



Connected Mobile Experiences Solution Overview

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Introduction

The emergence of ubiquitous wireless networks and the explosion of mobile devices means that nearly everyone has access to the Internet and can be contacted through a communications or data network. Mobile devices are no longer used solely for workplace activities that expand productivity and reshape work habits, but are now used as an instant source of information for users. Users leverage their mobile devices to discover, compare, share, and communicate information about products and services. With the increase of users leveraging their mobile devices, organizations have a new way to deliver innovative user services and enhance the customer experience by leveraging their wireless networks in their venues.

In addition to ubiquitous access to Wi-Fi networks and the growth of the smart phone and smart tablets, the industry is also seeing the growth of the mobile application. With the widespread acceptance of mobile applications, users worldwide take it for granted that they can access information anywhere and at any time. Access to Wi-Fi is expected and the market is seeing the emergence of a new phenomenon: the mobile connected user. Today's mobile connected users are bringing their smart devices into a venue and using them to look up prices, find information, and post to social media. This behavior has created opportunities for organizations to utilize their existing IT Wi-Fi network to connect with their customers to increase both loyalty and revenue.

Built on Cisco's WLAN infrastructure, Cisco's Connected Mobile Experiences (CMX) allows enterprises and service providers to deliver customized, location-based mobile services that not only provide a timely, personalized mobile device experience, but also enable organizations to better understand their users through onsite, online, and social analytics. Location-based services allow mobile users to receive useful information or capabilities based on their location within a venue. In turn, organizations acquire information about their mobile users that allows them to provide better services as well as track the success of their engagement strategies.

Organizations that recognize this new class of mobile users and the benefits the CMX solution offers can increase their revenue by providing personalized and relevant information based on where a user is located in the venue. With CMX solutions, organizations are able to:

- Build customer intimacy, loyalty, and retention.
- Elevate venue operations with intelligent product placement, appropriate staffing, and improved floor layouts.

- Transition Wi-Fi from an IT expenditure into a profit center through third-party mobile advertising opportunities and mobile-influenced sales.

Connected Mobile Experiences (CMX)

To build relationships with their users and ultimately increase revenue, organizations must:

- Engage users—Organizations must find new ways to reach their users that go beyond passive marketing campaigns. Today's mobile user wants relevant content, information, and services delivered to their mobile devices based on their location and personal preferences.
- Improve the user experience—Organizations must find new ways to provide an unprecedented user experience to increase customer satisfaction and loyalty, such as listing services inside venues and delivering customized information directly to a mobile device based on the user's location.
- Understand user behavior—Attracting a user to a venue is just the first step in realizing the potential revenue location-based Wi-Fi networks can provide. Organizations often lack insight into a user's behavior while in their venues. Understanding traffic patterns and dwell times is key to addressing user needs and improving operations and loyalty.

The CMX solution has three aspects:

- CMX Detect—Acknowledges a mobile consumer's presence in a venue by detecting the mobile device and its characteristics before they enter.
- CMX Connect—Provides premium mobile consumer access in a venue with seamless and secure Wi-Fi connectivity, allowing mobile consumers to receive personalized and location-based services. Organizations can collect these preferences and device and roaming credentials through direct access to a venue's network or through social media sites.
- CMX Engage—Organizations can gather highly relevant content and services based on user attributes and real time location to deliver a personalized, context-aware experience to a mobile consumer while in their venue.

The Cisco CMX solution relies on a Wi-Fi infrastructure within a venue. At the heart of the CMX solution are location-based services (LBS), which are essential to understanding a mobile user's context—where they are and what they are doing—and can help organizations engage with their users in a relevant way.

Cisco's CMX solution allows venues to simultaneously provide users with highly personalized content, provide services to customers to increase the customer experience, and gain visibility into customer behavior in their venues. CMX detects in-venue Wi-Fi enabled devices, prompts customers to connect to the wireless network, and engages them with value-added content and offers.

CMX and the Wireless Infrastructure

The CMX solution relies on a Wi-Fi infrastructure within a venue—the key enabler for service delivery—to detect, connect, and engage with mobile users. An organization's WLAN network must become as robust, secure, scalable, and predictable as possible to ensure a positive experience for mobile users within a venue. Many venues do not have a wireless network since network access was not a key design factor during construction. Before the mobility explosion, venues used paper advertisements, maps, and brochures to provide users with information about their location. With the increase in users with smart devices, a Wi-Fi network is critical to provide services customized for the individual. This new way of engaging with users also saves organizations the money and resources required to publish and update paper products. When establishing a Wi-Fi network within a venue, critical design

considerations include determining how many access points are needed within a venue, guaranteeing that the wireless signal is sufficiently strong, and validating that there are no rogue APs that compromise the security of an organization and its venues.

Role of the Mobile User in the CMX Network

The success of CMX requires establishing a mobile guest Wi-Fi network in the venue and a realization that this network is different from the organization's corporate network. Mobile users are often not employees of a venue and typically are only accessing data from the Internet or social media sites. Depending on the venue, there may be more mobile guest users than employees. This increase in smart devices used by mobile guests on a Wi-Fi network must be taken into consideration as increasing amounts of data traverse a venue's wireless network. In addition, the traffic from mobile guest users must remain separate from the organization's corporate network so the different types of traffic can be managed differently if network congestion occurs. Organizations must also protect their corporate data from mobile guest users to prevent them from injecting threats into the organization's network. The benefits of CMX to an organization include increasing the engagement and the loyalty of mobile users in their venues.

Role of the Organization in the CMX Network

With the increase of mobile devices and Wi-Fi connectivity, CMX provides expanded opportunities for organizations to connect and engage with their users. Services and benefits can be sent to a mobile user's smart device depending on their location within a venue to ensure the experience within the venue is personalized and relevant to the user. Leveraging the Wi-Fi network and adding location based services to their network, organizations have the opportunity to use location analytics to understand how many users are in their venue, how long they dwell in a certain zone in their venue, as well as what paths they take while in the venue. This information is critical to an organization to provide the right engagement strategies at the right time in the right place. Location analytics are a valuable piece of the CMX solution that provides organizations the data they need to connect and engage with their mobile users while in their venue.

Concerns for CMX and Mobile Users

- **Privacy**—In many organizations, in exchange for free Wi-Fi, a mobile user must accept the terms and conditions set by the venue. To receive Wi-Fi services, social media analytics or consumer information can be collected. While the advantages of a mobile user “opting-in” to the terms and conditions provides benefits such as services, discounts, and the right to use Wi-Fi, many mobile users prefer not to allow that aspect of their privacy to be invaded. This privacy concern is lessening as more and more mobile users check-in their location on social media sites, but it is still a valid concern. The workaround to this privacy concern is to not opt-in to the Wi-Fi network and use a cellular network for access to the Internet. The CMX solution provides a choice that accommodates all levels of privacy.
- **Security**—While there are privacy concerns regarding mobile user's rights, organizations are facing increasing amounts of guest traffic on their Wi-Fi networks. Although a wireless network may have been established for corporate users only, the addition of mobile users on the wireless network requires that organizations protect their data from mobile users and mitigate against threats to the organization. Having a strategy for protecting an organization's corporate data while providing valuable personalized data for their mobile users is critical. Strategies might include creating

mobile-user only wireless network access or offloading all mobile user data to the Internet. The CMX solution offers many design options to ensure an organization maintains the security of their critical assets while providing valuable services to their mobile users.

CMX Solution Advantages

The CMX Solution provides benefits to both organizations and their mobile users, including:

- **Location-based services**—Organizations can use signals from Wi-Fi enabled devices to detect each user's location. They can also deliver location-based product information, offers, and ads to the user's device, with an option for a customized loyalty application.
- **Seamless Wi-Fi onboarding**—Recognizing the aforementioned requirement for a balance between privacy and security, the CMX solution supports easy opt-in onboarding of the user's mobile device while maintaining corporate security policies. With a simple touch of a screen, users can receive controlled access to the venue's Wi-Fi network.
- **Advanced analytics**—Organizations can gain insights into user's traffic patterns and trends through location analytics gathered from mobile device signals. Detailed reports can provide venues with valuable information on dwell times, traffic patterns, new versus repeat customers, and conversion rates on marketing campaigns. Data analytics can be used to drive operational efficiencies and improve customer service.
- **Targeted advertisements and messaging**—Organizations have a new opportunity to meet users' needs and preferences with personal and contextual offers that are based on the user's traffic patterns. Personalized pop-up messages, based on current location, can be delivered to the user's smart phone via a mobile app.
- **Indoor directions and venue services**—On a user's smartphone or tablet, organizations can display a list of primary departments or areas of interest on a virtual map as well as provide any services within these areas that might interest a mobile user.

The Cisco CMX solution is a proven solution design that is fully tested and documented in a Cisco Validated Design (CVD). The CVD program consists of solutions designed, tested, and documented to facilitate faster, more reliable, and more predictable customer deployments. The Cisco CMX CVD integrates Cisco products, third-party products, and devices into a comprehensive approach to deploying CMX that provides these benefits to not only organizations, but to the mobile users they serve.