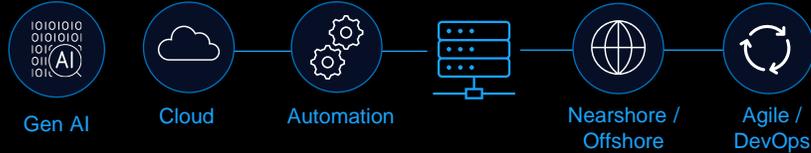NTT DATA | CISCO

Site Reliability Engineering

Reliability and performance at the intersection of software and infrastructure

Sunil Mathur,

Vice President, Product Engineering, NTT Ltd.

Today's Business Imperatives

The entire organization must modernize to support business goals

Gen AI — Cloud — Automation — Nearshore / Offshore — Agile / DevOps

New Technology — New Architecture — New Skills — New Ways of Working — Gen AI

Faster Time to Market, Faster Time to Value

- Lower TCO
- Operational excellence
- On-demand scalability
- Automated delivery and maintenance
- Regulatory compliance
- Analytics and insights
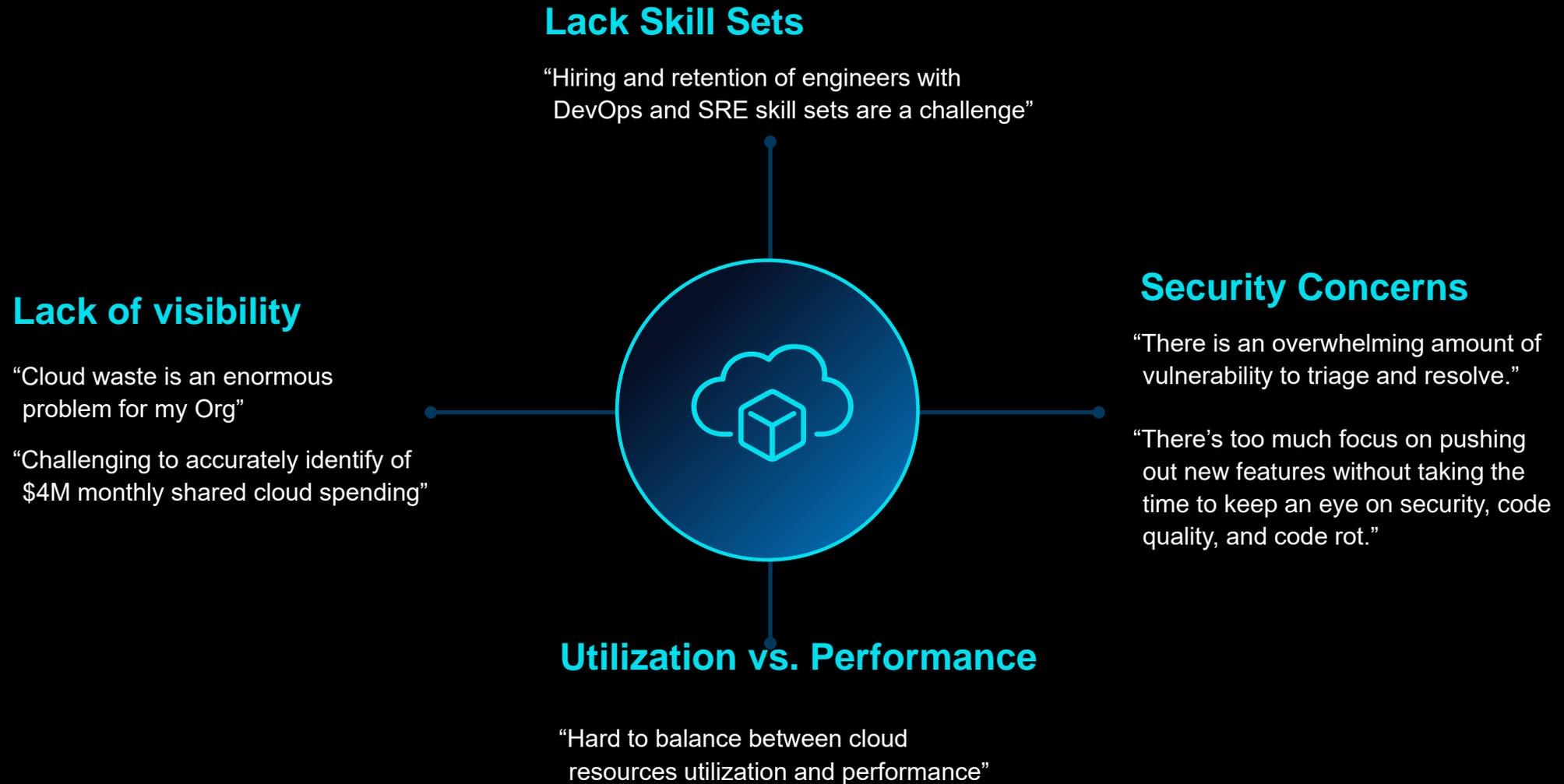- Strong, end to end security

Greater Innovation, Support New Initiatives

- Accelerate time to market
- Improve customer experiences
- Faster deployment and releases
- Meet Sustainability goals
- Continuous innovation and modernization
- Support new initiatives: 5G, edge, IoT, AR/VR, Gen AI

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There are Barriers to Successful Cloud Transformations

Many organizations are not realizing the full value of cloud

Lack Skill Sets

"Hiring and retention of engineers with DevOps and SRE skill sets are a challenge"

Security Concerns

"There is an overwhelming amount of vulnerability to triage and resolve."

"There's too much focus on pushing out new features without taking the time to keep an eye on security, code quality, and code rot."

Lack of visibility

"Cloud waste is an enormous problem for my Org"

"Challenging to accurately identify of $4M monthly shared cloud spending"

Utilization vs. Performance

"Hard to balance between cloud resources utilization and performance"

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SRE Adoption is Increasing to Support Cloud Transformation

Enterprises are adopting SRE for improved operations and deployment of end-user applications

Adoption of SRE Across Enterprises

62%
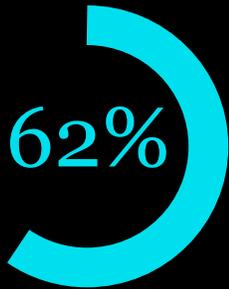
of enterprises report that their organizations are leveraging SRE today

SRE Benefits Digital Transformation

SRE is critical for digital transformation both for running the business and serving customers (SOE).

42%

of organizations are leveraging SRE **systems of record (SOR)** for:

Enterprise-level applications

To run all aspects of the business (financials, manufacturing, CRM, HR)

56%

of organizations are leveraging SRE for **systems of engagement**:
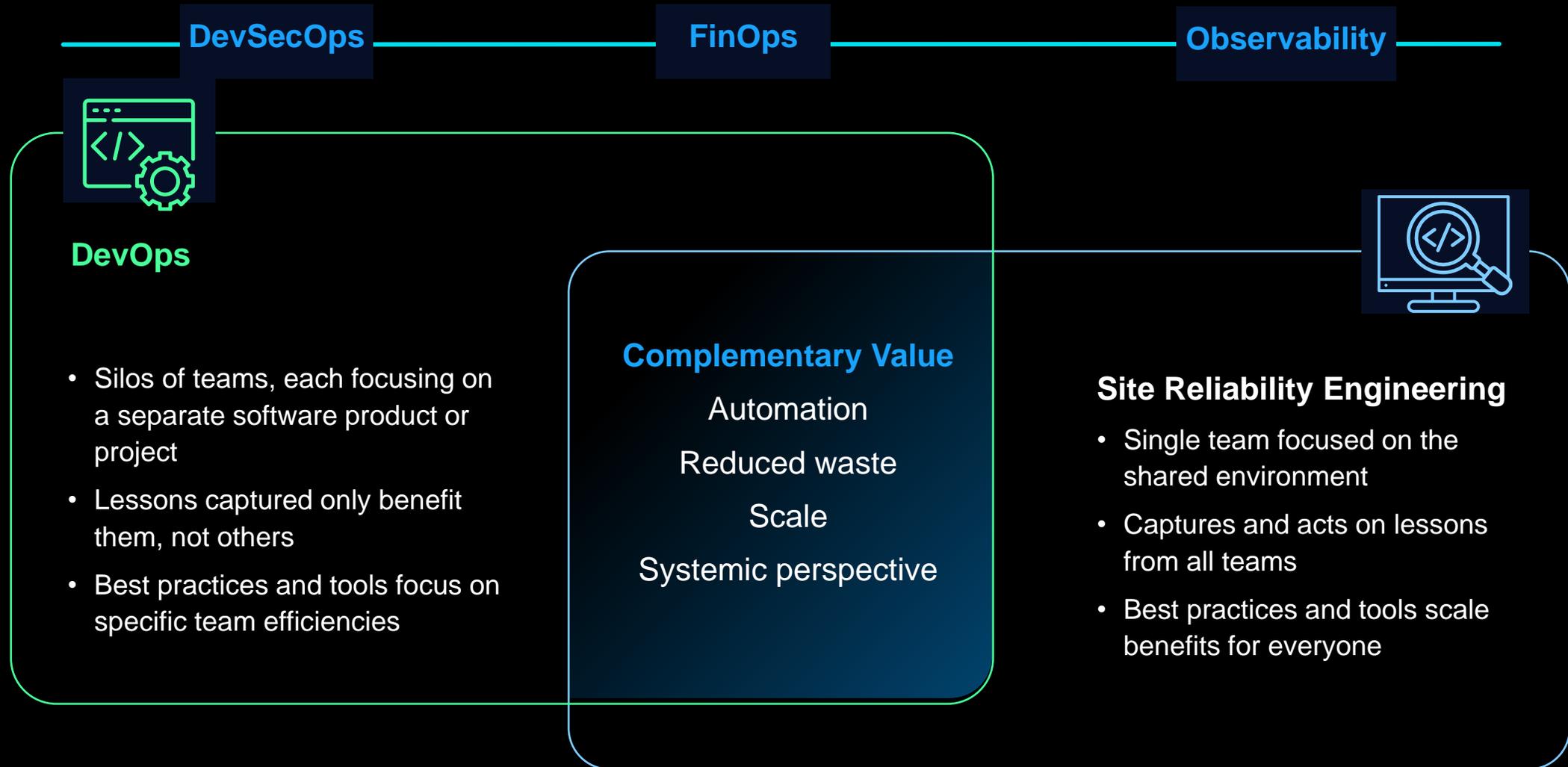
User-focused applications

Equip and enable customers, partners and employees with the tools they need with the business

Source: DevOps Institute, Global Pulse
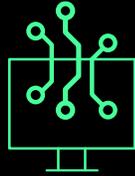
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Site Reliability Engineering

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What is Traditional SRE?
NTT DATAs Comprehensive SRE Solution

DevSecOps — **FinOps** — **Observability**

DevOps

- Silos of teams, each focusing on a separate software product or project
- Lessons captured only benefit them, not others
- Best practices and tools focus on specific team efficiencies

Complementary Value

Automation

Reduced waste

Scale

Systemic perspective

Site Reliability Engineering

- Single team focused on the shared environment
- Captures and acts on lessons from all teams
- Best practices and tools scale benefits for everyone

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NTT DATAs Comprehensive SRE offering

DevSecOps

Rapid development and improved resilience

- Capability assessment
- Solution design
- Cloud infrastructure, architecture design

Observability
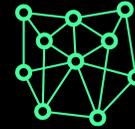
Advanced observability across DevOps and app delivery pipelines

- Observability maturity assessment
- Solution design & integration
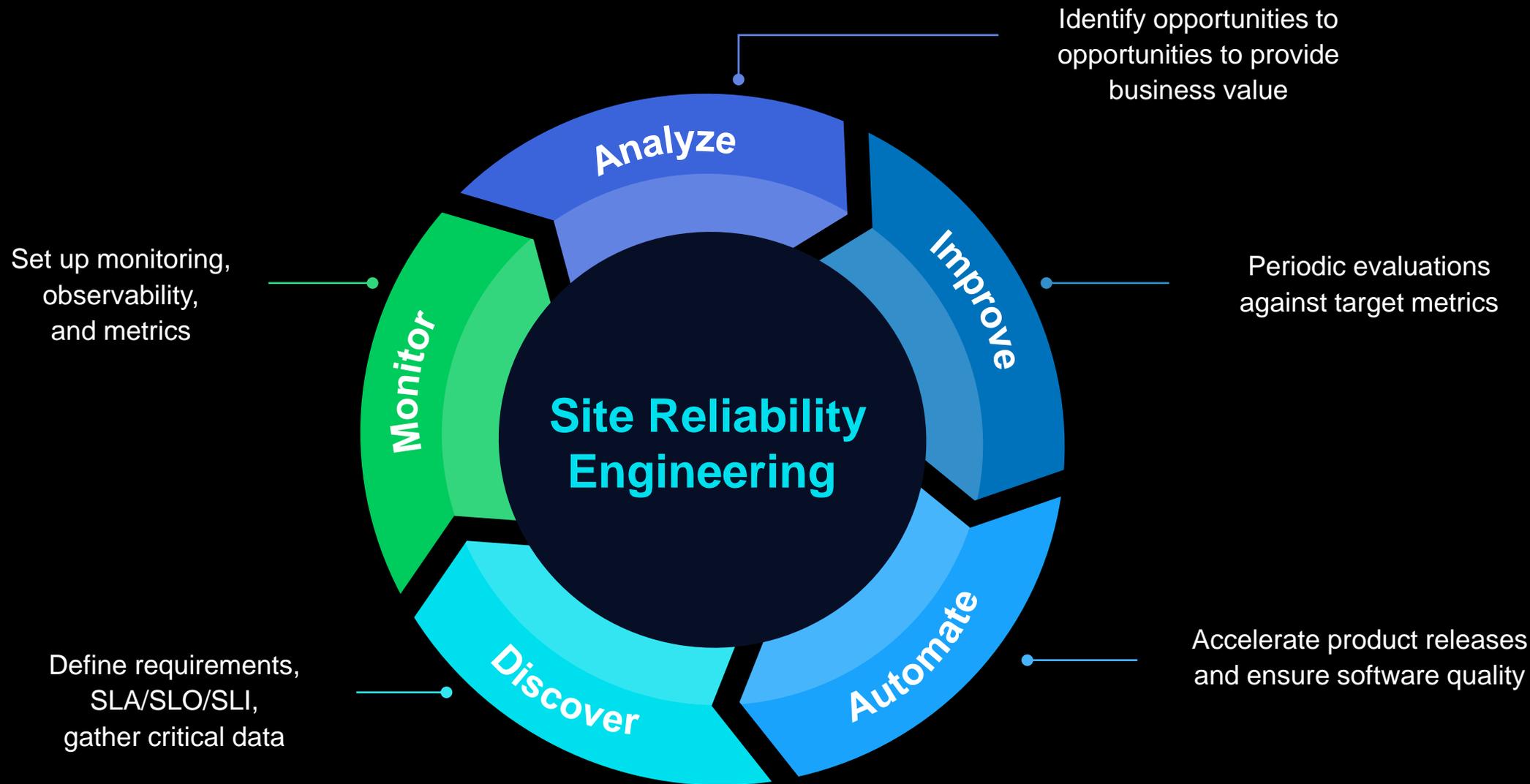- SRE observability services

FinOps

Cloud financial management for greater visibility, cost optimization, and strong governance

- Performance tracking and optimization
- Policies, controls, and organizational alignment
- Cloud rate optimization

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SRE Transformation Journey

Identify opportunities to opportunities to provide business value

Periodic evaluations against target metrics

Accelerate product releases and ensure software quality

Set up monitoring, observability, and metrics

Define requirements, SLA/SLO/SLI, gather critical data

Analyze

Improve

Monitor

Site Reliability Engineering

Automate

Discover

NTT DATA

DevSecOps

What is DevSecOps?

Intersection of DevOps and SecOps

	Security	Integrated at every stage of development and deployment process
	Collaboration	Development teams + Security teams + Operations teams
	Risk Mitigation	Risk management is integrated from the beginning & throughout all processes
	Automation	Security-focused tools - static code analysis, dynamic app security testing. and container security scanning. Measure implemented at every stage
	Compliance	Compliance requirements and governance considerations are taken into account from the outset, ensuring adherence to security standards and regulations.

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NTT DATAs DevSecOps Offering

End to end security, greater automation and faster releases
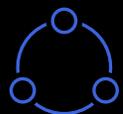
Implement

- App-level and infrastructure implementation
- Deployment of CI/CD pipelines
- Hybrid-cloud networking
- Disaster recovery strategy and design
- Cloud security posture management and remediation (Zero Trust)

Assess
Implement
Design

Faster Dev
Containers
Security
Best Practices
Disaster Recovery

Secure, Reliable, Faster Development
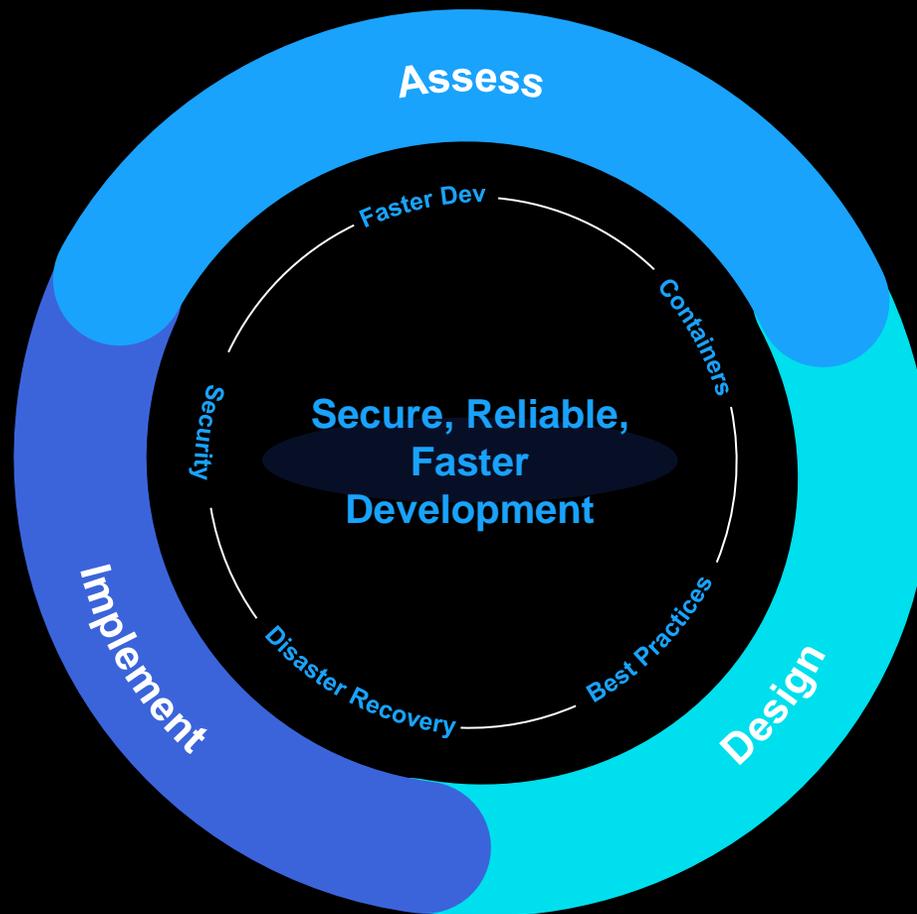
Assess

- Comprehensive assessment of DevSecOps practices
- Roadmap creation for faster development

Design

- Solution for containerization
- Address security vulnerabilities
- Incorporate GitOps practices in development cycles

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Woodruff Sawyer

Case study: Insurance

Customer pain points

- Difficulty in consistently deploying applications
- No consistent DevOps practices
- Lacks automation for software development repeatable tasks
- Lack of infrastructure automation

DevOps advisory for continuous optimization

- Partnered for full DevSecOps assessment: software, process, infrastructure
- Implemented agile software project framework
- Defined a consistent workflow with automation & consistent toolset.
- Created streamlined software development processes
- Implemented continuous delivery (cd) of Infrastructure-as-code (IaC)

Business outcomes

- A structured, data driven DevOps practice with increased automation
- Delivers faster release cycles, while securing applications and mitigating risks.
- Access to robust insights and ongoing optimization

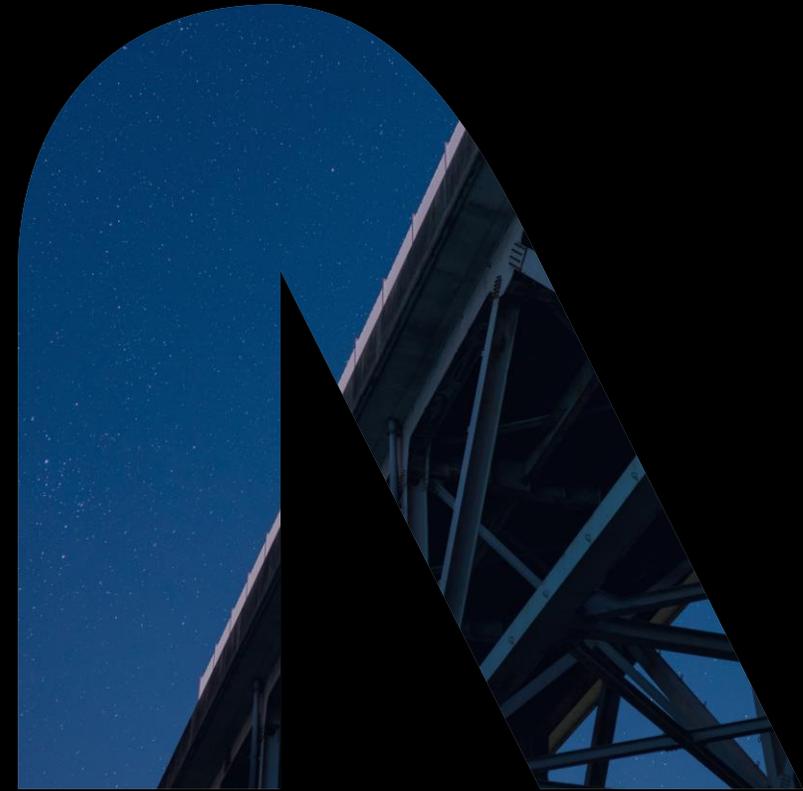### Tech and Accelerators

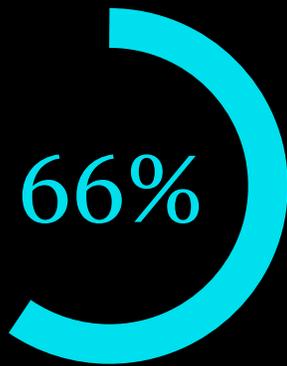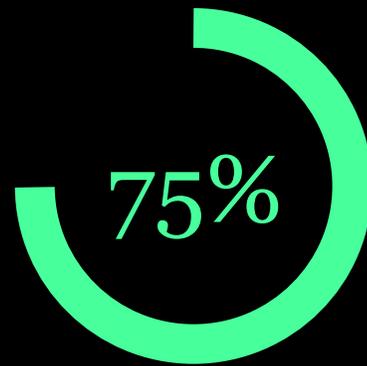| NTT partnership & Assessment	SRE	DevSecOps	Observability	FinOps

Observability

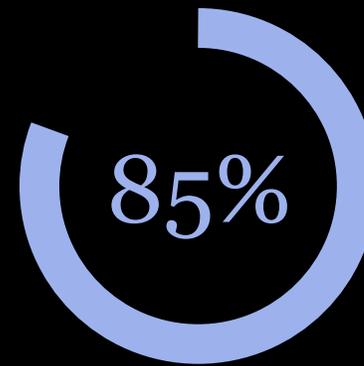NTT DATA

Why Observability?

Modern-day apps are complex and evolving fast…what you can't see can hurt you…
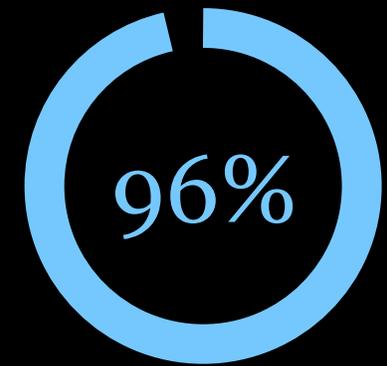
66%

Lack IT resources to maintain environments in an optimized state

75%

Wrestle with **overwhelming 'data noise'** without the resources and support

85%

Struggle to quickly **identify root cause** of performance issues

96%

Face issues due to **lack of visibility** and insights into app stack performance

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NTT Data's Observability Transformation Journey

A continuous outcome-driven service for every stage of our clients' observability journey

Assess

- Alignment of business & IT goals
- Measurable KPIs
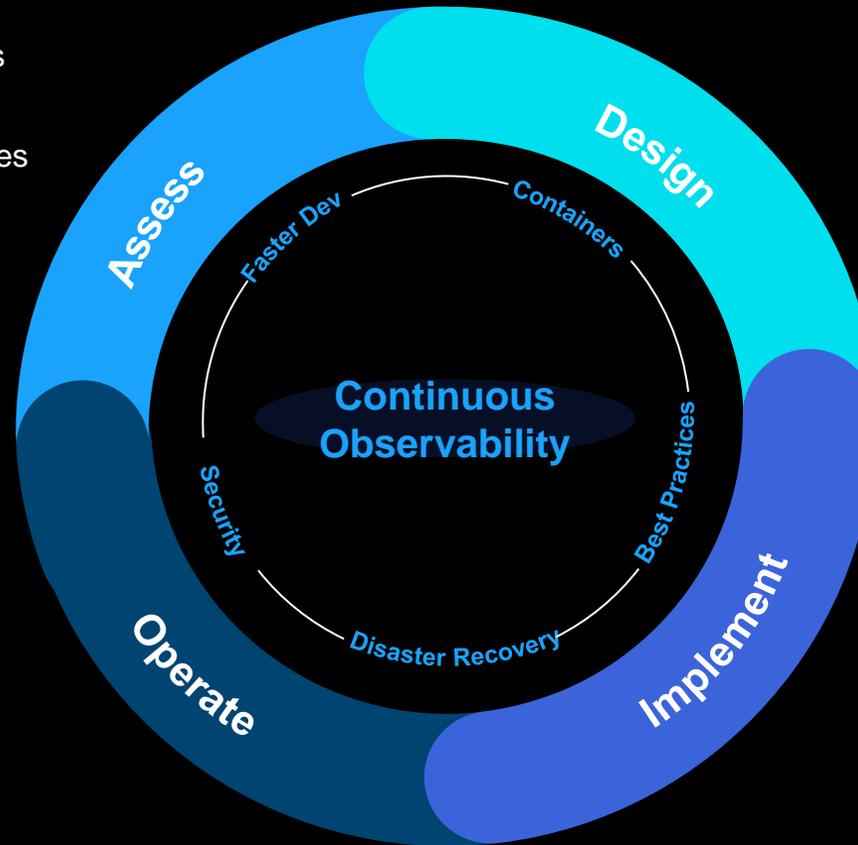- Identify architecture and strategies for operational future state

Design

- Solution design for targeted apps & services
- Clearly defined uses cases, success criteria, roles & responsibilities
- Timelines for technology deployments and integrations

Operate

- Observability platform reporting and recommendations
- Monitoring finetuning & alert customization
- Business-value dashboard creation, and advisory services

Implement

- Instrument, upgrade & integrate tooling – based on industry best practices
- Customize monitoring for apps, aligned to client's needs
- Advanced integrations between monitoring solutions and systems

Assess · **Design** · **Operate** · **Implement**

Faster Dev · Containers · Best Practices · Disaster Recovery · Security

Continuous Observability

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NTT Data's Observability service offerings

Full-stack Observability Services – designed and built to deliver premium digital experiences

Assess and Design

Identify the observability architecture needed to support the organization.

- Observability maturity assessment
- Observability design workshops
- Application assessment
- Monitoring environment assessment
- Tooling ratification assessment

Implement and Operate

Empower organizations to observe all the digital assets and services

- Multi-cloud application monitoring - visibility into business-critical apps and end-user experiences
- Digital experience monitoring - understand the impact of every network and service impacting digital experiences

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Royal Caribbean

Case Study: Hospitality

Customer Needs

- Deliver new customer-centric experiences faster
- Gain visibility to anticipate customer issues, be more proactive
- Improve mean time to problem resolution
- Gain data to inform development of new user experiences
- Increase client satisfaction

Continuous Optimization

- Designed & implemented an observability platform that solves the end-to-end service visibility
- Transformed operations with Cisco Full-Stack Observability
- Transitioned to a more proactive mode by using Cisco AppDynamics and Cisco Thousand Eyes for visibility into its services and user experiences
- Became a data-driven operation with real-time analytics for faster decision-making

Business Outcomes

- 100% improvement in development productivity, with more time to develop vs fix issues
- 50% reduction in mean time to repair
- Reduced number of critical issues
- Gained insights and new business agility for faster new service creation

"I now have full-stack observability, not only from the application experience but also visibility across the network experience. Now, I see everything. I see all the touchpoints and the failure points that are causing bottlenecks. With these real-time analytics, I know how many bookings are happening."

Alice McElroy, Royal Caribbean

Tech and Accelerators

NTT partnership	Cisco Full stack observability	Cisco AppDynamics	Cisco ThousandEyes

FinOps

What is FinOps?

Financial management to maximize business value with collaboration of development, finance, and operations

FinOps principles

- Fully leverage variable cost model of the cloud
- Decisions are driven by business value
- Timely and accessible reporting
- Enhanced team collaboration
- Accountability for cloud usage
- A centralized team to drive FinOps

FinOps domains

- Understanding of cloud economics
- Performance tracking and benchmarking
- Real-time data and analytics
- Cloud usage optimization
- Cloud rate optimization
- Organizational alignment

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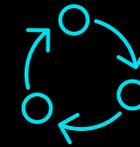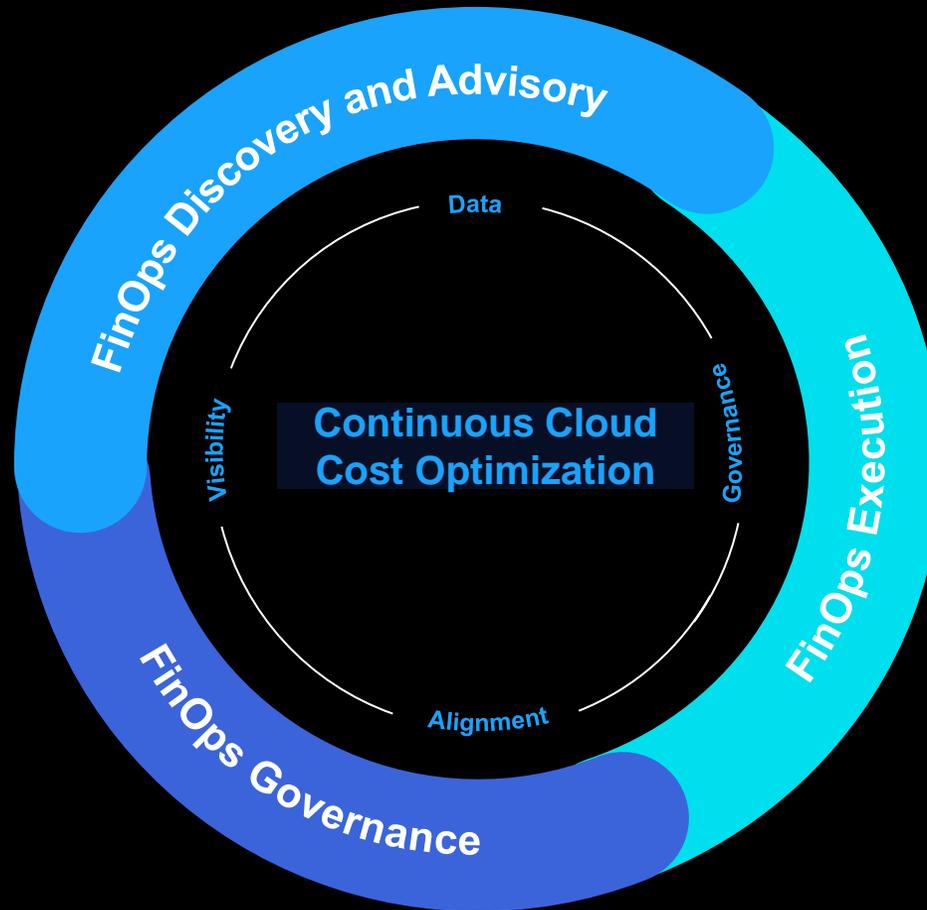# NTT DATA's 360° FinOps offering

FinOps Discovery and Advisory

- Understand cloud usage and costs
- Track performance for benchmarking
- Capture critical data

FinOps Governance

- Governance – Policies, security, risk management
- Organizational alignment – training, cost accountability

FinOps Execution

- Data and visibility for real-time decision making
- Cloud usage optimization
- Cloud financial optimization, management

FinOps Discovery and Advisory

FinOps Execution

FinOps Governance

Data

Visibility

Governance

Alignment

Continuous Cloud Cost Optimization

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FinOps Capabilities

Proven solutions delivered in collaboration with key stakeholders

Discovery / Advisory

- Public cloud spending expertise and advice

- Foundations for cost tracking and cost reductions

- Strategy and baseline for continuous cost optimization

Execution

- Data visualization, analytics, and reporting

- Trend analysis

- Resource tagging and categorization

- Resource lifecycle management

- Resource utilization monitoring

Governance

- Multi-cloud financial governance

- Cloud financial compliance

- Cloud financial risk management

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Case study: Global Information Services & System Integrator

Customer needs

- Create a new operating model for "one NTT" bringing together 50K employees and 31 companies
- Remove team silos
- Support the development of a profitable, platform-based services model
- Reduce costs
- Provide visibility into billing
- Improve governance

Continuous optimization

- Cloud-first strategy & transformation to streamline an ecosystem of 25K servers, and 2200 apps, across 50 data centers
- 100% of workloads migrated to Azure cloud making it easier to control cloud spend and uplift security posture.
- SRE, DevSecOps, FinOops best practices for streamlined operations, reduced costs
- Real-time data and end-to-end visibility provide valuable insights for continuous optimization

Business outcomes

- 33% savings in total Opex
- $3.3 M annual cost savings
- Decommissioned 25% of workloads and 450 VMs for a simplified infrastructure
- Enhanced visibility for better financial control, better security & governance
- Valuable insights into multi-cloud initiatives benefiting NTT clients
- Ongoing scalability & flexibility for faster response to customer and market demands

Tech and Accelerators

Microsoft Partnership	Public Cloud	Cloud migration and transformation	SRE frameworks and best practices	FinOps, DevSecOps, Observability	Managed Azure Cloud Services	Managed SAP

"Our cloud-first strategy has delivered the speed, agility, and flexibility we need to support our digital transformation goals. Our organization is now more responsive to changing customer needs and market conditions. We're able to develop products and services and take them to market faster than our competitors, increasing our ability to generate revenue."

Pascal Weiss
VP of IT Information Systems, NTT Data

SRE Benefits

Continuous business value

- Improved performance, agility, and resilience

- Improved traceability, observability and digital experiencea

- Highly scalable without having to manage the burdensome process

- Security embedded in all layers

- Single vendor for all support – automation, IaC, and infrastructure

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SRE Engagement Model

Flexible model to meet your business needs

	Foundational POD	Standard POD	Premium POD
POD Leader	✓	✓	✓
Cloud Engineer	1	2	8
DevSecOps Engineer	1	2	2
Cloud Network Engineer		2	2
FinOps Engineer		1	1
Observability Engineer			2
Coverage	M-F 9a-5p local time	M-F 9a-5p local time	24x7 on call
SLA	4 hours	2 hours	1 hour

This is a template. The estimation will have to be done on a custom basis depending on client requirements and capacity outcome expectation.

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Why NTT DATA?

Speed	**Quality**	**Continuity**	**Efficiency**
27 to 50x improvement in release velocity	<1% production code with defects	Migration and modernization with zero downtime	25% to 70% less platform support

Did you Know?

1st Global **Managed FSO Services** partner

NTT is the largest global **AppDynamics Partner**

Over 500 Cisco AppDynamics and ThousandEyes certified engineers

Observability Practice
delivering globally available services with local execution

Cisco Partner of the Year for **Managed Services**

NTT Data Strategic Cloud-native Modernization and Migration Partners

Providing exceptional services at a global scale

Hundreds of partner certifications

- Deep cloud-native infrastructure expertise that is highly skilled across all cloud types

- Over 100,000+ workloads migrated with zero downtime

- Cloud-to-Edge-as-a-Service powered by VMware's Edge Compute Stack.
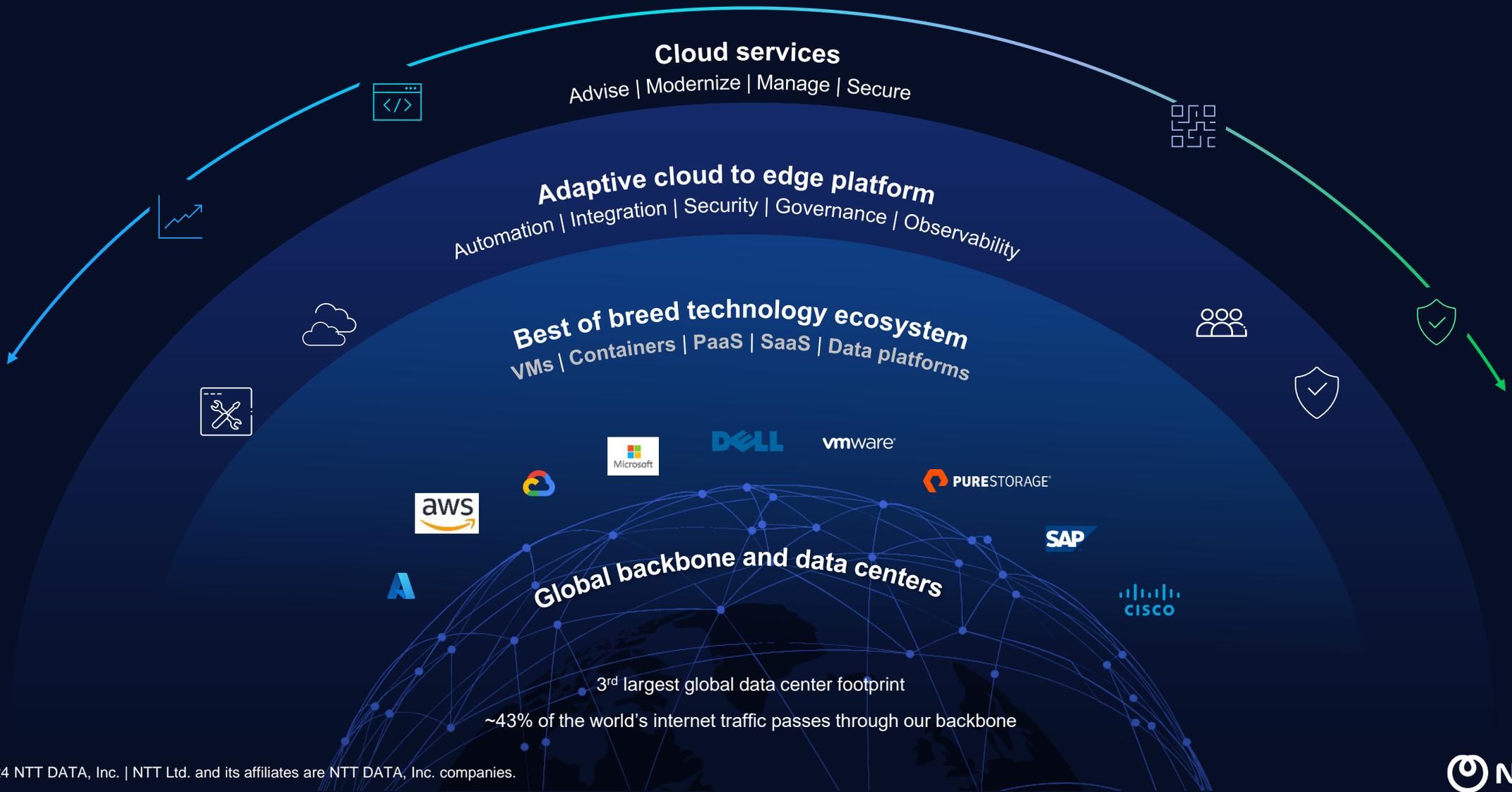
Unparalleled global expertise in ERP and SAP cloud migration and managed services

- Globally certified in Infrastructure Operations, Hosting, SAP HANA operations, and SP S4/HANA Solutions Operations

- NTT's 360 Observability, powered by Cisco Full-Stack Observability, moves beyond domain monitoring to a fully integrated approach

Thank you!

Join us for a coffee at the NTT DATA Coffee Lounge in the World of Solutions!

Visit us at the NTT DATA Private 5G corner at the Aviation Booth in The Hub!

Together, we do it right.

Join our upcoming sessions

How CILE transforms water management through smart solutions

Discover how we partnered with CILE to boost water conservation with an IoT and LoRaWAN solution – and how the network provides building blocks for other sustainability use cases.

William de Angelis, former CIO for CILE, currently Solution Manager for Smart City, i-CITY

Robin Joncheere, Country Manager Belgium, NTT Ltd.

When: Tuesday, 6 February | 11:30 am to 12:15 pm

Where: Customer Success Theatre

Maximize your IT investments: Best practices for transforming and taking control through software-defined infrastructure

Join us to explore practical solutions and best practices in license and asset management. Learn how you can enhance operational efficiency, optimize spending, and reduce risks associated with compliance and service interruptions.

Roberto Fasiani, VP GTM Software and Support Services Europe, NTT Ltd.

When: Tuesday, 6 February | 1:00 pm to 1:20 pm

Where: Partner Theatre

Charting the future: Consoles #_ to AI-driven infrastructures

Infrastructure setup and management now leverage automated processes, fuelled by APIs and software innovations. Smarter devices breed smarter infrastructure, providing uniformity, less downtime, swift time to market, and heightened compliance. Join this session for a glimpse into the evolution from console-driven management to AI-managed infrastructure, facilitated by intelligent devices.

Arnab Sen, Senior Technical Services Lead, NTT Ltd.

When: Wednesday, 7 February | 1:10 pm to 1:30 pm

Where: Partner Theatre

Network automation – A world of misunderstandings

You develop network automation solutions for others and experience the issue of misunderstanding during the development. Find out how methods like (user-)story-mapping help to create a common understanding of the problem you and your team are trying to solve through network automation projects.

Henry Oelsner, Technical Consultant, NTT Ltd.

When: Thursday, 8 February | 1:30 pm to 2:15 pm

Where: DevNet Theatre