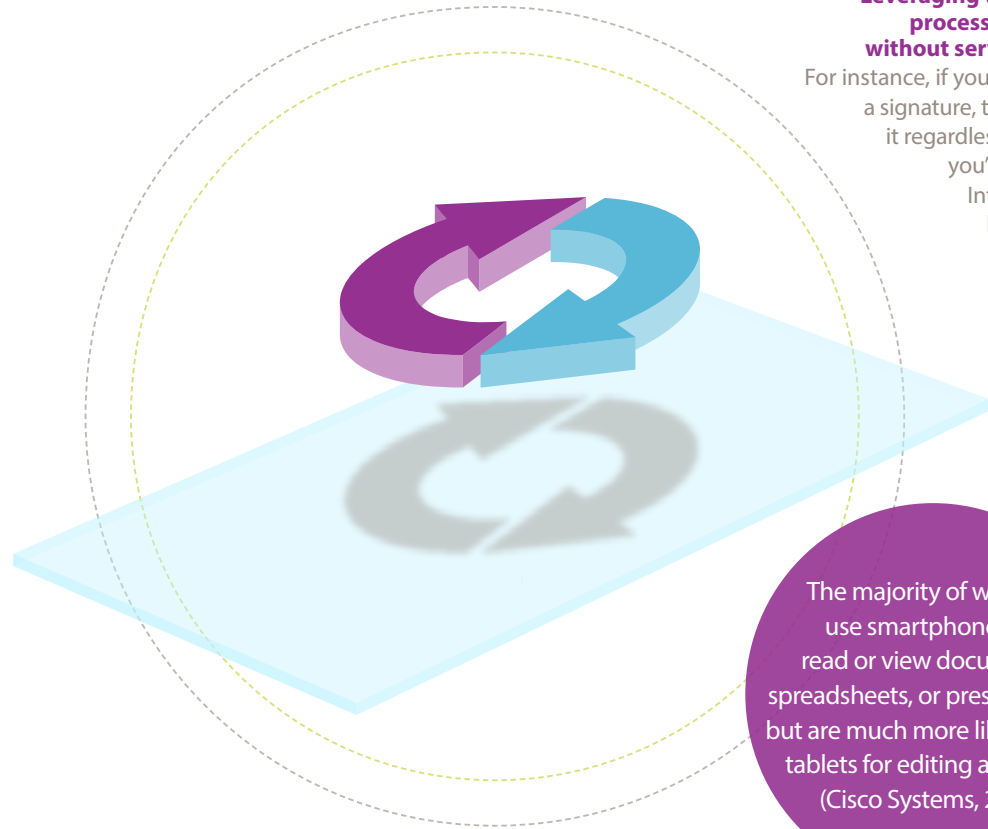
8. USER EXPERIENCE

If you were in the food business, this layer would be called "the presentation." It's literally how the app looks and feels to the end user. It's what makes them want to use it and determines how easy it is for them to do so. If you've considered all the other layers thoroughly, this is the place to spend your time. Get this layer right, and your app will not only be useful, it will feel like a pleasure to use. Which just means it will get used that much more.

- What micro-moment does your app address?
- How advanced does the UI need to be? Slick animations? Static forms?
- What is the screen flow? Will it use panels? Or sliding menus?
- How will users interact with the app and enter information? Sliders? Text?
- What content will be displayed? How?
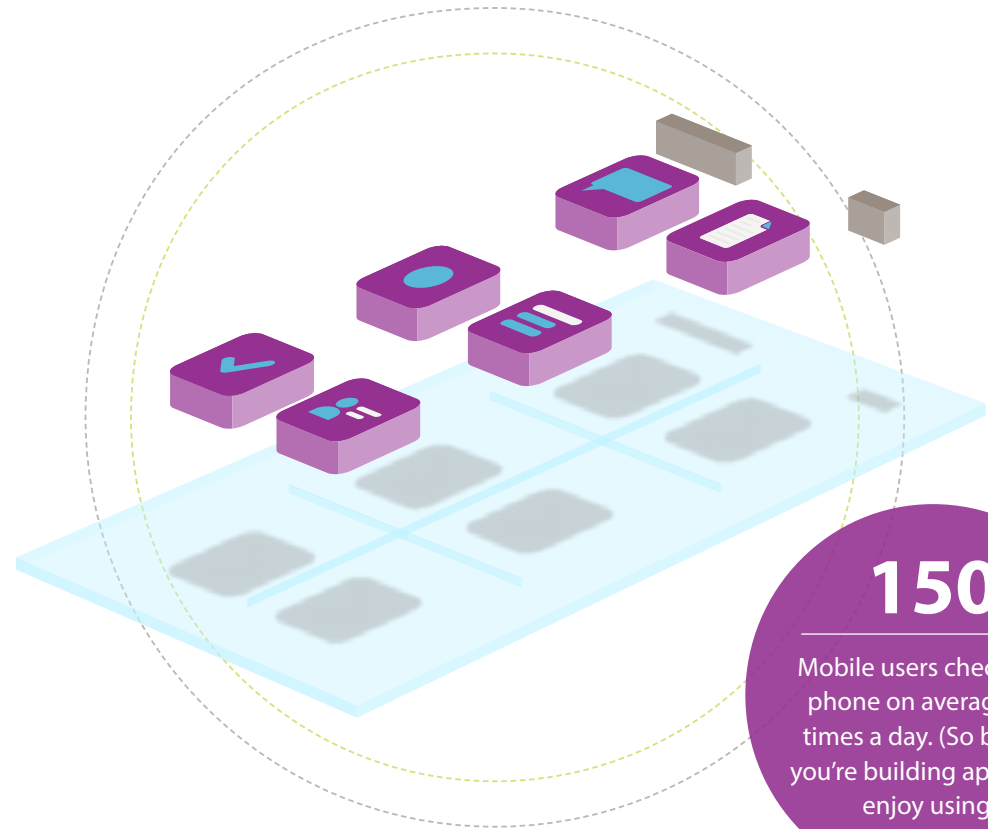
150

Mobile users check their phone on average 150 times a day. (So be sure you're building apps they enjoy using)

BUILD MOBILE APPS FASTER WITH THE LEADING CLOUD PLATFORM.

The Salesforce1 Platform gives you APIs that are mobile-ready, plus flexible UI templates to help turn ideas into apps, faster and more easily. So start creating the mobile apps you've always dreamed of building. And connect to customers and the next generation of apps and devices like never before.

▶ See demos and learn more
▶ Discover custom apps built on the Salesforce1 Platform

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