Artificial Intelligence for IT Operations

Accenture and Vodafone Transforming IT Operations

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Our Speakers

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Our Objectives

Accenture and Vodafone UK partnered together in 2017 to stabilise Vodafone's Consumer Centric Stack (CCS) with below objectives:

Improve quality, Improve stability, lessen risk, increase predictability

Improve the perception of poor quality and inconsistent ways of working

Improve the predictability effectiveness of monitoring, support availability management and capacity planning

Remediate unacceptable levels of service availability

Create consistent reporting of service performance

Ability to react effectively and independently to major service events or crisis

Successful transfer back to Vodafone insource team and to enable them to run the service successfully

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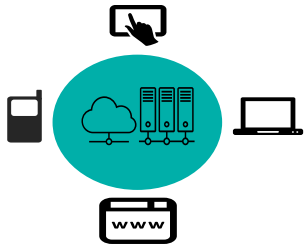
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IT Operations is important

Customer satisfaction is key to our business and we play an important role in it!

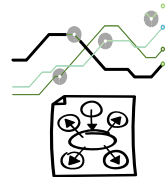**What do we get?**

Competition, customer demand & satisfaction

Complex Architecture

What do we manage?

Dealing with frequent change

Tangle of interdependencies

Provide 24X7 Support

What do we do?

Automate / DevOps

Alert / Monitoring

Gather data & analyse

Human judgment is key!

Automate core processes but needs to be triggered !

Automate alerting but still requires acknowledgement and action !

Data analytics generated but requires action/plan !

IT Operations is important

There are key goals which IT Operations needs to achieve….

Automating repetitive tasks , avoid human error

Increase employee satisfaction

Improve productivity

Reduce in processing cost

Machine Learning can ….

Enable analysis of information

Perform Logical inferences and conclusion

Perform actions

Ticket Analysis

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Vodafone Implementation of AI

Automated Weblogic Queue Throttling

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Problem Statement

Operations teams need to gather and analyse data to decide the best action required to meet SLA targets and KPI

Efficiency and speed of service restoration post planned and unplanned outages to ensure:

- Application uptime
- Customer experience
- Service fulfilment
- Operation resource utilization

2-3 changes per week

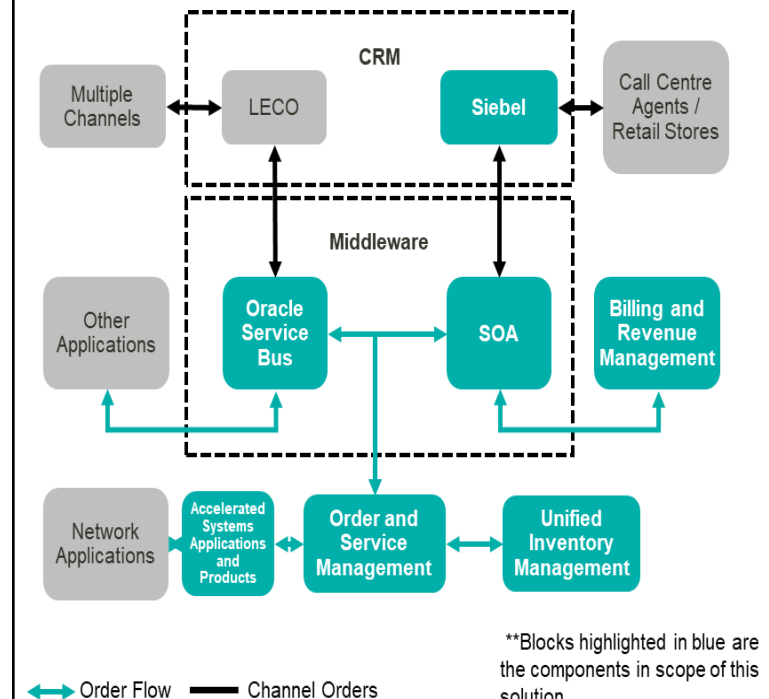- *Requires dedicated and coordinated efforts across multiple teams*

Complex architecture to meet business requirements

- *12 core applications & Complex integration to other 80*

Long and complex restoration process to:

- *Avoid dominos affect on applications*

Logical Architecture

**Blocks highlighted in blue are the components in scope of this solution

↔ Order Flow — Channel Orders

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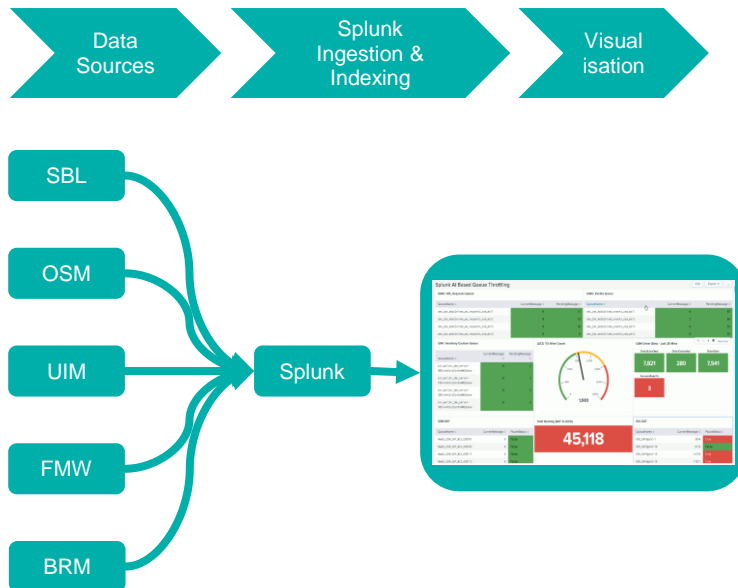
Service Restoration

Despite the best automation, monitoring and alerting tools , post deployment activities had to be coordinated across multiple teams safely to ensure no human error and post deployment incidents

KPIs to be constantly monitored across multiple applications

More than 12 queues across 5 applications 50k to 70k messages in each queue

3 to 4 times a week, minimizing outage to 4 to 5 hours. Mundane repetitive job

Change Coordinator or Incident Manager

Coordination of release of queues and request across multiple applications

Ensuring health of all the downstream and target applications is not impacted

Siebel

Accelerated Systems Applications and Products

Unified Inventory Management

Order and Service Management

Fusion Middleware

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Service Restoration (Solution)

Phase-1 : Dashboard

▸ Consolidated dashboard for real time KPI monitoring

Data Sources → Splunk Ingestion & Indexing → Visual isation

SBL, OSM, UIM, FMW, BRM → Splunk → [dashboard showing 45,118]

Phase-2 : Automate

▸ Threshold based throttling

Data Input → Splunk Data Ingest → [gear icon] → Backlog Cleared

Phase-3 : AI

▸ Intelligent decisions based on real time performance resulting in efficient queue throttling

Data Input → Splunk Data Ingest → [Monitor / Decision / Throttle cycle] → Backlog Cleared

Metrics
Application Updates
→ splunk> Data Ingestion →
Analysis & Indexing
Thresholds
→ splunk> Machine Learning →
Automated Actions *Throttling*
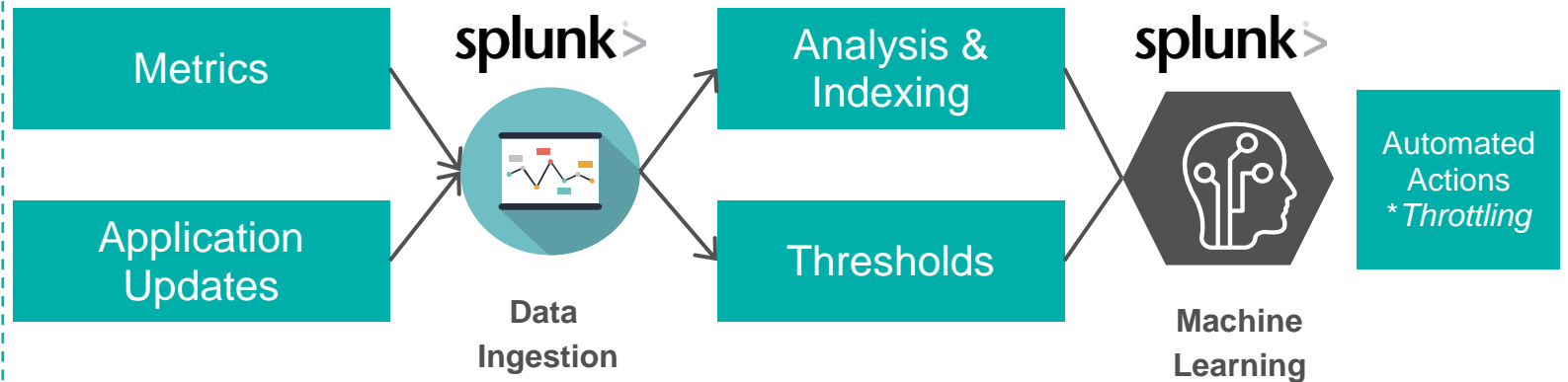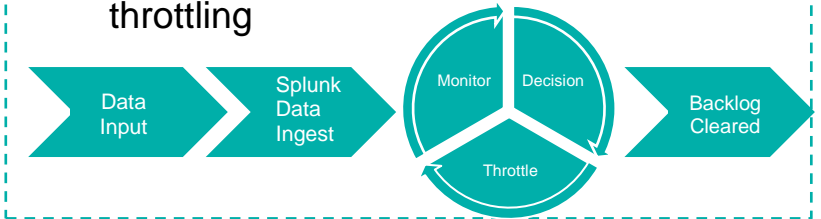
- **Data captured by custom scripts fed to Splunk via Universal forwarders**
- **Based on the indexed data, KPIs (queue counts, DB sessions, Order Completion rate, In Progress work orders etc) are monitored Real-Time by Splunk**
- **Alerts configured with Script alert action & Splunk is notified to start throttling i.e. pause & resume using AI**

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We applied Machine Learning to predict ticket priorities, categories, assignees and resolutions

Client IT Service Operations has been selected as an initial area of focus for gaining efficiencies and productivity from the Intelligent Analytics

To prove the added value of innovation and make it complimentary to traditional data mining – **Splunk and R Machine Learning was used on real Client data** to predict the following service parameters:

- **Ticket Priority**
- **Categorization**
- **Assignee**
- **Resolution Categories**

Client IT DATA

- Original data set: **50K** tickets
- ERP-filtered: 38K+ tickets

Model

9K+

Index

29K+

Training

70%

Test

30%

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Benefits realised
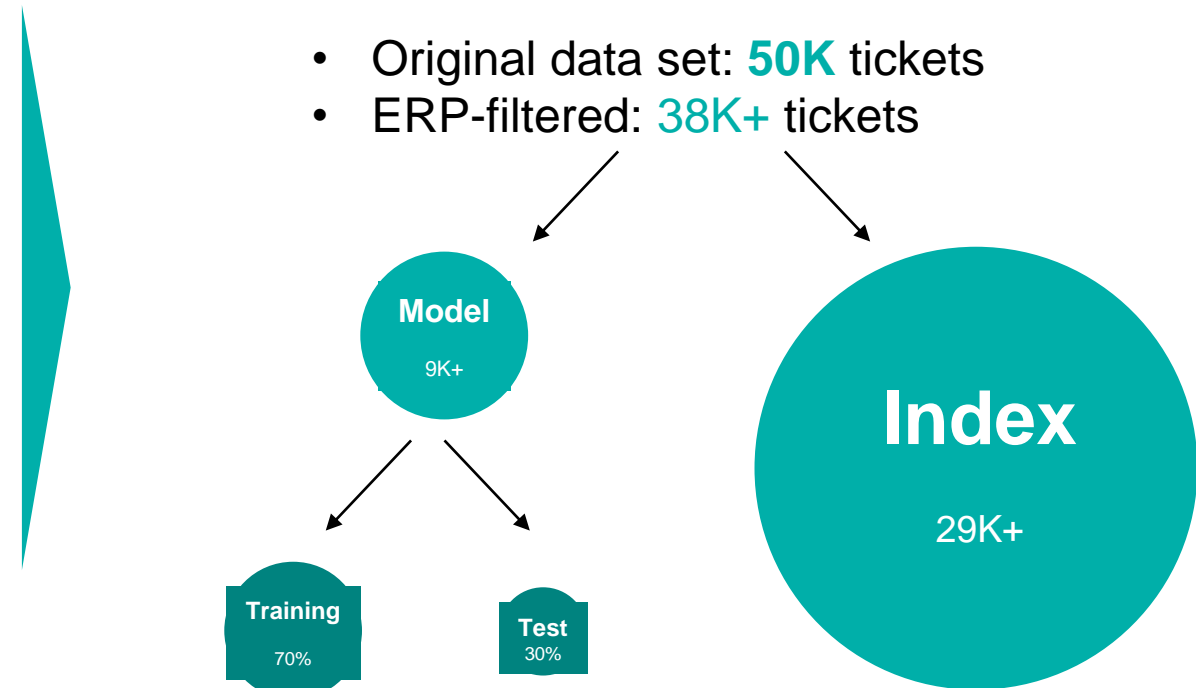
The implemented solution has delivered numerous benefits enlisted below

Cost Savings

- **Resource reduction**
- **Man Hours Savings / Year**
- **Up to 50% faster queue throttling**

Opportunities

Further Artificial Intelligence / ML within Operations space

AI & Machine Learning

- **Reduced SME dependency**

Customer Experience

- **Reduced issues and time to BAU, enhances Vodafone TNPS**

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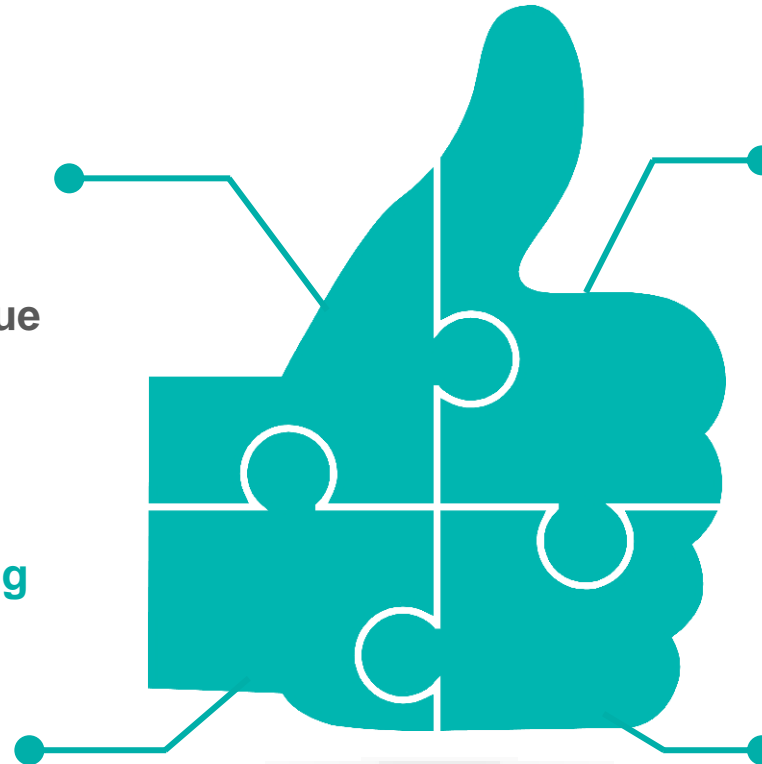
Key Takeaways

Machine learning enables comprehension and actions

1. Data and opportunities for AI are available, just need to know where to look for…

2. AI can make Operations a better place

3. Don't forget to stop by Accenture booth

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Thank You

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