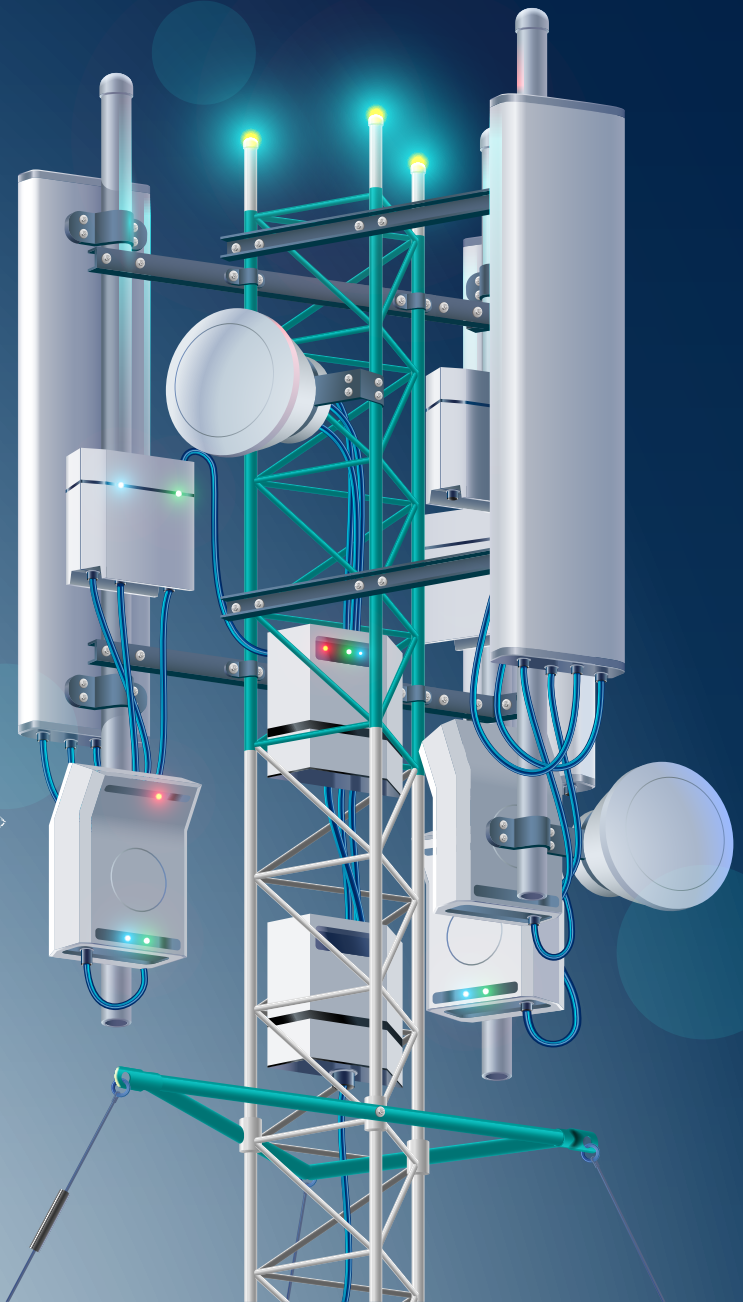


# The Telecom Playbook for IT Automation

A Strategic Roadmap  
for A Brand New Era



## TABLE OF CONTENTS

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|  |    |
|--|----|
| <b>Executive Summary</b> .....   | 3  |
| <b>Chapter 1: Telecom at the crossroads of innovation</b> .....                          | 4  |
| Reimagining the future for telecoms.....   | 5  |
| <b>Chapter 2: Automation as the bridge to innovation</b> .....                           | 6  |
| A new vision .....   | 6  |
| Pushing service assurance to new heights .....   | 6  |
| <b>Chapter 3: How the benefits of automation unlock innovation</b> .....                 | 7  |
| An inside look: Resolve + Telecoms.....  | 9  |
| <b>Chapter 4: A proven framework for telecom IT</b> .....                                | 10 |
| Leveraging the automation capabilities framework.....                                    | 10 |
| Establishing automation focus areas .....  | 11 |
| <b>Applying the model: A real-world example</b> .....                                    | 13 |
| <b>Chapter 5: Automating repetitive, manual tasks with tech-specific solutions</b> ..... | 14 |
| Technology Specific Automations in Action .....  | 15 |
| <b>Chapter 6: Automating repetitive processes in IT</b> .....                            | 16 |
| IT Process Automations in Action.....  | 17 |
| <b>Chapter 7: Automating cross-functional processes</b> .....                            | 18 |
| Cross-functional Process Automation in Action .....                                      | 19 |
| <b>Chapter 8: Automating customer experience-focused processes</b> .....                 | 20 |
| Customer Experience IT Automations in Action.....  | 21 |
| <b>A real-world example: Leveraging the framework</b> .....                              | 22 |
| <b>Chapter 9: Bringing automation to life</b> .....                                      | 23 |

# Executive Summary

The telecommunications industry is standing at the cusp of a new era, where the demands for speed, efficiency, and innovation have never been higher.

In this fast-paced and pressure-laden environment, automation is emerging as a key tool that telecom operators will need to leverage to not only survive but thrive. Automation facilitates speedy service delivery, enhances customer experiences, and optimizes resources while enabling innovation and a competitive advantage against less-advanced rivals.

Drawing on the collective wisdom of our customers and our decade-long journey in delivering IT automation solutions, we've developed an Automation Capabilities Framework to guide you as you integrate automation across your IT operations.

**Specifically designed for the unique needs of the telecom industry, the Automation Capabilities Model will help you:**



Categorize telecom IT automation use cases to unveil opportunities for optimization



Provide insight into the context and challenges at each level of automation



Leverage a structural blueprint for telecoms to prioritize and execute automation initiatives across all IT touchpoints

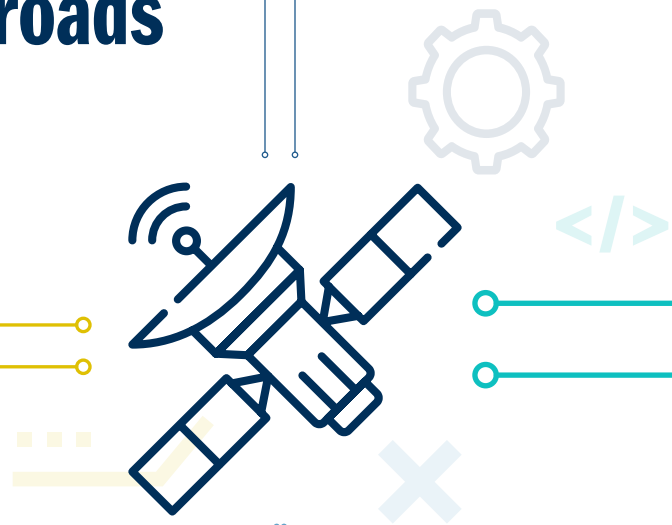


Establish a meaningful way to continually evaluate automation ROI in the context of your business

The whitepaper concludes with a basic framework of how to bring the Automation Capabilities Framework to life, painting a picture of what a strategic roadmap for automation should look like. We hope this guide will help IT practitioners in the telecom industry navigate the infinite possibilities IT process automation with Resolve can bring.



# Telecom at the crossroads of innovation



The telecommunications industry is at an exciting, yet critical, point in its development.

On one hand, it often feels like everything that can be connected is already online. From smartphones to internet-connected coffee makers to IoT-powered factory machinery, the world now sends tens of zettabytes of data back and forth between people, devices, and servers.

On the other hand, the future of telecom is only beginning to unfold. 5G is quickly becoming the standard, which will begin to unlock the many advanced experiences that have long been promised. Ubiquitous 5G will combine ultra-high-speed bandwidth with near-zero latency to revolutionize how governments, businesses, devices, and people download, create, transform, and transmit data, while new technologies like virtual reality and artificial intelligence (AI) exponentially increase the data that flows through telecom networks each year.

In addition, the pandemic significantly accelerated digital adoption trends, such as mobile data usage, remote work, videoconferencing, and streaming, which all require telecoms to quickly adapt to ensure optimal service.

The demand comes without even considering the impact of future technologies like 6G, Wi-Fi 7, advanced AI applications, and low power, wide area connectivity; the emergence of potential competition from non-traditional service providers such as technology companies and over-the-top providers; or another black-swan event like the pandemic that may turn the industry on its head.

Now is the time to capitalize on these new opportunities, by determining how to adjust your operations to meet the exponential growth in demand that the industry should

expect in the years and decades ahead.

In a recent survey, telecom executives cite telco service diversification and value-added services, the acceleration of cloud transformation, and increased deployment of AI/ML as their top priority investments.<sup>1</sup>

While each of these initiatives will help unlock key technical capabilities required for network growth, they will also create new demands for their IT teams to keep everything running. Telecom operators already say they struggle to innovate due to a lack of business agility for quickly adapting to macro-economic changes (57%), followed by high costs of operations (49%), and delayed time to market for new and innovative services (43%).<sup>2</sup>

## CHAPTER 1

Most telecoms today are still seeking to adapt to this new new opportunities, by determining how to adjust your operations to meet the exponential growth in demand that the industry should expect in the years and decades ahead. world in one way or another. Those that evolve most quickly will be the ones who most successfully address the following innovation blockers:

### 1 Legacy infrastructure

Legacy infrastructure refers to outdated hardware, software, and systems that are difficult to maintain, unsupported by vendors, and that pose security risks. The telecom industry often relies on specialized hardware, software, and equipment that are not only long past their shelf-life, but sometimes difficult to connect to unlock synergies.

### 2 Technical debt

Technical debt is the long-term consequence of shortcuts and quick fixes in software development and IT infrastructure. While managing technical debt is often critical for keeping the lights on, it can distract IT teams from focusing on implementing new solutions.

### 3 Poor efficiency

Technical debt and legacy infrastructure combine to create inefficient operations and processes. As a result, telecom operators often struggle with an increase in error messages, decreased productivity, higher costs, and a lower quality of service.

### 4 Security and trust

Telecom operators are responsible for protecting customer data at rest and in transit, so, they need keep their systems secure, respond quickly to cybersecurity attacks or insider threats, and maintain compliance with regulations. However, they're challenged by tools that introduce new risk or create integration challenges.

### 5 Infrastructure fragility

Telecom operators must be able to deliver 24/7 availability. System complexity means that threats like natural disasters, cyberattacks, failures of legacy infrastructures, or unexpected capacity issues can bring the network down at the worst moment.

### 6 Speed of response

As telecom networks become more complex, it has become more difficult for staff to keep pace with customer demands. The inability to analyze large data volumes or make real-time decisions will hinder the telecom operator's ability to optimize network performance at scale.

### 7 Regulatory complexity

Telecom operators must navigate a complex web of local, state, national, and global regulations. Regulatory requirements require strict compliance and oversight that telecoms already struggle to comply with, while an evolving regulatory landscape requires telecoms to be ready to adapt to new rules.

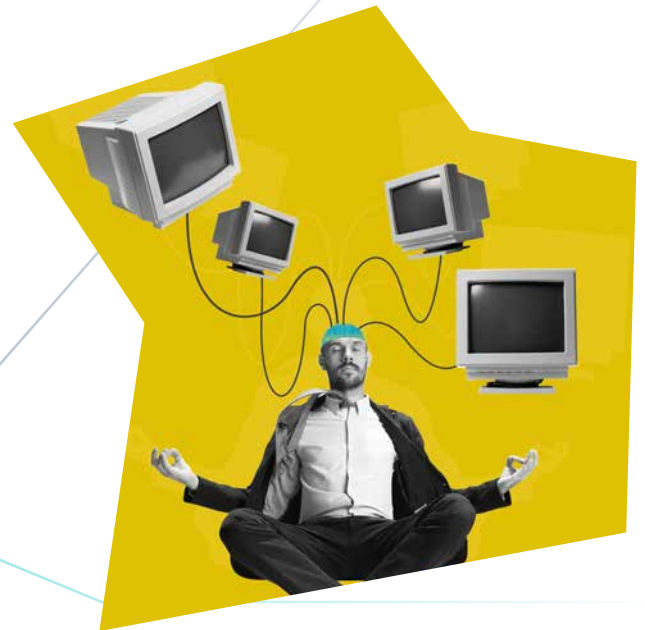
## Reimagining the future for telecoms

Thriving in an ever-evolving digital landscape requires strategic reevaluation of your operations. In do so, you'll enhance service delivery, reduce costs, and unlock greater value. At the heart of this transformative approach lies IT automation.

Considering the intense pressure telecoms face today, automation is an indispensable strategy for scaling and modernizing operations. Augmenting capacity to an already burdened workforce will deliver a vital performance boost, helping you achieve critical business objectives such as service assurance and service delivery.

# Automation as the bridge to innovation

While automation has always been an integral part of the telecommunications industry, advancements in technology like machine learning (ML) and artificial intelligence (AI) present new opportunities to leverage automation in a way that unlocks the full value of your digitized ecosystem.



Challenges will only increase in an era of 5G that offers the potential for significant business growth driven by an exponential use of data. While the promise of 5G is massive, fulfilling that promise is no small task. Transitioning to the service delivery of the future while overcoming the innovation blockers addressed in the last chapter will require rethinking the status quo.

## A new vision

The telecommunications industry is no stranger to new technology. The industry is at the crossroads of innovation, balancing the burdens of technical debt and legacy infrastructure with the need to capitalize on the modern technological advances at your disposal.

As customers demand faster and better products, meeting their service delivery expectations will require adopting a robust automation strategy, which allows you to augment and adapt legacy infrastructure while integrating and leveraging advanced technologies.

Merging decades of legacy infrastructure with that of today's hybrid cloud infrastructure is no easy project. With telecom operators already leveraging legacy, terrestrial, and cloud-based IT networks, many struggle to manage complexity, hampering their agility.

## Pushing service assurance to new heights

The network and service assurance processes of a telecom must work in perfect synchrony to manage a 5G network's complexity. This synergy is imperative for maintaining a hierarchical alignment among the network layer, service layer, and customer layer.

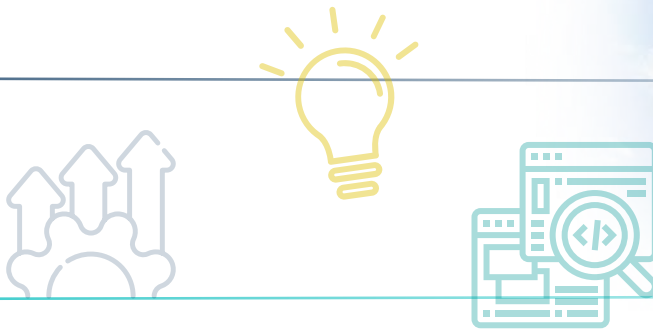
Strategic automation is key for cutting through the complexity to unify service orchestration and service assurance. As you continue to introduce new services such as network slicing or Network as a Service, automation will play a critical role in not only making these products work, but assuring you meet SLAs and internal expectations for performance, availability, and reliability.

Automation makes it possible to achieve crucial technical and business goals, including:

- ✓ Optimizing operational capabilities
- ✓ Enabling closed-loop network remediation and optimization
- ✓ Using real-time data to provide more responsive services and identify issues faster
- ✓ Leveraging a complete view of the network and services without requiring staff to manually piece together information
- ✓ Deploying AI/ML to identify new trends for disparate data sources

# How the benefits of automation unlock innovation

Automation is the foundation for effectively managing services and applications while unlocking innovation.



By automating service and application lifecycle management, you can transform your business to take full advantage of 5G standards and improve the basic nuts-and-bolts of daily operations. Zero-touch operations powered by automation allow you to efficiently run multi-domain services, optimize how you use all available resources, and unlock significant cost savings.

You can automate a wide variety of tasks to strategically utilize staff time, improve decision-making, and meet increasing customer expectations, which will then allow you to add capacity to your strained resources while balancing key priorities, such as:



Optimizing workflows of automated tasks across disparate systems



Capitalizing on available resources to ensure capacity is available on demand



Supporting workloads running on public and private clouds, distributed across multiple providers



Orchestrating network slices based on dynamic consumer needs

## The benefits of automation are notable and significant:



### Greater efficiency

Automation allows you to streamline your overall operations by reducing manual workloads, which frees up employees to focus on higher-value tasks, ensuring faster service delivery and lower costs.



### Optimized networks

The increased complexity of telecom networks is impossible for humans to manage alone. Advanced AI/ML-powered tools are required to analyze the vast amount of data the network handles so that your people can better predict network behavior, identify potential issues, and take proactive measures.



### Improved customer experience

Automation can help keep your customers happy by leveraging chatbots to handle routine customer interactions, which reduces wait times for common customer processes, like billing or technical support, while allowing human CX staff to contribute to more complex issues.



### Increased cost savings

You can leverage automation to optimize your workforce allocation and increase operational efficiency, reducing operational costs. In addition, automation can help improve things like network maintenance to help prevent costly downtime.



### Enhanced competitive advantage

The more you embrace automation, the more your organization will stand apart from your competitors by offering faster and personalized services, more affordable products, and more resilient operations.

## These benefits aren't just optional perks, but business necessities.

In a world of soaring customer expectations, the need for reliable, fast, and personalized services is imperative. Automation empowers you to ensure the consistent delivery of high-quality services, a seamless customer experience, and effective service assurance. By proactively identifying and resolving issues, optimizing network performance, and meeting stringent service level agreements, telecoms are better positioned to meet the needs of an ever-evolving digital era.





AN INSIDE LOOK

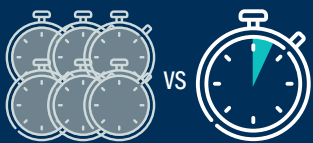
# Resolve + Telecoms

Resolve has partnered with many leading telecom operators worldwide, helping them leverage automation to accelerate their operations and boost their service assurance and service delivery objectives.

The Resolve Automation and Orchestration Platform is specially designed for IT teams in network, security, and IT operations who manage large volumes of service requests and incidents. This platform empowers operations teams by automating resolution procedures, equipping frontline agents with human-guided automations, and providing guided procedures to resolve incidents without costly and time-consuming escalations.

Telecoms that have adopted our automation platform have experienced significant advantages by standardizing their processes. Before implementing Resolve, many of these customers struggled to manage their multiple manual processes, supplemented by homegrown tools developed in various software languages. With Resolve now serving as the central nervous system of their IT operations, they can automate both essential workflows and the orchestration of existing homegrown scripts.

## Accelerate Incident Resolution



**6 min vs 4 sec**

Time Cut for Incident Diagnostics

## Increase Employee Productivity



**30%**

IT Support Staff Productivity Increase

## Reduce Operational Expense



**\$1.3M**

Monthly IT Operations Cost Savings

## Improve Customer Experience

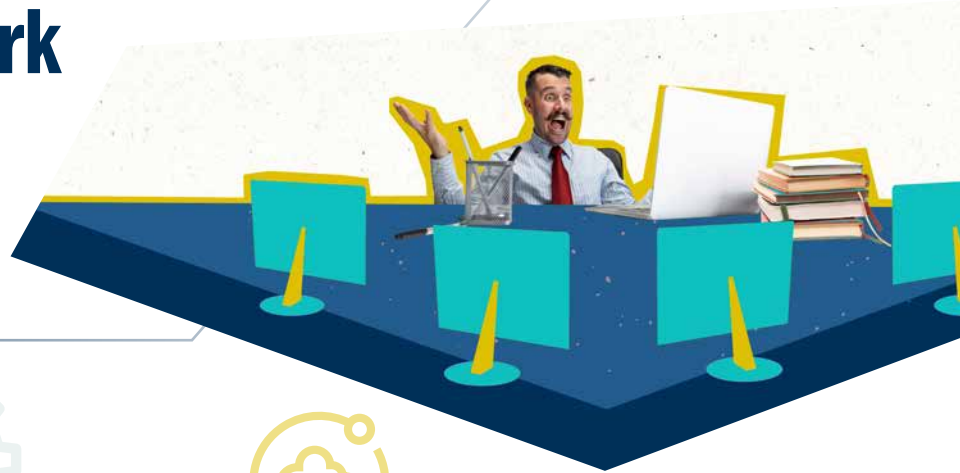


**6,500**

Monthly Customer Calls Eliminated

In the following chapters, we share the proven framework and methodologies used by Resolve's telecom customers for incorporating automation to meet and exceed their IT service delivery expectations.

# A proven framework for telecom IT



You're likely familiar with the Pareto principle, which states that roughly 20% of activities account for 80% of value created. For automation, investing in the small number of processes that will offer the most value in terms of performance, capabilities, and customer experience is key. Leveraging automation to respond to incidents and scale operations increases your ability to meet business goals for service delivery and service assurance while reducing customer churn.

Keep in mind that not all IT incidents are created equal. Automating high-volume, low-complexity tasks can deliver an outsized boost in productivity, allowing IT teams to spend more time focusing on innovation. At the same time, automating a highly complex, customer-facing workflow will result in a direct and positive impact on the customer experience.

No matter where you begin, it's important to determine a starting point that takes your priorities into account. The Resolve Automation Capabilities Framework has helped our telecom customers determine which network automations to prioritize based on desired business outcomes. The framework provides a place to start and led them to build their automation pipeline as they continued their journey.

The key to success: Never lose sight of the business outcomes that are important to you as a business. By using this automation framework, you can better understand your potential use cases within the larger context of your business.

## Leveraging the automation capabilities framework

Incorporating IT automation throughout the organization allows telecoms to evolve into digital services providers, and meet on-demand needs of customers and teams, with networks that are flexible, easily managed, swiftly provisioned, and customized with specific quality of services and service level agreements.

We developed the Resolve Automation Capabilities Framework by accumulating wisdom gained from our customers' experiences and our own decade-long journey in delivering IT automation. Using these learnings, we've developed an approach that enables telecoms to transition from a reactive to a proactive approach as they seek to embrace and integrate automation throughout their operations.

**The framework was developed to construct a telecom-specific route toward digital transformation. The intention of this framework is four-fold:**

1

Categorize telecom IT automation use cases to uncover opportunities

2

Provide a structure that telecoms can use to analyze and consider automation initiatives across all IT touchpoints

3

Deliver insights into the context and challenges each level of automation faces

4

Establish a meaningful way to continuously evaluate automation ROI in the context of the business

## Establishing automation focus areas

The framework divides use cases into four distinct automation focus areas. These focus areas assess the use cases through the lens of increased efficiency, efficacy, and agility based on key business outcomes such as the contribution an IT automation initiative can have on revenue growth, service assurance and service delivery, or risk management.

By using the framework to analyze your operations at a granular level, you can more effectively identify which processes are most likely to benefit from automation. Each automation focus area allows telecoms to achieve specific business goals:



### Technology Specific

Automations that replace manual work in a specific process to maximize time savings by automating repetitive, predictable, and short-running routine tasks.



### IT Process Specific

Automations that support workflows in IT processes spanning multiple decision points and IT systems. The goal is to extract more value by orchestrating and automating workflows to break through internal silos, support diverse input data from various sources, and leverage multiple calculations/business policies/rules and sophisticated algorithms to support a mix of rules and analytic models.



### Cross-functional IT Processes

Automations that orchestrate complex, end-to-end, long-running IT processes across complex business functions and workflows spanning individuals, applications, and functional boundaries to drive transformational change by eliminating organizational silos.

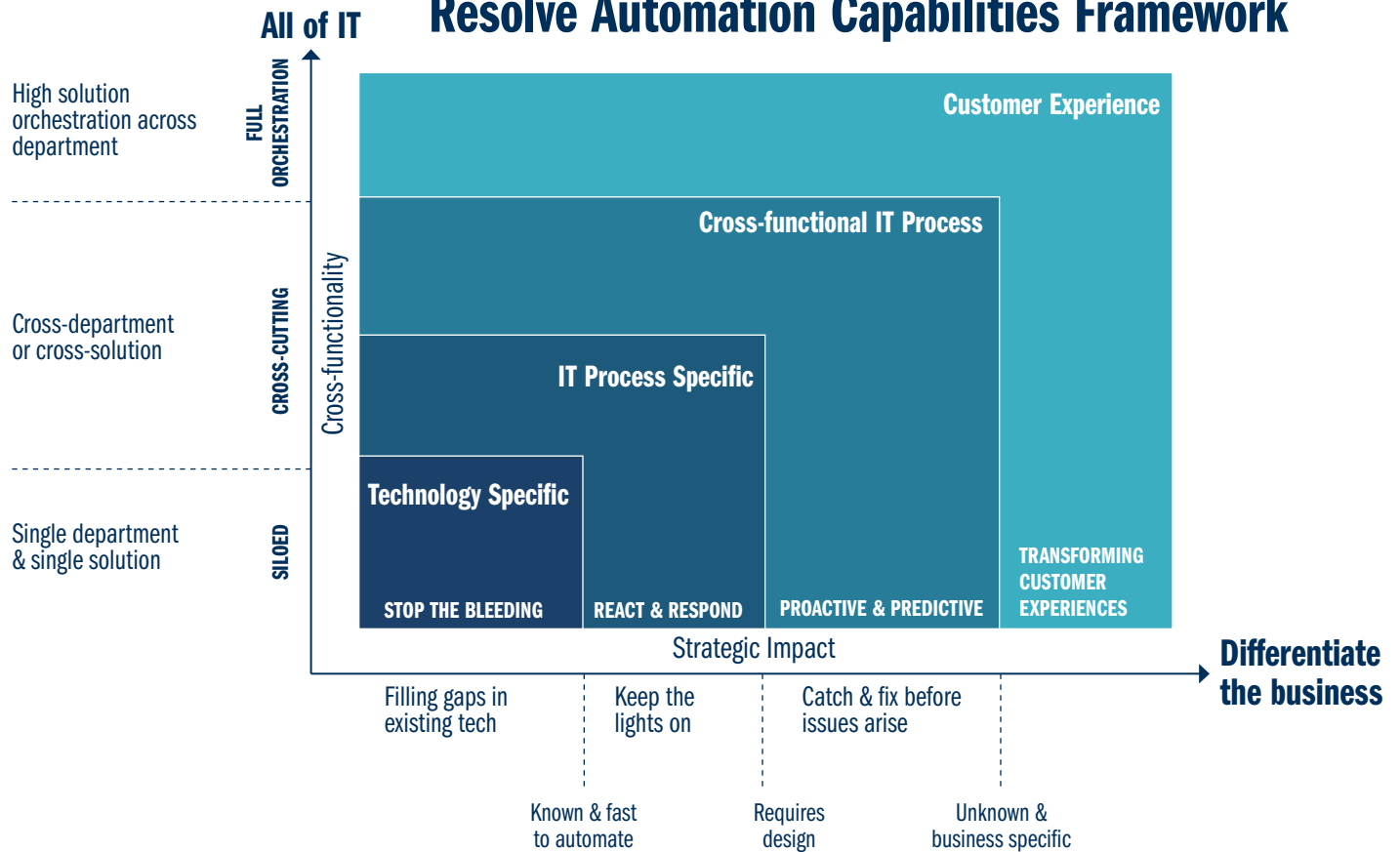


### Customer Experience Focused

Automations that leverage intelligent, automated decision-making and optimization to deliver a better customer experience, maximize innovation, and optimize returns on automation investments.



# Resolve Automation Capabilities Framework



Each of the above focus areas are meant to help you identify automation initiatives that accomplish your specific goals. Therefore, progress through each stage isn't necessarily linear; nor do you need to always automate lower levels before you can get to the higher-level use cases.

Evaluating processes using this framework allows you to be more deliberate in prioritizing and implementing automations. By using a systematic approach, you can incorporate automation to maximize investment and produce quick wins while setting up future automation efforts for success without ever losing sight of business outcomes.

APPLYING THE MODEL

# A real-world example

A leading mobile communications company based in South Africa had big plans for its future growth. To ensure customer loyalty as they continued to grow their subscribers, they had to make sure their networks could evolve while maintaining performance expectations. Meanwhile, their IT and network teams needed a way to support business goals for growth without increasing their staff capacity. The team recognized the only way they could

do both was to improve the operational efficiency of their existing processes.

Using the framework, the telecom's IT team was able to analyze its potential automation use cases. They identified a dozen of key processes that could be automated, allowing them to manage the dynamically increasing complexity of their multi-vendor networks while reducing human errors.

On the Resolve platform, the telecom then automated its end-to-end network configuration processes. The automation significantly reduced human errors by electronically validating data entry before a submission for configuration script creation was sent. Before automation, an IT engineer typically spent 55 minutes on a new site configuration. With automation, the process was reduced to less than five minutes.

Reduced key process from

**55** to **5**  
minutes to minutes

**10,000**

IT staff hours saved  
within the first year

Created

**32**

automation  
workflows in  
one year, with  
147 in the  
pipeline

# Automating repetitive, manual tasks with tech-specific solutions



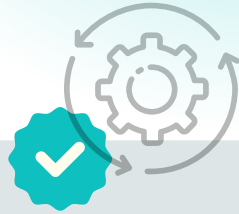
IT environments in most telecoms represent a blend of legacy and modern technologies, along with a fragmented tools ecosystem. As a result, IT teams often find themselves expending considerable time and resources simply managing the various aspects of their infrastructure stack, not to mention the numerous nuances within each layer found across physical and virtual servers on-premises and in the cloud.

For networking teams, the complexity in IT environments is becoming too much to handle. Managing both physical and virtual networks and ensuring optimal performance across both is an uphill battle. Automating management and tactical tasks not only frees up much-needed time, but adds a layer of standardization that eliminates human error, increases efficiencies, and saves money.

In this first category in the bottom left of the framework, the approach to automation targets routine, repetitive, and low-risk tasks. Exploiting domain-specific automation capabilities such as scripting or vendor-specific automations, in addition to leveraging the inherent workflow capabilities of automation platforms, allows you to achieve swift task automation within the corresponding domains. These narrowly focused IT automations yield the greatest benefits when they substitute a task that an IT or a network administrator is required to perform frequently. By automating these fundamental tasks, you can realize substantial cost savings, enhance your IT delivery accuracy and speed, boost employee productivity, and improve the overall customer experience.

Starting at this level in the framework shouldn't be confused with a low level of automation maturity. Automating routine, repetitive tasks often provides the fastest ROI while acting as building blocks for more complicated workflows. If you already have existing homegrown scripts and automations built using open-source configuration management tools, this approach is often the most effective way to start using and maximizing the Resolve platform.

Efficiencies can be quickly realized by importing code to create a library of reusable action tasks that can be standardized and verified for organizational compliance. Another key advantage of running these automations through Resolve is the ability to audit them, with detailed records of all performed actions, timestamps, and raw outputs for network teams to reference at a later time.



## State of NOC Cheat Sheet

Use the following cheat sheet to identify the operational state, challenges, tools, and value drivers that may be present where automations at this stage in the framework may be most useful.

### NOC teams

- Highly siloed teams with skills focused on domain areas
- Provisioning of new services is accomplished using multiple methods and tools
- IT teams requiring highly-skilled personnel

### Pressing challenges to address

- Reduced agility
- Increased maintenance costs
- Raised security risks
- Lack of innovation

### Automation technology in use

- Manual execution
- Ad-hoc scripts written to alleviate pain points around tactical tasks such as restarts

### Expected outcomes

- Faster execution
- Improved accuracies with few to no errors
- Better change management process

## Technology Specific Automations in Action

At this stage in the framework, focused on automating repetitive, manual tasks, individual segments of an IT process are typically automated to accomplish a highly specific tactical task. For example, Microsoft Windows PowerShell can assemble cmdlets, variables, and other components into a script, which mirrors the sequence of commands and steps an administrator would issue one-by-one via the command-line interface (CLI) to provision a virtual machine (VM) or establish a backup process.

Here is an example of typical automations that eliminate toil for telecoms:

### 1 Syslog Audit

Help IT proactively look for alarm signals by automatically running an audit on the transmission syslog and emails exceptions.

### 2 Customer Power Check

Allow L1 agents to do a power check to reconfirm as a last minute due diligence before ticket closure.

### 3 Site Down Confirmation

Confirm, using a ping, that network connectivity for the site is down. Next, the automation files a ticket with the right details and assigns it to the right team for investigation.

### 4 Email to Ticket Creation

Create a new ITSM ticket from email for resource provisioning.

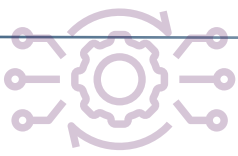
### 5 File Transfer

Run scheduled checks at a specified location for a file, and transfer to other locations once available.

## Resolve is purpose-built for IT automation

With capabilities to bring your own code, it lowers the barrier for telecoms to begin their automation journey. By ingesting scripts to build reusable action tasks, you can quickly increase the usability of your existing scripts, allowing you to benefit from heightened visibility and more secure automations, which can scale across teams. Not only will they have complete insight and visibility every time automations run, but they can also make it available for other teams for use.

# Automating repetitive processes in IT



The ever-increasing demand for seamless connectivity, customized solutions, and a wider variety of products and services has led to skyrocketing rates of data creation, usage, and storage. Meanwhile, operational services such as customer support, billing, order fulfillment, and more have become increasingly difficult to manage as subscriber counts, customized plans, and customer segments continue to multiply.

When faced with complexity, telecoms need to ensure network teams are agile and can keep up with business demands. Building processes for the future requires efficiencies across multiple domains – network services provisioning (Day-0) and Network engineering and operations (Day 2-N). Re-thinking existing automations to go beyond just tactical tasks and silos can help push the quality of service to a level higher than what is being achieved today.

Telecoms need to automate IT processes wherever possible to unlock efficiencies so they can refocus their limited resources on innovation and higher-value initiatives. While automating tactical network tasks using scripts can provide some respite, the hands-on effort it takes to run and maintain these automations is considerable, not to mention the security risk it could pose with open ports, PII data, and others.

In this second category in the framework focused on automating IT processes, the approach to automation builds on tactical automations or scripts that already exist to create a cohesive workflow. Exploiting capabilities such as event-driven automation can bring significant efficiencies into processes, as the automation will kick off as soon as the event occurs, rather than waiting for a human to address the problem. Process automation adds consistency and standardization





## State of NOC Cheat Sheet

Use the following cheat sheet to identify the operational state, challenges, tools, and value drivers that may be present where automations at this stage in the framework may be most useful.

### NOC teams

- Teams are siloed with skills focused on domain areas
- Provisioning of new services is accomplished using multiple methods and tools
- General SLAs are defined
- Service delivery goals are achieved with some degree of success

### Pressing challenges to address

- The need to operate at scale
- SLA attainment consistency
- Cost creep
- Increased workload and complexity

### Automation technology in use

- Manual execution combined with scripts
- Tactical automation platforms

### Expected outcomes

- Speed of service delivery
- Process standardization
- Cost and time efficiencies

## IT Process Automations in Action

At this stage, telcos that start to embrace the benefits of automation are willing to dedicate resources to advance it. For example, many IT teams leverage automation to deliver operational efficiency as they manage the complexity of 5G issues, such as new frequency bands, automated antenna systems, new low-latency services, and other network components. By leveraging IT process automation for incident, event, and diagnostics management, network engineers can then divert their focus toward more customer-centric processes.

Here is an example of typical IT process automations for telecoms:

### 1 Server Provisioning

Automatically provision Windows or Linux servers based on a request and permission levels.

### 2 Get Inventory Data

An automation is triggered from an ITSM ticket to gather inventory data for IP network / WLAN and update a SQL CMDB and the CI in the ITSM platform.

### 3 Verify Incident

Validate an IT incident by automatically interrogating vendor-specific IP network devices to confirm the validity of a network incident, update the ITSM ticket, and notify the user.

### 4 Customer Case Update Emails

Email case notifications to customers using a standard email template every time a customer case is updated in the ITSM platform.

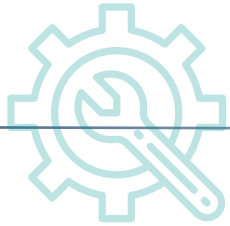
### 5 Check for Duplicate Incidents

Check for duplicate incidents based on CI and CMDB data and move them to a separate queue.

## Resolve provides the necessary foundation for network and IT teams to get started on building workflows

Starting with a low-code workflow designer and thousands of automation actions, IT teams can quickly build powerful and meaningful workflows in a matter of days. Connectors to ITSM and other third-party applications can be downloaded from the Automation Exchange to grow your drag-and-drop library of actions. Resolve continues to add new integrations each month, enabling telcos and other organizations to advance their IT automations.

# Automating cross-functional processes



Telcos are working to support 5G at record speeds. The complexity of a new architecture and RAN requirements will cause disruption, both in terms of what needs to be supported and the speeds at which they need to be supported. New concepts like network slicing and data increases will make IT ecosystems increasingly complex.

IT leaders today face a dichotomy of keeping the lights on while also supporting new initiatives. Automation, across IT as a whole, will advance these priorities. Collaboration among the larger IT team and the network teams have never been more important, with focus shifting from only automating network management to automating processes that deliver on service assurance and service delivery goals.

Automation is at the core of efficient telecom operations. Just as importantly, automation can help you overcome technical debt in the form of existing monolithic architectures and existing systems. Leveraging automation to enhance services, optimize operations, and scale the customer experience will enable you to reduce operational costs and energy consumption, all while sustainably increasing revenue per user.

In this third category in the framework focused on automating cross-functional IT processes, telecoms extend their automation efforts across teams or technological silos to coordinate between applications and complex IT systems. These automation workflows typically involve collaboration among various teams, data collection from multiple sources, and the analysis or synthesis of data with other systems.



## State of NOC Cheat Sheet

Use the following cheat sheet to identify the operational state, challenges, tools, and value drivers that may be present where automations at this level in the framework may be most useful.

### NOC teams

- Teams are siloed with skills focused on domain areas
- Provisioning of new services is accomplished using multiple methods and tools
- SLAs are defined and achieved with some consistency
- Service delivery goals are achieved with some degree of success

### Pressing challenges to address

- Tool silos and complexity
- Growth challenges
- Skills gaps
- Self-service without risk

### Automation technology in use

- Automation and orchestration platform for workflow automation
- Vendor-specific automations

### Expected outcomes

- Service delivery experience
- Process standardization
- Left-shift for common issues with SME approved automations

## Cross-functional Process Automation in Action

Automation at the cross-functional IT process stage spans team silos and service incidents. One common example is employee onboarding, which can necessitate account provisioning across several distinct applications. Other common automations include service request fulfillment, hardware and software management and monitoring, new technology implementation, compliance and security monitoring, and maintenance.

The outcome of these automations is faster and more efficient processes, fewer errors, increased cost savings, and enhanced productivity through seamless and timely cross-team collaboration.

Here is an example of typical cross-functional IT process automations for telecoms:

### 1 Network Auto-remediation

Triggered from a big data analysis, a Healing Action is initiated via a Rest Call to connect to an OMC and execute several commands to restore the Network Service or collect logfiles for future investigations.

### 2 Guided Incident Closure

Provide L1 engineers a guided automation for incident closure.

### 3 Line Subspeed Alert

Ensure quality and performance for fixed IP service based on DFM (bundle of physical lines) by identifying service degradation, diagnosing lines that are down, and applying a new configuration to either restore service or escalate it to a third party as needed.

Resolve automates end-to-end workflows across existing teams and tool silos to enable faster ticket fulfillment or incident response through zero-touch operations using auto-remediation. Resolve can also enable guided procedures that help network engineers follow an automated process, with the automation only advancing when the engineer has entered their decision. By fusing standards-based incident response and step-by-step guidance with machine-assisted decision support and interactive automation, Resolve enables telecoms to create a comprehensive investigation and remediation process.

# Automating customer experience-focused processes



New technologies such as 5G and IoT – not to mention the evolving regulatory standards that continue to emerge to account for them – require IT to move faster and faster, just to keep pace. Today's complicated macro-economic environment is characterized by high labor and material costs, the highest borrowing costs in more than a decade, and a tight labor market that often necessitates a hybrid workforce of employees and contract workers.

As a result, you're likely finding it more difficult to keep costs under control, leading to greater pressure to unlock operational efficiencies. However, the complexity of most telecom organizations makes it challenging to break down silos, move away from legacy systems, and adopt more modern ways of working. This can have a significant impact on the customer experience, as siloed departments and complex IT environments make it nearly impossible to deliver the exceptional service consumers expect.

In this category of customer-focused automation, you'll focus on the mission-critical processes that touch the customer

experience. By focusing on customer experience, you can leverage automation to respond more effectively to customer requirements, build customer loyalty, and create a stronger value perception in the minds of customers. In doing so, these customer experience improvements can generate sustainable competitive differentiation, improve long-term profitability, reduce operational costs, and increase agility.

Let's look at an example of how these types of automations impact both the customer experience and the bottom line. Imagine that a fiber optic cable gets inadvertently cut, interrupting critical services in the process. Finding the incident, filing a ticket, and routing it to the right team with the relevant diagnostics information can make all the difference between a momentary blip and a disruptive outage. Digitized and automated field workflows gives your dispatch staff the map-based data needed to identify which field crew is closest to the site, while ensuring they have the requisite skills and equipment to do the job. With full visibility into the situation, you can make optimal scheduling decisions to ensure the best customer service.



## State of NOC Cheat Sheet

Use the following cheat sheet to identify the operational state, challenges, tools, and value drivers that may be present where automations at this level in the framework may be most useful.

### NOC teams

- Cross-collaboration across IT silos
- Optimized resource management
- SLA consistency across all levels

### Pressing challenges to address

- Tool silos and complexity
- Security and governance
- Fast rollout of new services with full support

### Automation technology in use

- Automation and orchestration platform for workflow automation

### Expected outcomes

- Service delivery experience
- Process standardization
- Self-healing for low-risk endpoints
- Left-shift for common issues with SME approved automations

Resolve provides unified visibility and control over automations impacting the customer experience, making it simple to integrate event management, ticketing, CRM, set top box management, provisioning manager, and other network equipment management into a single user interface to validate, diagnose, and resolve issues fast and efficiently.

A robust and unified orchestration layer creates a centralized automation hub, while a low-code experience simplifies and accelerates delivery of new automations. Resolve seamlessly integrates with almost any IT tool bidirectionally, leveraging pre-built connectors and integrations for fast implementation. Users have access to an extensive library of pre-built automation templates to jumpstart an end-to-end automation workflow.

## Customer Experience IT Automations in Action

In addition to network coverage and speed, one of the primary competitive advantages for a telecom is the customer experience they offer. At this stage, you'll want to focus on automations that cover high-value, high-impact use cases that directly impact the user-level quality of experience (QoE) and your deployment speed.

Automation can become the bridge that connects your core network technologies together to ensure speed and accuracy, allowing you to operate faster through the use of software-defined networking (SDN) and network virtualization, including network function virtualization (NFV) and virtualized radio access network (vRAN).

Here is an example of typical customer experience IT automations for telecoms:

### 1 Sleeping Cells

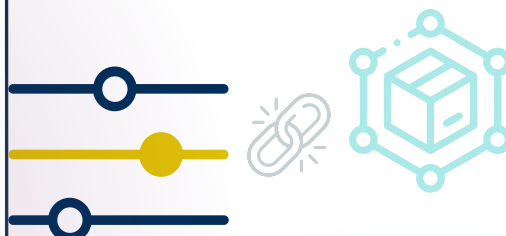
A scheduled automation workflow, using performance statistics, connects to the Huawei Network Management system and runs commands to check the mobile network for sleeping cells. If they are detected, then remedial actions are performed, and an email notification is sent out. This will restore capacity to the Mobile Base Station Site.

### 2 Customer Care Status - HubTV

Wiki-based Automations (largely used by NOC Help Desks) run diagnostics and services status tasks to provide customer helpdesks with information on customer service. This may cover HUB TV, Cable Boxes (HFC), Telephony (SmartRJ), and ServAssure (Graphics for Interface Statistics).

### 3 Service Configuration and Service Shifting

An automation is triggered from a service request, which retrieves all required information from a variety of third party systems. This is combined with templates of MML commands, to eventually deploy the configuration script to the Huawei router.



A REAL-WORLD EXAMPLE

# Leveraging the framework

A leading provider of advanced network communications and technology solutions for consumers, small businesses, enterprise organizations, and carrier partners across the U.S., needed a way to improve daily operations for its Network Operations Center (NOC). The NOC suffered from an unusually high alarm volume that technicians struggled to handle manually, with roughly 10,000 alarms a week that needed to be triaged, investigated, and closed.

Using the Resolve Automation Capabilities Framework, the telecom provider identified a way to augment its existing scripts to automate alarm triage. New automations included:



### Circuit enrichment

An automation can look up Circuit IDs to add into the Netcool alarm, which was previously done manually.



### Power alarm processing

This automation recognizes alarms from different locations when the power goes off. It then verifies the alarm and escalates it so a technician can be dispatched immediately for repair.



### Maintenance correlation

During scheduled maintenance windows, hundreds of alarms would be generated as expected. This automation tags the alarm appropriately and clears it once the window closes.



### TDM switch diagnostics

This alarm runs diagnostics on the switches to identify fault packs. Once identified, the automation escalates it with the right details, immediately dispatching a technician to the appropriate location to remediate the issue.

Using the Resolve platform, the customer leveraged these automations to eliminate their need for a NOC surveillance organization. Multiple alarms can now be tied to a single event, allowing technicians to be deployed to the correct location with all the information they need to solve the problem. Staff who were previously only focused only on alarm triage were redeployed to work on remediating issues, which helped the organization increase its response speed and lower its mean time to resolution (MTTR).

Automated

# 100%

of total alarm volume

# Improved

ability to correlate multiple alarms to a single event

Enabled NOC to achieve its MTTR goal of

# <4 hrs

# Bringing automation to life

The ability to efficiently combine people, processes, and technology will directly impact the value you achieve through automation. Based on Resolve's experience implementing automations for telecom customers, we've created a three-phase implementation strategy you can leverage when implementing automation.



## PHASE 1 Onboarding

Month 1-2

In Phase 1, you'll focus on implementing and configuring the Resolve platform to meet your organization's specific needs. Additionally, you'll also work on building your foundation for success by training your team, building out your automation flywheel, training your automation team on the platform, and establishing the KPIs you'll use to track ROI.

**By the end of this phase, you'll accomplish:**

- 1 One use case in production
- 2 One developer trained on the Resolve platform
- 3 Preparation to scale automation

## PHASE 2 Proving

Month 2-6

In Phase 2, you'll accelerate the implementation and use of automation throughout the organization. This will include the identification and design of multiple use cases, the continued deployment of new workflows, expanded training on the Resolve platform, and regular ROI reporting on your automation progress.

**By the end of this phase, you'll accomplish:**

- 1 3-5 use cases in production
- 2 Automation alignment with cross-functional stakeholders
- 3 ROI goal achievement

## PHASE 3 Expanding

Month 6+

In Phase 3, you'll continue to build onto your automation success. This may include the creation of a Center of Excellence, training new departments on how to optimize the Resolve platform, building out your backlog of workflows, and leveraging initiatives like hackathons and innovation workshops to inspire new thinking about the opportunities that automation offers.

**By the end of this phase, you'll accomplish:**

- 1 The creation of a Center of Excellence
- 2 Expanding automation into new departments
- 3 Enhancing customer experience workflows



## About Resolve

As a leading IT automation platform, Resolve delivers everything you need to achieve IT automation at scale. With Resolve, you can automate anything from the simplest task to the most complex process, helping your organization save hundreds or even thousands of IT hours each year so you can alleviate IT staffing issues, reduce costs, and increase efficiency across your organization.

Ready to unlock your telecom  
IT automation potential?

[REQUEST A DEMO >](#)