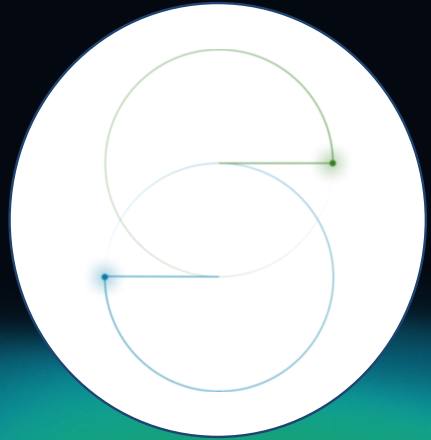
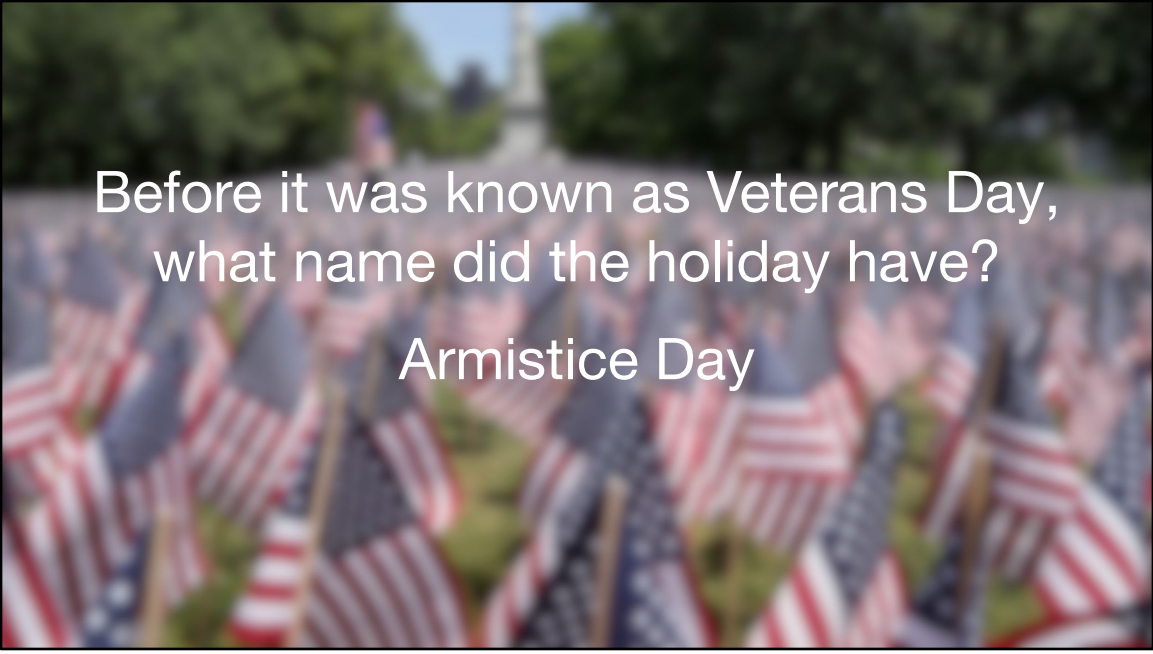


# Digitizing Spaces: People & Things

Cisco Spaces

Matt Ham, Systems Architect  
Cisco Systems LLC  
Network Center nVision: November 9<sup>th</sup>, 2023





Before it was known as Veterans Day,  
what name did the holiday have?

Armistice Day

Before we get started I want to focus attention on the important purpose of Veterans Day: A celebration to honor America's veterans for their patriotism, love of country, and willingness to serve and sacrifice for the common good.

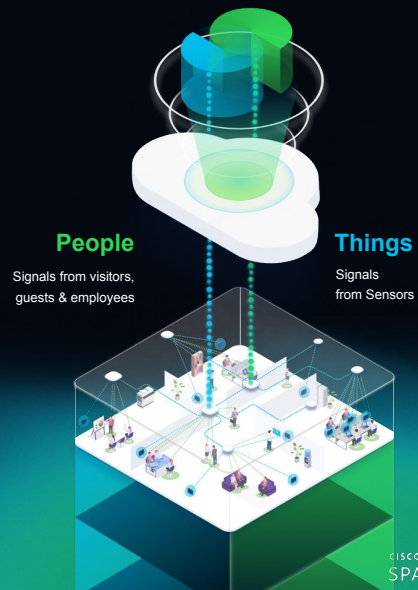
A quick trivia question to lighten the mood a little bit, whomever answers correctly first will get some Cisco swag.

# CISCO SPACES

## Turn your buildings into Smart Spaces

Cisco Spaces is a cloud platform that connects **people & things** with spaces to transform your buildings into smart spaces.

Using the power of your Cisco devices as sensors (Catalyst, Meraki, Webex) and the Spaces ecosystem, to make your buildings Safe, Smart, Sustainable, and Seamless.



Cisco Spaces is a cloud hosted platform that digitizes the 3D space created by Wireless AP, BLE beacons, IoT services, etc to connect the people and things in your environment.

By leveraging the digital data created by the current generation Catalyst, Meraki, and Webex platforms, Spaces transforms your workplace into a Smart Building.

Spaces focuses on 4 key pillars: making spaces safe, smart, sustainable, and providing a seamless experience.



The diagram illustrates a 3D perspective of a smart building labeled 'Building 01'. Inside the building, there are several human figures and various IoT sensors represented by small white dots. A large green sphere is positioned in the center of the building. Above the building, a cloud contains a stylized 'S' logo. Vertical lines connect the cloud to the building, and horizontal lines connect the sensors to the central sphere, representing data flow and connectivity.

## How does Cisco Spaces make your buildings Smart?

Our technology connects People, Things and Spaces. Cisco Spaces harnesses the power of your Cisco hardware and sensors (Catalyst, Meraki, Webex) making your buildings safe, smart and sustainable with seamless people experiences.

## Who is it for?

Cisco Spaces is the Bridge from IT — to — Line of Business



Our users span from IT to Line of Business – CXOs, Facilities, OT, Marketing, Data & analytics, HR driving various outcomes that are relevant for their business functions.

CISCO SPACES

In the 3D space created by various wireless protocols exist many data points and ways to interact with that data. Spaces aggregates this information and allows you to take actions on it, not just with the IT Infrastructure team, but across to the Line of Business teams. Anytime where, who, what, or when is asked of people or assets, Spaces provides the details.

## Cisco Spaces Today

### Adoption Scale

200,000+ Locations Live Globally  
7 Billion+ Square Feet  
2.5 Million+ Access Points Live  
10 Trillion+ Location Updates

### Cisco Spaces Cloud

Works across **Catalyst**, **Meraki** & **Webex**  
Context Rich Maps & Location Metadata  
Cisco and third-party sensor framework  
As-a-Service -30min to activate across customers  
**End-to-End** cloud service with Day 0, 1, 2

### Apps & Devices for Outcomes

**Single pane** cloud dashboard with  
25+ Built in Native Apps  
55+ partner apps in the Partner App Center  
35+ active IoT devices in the marketplace  
Dynamic, 3D, Indoor Rich Maps



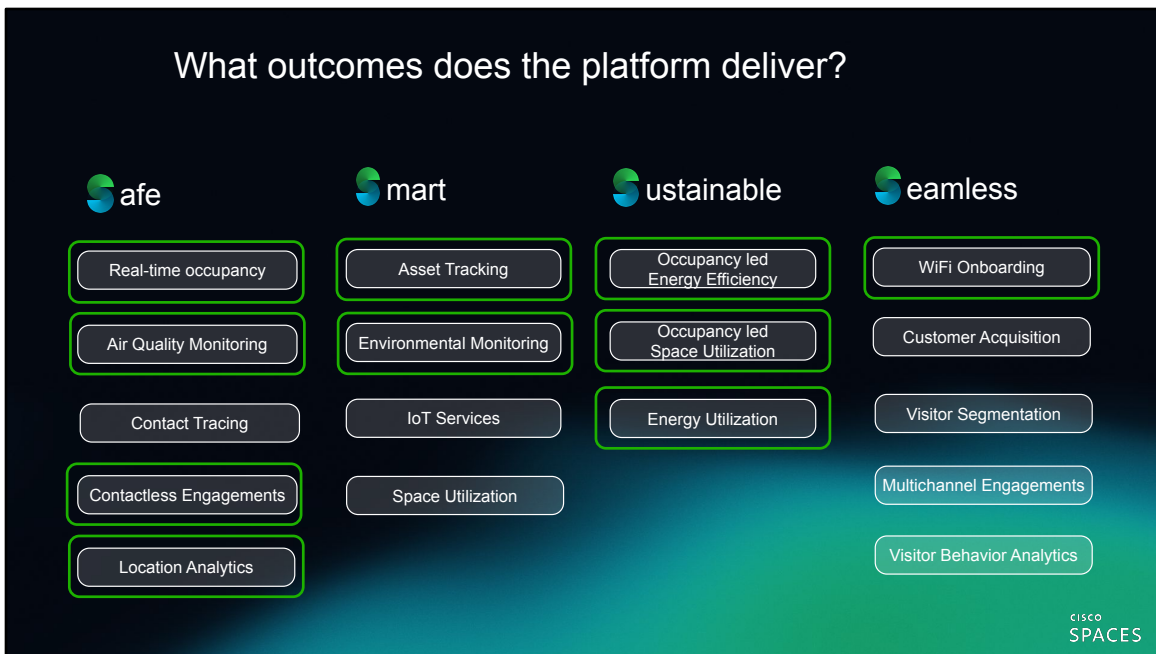
Cisco Spaces named "Customer Choice platform :  
2020, 2021, 2022" for Indoor Location Services

CISCO  
SPACES

Spaces began its journey as Mobility Services Engine which evolved into Client Mobility Express. When CMX combined with the acquisition of July Systems the product was rebranded Spaces and moved to the cloud. Since then the product has scaled globally. I won't read out the slide but just point out

Spaces is deployed typically in less than 30 minutes  
has an extensive Partner App ecosystem  
and a marketplace where approved physical IoT devices can be purchased. Things like temp sensors, nurse page buttons, etc.

## What outcomes does the platform deliver?



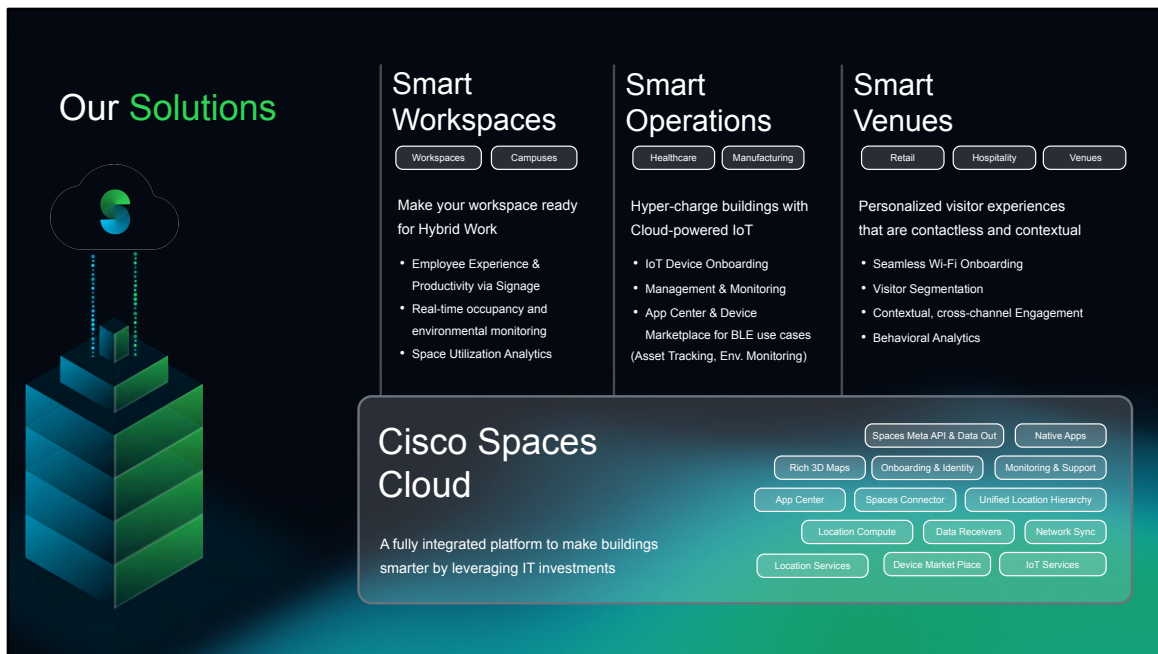
Outcomes generally fall in at least one of these pillars, usually more. Make a mental note of the 4 pillars, there will be a quiz at the end.

What we deliver with this platform can be tailored to individual customers and use cases with relative ease. One example from our area crosses many of these domains.

We have a large education customer building out a Smart Campus.

From a student perspective they want to give students Google Maps style wayfinding to classrooms or other student services. Inside buildings they want to provide air quality, temperature, noise, and occupancy information to students to help them locate the optimal places to meet and study. Be able to engage with the students for events or news on campus.

From a facilities point of view they want to know; where do students aggregate the most, where should we focus our remodeling dollars, where can we turn temperatures down and lights off when empty, how can we keep track of assets, how can we seamlessly onboard students to our WiFi network from cellular?



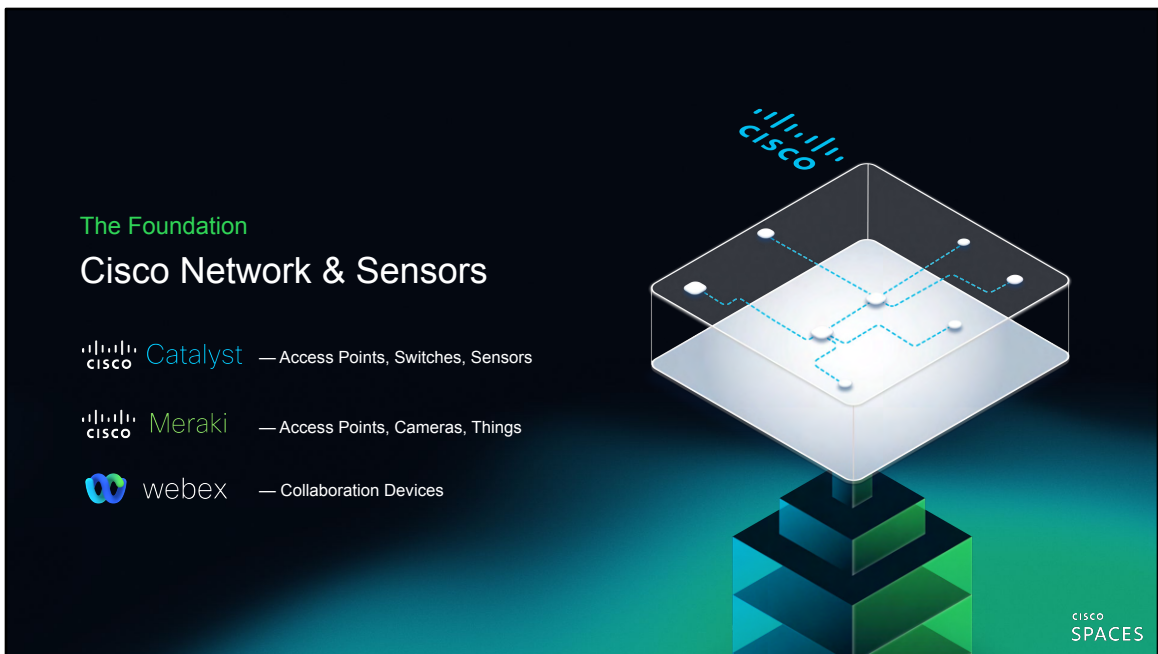
Not every customer will consume every app Spaces has to offer. The solution offers different packages based on the common use cases needed.

Workspaces is geared toward more carpeted spaces, offices, schools, etc.

Operations is intended for IoT heavy environments such as healthcare and manufacturing.

Lastly Venues contains many features needed by retail and venues such as stadiums.

All current DNA Wireless customers have entitlement to the base features.



Now that we've baselined what the platform is and does we'll build out how it all works.

As we mentioned Cisco hardware is truly the foundation.

The Access Points, be it Meraki or Catalyst, offer data from wireless signals and act as a BLE/Zigbee gateways.

Meraki IoT and cameras can provide temperature, door/open close/presence, air quality, occupancy, etc.

Webex collab devices offer some of the same features as Meraki IoT but also add a way for users to interact with the platform.

Gaps in Cisco device capabilities are easily solved with the offerings in Spaces Marketplace.



## Rich 3D Indoor Maps & Location Metadata

Transform your static floor plans into interactive 3D maps with uniform metadata & location context



CISCO  
SPACES

What good is extracting data from a digitized 3d space if it cannot be visualized? Spaces is all about getting information from the digital 3D space so we must digitize the 3D space to create rich maps to interact with. Maps must be both visually pleasing, and useful across multiple lines of business.

# Building Rich Maps

Transform flat floor plans into dynamic, interactive & highly intuitive, 3D maps.

Network Map



- Network maps are infrastructure centric and static. Not usable for business outcomes.

Facility Map



- Facilities Maps are built for building management and not suitable for consumer experiences.

Facilities  
CAD files



Cisco Spaces Mapping Engine

Intelligently deconstructs Facility maps and extracts data such as meeting rooms, desks, and amenities using AI/ ML and transforms them into interactive, rich maps.



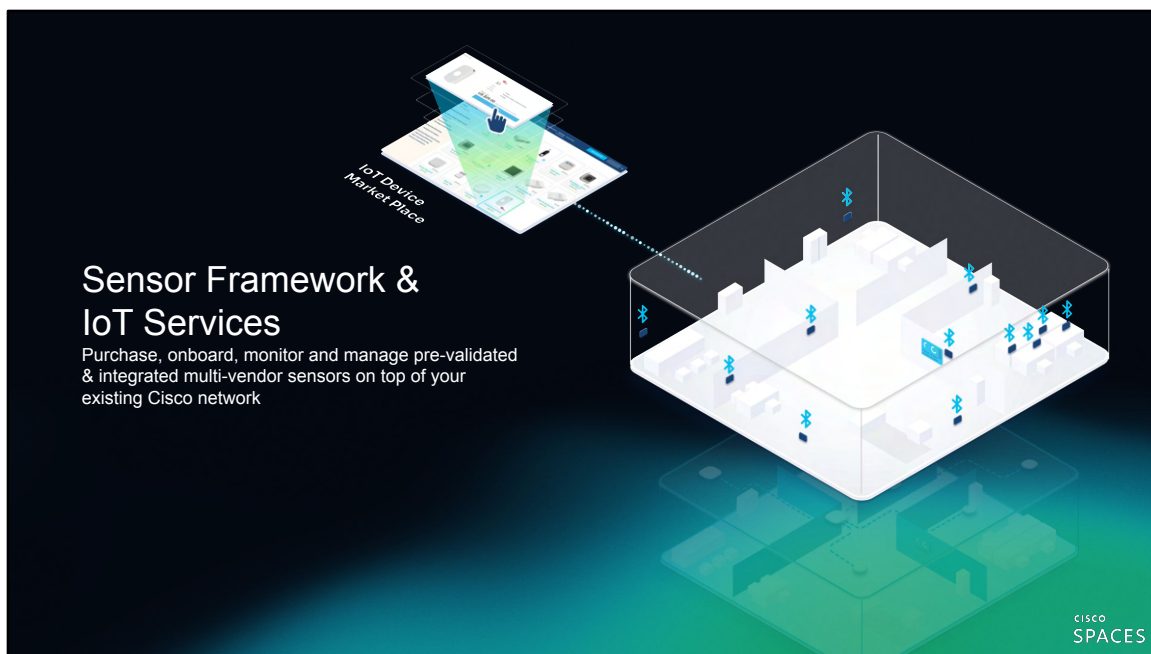
cisco  
SPACES

Earlier we talked about how Spaces helps bridge between IT and Line of Business. The first instance of this is in building the 3D maps.

On the left we see an infrastructure network map produced by the Meraki Dashboard, this provides asset location useful for the IT team. Not usually very useful for facilities who are more concerned with how space is utilized. And certainly not visually pleasing for visitors.

If a customer has the Facilities CAD files available, Spaces can take that and transform into a 3D map that we see on the right with its AI/ML mapping engine.

AI is a big deal for Cisco who is integrating various AI models into many of our products.



Once maps and infrastructure are in place we can build out the IoT network by adding sensors from the Marketplace to build out your use cases.

Temperature, occupancy, air quality, RTLS, Zigbee devices must be placed accordingly to provide the coverage needed.

## Native & Partner Apps

use cases that make your spaces safe,  
smart, sustainable and seamless



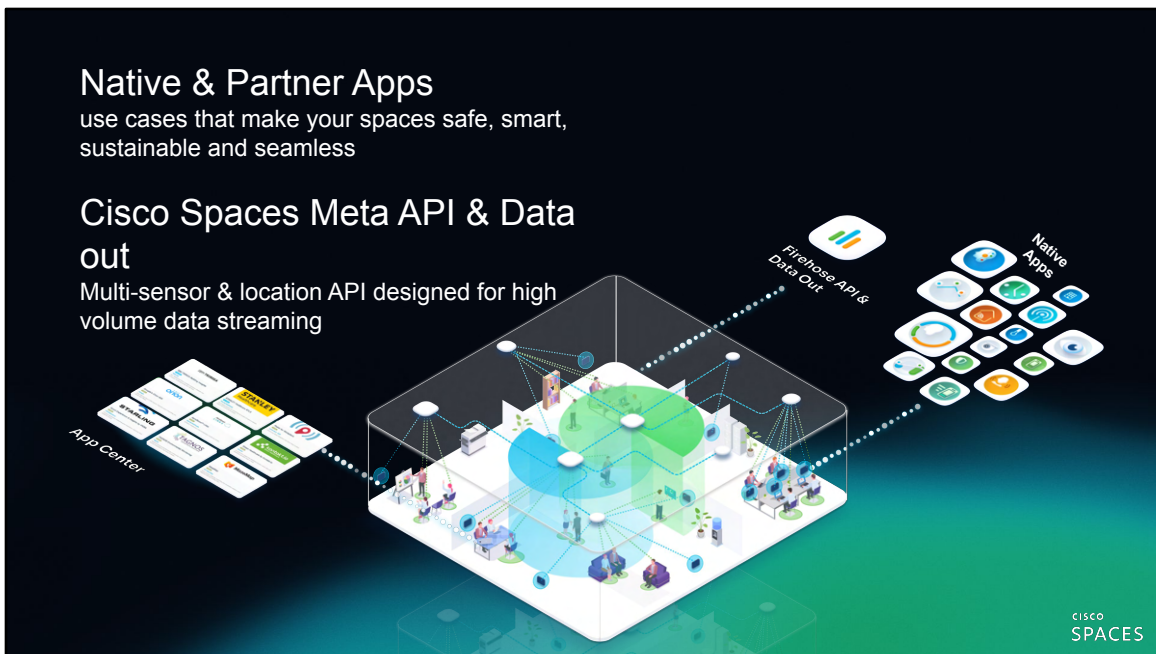
With the Firehose API 3<sup>rd</sup> party apps can be integrated for more point specific use cases.

## Native & Partner Apps

use cases that make your spaces safe, smart, sustainable and seamless

## Cisco Spaces Meta API & Data out

Multi-sensor & location API designed for high volume data streaming



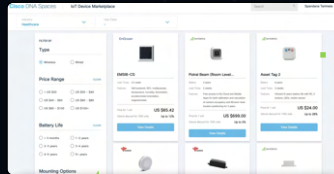
With the Firehose API 3<sup>rd</sup> party apps can be integrated for more point specific use cases.

## User Journey

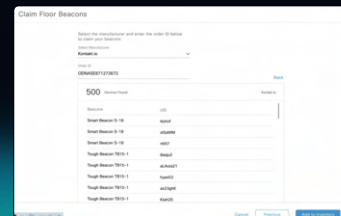
IT Director

**02** CHOOSE BLE devices from 50+ pre-integrated vendors available on Device Marketplace in DNA Spaces dashboard. And places an order.

**01** ACTIVATE Cisco Spaces 'dynamic software gateway' on Cisco Catalyst 9000 APs.



**03** ONBOARD all your BLE devices in 1-click. Instantly see device telemetry.



From 1,000 feet the deployment of the Spaces software follows these 5 basic steps

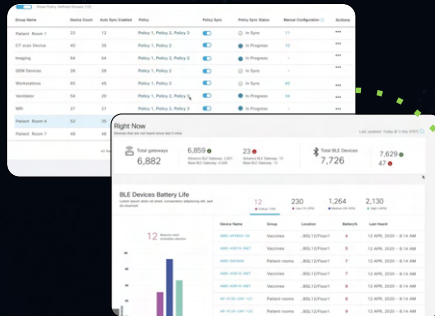
First, we must activate Spaces and get the wireless infrastructure reporting to the cloud services

Next, IoT sensors must be selected to fit use cases, purchased

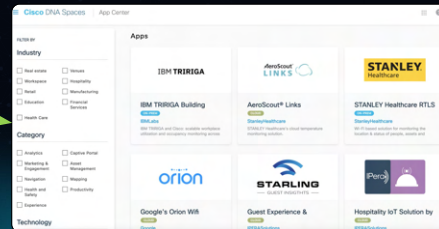
and onboarded.

## User Journey

### 04 MANAGE and MONITOR large volumes of BLE devices on a single pane of glass.



### 05 DEPLOY use cases ranging from asset management, environmental monitoring, space occupancy and indoor wayfinding. Use native apps built by Cisco on the dashboard or go with a vertical partner from our App Center.



Once onboarded and reporting to the dashboard the use cases are implemented

e.g.

Integrations with Stanley for Healthcare  
MazeMaps for wayfinding

## Indoor Location Services

Onboard people & things seamlessly.  
Understand their presence and identity across all  
your locations



Once all set up users/devices etc connect to the network and start reporting data. Spaces will then ingest this into the dashboard. Almost immediately you'll start to see location data flowing into Spaces and understand how your space is being utilized.



24/7

## Support & Monitoring across the platform

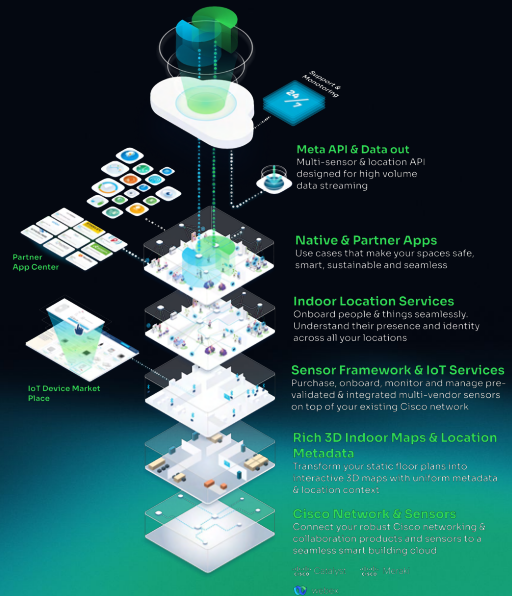
Proactive 24 X 7 monitoring



CISCO  
SPACES

# CISCO SPACES

A full stack cloud platform that provides you with all the tools you need to make your buildings smart





# TRIVIA TIME

Name two of the four Spaces Pillars.

afe

mart

ustainable

eamless

# MANUFACTURING CASE

Asset Tracking & Environmental  
Alerts

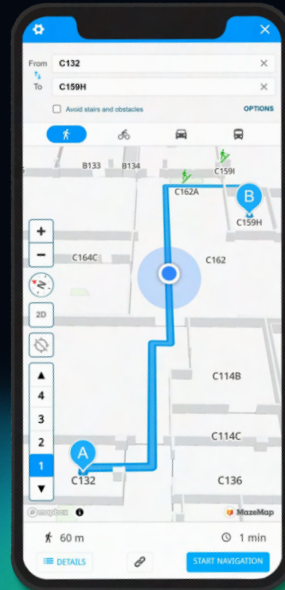


Spaces just isn't for carpeted space and Smart Buildings. We will go over a few uses from the Tri-State area to highlight that data from wireless and IoT networks extend across multiple lines of business.

Customer use case: We need to track the location of temperature sensitive devices and alert if they are in a hazardous environment. Utilizing Cat 9k access points BLE gateway and BLE tags on fork lifts, crates, pallets and other times to monitor location. Have BLE environmental sensors placed throughout the plant. Alerts are sent via Webex to appropriate teams if any items venture into an unfriendly zone.

# CORPORATE USE CASE

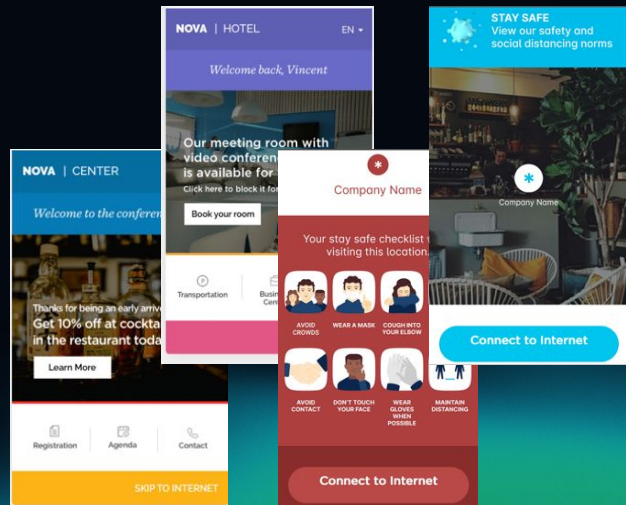
Wayfinding



As mentioned before smart campus. “Go through that example from a student perspective.”

Highlight my own experience at Cisco Live and IMPACT using wayfinding for breakout sessions.

# RETAIL USE CASE CUSTOMER ENGAGEMENTS



There is a concept inside of spaces called User Personas. Retail users of Spaces can integrate their loyalty programs to customize experiences for shoppers. For example:

VIP customers can receive customized welcome messages

Customers who frequently browse and purchase from specific departments can be notified of sales or promotions "Hunting jackets are 20% off."

From the business side, Spaces can track how users navigate the store allowing for better product placement. For example

If a customer typically goes straight to check out after visiting the candy section, the store can optimize product placement and location to have customers pass by other impulse items. Pop.

# TRIVIA TIME

What are the three Cisco products foundational to Spaces.

- A. Meraki
- B. Webex / Webex Devices
- C. Catalyst Networking

# CISCO SPACES

Cisco on Cisco Demo:  
Visitor Experience

ATLANT  
A





Thank  
You!  
Questions?