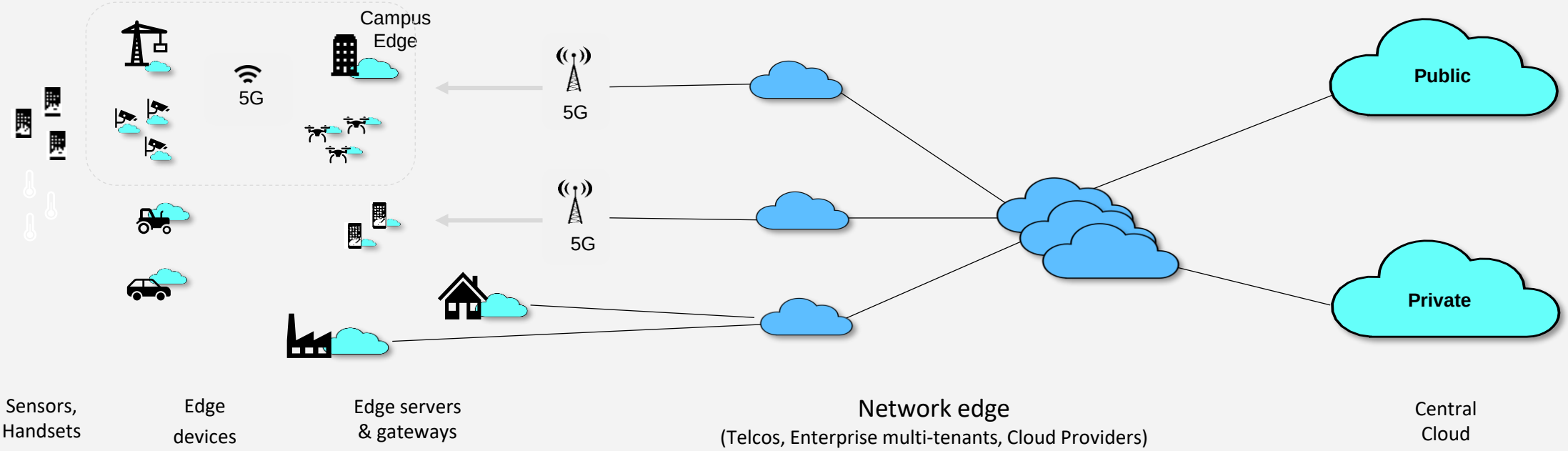
IBM Telco Network Cloud Manager and the Integration of Watson AIOps Webinar

Rapidly design, deploy and scale new communication services in minutes while reducing costs.

Creating a modern Telco Network Platform



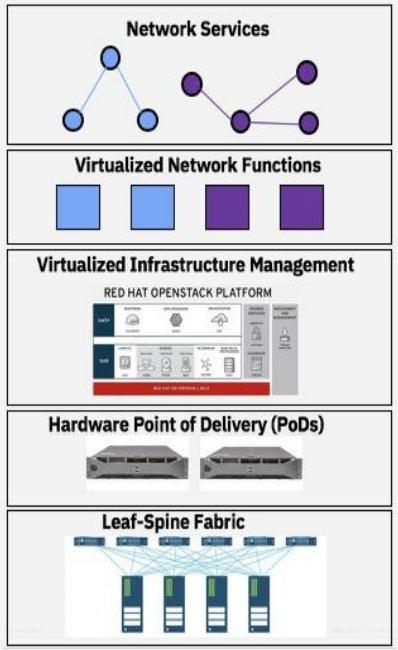
Taken together, 5G and Edge Computing will provide optimized connectivity and compute distribution…

…Workloads can be placed at most sensible point along network, with 5G mobile connectivity at the edge

Network evolution – from legacy to cloud network architectures

Traditional Proprietary
Vertically Integrated

xNF Approach
Common Platform



Legacy network paradigm	Virtualized network paradigm
Dominated by NEPs	Ecosystem of hardware and software suppliers
Network standards based; proprietary, bundled network elements and services	Network standards-based; open, unbundled, cloud-based platforms

Network transformation is key for success

- Deliver innovative services faster and stay competitive
- Reduce costs via extreme automation and adoption of cloud-native operations model

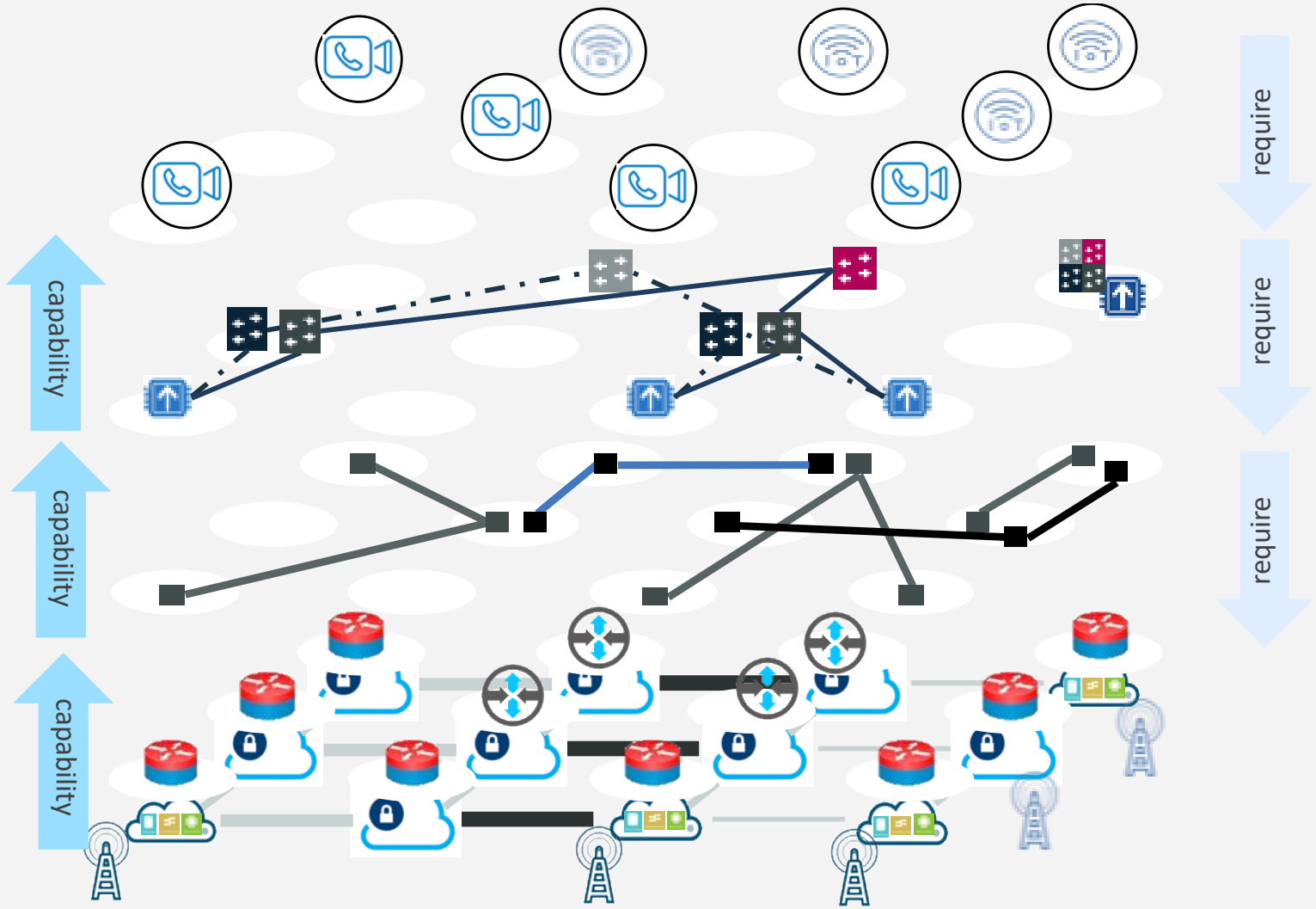
"Ultimately 5G is about the move to software at the center of the network"

*Quote from Appledore Research Whitepaper, 2020

Complex dependencies across multiple Cloud technology layers

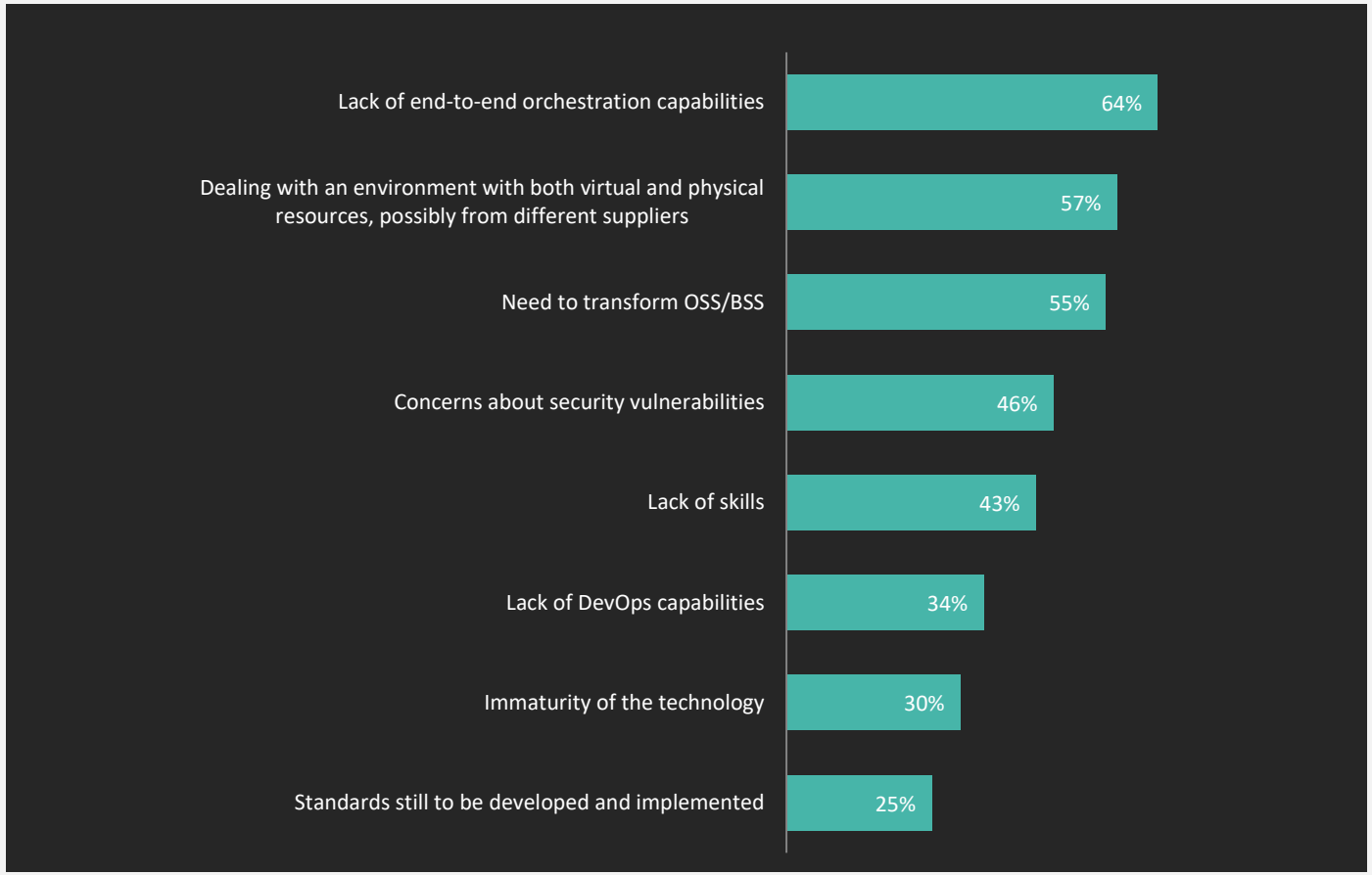
Enterprise Edge Cloud and Networking workloads must co-operate across independent layers and connected locations to deliver an end to end service

Each layer is designed and managed independently of the others delivering a service to the layer above



The challenges for network transformation inhibit innovation

Operational inhibitors for CSPs implementing SDN/NFV

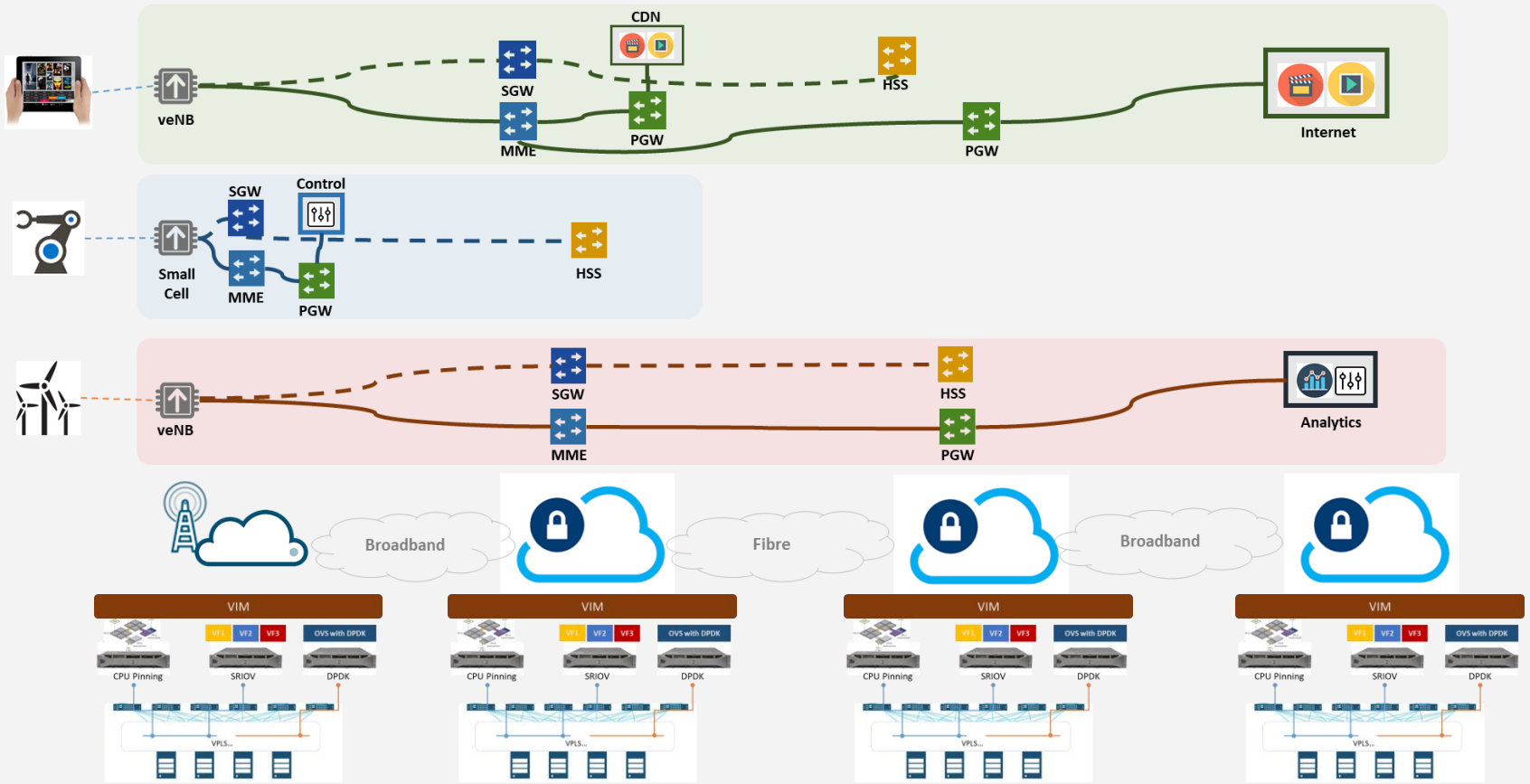


1. Comprehensive orchestration
2. Hybrid solution spanning all resources
3. True OSS/BSS transformation

*IBM Research Report

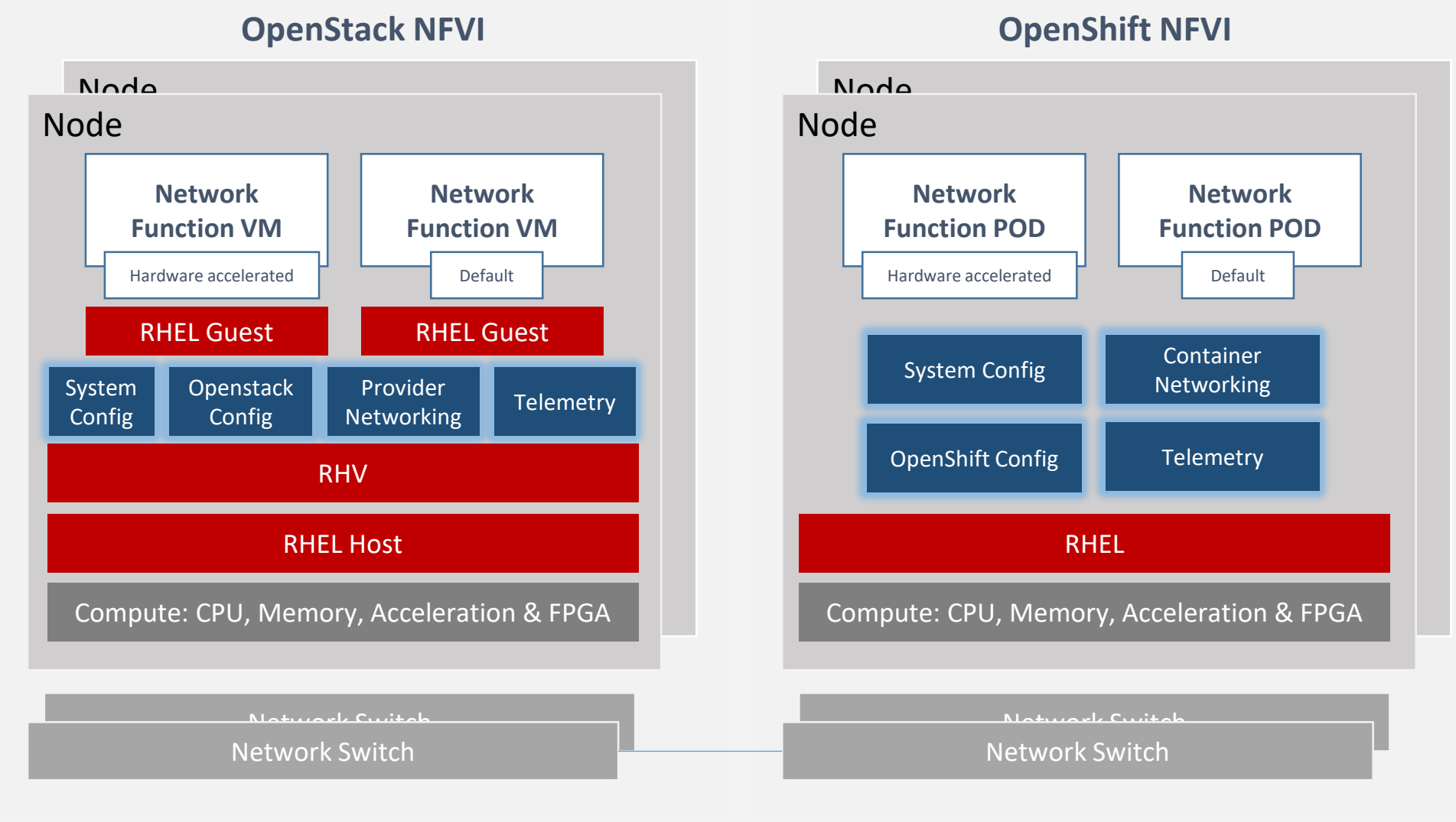
A revolutionary approach is needed.

Network Service Point of View



- What site do we put which version of a VNF/CNF?
- How do we fit everything we need for expected performance across these sites and WAN links?
- Figure out which existing network services to bind to?
- How to upgrade from one flavour of a network service to another with no down time?
- When to move an xNF from one site to another?

Hardware Tuning Point of View



xNF VMs/Containers require specific hardware and tuning to run in a performant manner (or at all).

Tuning parameters include

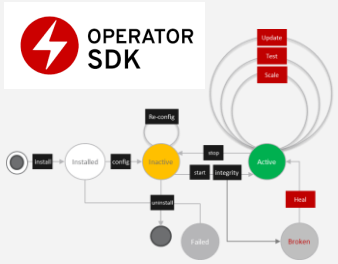
- BIOS settings
- NIC parameters
- Hypervisor parameters
- Operating System kernel parameters
- FPGA parameters

Container VIM Linux Kernel needs to have non-conflicting drivers and modules, e.g.

- NIC drivers
- Protocol Stacks, e.g. SCTP/GTP
- Container Networking plugins

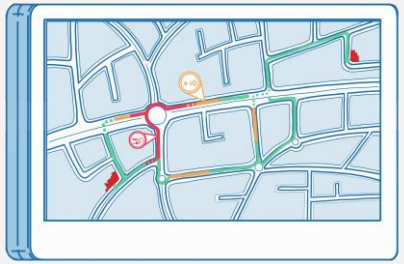
Apply Cloud Native techniques and machine enabled automation

xNF Standard Lifecycle



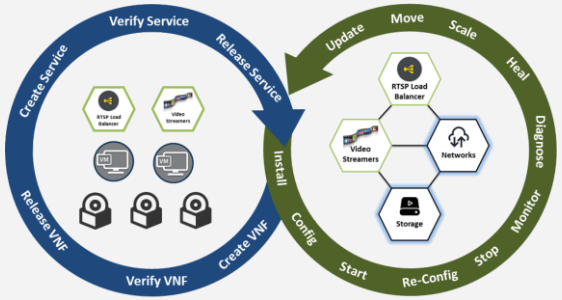
- Wrap xNFs with a self contained operational lifecycle
- Natively onboard autonomous CNF Operators

Intent driven Orchestration

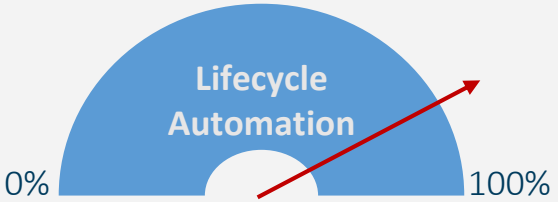


- Focus on modelling the network service rather than programming lifecycles
- Auto reconcile network services to cope with planned and unplanned xNF changes

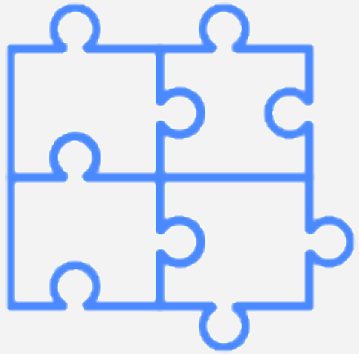
Cloud based tool chain



- Tools to enable automated onboarding and testing of xNFs and network services
- Self service network service/slice design and behaviour testing



You need a revolutionary strategy for Orchestration adding AIOps



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Zero touch automation

Normalized Lifecycle Model

Standardized lifecycle operations for all xNFs to enable model-driven automation with CI/CD toolchains

Intent driven Orchestration

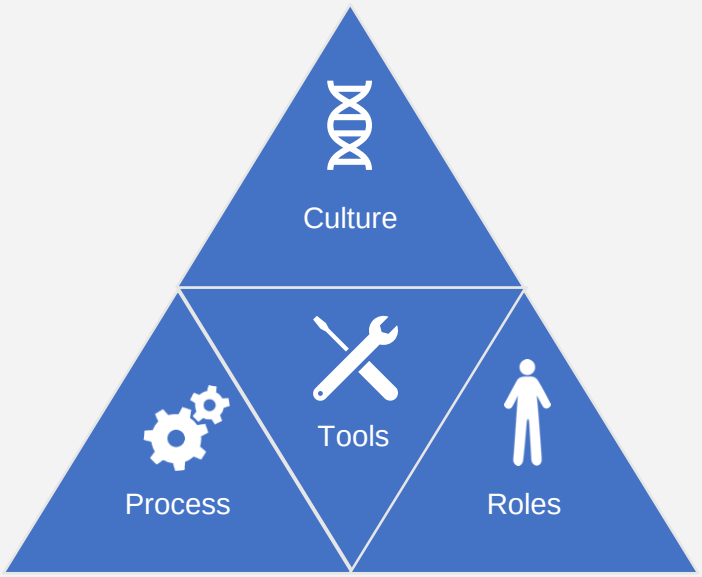
Model the desired service operational state rather than pre-programming workflows

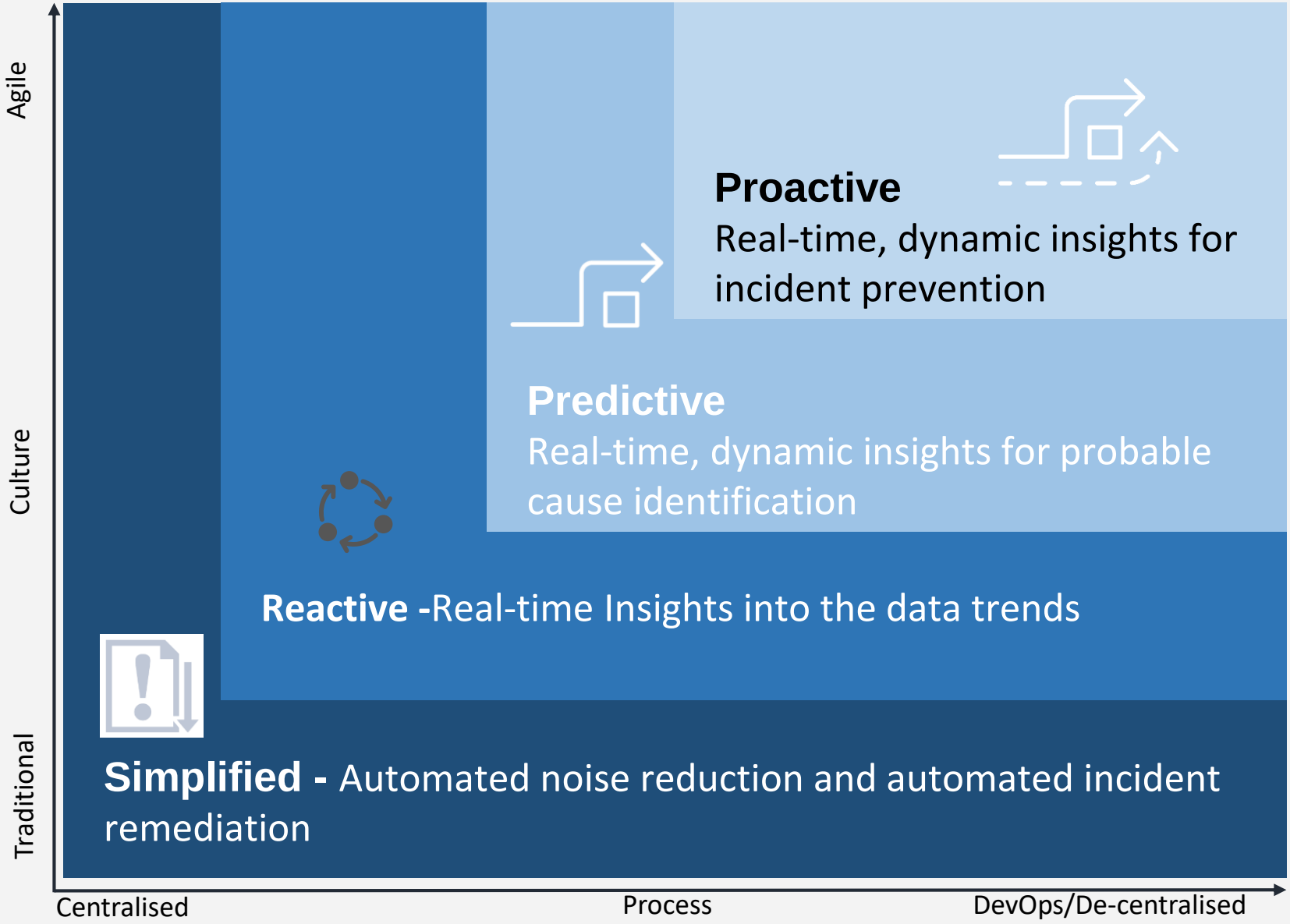
Closed-Loop Operations

Apply ML and AIOps to proactively respond in dynamic environments

AI for Network Operations

AI for Network Operations (AIOps) is the infusion of AI to provide operational efficiencies such as predictive alerts and outage avoidance





Watson AIOps

Real-time data feeds

Un-structured data

- Logs
- Tickets

Structured data

- Events / Alerts
- Metrics
- Topology

Watson AIOps

AI Manager

- Log anomaly detection
- Triage and correlation
- Ticket similarity analysis
- Story service

Event Manager

- Event grouping & Analytics
- Alerting

Metric Manager

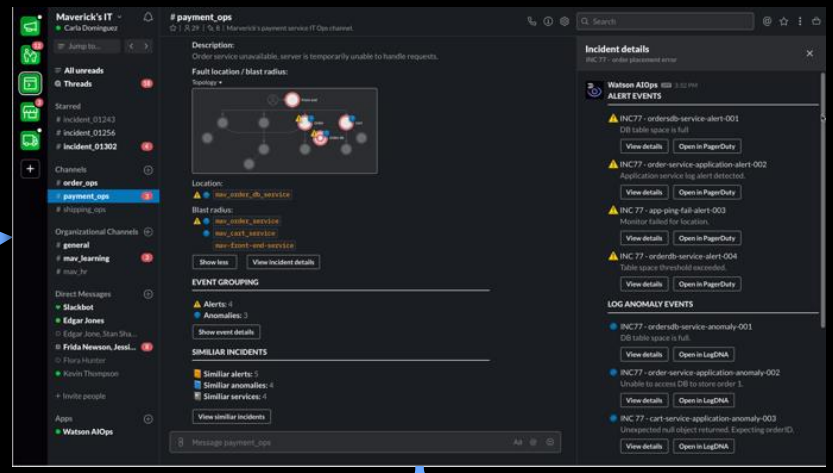
- Performance metric analysis

Anomaly detection & prediction

Topology

- Dynamic, history
- Cloud native, VMs, bare-metal

ChatOps UX to bring insights



Dashboard UX to drill down / explain

IBM Watson AIOps Fuels your AIOps Journey

Deepen your understanding. Operate proactively. Improve via automation.

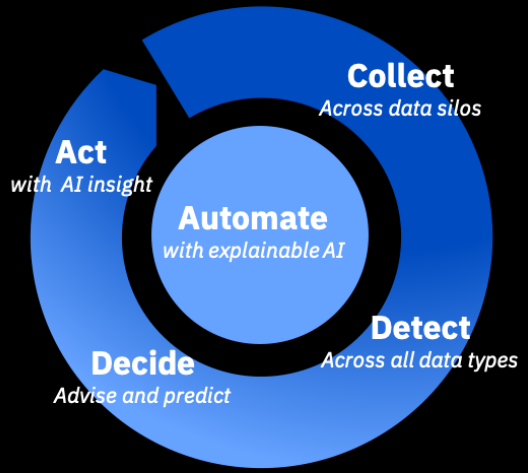
Un-structured data (Logs and Tickets)

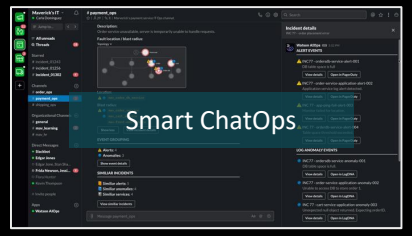
Structured data from Monitoring

Events and Alerts

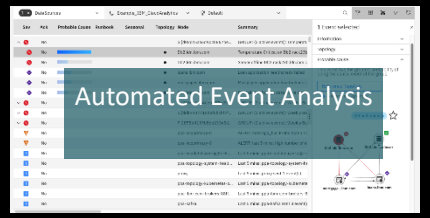
Topology Information

Collect all relevant data

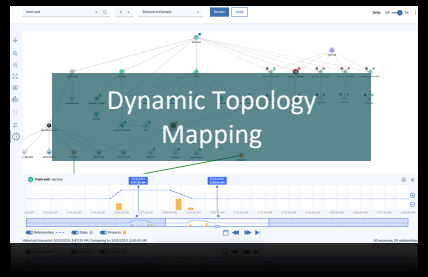




Accelerate data awareness to near-real time into existing workflows or ChatOps

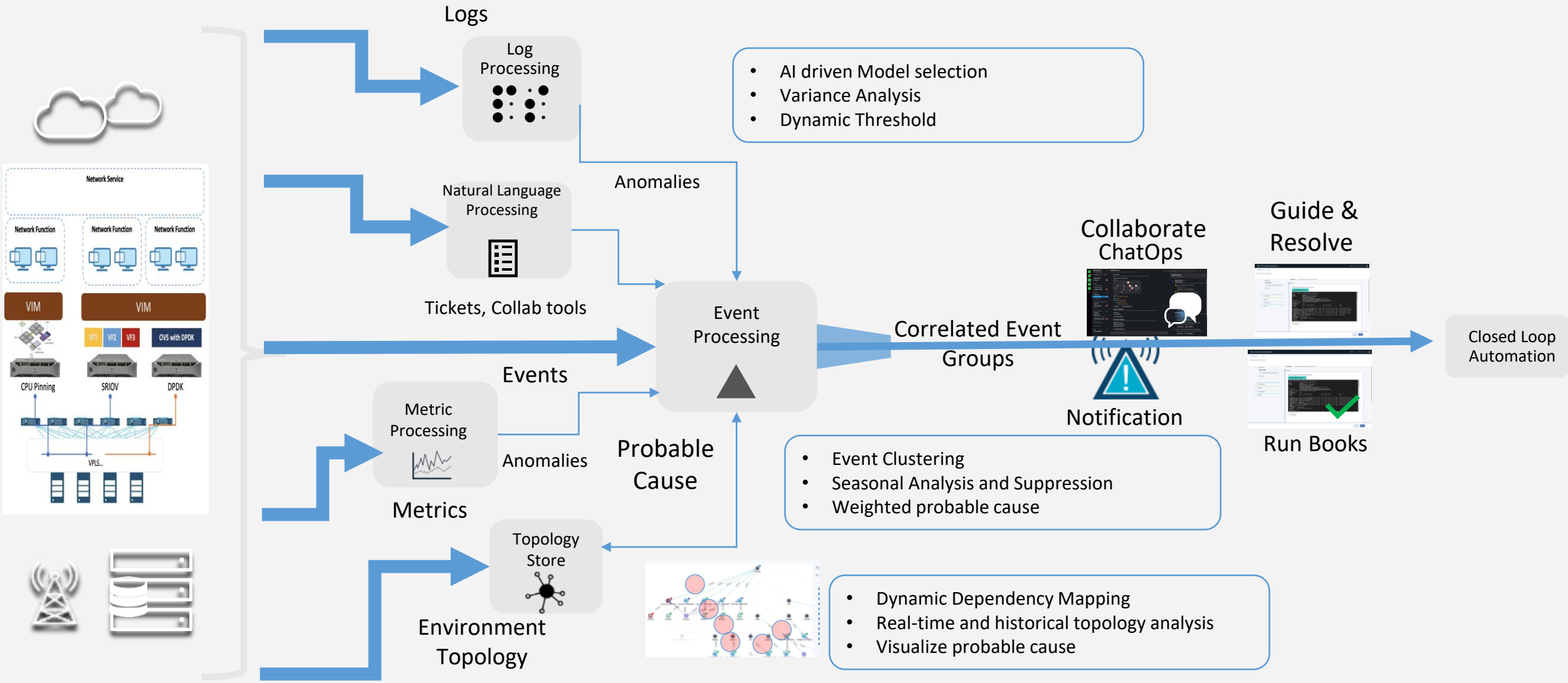


Correlate, curate and highlight most relevant data across tools without manual “deep-dive” investigations



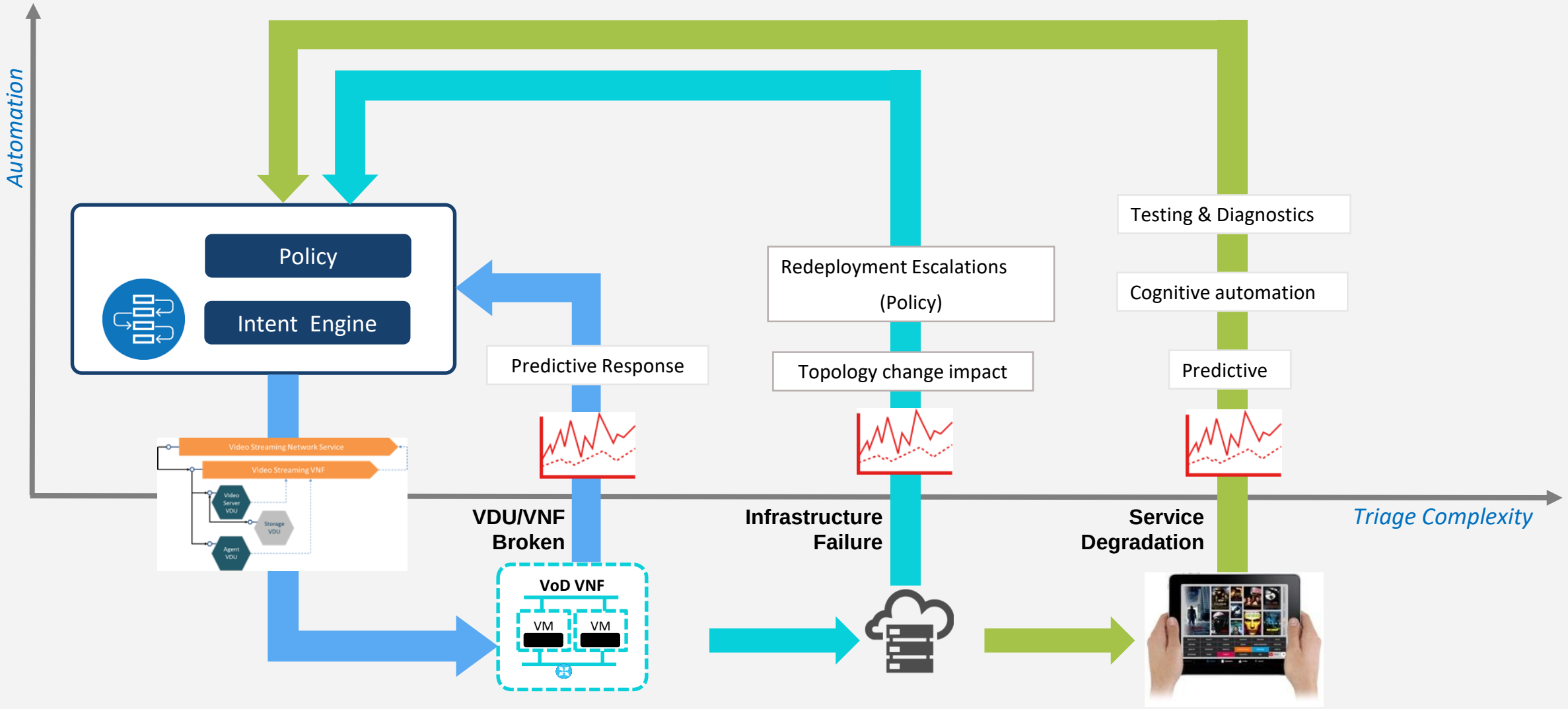
Focus your efforts via automated event grouping, analytics and probable cause

Implementing AIOps Structured and Unstructured Data

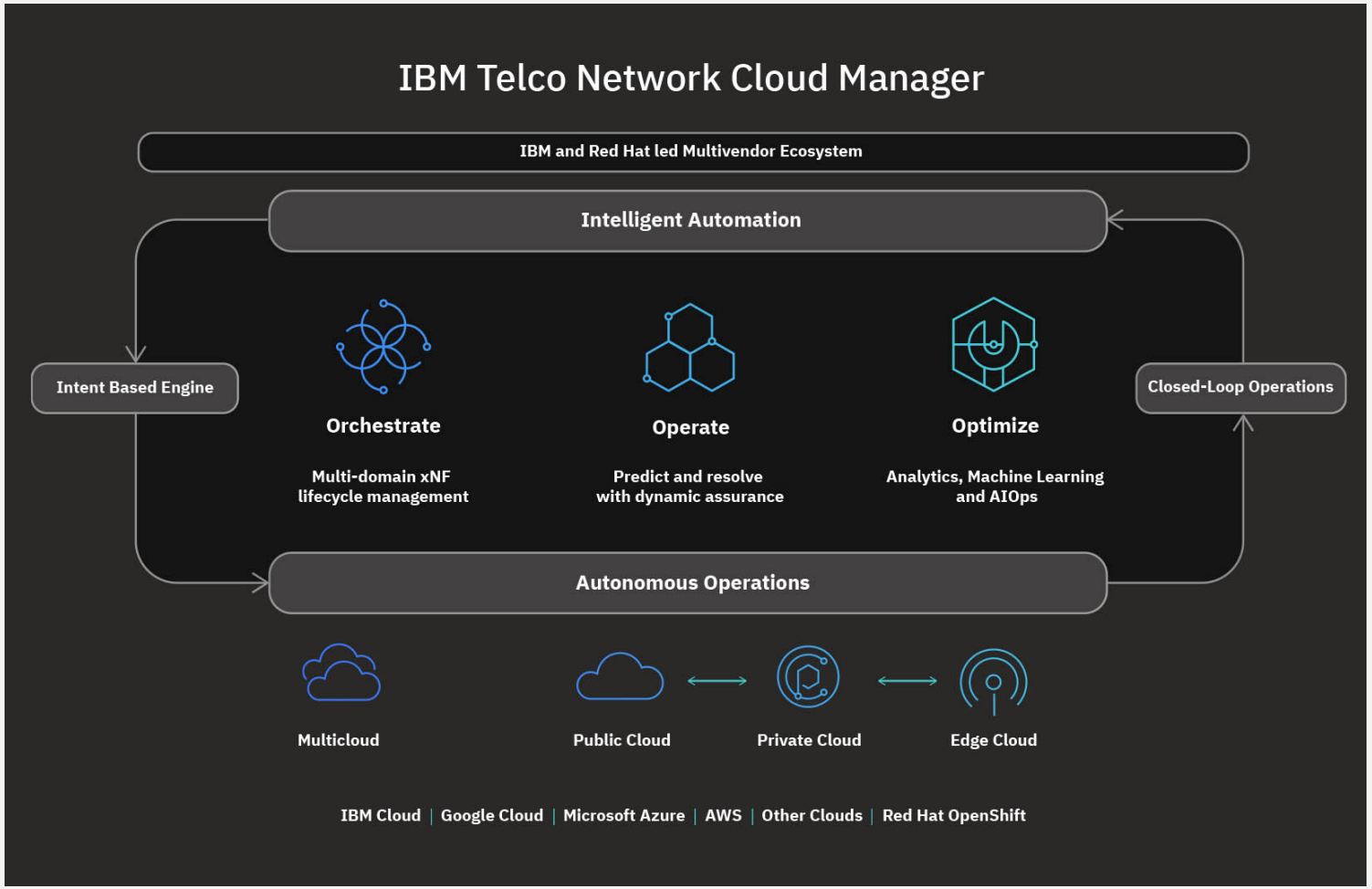


Combined value to support Closed Loop Automation

Tie it all together to enable self-healing and move to a 99.99 of availability!



Introducing **IBM Telco Network Cloud Manager 1.3**



Intelligent automation with autonomous operations to orchestrate, operate and optimize services across vendor-agnostic xNFs on any cloud

- Easily onboard network functions from any vendor
- Design, test and deploy services in minutes instead of days
- Evolve to zero touch operations

Offering up to

82%

in cost savings for onboarding services

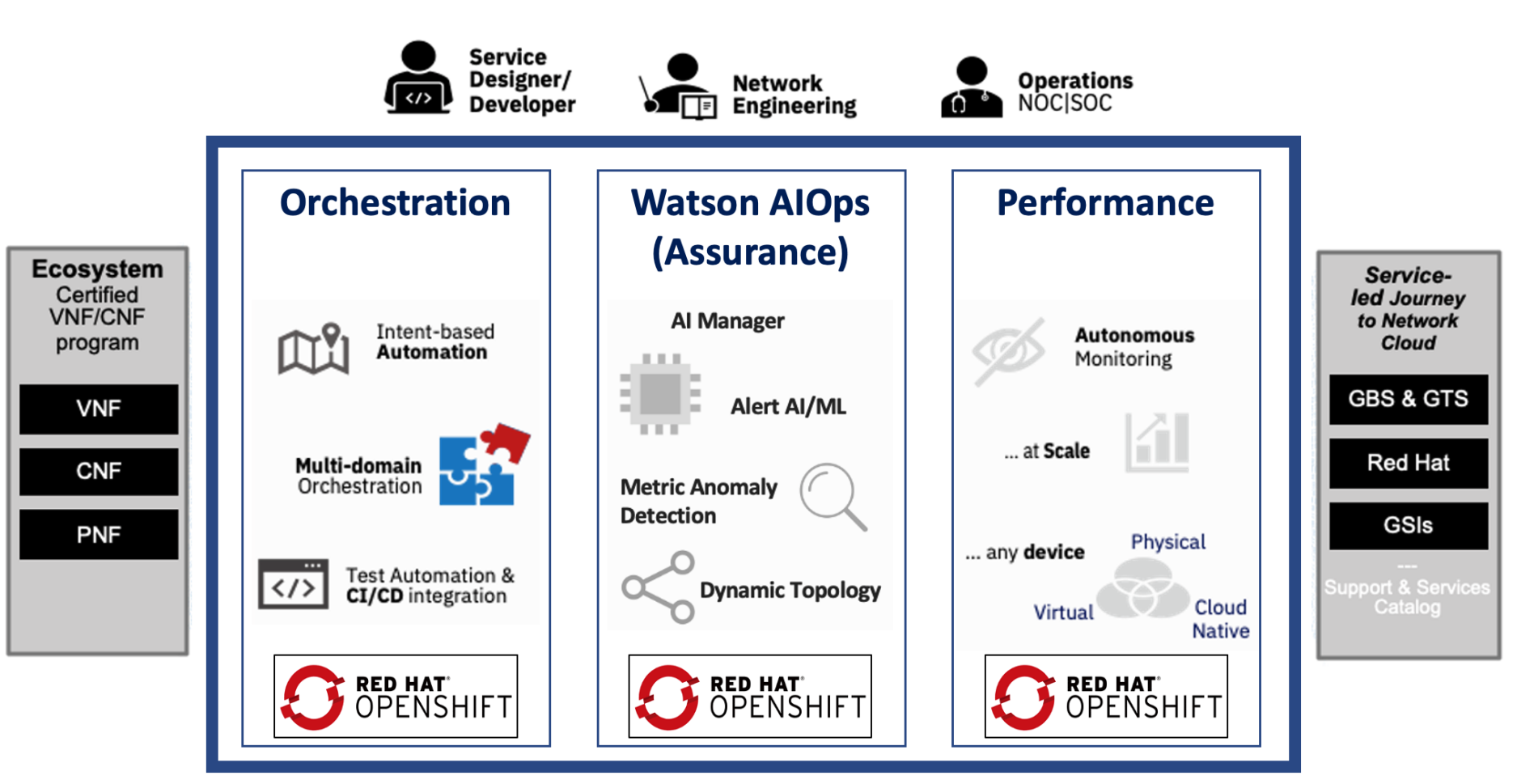
With up to

5x

improvement in operations responsiveness

*82%: IBM TCO Study; 5x based on Nextel case study

IBM Telco Network Cloud Manager 1.3 – Product Structure



- Built-in Red Hat OpenShift entitlement
- Leverages the power of Watson
- Solution delivery accelerated by xNF Certification Program

IBM Telco Network Cloud Manager

Intelligent

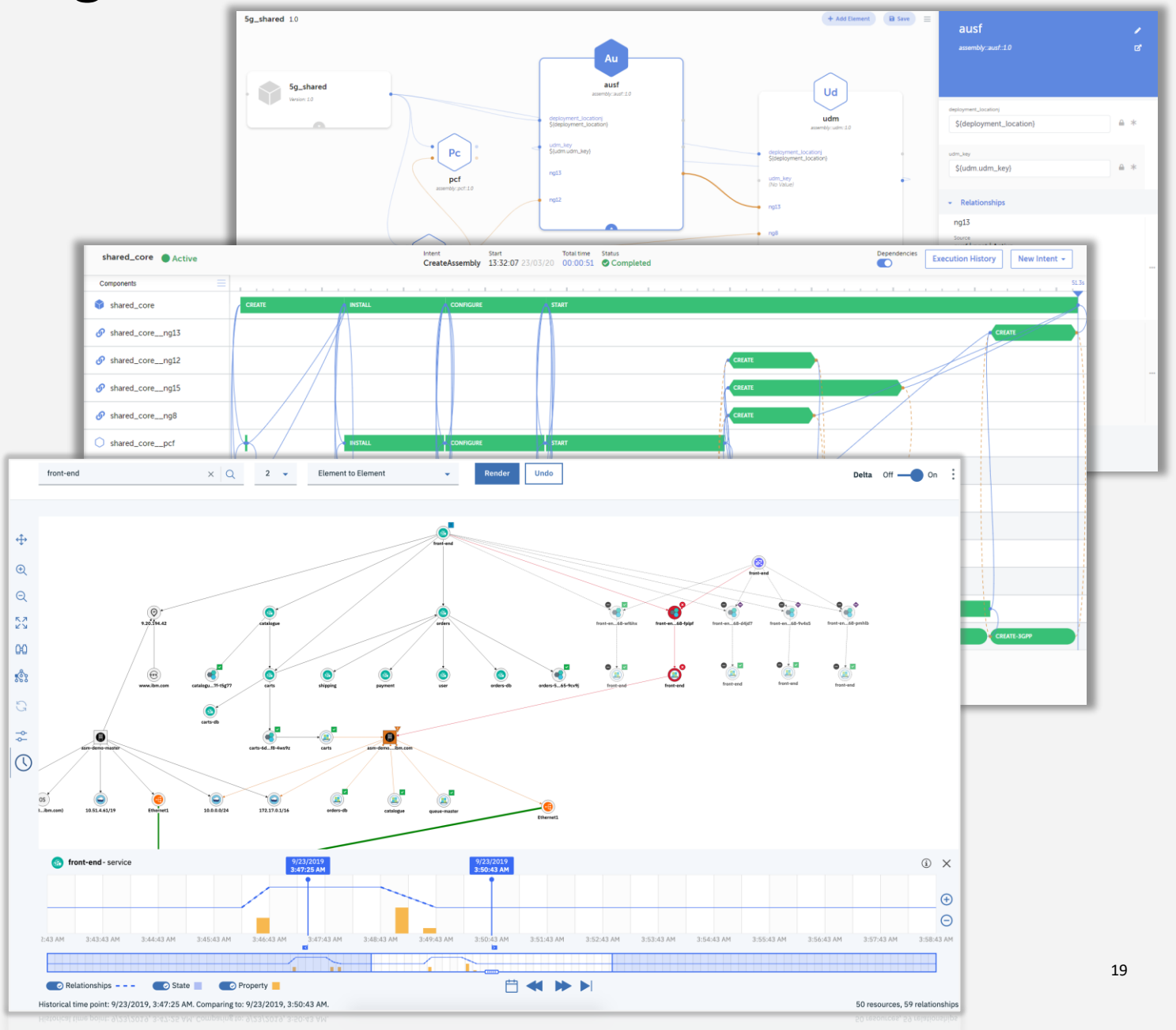
Automation throughout the entire lifecycle of xNFs to rapidly orchestrate and instantiate services in minutes, at scale, and with lower predictable cost

Optimized

Improved network visibility and customer responsiveness with machine learning and AIOps to reduce operational tasks and expenses

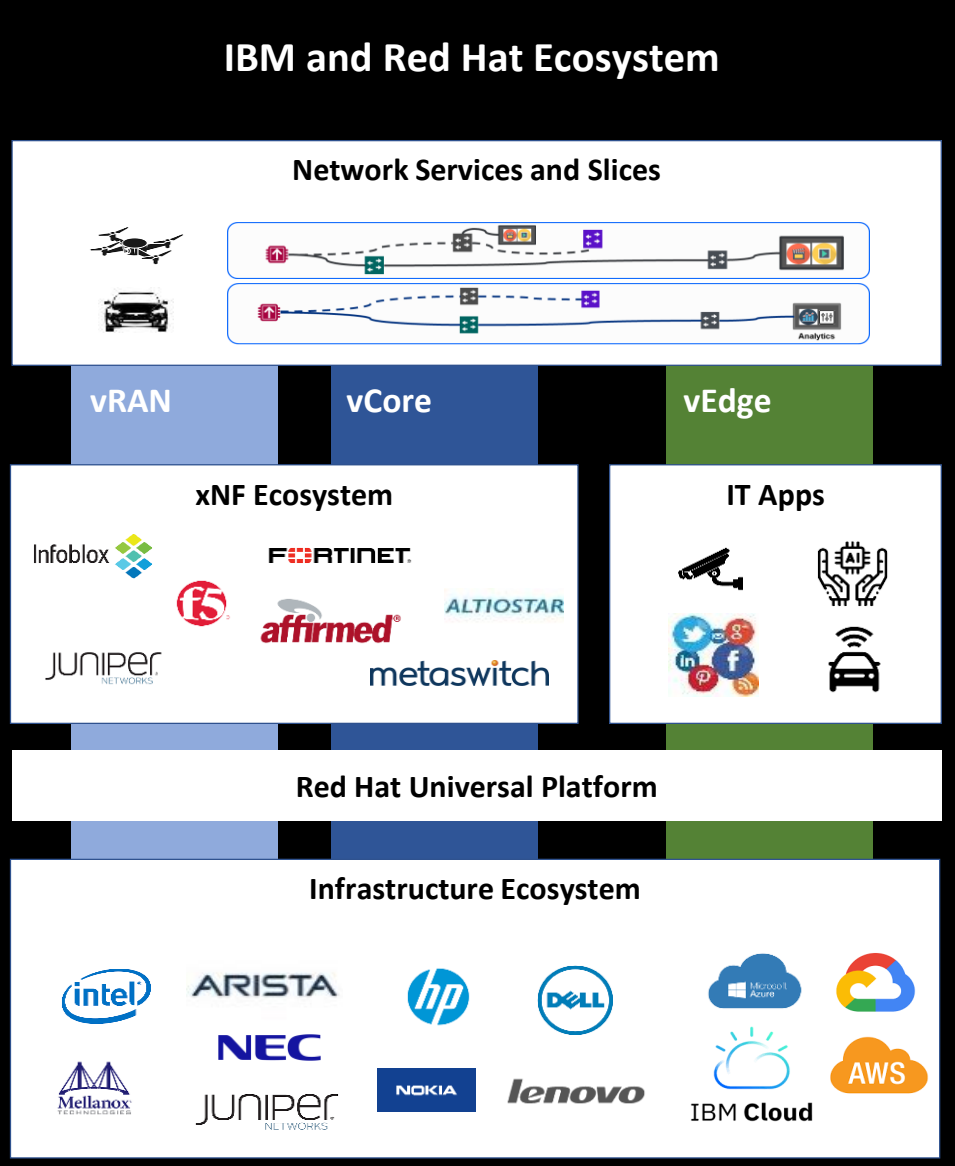
Open

IBM and Red Hat open source industry leadership with a joint ecosystem to rapidly onboard certified VNFs/CNFs



IBM Telco Network Cloud Manager Open ecosystem

- Standards led - ETSI MANO & ONAP
- VNF/CNF interop ecosystem jointly established by IBM and Red Hat
- Growing partner ecosystem of equipment manufacturers, networking providers, IT providers, independent software vendors, and system integrators



IBM Telco Network Cloud Manager

Dramatically increases automation and reduce costs

Rapid service delivery

- Intelligent automation to deploy services in minutes instead of days

Lower operations costs

- Automated and proactive operations to improve service availability and assurance

Greater flexible

- Open ecosystem to run all network functions across a multi-vendor and hybrid multi-cloud environment

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Rapidly design, deploy and scale new communication services in minutes while reducing costs.

Thank You !

Eoin Coughlan
5G, Edge and Hybrid Cloud Offering Manager
WW Lead, Telco Analytics Solutions

IBM