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Featured Application

Managed Smart — An AI Powered Automation

What We Did

With the current global economic environment and growing cost pressures, Professional Services providers are seeking to meet ever-increasing customer expectations regarding service delivery, but with reduced operational cost. This is placing higher importance on the use of dynamic and adaptive Machine Learning (ML) and Artificial Intelligence (AI) solutions to drive data-driven decision making and automation, providing a cost-effective customer-led experience.

This is acutely the case within Managed Services, where the industry standard is to use static point solutions that deliver a single function without consideration for everything else happening across the customer's environment. Preventable incidents and failures are handled and routed between support teams manually, leading to multiple unnecessary touch points and resulting in the customer experiencing longer than necessary downtime for their service.

To address this, Dell designed Managed Smart, a comprehensive multi-layered framework that delivers novel AI solutions powered by ML and automation across the entire managed services architecture. Initial solutions have focused on help desk optimization and customer experience improvement and have delivered a 25% improvement in Mean Time to Resolve (MTTR) for incidents, saving 1.4 million hours of wait time for our customers.

Solution Overview

Our key innovation is to take a holistic view of incident management where each Managed Smart capability (ticket routing, incident prevention) complements one another to deliver a comprehensive AI-powered transformation. In our framework, these capabilities not only add value independently but also build upon one another to deliver critical functions that comprise the layers of *Prevention*, *Detection* and *Reaction* for incident management.

- I. **Prevention Layer** - Predict and prevent incidents and failures ahead of time
- II. **Detection Layer** - When failures occur, detect them as quickly as possible
- III. **Reaction Layer** - Facilitate speedy and accurate response to incidents

The Prevention layer will be deployed at or close to the devices and services being managed for the customer. It consumes the metric and telemetry data from these devices in close-to-real-time and can use a variety of predictive and anomaly detection algorithms to notice when the device is encountering an issue. Information is then passed to the Detection layer, where root cause analysis and additional anomaly detection take place to understand what the likely causes of the problem are and to trigger a response. Finally, the Reaction layer is designed to facilitate an automated response, where possible (Self-Heal), or pursue a manual response by quickly routing the incident to the correct person (Intelligent Ticket Routing).

Intelligent Ticket Routing (ITR) is built using a combination of unsupervised and supervised algorithms to automate the routing process for ServiceNow incident management. Typically, a customer's infrastructure will be managed and maintained by
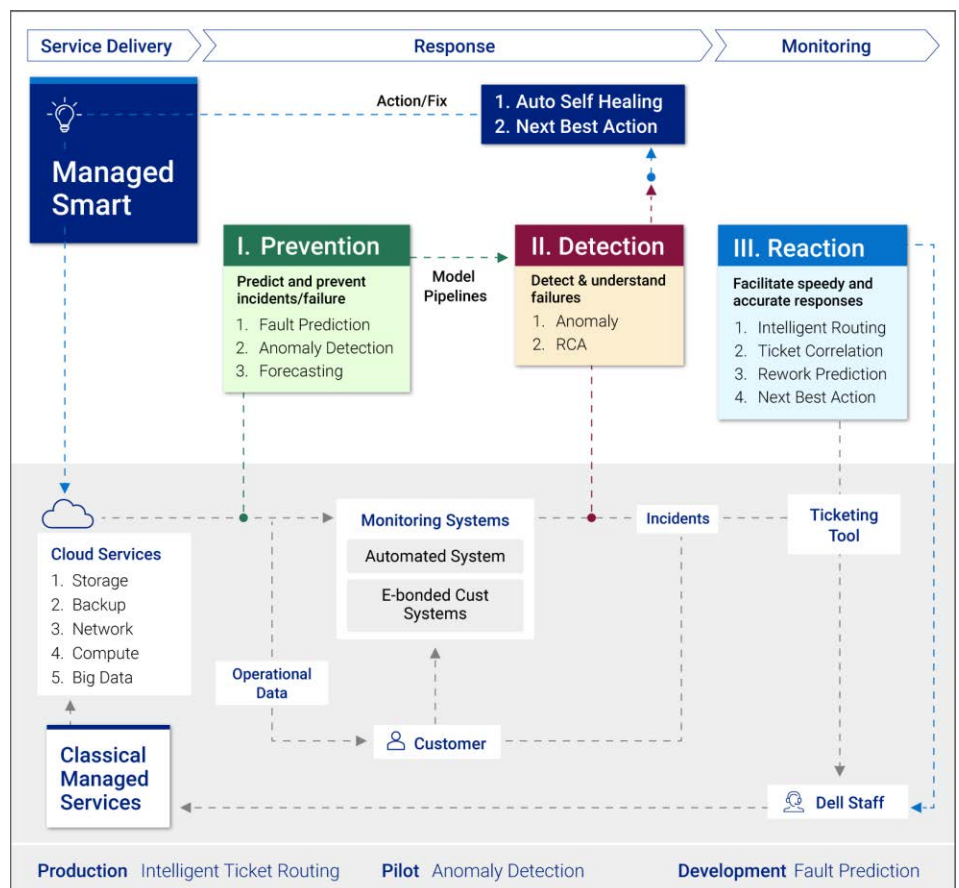
several resolution and support teams, each with different domain expertise. Tickets are routed to Level 1 support agents who decide how the ticket should be handled based on its subject and symptoms. This approach leads to a significant number of tickets (~26%) being handled by agents who cannot add value to the ticket and increases resolution time.

Instead, ITR predicts the best suited support team as soon as the ticket is generated, allowing the ticket to be routed directly, optimizing MTTR for the customer. ITR achieves this by learning the behavior and capability of each support team from historical ticket routing and resolution patterns and using advanced Natural Language Processing (NLP) to understand the type and complexity of each new incident ticket.

Using advanced anomaly detection techniques, our Incident Prevention capability monitors metric data from customers' managed devices and notes deviations from normal behavior in real-time. This capability can be deployed across all product families in a customer's environment such as backup, storage, converged infrastructure, compute, etc. Once anomalous behavior is detected, an alert is automatically sent to support staff notifying them of the impacted device and specific issue. This capability is complemented by ITR which ensures the most appropriate support team receives the incident to allow efficient and effective mitigation. This will be augmented in future development with automated self-healing responses that will be selected and prompted by our classification and root cause analysis algorithms.

Business Impact

Managed Smart is part of Dell Technologies' Professional Services long-term vision and strategy to meet our customers' ever-increasing service demands in a cost-efficient manner. Its goal is to deliver solutions that increase customer satisfaction and remove or avoid cost for our business.

Delivered and Projected Impact:
- **32% reduction** in re-assignment rate, meaning less no-value touches for incident tickets (avoid cost)
- Incident Prevention targets a **50% reduction** in incident volumes and Level of Effort (LOE) across all product families (remove cost, increase customer satisfaction)
- **25% reduction** in MTTR for routed incident tickets (increase customer satisfaction)

> "**The TTR counts have been consistently decreasing since ITR was deployed. MTTRs have shown improvements. Very well done, the change is clear.**"
>
> – Senior Advisor, Services Project/Program Management, Dell Technologies

Customer Impact

Managed Smart is directly and positively affecting customer satisfaction and experience by ensuring their issues and outages are resolved quickly and efficiently:
- **25% reduction** in MTTR for routed incident tickets, resulting in faster resolution and less downtime
- **1.4 million hours** (annualized) **saved** for customers in wait time, freeing them up to focus on other priorities

> "**We've seen a remarkable improvement in our Incident resolution time. It's not just about the numbers – though the 25 % reduction in MTTR is significant, it's about the peace of mind of knowing tickets are reaching the right people faster. This has directly translated to increased customer satisfaction and a stronger partnership with our customers.**"
>
> – CTO, Infrastructure Managed Services India, Dell Technologies

Next Steps

The success of our solution deployments has paved the way for further growth and adoption within Dell Technologies' Professional Services. Intelligent Ticket Routing will be added as a key component of Dell's Managed Service intelligence platform, growing the solution's footprint to include every new customer. In addition, Incident Prevention anomaly detection capabilities will be rolled out to all product families. This will be augmented with intelligent automation to enable product self-healing capability.

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