



# Idea to Reality: Transforming Business Activity Monitoring with Splunk

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**Splunk Conference**

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# Idea to Reality: Transforming Business Activity Monitoring with Splunk

- 01.
  - 02.
  - 03.
  - 04.
  - 05.

# Business Case



# Challenge



## Risk/Implication



## Ask

# Value of End-to-End Business Monitoring



Operational  
Intelligence & Insights



Incident  
Response



Customer  
Engagement

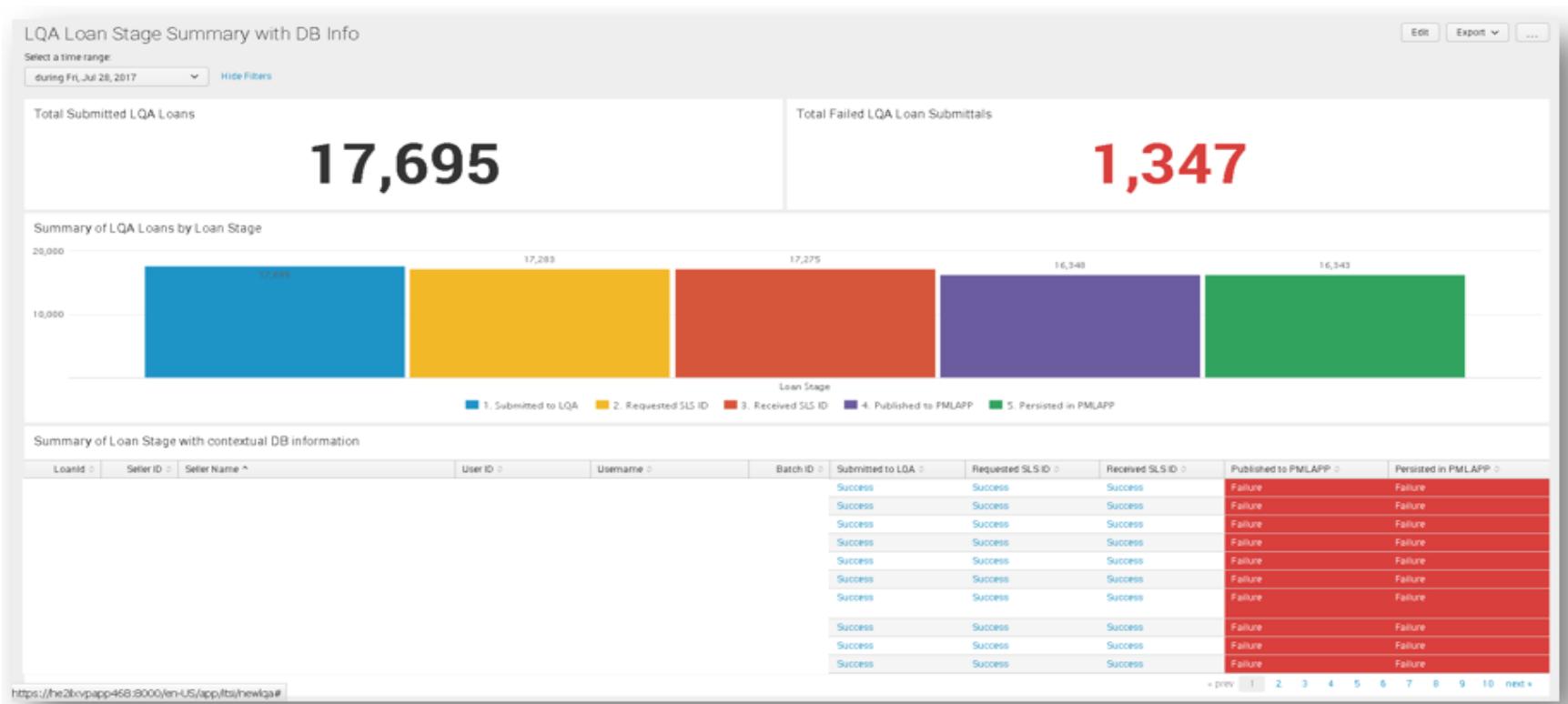
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Who benefits...

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**Key Takeaway:** Develop a Business Case to Clearly and Concisely Articulate the Problem, Value, and Ask

# Early Transaction Monitoring Pilot

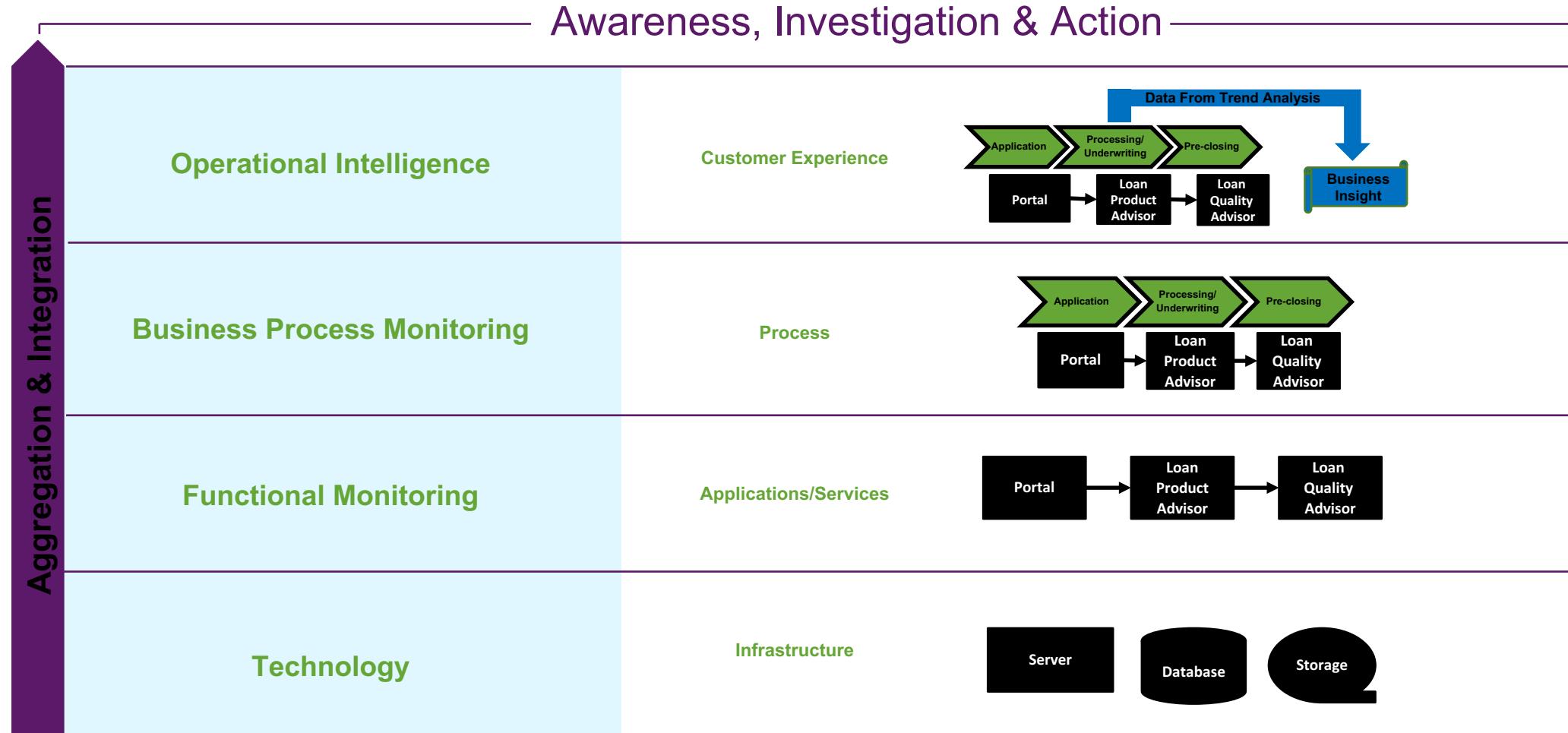


# 100 Day Plan & Incremental Success

	30 Days October 2017	60 Days November 2017	100 Days December 2017	Beyond
Tasks	<p><b>Release 1 Dashboard:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p><b>Strategic Planning:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	<p><b>Release 1 Dashboard:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p><b>Strategic Planning:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	<p><b>Release 1 Dashboard:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul> <p><b>Strategic Planning:</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	<p><b>Release 2 Dashboard:</b></p> <ul style="list-style-type: none"> <li>•</li> </ul> <p><b>Strategic Planning:</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
Deliverables	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	

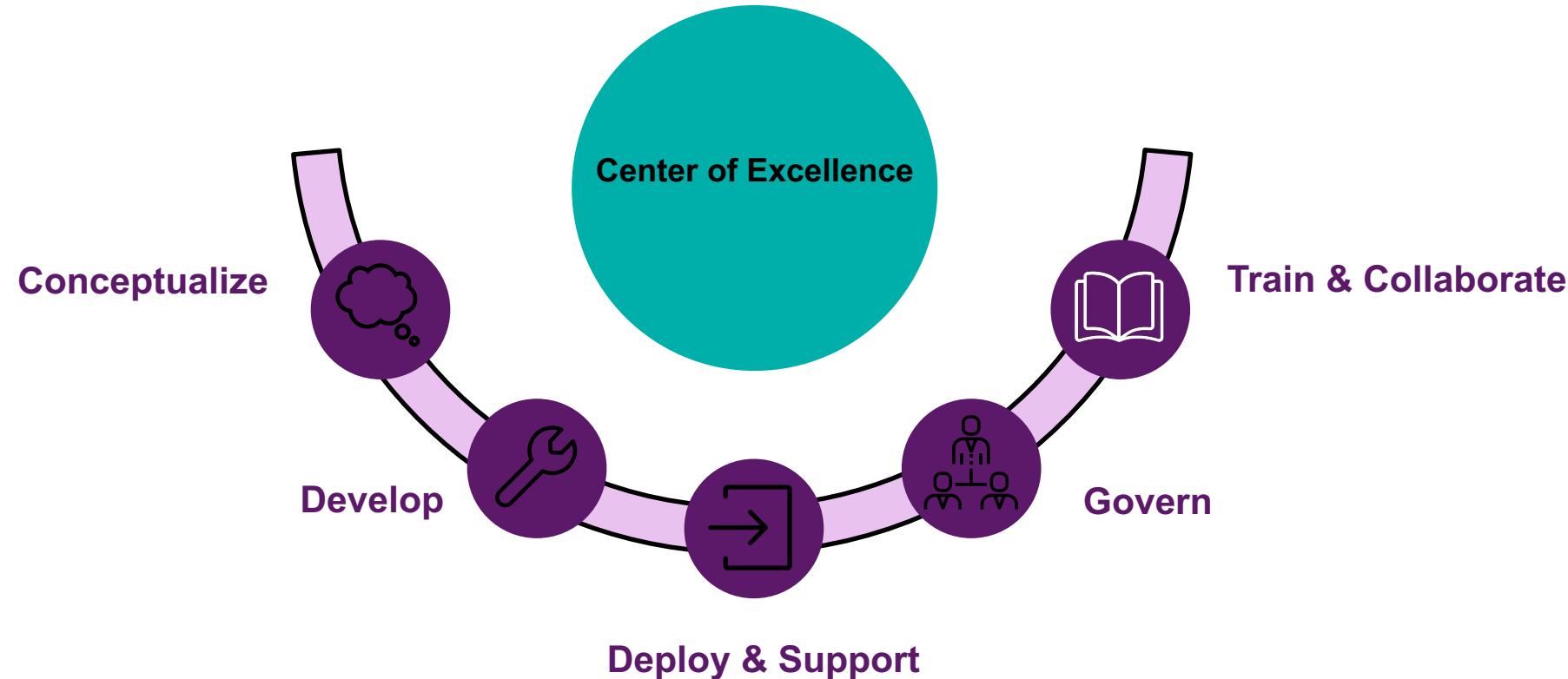
**Key Takeaway:** Develop a Plan to Show Early Success

# Strategy for E2E Operational Monitoring



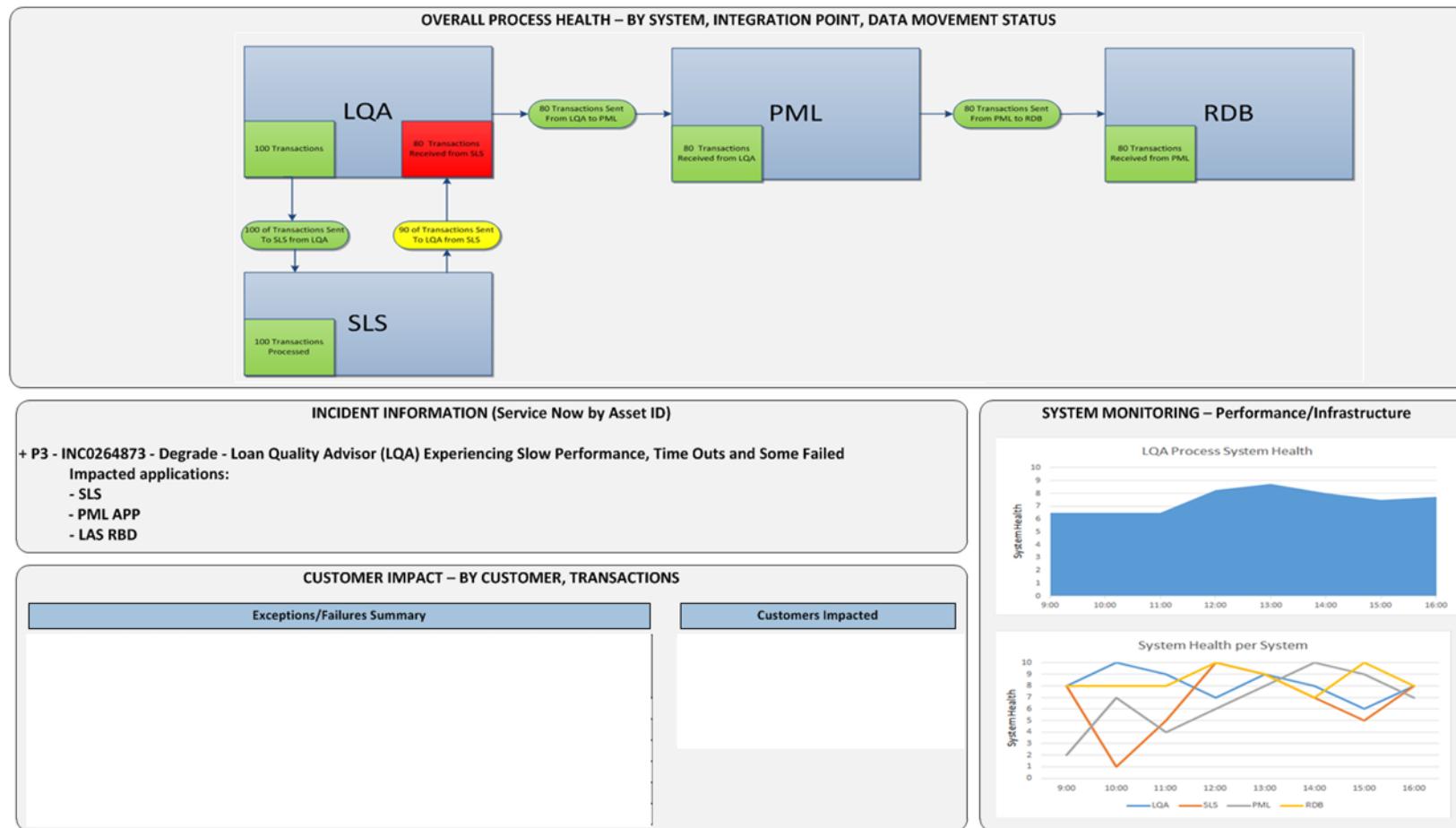
**Key Takeaway:** Develop the Implementation Strategy Including Stakeholders

# Business Monitoring COE Framework



# Concept & Wireframe: Holistic Business Operations Dashboard

## SUMMARY DASHBOARD - WIREFRAME



**Key Takeaway:** Visualize your End State, Focus on the User

# Execution: Business Operations Dashboard

LQA Business Operations

Time Range: Custom time Hide Filters

**Freddie Mac**

**Release 1 Dashboard**

**LQA Failure Summary Table**

Stage	Failures
LQA to SLS Failures	9
SLS to LQA Failures	0
Published PML Failures	0
Persist PML Failures	0
Total LQA Process Failures	9

**LQA - Application Health Score**: 96<sup>2</sup>

**SLS - Service Health Score**: 93<sup>7</sup>

**PML - Application Health Score**: 93<sup>7</sup>

**RDB - Database Health Score**: 100<sup>0</sup>

**Exception/Failures Details**

Filter by Stage: All, Hide Synthetic Transactions: Yes (checked), No

Application	Loan Id	Seller Loan Id	Seller ID	SLS ID	Seller Name	Exception Age (mins)	Note Amount	Note Rate	Loan Amortization Type	Appraisal ID	Loan Underwriting Case ID	MERS MIN ID	Credit Repository Source Type	Loan Underwriting Type
1 LQA to SLS	126					230								
2 LQA to SLS	126					114								
3 LQA to SLS	126					111								
4 LQA to SLS	126					110								
5 LQA to SLS	126					110								

**Customers Impacted**

Seller ID	Seller Name	# of Failed Transactions
15i		6
15:		2
17:		1

**System Health - Application Monitoring**

Time: 6:00 PM Sun Mar 18, 2018 to 12:00 AM Mon Mar 19, 2018

Legend: LOA, PMLAPP, RDB, SLS, warning

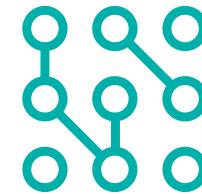
# The Implementation



Critical programs/  
Business processes



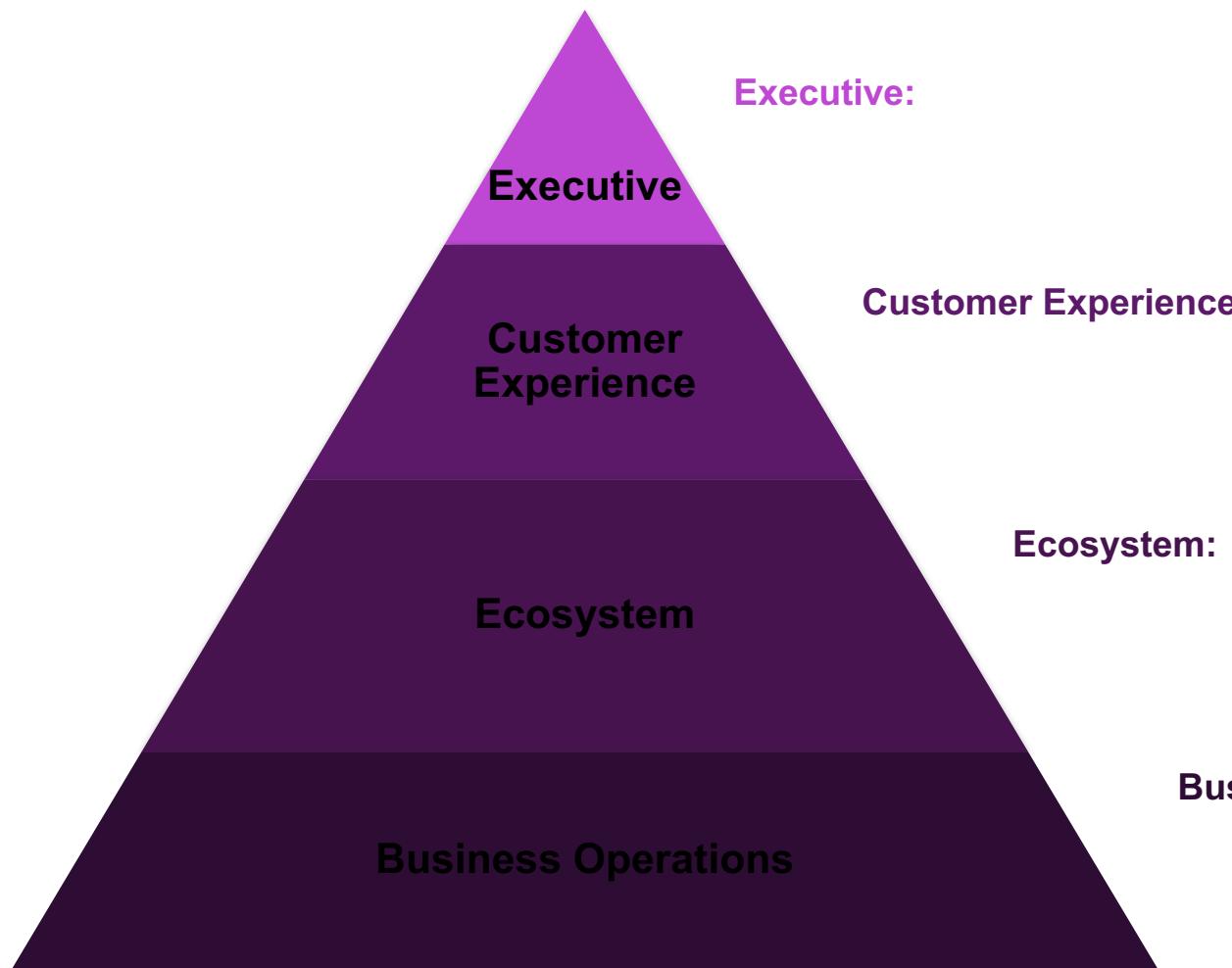
Applications/services that  
support the business processes



How to monitor the  
applications/services

**Key Takeaway:** Define a Reasonable Scope Based on Business Needs

# Dashboards by Stakeholder Type



**Key Takeaway:** Develop Dashboards / Visualizations Based Off the End User Needs

# Production Dashboards

LAS Executive Dashboard   Search   Datasets   Reports   Alerts   Dashboards

LAS Executive Dashboard

## LAS Executive Dashboard

Process Health

**Loan Quality Advisor**

Customer Experience

Transaction Volume

Overall Health

**Loan Product Advisor**

Customer Experience

Transaction Volume

Overall Health

**Loan Collateral Advisor**

Customer Experience

Transaction Volume

Overall Health

**Loan Coverage Advisor**

Customer Experience

Transaction Volume

Overall Health

**Loan Selling Advisor**

Customer Experience

Transaction Volume

Overall Health

**Correspondent Assignment Center**

Customer Experience

Transaction Volume

Overall Health

**Loan Advisor Suite Portal**

Customer Experience

Transaction Volume

Overall Health

**Condo Project Advisor**

Customer Experience

Transaction Volume

Overall Health

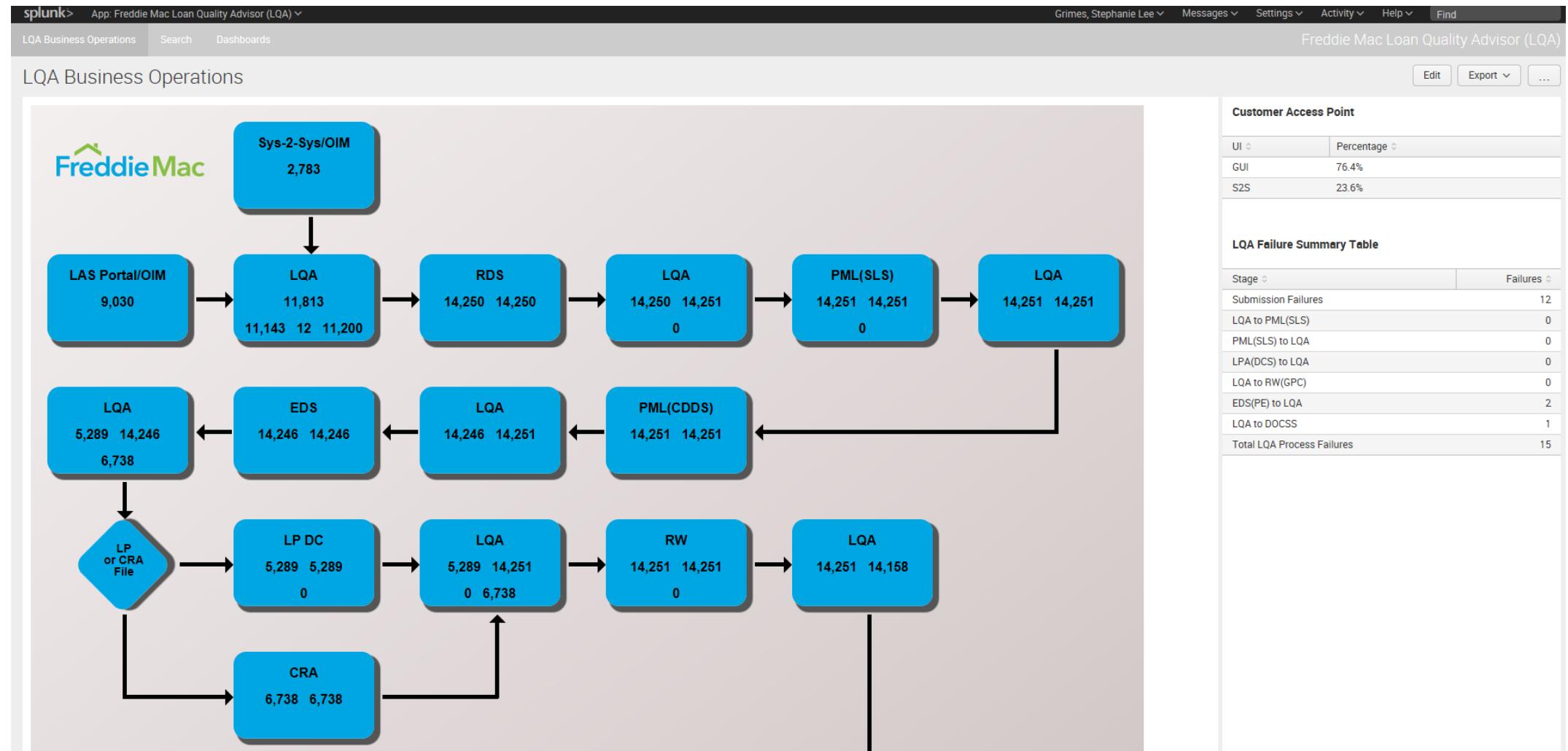
**Loan Closing Advisor**

Customer Experience

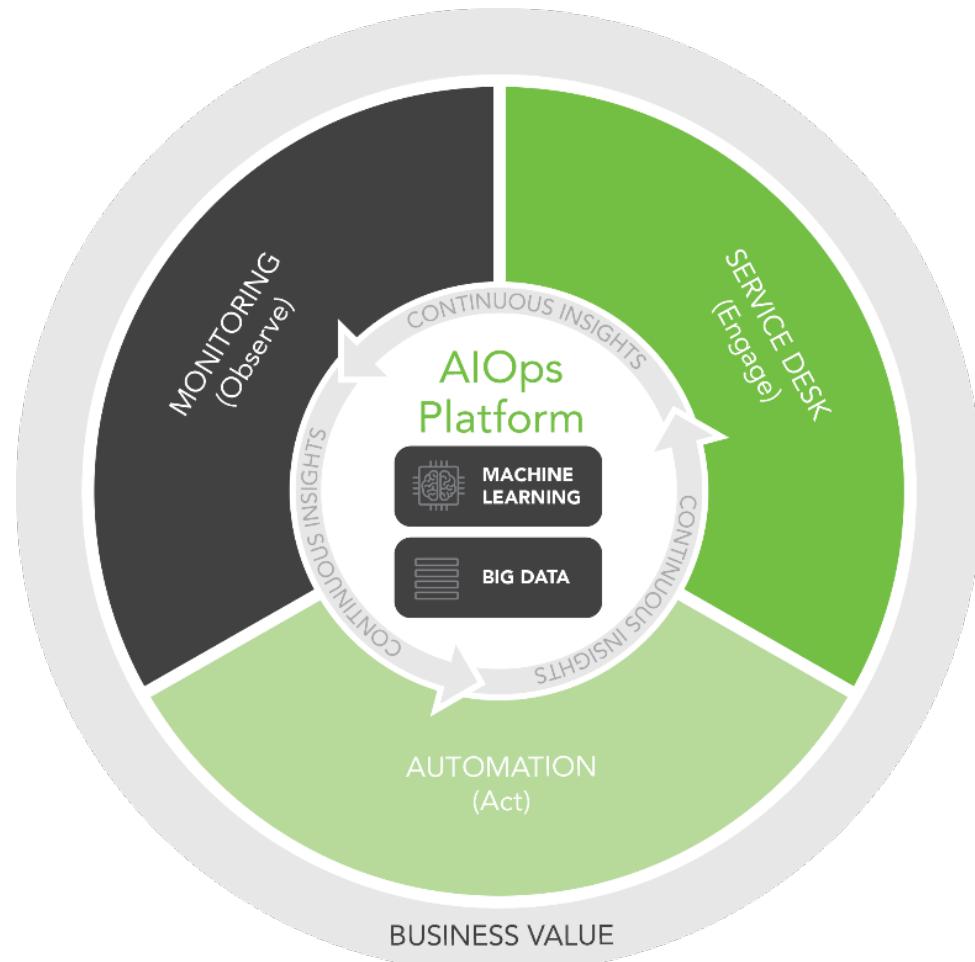
Transaction Volume

Overall Health

# Production Dashboards



# The Future: Moving to AI Operations



Sourced from Gartner, 2016

# Key Takeaways

- 
- ```
graph TD; 1((1)) --> 2((2)); 2 --> 3((3)); 3 --> 4((4)); 4 --> 5((5)); 5 --> 6((6));
```
- 1 Develop a Business Case to Clearly and Concisely Articulate the Problem, Value, and Ask
  - 2 Develop a Plan to Show Early Success
  - 3 Develop the Implementation Strategy Including Stakeholders
  - 4 Visualize your End State, Focus on the User
  - 5 Define a Reasonable Scope Based on Business Needs
  - 6 Develop Dashboards / Visualizations Based Off the End User Needs

# Questions?



# Appendix

# Value of End-to-End Business Monitoring



## Operational Intelligence & Insights

Harness operational and business data to improve business outcomes

Reduce the number and severity of production incidents through proactive investments and early incident intervention

Enable informed decisions about investments



## Incident Response

Identify/detect early warning indicators

Reduce production incident resolution time

Target issue/incident location and deploy fewer individuals/teams to triage/resolve



## Customer Engagement

Proactively communicate to impacted customers

Executive level view of business performance (i.e. KPIs for customer impacts, KPIs for customer experience)

## Who benefits...

Enterprise Command Center

Incident Management

Business Operations

Customer Care

IT Operations

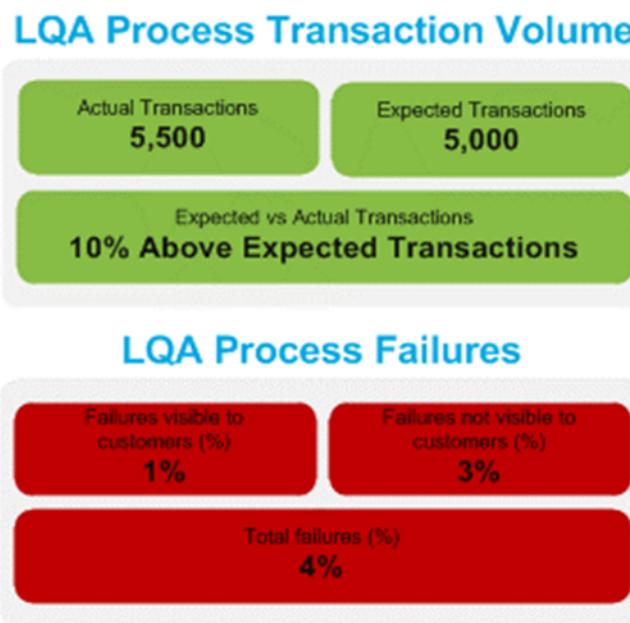
# Appendix- Wireframe: Executive Dashboard

## Loan Advisor Suite Executive Dashboard



# Appendix- Wireframe: Customer Experience Dashboard

## Loan Quality Advisor Customer Experience Dashboard - Wireframe



| Customer | Customer Tier | Customer Experience Score | Total Transactions | Total FRE Failures | Total FRE Failure % | Customer Driven Failure % | Customer Impacting Failures % | Avg. Response Time vs. Actual Response | Call Center Calls | Case Types | Speech Analytics |
|----------|---------------|---------------------------|--------------------|--------------------|---------------------|---------------------------|-------------------------------|----------------------------------------|-------------------|------------|------------------|
|          | Medium        | 40                        | 2,000              | 300                | 15%                 | 5%                        | 10%                           | 10% slower                             | 1                 | 1          | 10               |
|          | Small         | 55                        | 1,500              | 150                | 10%                 | 5%                        | 5%                            | 25% slower                             | 3                 | 0          | 7                |
|          | Large         | 80                        | 1,250              | 25                 | 0%                  | 0%                        | 0%                            | 30% slower                             | 12                | 1          | 7                |
|          | Large         | 93                        | 750                | 0                  | 0%                  | 0%                        | 0%                            | 30% faster                             | 0                 | 5          | 5                |

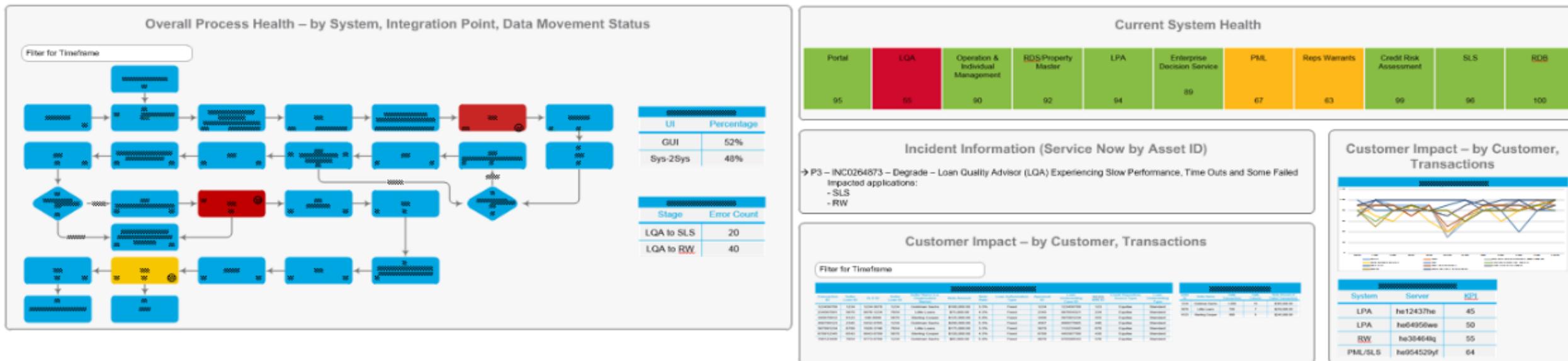
**Incident Information (Service Now by Asset ID)**

→ P3 – INC0264873 – Degrade – Loan Quality Advisor (LQA) Experiencing Slow Performance, Time Outs and Some Failed Impacted applications:  

- SLS
- RW

# Appendix- Wireframe: Business Operations

## Loan Quality Advisor Business Operations Summary Dashboard



# Appendix- Business Case

## Problem

- Freddie Mac does not have a robust tool to monitor business activity in an End-2-End fashion
- Due to the lack of an End-2-End business monitoring tool, Freddie Mac cannot:
  - Quickly triage and resolve production incidents using a targeted group of individuals
  - Easily link how an incident affects the business (e.g. customers, # of loans/securities, total monetary impact, etc.)
  - Proactively identify and make business investment decisions to avoid future incidents (i.e. infrastructure or software upgrades)
- Freddie Mac's current Splunk infrastructure is built only to cater to the needs of Information Security and is limited in supporting the broader Enterprise needs

## Ask

- Allow for enterprise enablement to meet 2018 business needs (e.g. LAS, Single Family Command Center, CSP, etc.)
- Establish a Center of Excellence to provide governance, best practices support, training and service provider to meet enterprise needs.

## Risks

- If Freddie Mac does not invest in a robust End-2-End monitoring tool and house / utilize it in a strategic way, as the IT ecosystem grows, resolving production incidents and knowing their impact will become more difficult
- Separate work streams assessing and implementing various solutions for business monitoring could delay execution and reduce efficiencies, versus a centralized, consolidated effort

## Benefits

- The benefits of bringing a robust End-2-End business monitoring tool to Freddie Mac are:
  - Provide an executive level view of business performance (i.e. KPIs for customer impacts, KPIs for customer experience)
  - Harnessing operational and business data in order to improve business outcomes
  - Both IT and Business Operations will be able to reduce resolution time, target issue/incident location and deploy fewer individuals to triage
  - Customer Care will be able to proactively communicate production incidents impacts to customers
  - Allows application business owner make informed decisions application investments
  - Proactive investments and early incident intervention will reduce the number and severity of production incidents

## Stake Holder Groups

| SF DG&M       | SF Platform Delivery     | Strategic Delivery | Incident Management | SF Operations (i.e. Servicing Operations and Loan Purchase Operations) |
|---------------|--------------------------|--------------------|---------------------|------------------------------------------------------------------------|
| Customer Care | SF Ops Change Management | Finance            | Architecture        | Top Initiatives (e.g. CSP, LAS, PE, IRC, etc.)                         |

# Application Production Incident Modeling

## DRAFT – LPA vs. LQA Production Incident Impact & Communication Modeling Exercise – July 2018

