



SAP  
Innovation  
Awards 2019



# SAP Innovation Awards 2019 Entry Pitch Deck

The Intelligent Stadium: Leveraging Real-Time Insights to Optimize Fan Experience

The San Francisco 49ers

THE BEST RUN





<https://youtu.be/tv2uOxAszhc>

# Executive Huddle

## The San Francisco 49ers



### “Quote”

**“It’s a fundamental shift in how we can operate. This is not incremental growth. Going from being reactive to real-time—a completely different set of possibilities open up for us. This is technology that’s going to affect 70,000 fans in our building.”**

*Moon Javid,  
Vice President of  
Business Strategy and  
Analytics, San  
Francisco 49ers*

### Challenge

A fan's end to end game day stadium journey crosses many different systems. The 49ers had no consolidated insight until 2 days *after* an event. This delay limited their ability to improve fan experience, maximize revenue, and increase operational efficiencies on game day.

### Solution

The team deployed three SAP Leonardo technologies to aggregate, consolidate, and visualize real-time data from 9 different systems in their state-of-the-art “Executive Huddle,” located in a specially equipped suite right above the 50-yard line.

### Outcome

In just six months, the 49ers succeeded in creating the first and only venue digital boardroom focused on providing *real-time* game day insights across the fan’s end to end journey.



Helped optimize fan experience by enabling staff to react to pain points and issues in parking lots and security gates.

Identified areas of opportunity for Retail and F&B Concession sales; 100+ individual locations with a cross-reference of fan satisfaction and sales.

Featured at League Meetings for the NFL and NBA for best practices around Fan Experience.



## Partner Information

**NIMBL**

**Design, Build & Deploy**



We were thrilled to work with a historic franchise like the SF 49ers. As the first project of its kind in North America, deploying real-time analytics based on multiple data streams was both challenging and remarkably rewarding. Attending game day events at Levi's Stadium is an awesome experience, but getting to see your work in action during an event is remarkable. We enjoyed taking technology typically used by very large enterprises and adapting it to fit both a sporting venue and the small operation team at the 49ers, who run amazing events for 60,000+ fans every season.



## Business Challenge & Objectives

The San Francisco 49ers are a professional American football team located out of Levi's Stadium in the San Francisco Bay Area. They compete in the National Football League. The end to end fan journey on game day crosses multiple systems (parking, tickets, food and beverage, merchandise, fan sentiment, weather, etc). It took two or three days to consolidate the data from these various systems and produce game day feedback—too late to take any actions or fix any problems.

With only eight to ten home games per year, a fan's bad experience at one game translates to 15% of the season. And, with season ticket holders filling 80%+ of the seats at each game, a superb fan experience at every game is critical to retaining those customers.

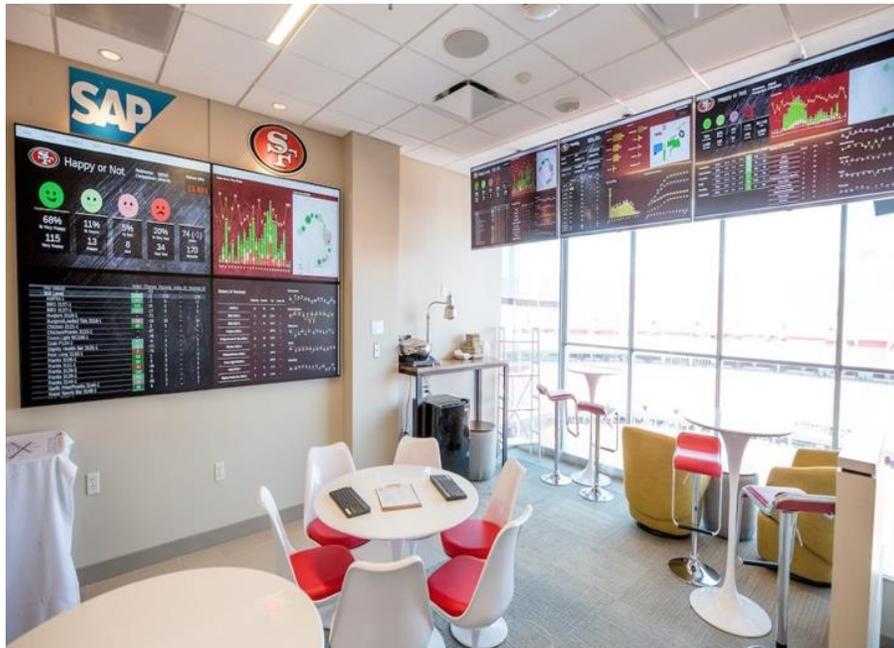
In order to maximize the game day fan experience, revenue opportunities, and operational efficiencies, the 49ers needed to be able to:

- Consolidate the data from the systems used across the fan's end to end game day journey
- Produce management insights and benchmarks to easily identify problems
- Act on these insights
- All in real-time

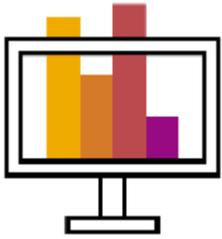


## Project / Use Case Details

The 49ers converted a suite at the 50-yard line into their “Executive Huddle.” From there, the team could receive and respond to immediate feedback from multiple data sources. This is the first and only modern, high-tech stadium digital boardroom focused on visualizing insights from real-time data across the end to end fan game day journey at the stadium. The 49ers are also unique in their ability to benchmark prior games’ data to compare to the current game across any of their metrics. Three SAP Leonardo technologies were used:



1. SAP Cloud Platform Integration Services are used to get real-time data from 9 different non-SAP systems and to send push SMS notifications.
2. SAP HANA Database as a Service consolidates and stores the data in virtual data models. Benchmarking/performance scoring of parking, gate scans/attendance, concession sales, merchandise sales, and fan sentiment is done by location across the stadium.
3. SAP Analytics Cloud and the venue’s Digital Boardroom are used to visualize and present the data.



# Benefits and Outcomes

## Business / Social

- Maximizes revenue by improving customer service and experience.
- Helps identify and resolve gameday issues quickly before they become a widespread/publicly known problems for all fans.
- Ticketing scan data notifies sales team when their VIP customers arrive so that they can greet them ASAP.
- Use sales & merchandise data to ensure numbers compare to benchmarks for similar games and which campaigns/promotions are working/not working.

## IT

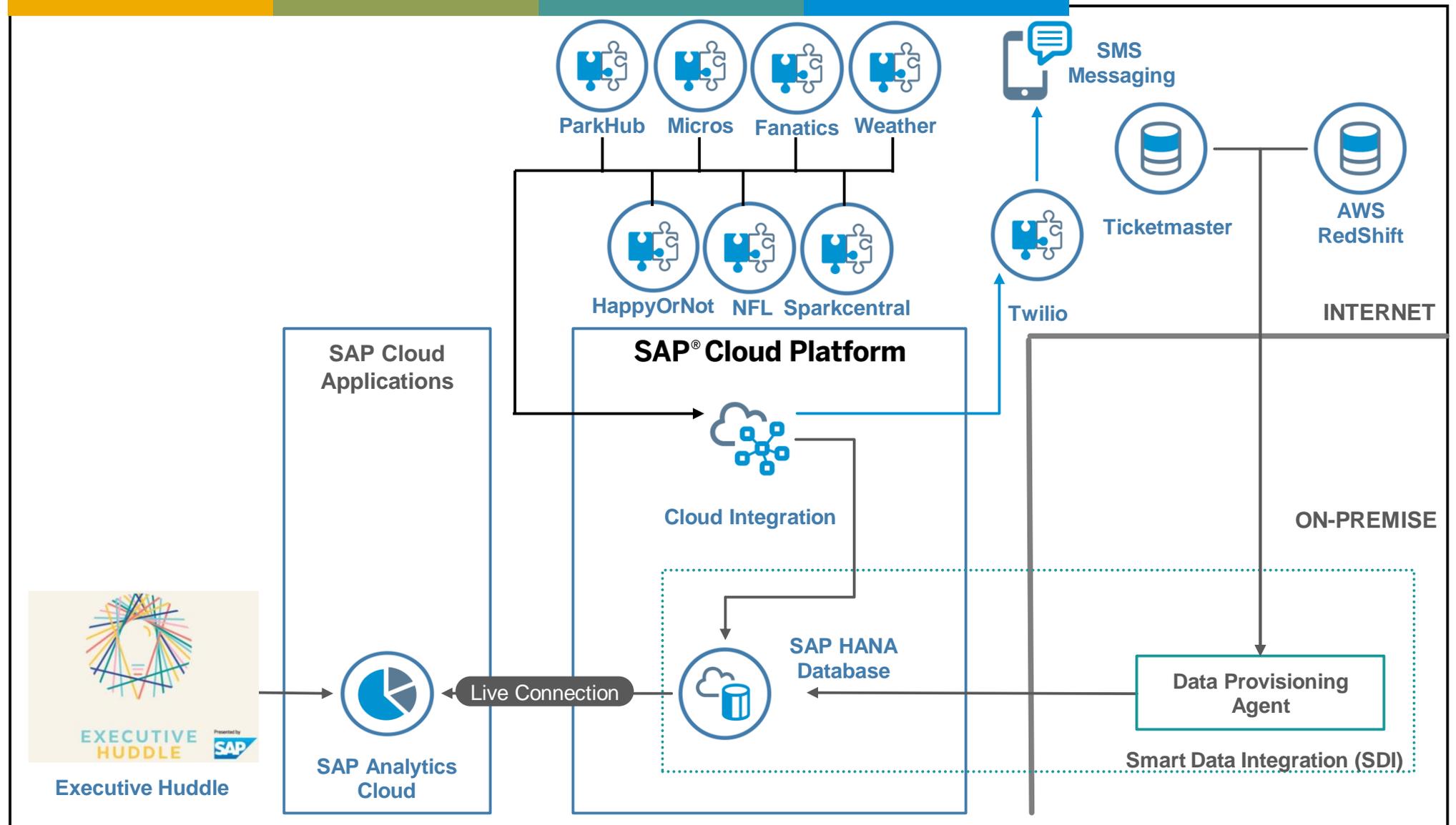
- Previously relied on 50-page post-event recap 3 days after the event; can now focus on same-day enhancements using live data and fan feedback.
- First in industry to be able to compare data in real time across multiple sources
- More efficient use of hardware and facilities; better IT efficiencies

## Human Empowerment

- Makes for a seamless, problem-free game day experience
- Centralizes real-time fan feedback for expedited issue triaging and resolution.
- Enhances productivity of staff, from executives to janitors, by pinpointing exactly where issues lie



# Architecture





# Deployment

Date of Deployment or POC: September 2018 Go Live

Number of live users: 10+

## SAP Technologies Used:

Product	Status
SAP HANA Services (SAP DC) Standard Edition	In Production (Live)
SAP Cloud platform integration services – enterprise edition	In Production (Live)
SAP Analytics Cloud for BI, Predictive Edition, Public Option	In Production (Live)
SAP Digital Boardroom - Software - Predictive Edition, Public Option	In Production (Live)
SAP Machine Learning Foundation	Phase 2

Server Processor: Intel Xeon

Linux Distribution: Other (SUSE)



## Emerging Technologies and Use Cases

The following Emerging Technologies and use-cases are part of the project and describe the contribution

	Technology or Use Case	Yes/No	Contribution to Project
1.	Machine Learning / Artificial Intelligence	Yes	Use parking scan rates, social media activity, weather forecast to predict attendance, likely concessions and retail trends, bathroom usage, etc.
2.	IoT	Yes	Real-time data from 9 different systems is essential to the use case.
3.	3D printing	No	
4.	Blockchain	No	
5.	API Economy / Integrate the Intelligent Enterprise	Yes	APIs are essential to accessing the real-time data from the 9 different systems.
6.	Cloud Native / Event Based Architectures	Yes	The system had to live in the cloud, since the 49ers do not have the staff to maintain and manage on-prem solutions.
7.	Extending the digital core with SAP CP / ABAP in SAP CP	No	
8.	SAP Leonardo Application ( extending SAP application, using Industry Innovation Kits or result of Design Thinking workshop)	Yes	The SAP Venue Analytics Leonardo package helped accelerate the project and allowed it to be done in time for the 2018 season – Design Thinking, industry innovation kit, etc.