

Hybrid Networking

Our point of view

Today's world has been driven by exponential growth in technology. Performance has become increasingly reliant on connectivity to more distributed and diverse platforms. And that growth has added complexity. Each time something is added or changed, there is one more thing for your support team to do and manage. More devices, users, sites, clouds, applications, connections, routes, all mean more activity and work.

Many organisations simply don't have the bandwidth to manage this growing workload. Buying services individually isn't delivering the effectiveness or efficiency they need - managing multiple contracts, vendors and service environments is a drain on time and resources.

Buying overlay tools and strategies to bring together these complex multi-vendor environments is where global service providers can provide value. They offer economies of scale and scope along with direct buying relationships.

By bringing together all elements of your connectivity: Cloud, WAN, LAN, WLAN and data centre into an agreed and structured plan or strategy, whether that's MPLS, Optical, Internet or 4G / 5G services, you're able to bring direction, focus and security to your operation. These all have to work in unison to support the experience your users and customers need - delivering rapid applications and refreshes so they can do their job effectively.

We also believe that to be successful in a constantly changing environment, you need to consistently upskill people in security, process and systems - learning and documenting each time you go through change.

Solving the puzzle with Hybrid Networking

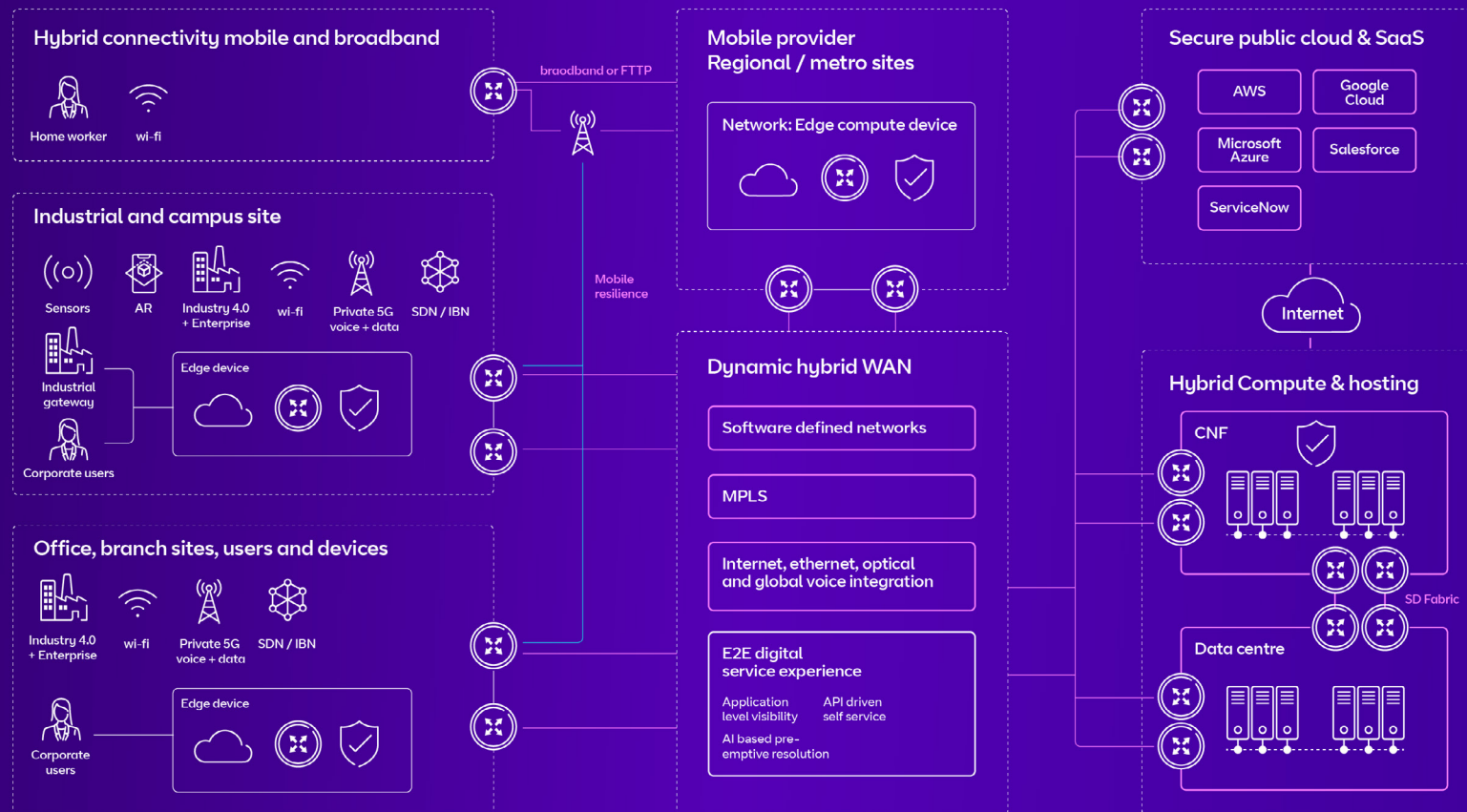
We've been operating a global digital network with security at its heart for some years. We integrate, orchestrate and automate to turn your network objectives into reality quickly and easily, unlocking huge efficiency and security gains.

With a hybrid network, you'll need a plan and a partner to iterate and stay in-step as your requirements evolve. A partner who can help you join up your entire infrastructure including overlay, underlay, hybrid data centres and cloud partners.

We offer:

- outcome based contracts
- long run total cost of ownership (TCO) reduction
- PAYG consumption aligned to business velocity and appetite
- evergreen technology strategy with flexible integrations
- security by design
- cloud service and functions ordered through digital interactions.

Global customer connectivity architecture



Our blueprints span network topology from branch and Industry 4.0 sites right into the cloud. Use them together with our experience to better align to business outcomes.

The objectives of Hybrid Networking

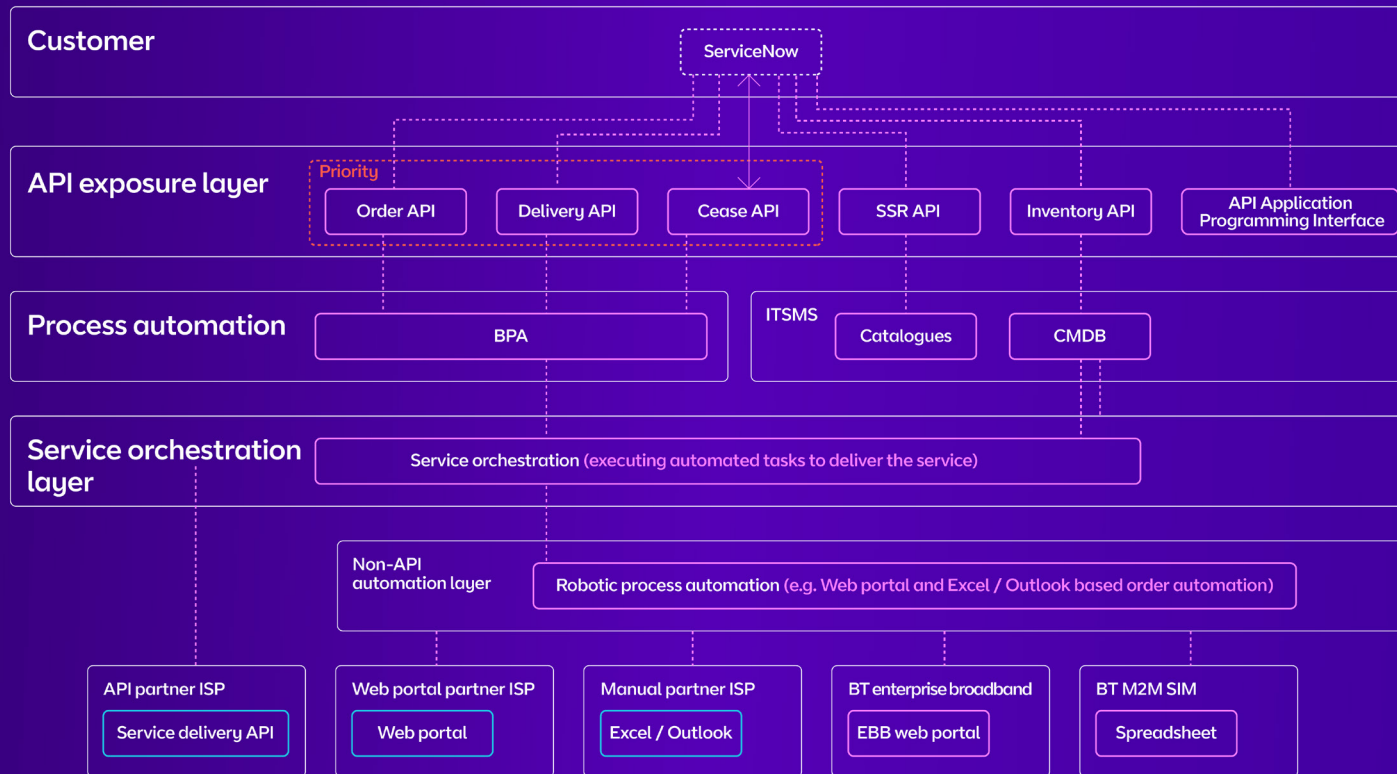
- Cost reduction and alignment for underlay / network transport.
- Increased agility and flexibility of Internet vs private networking, i.e. for new sites, geographies or to collaborate with partners / suppliers.
- Choice of services or match organisation personas
 - strong Service Level Agreements (SLAs), secured, private etc.
- Supports cloud applications, virtualisation, and big data transformations.
- Empowers collaboration and drives performance for distributed workers (at home, remote, guests).
- Secures your data and protects from evolving threats.
- Simplifies complex routing and potential bottlenecks.
- Speeds up response times and delivers predictive network performance.
- Aligns service levels end-to-end to meet new working requirements.
- Provides tools for better reporting, benchmarking, monitoring and network insight.

Why implement Hybrid Networking?

Your network is the digital lifeblood of your business. Without constant attention, it won't perform at its best. And because you're continually making modifications - new routes, policies, connections, devices, addresses and users - management becomes more and more time-consuming.

- If you're seeing response delays on Internet applications, your cloud collaboration platforms may need better connectivity or peering from your ISP provider to improve user performances.
- Proactive tracking and monitoring allow you to avert problems before they happen. Traditional IT tools are often unable to cope with the demands of diagnosing root cause performance issues from device to cloud. You need visibility into both the overlay and underlay to quickly diagnose root cause and avoid your suppliers playing the "blame game".
- Use APIs where possible for immediate connectivity to save time and money and increase agility.
- To personalise the ordering/buying process for stand-out customer and user experience to command a premium position in the marketplace.
- Understand the end user experience, from log-on through to the performance of SaaS applications.
- Offer guests connectivity to their own data and secure your systems to ensure they don't bring viruses into your network domain.
- Improve performance for homeworkers by not tromboning traffic through your network data centre just to provide security.
- Improve applications latency by using SaaS acceleration clients which can dramatically increase responses.
- Get joined up SLAs across vendors, with measurements to show failure and offer credits.
- Consolidate and join up your supply chains.
- Interlock different providers and technologies using visibility tools and managed services to speed up the resolution cycle when problems occur.
- Outsource low-value repeat tasks, often a hidden internal cost, so your support teams can focus on higher value business projects.

Our logical architecture for internet automation showing APIs



Logical architecture for Internet automation using the ServiceNow platform and our own SNAP orchestration engine. Multiple APIs configured to consolidate and automate information retrieval and adoption, saving manual time and effort to consolidate data.

Why now?

As more and more devices, users, sites, clouds and applications cause complexity, security risks and additional work, the pressure increases to integrate and deliver performance. That means more to do. Many IT teams are now reaching the point where they are saturated, the sheer scale and complexity is exceeding their ability to manage and secure the network. They need automation or a change of model before a failure or breach occurs.

- Digital transformation is key for user and customer experience. You can't afford to provide a lesser or slower experience than your competitors without affecting your business and market share.
- A strong security policy that covers your entire hybrid cloud architecture is critical to avoid gaps or issues caused by overlapping security controls from different cloud providers.
- Renewed insight will open new opportunity for you in the developing digital world.
- Increasing demand for predictable internet services optimised for cloud applications to serve your business.
- Bigger appetite for cloud, unified comms and virtualised services to keep up with user demand.
- Your current network architecture probably doesn't fit well with the changed and now distributed traffic patterns for cloud applications.

Use case examples

- One of our customer's existing monitoring tools couldn't pinpoint MSTEams packet loss issues for home and office workers. We used the latest e2e applications visibility tools to diagnose root causes of applications and security conflicts, resulting in a significant improvement in employee productivity.
- A global manufacturer lost SAP access and days of management time interrogating and assessing the network until we deployed an underlay visibility tool which proved the root cause was due to an application authentication issue.

Key considerations

Identifying and specifying the right hybrid networking solution depends on managing three areas – sourcing Internet services, managing the network and securing your infrastructure and data. Addressing these considerations will help us develop a blueprint customised to the specific needs of your business.

Sourcing Internet services

- Local Internet Service Providers (ISPs) will offer in-country or in-region communications. Their connectivity and service levels will vary enormously and depend on what contention ratios and throughput guarantees they offer. Do you know the peering arrangements they have with other ISPs you're using?
- How will changing private dedicated services with public Internet service affect performance and downtime for applications? Critical operational applications will need a resilient and performant service. Users on secure, reliable high bandwidth connectivity to data centres, HQs and cloud ecosystems will encounter problems on contended ADSL connections.

Key actions

- Understand and know what you're buying, whether that's consumer ADSL or business ADSL, and what SLAs are attached.
- Joining up ISP services across the world will rely on peering arrangements between them. The application journey will affect response times and throughput and you'll need to track performance.

Managing the network

- Consider how you'll track and resolve problems across the Internet, into cloud and through the new infrastructure model. How will you measure, benchmark, and manage performance? What insight will you need?
- Is Internet the best option for sensitive and valuable traffic, do you need private and dedicated bandwidth for certain users or connections?
- How will you measure and show the cost savings of moving to SaaS or cloud?
- SD-LAN in your data centre will save you time, space and money and provide faster performance than hosting in the cloud. Could you consider this for non-cloud applications?
- A managed overlay will provide defined levels of service which can offer consistent performance and faster resolution of issues.
- Are you seeing the full picture? What support or connectivity costs are hiding in your operation that could be freed?

Key actions

- Decide what skill set you have and then decide if you want a managed or DIY service.
- Choose a trusted and credible network partner with a strong portfolio and history of customer transformations who can help you manage suppliers.
- Clarify your objectives and involve your peers in the decision making, understand their perspective and prioritise hitting key objectives. The more business objectives you can meet, the more valuable the solution.
- If using in-house skills, develop a robust training and retention programme.
- Quantify the savings could you make and what costs will you incur on the project so that you can articulate your business case for change.
- Consider a global ISP with its own backbone and superior peering arrangements who could connect offices together with a single service wrap and point of contact.

Security

- As you transition from private to public infrastructure, how will you keep sensitive data safe as it travels and where it rests?
- Where you open up connections to the Internet, like local break-outs, you'll need a security policy or directive.
- Security can be bought as a service in the cloud, at the edge, as a gateway or on-premises. But combining and building the right protection for your operation is key – how will you review your overarching security policy to identify critical controls and where best to place them?

Key actions

- Assess how to maintain visibility and control of the traffic that is travelling directly to your cloud infrastructure.
- Consider bringing voice services onto your network. They can be secured and treated as another application with plenty of options for resilience and break-out to public voice platforms globally.

Why us?

We focus our solutions around people first and technology second – which means your objectives are our priority and we work with you on them. We know your organisation is unique and will require a unique set of services. That's why we offer choice, whether that's a choice of SD-WAN provider or showing you which ISP is the best option in a particular region to access your chosen cloud provider. And that choice extends through technology to visibility tools, security and cloud options.

We bring systems and process together, using APIs to integrate with vendors, and tools like ServiceNow to manage different domains seamlessly. And we have global reach with a local touch - our global network and service operation teams around the world can fulfil your networking needs. We do this hand and hand with building security into your design, from the very beginning, meaning it becomes an enabler to your outcomes.

We have the most ISP partners and the best ISP supplier management of any leading global telco. Our expertise and experience across networking, coupled with our supply partners, gives us the ability to supply and manage quality private or public networks across 200+ countries and territories around the world.

We have 100 years of networking heritage and provide an ecosystem of partners who work with us to offer better solutions for our customers. Our smart transformation methodology has delivered significant acceleration on transformation and cost reductions across many global organisations

Our methodology

We have a unique approach to supporting organisations through their digital transformation journeys, developed using our experience of delivering successful transformations for multinationals around the globe. Our approach includes help to:

Our approach includes help to:

- define blueprints - using artifacts to design and steer customers to the right solutions
- build transition plans which reduce risk and increase speed to outcomes
- develop service models to automate and orchestrate change
- use predictive service models with Artificial Intelligence and Machine Learning to spot trends and fix issues before they become a problem.

Our Hybrid Networking principles

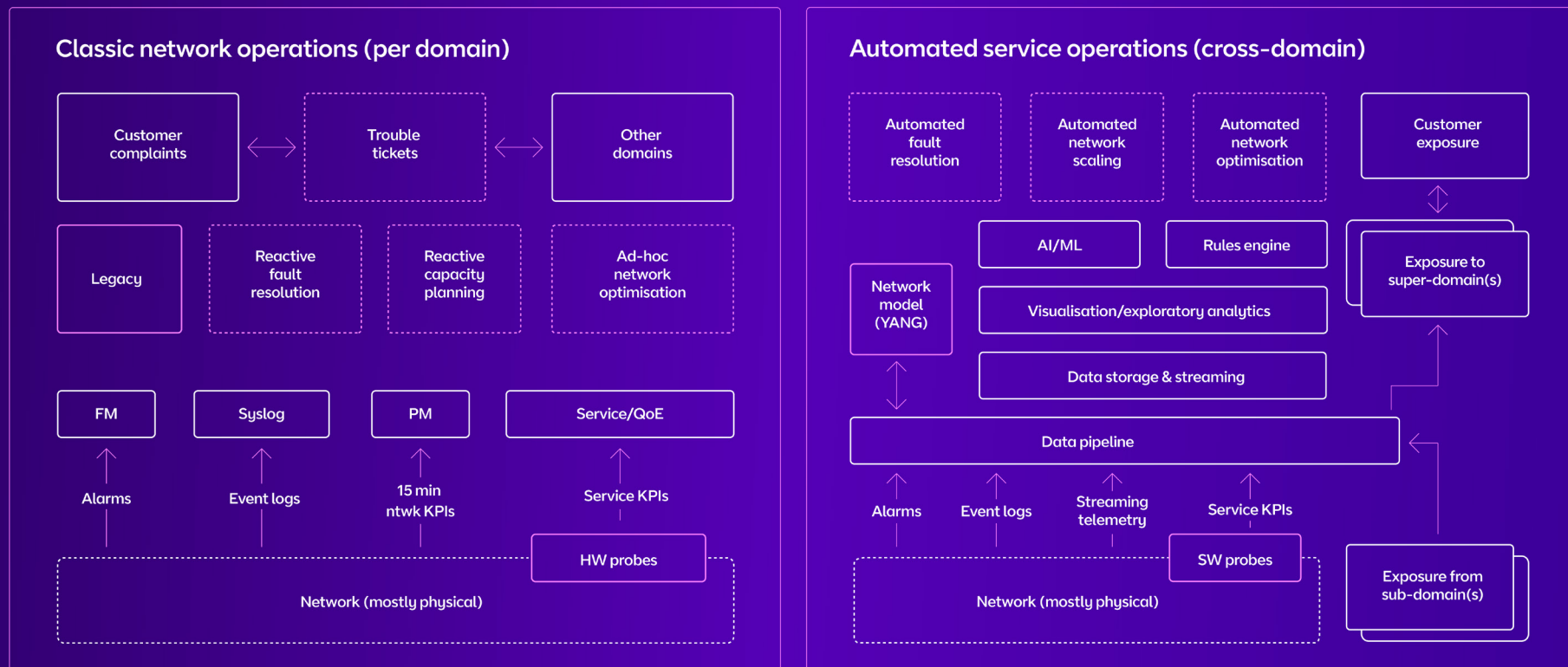
Many businesses have organisational boundaries and budgets which are holding back the development of technology. Typically it's because of a siloed approach to network, cloud, security, LAN, remote users, Edge etc. across all areas. Once joined up the network then provides benefits to all units and enables end to end experiences across different domains and teams.

We've brought together a digital interaction layer, where your systems and ours meet. New APIs mean they can talk to one another without any manual transfers so you get a clear view of everything and can manage it all in one place. And you have one point of contact for any queries.

The digital first automation layer includes a suite of smart tools that will automate services wherever possible and give you proactive diagnostics on your network health. The operating model layer has been streamlined to map to your business needs and outcomes. We've changed the way our teams work so you don't encounter any duplication, you get through to the people you need and get problems solved first time.

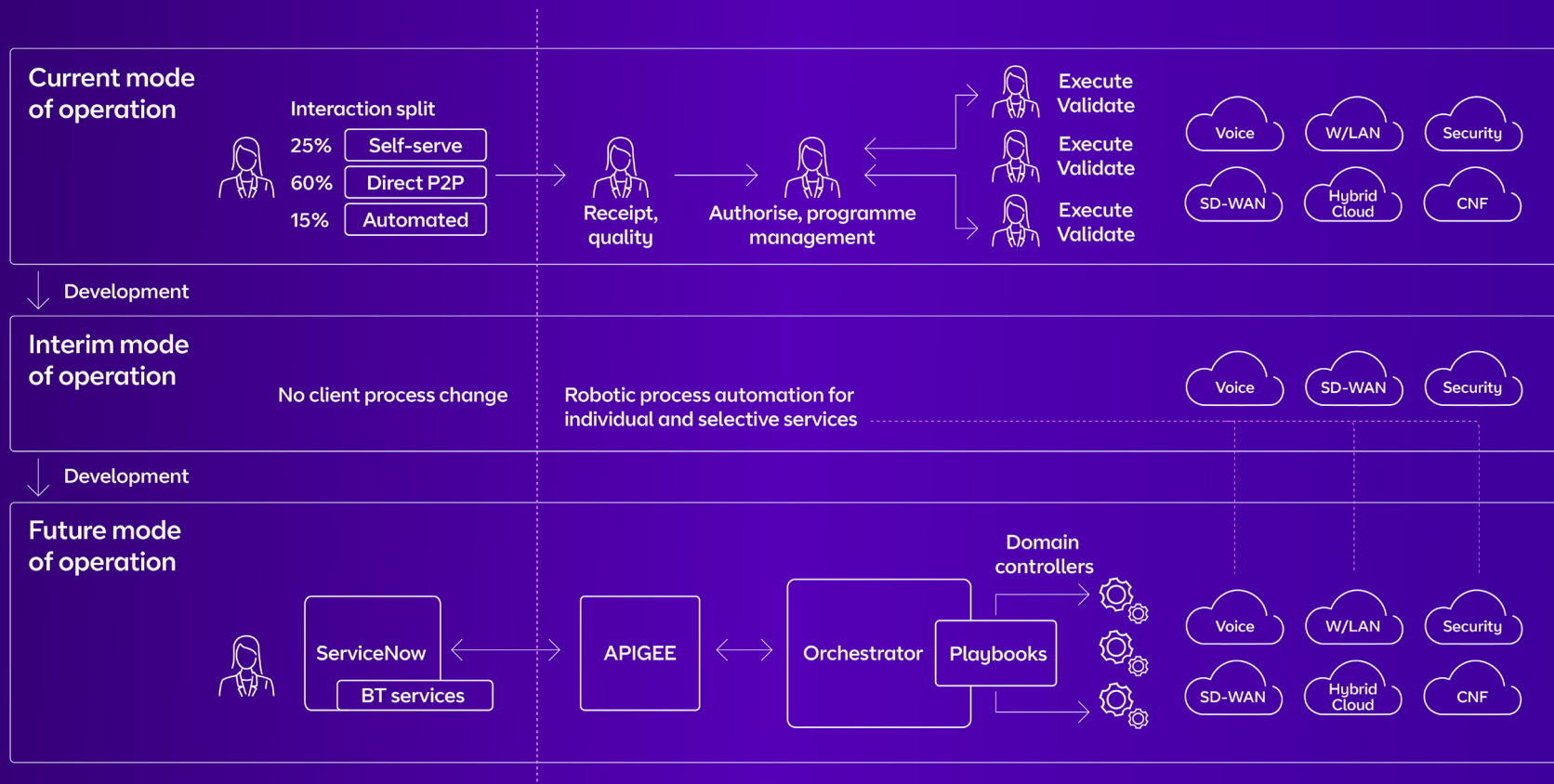
Finally, the data and insight layer is what drives so much of this. Because we can see your entire estate and pull data from all across your network, it means you'll never be making decisions without having all the information and analysis you need. Everything will be driven by data analysis, proactive monitoring and mapped to your business outcomes.

Evolving network assurance from a **siloe**d approach



Many businesses have organisational boundaries and budgets which are holding back the development of technology to enable objectives. Typically there isn't a joined up approach to network, cloud, security, LAN, remote users, Edge etc for all areas of your operations. Once joined up the network then provides benefits to all units and enables end to end experiences across different domains and teams.

Transformation of the service operating model



Customer references

Case studies

BT for global business

Getting David Lloyd Leisure's IT in shape | BT for global business

[Read case study >](#)

BT for global business

Helping Anglo American connect the most remote parts of the world | BT for global business

[Read case study >](#)

Press releases

BT for global business

New BT network ignites digital transformation for Orica | BT for global business

[Read press release >](#)

BT for global business

BT nurtures partnership with Syngenta to support global connectivity and innovation culture | BT for global business

[Read press release >](#)

BT for global business

BT to support transformation of Walgreens Boots Alliance's customer experience in the UK and Ireland | BT for global business

[Read press release >](#)

Would you like to talk to our experts?

We're ready and waiting to help you take the next step in solving your infrastructure puzzle. To find out more, get in touch with your account manager.

See more blueprints

Offices worldwide

The services described in this publication are subject to availability and may be modified from time to time. Services and equipment are provided subject to British Telecommunications plc's respective standard conditions of contract. Nothing in this publication forms any part of any contract. © British Telecommunications plc 2020. Registered office: 81 Newgate Street, London EC1A 7AJ. Registered in England No: 1800000.

July 2021