

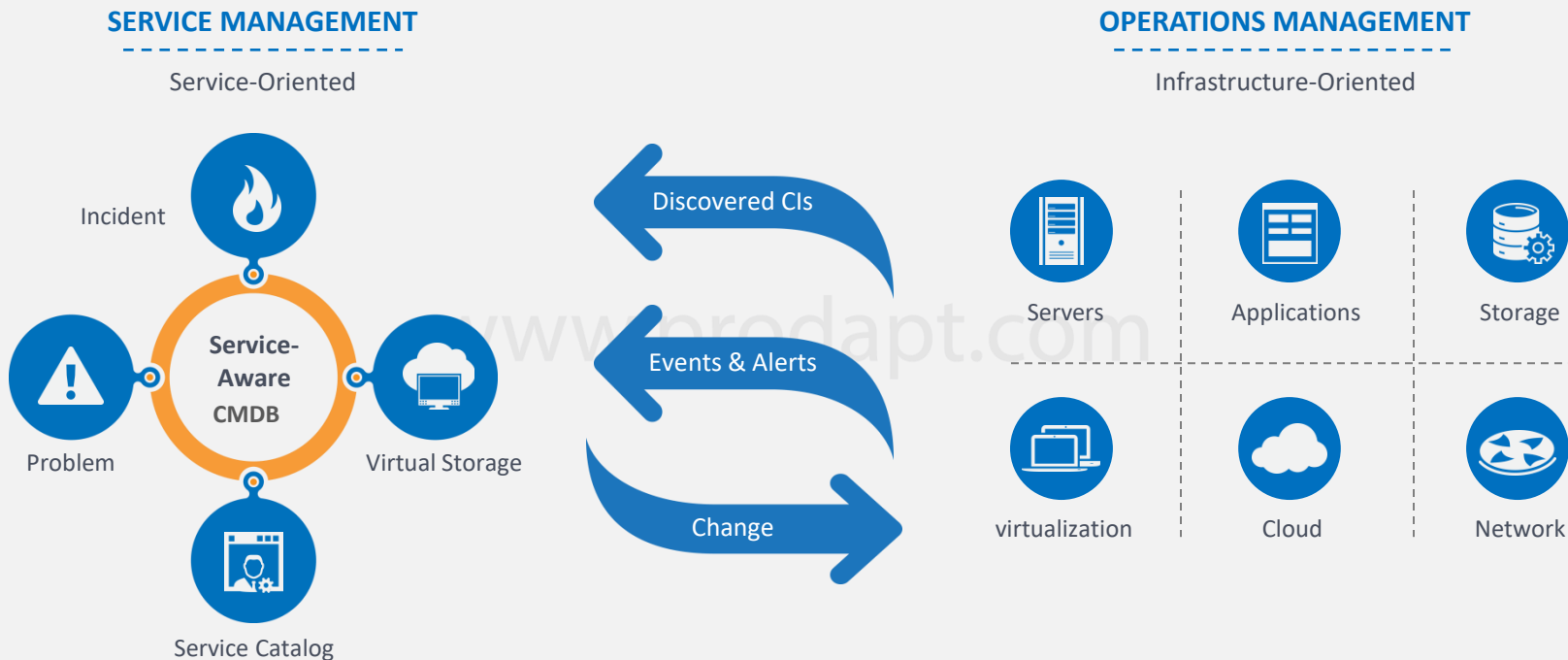


Prodapt powering
global telecom

Speed up IT problem resolution

Implementing an adaptive prioritization model in IT Service management reduces ticket resolution time by 50%.

Establishing synergy between network infrastructure layer & service management layer is critical to improve IT operational efficiency and reduce costs



Network's events & alerts are continuously monitored using network monitoring tools, and only the escalated alarms are logged in the service management tool. The change management module helps plan future changes and execute any corrective actions in the network.

Typical challenges faced by CSPs with traditional ITSM system

Growing customer base & changing needs

With the exponential growth in a number of incidents, the key challenges faced by the operations team are identifying the high-priority issues, when to address them, and whom to assign them.

There is always a need for an expert system

Support teams have a real challenge in raising multiple tickets and following up on emails. There is a constant need for an expert system that can automatically categorize, correlate & assign appropriate severity to an incident.

Difficulty in identifying the signals out of noise

Isolating a nuisance or a noisy event can be a challenge. Increased noisy events often cause delays & visibility issues for critical events, leading even to customer churn.

Only reactive approach - discovering problems when users complain

Inability of the current system to come up with predictive & proactive measures to prevent the incident from happening

Identifying the number of affected customers & impact intensity

Identifying the accurate number of end users/customers affected due to network incidents is a real challenge. Monitoring & operations tools are unable to provide this essential information.

High MTTR leads to high OPEX

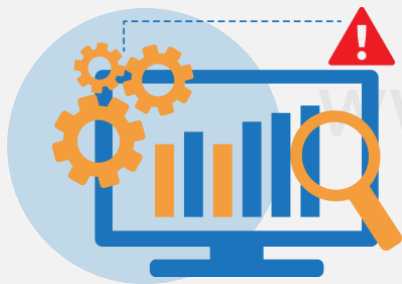
Currently a majority of the time is spent in identifying & isolating a problem, rather than fixing it. Hence higher MTTR (Mean Time To Resolve) leads to higher operational cost.



A solution to address these challenges is **adaptive incident prioritization model**

Need for adaptive priority model in ITSM incident management

IT & network systems have seen major evolutions during the last few decades. With tremendous changes in technology & services growing in leaps and bounds, monitoring applications are unable to fulfill the dynamic demands of response time and stringent SLAs. The number of incidents and alarms generated in the IT & network landscape of a CSP is constantly on the rise. It is important to prioritize the incoming incidents with the right priority based on various attributes. However most ITSM systems are still prioritizing the incidents only based on urgency & impact.



Adaptive incident prioritization model

Move from traditional “impact vs. urgency” model to considering diverse attributes like number of users impacted, areas affected, services affected etc., to determine the right priority to an incident.

Strategies that helps CSPs in Adaptive Priority Model implementation



Mapping business services to infrastructure components

Map each business processes directly to infrastructure to identify impact on any service disruption. This factor improves relation between service item and your affected incidents.



Ingest events from multiple sources across IT landscape - Cloud enabled centralized management system

Performing cross-domain analysis helps in big picture view to a problem with deep dive analysis when compared to localized analysis. Overall it improves fault isolation and adaptive prioritization.



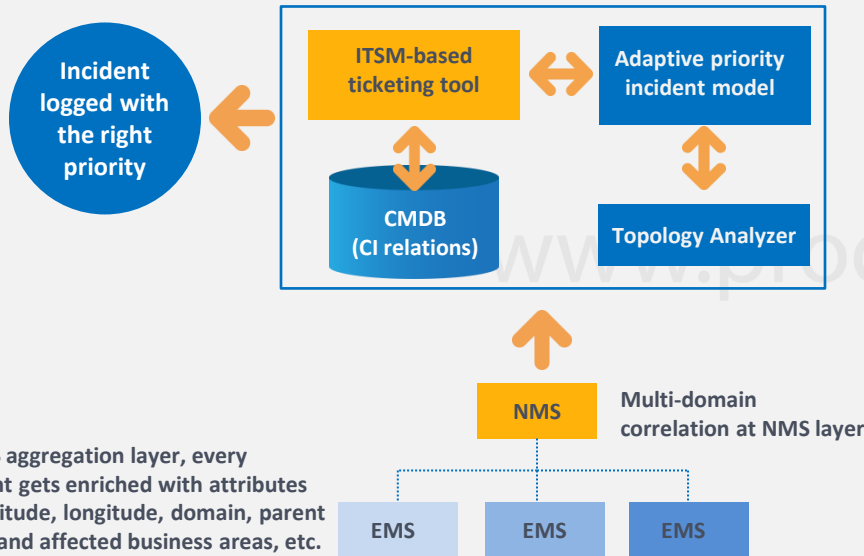
Real-time dashboard view for dynamic business services

Know the status of critical business services through a single dashboard view of near real-time view of prioritised incident.

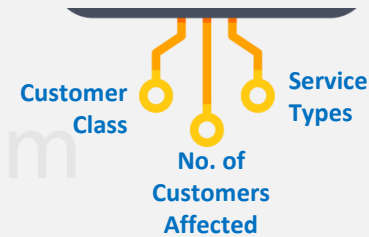
This insight's main focus is prioritizing incidents with adaptive model which helps in faster & effective resolution of a problem

High-level architecture with adaptive priority model & topology analyzer plugins

Below solution diagram shows how incidents are analysed by the Adaptive priority Model (a plug-in integrated with existing ITSM) leveraging its inbuilt Topology Analyser to assign right priority



Machine learning (ML) algorithms to analyze various attributes



Severity Model Attributes (sample):

Business Area: Residential | **Service:** Voice | **Type:** Critical Service
Total Number of Users affected: 2000 | **Major Incident:** Regional
Impact: Significant | **Urgency:** High
Priority: 1 (Custom priority assigned by adaptive system)

Key Accelerators

Topology Analyzer

- Open API enables easy integration with ITSM systems
- Intuitive GUI, drill down feature to view affected users
- Navigation capabilities upto tail node

Classification algorithms

- No manual selection
- Algorithm-based business rules/ML
- Improved classification process

Adaptive Priority Incident Model

- Multiple parameters like business area, service affected, category of service, number of customers impacted & level of service degradation are considered for identifying the effective priority for an incident.

Recommendations - Prioritization of incidents based on advanced data set ..Part(1/2)



Problem Analysis

As the number of incidents grows, the support team finds it challenging to handle them. The existing incident priority calculation model using traditional method is shown in the below matrix which is based on impact vs. urgency.



Recommended Solution

Traditional ITSM systems depend only on “impact & urgency” factors to determine the incident priority while Adaptive Incident Priority Model Plugin equips ITSM systems with additional capability of looking into multiple influencing factors, which helps in determining the right priority. Without a framework for establishing correct priority, it is very difficult to meet service level agreements & trigger incident escalations appropriately.

Enriching the incident with **intelligent data** helps in effective problem identification & resolution.

Adaptive Priority Incident Model solution is based on new business logic/algorithm with various input parameters which include:

Business area (residential, B2B, IT) | Service affected (local, urban, regional) | Service category (DTV, CRM, billing)
| Impacted customers (0~500,501~5000,5001~50,000)

		IMPACT		
		High	Mid	Low
URGENCY	High	1	2	3
	Mid	2	3	4
	Low	3	4	5

Open API availability on CMDB or network topology database makes it easier for adaptive plugin integration.

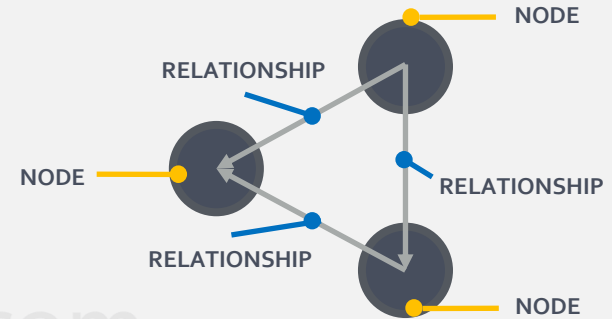
Recommendations - Prioritization of incidents based on number of end-users ..Part(2/2)



Problem Analysis

A typical network is a complex system which comprises multiple telecom nodes from different vendors across multiple domains. Accurately identifying the number of affected end-users because of an incident is a real challenge.

For e.g., smooth operation of a wireless network depends on the underlying fiber network.



Recommended Solution

Topology Analyzer - an intuitive GUI, which is used to traverse the entire network of the CSP.

Based on the relationship between two nodes in a telecom network, we can identify its type of relationship i.e. either it's a parent-child or uncle-nephew. If a port does not exist without a card, it is an example for parent-child relationship.

Based on selected incident from the network, the **faulty element** can be identified through the **Topology Analyzer** which in turn helps in identifying **the number of end-users affected or the portion of customer base impacted** on the specific node through its relationship data. Adaptive priority model helps in assigning the right priority to the incidents based on this info.

Prerequisite for implementing relationship based prioritization model is the 'availability of relationship data' of entire network

Sample data set for adaptive priority model & Topology Analyzer view

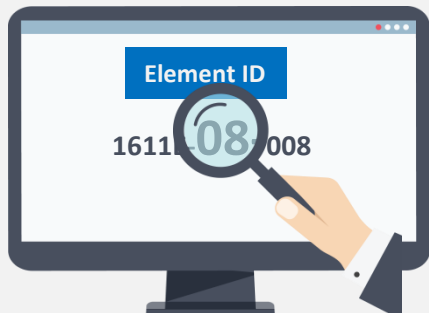


Sample data set used for identifying adaptive priority

Business Area	Service Impact	Impacted Customers	Service Category	Key Service	Impact	Urgency	Priority
Residential	Local	0-500	DTV	Tier 2	4-Minor/Localized	Low	Low
IT	Urban	501-5000	CRM	Tier 2	2-Significant/Large	Medium	Medium
IT	Regional	5001-50000	Billing	Tier 1	1-Extensive/Widespread	High	High
B2B	Nationwide or Multiple Countries	50001-999999999	Customer-facing Mail B2B	Tier 1	1-Extensive/Widespread	Critical	Critical

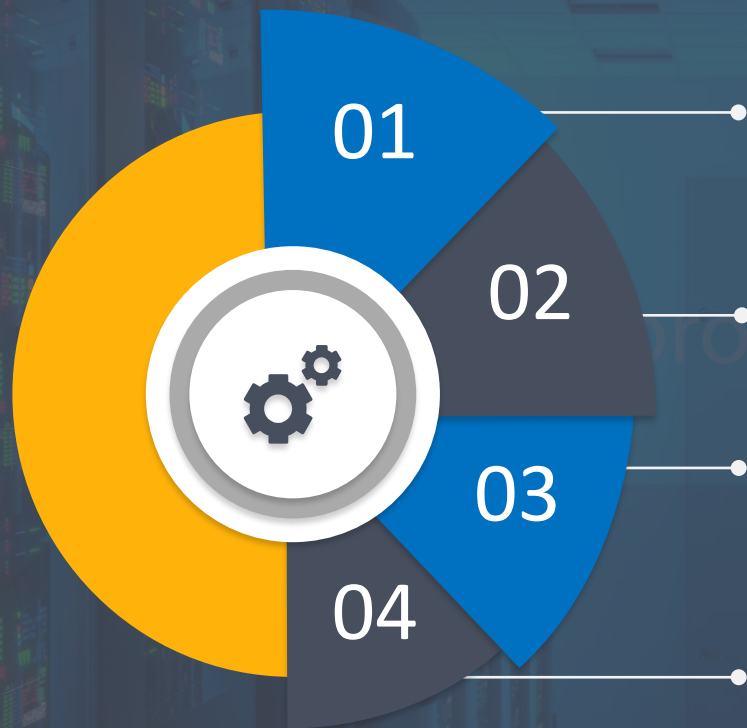


Topology analyzer shows number of end users affected because of an incident



Type of Customer	DTV	Internet	Voice	B2B
No. of affected customers	15	28	26	3

Features that adaptive incident priority model brings into traditional ITSM system



Handling complex associations | Multi-technology, multi-vendor

Captures & maintains all the complex associations in an ecosystem with its relationship across different domains
E.g., relationship between DWDM equipment and Edge router (IP based)

Dynamic impact assessment

Near-real-time impact assessment through in-memory relationship data using ML-based algorithm

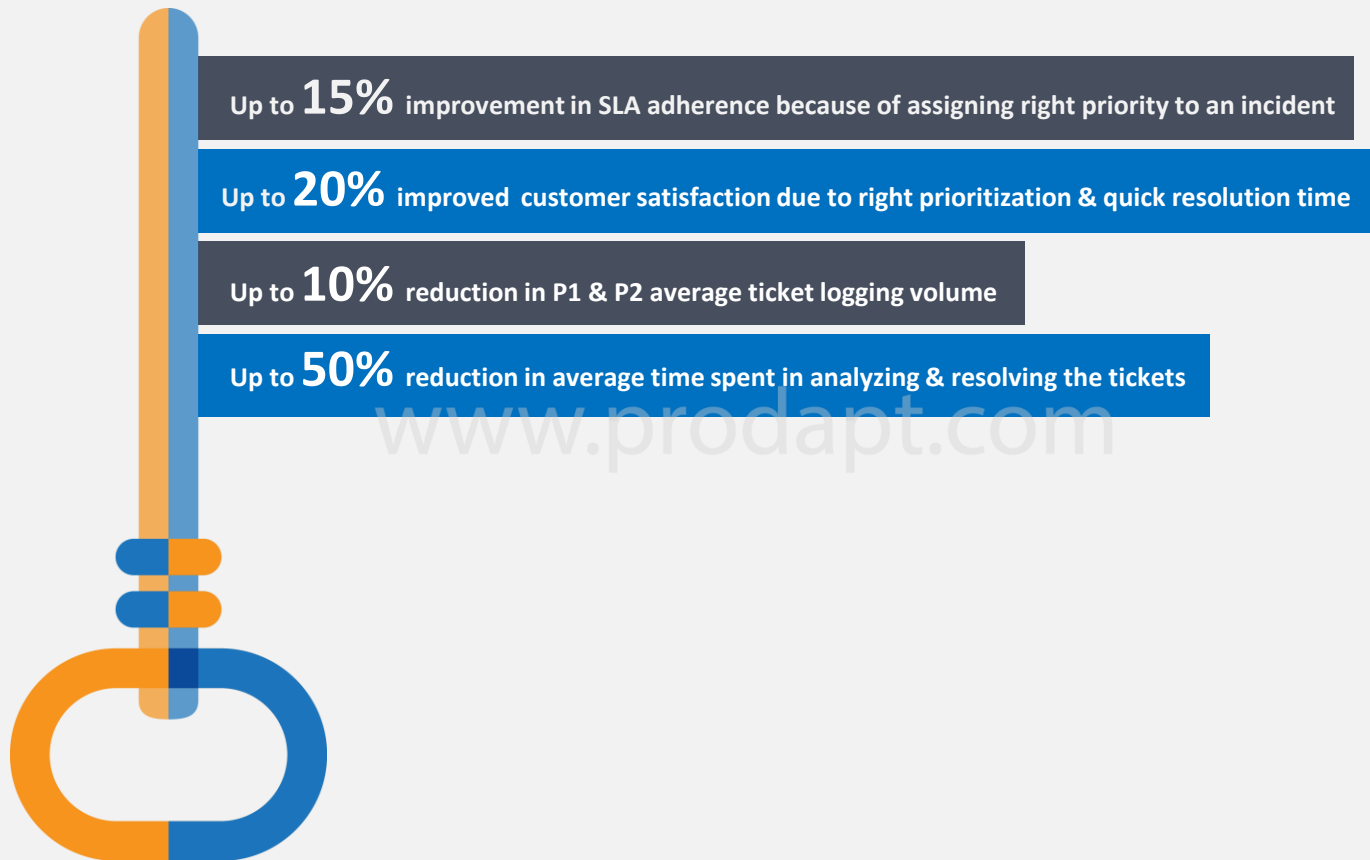
In radar monitoring

Continuous monitoring of affected configuration items(CIs) in service impacted areas

Proactive notifications

Incident priority-based notifications to all relevant stake holders & the management team depending on the escalation matrix

Key Takeaways



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