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The bridge to possible

How Honeywell is using Cisco DNA Spaces Data to Optimize Their Workspaces

Cisco Live 2022 Las Vegas

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CSSEWN-1051



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Questions?

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How

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<https://cislive.ciscoevents.com/cislivebot/#CSSEWN-1051>



Agenda

- Introductions
- The challenge & the data “blind spot”
- Using the Wi-Fi network as a sensor
- Working together across boundaries
- Unlocking the data via APIs
- Conclusion

Honeywell facts

- HQ in Charlotte, NC
- \$35bn annual revenue
- 99,000 employees
- 750 locations
- 210 manufacturing sites
- 82 countries

Source: Honeywell Annual Report (SEC 10-K filing), March 2022



The Challenge & the Data Blind Spot



The Challenge

Office space is a **major expense**

- Facilities upkeep & maintenance
- IT equipment
- Utilities
- Leases

The workplace experience has been **disrupted**

- Global pandemic
- Employee preferences
- Health & environmental concerns



The data “blind spot”

- When are the busy hours?
- How is the office space utilized?
- Are certain floors or zones busier than others?
- Are there enough conference rooms / huddle rooms / quiet rooms / open workspaces?
- Is the office layout efficient?
- Are the energy and indoor air quality optimized for the current occupancy (per zone, floor, building)?

The data “blind spot”

How might we provide data to help with enabling workplace transformation; improving the employee experience/health/safety, optimizing business expenses, and reducing carbon footprint?

Using the Wi-Fi network as a sensor

The data “blind spot”

- Access card / HID readers
- PIR motion detectors
- IT logs (e.g., DHCP events)
- Desk occupancy sensors
- Physical security cameras
- BLE beacons
- Wi-Fi



Using the Wi-Fi network as a sensor

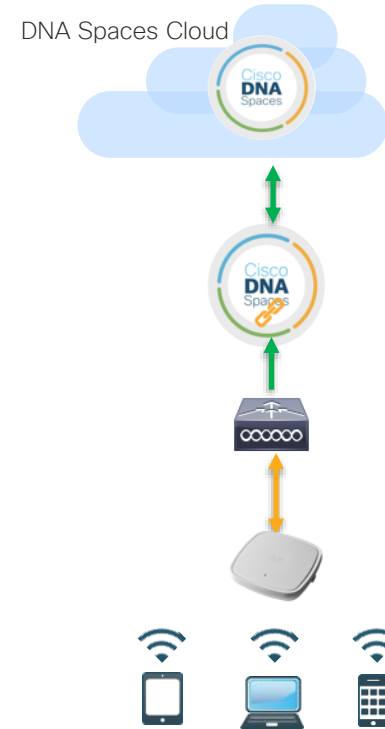
- Wi-Fi already deployed at all Honeywell offices
 - Approx 9000 Cisco Wi-Fi APs
 - Coverage of 1,500ft²–5000ft² per AP, depending on site
 - Mix of AireOS & Catalyst 9800 WLCs
- Office employees connect their laptops, tablets, and/or smartphones to Wi-Fi when they arrive & disconnect when they leave
- Existing maps and location hierarchy of DNA Center
 - 3 regional DNA Center clusters
- DNA Spaces already deployed for DNA Center Wireless Assurance
 - 5 regional DNA Spaces connector VMs

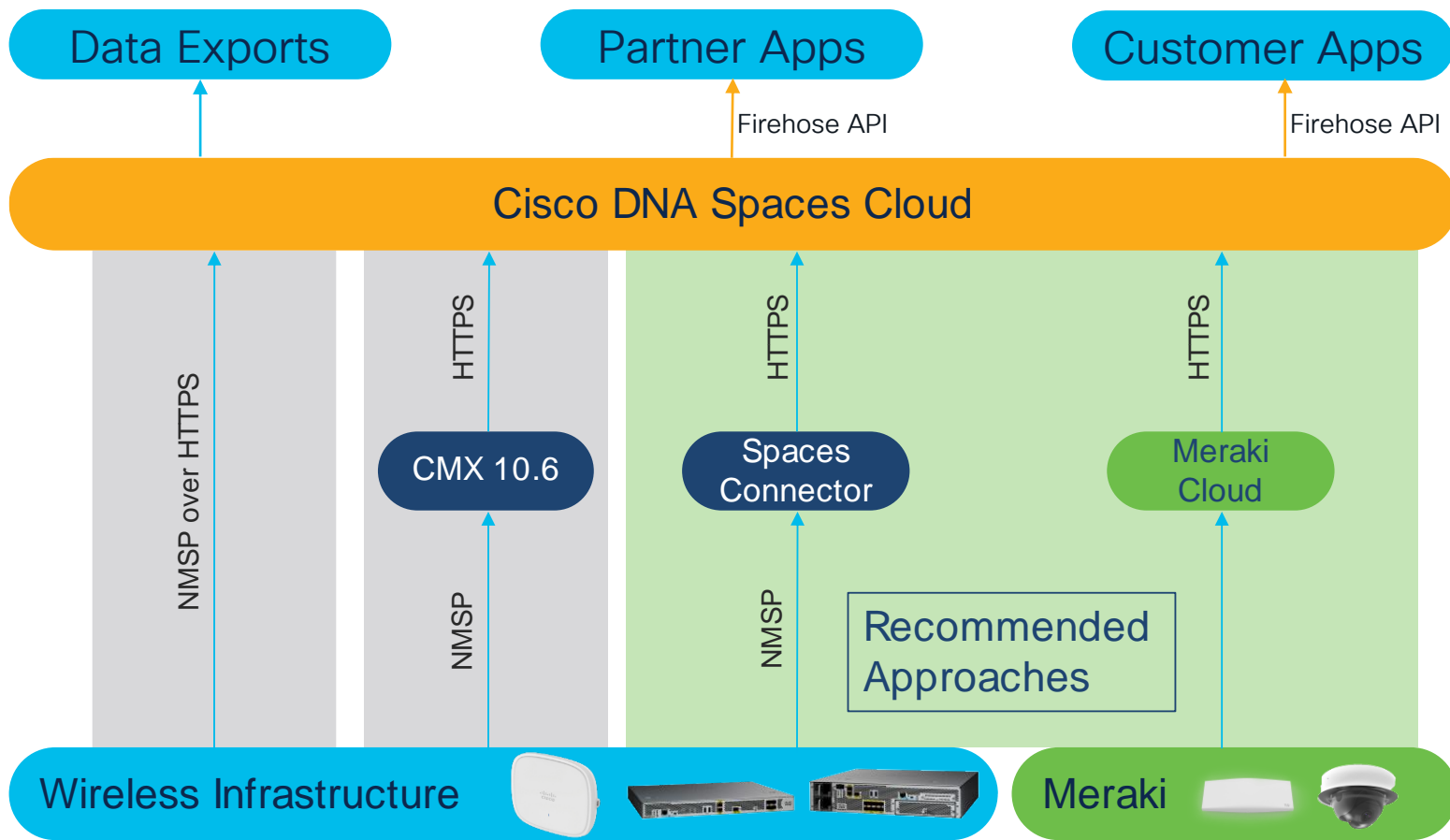


Using the Wi-Fi network as a sensor

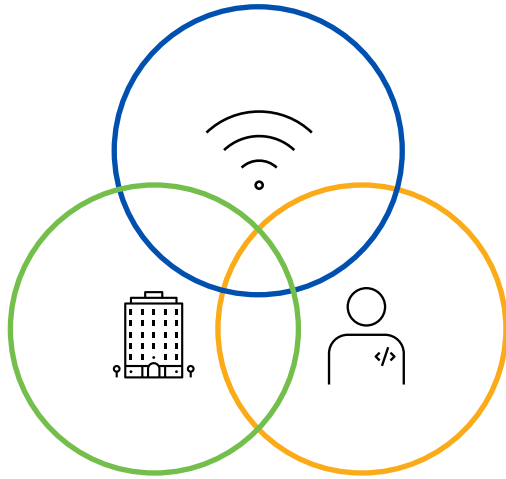
DNA Spaces Refresher:

- Cloud-based location analytics platform
- Supports Wi-Fi location, indoor IoT services, captive portal, OpenRoaming, Meraki camera analytics, Webex devices as sensors, and more
- Supports partner application integrations (both cloud and on-prem)
- Lots of built-in reports and applications
- DNA Spaces connector VM is recommended
- Open APIs and option to SFTP data



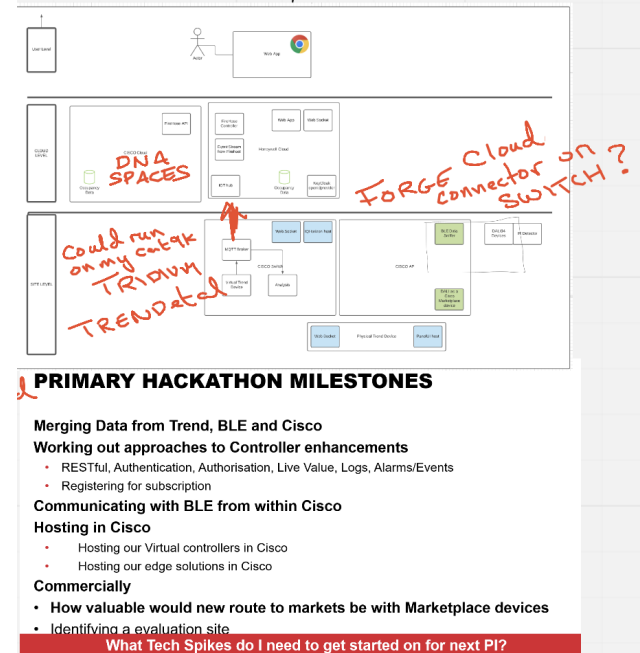


Working together across boundaries

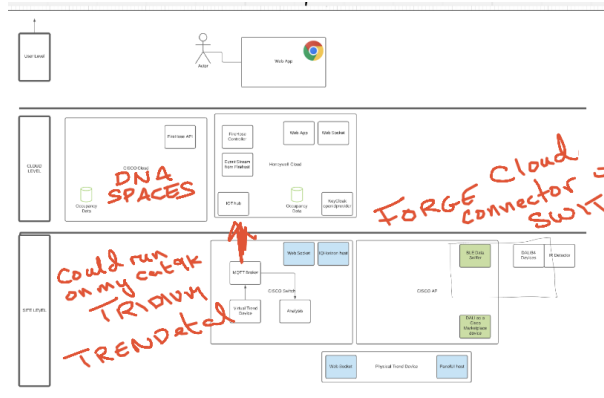


Working together across boundaries

- Hackathon to validate proof-of-concept
- 7+ countries spanning virtually all global time zones
- Honeywell Building Technologies engineers
- Cisco DevNet engineers
- Cisco DNA Spaces engineers
- Honeywell Information Technology
- Honeywell Global Real Estate
- Cisco Account Team



Working together across boundaries



PRIMARY HACKATHON MILESTONES

Merging Data from Trend, BLE and Cisco

Working out approaches to Controller enhancements

- RESTful, Authentication, Authorisation, Live Value, Logs, Alarms/Events
- Registering for subscription

Communicating with BLE from within Cisco

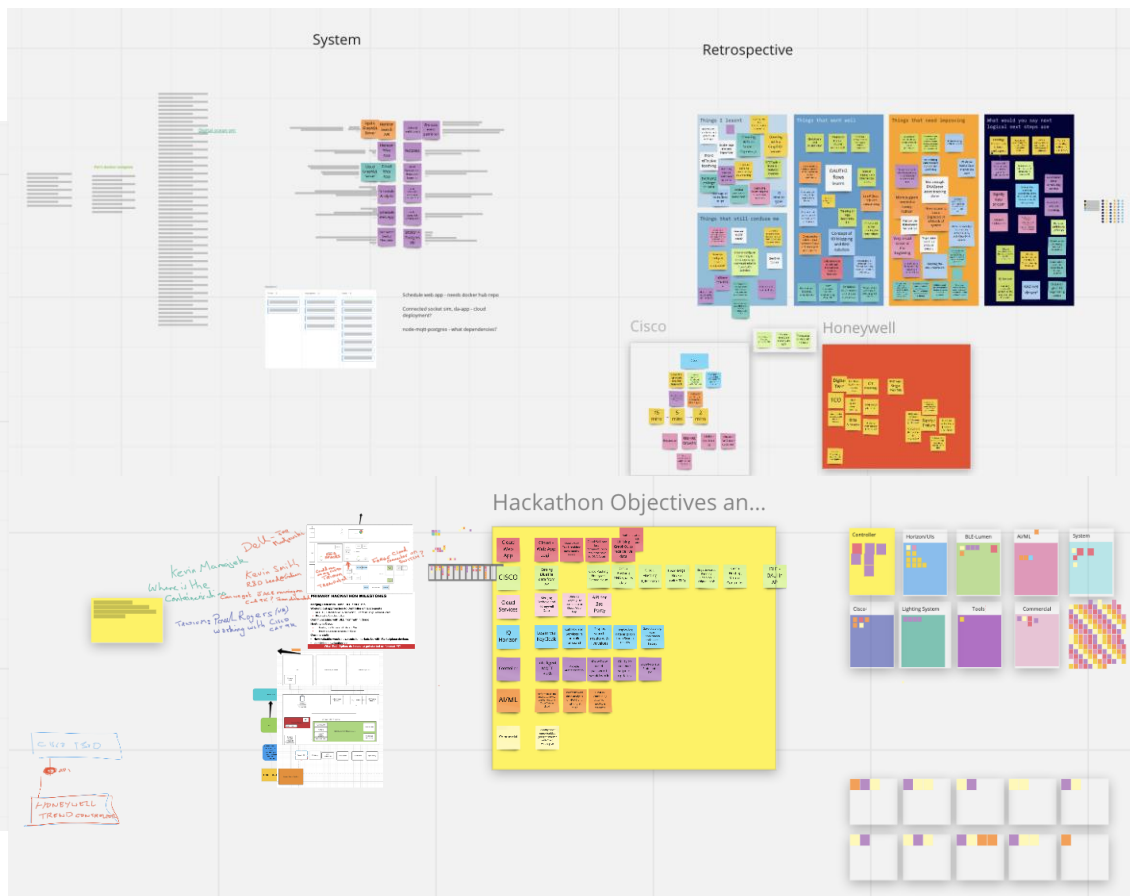
Hosting in Cisco


- Hosting our Virtual controllers in Cisco
- Hosting our edge solutions in Cisco

Commercially

- How valuable would new route to markets be with Marketplace devices
- Identifying a evaluation site

What Tech Spikes do I need to get started on for next PI?





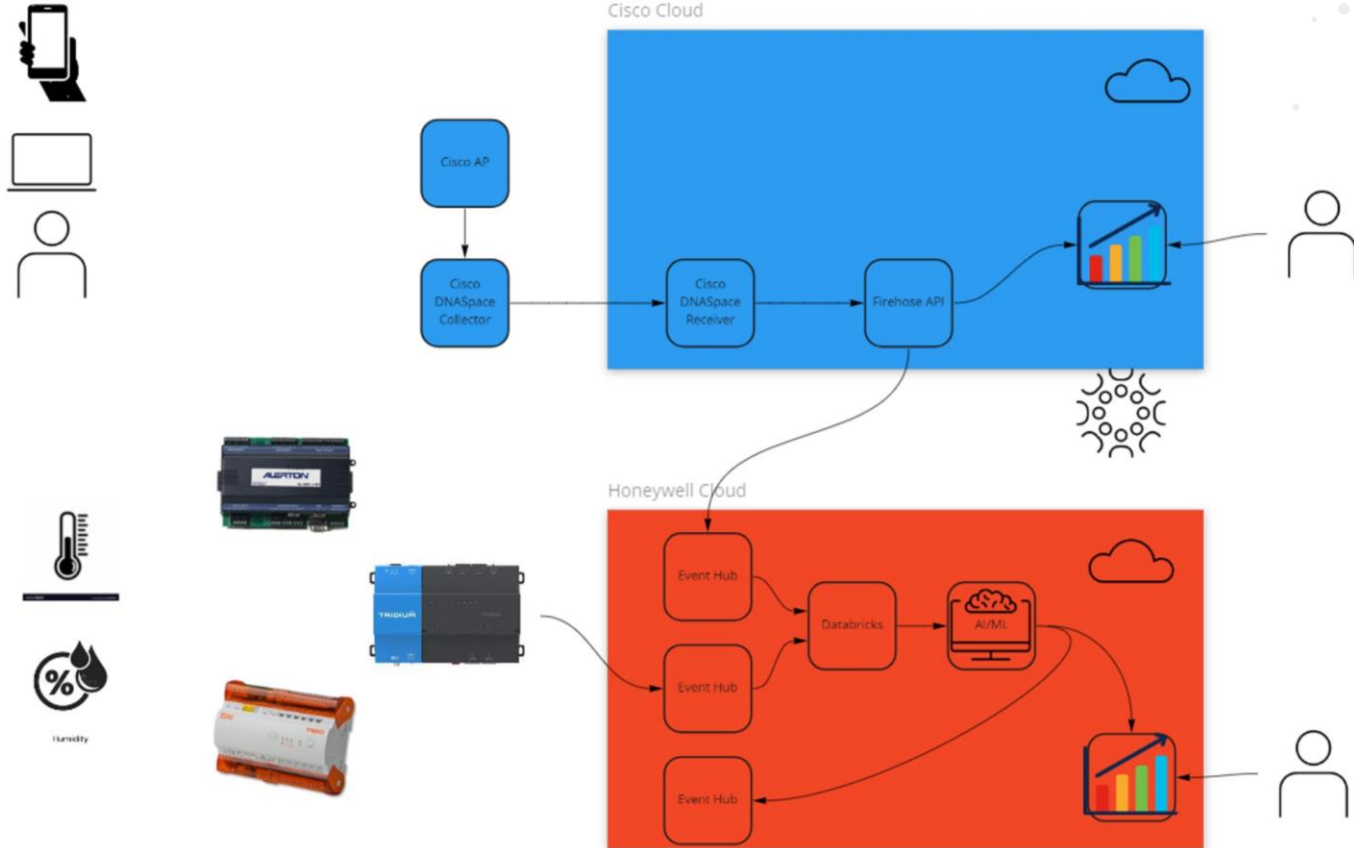
“We like that Cisco DNA Spaces lets us seamlessly gather occupancy data to enhance our automation solution and occupant experience with real time visibility and monitoring. The Honeywell–Cisco partnership delivers a complete building experience that fosters innovation and collaboration”

Sheila Jordan, Chief Digital Transformation Officer
Honeywell

Use cases and experience

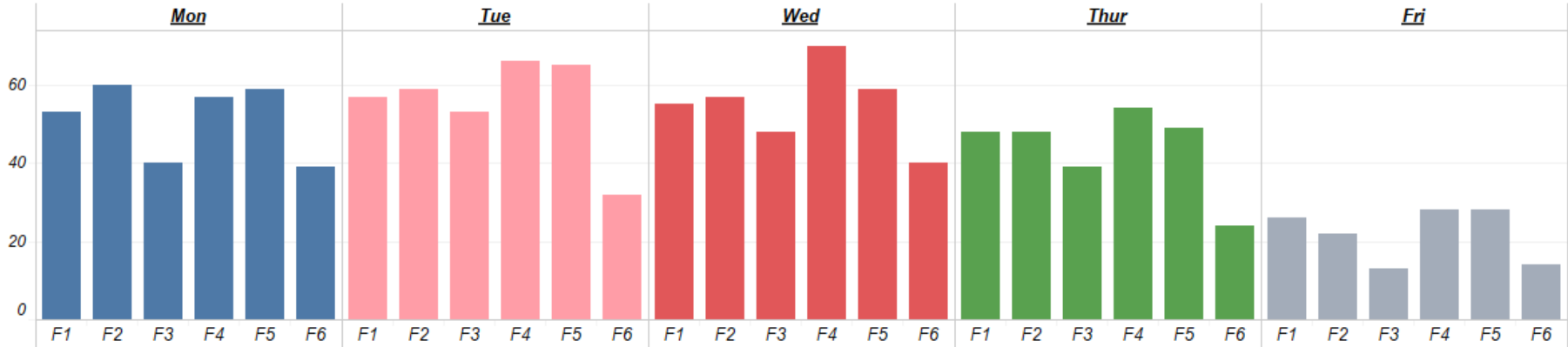


High-level architecture



Space Utilization Dashboard - Weekday

Effective User Presence



Effective Space Utilization

<u>Floor</u>	<u>Mon</u>	<u>Tue</u>	<u>Wed</u>	<u>Thur</u>	<u>Fri</u>
F6	39%	32%	40%	24%	14%
F5	59%	65%	59%	49%	28%
F4	57%	66%	70%	54%	28%
F3	40%	53%	48%	39%	13%
F2	60%	59%	57%	48%	22%
F1	53%	57%	55%	48%	26%

Space Utilization Dashboard - Hourly

Effective User Presence

Floor	7Am ~ 8Am	8Am ~ 9Am	9Am ~ 10Am	10Am ~ 11Am	11Am ~ 12Am	12Am ~ 1Pm	1Pm ~ 2Pm	2Pm ~ 3Pm	3Pm ~ 4Pm	4Pm ~ 5Pm	5Pm ~ 6Pm
F6	6	21	23	17	20	23	26	26	25	17	10
F5	9	25	28	16	17	24	34	37	32	22	17
F4	8	24	31	27	32	36	42	45	45	31	15
F3	4	12	16	9	10	15	19	20	19	11	6
F2	3	19	26	20	20	24	26	29	25	16	8
F1	7	20	26	22	29	32	41	46	38	23	12

Effective Space Utilization

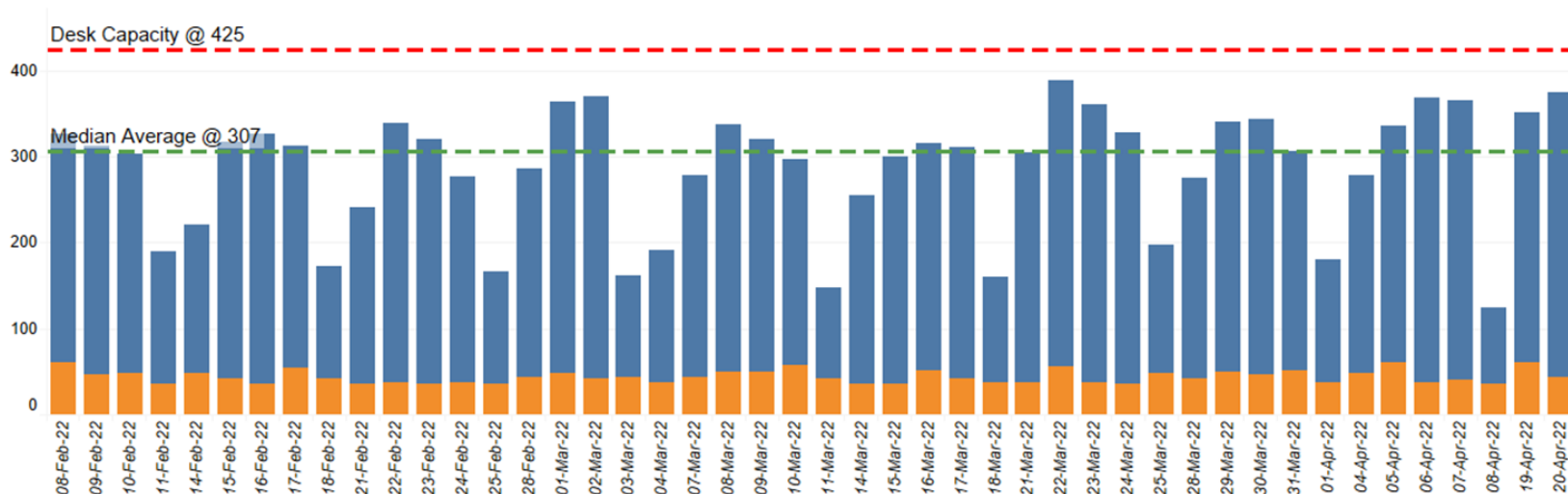
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F6	12%	42%	46%	34%	40%	46%	53%	53%	51%	34%	19%
F5	17%	51%	55%	32%	34%	49%	68%	74%	63%	45%	34%
F4	16%	48%	61%	53%	64%	73%	85%	91%	90%	62%	30%
F3	8%	24%	31%	18%	21%	30%	39%	39%	38%	22%	12%
F2	7%	39%	51%	41%	40%	48%	52%	58%	49%	31%	16%
F1	14%	40%	51%	44%	57%	65%	82%	92%	77%	46%	24%

Space Utilization Dashboard - Workday

Desk Capacity	425
Median Average	307
Space Utilization	72.2%

■ On-site Employees based on the target site

■ Visitor Employees from other sites / Guests





NC01

Floor 21 ▾

This Map is
interactivePan, Zoom In & Out On
The MapTap On Places To See
More

On this floor

● Rest Rooms

ENABLING SENSING INTELLIGENCE



Challenges we encountered

- Accurate floorplans for hundreds of sites
- Need for room/desk level occupancy sensing
- Data accuracy for devices/users
- Data privacy considerations
- High data volume coming from DNA Spaces Firehouse API and how to scale it

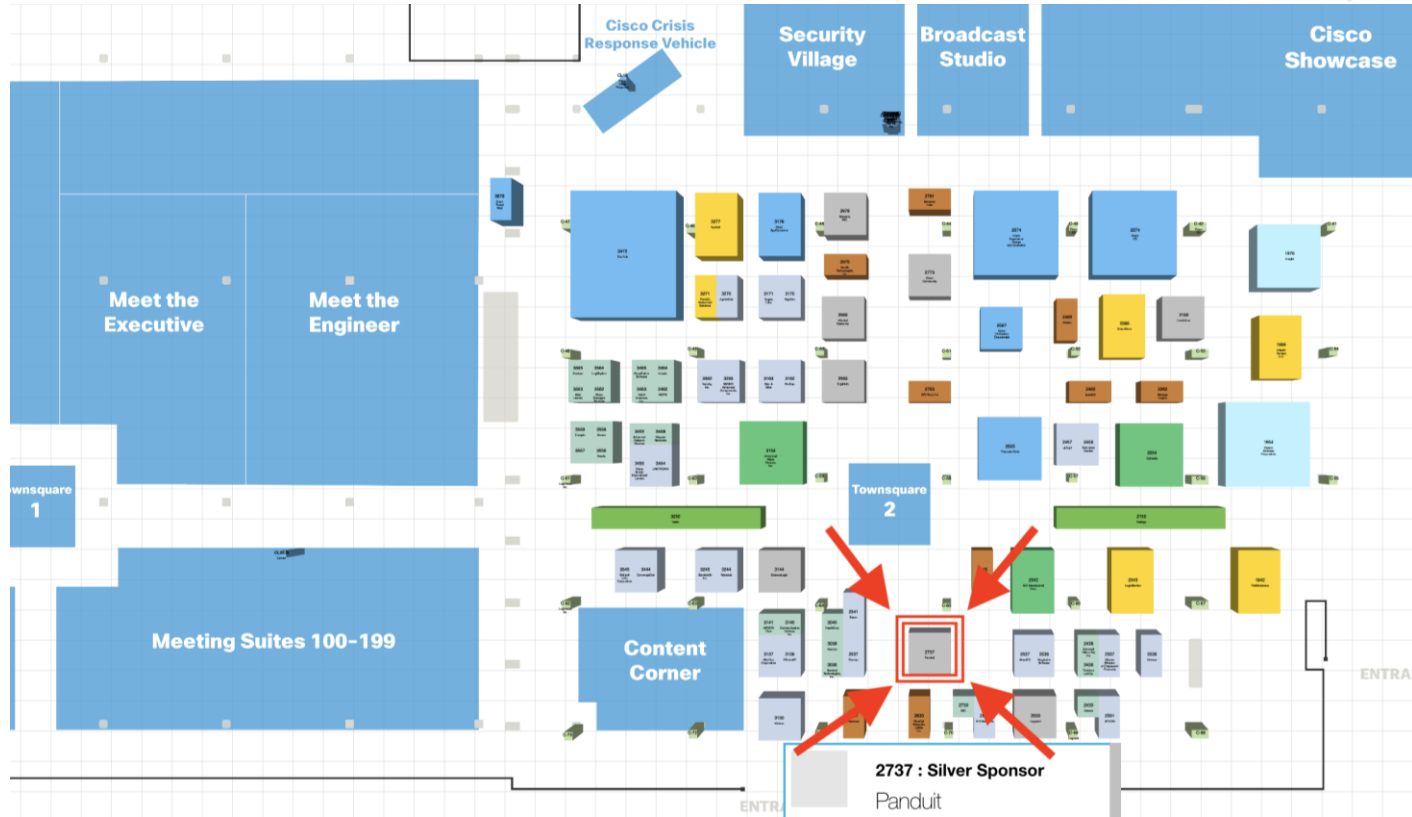
Conclusion

Conclusion

- Honeywell IT, Building Technologies, and Global Real Estate worked together with Cisco to provide the visibility the needed
- IT was able to leverage their existing installed systems to provide additional value to the business
- Honeywell Building Technologies were able to use this experience to enhance their offerings



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Thank you

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