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SEPTEMBER 13, 2017 | FINANCIAL SERVICES | CHICAGO

Financial Services – Common Goals

Helping customers realize their ambitions and succeed financially.

Grow the Business	Reward Shareholders	Streamline Processes	Attract Top Talent	Customer Driven
Strike revenue growth by capitalizing on opportunities across all lines of business and geographies.	Generate attractive and sustainable return for shareholders.	Reduce complexity and inefficiencies, releasing capital to be reinvested in other areas of the business.	Be a workplace that attracts top talent and which collaboration achieves results.	Make the financial lives better for customers, listening to what they want and delivering the solutions they need.

Source: Annual reports for leading banks such as HSBC, Bank of America, Santander Bank…

Overall FSI Digital Transformation

2017 Top Industry Drivers*

Fintech Disruption

Digital Technologies

Cloud Services

Cyber Security

Advanced Analytics/ML

Business Process & IT Modernization

End-to-End Operational Visibility

(Source: Deloitte Report, 2017)*

Big Data is central to these priorities and drivers*

(Source: Cap Gemini Consulting, 2016)*

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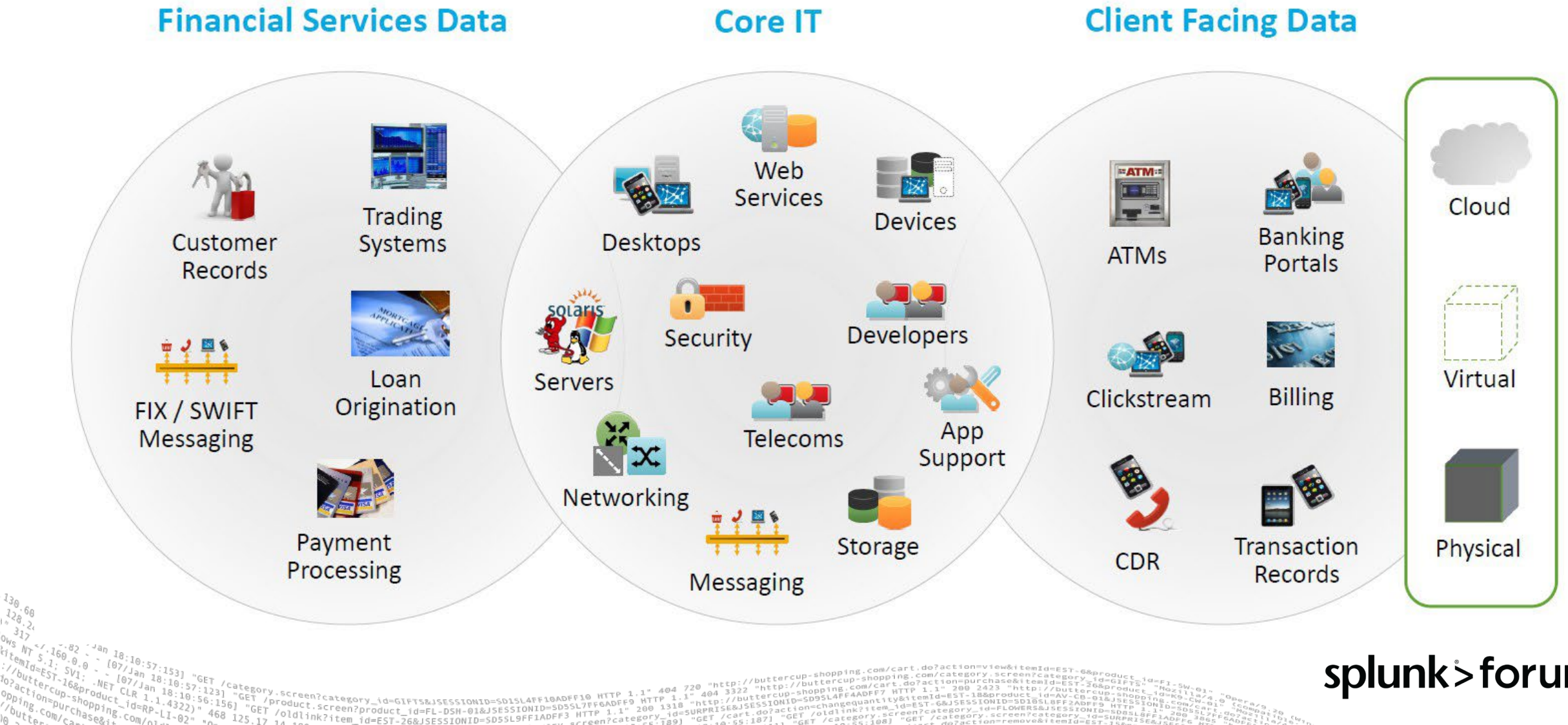
Big Data Comes from Machines

Volume | Velocity | Variety | Variability

**Machine data** is the fastest growing, most complex, most valuable area of big data

GPS, RFID, Hypervisor, Web Servers, Email, Messaging Clickstreams, Mobile, Telephony, IVR, Databases, Applications, Telematics, Storage, Servers, Security Devices, Desktops, Wire Data, Social Data, Middleware

Diversity & Silos of Machine Data Creates a Challenge

FSI Processes & Services Use Data From Diverse Systems

Sample Trade Processing Flow
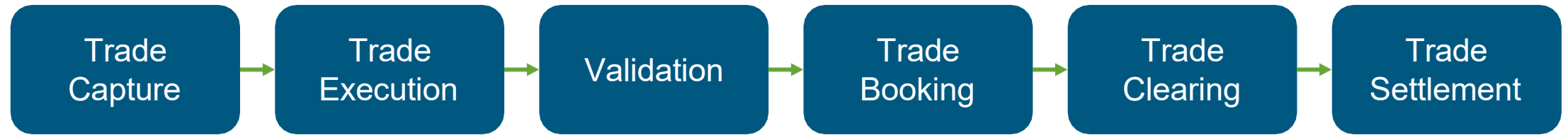
Trade Capture → Trade Execution → Validation → Trade Booking → Trade Clearing → Trade Settlement

Diverse IT Systems Support Trade Processing

Front & Back Applications   Hardware   Message Queues (SWIFT/FIX)   Enterprise Service Bus   Networking   Devices

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Getting Visibility Across These Systems Is Challenging

Diverse IT Systems Support Trade Processing

Front & Back Applications

Hardware

Message Queues (SWIFT/FIX)

Enterprise Service Bus

Networking

Devices

Search & Identify
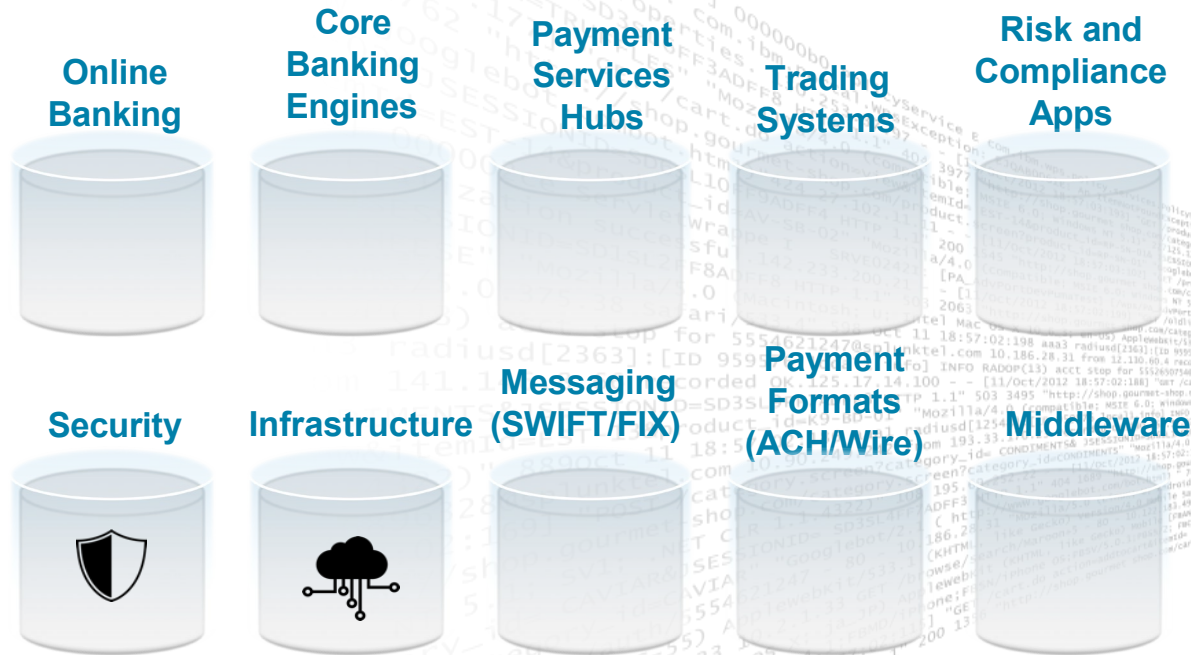
Monitor Systems/Process

Gain Operational Visibility

Get Business Insights

- What caused the delay in processing or settlement?
- Where are the transaction confirmation details?
- Does the user have access to the right data?
- How many transactions were processed?
- Can we prevent the problem from happening?
- How is the customer experience? Did we meet SLAs?

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Gain Insights Across Financial Services Machine Data

Online Banking

Core Banking Engines

Payment Services Hubs

Trading Systems

Risk and Compliance Apps

Security

Infrastructure

Messaging (SWIFT/FIX)

Payment Formats (ACH/Wire)

Middleware

COLLECT, CORRELATE, ANALYZE

Cyber Security

Regulation & Compliance

System Modernization, Monitoring, & Infrastructure Cost Reduction

Real-Time Payments

Advanced Analytics

Digital Technologies & Omnichannel

Emerging Technologies (e.g. Blockchain)

Payments: Business Process Monitoring

UniCredit

This example recognizes the value of monitoring the entire stack from technology to business process with a single platform.

Gaining New Insight Into the Payment Business Process

Tuesday, September 27, 2016 | 10:30 AM-11:15 AM

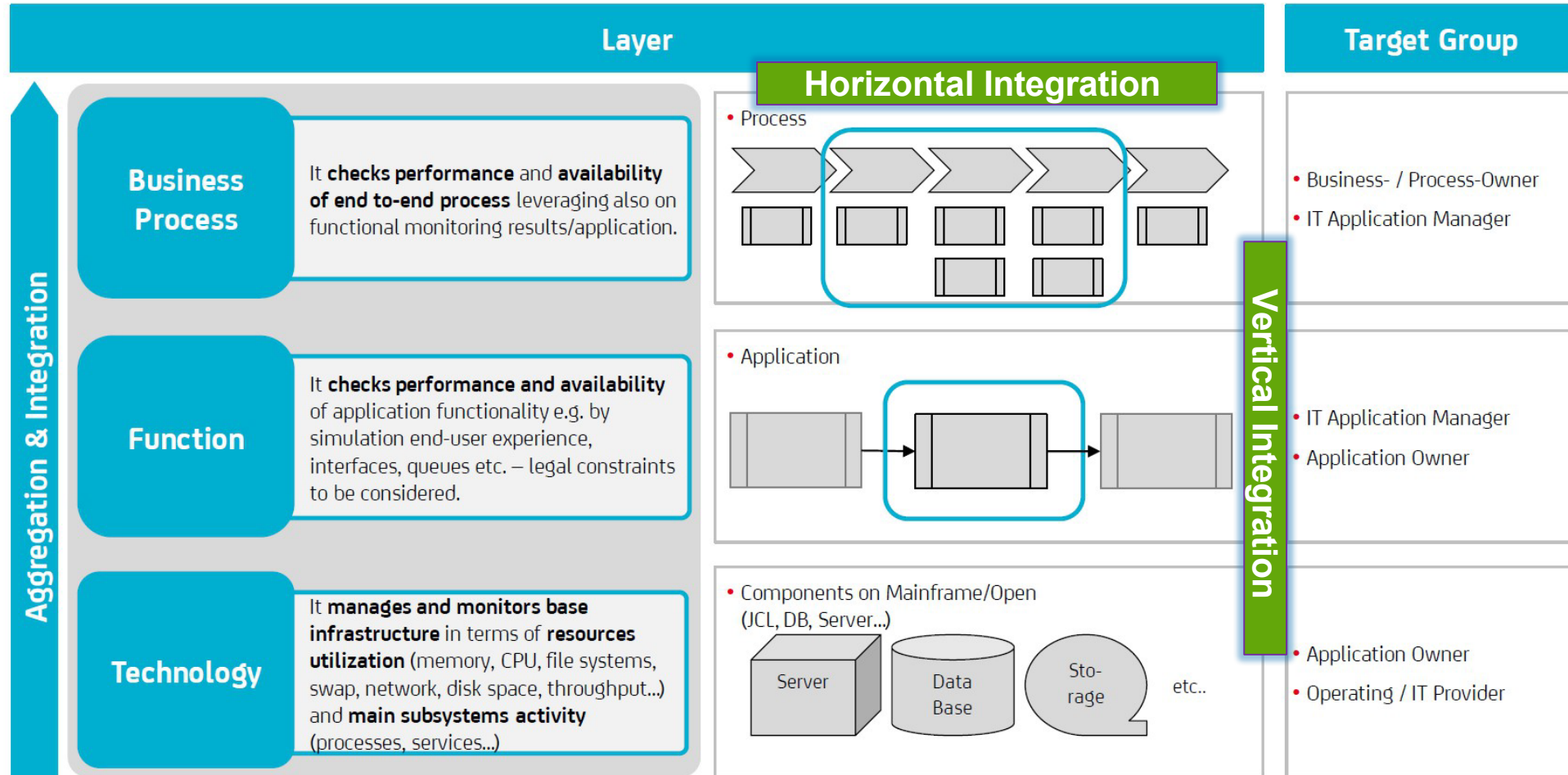BEGINNER | **Industries:** Financial Services | **Products:** Splunk Enterprise | **Role:** Splunk Technical Champion, Architect, Operations Manager, Data Scientist/Analyst | **Track:** Splunk for Operational Intelligence | **Session Focus:** Business Analytics | **Other Topics:** Customer Success Story, customVisualizations

Speakers
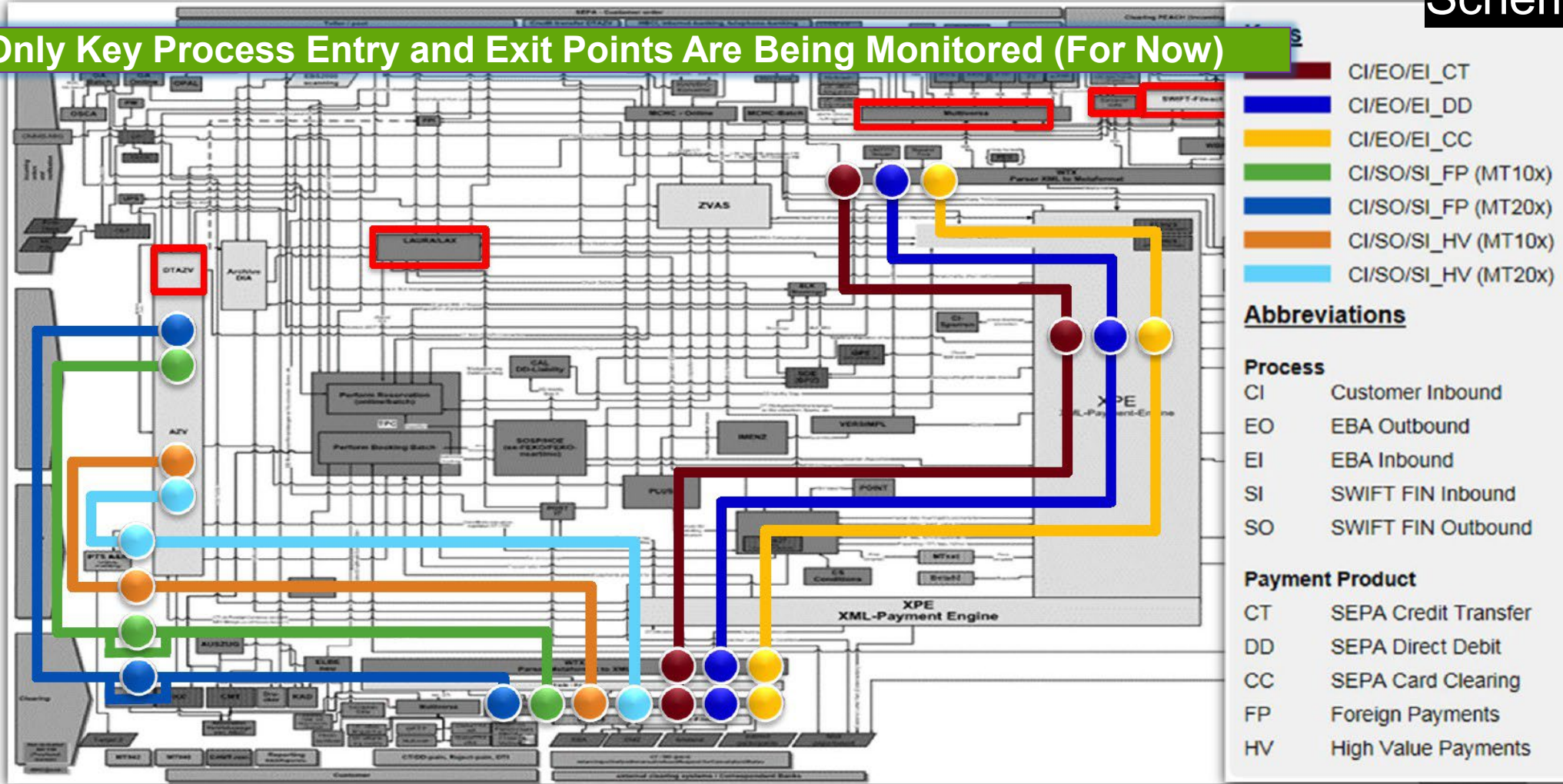**Markus Sprunck**, Senior IT Architect, UniCredit Business Integrated Solutions S.C.p.A.

Layer

Target Group

Aggregation & Integration

Business Process

It **checks performance** and **availability of end to-end process** leveraging also on functional monitoring results/application.

Function

It **checks performance and availability** of application functionality e.g. by simulation end-user experience, interfaces, queues etc. — legal constraints to be considered.

Technology

It **manages and monitors base infrastructure** in terms of **resources utilization** (memory, CPU, file systems, swap, network, disk space, throughput...) and **main subsystems activity** (processes, services...)

Horizontal Integration

Vertical Integration

• Process

• Application

• Components on Mainframe/Open (JCL, DB, Server...)

Server

Data Base

Sto-rage

etc..

• Business- / Process-Owner
• IT Application Manager

• IT Application Manager
• Application Owner

• Application Owner
• Operating / IT Provider

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Payments: Business Process Monitoring

UniCredit

Only Key Process Entry and Exit Points Are Being Monitored (For Now)

Keys

■	CI/EO/EI_CT
■	CI/EO/EI_DD
■	CI/EO/EI_CC
■	CI/SO/SI_FP (MT10x)
■	CI/SO/SI_FP (MT20x)
■	CI/SO/SI_HV (MT10x)
■	CI/SO/SI_HV (MT20x)

Abbreviations

Process

CI	Customer Inbound
EO	EBA Outbound
EI	EBA Inbound
SI	SWIFT FIN Inbound
SO	SWIFT FIN Outbound

Payment Product

CT	SEPA Credit Transfer
DD	SEPA Direct Debit
CC	SEPA Card Clearing
FP	Foreign Payments
HV	High Value Payments

☐ Selected delivery systems, i.e. Multiversa, Swift-Fileact-Bank, European-Gate, DTAZV, LAURA

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Payments: Business Process Monitoring

The resulting glass tables capture key payment process points.

Any gateway can be clicked to drill down into the underlying process health and measures.
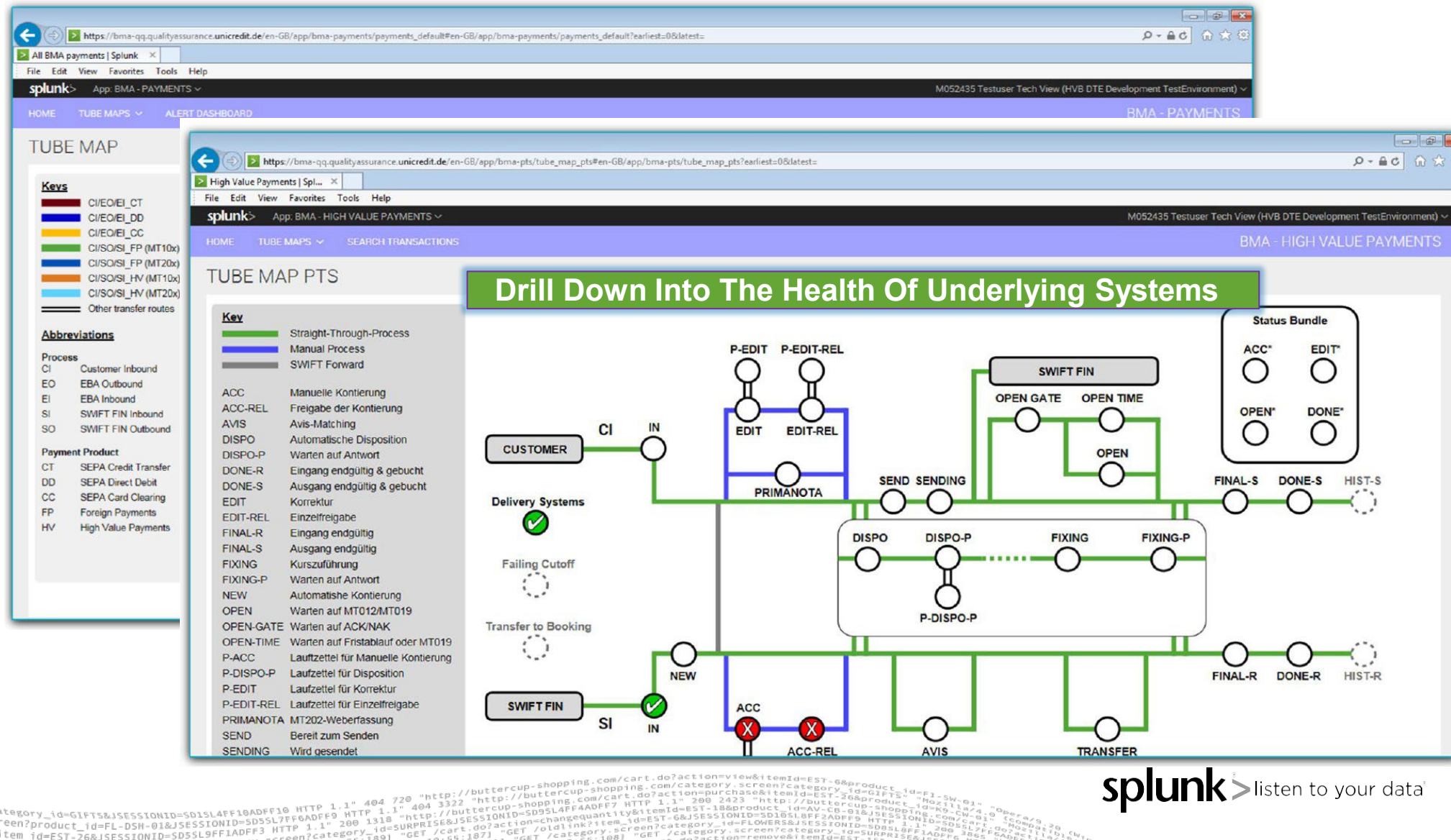
Regtech: Detect Anomalies For Non-Compliance

Global Swiss Investment Bank

A Global Swiss investment bank prototyped a solution to address MiFID II's Regulatory Technical Standards (RTS) in days instead of weeks. It correlates clock data from application servers with trade execution data.

MiFID II: The clock is ticking for Financial Services

https://www.splunk.com/blog/2017/08/01/mifid-ii-the-clock-is-ticking-for-financial-services.html
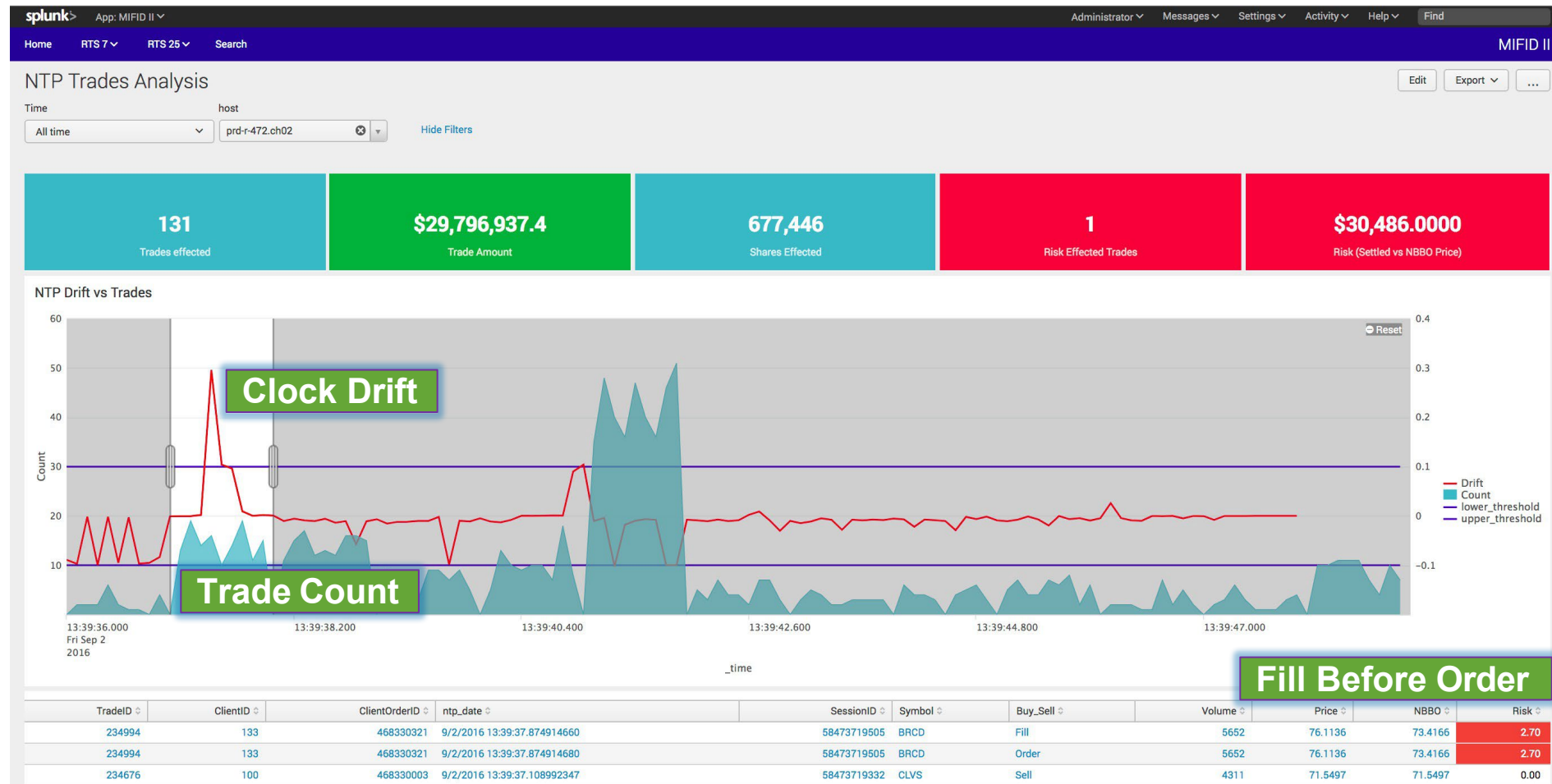
European Insurer

Insuretech : Monitoring Business Activities Generated By Partners With Disparate Systems

Real time monitoring of the business impact and SLA compliance of partner business transactions generated by disparate systems. Developed in a matter of days.

Aggregate Of All Partner
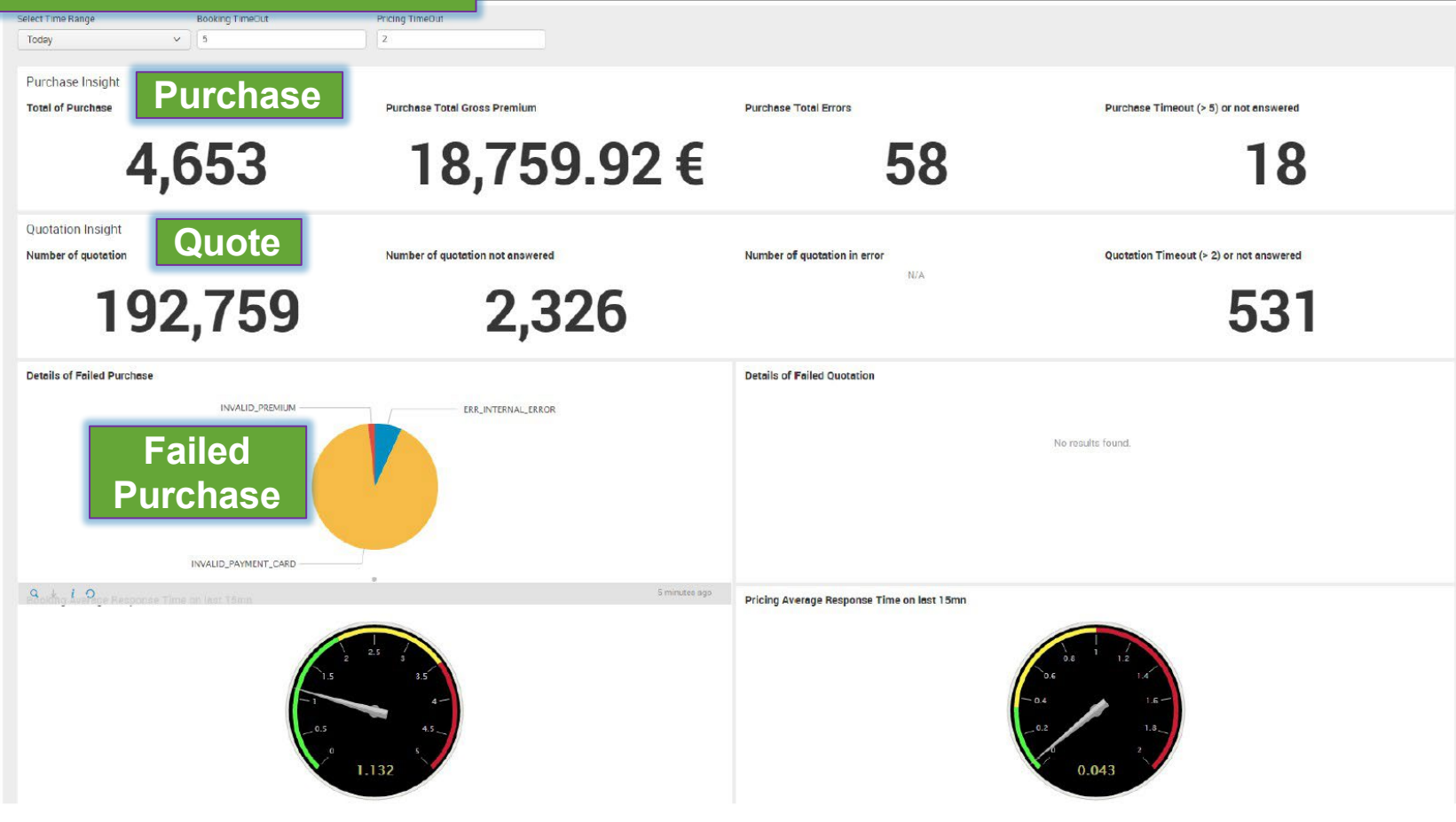
Select Time Range | Booking TimeOut | Pricing TimeOut
Today | 5 | 2

Purchase Insight

Purchase

Total of Purchase | Purchase Total Gross Premium | Purchase Total Errors | Purchase Timeout (> 5) or not answered

4,653 | 18,759.92 € | 58 | 18

Quotation Insight

Quote

Number of quotation | Number of quotation not answered | Number of quotation in error | Quotation Timeout (> 2) or answered

192,759 | 2,326 | N/A | 531

Details of Failed Purchase

Failed Purchase

INVALID_PREMIUM | ERR_INTERNAL_ERROR

INVALID_PAYMENT_CARD

Details of Failed Quotation

No results found.

Booking Average Response Time on last 15mn | 5 minutes ago

Pricing Average Response Time on last 15mn

1.132

0.043

Monitor Your Business Transactions with Splunk to Gain Real-Time Insights Into Your Business Performance

Thursday, September 29, 2016 | 12:25 PM-1:10 PM

INTERMEDIATE | **Industries:** Financial Services, Online Services, Technology, Communications, Retail, Healthcare | **Products:** Splunk Enterprise | **Role:** Architect, Splunk Technical Champion, Business Manager | **Track:** Splunk for Operational Intelligence | **Session Focus:** Business Analytics | **Other Topics:** Getting Data In, Thought Leadership

Speakers
Stephane Lapie, Sales Engineer, Splunk
Romain Testu, Senior Presales Consultant, Splunk

Recording | Slides

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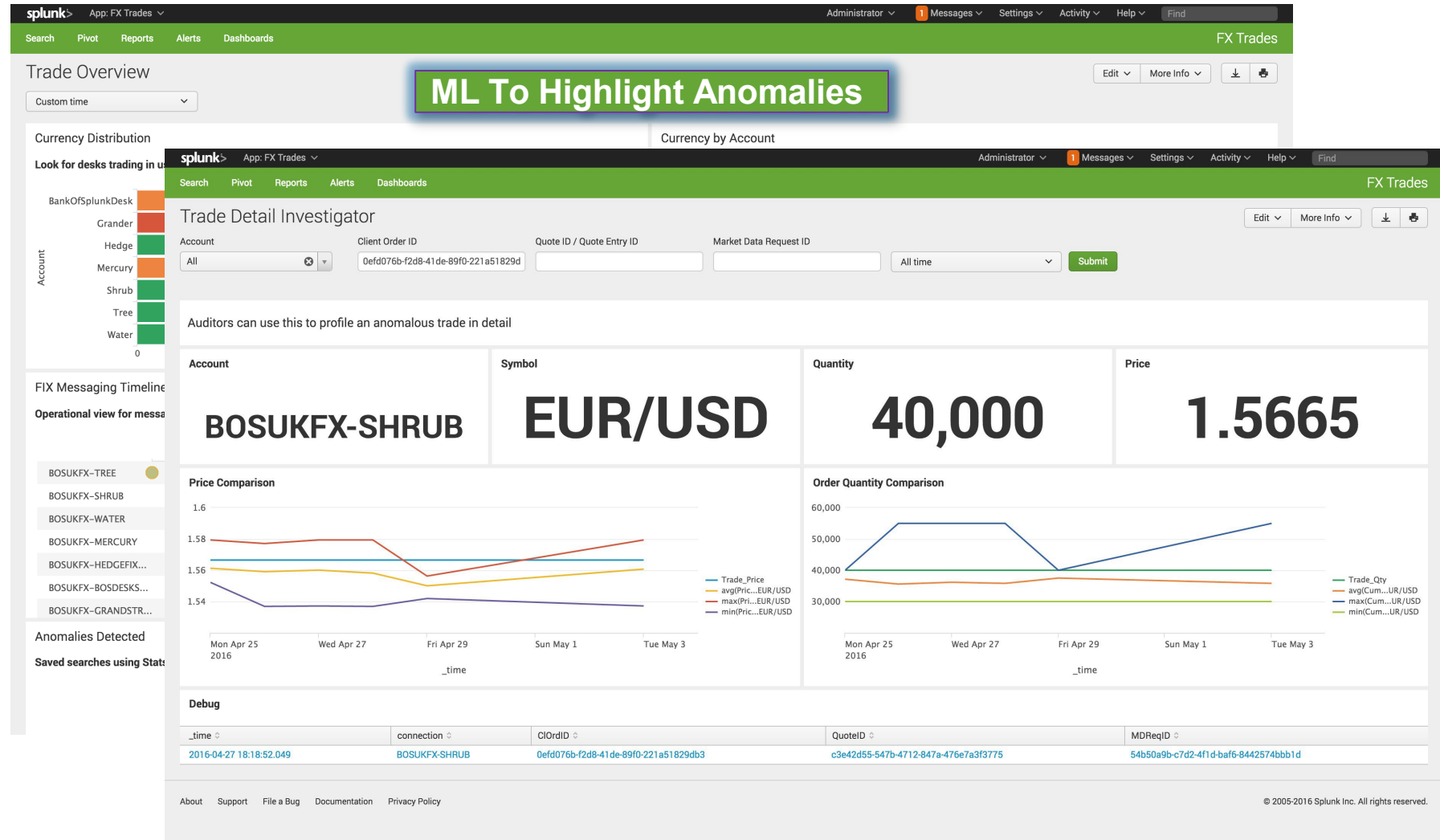
Marketing : Offer Monitoring

Offer and program popularity in the market through recent or even real-time analysis. This helps illustrate return on investment (ROI) for specific marketing campaigns.

Leveraging Splunk Analytics for Business Intelligence and DevOps: API Activity and Performance

Wednesday, September 28, 2016 | 3:30 PM-4:15 PM

BEGINNER | Industries: Financial Services | Products: Splunk Enterprise | Role: Architect, Business Manager, Splunk Technical Champion | Track: Splunk for Operational Intelligence | Session Focus: Business Analytics | Other Topics: Customer Success Story, ODBC, Getting Data In, customVisualizations

Speakers
Tim Watkins, Senior Consultant, Platform Architecture and Support, MasterCard

index="webindex" sourcetype="apache:access" priceless.com offerId earliest=-30m| stats count by offerId | sort limit=10 -count
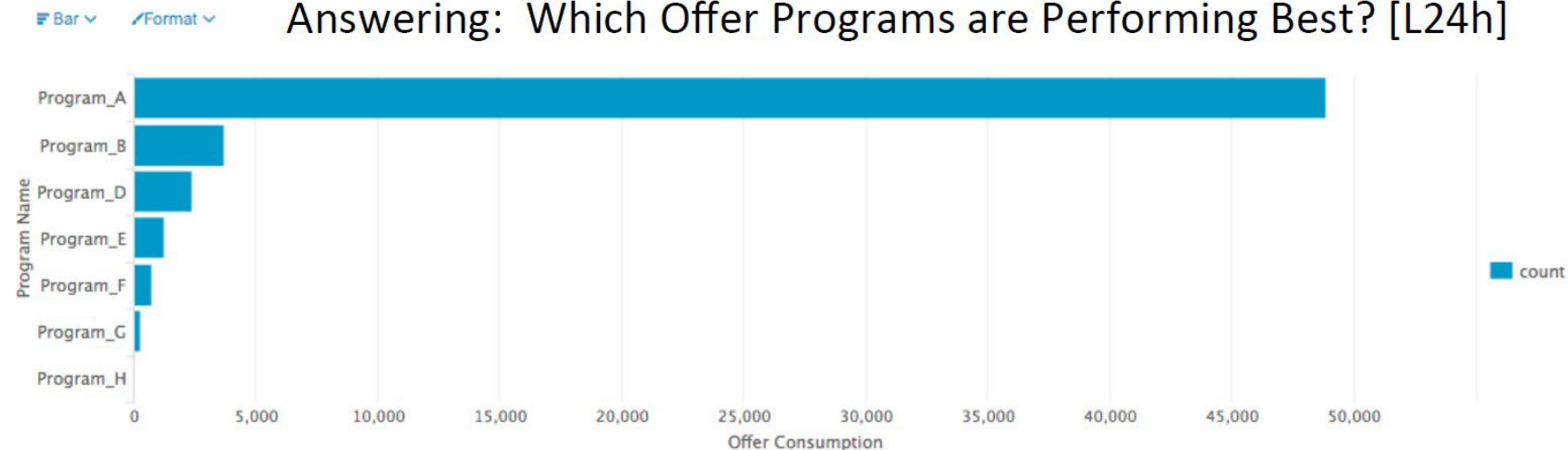
Top_10_Offers

Answering: Which Offer is Viewed Most? [Past 30 Minutes]

Live_Event_Offer_302
Vacation_offer_1632
Vacation_Offer_1197

index="offersPlatform" service="OfferDisplayService" earliest=-24h | stats count by program | sort limit=10 -count

| Events | Patterns | Statistics (7) | Visualization |

Bar ∨   Format ∨

Answering: Which Offer Programs are Performing Best? [L24h]

Program_A
Program_B
Program_D
Program_E
Program_F
Program_G
Program_H

Program Name

count

0   5,000   10,000   15,000   20,000   25,000   30,000   35,000   40,000   45,000   50,000

Offer Consumption

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Large US Credit Union

Operations : Call Center Monitoring

These dashboards are optimized for "one click" access to three tiers of information;

- The top level KPI color coded for severity
- The recent trend of that KPI
- The specific metrics that provide context around the value of that KPI.

Clicking on any top tier KPI refreshes the sub panels without refreshing the page.
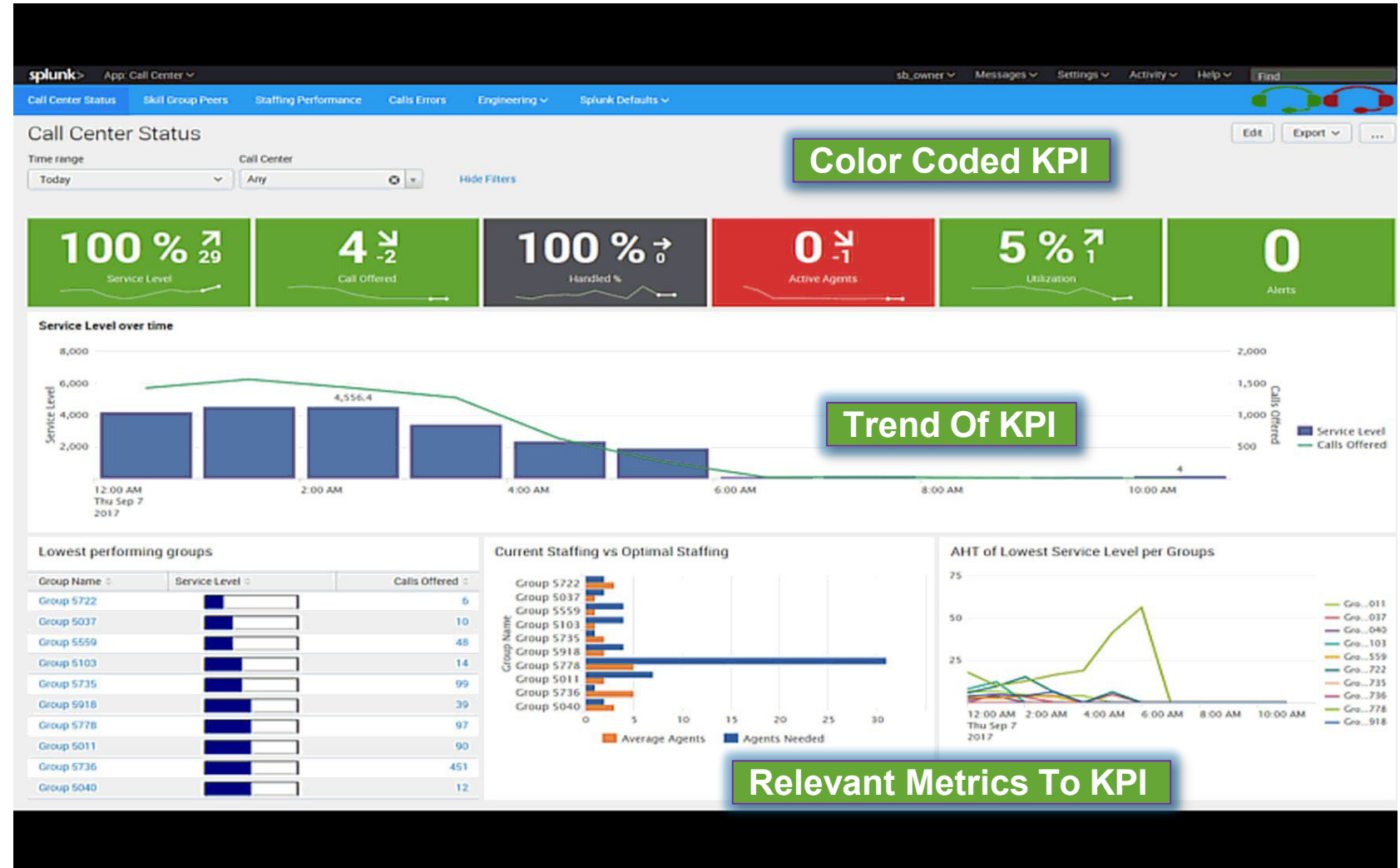
Summary

- The ability to analyze real time operations utilizing machine data opens a whole new set of innovation possibilities – Experiment and Fail Early
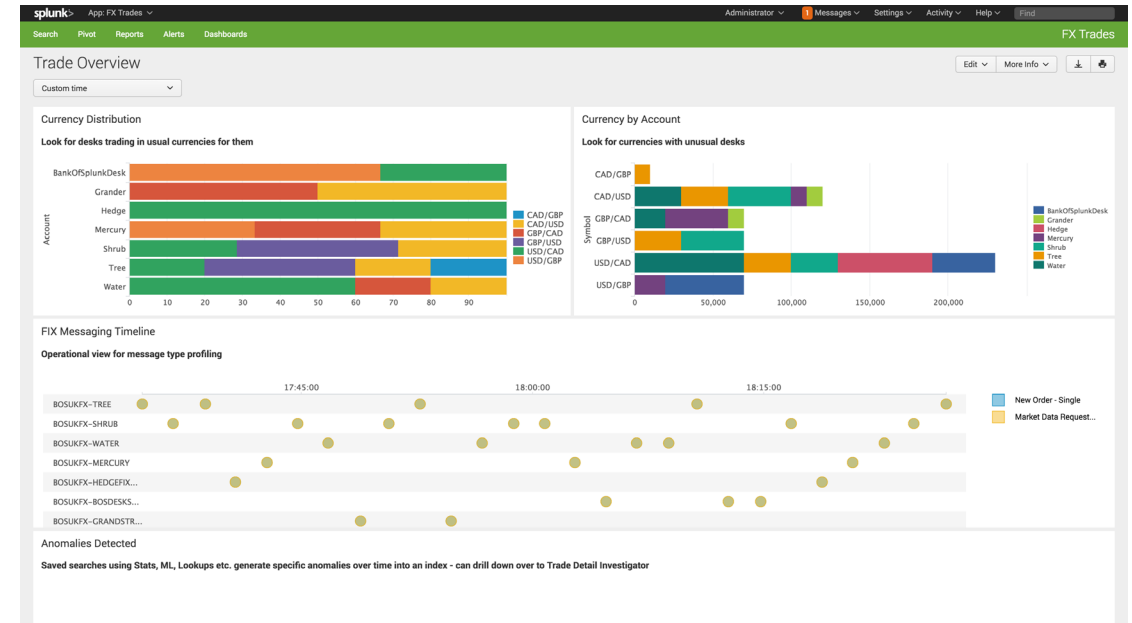
Summary

- The ability to analyze real time operations utilizing machine data opens a whole new set of innovation possibilities – Experiment and Fail Early

- Innovation requires change, and the impact of change on the organization can't be ignored

20%   **Design** **(promotes change)**
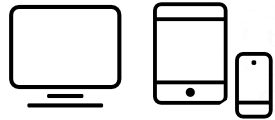
50%   **Default** **(accepts status quo)**

30%   **Defiance** **(resists change)**

Source: Karl G. Shoemer, MS

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Continuous Data Ingest at Scale

Industrial Assets

Consumer and Mobile Devices

OT

IT

Industrial Data
SCADA, AMI, Meter Reads

Native Inputs
TCP, UDP, Logs, Scripts, Wire, Mobile

Modular Inputs
MQTT, AMQP, COAP, REST, JMS

HTTP Event Collector
Token Authenticated Events

Technology Partnerships
Kepware, AWS IoT, Cisco, Palo Alto

Real Time

splunk>enterprise   splunk>cloud

Engineers   Data Analysts   Security Analysts   Business Users

Search   Alert   Visualize   Predict   Develop

External Lookups/Enrichment

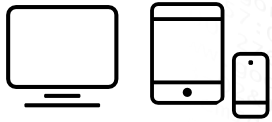Asset Info   Maintenance Info   Data Stores

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Sense and Respond

Every Search Can Use Machine Learning

Industrial Assets

Consumer and Mobile Devices

OT

IT

Real Time

splunk>

Search

Alert

Flash lights

Email — Send an email

Tickets — File a ticket
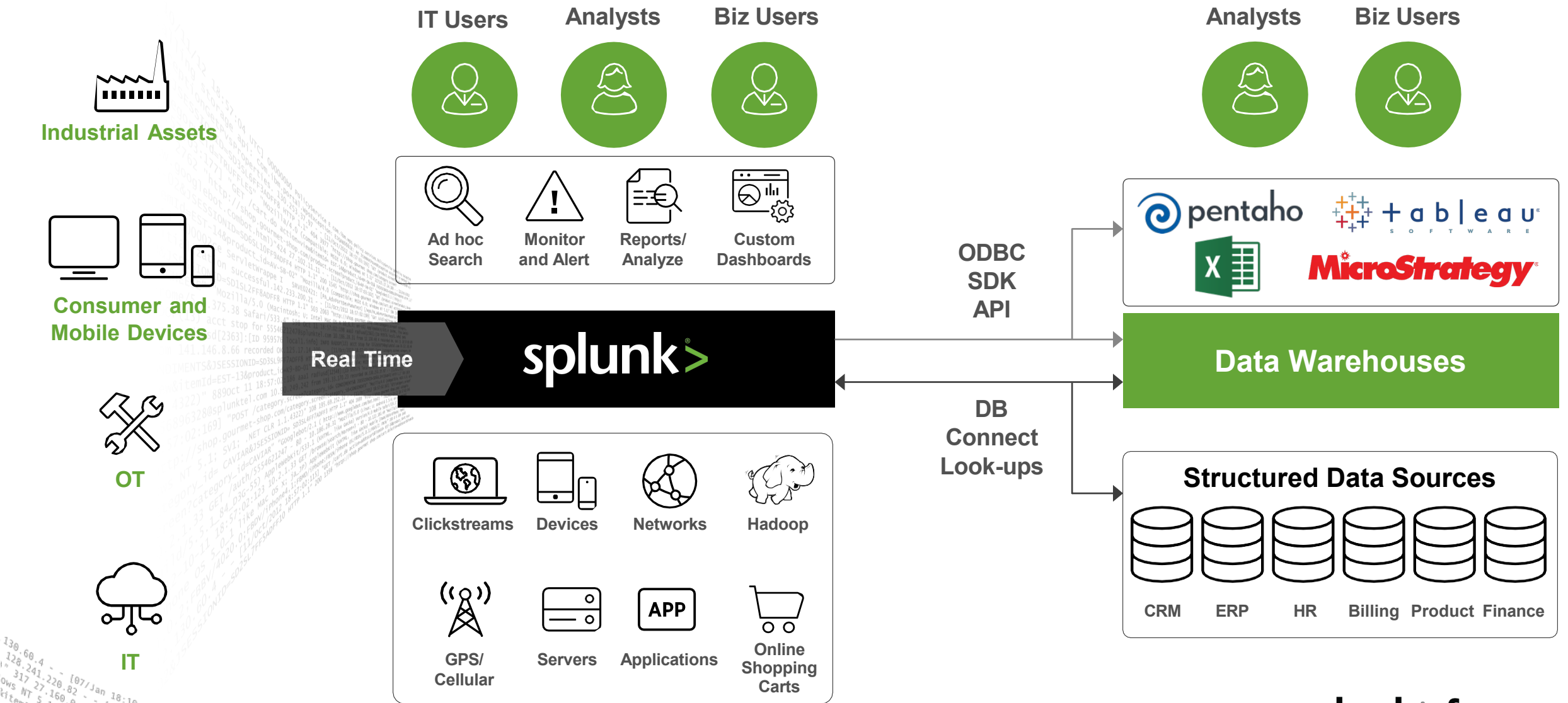
Third-Party Applications — Trigger process flow
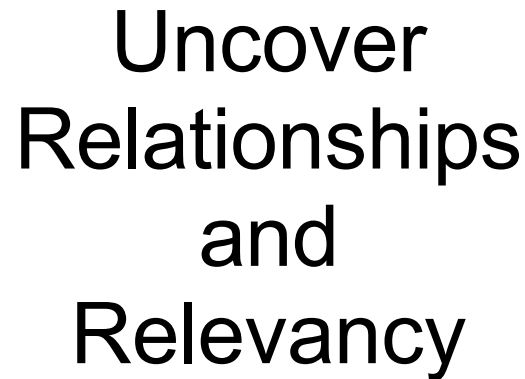
Smartphones and Devices — Send a text

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Splunk: Data Fabric

Partner Solutions: Transaction Analysis

Investigate and *Analyze* Transactional Behavior.

Qualitative
Rule Engine

Identify
Transaction
Paths

Uncover
Relationships
and
Relevancy

Part of a
Solution Suite

SCIANTA ANALYTICS
DEEP INSIGHT™
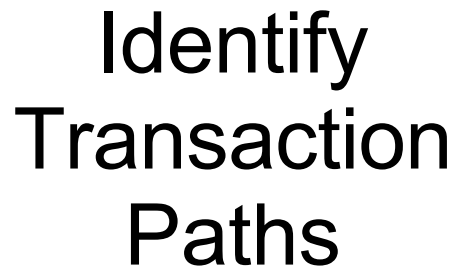
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SEPTEMBER 13, 2017 | FINANCIAL SERVICES

Closing Remarks

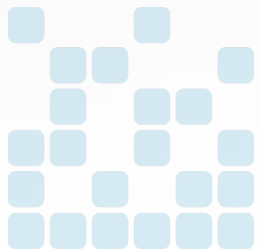Andrew Stein | Data Scientist & Business Analytics Practice, Splunk

Why Splunk?

FAST TIME-TO-VALUE

ANY DATA, ANY SOURCE, ASK ANY QUESTION

VISIBILITY ACROSS STACK, NOT JUST SILOS
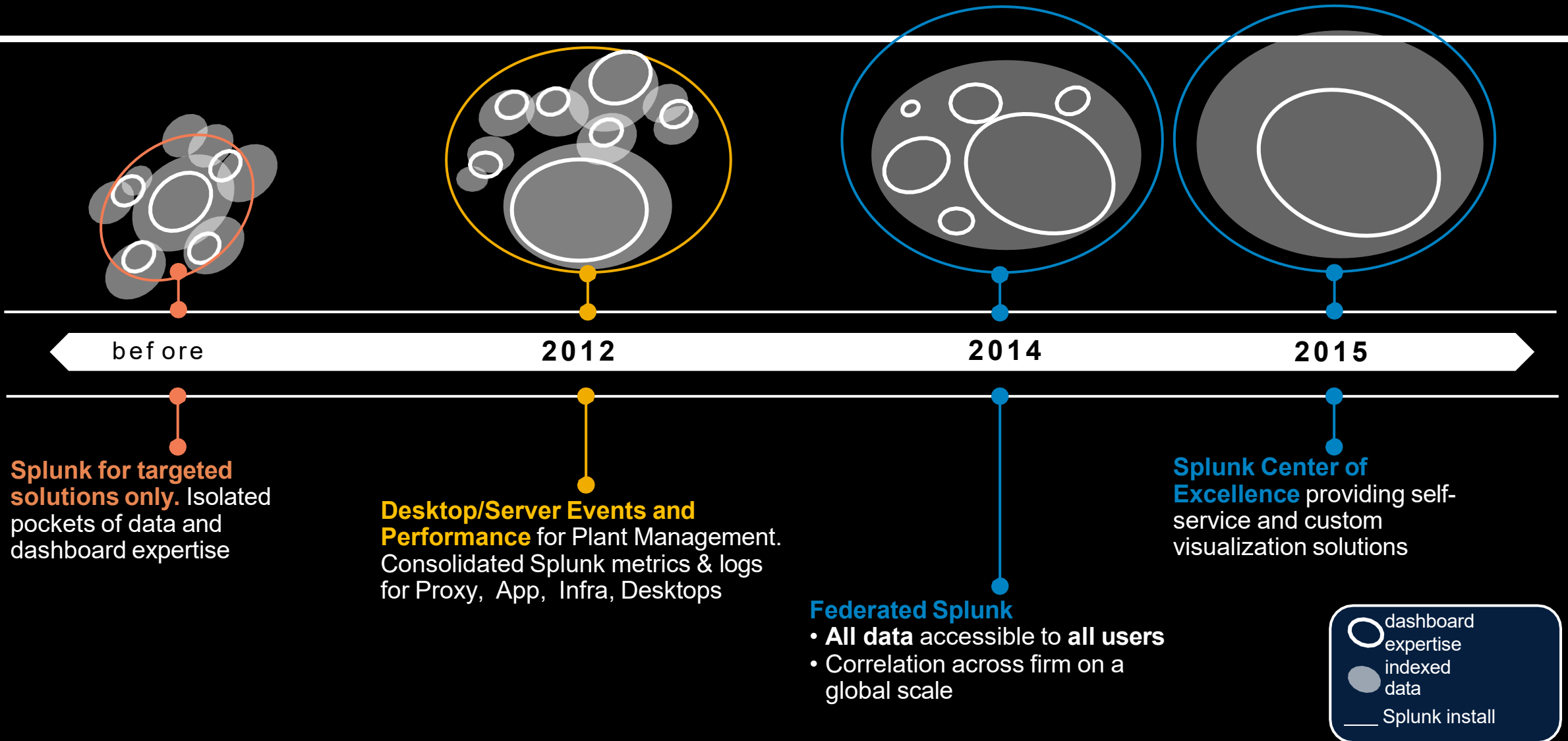
ONE PLATFORM, MULTIPLE USE CASES

CLOUD, ON-PREMISE & HYBRID DEPLOYMENT

splunk>enterprise   splunk>cloud™

splunk>

Evolution of Splunk at a Major Financial Institution

before

2012

2014

2015

Splunk for targeted solutions only. Isolated pockets of data and dashboard expertise

Desktop/Server Events and Performance for Plant Management. Consolidated Splunk metrics & logs for Proxy, App, Infra, Desktops

Federated Splunk
- **All data** accessible to **all users**
- Correlation across firm on a global scale

Splunk Center of Excellence providing self-service and custom visualization solutions

dashboard expertise
indexed data
Splunk install

108

Monitoring can be divided into three layers

Layer		Target Group
Business Process	It **checks performance** and **availability of end to-end process** leveraging also on functional monitoring results/application.	■ Process	■ Business- / Process-Owner ■ IT Application Manager
Function	It **checks performance and availability** of application functionality e.g. by simulation end-user experience, interfaces, queues etc. – legal constraints to be considered.	■ Application	■ IT Application Manager ■ Application Owner
Technology	It **manages and monitors base infrastructure** in terms of **resources utilization** (memory, CPU, file systems, swap, network, disk space, throughput…) and **main subsystems activity** (processes, services…)	■ Components on Mainframe/Open (JCL, DB, Server…) Server / Data Base / Sto-rage / etc..	■ Application Owner ■ Operating/ Provider

Aggregation & Integration

UniCredit
Business Integrated Solutions

Ally's Splunk Journey