Rakuten's OSS Reboot

Innovating with AI to reinvent the telco

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A revitalized Rakuten Symphony

Rahul Atri is rejoining Rakuten Symphony to head up its OSS Business Unit. Since leaving Rakuten Rahul has worked with a major Indian System Integrator on its digital business strategy and with Appledore Research as an analyst. This external insight is now informing some changed thinking within Rakuten Symphony.

Innovation is back at Rakuten Symphony

Appledore observed that with Rahul rejoining, what made Rakuten Symphony different and unique was back on show. After a hiatus of two years as just another OSS vendor.

Rakuten Symphony has somewhat lost its way in the last few years, shifting from an industry leader with a clear vision for operational automation, to one characterized by a proliferation of replacements for traditional OSS products. In Appledore's view, there is limited point in building what the industry already has. Rakuten built its operational environment from new but probably a third of what it was building was the same as before and this was the easiest to sell into existing siloed procurement processes. Rakuten has been challenged by having solutions that could genuinely transform the operational behaviour of telcos, but having to work with an industry that finds it difficult to engage with this.

Appledore was privileged to get early sight of Rahul's vision for Rakuten Symphony's OSS Business Unit. With this vision Rakuten Symphony now has four workstreams that Appledore believe could change this situation:

- A reinvigorated **vision** for telco operational transformation

- A focus on **partnership**

- **Simplified product portfolio** building on its success with key clients worldwide

- A new approach to operational **transformation with AI** at its center. One aligned with Rakuten Group's overall "Triple 20" productivity goals set out in FY2023 results

Source: Rakuten FY2023 Earnings Call

A reinvigorated vision

"There is no BSS and OSS in the future telco – Rahul Atri

For the president of the OSS Business Unit of Rakuten Sypmhony, this may be seen as self-defeating. But for Appledore, this shows the necessary ambition for a telco industry that is in crisis currently:

- The failure of 5G to deliver any meaningful change in the business of telco.

- An operational model that is increasingly broken, from a cost, speed and agility perspective.

The industry needs a different path if it is not to become irrelevant or superseded. The industry needs to rethink its whole operating model, not simply incrementally mechanize its status quo. Rakuten has its eye on this goal. A goal in which dynamic services are driven by intent which in turn drives automated action in the network and the ongoing assurance of that action. All are enabled by AI at the centre of this operational change, rather than a bolt onto existing practice.

Rakuten Symphony as a partner

Change is in the air too in terms of Rakuten Symphony's attitude to partnership. Rakuten Symphony largely focused on a direct-to-customer model – even if in reality its success was built with others. Rakuten Symphony is now becoming truly open to partnerships. Multiple SIs have signed up in the 2 months since Rahul rejoined. Rakuten Symphony is looking at opportunities to "white label" its OSS capability to other vendors. Rakuten Symphony is also talking to many CSP customers about how this new partnership model would work. This model is already being explored in Rakuten Symphony's Cloud and Network Divisions. Appledore expects important announcements in these areas soon from the OSS Business Unit.

For Rakuten to succeed in its transformational aims it needs to take the rest of the industry with it – and partnership and the role of the CSP in that partnership is an important part of this. Something Rahul explored with Appledore in our research last year on the Innovation Telco.

Figure 1: Creating an outcomes-driven telco

Source: Appledore Research

Clearer products

Gone is the proliferation of OSS products from Rakuten Symphony and in its place three key product categories, Plan/Build > Orchestrate > Operate, with simplified products in each category. Importantly the simplified products are backed by real customer success, both in Rakuten Mobile, and live with key customers worldwide, including AT&T, Dish, and 1&1. Back to the future for Rakuten Symphony with a portfolio that reflects the original Rakuten core principles:
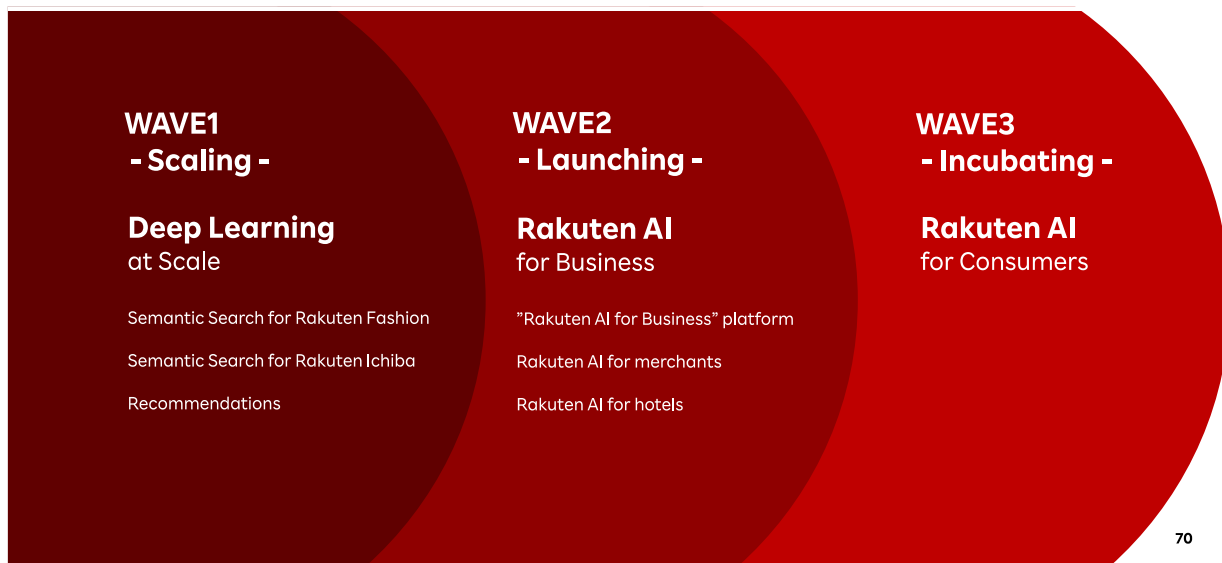
• End-to-end process support from plan through to operation. No more siloes.

• Single source of truth. Common Data Platform underpins everything.

• Cloud. An infrastructure platform for scale.

• Ubiquitous Automation.

These Rakuten principles can help telecom operations to become less complex and siloed. Moving them from a situation where every problem or use case becomes a new application, product, program, or even organization. Instead enabling a simplified, agile telecom operator that is ready to adopt AI at the center of its business.

AI at the center of Rakuten Symphony OSS

Rakuten Group is putting AI at the center of its overall company strategy. It wants to be an AI company. In looking at Rakuten Symphony's AI strategy it is important to see that this is a part of an overall company strategy, not a specific initiative for telco. Rakuten is already scaling deep learning across its business, and this forms the background to what it is seeking to achieve in Telecom.

Figure 2: Rakuten AI Execution Plan

WAVE1
- Scaling -

Deep Learning
at Scale

Semantic Search for Rakuten Fashion

Semantic Search for Rakuten Ichiba

Recommendations

WAVE2
- Launching -

Rakuten AI
for Business

"Rakuten AI for Business" platform

Rakuten AI for merchants

Rakuten AI for hotels

WAVE3
- Incubating -

Rakuten AI
for Consumers

70

Source: Rakuten FY2023 Earnings Call

The AI-Driven Operational Network

Building on these four founding principles, Rakuten is now able to add a fifth principle – AI in production – enabling a network to truly be driven by intent.

Rakuten Symphony is using Rakuten's wider AI capability to provide a simple conversational interface to Rakuten Symphony's operational systems. Rakuten Symphony is pairing AI with Data, delivered by end-to-end process knowledge, to achieve business outcomes! Rakuten AI paired with an end-to-end operational view can enable the new CSP.

Rakuten is not simply bolting AI onto its existing OSS product line and riding the AI hype wave. Instead, it is aiming to leverage its long-term investment in AI capability across the group. Rakuten is effectively the Amazon of Japan, an organization driven by data. Rakuten Symphony is leveraging AI capability that has already been proven across the organization over several years. Rakuten is an existing "AI native" organization.

Initially, Rakuten AI is being introduced in Rakuten Symphony OSS as a set of standalone licensable AI products linked with its OSS: Anomaly Detection, Energy Saver, Process Miner, Automation Engineer, and AI-powered rApps. It is also introducing a set of augmented AI features within its existing OSS products such as planning support.

Rakuten Ichiba has already got lots of AI use cases and Rakuten Mobile and Rakuten Symphony can leverage these. For example, Rakuten Symphony can leverage out of the box capability with image recognition that it can immediately use for drone-based site inspection.

Figure 3: Existing Rakuten AI based vision recognition easily enables drone cell tower inspection
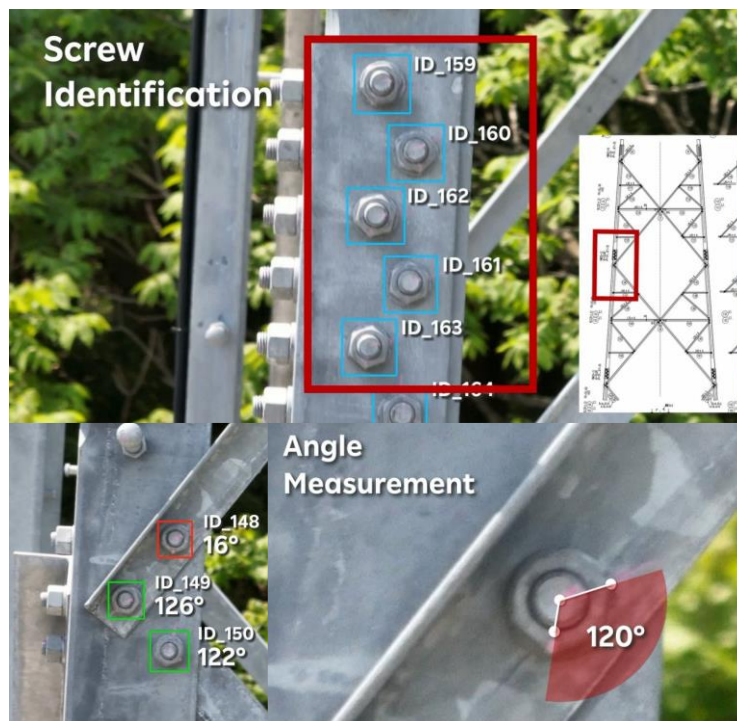

Source: Rakuten Symphony

Rakuten Mobile and Rakuten Group already have petabytes of data that it can leverage. Data that spans domains: BSS, OSS, Networks, CEMs. Using this data Rakuten is identifying new learnings from its employees that can be encapsulated in AI solutions. Rakuten is packaging its experience in developing AI with telecoms experts for Rakuten Mobile. It will sell this as a professional services-based solution "Employee-sourced AI" for customers adopting the Rakuten AI platform.

AI for humans

Most exciting is the introduction of a new standalone telecom LLM AI product, codenamed RAi (pronounced "ray"), for Rakuten AI, which is currently in beta with Rakuten Mobile. Underpinning what Rakuten is trying to achieve with RAi in telco is the concept of "AI for Humans".

Figure 4: Rakuten AI
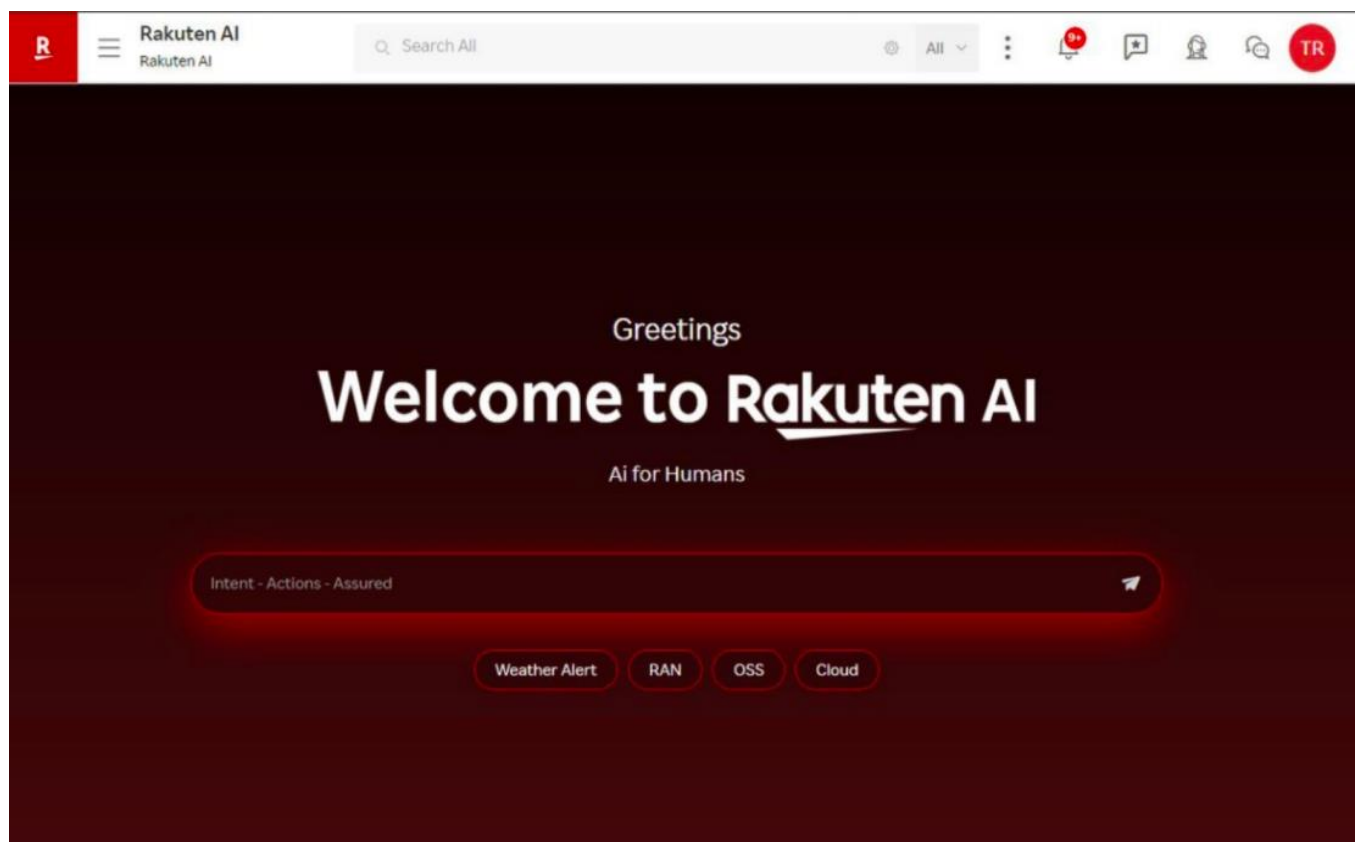
Courtesy: Rakuten

The RAi solution aims to be collaborative with people, working alongside them, assisting, scaling and augmenting what they can do, not replacing them. Specialists and experts will always be needed but they cannot scale at the speed or cost required by the business. Telecom is tremendously specialized. AI enables expertise to be scaled, no longer tied to a person at a location, doing one thing at a time. Instead, expertise is available wherever and whenever it is needed. Augmenting junior employees, improving their value/contribution and addressing the telco talent shortfall.

Figure 5: AI for Humans
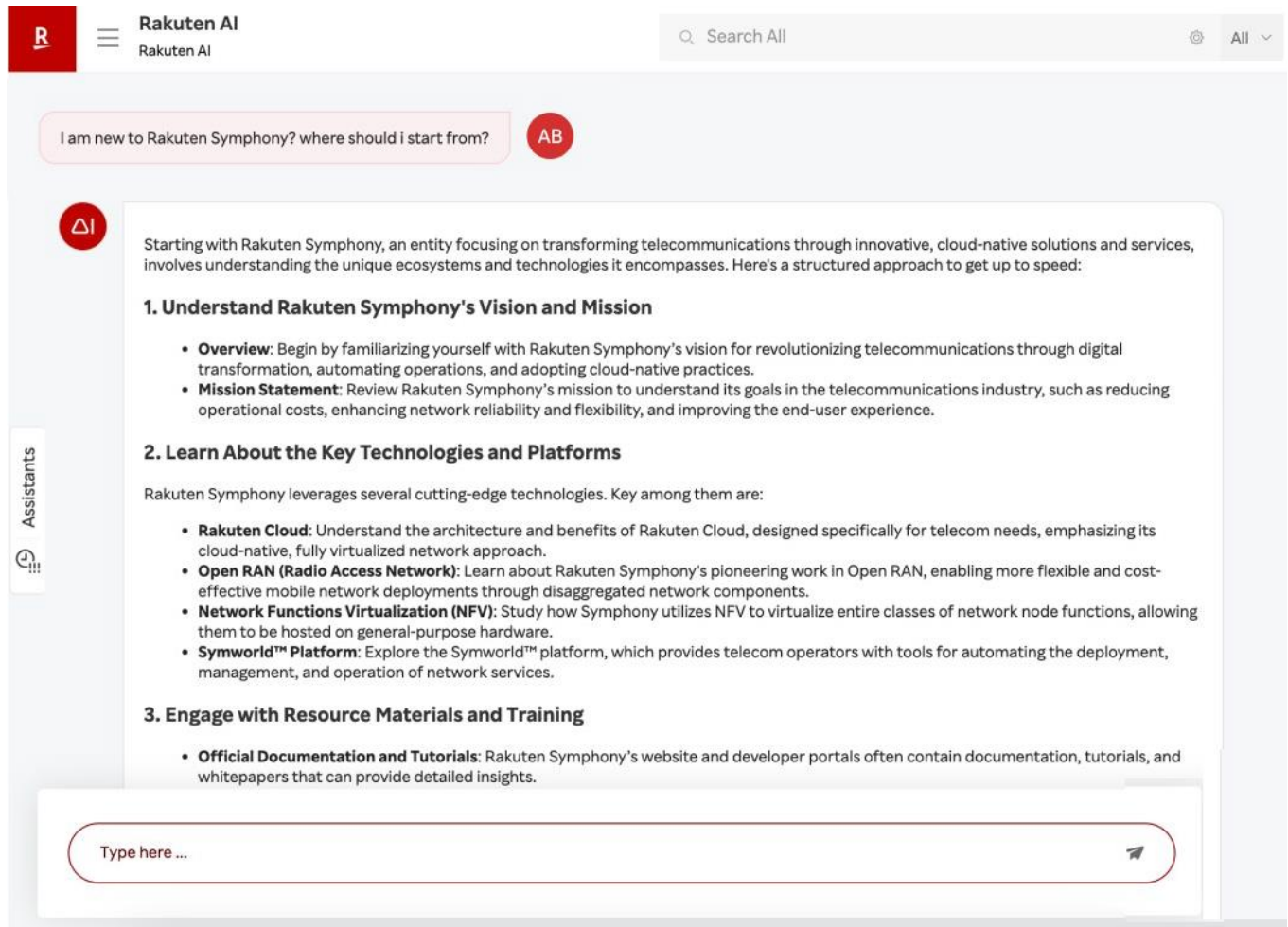
Courtesy: Rakuten

Rakuten Symphony is using AI to enable one interface to the OSS, or more accurately the operations of the telco. The Rakuten Symphony AI solution aims to provide a conversational interface to the business enabling anyone to ask natural questions about the network and the business. "Show me the number of network subscribers" generates possible more specific questions like "Show me the number of network subscribers with other Rakuten products" or "Show me the number of network subscribers with a Rakuten product in Tokyo". All of this is driven by data and AI learning.

*"Will telcos as we know them exist in 5 years?" – Rahul Atri*

In a recent Rakuten podcast on AI, it was noted that 95% of telco use cases don't need AI. This is true in the context of existing telco operations. AI offers very few added benefits beyond that already provided by analytics where it supports existing siloed organisations incrementally changing existing largely reactive operational behaviour.

AI does have much to offer to telcos if they can change their view. Moving from reactive to proactive networks. And this is where Rakuten's long-term vision for telco is heading. With this AI-driven interface live in Rakuten's mobile network Rakuten is not standing still.

Figure 6: A conversational interface to the telco network (1)
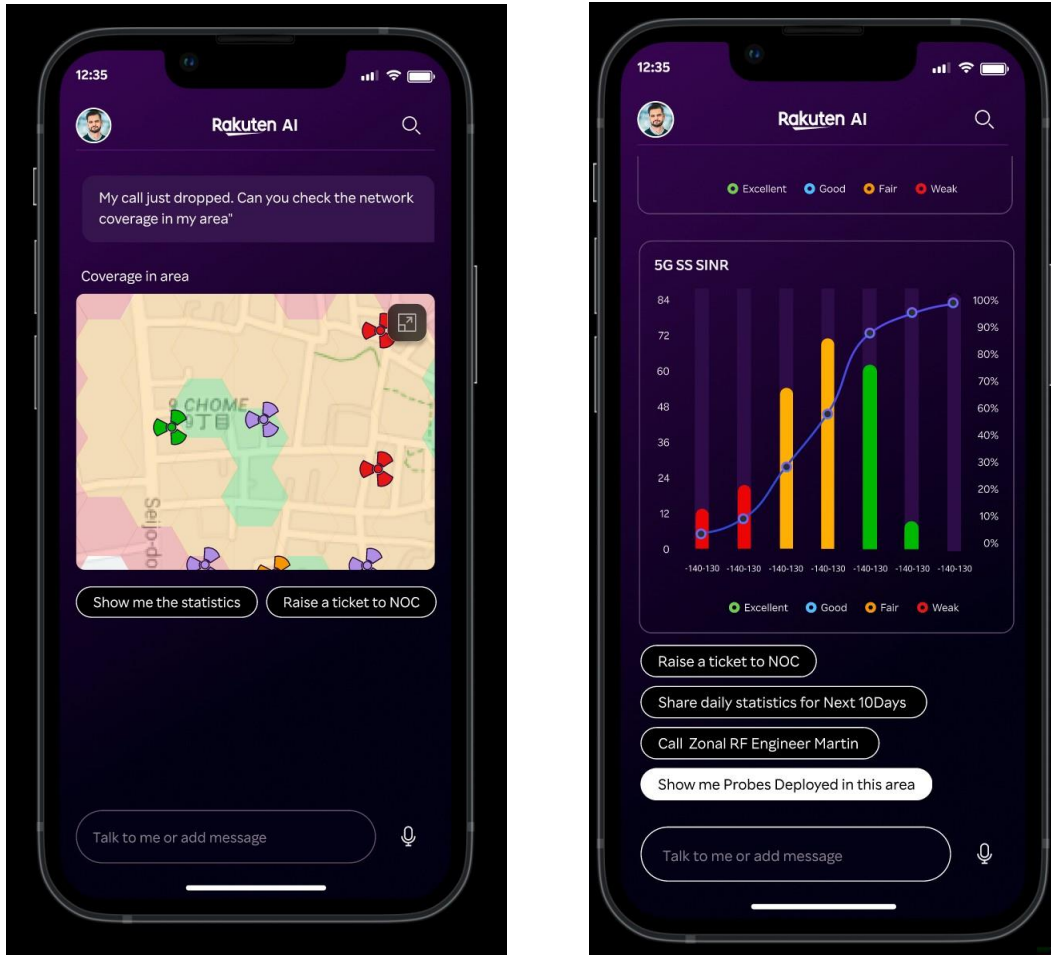
Courtesy: Rakuten

AI enabling the Intent-Driven new telco

Rakuten's vision for AI in telco goes beyond simply using AI to support the existing operational model and to use AI to enable a truly intent-driven network. Intent-driven networks have been central to Appledore's vision for telco since the beginning. Something discussed in Appledore's research Achieving Intent Driven Networks.

Intent + Context + AI

Rakuten Symphony has created a sandbox solution for the next step in its vision for a transformed, business intent-driven network. Today's solution is about enabling action in the telco. Tomorrow's vision is to show the power of the combination of Intent + Context + AI. It is analogous in concept to Google Gemini. RAi Intent, an intent-driven AI LLM sandbox solution, will be demonstrated at MWC

and Appledore was shown a sneak preview of this. Perhaps reflecting Rakuten Mobile's known business problems and focus, Appledore was shown the sandbox solution in action, solving Rakuten's subscriber growth problem.

Suggest to me how to increase my Subscribers by 100K

The sandbox solution generated three potential solutions to the above query

- Hotspot (marketing or Shops)

- New product or bundles (cost)

- New customer-facing / enterprise use cases (gaming, ++)

Importantly RAi Intent was both addressing the business need, but also comparing solutions that would in a typical telco be managed in very different siloed parts of the organization (COO, CMO and CTO/CMO). In this case, the shops' solution seemed to deliver the best solution, and this is where the ability to break organizational boundaries was even starker. The shop solution was not leveraging a BSS component it was leveraging site management capability from Rakuten Symphony to cost and plan the deployments. Sites are sites whether a shop or a network tower, whatever the internal network, the Rakuten solution treats them all the same with common characteristics, not as distinct objects tied to a siloed part of the telco.

Figure 7: A conversational interface to the telco network (2)
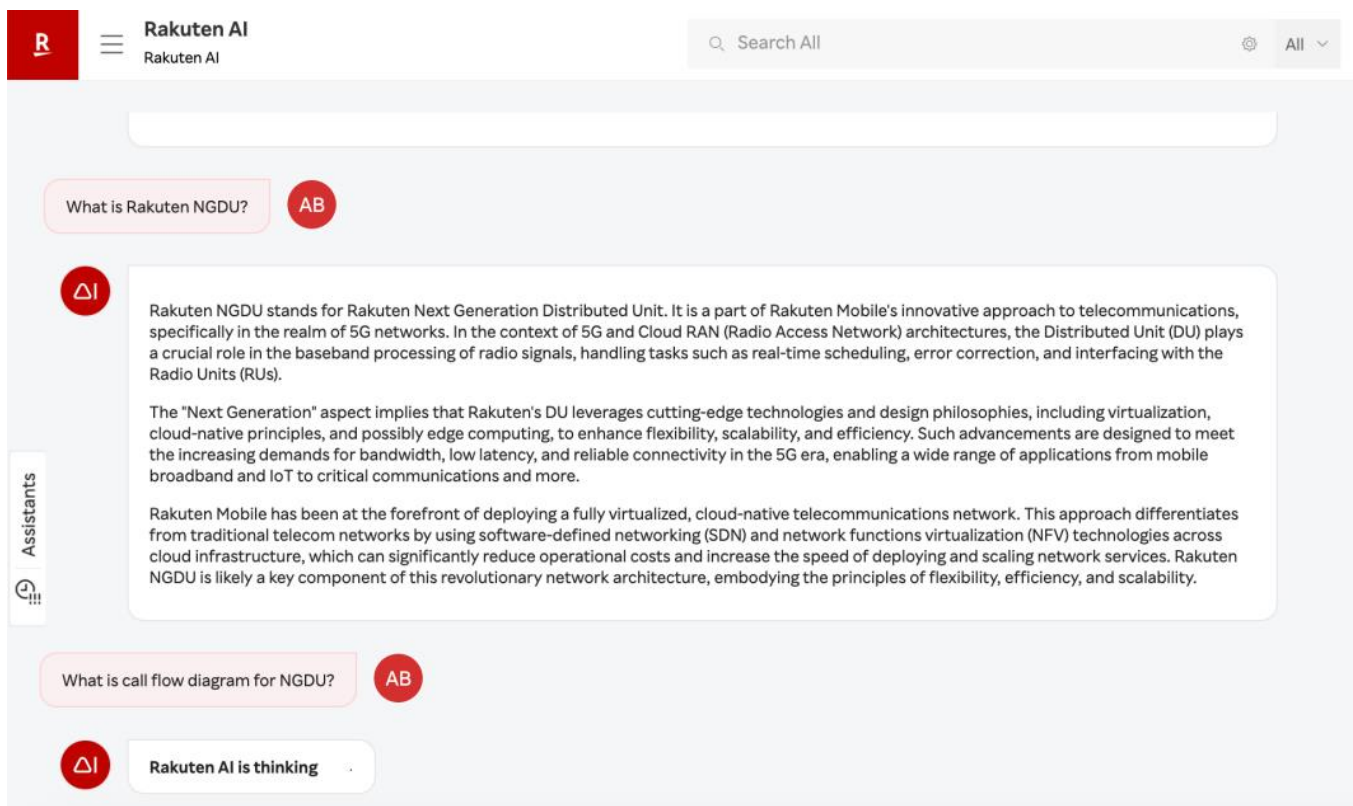
Source: Rakuten Symphony

Changing the telco mindset

RAi Intent is a sandbox trial, but it shows the potential for a very different intent-driven business. The technology to achieve this exists today, Rakuten is leveraging its data (both within telco, within the Rakuten Group and more widely) and AI technology that exists today. The challenge in achieving this is not one of technology, it exists today. The challenge is not even data, telcos are drowning in data lakes. It is rather one of the behaviours throughout the telco organization:

- The willingness to drive change within the CSP.

- The fundamental breaking down of siloes of data and processes, with which the quality and completeness of data that AI requires can be achieved.

Rakuten is achieving this change because as an organization it wants and demands this change from the top of the organization to the bottom. Rakuten can run a nationwide network with just over 200 people because it has demanded fundamental operational change across the organization. It also demanded ownership of the problem within the telco itself. It has high-quality data because it has invested in an end-to-end un-siloed platform.

Somebody else to do my job

And this brings us back to behaviour change. The challenge for AI in the telco is the telco organization and that organization's ambition. AI is about enabling what the telco wants to be. It is not something that can be subcontracted to someone else. Many CSPs are actively subcontracting AI to hyperscale providers, hoping for them to deliver AI capabilities, but in reality often simply procuring compute. For CSPs to fully benefit from AI the CSP needs to own measurable success criteria in terms of monetization, efficiency and cultural evolution.

Telecoms continue to adopt new technologies, like Cloud, Open RAN, and even 5G, but the economics and competitiveness are not changing. The question that is never asked - what does the telco want to do differently with this technology? With the promise of new 6G technology, and increased AI capability, is the industry ready to ask the tough question – what do I want to be when I grow up? Or will it revert to type, adopting AI as a technology and nothing changing?

Conclusion

Rakuten is challenging the telco industry to think differently about how the network can be changed to meet the very different future of the industry. What Rakuten is demonstrating with its AI-based interfaces and its revitalised OSS division is a fundamental rethinking of operational systems in telcos. Not one with AI bolted onto existing operational ways of working, but AI at the centre of a reimagined intent-driven telco.

Rakuten is Humanizing AI for telcos, personalizing it as RAi, one of the team, rather than as an awkward technology. Enabling new recruits in Rakuten to gain access to five years of Rakuten operational experience. Enabling old hands to rapidly adopt evolving best practices.

Rakuten Symphony is in a unique position to provide a new vision for the future DSP. A vision based on Rakuten as an existing leading digital player and Rakuten Mobile as the vehicle that drives the adoption of the wider Rakuten Group's services. A vision that all CSPs say they want.

From the beginning, Rakuten Symphony OSS has been about how data and automation can drive fundamental change in the operational behavior of telecoms. Now paired with AI, Rakuten Symphony has the opportunity to help CSPs become more efficient, and to also grow their digital businesses.

Appledore has for years promoted the idea of a truly intent-driven automated network. Perhaps we have seen a vision of what this could look like. Let's hope!

Insight and analysis for telecom transformation.

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