Americas' SAP Users' Group

Acting on Real-Time Data to Impact the Fan Experience

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Session ID #84055

SAP

SAP Innovation Awards 2019

San Francisco 49ers

Digital Trailblazer Winner

Objectives for Today

Real-time Data & Analytics:
Why is it important?

Lessons Learned:
Data acquisition to insights

Bringing it all together:
Technology acting as one

EXECUTIVE HUDDLE

Presented by SAP

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Agenda

- 49ers Business Analytics
- Real-Time Problem
- Areas of Focus
- Lessons Learned
- What's Next

About the Speaker

Massachusetts Institute of Technology

RAYBEAM

ebay

BUSINESS STRATEGY & ANALYTICS

BUSINESS STRATEGY & ANALYTICS

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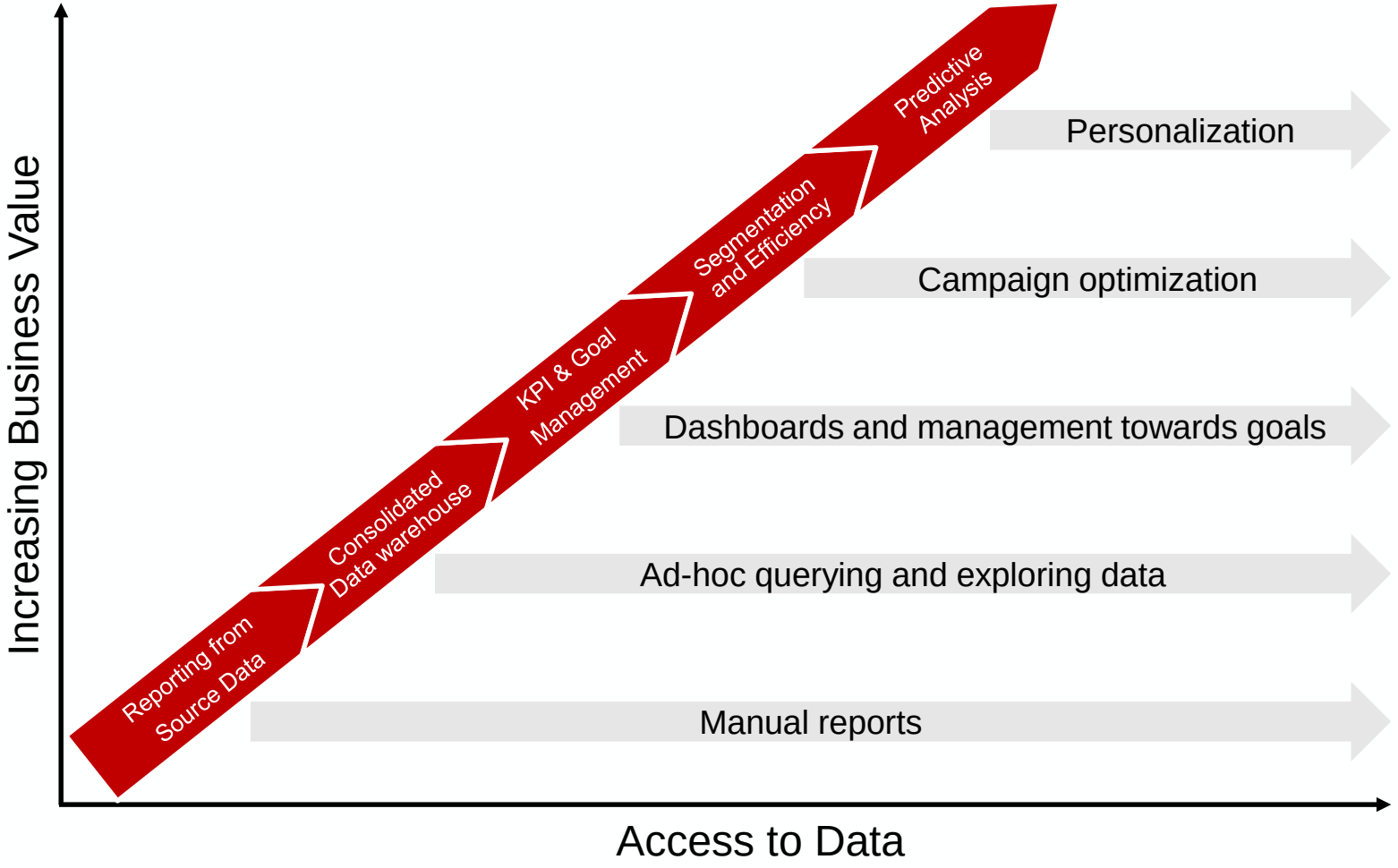
Fan Experience

Leveraging Data



Business Analytics Across the Organization

Business Analytics Platform

- Fan 360
- Data Consolidation
- API Data Management
- Machine Learning
- Predictive Modeling
- Reporting Infrastructure

Sales	Member Services	Marketing	Ticket Operations	Corporate Partnerships	Stadium Operations	Business Operations

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Customer Segmentation
Lead Scoring
Campaign Attribution
Sales Funnel Automation
Fan Feedback
Churn Prediction
Risk Mitigation
Service Score

Marketo

Microsoft Dynamics

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Business Analytics Across the Organization

Business Analytics Platform

- Fan 360
- Data Consolidation
- API Data Management
- Machine Learning
- Predictive Modeling
- Reporting Infrastructure

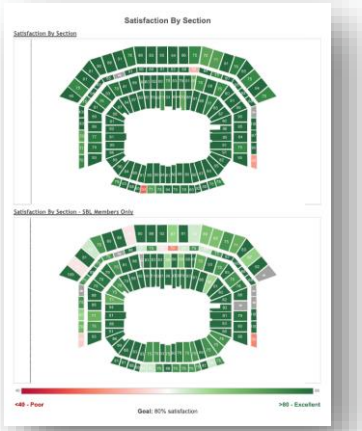
Sales	Member Services	Marketing	Ticket Operations	Corporate Partnerships	Stadium Operations	Business Operations

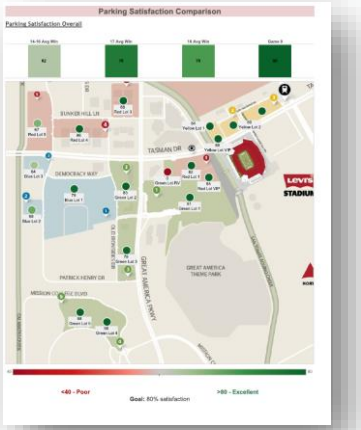
Dynamic Ticket Pricing
Ticket Sales Analytics
Standardized Reporting
Mobile App

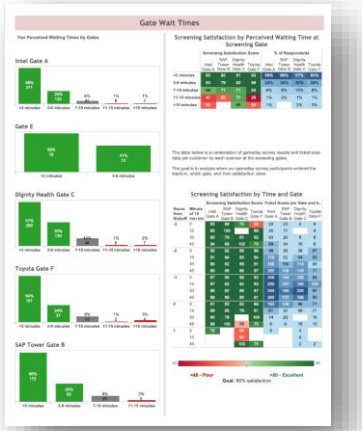
Expand the Fan Experience
Event Day Optimization
Food & Beverage
Security & Staffing

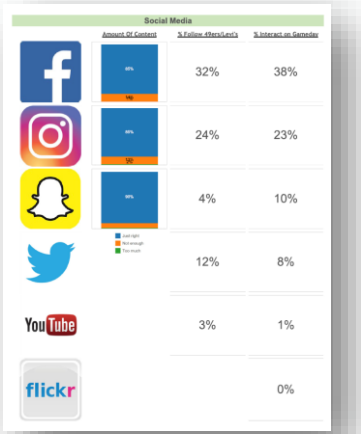
Data Visualizations

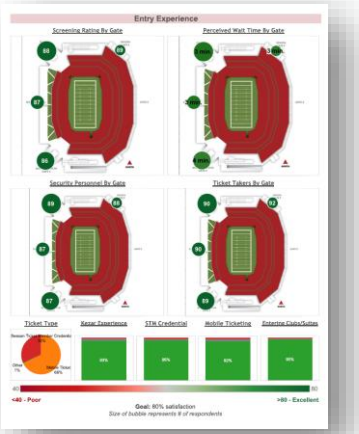
Post Gameday Surveys



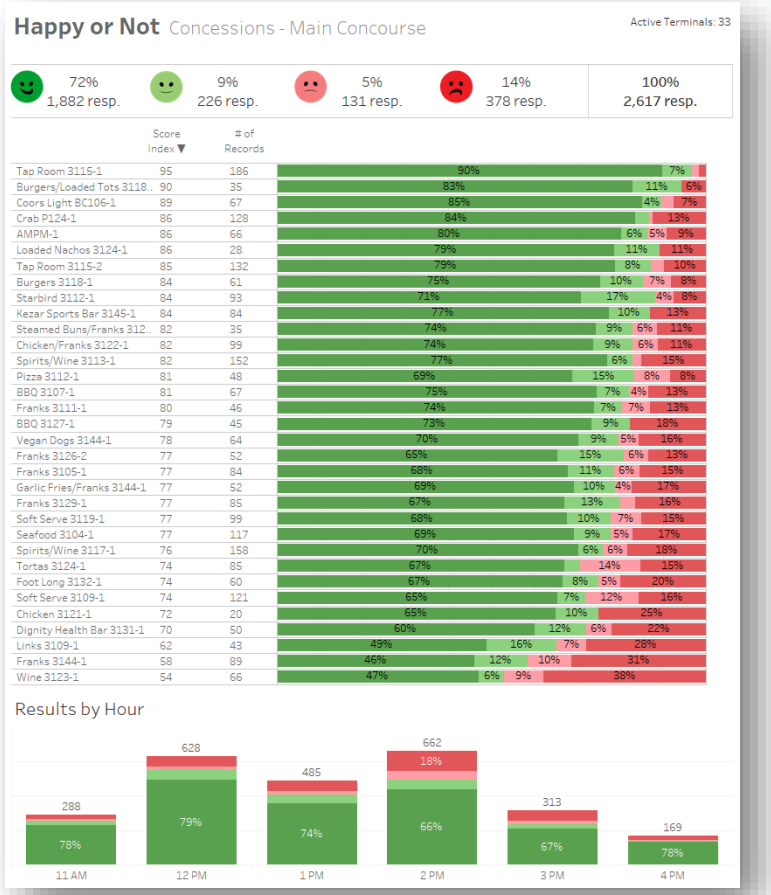


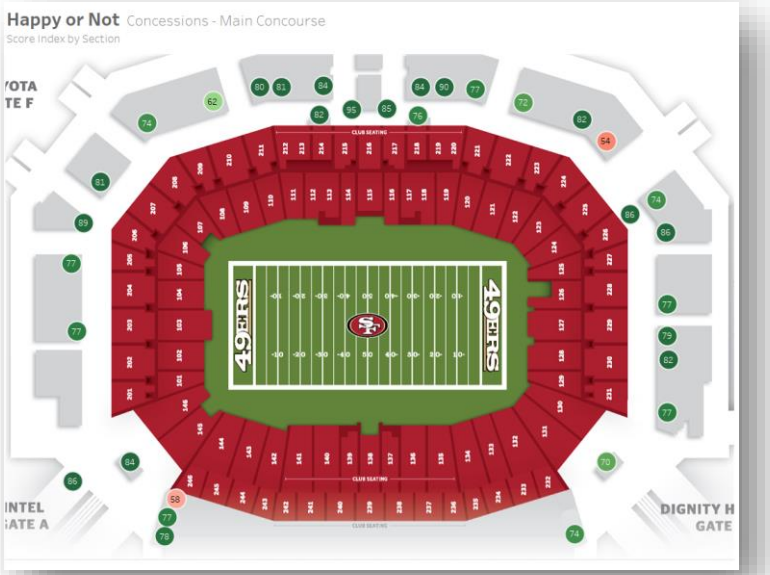






HappyOrNot Dashboards





Real-Time Problem

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Real-Time Problem

Data & Access

70+ page report available after three days

Surveys and fan feedback

Over 200 improvements

10

Home games per season

Only so many chances to iterate and improve

Real-Time Solution (stage 1)

Real-Time Fan Feedback

with Alert & Notifications

HappyOrNot

In over 100 areas of Levi's Stadium

CONCESSIONS
52

RESTROOMS
14

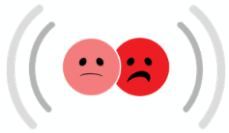
GUEST SERVICES
6

SUITES
10

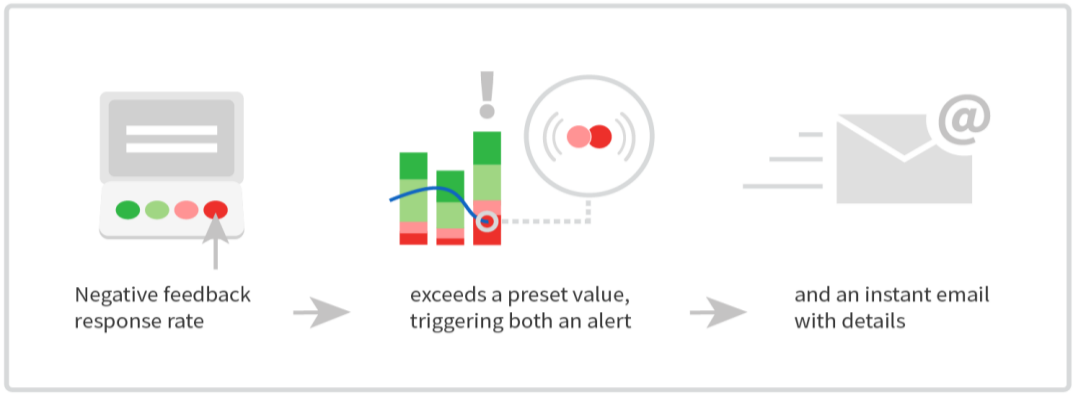
GATES
8

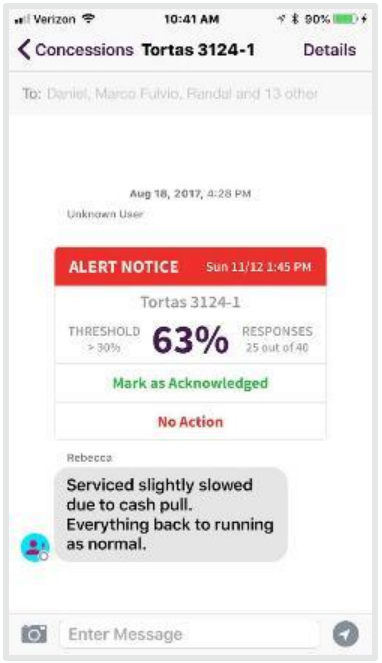
RETAIL
8

Alerts & Notifications



When 30% of responses in 15 minutes are negative and there are at least 30 responses





✓Area responsible evaluates the issue

✓Under 5 minutes, all stakeholders receive a response with the action taken

Small Issues and a Big Impact

Concessions

Spirits 7301

Stand was one bartender short causing long lines.

Fix: support sent

Wine 3123

Fridge stopped working causing warm wine bottles.

Fix: put wine on ice

Across the Venue

Alerts	Fixes
34	14

Lines, speed of service, F&B temp.

Alerts	Fixes
74	63

Cleanliness, lines

Alerts	Fixes
11	4

Waiting on line

Alerts	Fixes
5	2

Fan experience by the gates

Alerts	Fixes
17	11

Missing kickoff, bag restrictions, line

Alerts	Fixes
VIP 2	0

We continue to improve our process to deliver a best-in-class fan experience

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Real-Time Solution (stage 2)

Real-Time Fan Feedback

with Alert & Notifications

Real-Time Analytics Platform

SAP + NIMBL + 49ers

Design Thinking for Business Innovation

People

At the heart of innovation are people. Building a culture of innovation takes collaborative, diverse, & empowered employees who seek empathy for their end-users.

Process

"Discover, Design, Deliver" is the process that gets you to the root of the problem and builds optimism for both problem finding and problem solving.

Place

The environment must facilitate collaboration and encourage risk taking with a 'fail early & fail oftern' mentality.

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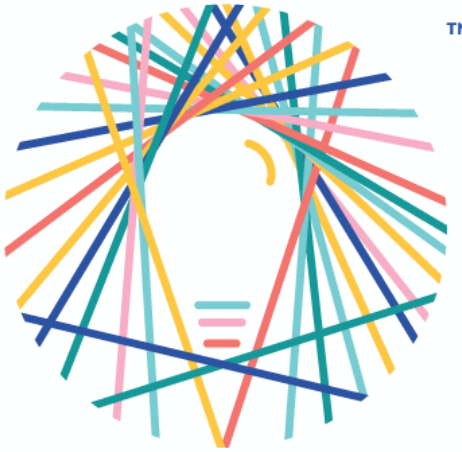

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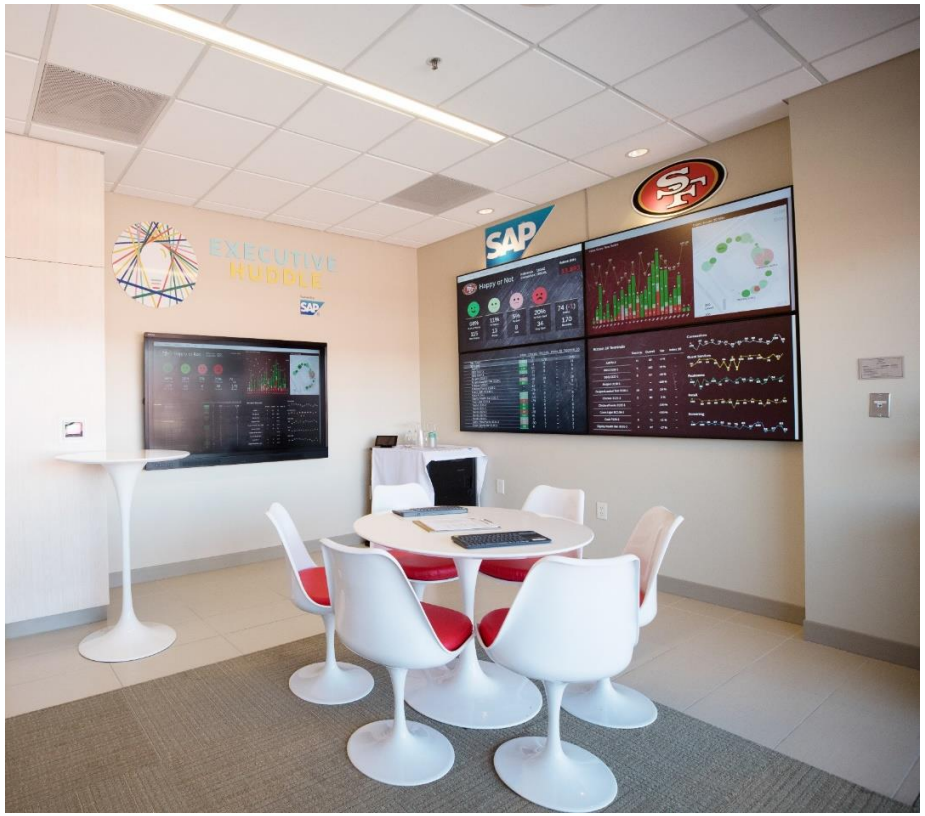
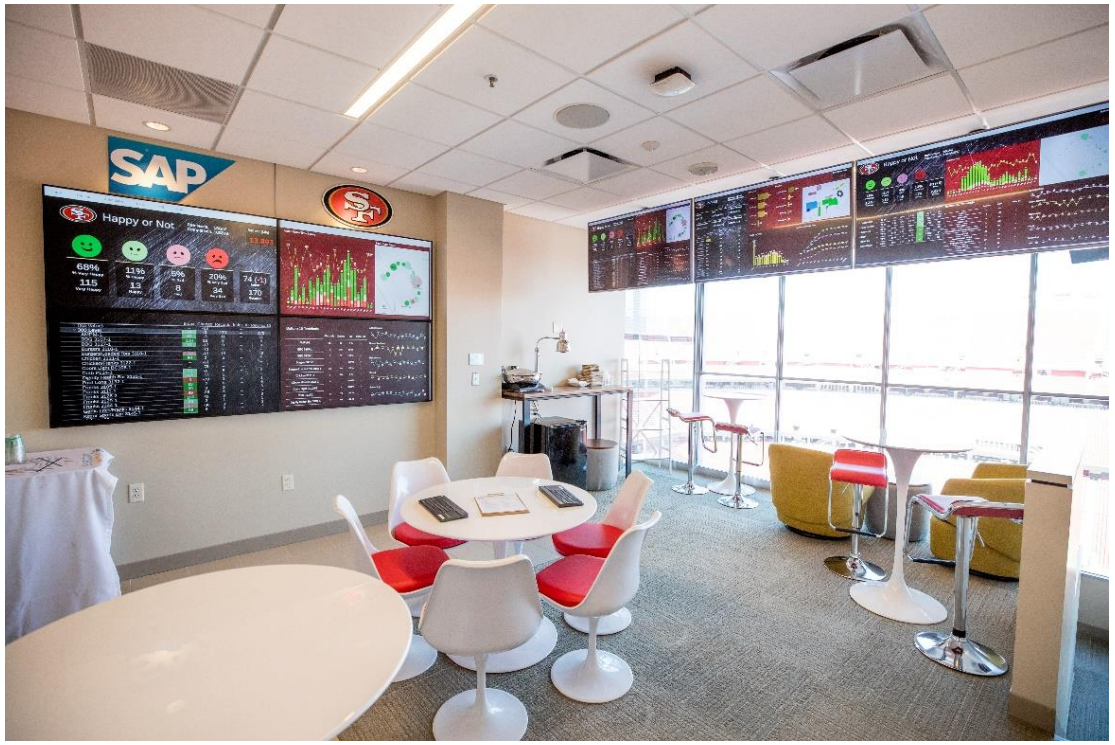
Real-Time Analytics Platform





The Executive Huddle gives us insight on operational metrics on game days: attendance, parking, concessions, retail, and real-time fan feedback

Executive Huddle: Areas of Focus

Ticket scan by location

Food & Beverage

HappyOrNot real-time feedback

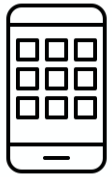
Mobile ticketing & security

Social data to identify PR concerns

Parking scans & capacity

Retail & Team Store

Notify account reps of arriving VIPs



Push notifications to drive fan behavior

Weather data to predict fan needs

Powered by SAP Leonardo

EXECUTIVE HUDDLE Presented by SAP

SAP Analytics Cloud

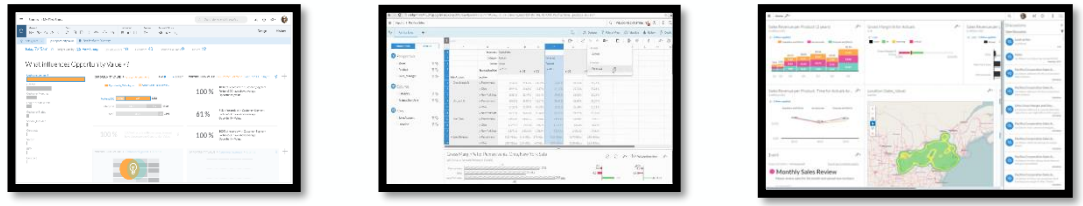
- Presentation Layer

SAP Cloud Platform Integration Services

- Multiple data sources into a single source of truth

SAP Hana Database as a Service

- Store the data in memory for speed



SAP Analytics Cloud - All analytics capabilities in one product (BI, Predictive, Planning)

Integration	IoT	Security	Analytics	Machine Learning	Mobile

SAP HANA (Database as a Service)

Gate Scan | Parking | Food & Beverage | Retail | NFL API | Fan Feedback | Weather

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Executive Huddle in Action

Selections

EXECUTIVE HUDDLE

ticketmaster

Attendance

- Reference Event (1): SBG0129
- Comparison Event (1): FNG0409
- Comparison Season (0): (All)

Attendance Scans

- TM Event (Ref)1 (1): SBG0129
- TM Event (Comp)1 (1): FNG0409
- TM Season (Comp) (0)

Pre Paid Parking

- TM Event (Ref) (1): SBPK0129
- TM Event (Comp) (1): FNPK0409

parkhub

Transactions

- Event (Reference) (1): 17PARK04
- Event (Comparison) (1): ICC0804P
- Season (Comparison) ...: (All)

Cumulative

- Event (Ref) (1): SBPK0129

HAPPY OR NOT

Transactions

- Event HON (Ref) (1): SBG0129
- Event HON (Comp) (1): FNG0409

micros

Transactions

- MIC Event (Ref) (1): SBG0129
- MIC Event (Comp) (1): FNG0409

Fanatics

Transactions

- Event Fan (Ref) (1): HS0921
- Event Fan (Comp) (1): SBG0129

Parking

Refresh (Min)
5,198

Reference: FNPK0409
Comparison: SBPK0129

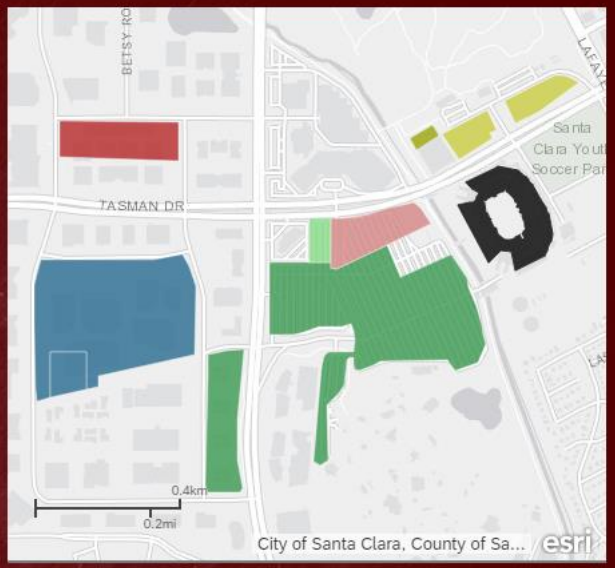
Capacity	Scans	# Day-of Purchases
55% (-20%)	91,179 (-10%)	36,747 (-10%)

Pre-Paid Show Rate	Pre-Paid Sold	# Pre-Paid Scanned
68% (0%)	126,412 (+10%)	86,548 (+10%)

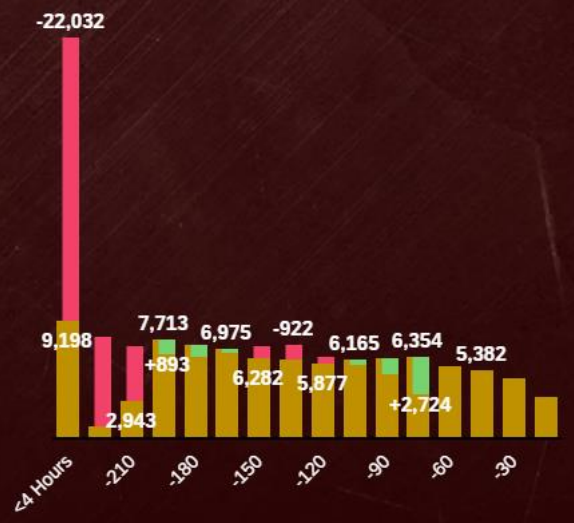
	Capacity (%)	Scan Cnt	Variance	Errors
Blue Lot #1	64 %	29,169	-20 %	1,035
Green Bus	34 %	306	-20 %	18
Green Lot #1	76 %	27,576	-20 %	9,765
Green Lot #2	–	–	–	–
Green Lot #3	67 %	4,554	-20 %	234
Green Lot #4	–	–	–	–
Red Lot #1	12 %	5,391	-20 %	396
Red Lot #3	–	–	–	–
Red Lot #4	75 %	5,562	-20 %	180
Red Lot VIP	–	–	–	–
Yellow Lot #1	88 %	14,256	-20 %	1,674
Yellow Lot #2	56 %	2,016	-20 %	126
Yellow Lot #3	53 %	2,016	-20 %	117
Yellow Lot VIP	–	–	–	–

Errors Per Lot

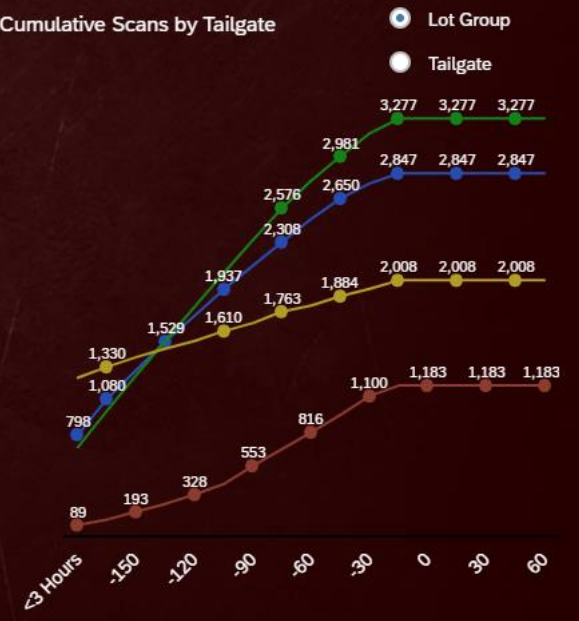
Errors per Group



Scans by Time



Cumulative Scans by Tailgate



Attendance

Reference: FNG0409
Comparison: SBG0129

Next Hour
Temp (F): 51
Rain (%): 1

Refresh (Min): 4,868
Refresh AS (Min): 4,868

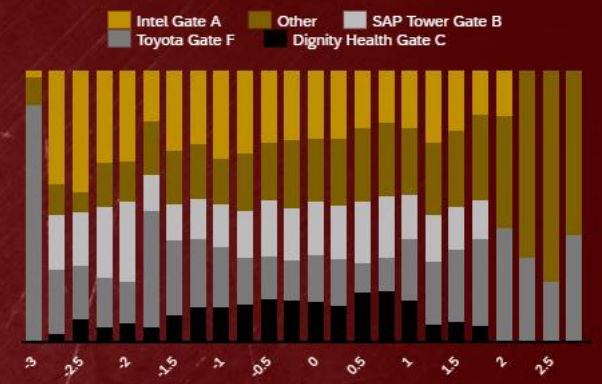
Total Attendance	Show Rate	Scans by Kickoff
556,434 (-10%)	90% (0%)	338,211 (-27%)

478,188 SBL Attendance	90% (0%) SBL Show Rate
64,827 SG Attendance	92% (0%) SG Show Rate
6,489 Comp Attendance	75% (0%) Comp Show Rate
51,187 Mobile Attendance	9% (+11%) % Mobile Attendance

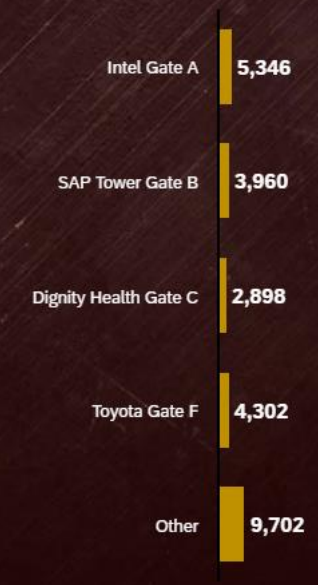
	Scans	# Errors	% of Total	Variance
Intel Gate A	138,384	5,346	25 %	0 %
SAP Tower Gate B	106,929	3,960	19 %	0 %
Dignity Health Gate C	81,900	2,898	15 %	0 %
Toyota Gate F	99,333	4,302	18 %	0 %
Other	129,888	9,702	23 %	0 %

Scans by Time (Hours)

Scans by Gate (Hours)



Errors by Gate



Errors per Type

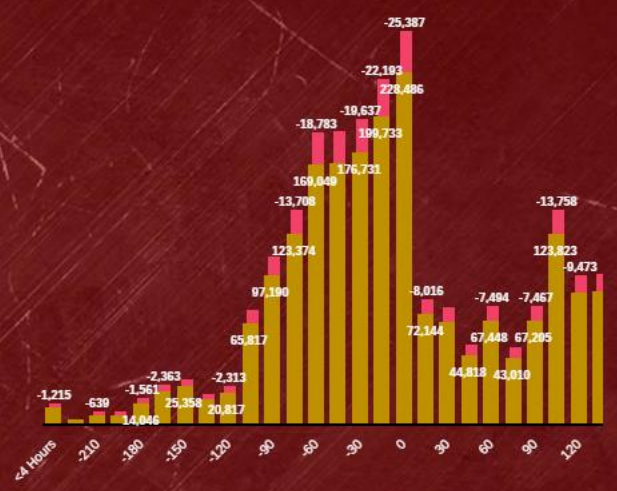
Retail

Refresh (Min)
414

Reference: FNG0409
Comparison: SBG0129

Total Sales ($) 2,800,983 (-10%)	Transactions 4,360 (0%)	Rev per Trans ($) 642.43 (-10%)
Attendance 556,722 (-10%)	Per Cap ($) 5.03 (0%)	HON 78 (0)
% SBL Trans 12% (0%)	Avg. Rev. SBL ($) 535.99 (-10%)	Avg. Rev. Non SBL ($) 604.65 (-10%)

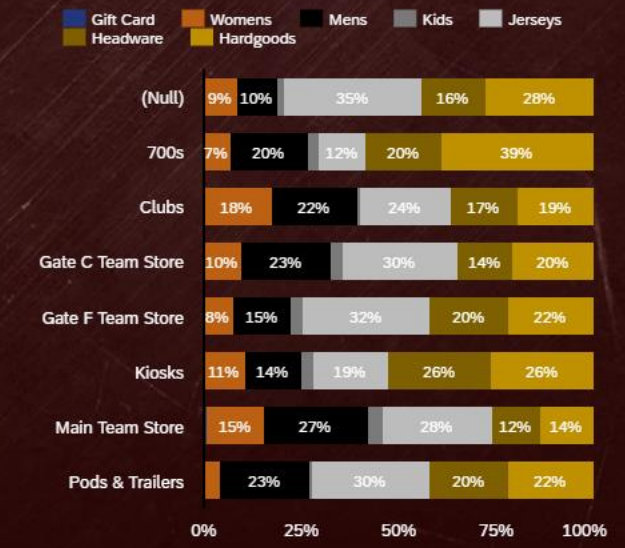
Revenue ($) by Time (Minutes)



Index Score Time Series

Selection Department	Units	Total Sales	Trans	% SBL	$/Trans
Jerseys	6,498	736,172	556	7 %	1,324.05
Mens	13,662	643,471	1,002	12 %	642.19
Hardgoods	52,092	541,092	2,607	12 %	207.55
Headware	16,182	436,365	1,211	11 %	360.33
Womens	7,182	340,481	550	15 %	619.06
Kids	3,375	89,002	237	14 %	375.53
Gift Card	72	14,400	1	–	14,400.00

Department Sales ($) by Revenue Center



HON - Main Team Store

HON - 300 Level

HON - 700 Level

HON - Outside

F&B

Refresh (Min)

15,096

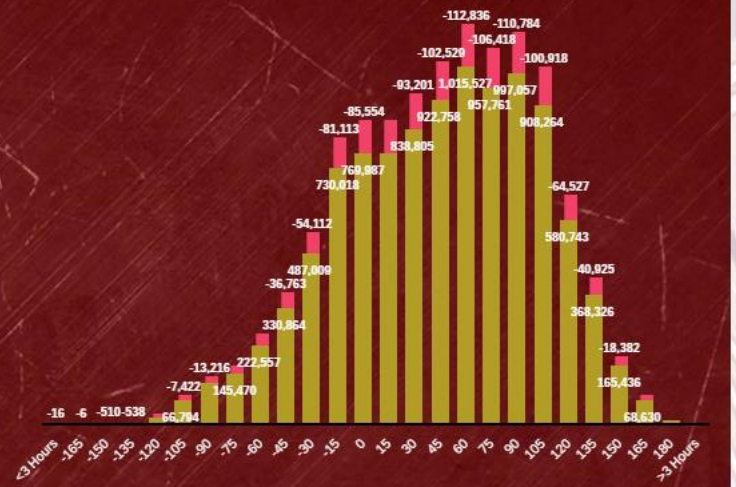
Reference: FNG0409
Comparison: SBG0129

- ALC BEV
- FOOD SALES
- NA BEV SALES

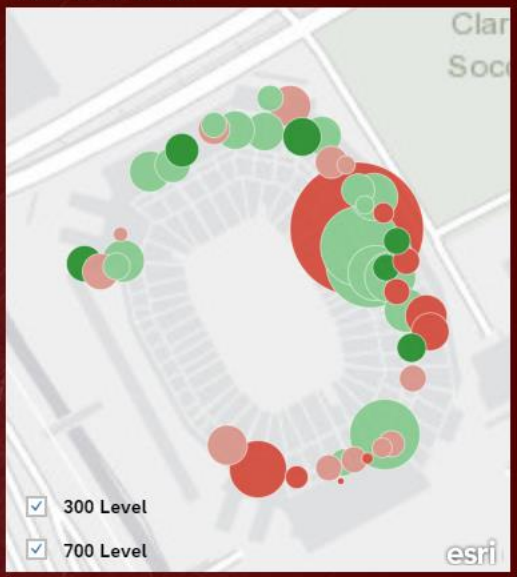
Total Sales ($)	Transactions	# Items
10,508,715 (-10%)	46,275 (0%)	1,010,565 (-10%)

Per Cap ($)	Rev per Trans ($)	HON
18.88	227.09 (-10%)	72 (0)

Revenue ($)



Index Score 30 Min



Flag (1)
Focus

	Sales	Var	Trans #	Items
3107 BBQ	286,443	-10 %	1,016	25,929
3109 Links	271,989	-10 %	1,183	28,494
3115 Tap Room	444,015	-10 %	1,693	34,380
3118 Burger	283,086	-10 %	1,332	28,980
3121 Chicken	191,313	-10 %	1,004	18,666
3126 Franks	272,291	-10 %	1,189	28,935
3131 Sports	292,626	-10 %	921	23,886
3144 Franks	296,816	-10 %	1,315	31,581
3145 Sport	310,869	-10 %	1,044	26,019

Bottom Stands	Sales	# POS	Trans #	Items
B301 Employee Me	837	29	21	252
P310 Coffee*J	7,416	149	98	1,161
C116 EF Wine	7,650	69	30	549
B317 Beer Cart	10,287	123	51	1,008
C113 EF Market	10,643	153	91	1,278
C406 Cffee	11,318	277	160	2,115
C112 EF Coffee	12,591	161	77	1,206
P309 Ice Cream*J	13,145	208	133	1,791
P302 Wingy Wingy	13,271	183	83	1,521
C305 Unit S Wine	15,615	184	100	1,395

HON - 300 Level

HON - 700 Level

HON - Specialty

Fan Feedback

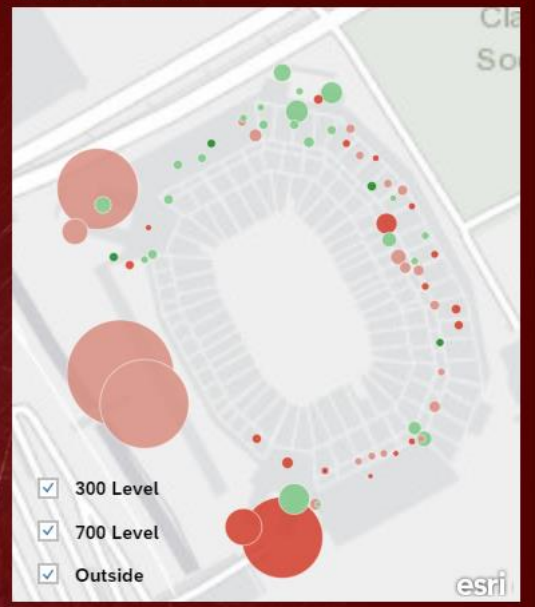
Reference: FNG0409
Comparison: SBG0129

Refresh (Min)
4,883

63%	9%	4%	23%	71 (0)
% Very Happy	% Happy	% Sad	% Very Sad	Index
127,704	17,765	8,772	47,022	201,263
Very Happy	Happy	Sad	Very Sad	Records

Index Score Time Series

Index Score 30 Min



	Index	Change	Records	Index 30	Records 30
Concessions	72	0	47,583	72	47,583
Guest Services	73	0	6,460	73	6,460
300 Level	75	0	5,712	75	5,712
Guest Services 101	77	0	1,054	77	1,054
Guest Services 105	77	0	612	77	612
Guest Services 107	84	0	1,241	84	1,241
Guest Services 124	74	0	1,360	74	1,360
Guest Services 130	67	0	1,445	67	1,445
700 Level	61	0	748	61	748
Restrooms	65	0	39,338	65	39,338
Retail	78	0	27,778	78	27,778
Screening	69	0	75,514	69	75,514
Suites/Clubs	86	0	4,590	86	4,590

Bottom 10 Terminals

Level 2 Name (6)

	Index	Change	Records	Index 30	Records 30
MRR 110	48	0	6,834	48	6,834
Franks/Nachos 7313-1	53	0	578	53	578
FRR 127	53	0	1,343	53	1,343
Burgers 7319-1	56	0	1,037	56	1,037
Soft Serve 3119-1	57	0	697	57	697
Franks 7325-1	58	0	272	58	272
MRR 103	60	0	4,131	60	4,131
WRR 326	60	0	2,550	60	2,550
Gate C-1	61	0	5,797	61	5,797
Franks 7325-2	61	0	374	61	374

Concessions

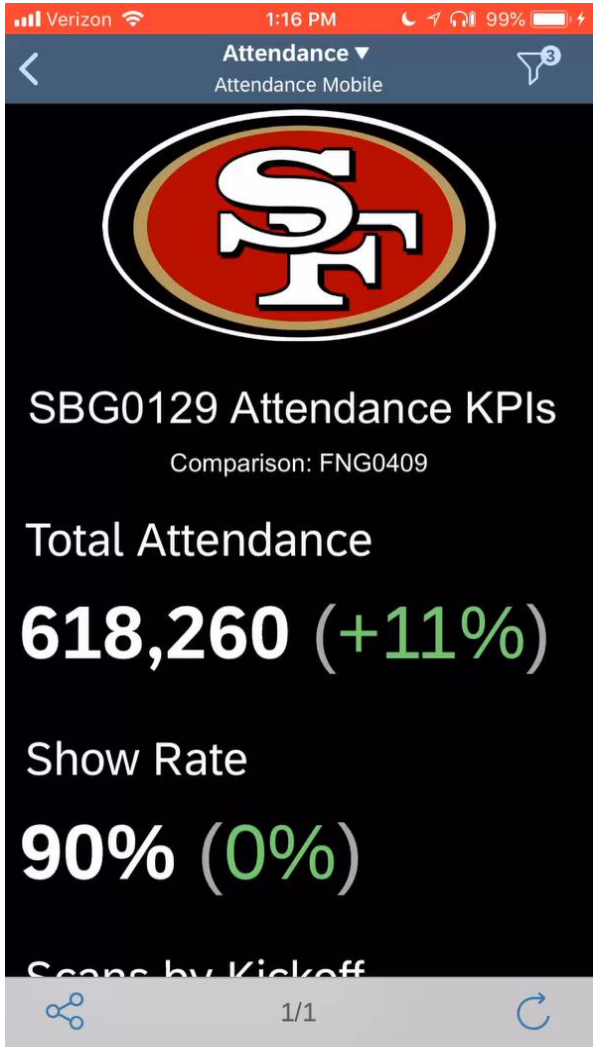
Guest Services

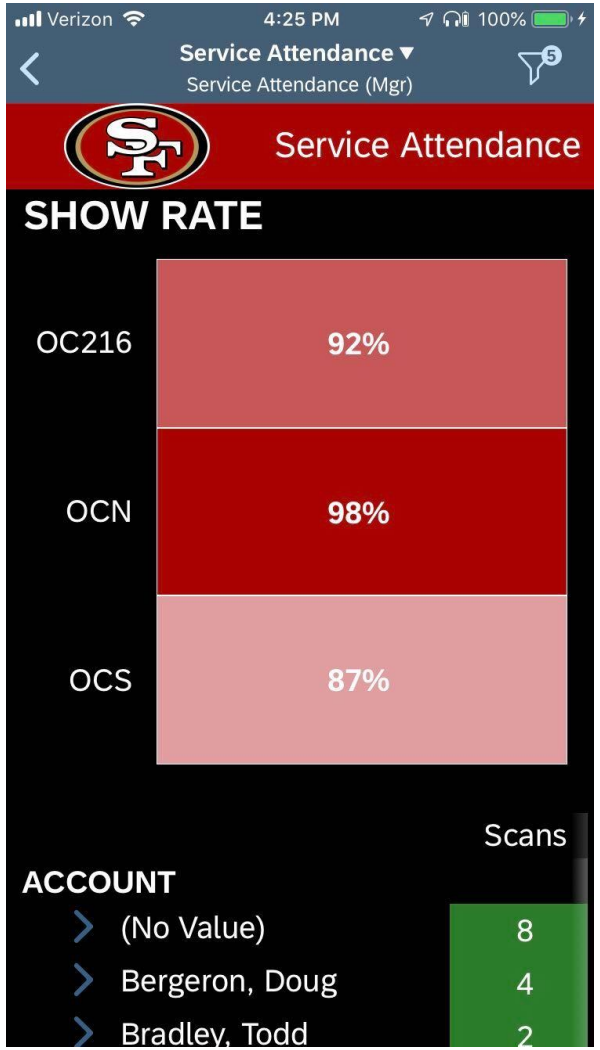
Restrooms

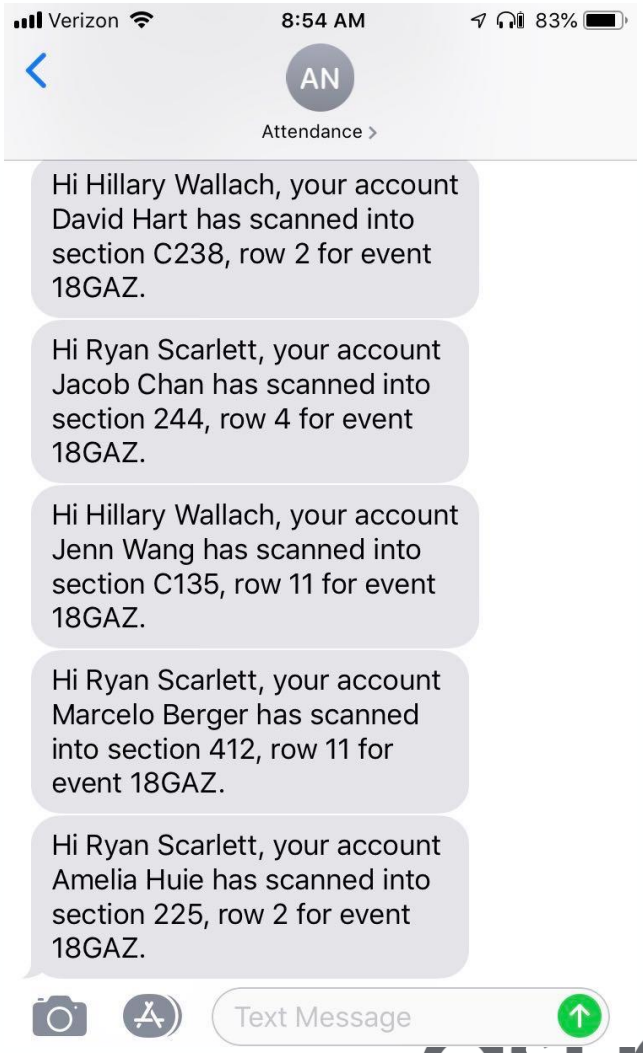
Retail

Screening

Using Mobile Devices to Scale







How We Did It & Lessons Learned

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How We Did it

NIMBL	Marcelo Berger	Data Modeling & SAC Developer
	Hari Sonnenahalli	Integration Developer
	Mark Dent	SAP Cloud Platform Admin & Digital Boardroom
	Alisha Khan	SAP Delivery Manager
	Michael Pytel	Solution Architect, CTO
	Jay Mills	VP of Sales
SAP	Jacob Stark	Director, SAP Cloud Analytics Product Management
	Anamarie Franc	VP, Customer Success, SAP Analytics Cloud
	David Martinez	Director, Global Sponsorships
	Mark Lehew	VP & GM, Sports & Entertainment Americas
	Dan Fleetwood	VP, Global Sponsorships
49ers	Nick Zobel	Manager, Business Intelligence & Analytics
	Nikki Hawkins	Director, Partnership Activation
	Steven Chan	Director, Business Intelligence & Analytics
	Moon Javaid	VP, Business Strategy & Analytics

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How We Did it

nimbl
Techedge Group

BUSINESS
STRATEGY &
ANALYTICS

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Attendance

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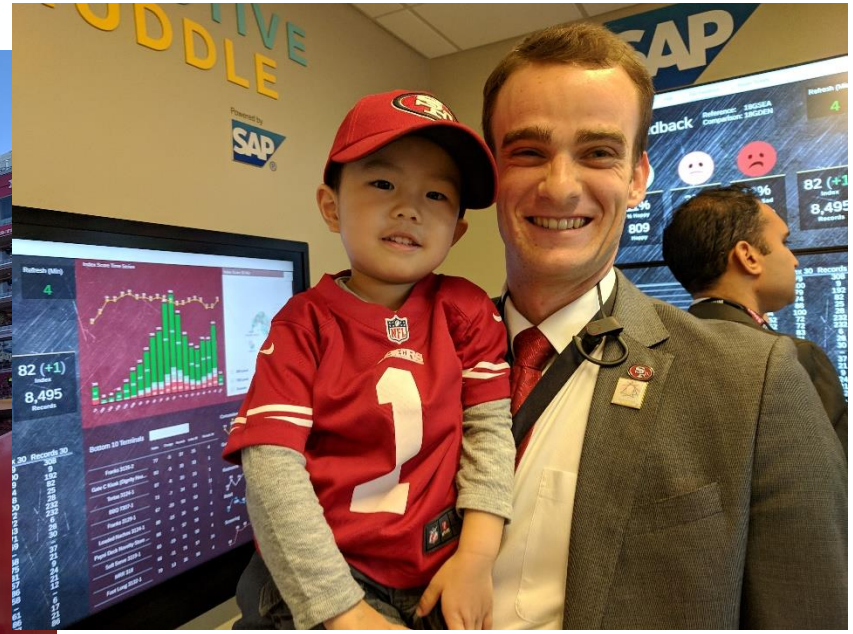
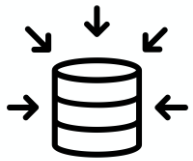
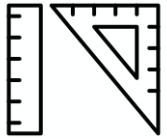
levi's STADIUM


SAP
82 (+1)
8,495

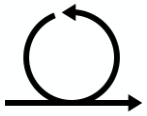
Learn From Our Lessons



Data acquisition

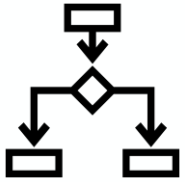


Hardware and the details

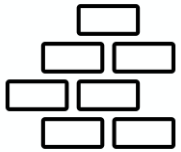


Iterative development

Plan for scale



Focus on operational integration



Consolidate data early

Moving Forward

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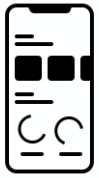
What's Next?

Automated alerts

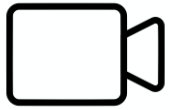
Inventory management



Mobile dashboards

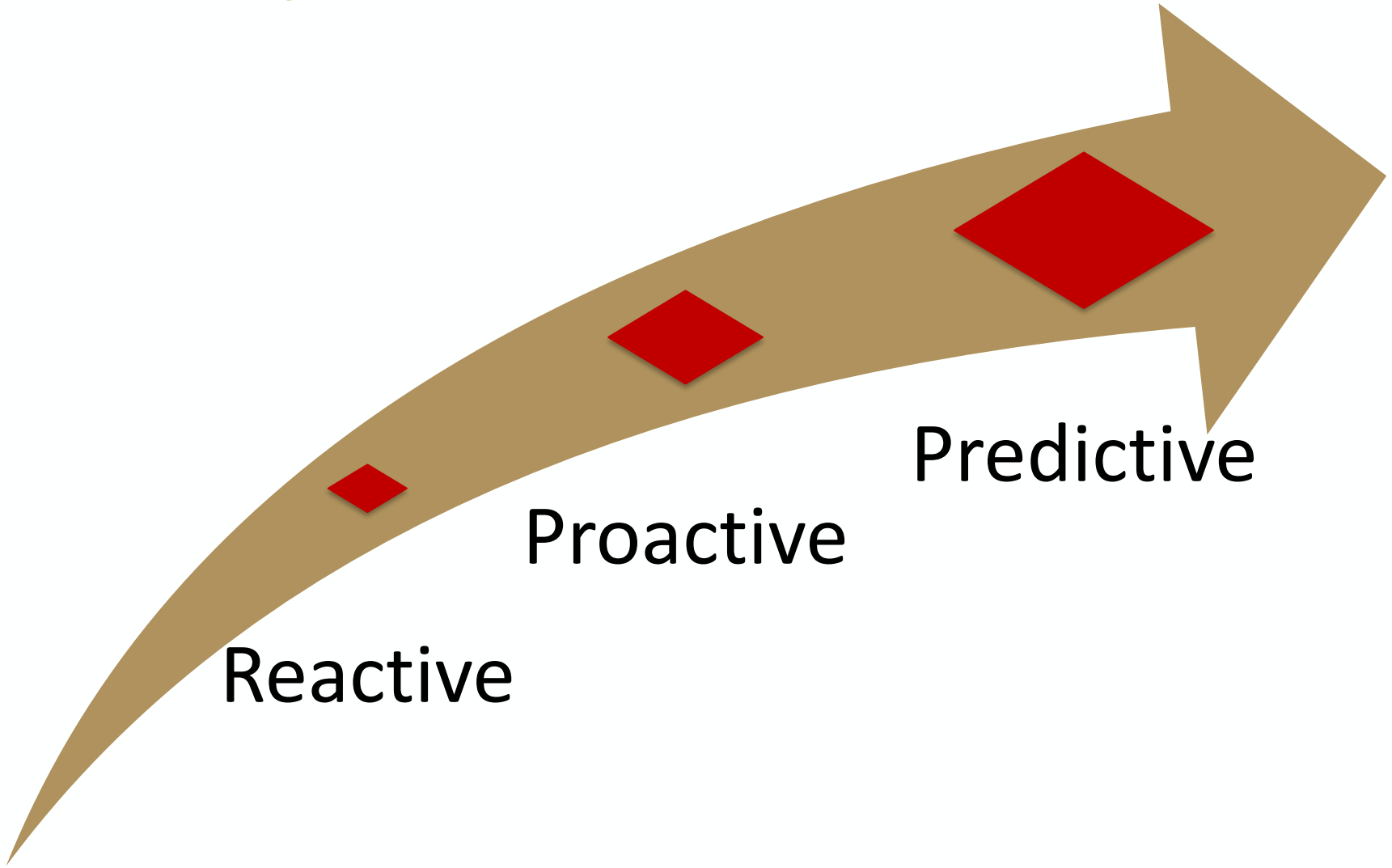
Social media

Predictive modeling



Computer vision

From 3 Days to Real-Time



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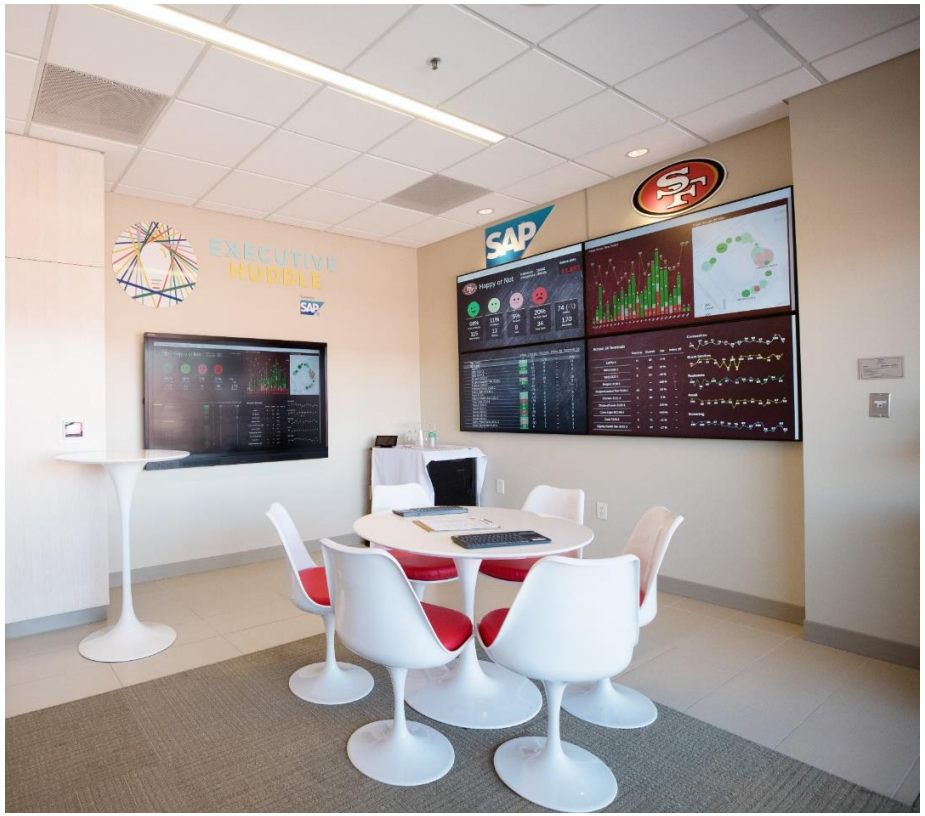
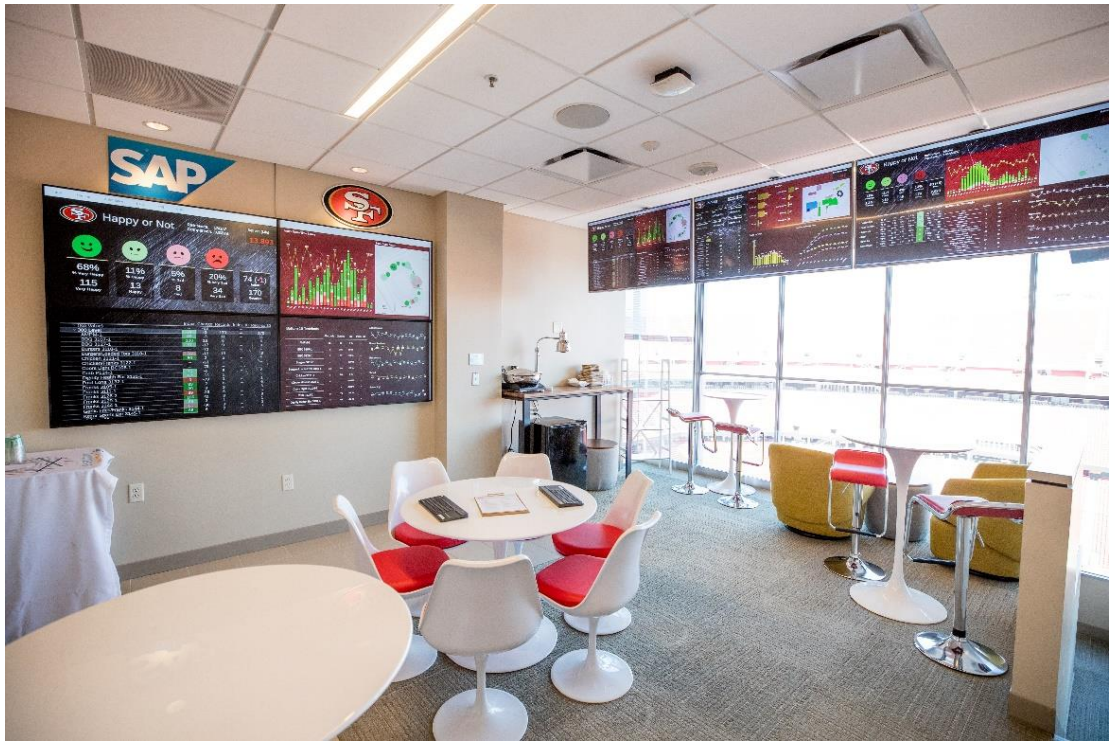
SAP Innovation Awards 2019

San Francisco 49ers

Digital Trailblazer Winner

Real-Time Analytics Platform





The Executive Huddle gives us insight on operational metrics on game days: attendance, parking, concessions, retail, and real-time fan feedback

Contact Us

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Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

http://info.asug.com/2019-ac-slides

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Q&A

For questions after this session, contact us at steven.chan@49ers.com.

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