



SP Wi-Fi Monetization

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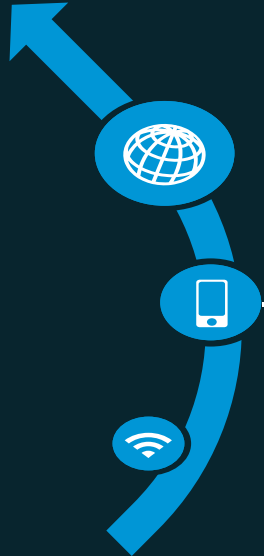
Agenda

- > **Market Overview**
- > **Solution Overview**
- > **Technology Overview**
- > **Customer Case Studies**



Mobile Offload Adoption Accelerating

Market Drivers



Growth in mobile data



Lack of Spectrum



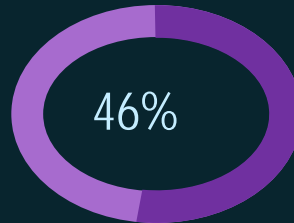
Offload economies



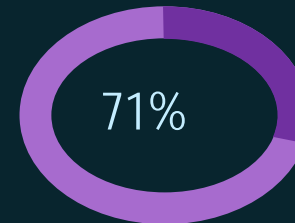
Wi-Fi is ubiquitous



Shift to indoor consumption



By 2017, 46% of smartphones traffic will be offloaded



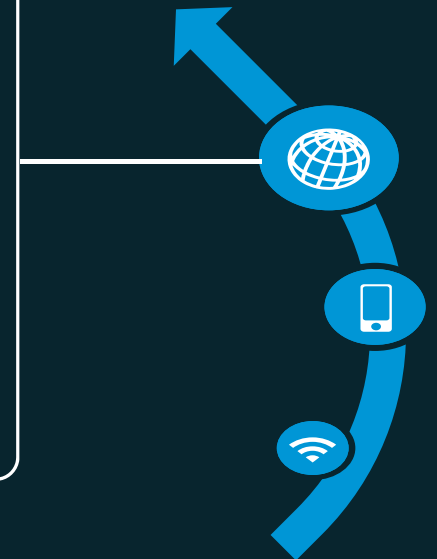
By 2017, 71% of tablets traffic will be offloaded

Source: Cisco Visual Networking Index, 2013

Wi-Fi Transitions into a Platform of Business Innovation

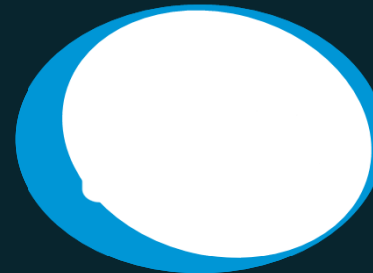
Wi-Fi: From Productivity to Revenue Enabler

	YESTERDAY	TODAY
Primary Benefit	Productivity	Revenue enablement
Availability	Optional, Sparse	Expected, Pervasive
Connection	Complicated	Seamless
Apps / Content	Generic	Contextual
Experience	Limited	Personalized



SP Wi-Fi Business Models and Value Creation

Save Money



Make Money



Retention & Loyalty

Increase customer stickiness by offering free mobile Internet through public Wi-Fi



Mobile Data Offload

Optimize mobile data network or deploy offload services

Managed Services

Increase B2B revenues with managed wireless services



Location Analytics

Create new revenues through location data analytics



Location-Based Advertising

Generate new revenue streams via mobile advertising



Cisco CMX



To Take Advantage Of These New Opportunities Requires...

Detecting and Locating Devices to Provide:

Enhanced
Customer Engagement



Context-Aware Marketing
Opportunities



On-Premises
Customer Visibility

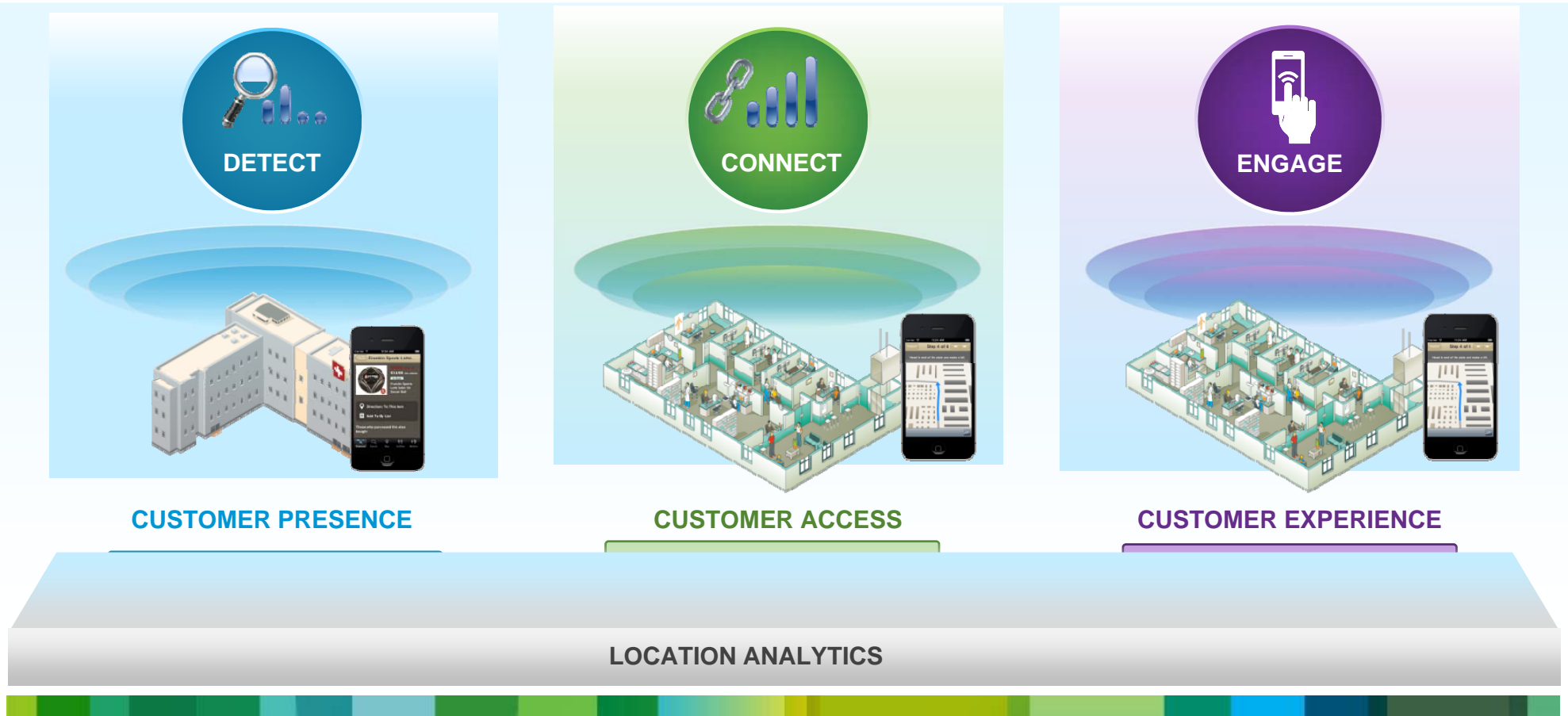


ENGAGEMENT SERVICES



Increased Revenue Opportunities

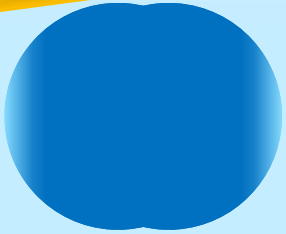
Cisco Connected Mobile Experiences (CMX)



Apply Location-Based Services To Your Business...

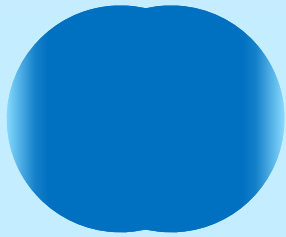
Unlocking Unprecedented Business Value

INDOOR GPS



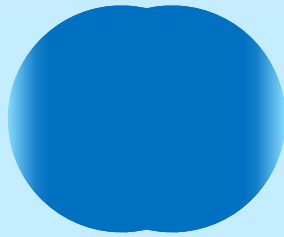
- “Turn-by-turn” directions in any retail venue

TARGETED MESSAGING



- Combat showrooming with URL/location-based promotions

LOCATION-SPECIFIC ON-BOARDING



- Location-based or social onboarding
- Automatically connect to the dedicated wireless SSID network

SYSTEM INTEGRATION



- Integrate with product databases and CRM systems

ANALYTICS



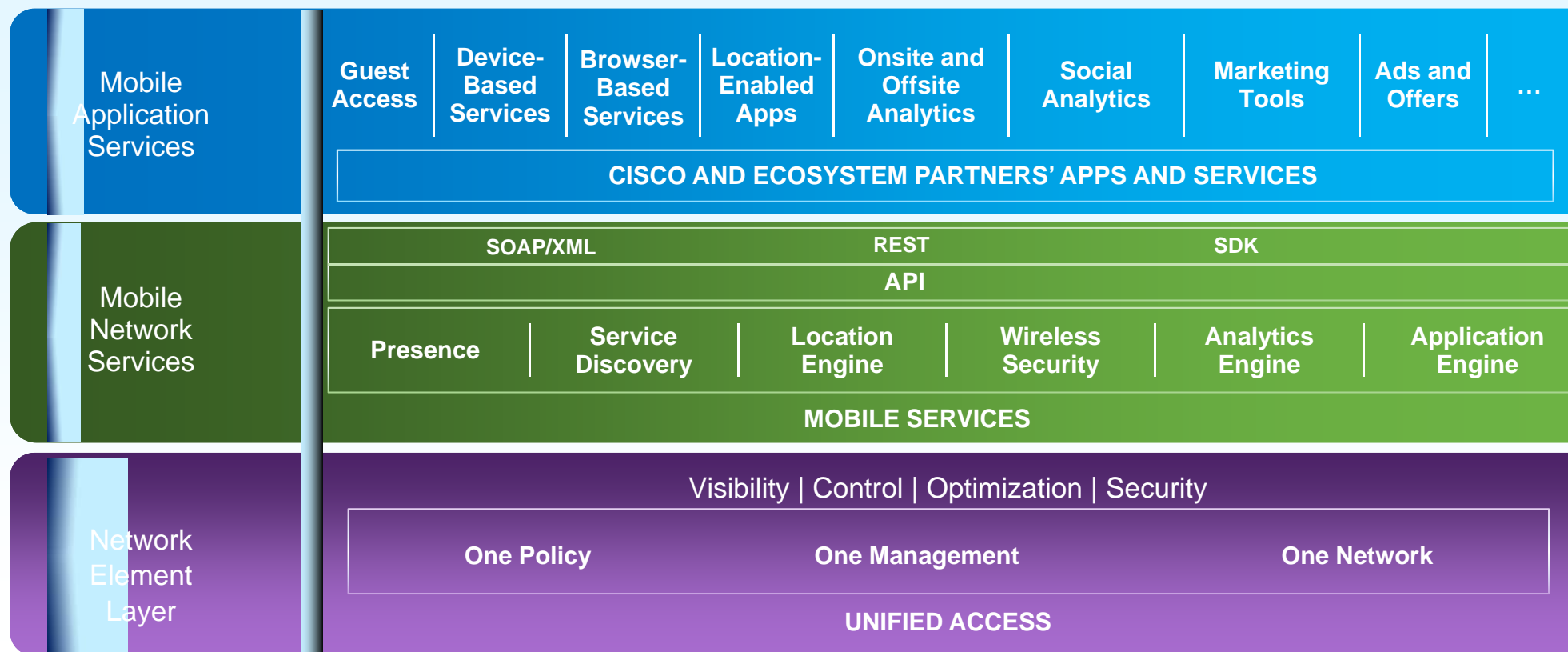
- Gain insight into online, onsite, and social customer trends
- Analyze aggregate locations, URLs, and demographics

CMX Architecture



Connected Mobile Experiences

Solution Architecture



Cisco Mobility Services Engine

Choose a Physical Appliance or a Virtual Appliance



Cisco Mobility Services Engine

Both platforms support Base Location, Connected Mobile Experiences (CMX), and WIPS

**Cisco® MSE Virtual Appliance
tracks up to 50,000 devices**

**Cisco 3355 MSE tracks
up to 25,000 devices**

MSE provides representational state transfer (REST) APIs for location-enabled application development

Mobility Services API



Mobility Services API with support for SOAP/XMP and REST (new!)

Exposes current and historical location information for tracked devices

Broad range of use cases – apps, analytics, equipment tracking, etc.

Pull model: XML or JSON, based on the requesting client

Push model: XML, JSON, and protocol buffer formats
Can be streamed over HTTP, HTTPS, or TCP

Cisco CMX Partner Ecosystem

Better Engagement Through Infrastructure Data Abstraction

Guest Access	Device-Based Services	Browser-Based Services	Location-Enabled Apps	Onsite and Online Analytics	Social Analytics	Marketing Tools	Ads and Offers
Broadhop Singleligits	Qualcomm Broadcom	Mazemap frontporch	Phunware Point Inside Aisle411 Connexient GreenTomato	Retailnext Nomi Euclid Sita	Facebook	Shopkick Solomo Joingo Phunware Frontporch Aisle411	Shopkick Solomo Joingo

Cisco and Ecosystem Partners' Apps and Services

CMX Connect



CMX Connect



Cisco Connected Mobile Experiences

Captive Portal for Mobile Registration and On-Boarding to the Wi-Fi Network

WEB REGISTRATION

- Location-specific portal page
- ID capture, terms of use
- Easy on-boarding

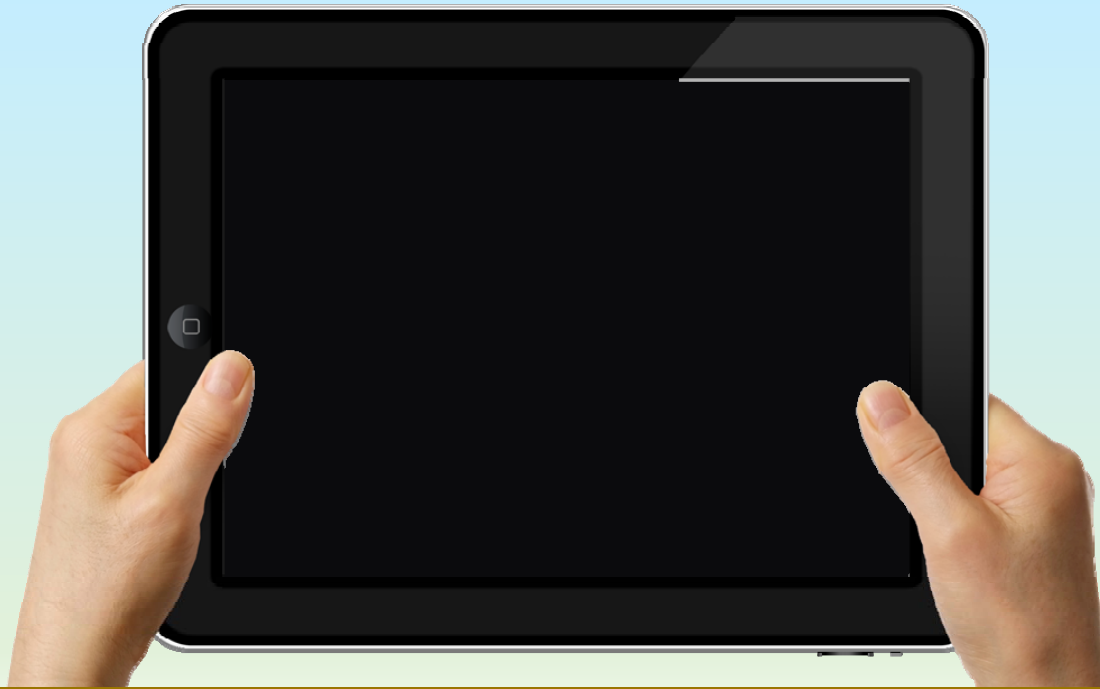
WEB AUTHENTICATION

- Location-specific portal page
- Integrates with customer relationship management (CRM)
- Support for Hotspot Release 2.0

SOCIAL MEDIA AUTHENTICATION

- Simplifies user login
- Facebook, LinkedIn, and Google+ support
- Social analytics

Welcome Page



Customizable logos, header and footer, registration fields, and terms and conditions

Landing Experience



Can direct users to landing page, advertisements, or videos once they connect

CMX App Engage



App Engage

Providing Unprecedented User Engagement as Well as Analytics

Scenario Details

Indoor GPS and directions integrated into app

Location-based messaging

Location analytics

Ability to provide additional customer services



Screen shot from Connexient

Business Benefits

Improved visitor satisfaction

Fewer late appointments

Increased incremental revenue

Greater insight into customer flow and dwell times

CMX Device Engage

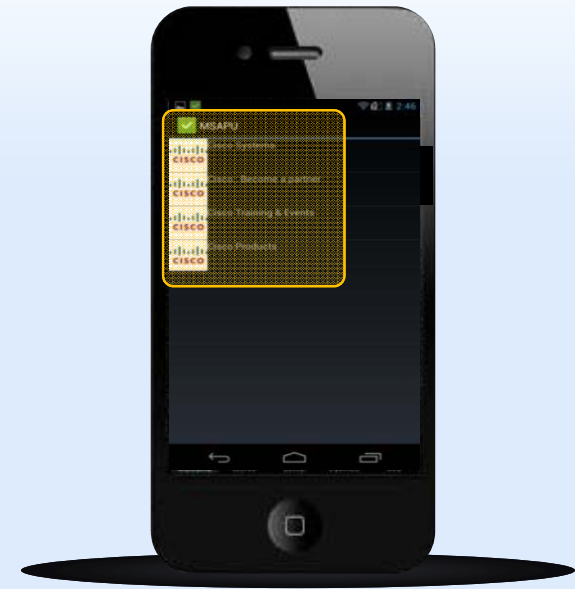


Device Engage

Device-Based Local Services Discovery: 802.11u/MSAP



Devices with location-aware Wi-Fi chipsets discover local services

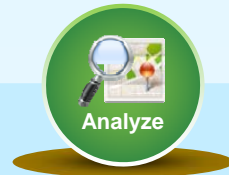


Automatically show local services to in-range mobile users

CMX Analytics



CMX Analytics



Cisco Connected Mobile Experiences

Understanding Customers and Increasing Efficiencies with Analytics

ONSITE

- How, where, and when users are moving in a venue

ONLINE

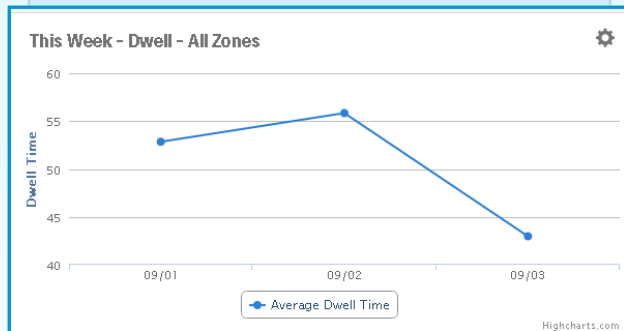
- Top visited websites
- Browser campaign adoption
- Parse results

SOCIAL

- Facebook support
- Demographics data from users who "check in"

Onsite (Location) Analytics

How Long Were People in the Venue?



Number of Devices per Zone

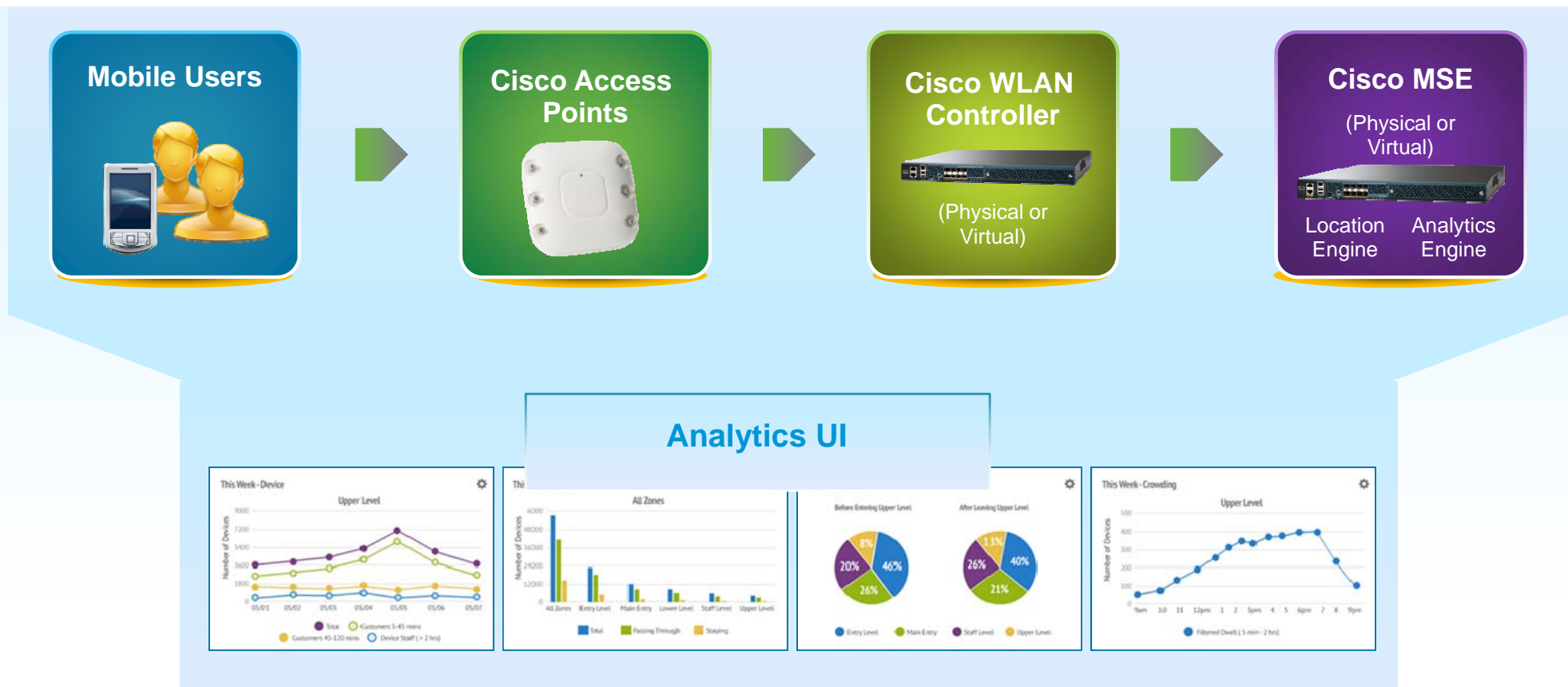


Before/After Zones



Onsite (Location) Analytics

How It Works

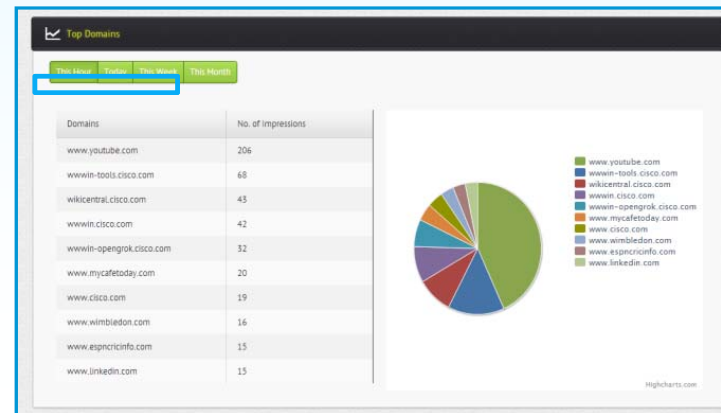


Online Analytics

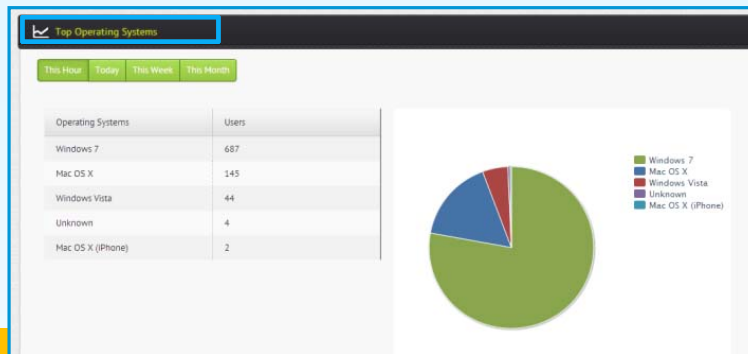


- Browser Engage campaign adoption
- Number of banner ad click-throughs by date

- Top domains visited in venue
- Aggregate view

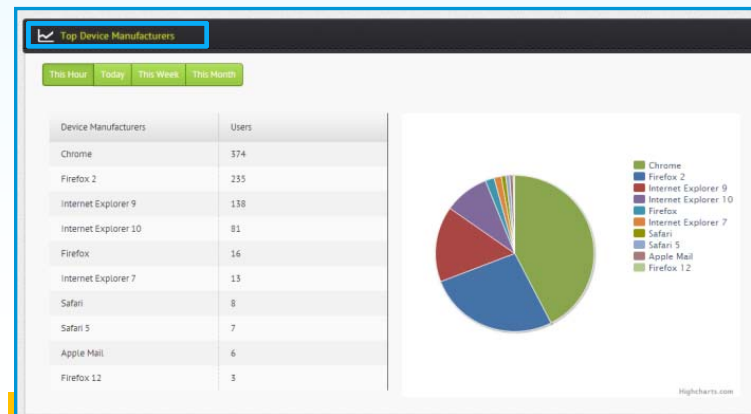


Online Analytics

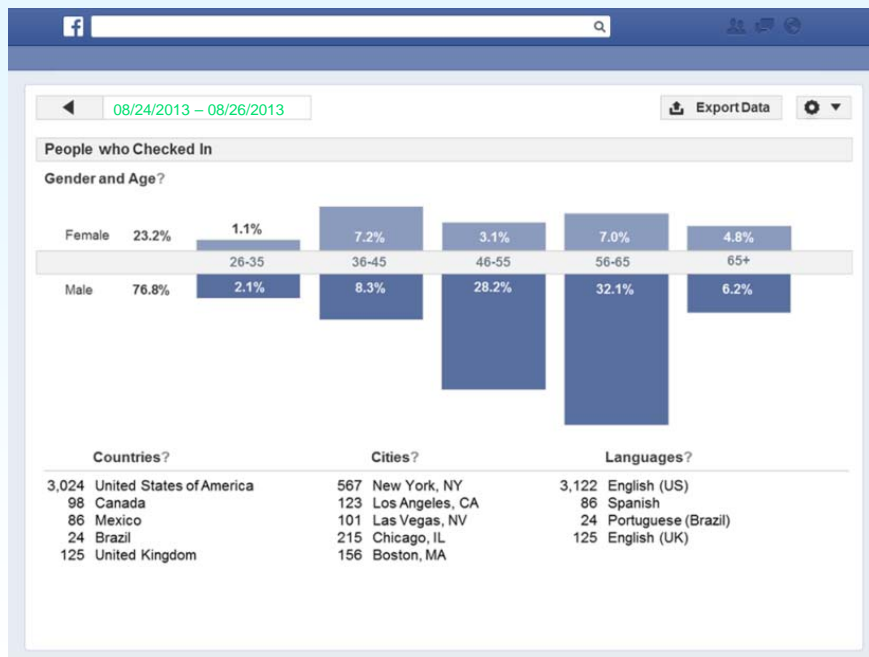


- Top operating systems used in venue

- Top devices used in venue



Social Analytics



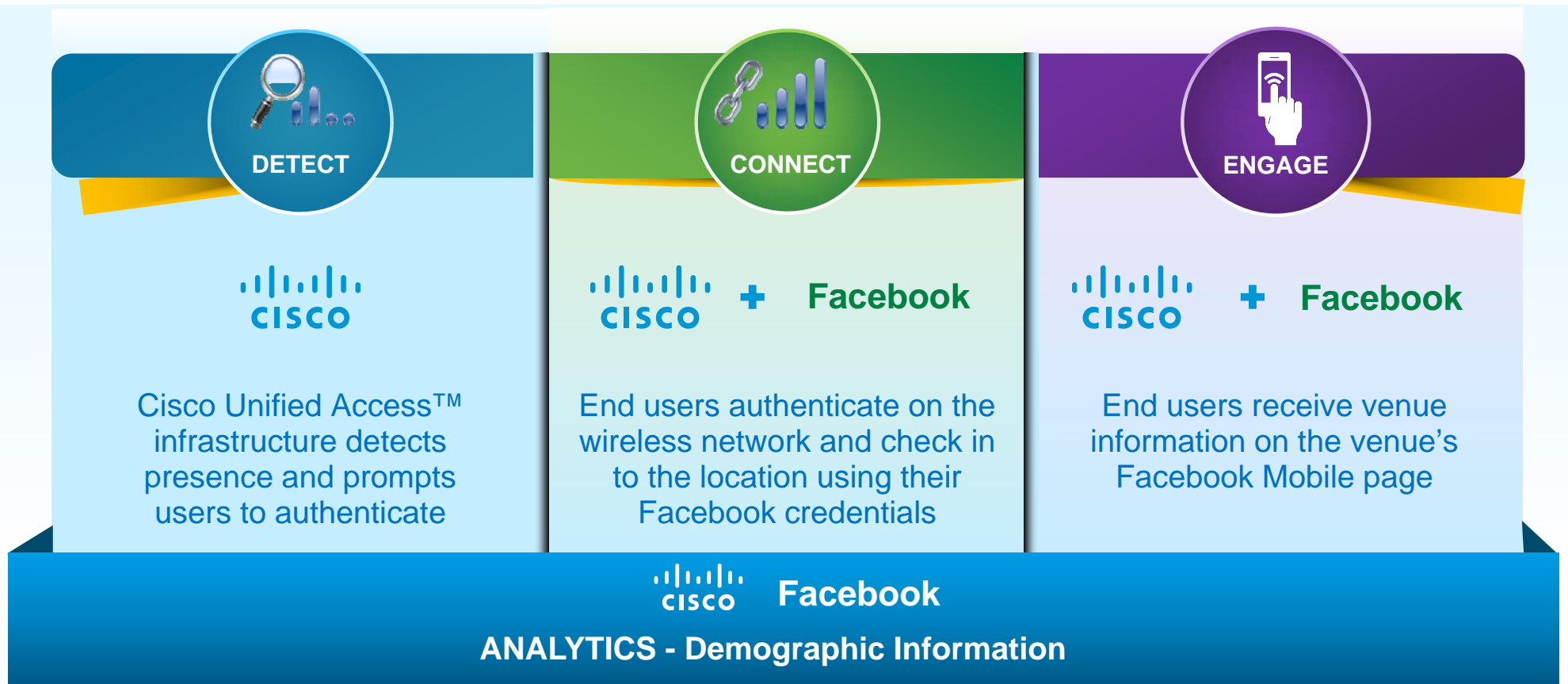
- Facebook Insights offers views with demographic information for those who have checked in to the venue
- Used for profiling customer base

CMX For Facebook Wi-Fi



Cisco CMX For Facebook Wi-Fi

Delivering New Connected Experiences



CMX For Facebook Wi-Fi Vision

Facebook CUSTOMER PROFILE



60%: Women, 25 to 35, married



70%: Like high-fashion magazines



12:30 to 2:30 p.m.: Peak time when customers shop



60%: Visit frequently



Most visited department: Shoes

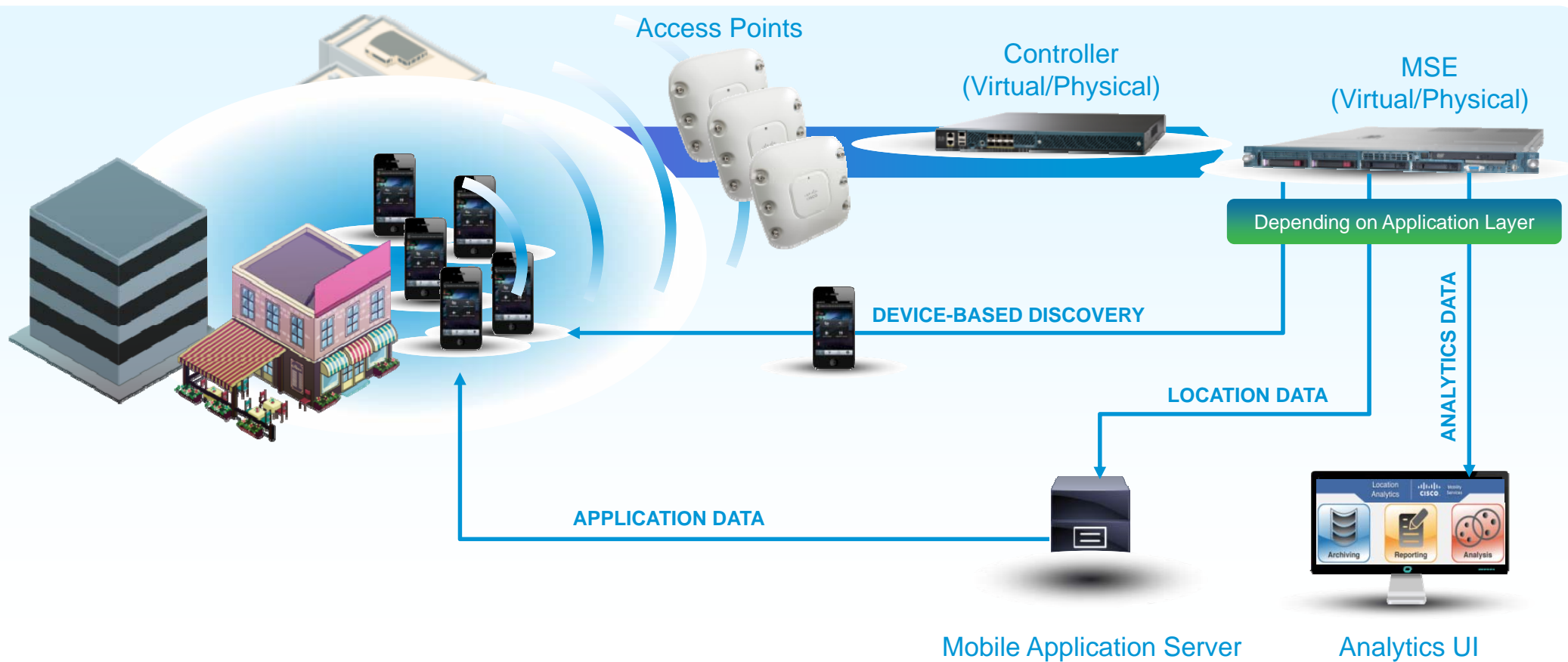
**Actionable Information
About Your Environment**

How CMX Works



How CMX Works

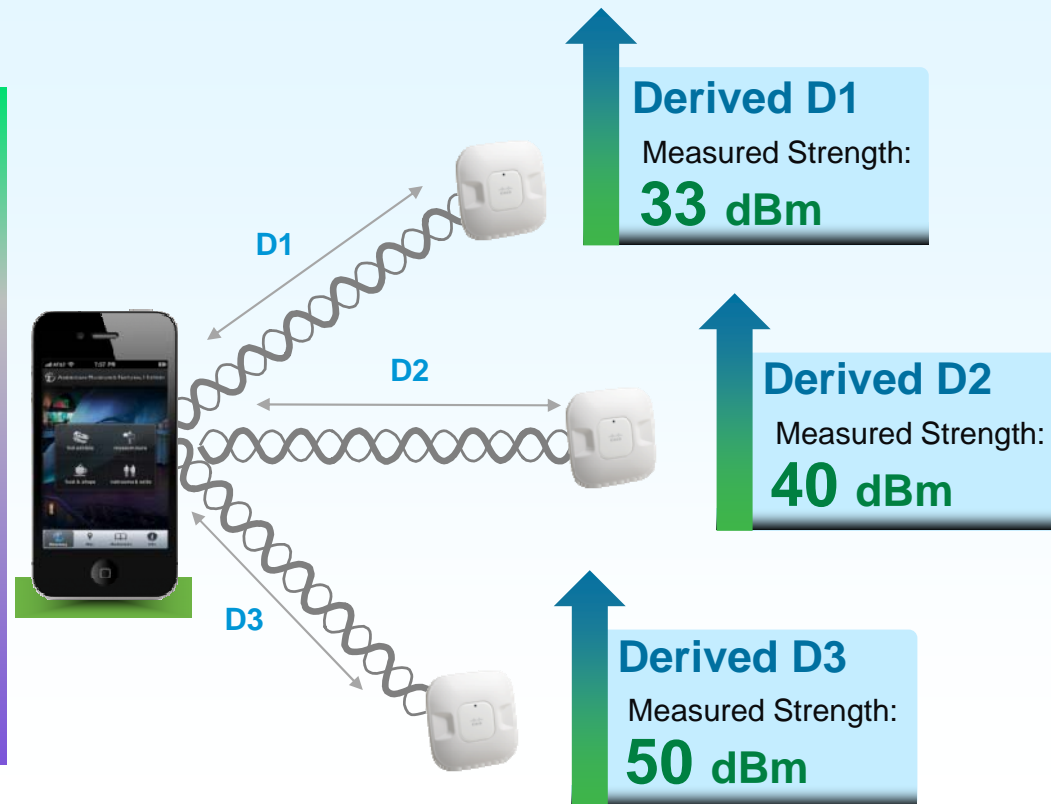
Built on Cisco Unified Access



How Location Is Calculated

Out of Data Path for Higher Scalability

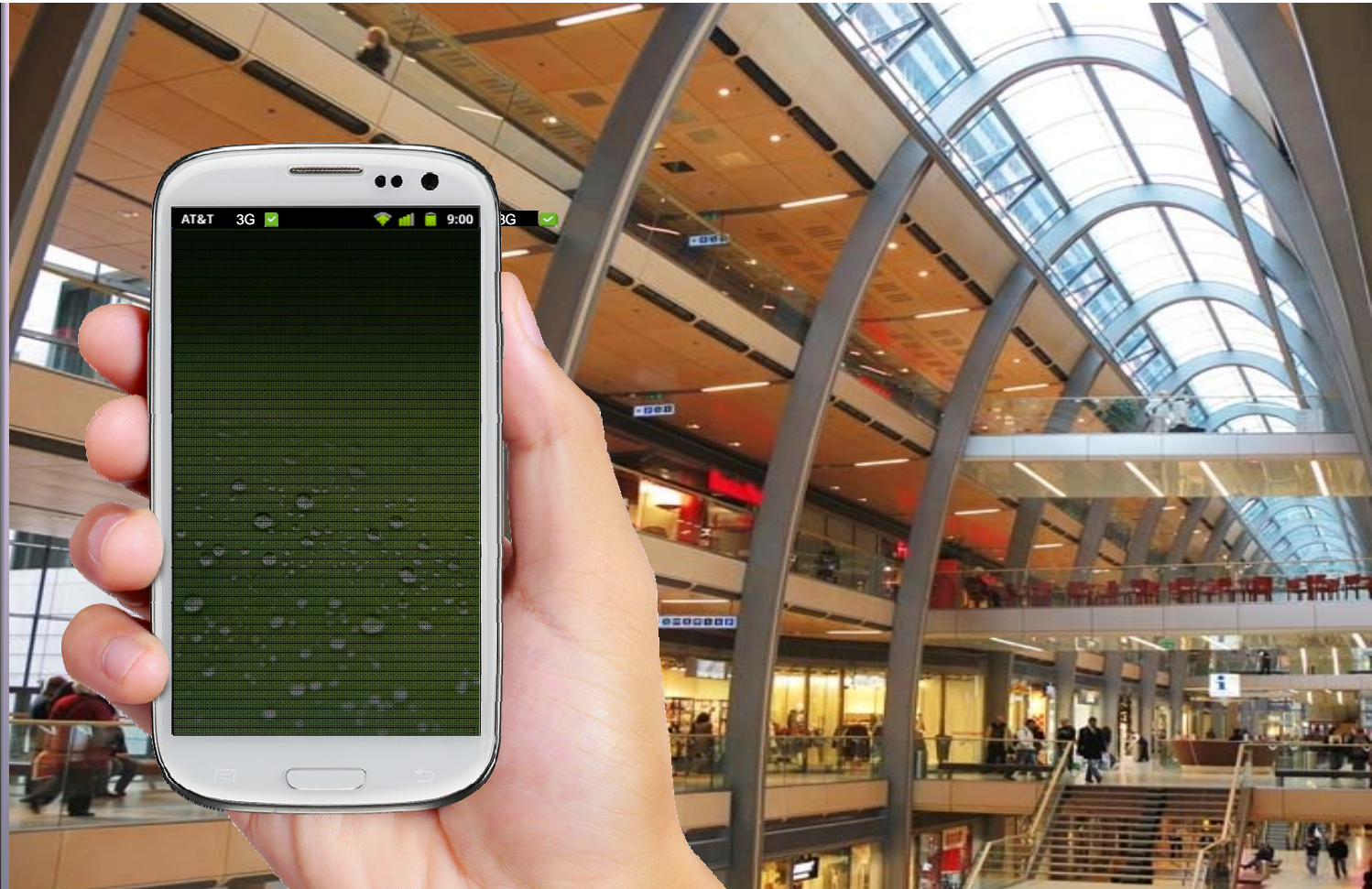
- > Access points detect signal strength from mobile device beacon.
- > Controllers send signal strengths to the Cisco® MSE.
- > RF fingerprinting and triangulation, based on signal strengths, are used to calculate device location.



Use Case



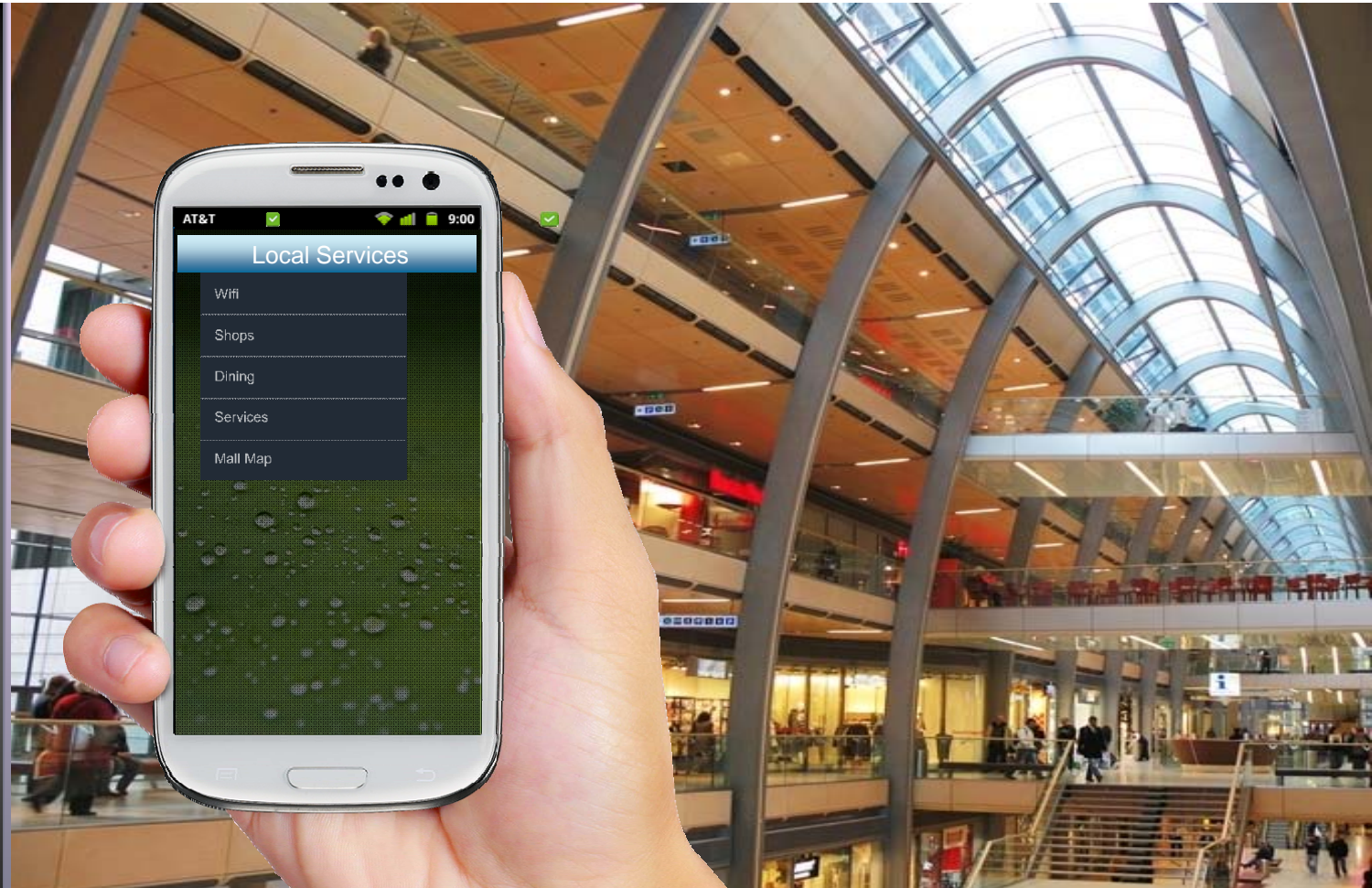
- Pre-Authentication: Network Services Discovery on the Device



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

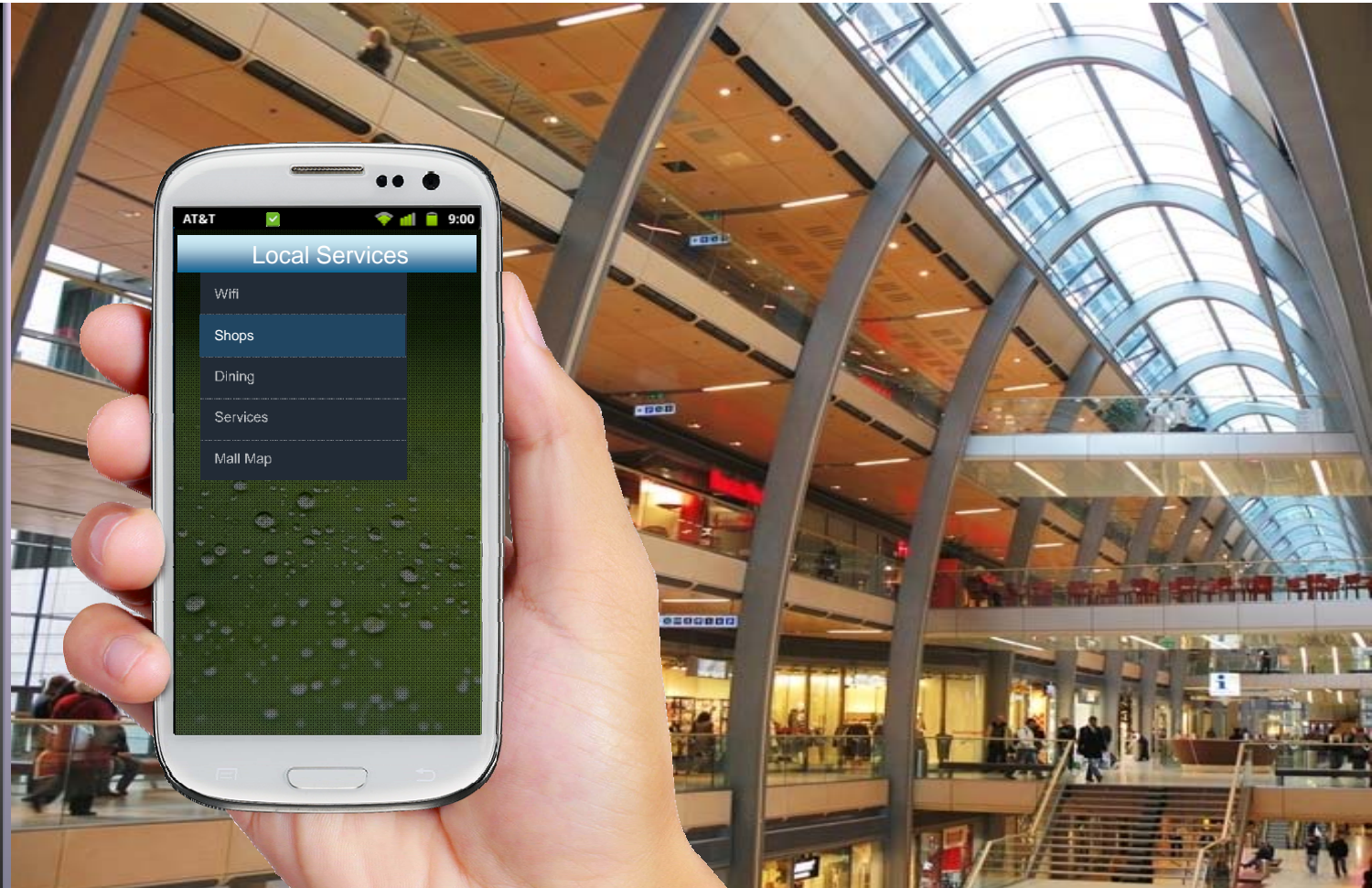
- Local Services Discovery



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

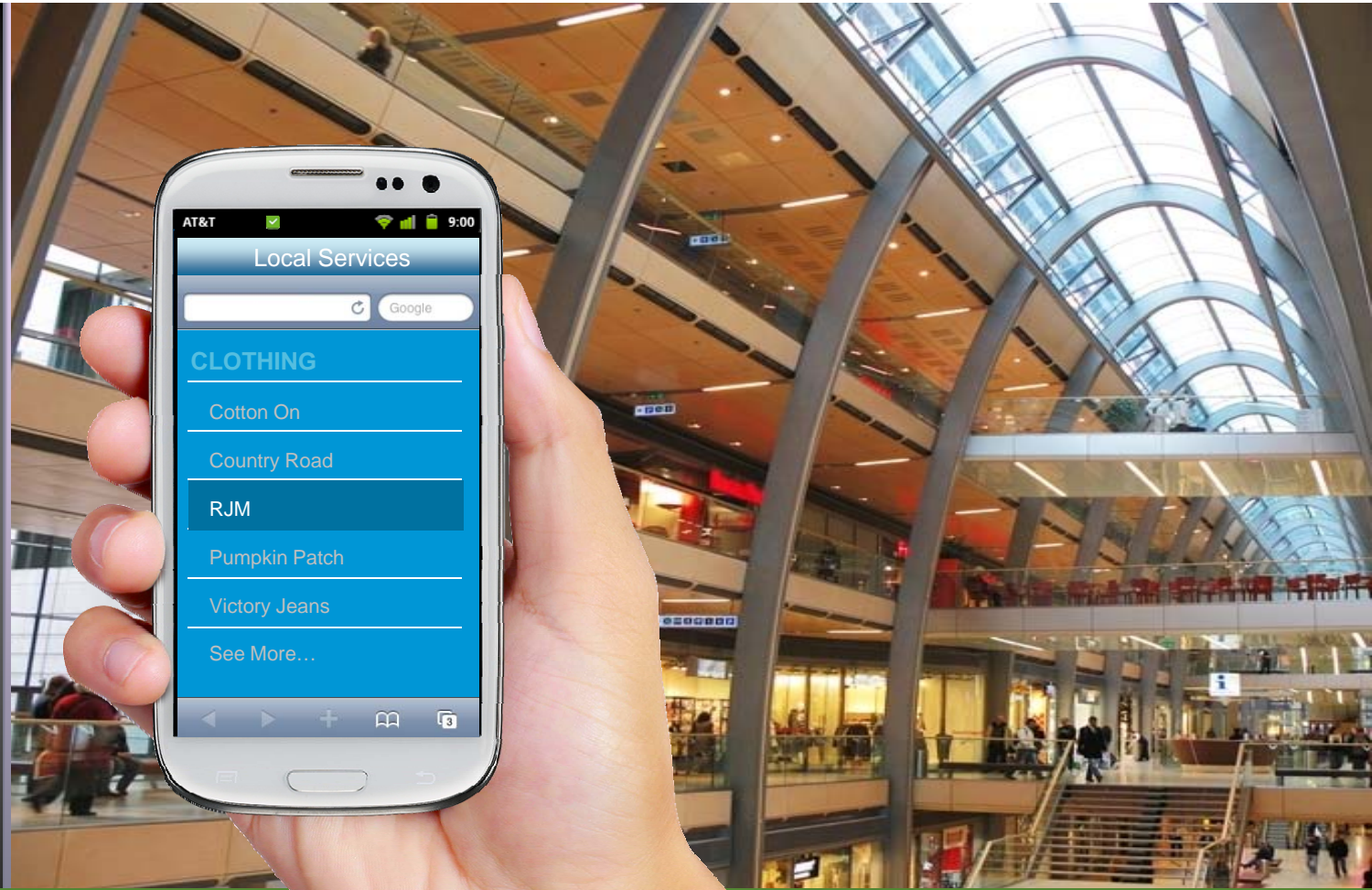
- Local Services Discovery



Retail

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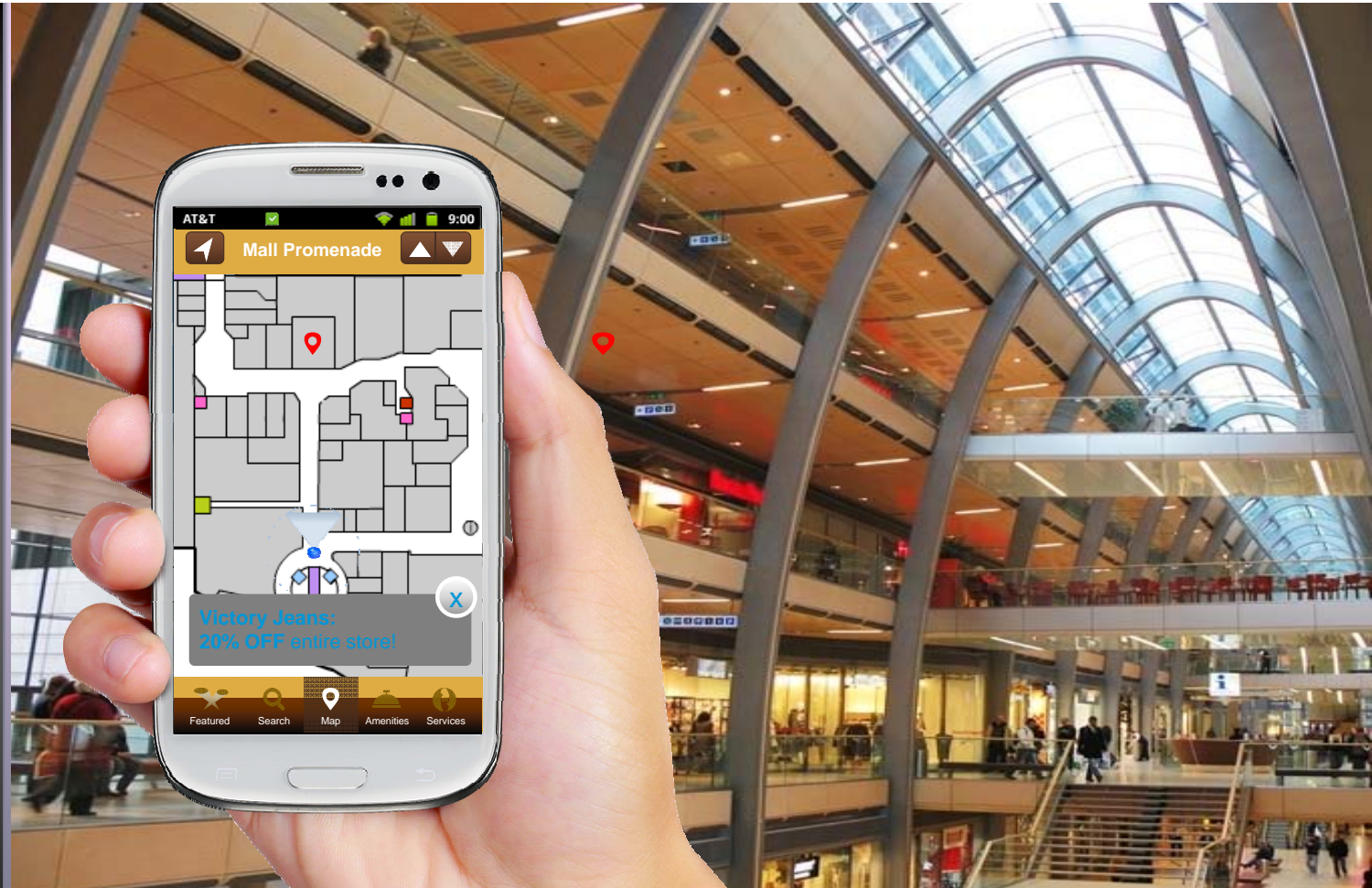
- Local Services Discovery



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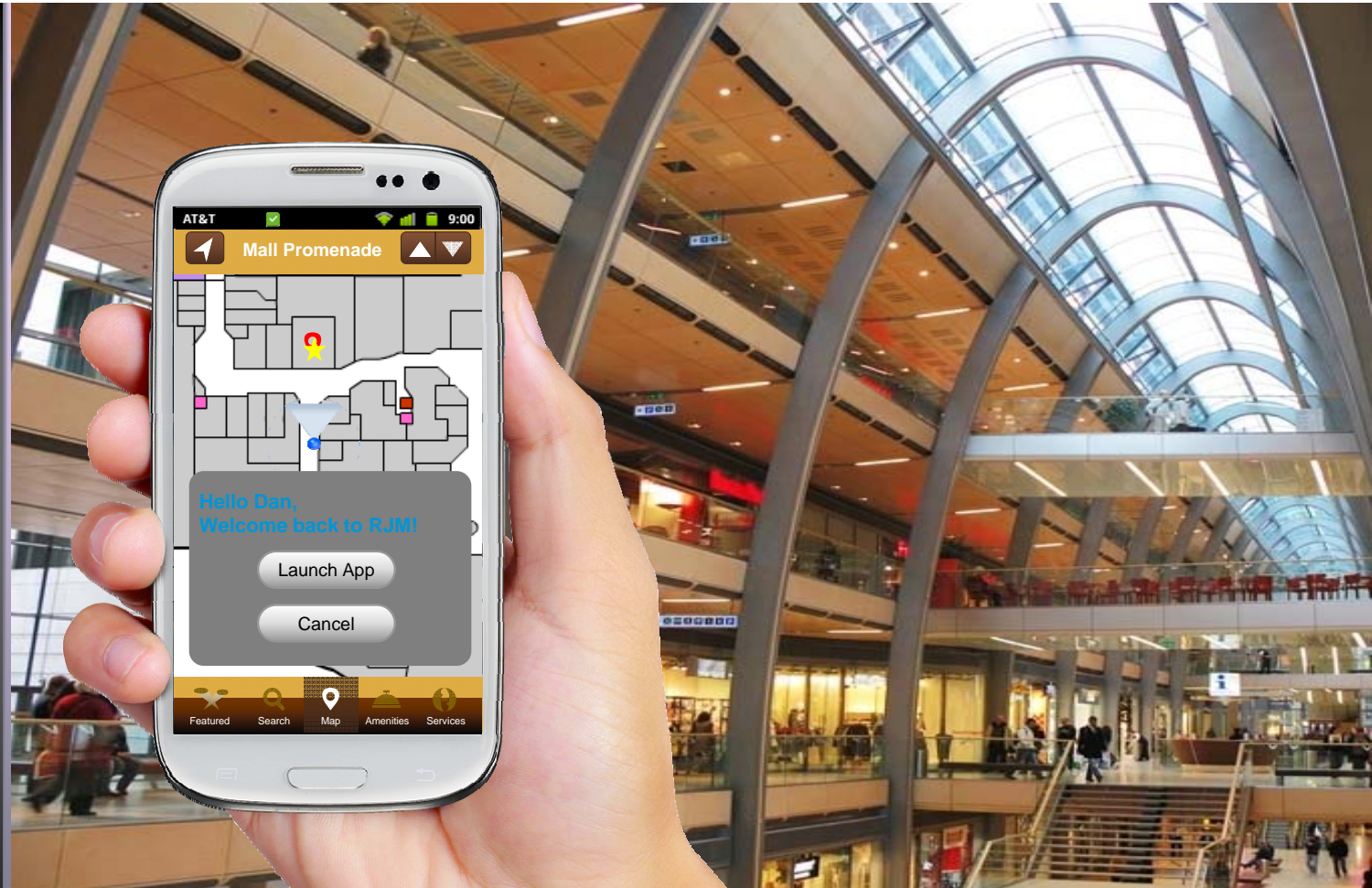
- Turn-by-Turn Indoor Navigation
- Location-based Web Engagement



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

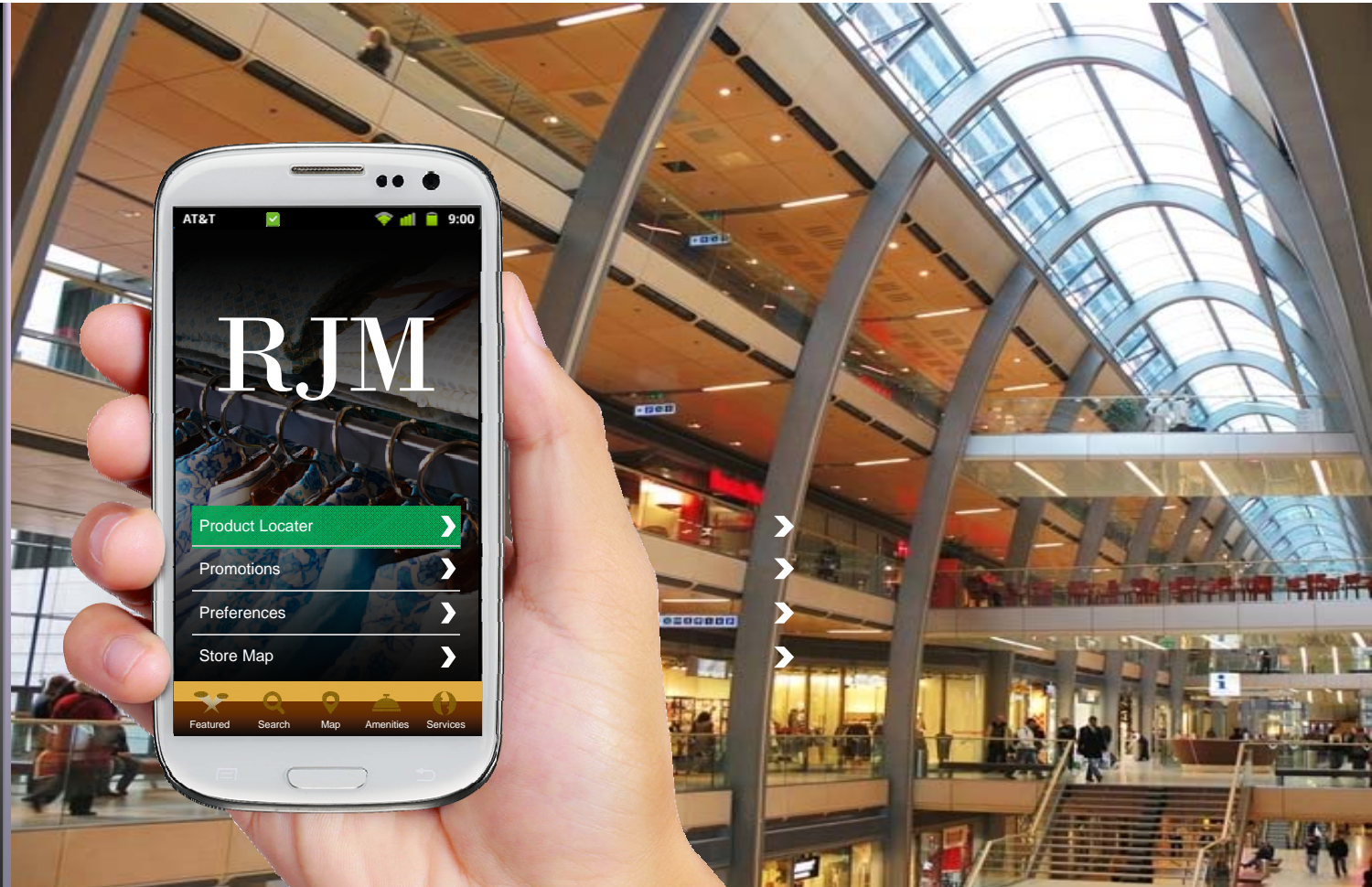
- Turn-by-Turn Indoor Navigation
- App “Wake-Up”



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

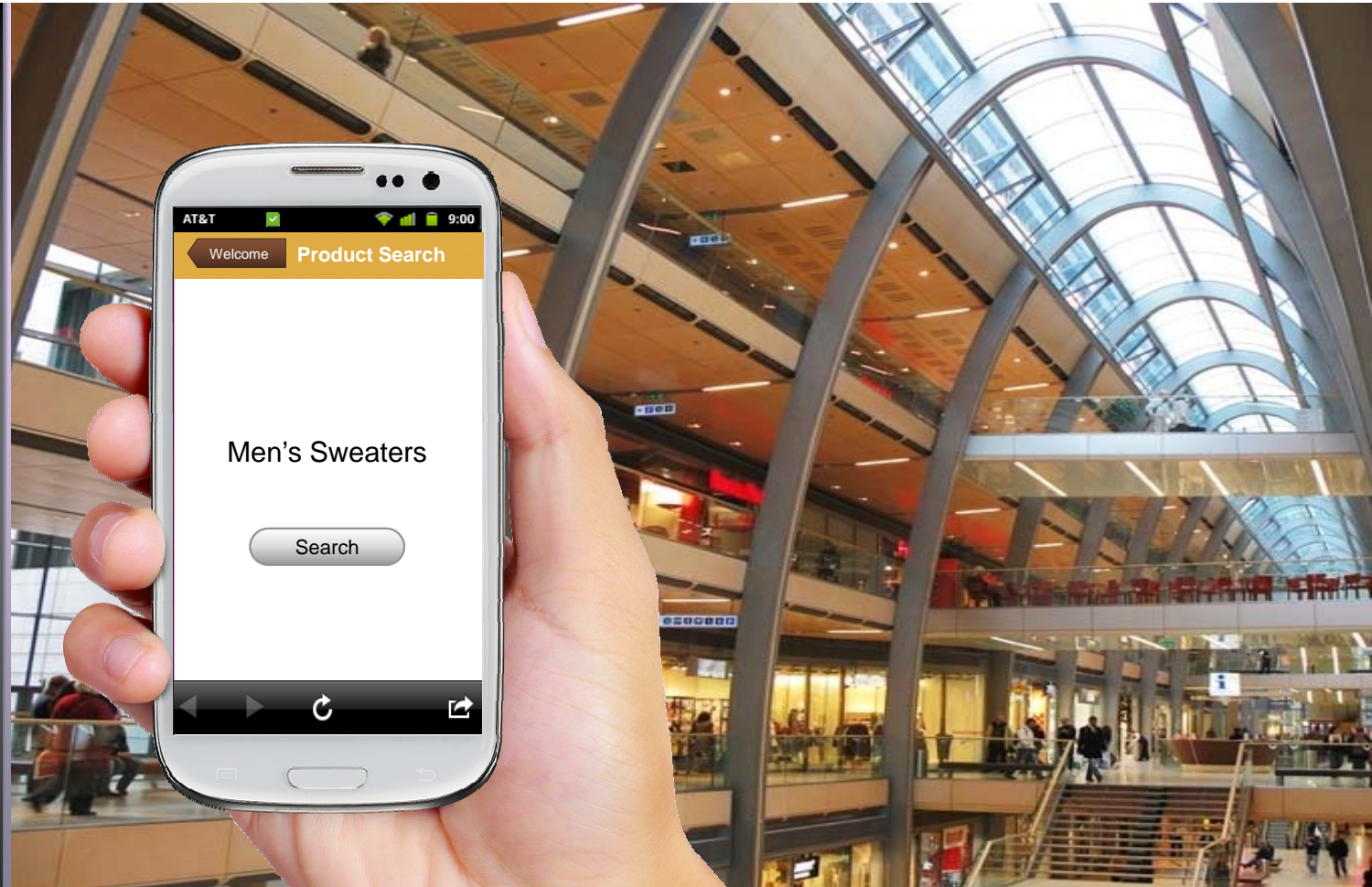
- Personalized App



Shopping Mall with AT&T

Transforming Visitor Experience with Personalized, Managed Wi-Fi Services

- Integration with Product Databases



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

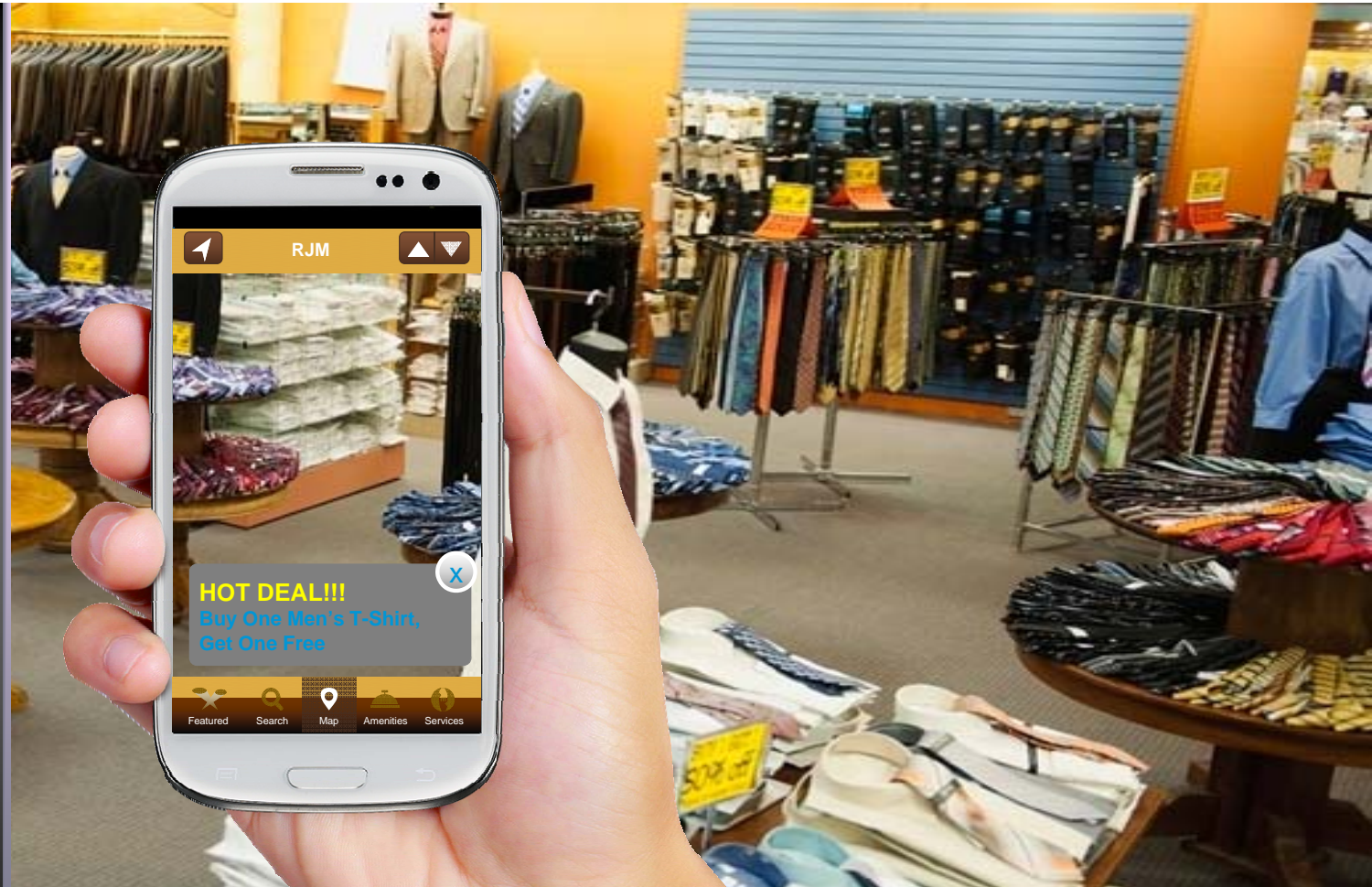
- Indoor Navigation Based on Location



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

- Location-Based App Engagement



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

- Indoor Navigation to Departments/Products



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

- Web-Based Engagement



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

- Web-Based Engagement



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

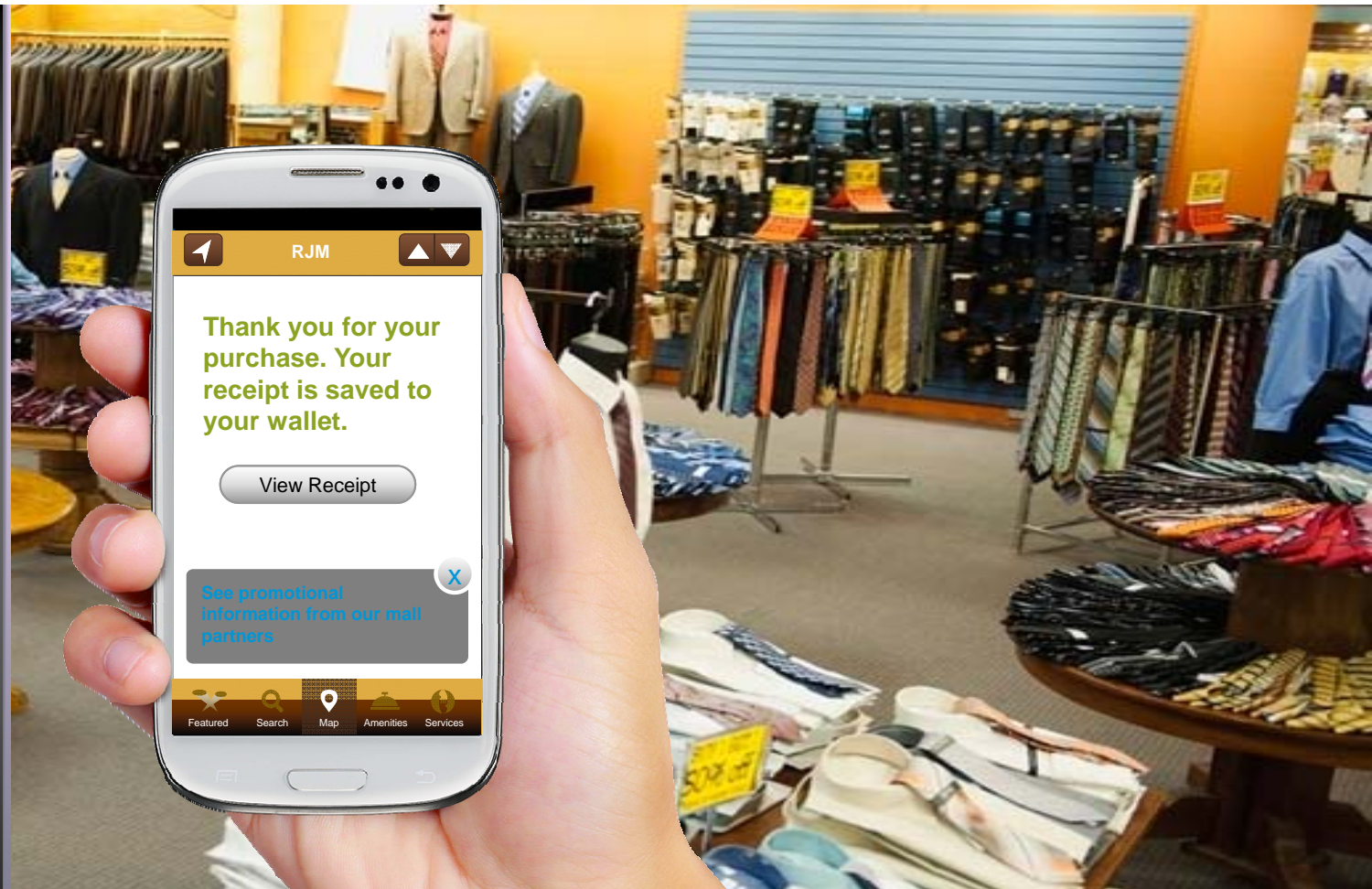
- Shopper's Location for High-Touch Engagement



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

- Integration with App-Based Mobile Payment Systems



Retail

Transforming Shopping Experience with Personalized Wi-Fi Services

Closing



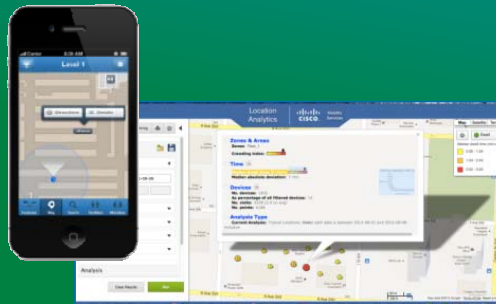
Mobility Services Engine Licenses

Connected Mobile Experiences License

BASE LOCATION LICENSE

- Advanced spectrum
- Location tracking for rogues, interferers, Wi-Fi clients, and tags
- Mobility Services API

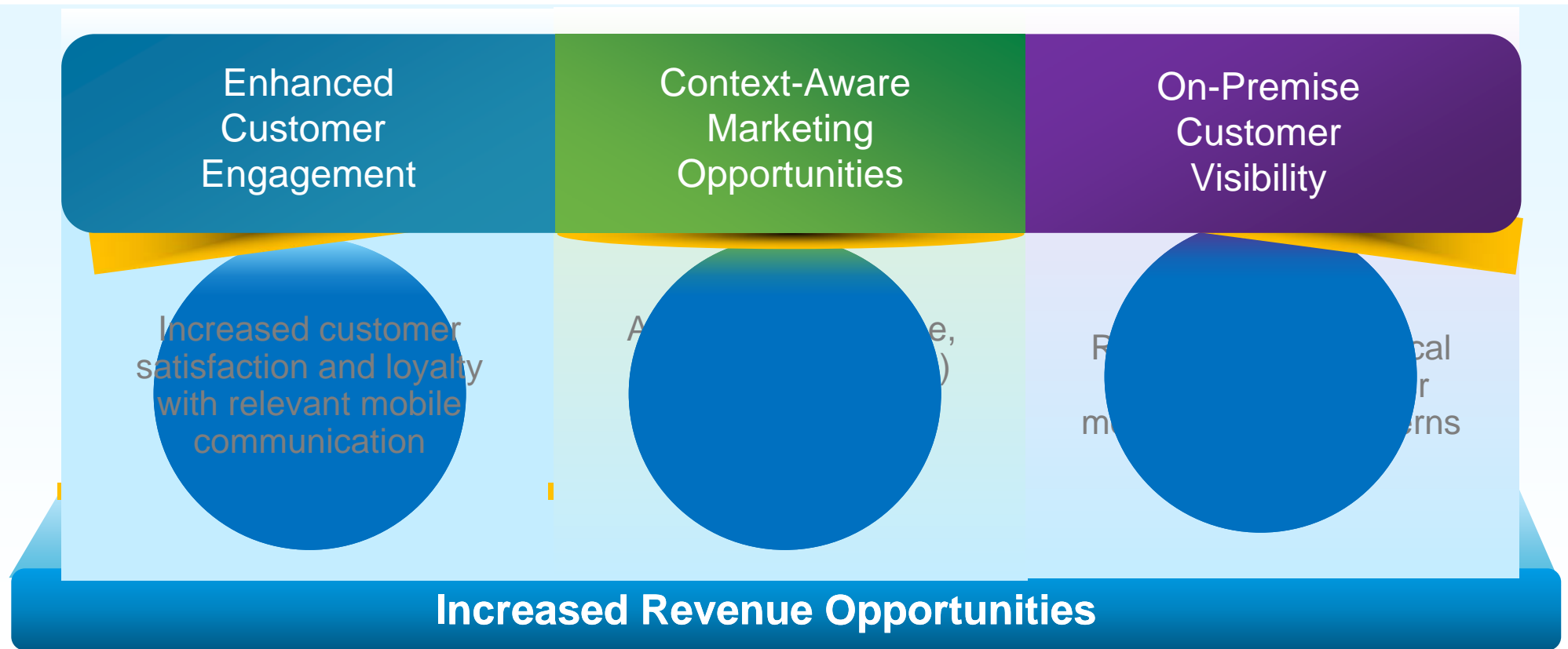
- CMX Analytics
- CMX Connect
- CMX Engage
- CMX for Facebook Wi-Fi



wIPS License

Detection and mitigation of security penetration and DoS attacks

Benefits Of Connected Mobile Experiences



Professional Services Help Move The Conversation From “What?” To “Why?” And “How?”



How Will Services for CMX Benefit Me?



- Create an end-to-end application platform to support your initiative
- Engage customers better to fuel new revenue streams
- Deliver real-time context- and location-aware services and analytics



Where Do I Start?



- Develop an intelligent application infrastructure strategy
- Validate LOB use cases and define requirements



How Do I Manage CMX Application Development?



- Application and platform design and development solutions from Cisco and partners
- Testing and validation services
- Proof of concept and pilot

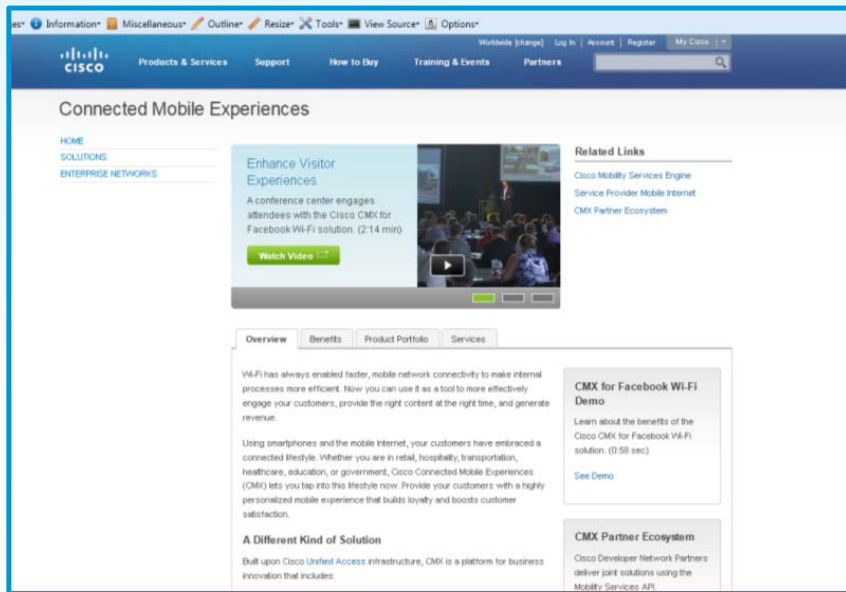


How Do I Manage and Operate After Implementation?



- Optimization services for mobility
- Global technical support
- Application and platform term license subscription and support from Advanced Services

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