Data-driven operations

Revolutionising service management and delivery

MOZAIC

The future of the Operating Model

> As a recognised leader in IT and Digital Operating model design and transformation, Mozaic has delivered wholescale change in over a hundred, large complex estates over the past 10 years – possibly more than any other single organisation during that period. Our team includes ex-CIOs and CTOs from across a broad range of industries, giving us a unique perspective on the past, and on the next phase of operating model change that will affect us all.

THE SERIES

This whitepaper is one of a series that looks at the future of the operating model, and details the specific areas of change that organisations will need to embark upon to transform to Enterprise Product and achieve excellence in technology delivery.

The papers in the series are:

- The future of the technology operating model
- Focusing on value
- The importance of culture in transformation
- Measure the things that really matter
- Aligning sourcing models to support Enterprise Product
- Value stream management - it's time to stop throttling change
- Data driven operations
- Addressing legacy constraints

The full catalogue of papers can be found on the Mozaic website at https://mozaic.net/insights/.

Accompanying the series, Mozaic offers a range of complementary workshops, which look in more detail at the subject areas, and help teams to better understand the challenges and opportunities in their context.

If you would like to know more, please contact us at info@mozaic.net or call us on 0203 709 1625.

Powering Enterprise Product

> New data-driven AIOps techniques enable automatic, intelligent, event correlation and proactive Digital management using big data to attain deep, real-time insight, predictive analysis and automatic resolution. In this way you can achieve greater stability, security and resilience across your estate, and achieve significantly faster incident resolution.

Technology estates are now virtual and dynamic, with both infrastructure and software defined in code, and subject to continual change. Understanding the make-up of these estates is fundamental to all aspects of secure, resilient, performant and cost-effective management. Traditional Service Management techniques that rely on maintaining a CMBD through Discovery snapshots are no longer relevant – the pace of change is simply too quick, and the level of configuration data too dispersed.

CONTINUOUS, RAPID CHANGE

Effective Digital delivery relies on a comprehensive and current understanding of your estate and of the potential impact of change; lack of visibility can lead to expensive delays, performance issues and failure.

Unfortunately, in a fast-changing cloud-first, Digital world, where release cycles are increasingly short, and infrastructure is virtualised and dynamic, traditional ways of mapping your estate are no longer appropriate. The challenge is further exacerbated as responsibility for delivery of products and services is devolved to DevOps teams - critical configuration data now sits within local, siloed tools (i.e. code repositories) whilst the systems are reliant upon interdependent platforms delivered and managed by others.

THE WORLD OF SERVICE DELIVERY

Widespread investment in Service Management platforms and the implementation of comprehensive CMDBs have been the backbone of good service management; supporting troubleshooting, problem resolution, strategy planning and proactive change initiatives. However, building a CMDB and related service maps is a resource intensive task, and ensuring it remains current, and therefore useful, is extremely challenging.

This is true in a traditional, physical world where devices, assets and configurations are largely static. However, in a cloud-first, elastic, dynamic world, the challenge becomes nigh on impossible.

As a result, operational costs have increased, change and release cycles have stymied innovation, and quality has dipped. Organisations are struggling with higher volumes of change failure - as high as 10% has been reported in some areas.

The future, now

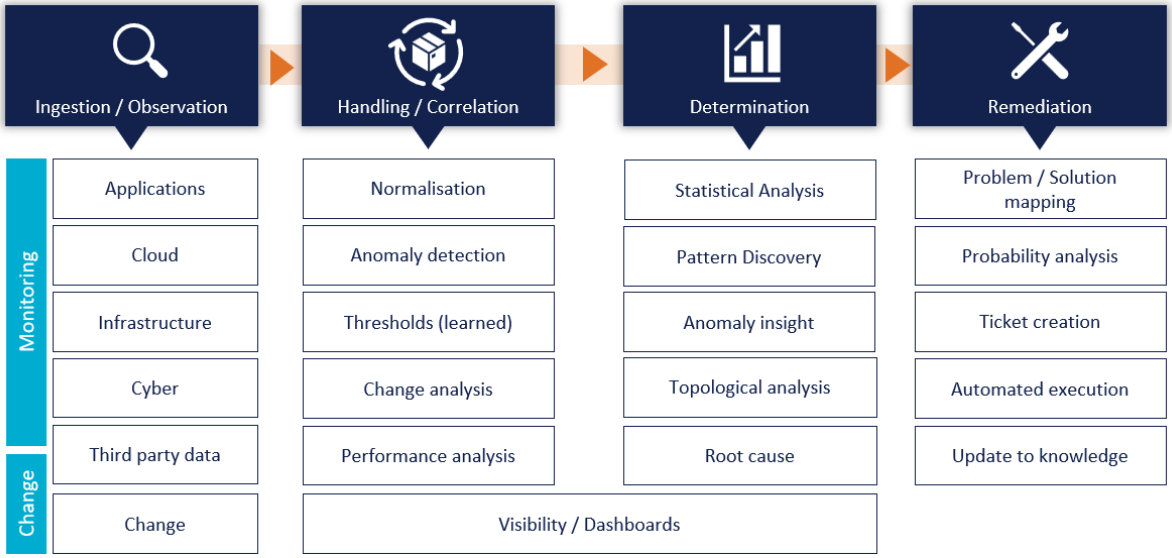
The solution lies in the recognition that the data for "everything as code" is already available in abundance in a diverse set of tools and locations across your virtual estate; including code repositories, incident reports, performance logs, application logs, and cloud metrics.

Using proven big data techniques, these disparate, federated data sources can be aggregated, harvested, and analysed to provide a comprehensive real-time understanding of your estate; enabling automatic, intelligent root cause analysis; identifying correlations between seemingly unconnected events; spotting anomalies; learning and applying tolerance thresholds; and automating resolution.

Given the volume of data and its disparate nature, this level of analysis and insight simply cannot be achieved manually or through snap-shots using discovery tools; and yet it is essential for the secure and resilient delivery of digital services. AIOps is the only viable solution.

This data-driven approach is proven across many industries over many years and is already widely used to provide predictive analytics and business insights in finance, retail, and engineering.

The approach in Digital is similar to that employed by aircraft engineers, where detailed jet engine telemetry is analysed continually to proactively identify and address potential issues. Similarly, pit systems in Formula 1, continually monitor every aspect of a car's performance, including engine behaviour, fuel consumption, tyre wear, break wear, grip, acceleration. In this way engineers gain a real-time understanding of performance to proactively address issues and tune the systems.



Using machine learning provides a deep understanding of what is really happening across your estate, correlating events, providing deeper insight into performance, enabling failure to be predicted before critical impacts occur, and accelerating and automating incident resolution.

Data-driven Operations

1) PROBLEM IN THE FIELD
A user has a problem. They connect to their service portal (ServiceNow) and select "Ask for help".

2) IMMEDIATE RESPONSE
They get an immediate response from the Virtual Agent. This provides guidance and resolves their problem.

3) EVENT CORRELATION
In the background, the Event Correlation engine identifies an unusually high number of similar calls, and that performance events have been triggered by a variety of sensors.

4) TACTICAL FIX
A known tactical solution to the performance degradation is initiated which increases the compute capacity available.

5) PATTERN MATCHED
In parallel, the AI engine draws data from the across the estate, matching the unusual events. It triggers a review of changes in the configuration files.

6) INCIDENT RAISED
An Incident is automatically raised for the DevOps team in the ITSM tool. The ticket is replicated into the team's Backlog (e.g. Jira).

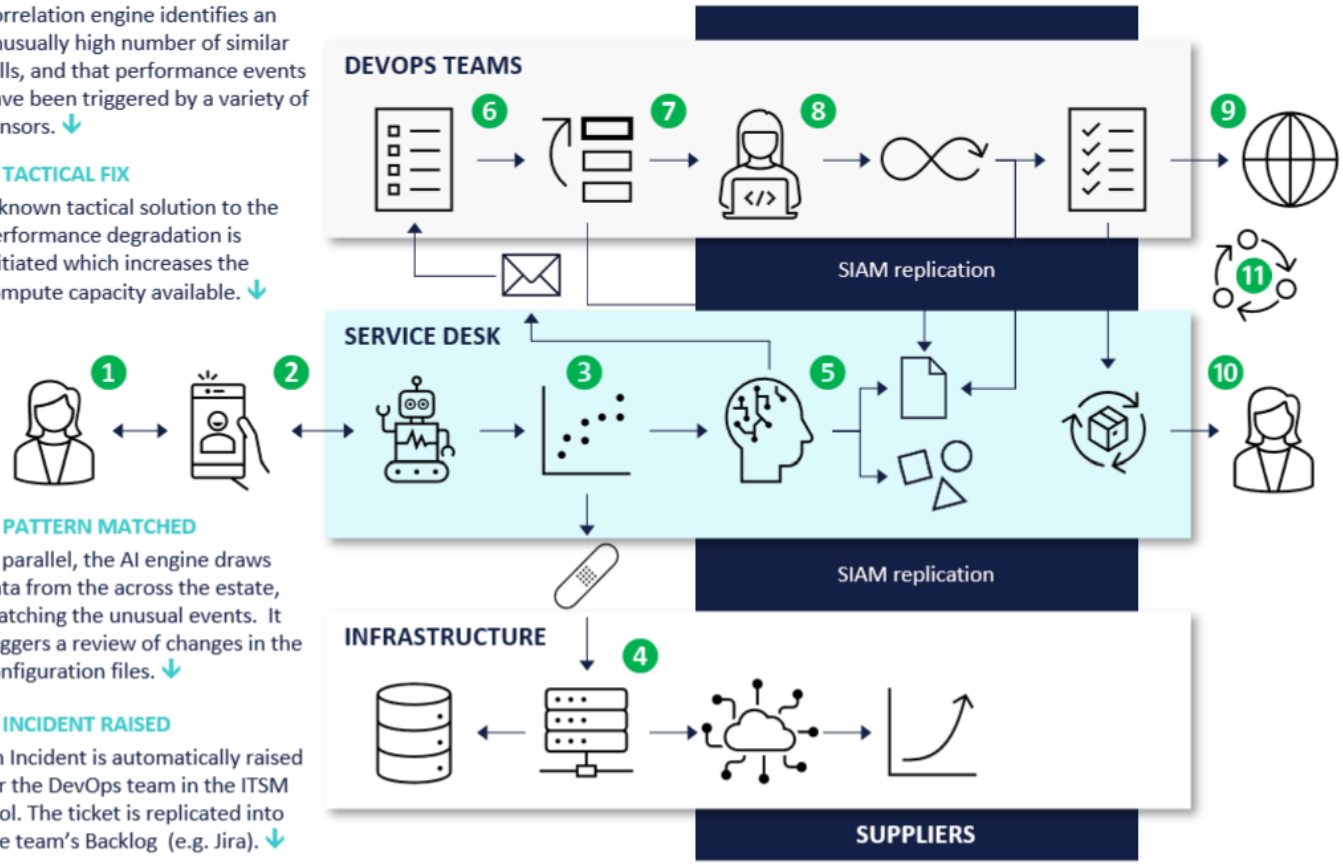
7) SOLUTION PRIORITISED
The DevOps team prioritises the incident for release. The release in Jira is replicated into the ITSM tool (ServiceNow) and the Change Record is created.

8) SOLUTION DEVELOPED
Test and deployment records are added to the Change Record for audit purposes. Configuration files are continually updated (e.g. Github).

9) SOLUTION DEPLOYED
The Release is delivered, and the Incident and Change Records closed. The Knowledge Articles, Solution Patterns and Virtual Agent scripts are automatically updated.

10) USERS UPDATED
Updates are automatically sent to the users to explain that the underlying problem has been resolved. The users have been kept up-to-date throughout the process.

11) CONTINUAL IMPROVEMENT
The teams review their MI reports to understand where systemic issues exist. Any findings are fed into their respective backlogs to support continuous improvement.



Data-driven Operations

Where to start?

AIOps is a key enabler for modern Digital organisations, and as such it addresses many of the Themes of Digital Excellence (see below). These Themes can be used to assess the prevailing context and prioritise implementation.

You probably already have a suitable platform available on which to implement data-driven operations. For example, ServiceNow offers a comprehensive solution within its standard modules – modules you may have already paid for and installed.

The complexity of the roll-out roadmap is, of course, proportional to the complexity of your estate. Success of this approach is dependent on the discovery, ingestion, aggregation and analysis of data; the harder it is to access this data, the more difficult the implementation project will be.

For example: are you subject to prohibitive security requirements and therefore heavily locked-down; how many third parties provide parts of the portfolio, and are they “black boxes”; and how widespread is the integration with peripheral systems?

Fortunately, the task can be sub-divided into smaller, easier to manage, tranches – it is often not necessary (or appropriate) to tackle your entire estate in one go. Mozaic recommends an initial focus on a single product line, one that provides greatest value and interfaces with the largest audience.

Having identified and agreed on the initial exemplar, the system should be set up and initial event patterns and thresholds identified. Of course, once the system is live, it will immediately “learn”, identifying new patterns and correlations, and redefining thresholds.

It’s time for action

> Over the last few years, IT estates have changed fundamentally and yet, to date, few organisations have changed the way in which they manage and deliver services. As a result, costs, failure rates and risk are increasing. It’s time to think differently – holding on to existing working practices is simply not practicable.

Implementing a data-driven approach provides deep, 360-degree visibility across the IT estate. Using AI and big data techniques provides predictive analytics and automated root cause analysis. It will significantly reduce escalations, downtime, and the time spent managing your estate.

According to a study reported by ServiceNow, front-line customer support functions spend up to 12% of their time managing tickets, and 43% of IT service desk respondents are weighed down by having to choose from hundreds of assignment groups.

The results are compelling, studies show reductions of up to 50% in IT Service Management costs, 50% reduction in Mean Time to Resolution (MTTR), and 90% in level one incidents.

[END]

FOR MORE INFORMATION

STEVE TUPPEN
07584 171 013
steve.tuppen@mozaic.net

RUSSELL SMITH
07980 624 738
russell.smith@mozaic.net

LEGAL DISCLAIMER