SOLUTION BRIEF
Automated Service Desk
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Executive Summary

Detecting network failures, performance degrades and understanding their impact on subscribers is one thing. Ensuring the appropriate and rapid handling of incidents through to resolution is quite another.

While operators have made significant progress on automating the process of filtering alarm and event data to identify the source of faults, the process of managing those faults to resolution still often depends on a considerable amount of human effort, manual process and decision-making. This makes the process prone to human error: omissions, mistakes, misunderstandings, failures to check all the necessary information when making decisions. It also makes it more difficult for operators to act optimally in response to rare and unexpected events, such as floods, fires or storms.

Network assurance and maintenance cost is a considerable overhead for any service provider. With faster, better, and low-cost run assurance, there is a need for a governance framework to ensure that stakeholder needs, conditions, and options are rightly evaluated to determine balanced and unanimous enterprise objectives to be achieved. Therefore, setting the course for the right direction through prioritization and decision-making, and monitoring performance and compliance against agreed-on directions and objectives becomes crucial in the process.

Rakuten Symphony’s Automated Service Desk solution is designed to deliver a new generation of automated, intelligent network incident response and management. One that significantly reduces the time and effort taken to bring operational network issues to a successful resolution. One that leverages accumulated knowledge so that the most appropriate action is taken, regardless of the knowledge of whoever is overseeing an incident. One that works closely with live network data to ensure an accurate, comprehensive and up to date understanding of any situation.

Compliant with ITIL and BPMN 2.0 standards, Automated Service Desk is an end-to-end service management solution that helps the telecom operators tackle issues brought on by a lack of standardization by simplifying and automating business activities. It targets key operational metrics such as mean time to acknowledge (MTTA), and mean time to repair (MTTR), as well as overall staffing levels and productivity.

Symphony’s Automated Service Desk solution allows telecom operators to track and create trouble tickets and streamline ticket assignment, routing, prioritization, and escalation to the right person at the right time. It automates the network change process across the organization while maintaining security and compliance. In addition, a centralized knowledge repository ensures that all the communication related to operations for change requests is centralized and that the information can be tracked quickly and easily.

Enabling closed-loop network remediation and optimization, our solution makes more use of real-time data providing greater responsiveness, governance, and an end-to-end view of the networks and services, introducing optimal assurance and reducing financial penalties and operational costs. In addition, it enhances the decision processes (automated/manual) with superior insights.

Automated Service Desk is built on the Symworld Platform, ensuring effortless scalability, minimal integration effort, and a solid foundation for strategic automation initiatives.

Challenges with the existing approach towards Service Management

CSPs are looking for proactive and faster identification and resolution of issues in near real-time in their networks to deliver consistent service to their users. Although there are solutions available in the market hosting an array
of capabilities and features, an optimal solution to the operational issues impacting the business holistically is still predominantly to be observed, majorly due to the following challenges:

- **Complex integration challenges and siloed approach to run multiple business processes:** Currently, operators are using multi-vendor tools to run their intelligent network service assurance processes which further, due to complex or no integrations, lead to losses in data translation from one application to the other with unclear reporting and KPIs. There is a need for a cloud-native solution to host and unify processes under a single platform where these services offer the required flexibility to manage organization-wide best practices at scale and break the silos.

- **The next steps in case of automation failure:** It is imperative to clearly establish the standard operating procedure in case of automation failures so that mitigation steps may be implemented manually. Similarly, during an automated failure, ironically, the absence of an efficient manual operating procedure can result in major problems such as extended system outage and a lack of availability since users may not be aware of the necessary course of action to follow in the event of a failure if there are no clear instructions on how to manually intervene and act.

- **Lack of incident scope detection:** The operators are unable to identify threats to find any anomalous activity or the scope of any incidents and take actions to neutralize the threat. However, it increases the possibility of infringement on the business data which can heavily impact the business’s bottom line and reputation. Therefore, there is a need for a solution that can facilitate immediate incident scope detection to prevent, deter, and detect the incidents on time.

- **Limited visibility due to negligent governance:** There is a need to clearly define roles and responsibilities, accountabilities, established communication channels and escalation thresholds for end-to-end visibility in the network operations. There is a requirement for a tool that can enable and enforce a governance framework to meet the agreed objectives through real-time visibility across customer and network operations.

- **Sub-optimal knowledge bases with unactionable content:** Troubleshooting or self-service for incoming incidents should be promoted to diminish the volume of tickets in the system to reduce unnecessary resource allocation. There is a need for a Knowledge Base repository that can act as a single source of truth for reference to resolution summaries and root cause analysis, from historical data historical data of recurring issues to be easily traced.

- **Lack of collaboration:** To effectively manage the upsurge in the tickets and ensure service assurance, the cross-functional teams must collaborate for issue resolution. Lack of collaboration will cause inefficiencies in resolving tickets, accountability issues, decreased customer satisfaction, and SLA breach since team members cannot access important ticket information and dependencies. Therefore, the solution must be able to communicate and collaborate effectively to ensure the overall effectiveness of the service assurance process.

- **Lack of automation:** There is a need to automate common tasks and workflows, such as reporting and analytics, ticket routing, and resolution. With such volume and complexity, while also coordinating a wide range of data and technological domains, it is not possible to achieve this using manual operations.

- **Inability to customize and configure:** With legacy systems, it is difficult to customize and configure the solution to meet specific business needs, making it complicated to adapt to the changing business requirements and processes. This reduces efficiency since the lack of configuration to match the existing workflows and processes results in delays and inefficiencies across the service assurance process, making it a poor fit for the organization and leading to suboptimal performance.

**Service Desk Operations and Network Service Assurance**

Operators must elevate service assurance to a new level with real-time visibility across customer and network operations enabling a more comprehensive understanding of service degradation and outages with governance comprising the following:
- **Service Management**: This includes incident management, trouble management, and change management, allowing organizations to manage service-related issues and ensure services are delivered efficiently and effectively.

- **Service Level Management**: This incorporates the ability to define, measure, and monitor service level agreements (SLAs) to ensure that services meet the certified performance levels.

- **Automation**: This comprises automation in ticket and incident management by offering automation in ticket condition-based auto ticket creation, prioritization, remediation configuration, and escalation of the issue to improve the efficiency and effectiveness of the service assurance solution with quick and one-time assistance to network problems.

- **User-Friendly Interface**: This includes providing an adaptable and accessible interface that allows users to conveniently access information and perform tasks quickly.

- **Integration**: This incorporates the ability to integrate with other systems, such as network management and service assurance systems, to provide a comprehensive view of the network and service-related components.

- **Governance for Service Assurance**: This comprises a solution that compliments network service assurance with governance that provides policies, procedures, and controls to ensure that telecom services are provided reliably, consistently, and in compliance with the defined SLA.

- **Native Support for Knowledge Base**: This includes a solution that supports a strong knowledge management practice that streamlines the incident handling ability and assists service desk teams to make the right decisions throughout the service life cycle and the incident resolution process by efficiently controlling and handling the flow of information. Also, results in the reduced mean time to repair by providing the workarounds and historical data which helps in quickly analyzing the issue and solving them within SLA.

- **Cloud native architecture**: Cloud-native architecture offers scalability to manage a multitude of tickets, incidents, and change management requests to support Service Assurance solutions.

- **Customization and Configuration**: This comprises a solution that enables customization and configurability to meet specific business needs making it easy to adapt to the changing business requirements and processes. It results in increased efficiency as the ability to configure facilitates it to match the existing workflows and processes resulting in quick time deployment and efficiency across the service assurance process. Thereby, making it the best fit for the organization resulting in enhanced performance.

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**Industry Standard. And Then Some.**

End-to-end service management that meets ITIL and BPMN 2.0 standards is provided by Rakuten Symphony’s Service Desk. Streamlining and automating business processes aids telecom operators in addressing challenges brought on by a lack of standards by ensuring enhanced root cause analysis (RCA), mean time to acknowledge (MTTA) and mean time to resolve (MTTR).

The solution improves the effectiveness of network management and maintenance activities and is a specialized workflow system focused on the following processes defined in the IT Infrastructure Library (ITIL):
It provides businesses with the operational intelligence required to manage their complex multi-vendor physical and virtual environments holistically. Symphony’s Service Desk acts as a central hub to harmonize and facilitate logging, prioritization, routing, and resolution of issues occurring in the network. The solution is built to host various processes for operations or businesses, reflecting domain-agnostic capabilities and features. Its strengths lie in its integration with the Symops Service Assurance stack and other Symworld applications to deliver an integrated Service Solution. In addition, it provides automatic ticketing capabilities for incoming incidents from Fault Monitor and Performance Monitor, along with other applications from the Symworld stack. Coupled with an Open API structure, the solution can easily be integrated with any third-party system for operational continuity.

The solution also provides support with a centralized knowledge repository that stores reference documents and workarounds to solve incidents and issues. In addition, it comprises Playbooks which provide step-by-step assistance to solve the network issues that help the network operations teams resolve an incident leading to reduced mean time to repair. As a result, this self-service portal helps reduce ticket inflow, avoid repetitive incident logs, and improve resolution times and first-time call resolution rates.

In service assurance, governance refers to the policies, procedures, processes, and oversight mechanisms put in place to ensure that processes and systems are functioning effectively and in compliance with relevant set standards. Moreover, effective governance can facilitate establishing clear lines of accountability to recognize and address issues quickly and avoid them altogether.

Symworld Service Desk provides effective governance that reduces the risk of service interruptions and other problems that could negatively impact the customer experience while ensuring the telecom services satisfy the needs and expectations of the customers. This can be especially crucial in a sector where disruptions in service or other problems can have a significant impact on organizations and people that use telecommunications on a regular basis. Hence, the customer’s trust and confidence can be increased, which improves the organization’s overall performance and sustainability.

Service Desk supports network and service operators, allowing them to resolve incidents swiftly in line with specific SLAs. It facilitates root-cause analysis of reported problems and aids wise planning of changes in the network to minimize the impact on customers and business agreements. It involves elements such as Quality Control, Quality Assurance, and Service Level Management, which equip the network operators with the advantage of identifying and communicating with the customers impacted by the network faults and planned maintenance. This improves the proactiveness capabilities of customer service.
“Rakuten Symphony Automated Service Desk – Purpose-built to truly deliver next generation experiences”

Key Capabilities

Service Desk

- **Centralized Ticket Management tool** that encompasses all workflows across an organization under a single pane.
- **Integrations with Symworld Platform Services and Applications** such as Workflow Studio and Automation Studio enable seamless and powerful automation capabilities to run daily operations.
- **Auto-Ticket Generation** with the help of predefined rules, provides a capability to automatically convert incoming incidents into Trouble tickets, thereby reducing manual intervention and faster movement toward resolution.
- **Auto-Prioritization** logic allows resources to be carefully allocated toward more critical issues.
- **Auto Assignment, Predictive Assignment, and Workgroup association** allow the correct stakeholders to be engaged for incoming incidents which are ultimately responsible for resolving them within time-based deadlines outlined in the terms of service.
- **Automation Scripts** can be run directly from the Service Desk to investigate and trigger remedial actions remotely as the first level of actions towards restoring services and identifying the root cause.
- **Real-time Omnichannel Notifications** for network alerts in near-real-time via Phone, SMS, Email Notifications, In-App Push Notifications, Communication Channel bots, and more.
- **Digital Root Cause Analysis** improves resolution quality and prevents future incidents by recording information on an incident’s background, contributing factors, and actions taken to reduce future risks. It also pushes the RCA automatically to the central knowledge hub repository and organizes historical data of incident resolution summary.
- **Avoid Duplicate Tickets** with the similar Tickets feature, where the system provides suggestions on previously raised tickets for similar issues based on entered parameters to find a resolution to the issue at hand to streamline ticket resolution and reduce duplicate tickets.

**Knowledge Hub**

- A **single source of truth**, a centralized repository to store, share and access all information across the organization. It consolidates all business assets into a holistic view to offer simplified management of all organizational assets: static articles, dynamic playbooks, and a virtual assistant, all in one product.
- **Information to shared knowledge** with integration to the Symworld Platform with access to all network-related data that is categorized and indexed for easier referencing in a central repository that is easily accessible.
- **Confidentiality of content** with space which acts as a boundary between different workstreams.
- **Whiteboard using articles** to collaborate in real-time with relevant stakeholders and emergency response teams in case of high-priority issues. This acts as the team discussion board, and the information gathered can be stored in the Knowledge Hub and Service Desk.
- **Playbooks** enable visualization of troubleshooting steps, instructions, and executable tasks that can also be automated to resolve issues quickly.
- **Lina** is a virtual assistant integrated across the Symworld ecosystem to provide instant responses to queries without any delay, delivering personalized user experiences by executing playbooks as well.
- **In-built diagramming** tool helps create mock-ups, charts, and business process modeling from within the application.
- **Add media and links** from other Symworld applications and YouTube to your knowledge article with iFrame capability.

**Solution Components**

The Automated Service Desk solution is engineered and purpose-built to provide a single platform for governance in network operation and service assurance with tools such as ticket management, incident control and network change lifecycle while considering all standard capabilities and specifications for any network ITSM and service desk operations:

- **Ticket Center** stores, creates, and associates tickets with workflows, and interacts with other services such as Naming Manager, View Builder, Automation Studio, Knowledge Hub, BI Studio, and Inventory to enable the creation and management of tickets.
- **Incident Control Center** provides an automated mechanism to monitor and manage the network and reports to get incident-related insights. It offers incident monitoring, auto trouble ticket configuration, and MOP execution, disrupting normal service operations.
- **Change Center** helps create change requests and ensures all the CRs are centralized, tracked, and executed efficiently with minimal impact on customer service. It aids in uninterrupted service delivery.
- **Correlation** supports different methods of correlation analysis, mainly including intermittent, parent-child, performance threshold, NE count, and topology correlation.
- **End-to-end visibility** provides transparency across the business processes to ensure better decision-making.
- **Event and Communication traceability** allows tracking timelines of all critical events, updates, and communication to create timelines without any errors or glitches.
- **Continuous improvement** facilitates the businesses to track the end-to-end improvements loop right from the incidents and the problems to the changes through a centralized solution.
- **Integrated SLA management** capability to manage resolution quality and time.
Automated Service Desk’s design supports the demands of new generation of network operations in speed, agility and scalability:

- **Cloud native, microservice-based architecture** that is agile to plan, build, and operate quickly and efficiently
- **Cloud agnostic with the use of Kubernetes** as underlying PaaS (Platform as Service) that helps to deploy the product in any cloud (Public/Private)
- **Cloud observability** support to collect real-time (streamed) data telemetry for applications and infrastructure monitoring
- **Highly scalable** to cater to the needs of the increasing number of users, transactions, and processing instances
- **High Availability** to ensure that the solution remains up and running and accessible to users in the face of unforeseen circumstances
- **Openness** to seamlessly integrate with third-party applications with the support of open API and event-based integration

**Built on the Symworld Platform**

The Symworld Intelligent Operations suite consists of a suite of integrated applications built on a powerful, common platform to provide a robust and cost-effective solution to bring down operational expenditure.

The Symworld platform offers a workflow engine that provides automation and flexibility to adapt to any custom network operations service desk process flow, along with the customization to meet different operations required for network service assurance. In addition, it offers the capabilities such as data storage, security, identity and access management, and notification, making the solution self-capable and reducing the dependency on any third-party applications.
Symworld Automated Service Desk Solution in Action

Our Service Desk Suite gives the operations team the tools they need to resolve low to medium-impact incidents such as network alarms, configuration changes, and other network problems daily and perform activities that include:

- Notifying all end users of service failures
- Establishing a line of communication with users to investigate problems and collect as much data as possible for speedy resolution
- Creating records for problems or modification requests
- Adhering to the incident’s service level agreements (SLAs) and escalating it, if necessary
- Resolving and closing incidents
- Providing status updates to end users throughout the incident life cycle
- Updating the resolution summary and workarounds to new issues in the Knowledge base

Service Desk Suite employs a high-speed resolution model, a concise, easy-to-follow procedure that addresses obstacles and assures smooth flow to manage daily incidents.

Business Outcomes

Based on real-world deployment examples, Symphony’s Automated Service Desk delivers next generation levels of operational performance, including:
While we see how detection, prioritization, investigation, and resolution of the network issues are managed using various Symworld Platform Services and Applications, the governance elements are carefully placed to bring visibility and ownership. All the resources operate under a unified workflow within a defined governance framework wherein the products and services are enablers.

The differentiators are:

- **Integrated Services tailored to the Symworld Ecosystem**: The applications under Symworld are seamlessly integrated with the platform service to provide a holistic approach toward Service Assurance. Whether it is the Workflow or the Automation/AI ML engine, they work in sync to provide a single view of network operations to improve the network and manage issues proactively.
- **Proven at Scale**: The Symops Service Assurance solution is already supporting record-breaking levels of automation at the world’s largest, most advanced, cloud-native network: Rakuten Mobile.
- **Service Assurance with Governance**: Symworld applications have been rigorously tested and are constantly evolving owing to the agile nature of the approach to incorporate and build upon real-time operational use cases. This has led to the identification and formulation of a Governance framework, an essential factor driving operations and the applications enabling and adhering to defined organizational processes.
- **Out-of-the-Box Service Management Processes**: Symworld Service Desk provides tried and tested processes explicitly tailored for the telco domain, which not only adhere to some of the best industry practices but are also an improvement over them. From Service Restoration to Issue Resolution and Problem Management with Digital RCA to Known Errors, an entirely governed set of processes and tasks help in the management of efficient network operations.
- **Carefully Curated Metadata for Telco Domain**: With real-time inputs from Rakuten Mobile, Symworld applications provide a specially curated set of metadata to be used by any CSP, who is adopting Cloud, Open RAN, and deploying 5G Services.
- **Knowledge Repository**: Critical network information and knowledge can be accessed throughout an organization on a common application where everyone is a contributor. With real-time collaboration, working together to create a knowledge base has never been easier.

### Key Differentiators

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<th>Percentage</th>
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<tr>
<td>90%</td>
<td><strong>Automated Trouble Tickets Created for Network Incidents</strong></td>
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<td>36%</td>
<td><strong>Reduction in Response Time</strong></td>
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<td>39%</td>
<td><strong>Reduction in Mean Time to Resolve (MTTR)</strong></td>
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<tr>
<td>99.99%</td>
<td><strong>Application Availability</strong></td>
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<tr>
<td>3000+</td>
<td><strong>Monthly Active Users</strong></td>
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<td>400k+</td>
<td><strong>Volume of Tickets Supported</strong></td>
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<table>
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<tr>
<th>How?</th>
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<td>Open APIs Enabling Seamless Integrations</td>
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<td>Easy to Understand UX and Higher Adoption</td>
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<td>Hyperscalability</td>
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**How?**

- Integrated Services tailored to the Symworld Ecosystem: The applications under Symworld are seamlessly integrated with the platform service to provide a holistic approach toward Service Assurance. Whether it is the Workflow or the Automation/AI ML engine, they work in sync to provide a single view of network operations to improve the network and manage issues proactively.
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- Out-of-the-Box Service Management Processes: Symworld Service Desk provides tried and tested processes explicitly tailored for the telco domain, which not only adhere to some of the best industry practices but are also an improvement over them. From Service Restoration to Issue Resolution and Problem Management with Digital RCA to Known Errors, an entirely governed set of processes and tasks help in the management of efficient network operations.
- Carefully Curated Metadata for Telco Domain: With real-time inputs from Rakuten Mobile, Symworld applications provide a specially curated set of metadata to be used by any CSP, who is adopting Cloud, Open RAN, and deploying 5G Services.
- Knowledge Repository: Critical network information and knowledge can be accessed throughout an organization on a common application where everyone is a contributor. With real-time collaboration, working together to create a knowledge base has never been easier.
Conclusion

Symphony’s Automated Service Desk, together with our Service Assurance solution, delivers Service and Network Assurance comprising fault, performance, incident, and change management across various multi-vendor networks and technologies. It has broken the silos and has paved the way for a comprehensive and holistic approach to providing end-to-end service assurance processes.

Fully aligned with relevant industry standards, Symphony Automated Service Desk goes further in delivering strategic business value across the telecom operations environment: a significant uptick in operational performance KPIs, greater speed, agility, reduced cost of ownership and a solid foundation towards business-wide automation.