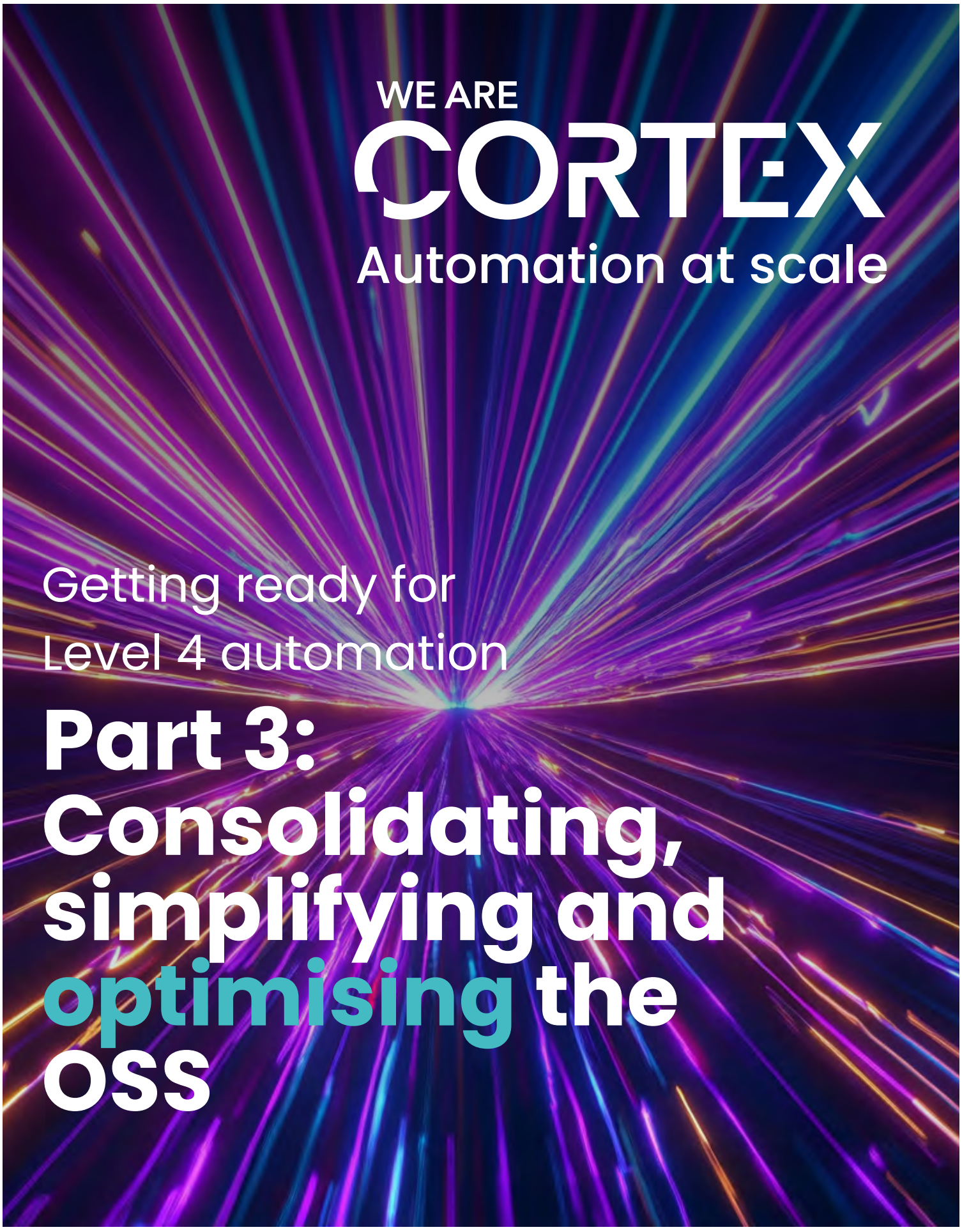

Getting ready for
Level 4 automation

Part 3: Consolidating, simplifying and optimising the OSS

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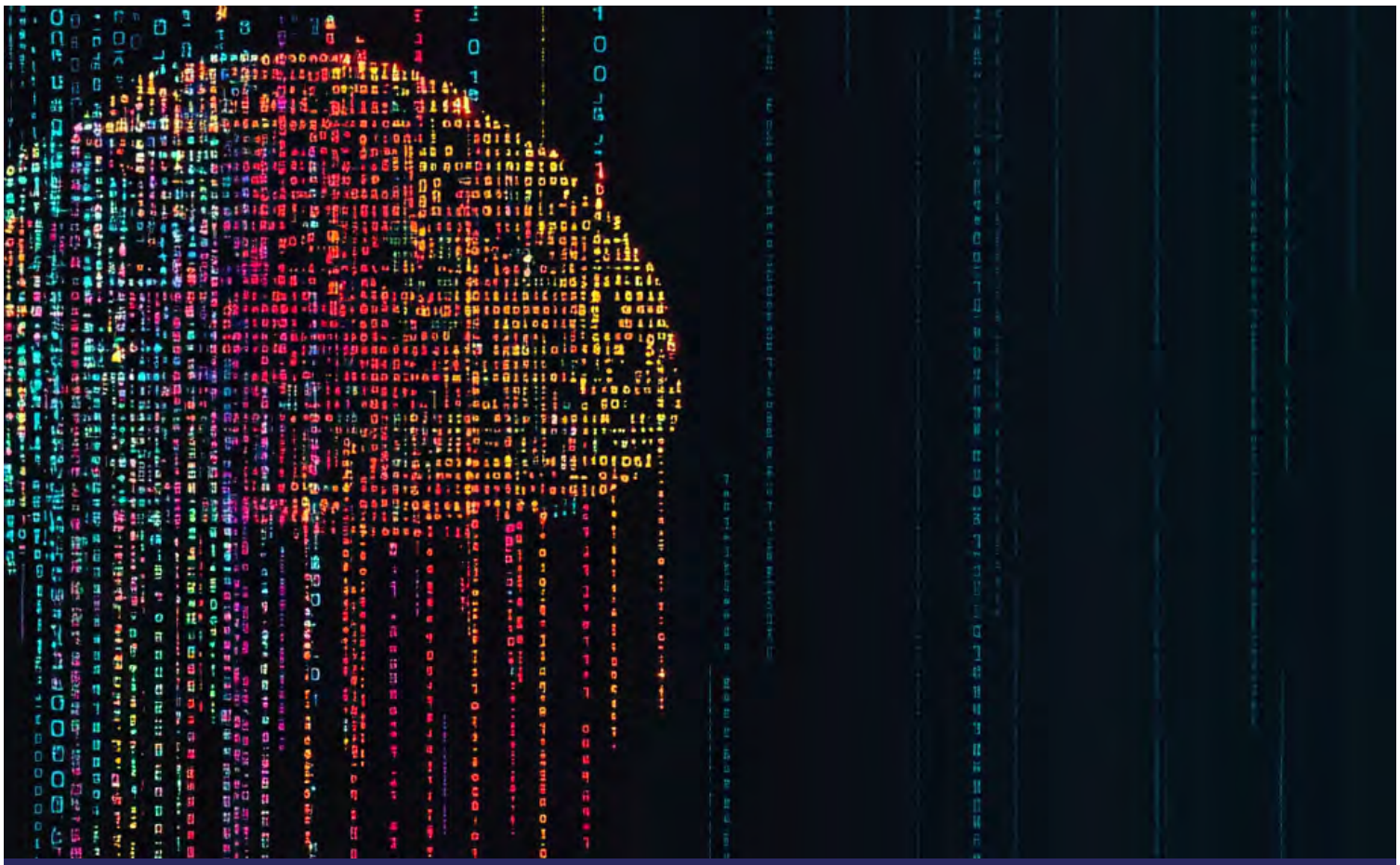


Introduction

Identifying opportunities to optimise

In this series so far, we've covered the first two of a three-stage automation transformation template that has been developed by We Are CORTEX – for operators of all sizes. These stages are:

- Consolidation
- Simplification
- **Optimisation**

In this paper — Part 3 — we'll explore the topic of optimisation, from the perspective of the network operator and service provider. In many ways, this is the weightiest of the topics we have addressed. What business does not want to optimise, in some way? After all, it's key to reducing costs, raising productivity and boosting the bottom line. And, all vendors promise to optimise your networks – somehow.

But where? What? And how? In the view of We Are CORTEX, identifying and executing optimisation opportunities is the natural next step in our process – so, if you have been able to consolidate and simplify, then you are probably already embarking on the optimisation journey. It builds, naturally, on the previous steps. In this paper, we'll explore why that's the case – and how you can benefit.

What does

optimisation mean?

The problem is that optimisation can mean different things to different people. As such, it can be seen as a generic target, not a specific goal. Generally speaking, all optimisation efforts seek to reduce costs and/ or risks. In the context of telecoms networks, optimisation opportunities and targets can include:

- Reducing the chance of service failures occurring
- Increasing the velocity with which services are delivered
- Accelerating the resolution of problems and processing queries
- Creating additional network capacity
- Building agility, so that the business can more rapidly pivot to new challenges and opportunities
- Reducing energy costs

UK operator BT's efforts to reduce its operational overheads by retiring public phone boxes is a good example of one approach to optimisation[1], removing costly (and largely unused) infrastructure from its estate.

So too are efforts by telcos generally to switch off their PSTN networks, so they can retire legacy copper connections[2] - and, with a bit of effort, recycle them[3]. But these efforts have been fraught with difficulty. PSTN shutdown has been a goal for more than a decade – and the end dates keep shifting as regulators step in to protect customers dependent on such services.

These efforts undoubtedly fit the model of optimisation, but they remain broad targets. Analysts and consultants may also make vague recommendations. For example, McKinsey — rightly, as per the above — reckons that reducing energy consumption should be a key optimisation target[4] — but how? By retiring copper networks and moving to fibre? That's one tactic, but that has its own complications.

Similarly, consultancy firm Ernst and Young thinks that telcos should "leverage analytics tools to optimise revenues"[5] — which is also a valid target, but one that also requires investment in (and integration of) new solutions and a supply of relevant data on which to make the right decisions.

So, if you ask the industry, optimisation can be predicated on further investments and network updates. Not all operators can afford to do this at the same time as they are managing other issues, such as ensuring universal service or rolling out 5G SA.

Investment in more complex solutions isn't always the answer. In our terms, optimisation has a somewhat more subtle meaning: can we improve a process or decrease our costs while reducing any need for manual intervention?

Where is

the starting point?

The old joke about a lost traveller asking a passerby for directions remains valid. The answer — I wouldn't start from here — is true for many operators. It would be great to start from scratch, as a greenfield. In this situation, many alternative operators have had the luxury of rethinking processes, such as onboarding and service activation.

The result? Digital first experiences in which a new fibre connection can be selected and purchased, with automated transfer from an existing provider, and selection of an installation window – in minutes, not hours. But most are faced with more challenging processes, in which requesting a device upgrade and new plan can take repeated phone calls, lengthy processes and more.

The truth for most, though, is different. Yes, processes can be rethought and remade, but they must be implemented in the context of the current state of the network and set against the panoply of existing and planned services and packages, each with its own concerns.

So, where do we start? The answer is both broad and narrow. Every network function and operational task represents an optimisation opportunity, but you have to adopt a focused approach, selecting projects with a degree of prioritisation. It all depends on your own operational priorities, which may not align with those suggested by McKinsey et al.

Let's consider a few key domains and goals, before exploring specific optimisation opportunities in detail.

RAN coverage and capacity

Delivering coverage in the RAN while providing sufficient capacity to meet user demand is, of course, a basic requirement for all mobile network operators. This is necessary, not just for their own customers, but also for MVNOs and other business partners that use their networks.

It's a fine balance. However, since demand is not constant, the capacity available should also not be constant, otherwise resources will be wasted in maintaining it at a set level. Instead, capacity needs to be adjusted, in a predictable manner, that should be automated to the greatest extent possible. And, because demand not only differs for each cell site, it also differs according to location, time, and population density.

As such, baseline settings and power cycles provided by manufacturers are not universally applicable – rural cells have less demand than urban ones, while seasonal surges must also be accounted for.

Optimising these settings individually will deliver better experiences to users, while also helping to meet more general energy management goals, but the experience delivered is the real driver to being the optimisation process.

There is another aspect to consider in the RAN: what happens when adverse conditions are encountered? For example, if there is a national event that impacts the entire network? In this case, operators typically have planned cycles to reduce services. This means that, for example, capacity could be reduced and data services deactivated, while providing sufficient for accessing emergency services. Testing to see if the expected service availability can be delivered during such events, or during power up and power down cycles should also be automated, because operators need to check to ensure that they can deliver to their required SLAs.

Proactive Churn reduction

Subscribers churn for many reasons but one key reason is apathy from their current service provider. In this case, the provider simply doesn't make any real effort to retain a customer, even when they reach the end of any contract period. That's clearly an opportunity for optimisation – but how?

A proactive churn strategy may involve tactics that use propensity modelling to predict likely churners while proactively presenting new offers and inducements long before contract expiry is one approach. This requires focus and planning across different systems. For example, CRM, service history, service quality indicators and more can combine to build the requisite picture and enable proactive approaches.

Put simply, a customer that has frequently called customer service to report faults with their fibre connection, or coverage issues for their mobile contract may be unhappy with the experiences they have received from their current provider.

Here, context also matters, so tracking availability of services (and their costs) from other providers also adds to the picture.

Customer service and support

While interactions with customer care teams can be an indicator of the likelihood of churn, the experience of actually getting to the right person is also an opportunity for optimisation. Customers that contact the care teams are already agitated about something. Introducing friction — like multiple requests for authentication, or overly long menu options that can't easily be remembered — compounds the problem.

Tools already exist to eliminate these friction points, but not all operators leverage them to their full advantage. And, many focus instead on a KPI like 'first call resolution" – but this doesn't address the pain of getting to the support agents in the first place, or the experience obtained while doing so.

In fact, customer service and support teams may not have control over such moments of truth, with the responsibility being fragmented across different teams. Here, optimisation may first require an evaluation across the whole OSS and BSS stack, ensuring that it is properly aligned with both seamless customer experiences and to obtain insights regarding the customer.

Refine existing processes before investing in new solutions

These are macro issues, and a longer list could be generated. What matters is that problems are easy to identify – and it should be clear that the answer is not necessarily an investment in new technologies or solutions, but refinements to the processes involved, building on earlier efforts towards consolidation and simplification – through micro-level innovations.

For example, there's no reason why, having passed authentication barriers, a flag should not be set in the CRM indicating that procedures have been met when calls are passed between agents or teams.

Similarly, correlating the number or recency of issues with contract duration should set a flag that a customer is less than happy, moving the account to an at-risk list, so an enhanced offer can be generated that includes a bonus – an extra amount of data. Or, if the customer is a frequent roamer, providing a gift for their next trip.

And, creating algorithms that use tracked data to more accurately reflect demand can optimise cellular capacity at a per site level, allowing for more tailored service delivery – while providing the template to change resource availability for expected demand periods.

All of this is easily achievable and can also be automated through the integration of different systems and processes. All should be done, but these are easy optimisation candidates to identify. The problem is that, because they attract a high level of attention, it's easy to neglect other opportunities that can, individually or collectively, deliver equal or better returns.

Friction is everywhere. What matters is addressing, through time, as many of these points of friction as we can – and not simply focusing on headline grabbing initiatives. Let's explore some other optimisation opportunities that generate proven value and were driven by the need for innovation within specific teams and departments.

User Access Management as part of SLAM

Managing access to systems that contain sensitive data or which interface with critical elements of your infrastructure is a major headache for any organisation – for operators and service providers governed by regulation such as NIS 2, the TSA, or DORA, it's a mission-critical task.

Protecting against accidents and ensuring consistent governance comes under the heading of SLAM — Starters, Leavers, Amendments and Movers — for which you need strict safeguards. One aspect of SLAM is ensuring user access to the correct systems – and removing it when the employee changes their role, or moves to a different department with different needs, or exits the organisation completely. The semi-manual methods typically used today, are not just extremely slow, but also leave room for error — and possible back-doors for bad actors.

SLAM is, then, a clear opportunity for optimisation, not just because it could simplify processes, but also because it's a legal requirement in many countries. So how do you optimise such a widespread but essential task?

One operator had problems in both enabling the requisite access for users and auditing it to ensure that the correct rights were in place. It had run quarterly assessments of user access and, on each occasion discovered multiple errors.

Together with We Are CORTEX, an automated solution for both SLAM and user access management was implemented. This required integration with multiple platforms, so that data could be tracked and correlated with contextual information, including:

- Human resources records and ERP systems
- Identity access management system
- Identity governance and administration
- Microsoft Active Directory

The resulting automation flow enabled HR personnel to execute the entire SLAM process instantly, ensuring that all access rights were secured – and protected. Rights could be revoked at the same speed, when triggered by HR processes. If manual oversight was required, portals were made available to enable acceptance or rejection of the required action.

The comprehensive automation delivered the following outcomes:

- >80% of all SLAM requests were fully automated within 3 months, which improved to >98% in 12 months
- The organisation managed 60,000 employees and >500 change requests per day were processed across the enterprise
- HR processing reduced from >5 days to <2 minutes
- 99% reduction in unauthorised account access
- 99% reduction in associated costs

Service assurance - alarm management and resolution

Customer satisfaction depends on service assurance. The problem is that services are delivered across multiple domains, covering an end-to-end chain of different systems. This makes it hard to track down issues, troubleshoot and identify and resolve the root cause.

With so much to lose from delivering imperfect services — and millions of customers and connected devices to consider —optimising service assurance processes is an obvious target for operators seeking to both protect customers and reduce costs.

Of course, there are multiple places to start from, so here's an example of how one operator secured significant reductions in MTTR (Mean Time To Repair) for core B2B connectivity services, while also redeploying staff to innovation and customer facing roles.

MTTR in this case was highly variable across different services delivered by the operator. It was calculated that almost 500,000 system alarms were either unchecked or completely missed.

At the same time, the resource allocation was fundamentally inefficient – because more staff were deployed in the NOC managing alarms than were occupied on fault prevention and root cause identification.

CORTEX was deployed as the solution and, in this case, automation flows were developed to handle the alarms generated by service and network delivery platforms. From the outset, it was essential that the automation also performed triage – isolating alarms that need human intervention from those that could be resolved via automated processes.

The automation integrated with the Network Management System and Fault Management System, and handled validation, classification and enrichment of alarms. This enabled false and duplicated alarms to be eliminated, so that accurate information was provided to the team.

As a result, the operator secured the following benefits:

- MTTR reduced by 40%
- 50% reduction in trouble tickets by eliminating duplicate and false alarms
- 500,000 alarms / month automatically resolved
- 30 FTEs redeployed from the NOC to product innovation and customer facing roles

B2B partner supply - SIM Management

B2B partnerships are increasingly important, especially as we move into the full-5G era. Ensuring that they are maintained effectively is essential. Partnerships cover a wide range of business areas – from interconnect and wholesale, content providers, to MVNOs.

MVNOs, particularly in the retail sector, can scale rapidly through their bricks and mortar businesses, so keeping them supplied with SIM cards remains hugely important, despite the growth in eSIM adoption.

One operator's process for activating and shipping SIMs to a leading MVNO partner had faults that could lead to failure in the field, with as many as 40% of SIM activation attempts failing. These failures would not be removed from the systems in the supply chain, with the result that a large number were released for distribution. So, it needed to adjust and optimise the process to eliminate these problems.

The operator integrated the CORTEX automation solution into the process, to manage the remediation of failures, in turn, reducing the revenue and brand impact risk. When a failed activation attempt is identified, CORTEX automatically identifies it and reprocesses the SIM, ensuring that every single SIM is activated.

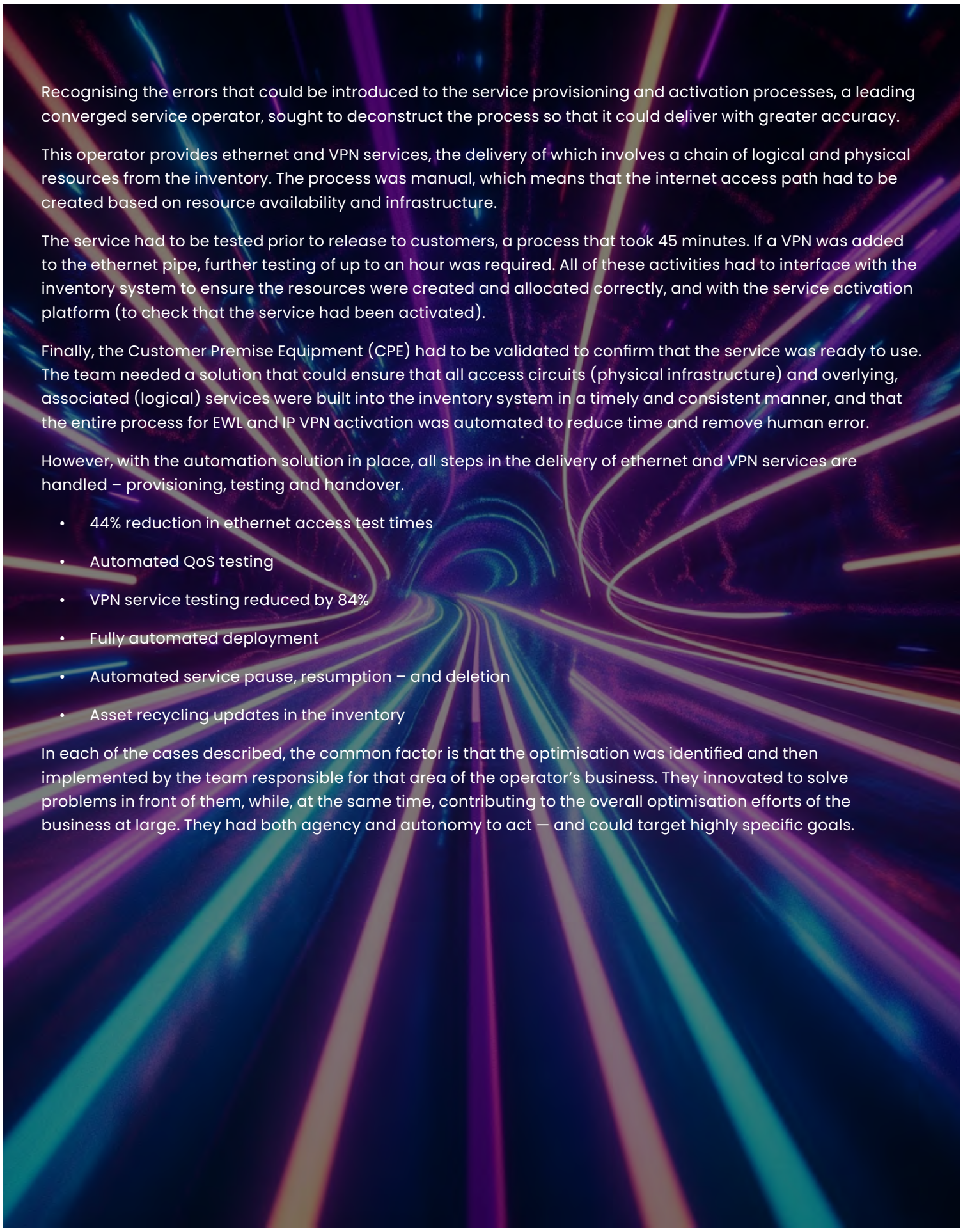
By addressing a single point in the supply chain, a point of pain was removed, optimising the process for the operator, the MVNO – and for the end users.

- Bulk SIM processing for MVNO partners
- 100% of SIMs released to the supply chain are verified
- Automated SIM and eSIM activation
- >3 million processed each year

Service provisioning and activation – ethernet and VPN

When a customer orders a service, they expect it to be delivered according to the promised time schedule — but they also expect it to perform as expected, first time. Unfortunately, that doesn't always happen — and the impact is greater for valuable business customers and enterprises.

For any given service to be realised, there are multiple steps to be taken, involving many different systems. Aligning these effectively is, of course, core to the function of an operator or service provider – but when something goes wrong, the customer is left frustrated, and the vendor is exposed.



Recognising the errors that could be introduced to the service provisioning and activation processes, a leading converged service operator, sought to deconstruct the process so that it could deliver with greater accuracy.

This operator provides ethernet and VPN services, the delivery of which involves a chain of logical and physical resources from the inventory. The process was manual, which means that the internet access path had to be created based on resource availability and infrastructure.

The service had to be tested prior to release to customers, a process that took 45 minutes. If a VPN was added to the ethernet pipe, further testing of up to an hour was required. All of these activities had to interface with the inventory system to ensure the resources were created and allocated correctly, and with the service activation platform (to check that the service had been activated).

Finally, the Customer Premise Equipment (CPE) had to be validated to confirm that the service was ready to use. The team needed a solution that could ensure that all access circuits (physical infrastructure) and overlying, associated (logical) services were built into the inventory system in a timely and consistent manner, and that the entire process for EWL and IP VPN activation was automated to reduce time and remove human error.

However, with the automation solution in place, all steps in the delivery of ethernet and VPN services are handled – provisioning, testing and handover.

- 44% reduction in ethernet access test times
- Automated QoS testing
- VPN service testing reduced by 84%
- Fully automated deployment
- Automated service pause, resumption – and deletion
- Asset recycling updates in the inventory

In each of the cases described, the common factor is that the optimisation was identified and then implemented by the team responsible for that area of the operator's business. They innovated to solve problems in front of them, while, at the same time, contributing to the overall optimisation efforts of the business at large. They had both agency and autonomy to act — and could target highly specific goals.

An environment for

continuous optimisation

As we have seen, opportunities for optimisation abound. While operators can focus on major transformation initiatives, the truth is that they may be better served by enabling an environment for continuous optimisation that allows hundreds of lower level (but still essential) optimisation initiatives to proceed in parallel – micro-level innovation.

What matters is creating an organisational attitude and enabling experimentation across all departments and teams. If you have already embarked on Consolidation (Step 1) and Simplification (Step 2), then you will already have the tools in place to support this shift: CORTEX.

CORTEX provides an institutional framework for implementing both consolidation and simplification strategies — across the board — while also enabling any user to pursue optimisation activities.

This is important because the ultimate goal of achieving Level 4 or 5 automation (according to the TMF's autonomous networks model) depends on mass transformation.

That is not to say that it needs to happen all at the same time. With the right framework in place, CORTEX users can identify their own opportunities for optimisation and proceed, under a single, cohesive governance framework, to tune their own areas of focus. From the transport to the core, to customer facing activities and service management, all can be tackled by autonomous teams, taking responsibility for enhancing their own areas of responsibility.

Conclusion

optimisation with We Are CORTEX

Any optimisation strategy cannot avoid steps 1 and 2 of this process – Consolidation and Simplification. This journey requires the right tooling and the right processes. CORTEX is the tool to support you on that path – backed by methodologies that are designed for organisations who embark on some or all of this journey, and enabling independent innovations that deliver to any team.

If the ultimate goal is Hyperautomation, then the impact of changes must also be considered. CORTEX minimises the impact of automation efforts, at all steps. Many of the leading operators of Europe depend on CORTEX to enable them to succeed, unlocking the advantages of automation. We Are CORTEX helps Tier 1 and Tier 2 operators with complex, large-scale and legacy-rich organisations to transform, overcoming the frictions and obstacles these efforts present.

Optimisation in general is a clear goal. However, it requires a specific, tactical approach — micro innovation — as well as a strategic orientation.

Underpinning this is the knowledge held by your people of your processes and technology – so that these micro targets can be achieved.

CORTEX enables you to leverage your people, your processes and your technology, without disruption, empowering them with the autonomy to innovate. Together, we can unleash your potential through transformation to automation – backed by the highest levels of governance and security.

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WE ARE CORTEX

We Are CORTEX

Kings Park House
22 Kings Park Road
Southampton
SO15 2AT

Phone: +44 23 8254 8990
Email: hello@wearecortex.com
Visit: wearecortex.com