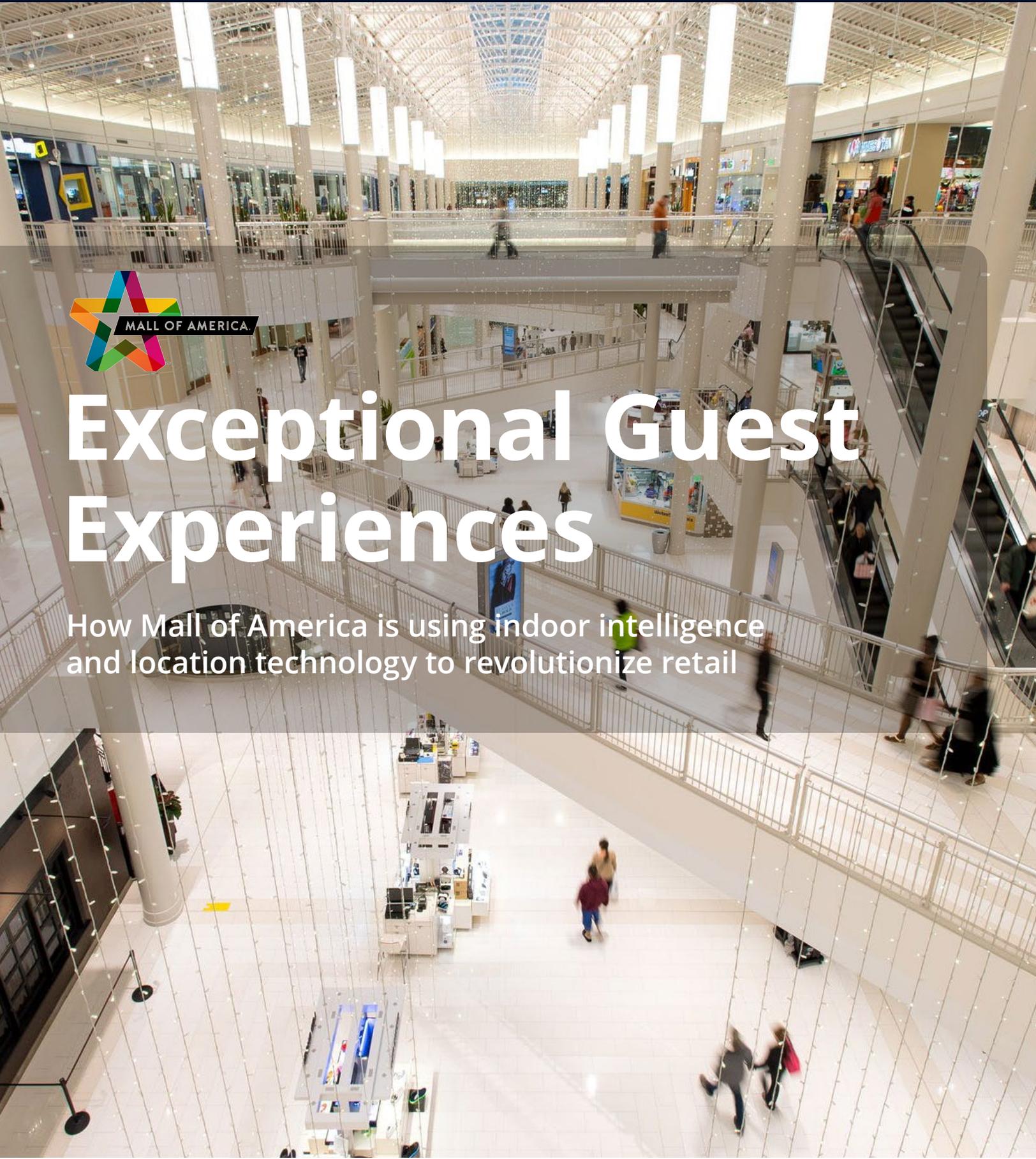




# Exceptional Guest Experiences

How Mall of America is using indoor intelligence and location technology to revolutionize retail



The background image shows the Mall of America building, a large, modern structure with a glass and metal facade. In the foreground, there is a large, colorful, abstract sculpture made of various geometric shapes in shades of yellow, red, blue, and green. The sculpture is partially obscured by the text blocks. The building's name, "MALL OF AMERICA", is visible on the facade.

In a time when headlines are touting “the end of brick and mortar retail”, Mall of America has thrived by redefining the retail experience. With their innate commitment to innovation and amazing guest experiences, and by leveraging location-aware technologies, Mall of America has always been more than a mall - it is a destination.

Mall of America is the largest mall in the United States welcoming over 40 million visitors from around the world every year. The Minnesota-based retail complex was built with an amusement park in its core, laying the foundation for it to always be an entertainment destination at heart.

Covering over 5.6 million square feet and home to over 520 stores that are frequently rearranged, Mall of America is the definition of a large, complex, dynamic space.

Their commitment to excellent guest experiences and memories, combined with the magnitude of the mall, has meant that location-awareness and indoor location intelligence have been key to their technological journey. Ten years ago, Mall of America identified the need to modernize the aging building's connectivity. The team knew that charging stations for mobile devices would become increasingly important, and that WiFi was needed throughout the building.

It was a significant architecture investment, but one that was important due to the nuances of the space, and ultimately was key to kick-starting Mall of America's digital transformation. After establishing indoor WiFi connectivity and updating the mall's overall architecture, the time was right to explore digital wayfinding and business intelligence solutions for America's largest mall.



## The Challenge

In 2015, Mall of America set out on an indoor intelligence journey with a mission to make the mall smarter, to provide digital wayfinding for guests in their very large, challenging space, and to acquire actionable data insights from location data.

Tenant relocation and turnover was a unique challenge for Mall of America. With 520 plus retail tenants, there are new stores frequently opening as well as re-arranging of tenants to create the best experience. Guests not only needed to know where vendors were, but also if one had left, what other vendors were nearby that would suit their needs.

There were also concerns around data architecture. Getting the data architecture in place was integral to Mall of America's digital transformation. The team also needed to adopt a data mindset, which required an internal cultural shift.

After having invested heavily in WiFi connectivity for the building, the team had hoped to be able to provide wayfinding with WiFi alone. Unfortunately, while the technology on the WiFi side worked well for triangulating, it was the personal phones and devices that were not effective. This led the team to make the switch to a Bluetooth-based Indoor Positioning (IPS) system, which requires guests to download an app. This meant that in order for guests to actually go through the process of downloading another app to their personal devices, whatever they built needed to be of immense value and add significantly to the guest experience.

# Project Goals

Mall of America's team set out to achieve three main objectives:

- 1.** Making the property more accessible while ensuring visitors get the most accurate and relevant information across all platforms.
- 2.** Bring dynamic mapping to internal facing applications saving both time and effort.
- 3.** Garner actionable insights from location data to guide future initiatives.

Mall of America is in the business of creating exceptional experiences and memories, which meant that they needed to find the right technology partners to remove friction from the guest journey while giving their internal team the flexibility and control to create and maintain their solution. For Mall of America, that meant investing in a technological foundation which included:

- [implementing indoor positioning](#)
- [harnessing data analytics](#)
- [incorporating indoor mapping](#)

The vendors Mall of America was searching for needed to remove stress and pave the path to a good time, respecting that guests always come first.

Janette Smrcka, Mall of America's IT Director, leveraged her community from the outset, thriving off of the diversity of experiences in her network. She consulted with technology teams from local major airports and stadiums, finding many similarities between end users and guest experiences. The team at Mall of America were able to draw upon learnings from these different industries, having concluded that they were working with the same people and technology, just using it slightly differently.

# The Journey

Mall of America worked with several different IPS technology providers experimenting with a variety of solutions before selecting a positioning partner. In the end, Mall of America went with IPS provider Senion, using Cisco Halo beacons, to roll out Bluetooth-based indoor positioning throughout the property. This technology stack mitigated issues around battery life and empowered them to adjust beacons centrally without having to walk around throughout the considerable building.

When it came to data analytics, Mall of America encountered an unexpected opportunity. They connected with local university, Carlson School of Business and their Master of Science Business Analytics program in 2016. This led to a larger partnership mining directory and WiFi data, which simultaneously created a data-driven culture within the organization. The Mall of America team now has dedicated data analytics members who regularly work to identify search trends and insights enabling them to be proactive with their development work.

Mall of America also carried their agile methodology into their kiosks project, working with app development services firm, Express Image, in an iterative way to create digital directories that provided smooth experiences for guests based on A/B testing throughout the facility. Since implementation, the team had built upon their historically good intuition about what to do with their space, but now the team has the data mindset, tools, and repository to make more strategic, quantifiable decisions.

Another consideration for Mall of America was the concept of an indoor mapping platform. When they first started working with indoor maps, the concept of a mapping platform was completely foreign to them. Due to the dynamic nature of Mall of America and its many tenants, their maps need continuous monitoring and reinvestment in order to maintain the experience. With their initial mapping provider, it proved difficult to find a balance between continuing to innovate and maintaining current systems. They quickly realized that they had outgrown their vendor. The team at Mall of America knew that they would need a more efficient way to do things - and that meant replacing their initial mapping provider with Inpixon's indoor mapping platform.

In a facility as dynamic as Mall of America, ensuring that their underlying tenants were always up to date and that they always had context was tremendously important. Working with Inpixon's open and agnostic mapping platform meant that they could integrate directly with their tenant systems, empower their internal team to edit maps and implement changes in real-time with a graphical user interface (GUI) map editor, and scale to fit and complement their evolving needs. Mall of America also needed to have different maps for multiple stakeholders such as security, operations and other uses. Doing this required layered maps and support for multiple map profiles from a single source of truth for all maps, all of which were made possible with Inpixon.

Switching from their prior mapping partner to Inpixon to power and manage their indoor maps played a vital role in giving Mall of America the ability to continue to innovate and was an important step for them to continue their evolution. Since moving to Inpixon, Mall of America has been able to reduce their weekly map maintenance workload anywhere from 50% to 200% depending on the changes transpiring each week.

*“Inpixon was such an important step for us to continue our evolution. Getting onto the Inpixon Mapping platform really opened the doors and gave us a lot more flexibility with what we could do.”*

*Janet Smrcka - Director IT | Mall of America*

## The Solution

At their core, Mall of America is passionate about delivering the best customer experience. Their website, onsite digital kiosks and location-aware mobile app help to do just that.

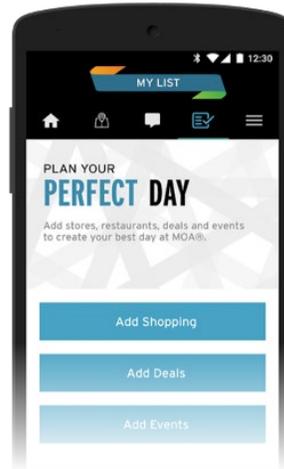
Mall visitors can go to Mall of America’s website to see a map of the property, access a list of stores, dining options, attractions, upcoming events, parking availability and more. They also have the option to download Mall of America’s iOS or Android mobile app designed to enhance the user’s experience. For anybody who may not be comfortable downloading a mobile app, or for those who just want something tangible to interact with, Mall of America has approximately 100 wayfinding directory kiosks located throughout the facility to help people find their way around the property.





### Find Your Way

- Quickly browse Mall of America's extensive directory of destinations
- See contextually where you are, what's around you, where you are going, and navigate around the property in real-time on a detailed map.



### Plan Your Perfect Day

- Organize your trip in a convenient to-do list to help you track all the things you want to experience
- Easily navigate from destination to destination



### Digital Concierge

- Text with a digital concierge for personalized assistance
- Get instant answers to your questions
- Engage with a live agent



### Parking Made Easy

- Never forget where you parked using simple parking reminders
- Receive direct-to-parking-stall navigation

# The Future

Innovation is in Mall of America's DNA. A family-owned business with no board, the leadership team is able to move quickly and carries a start-up mentality. As a forward-thinking team, it should not come as a surprise that the IT team has big plans for how to keep things 'Always new'. As always, the guest experience is central to Mall of America's vision, and the team plans to leverage their indoor technology and data analytics to craft more hyper-contextual messaging and provide more intuitive wayfinding solutions to guests. In the coming months, the team at Mall of America is looking forward to conducting more testing and measuring intent at the user level to better understand and serve guests.

Mall of America is a huge building, and facility management is a big job. The team is also actively working to add more operational layers to their maps. Currently, engineering and security teams are looking to put locations of sensors into searchable maps. Through integrations with building management system alerts, they could display and direct maintenance and property staff to service issues faster. By connecting these integral third party systems with the Inpixon indoor mapping platform, they will be able to expedite their resolution time and prevent damage, ultimately creating a better property experience.

In the words of Mall of America's IT Director, "a process like this is never really done. We continue to learn and phase in different elements and enhancements on top of the day-to-day maintenance that needs to happen to ensure that our solutions stay relevant."

## About Inpixon

Inpixon is an Indoor Intelligence™ company that specializes in capturing, interpreting and giving context to indoor data so it can be translated into actionable intelligence. The company's indoor location and data platform ingests diverse data from IoT, third-party and proprietary sensors. Paired with a high-performance data analytics engine, patented algorithms, and advanced mapping technology, Inpixon's solutions are leveraged by a multitude of industries to do good with indoor data. The multidisciplinary depiction of indoor data enables users to increase revenue, decrease costs and enhance safety.

Let's talk about your goals.

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