Full Stack Observability for Hybrid Architected Applications

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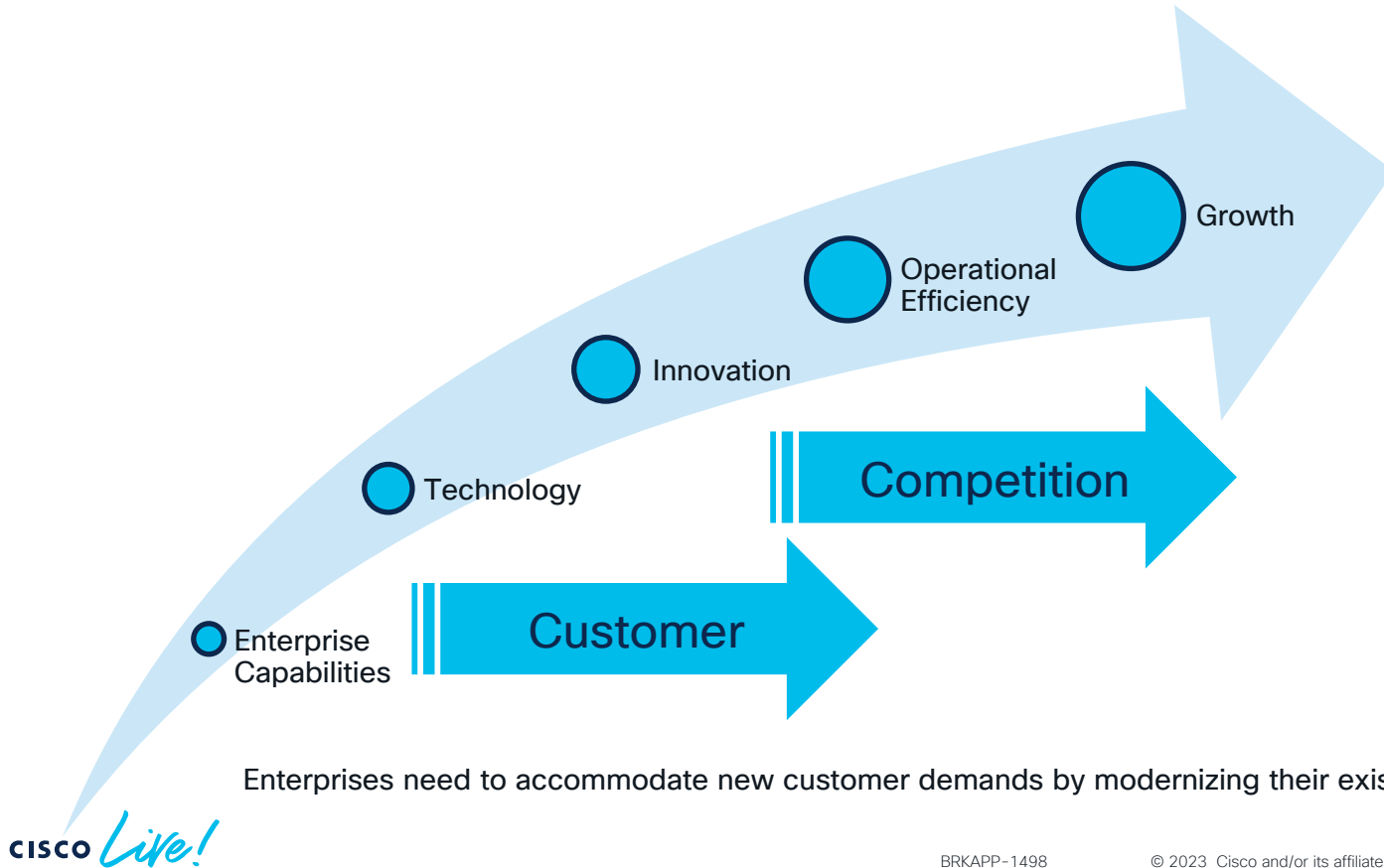until February 24, 2023.

Agenda

- Journey to Digital Transformation

- Hybrid Applications and Support Challenges

- Using Full Stack Observability as Toolset

- Rethinking Application Observability Support Models

- Conclusion and Takeaways
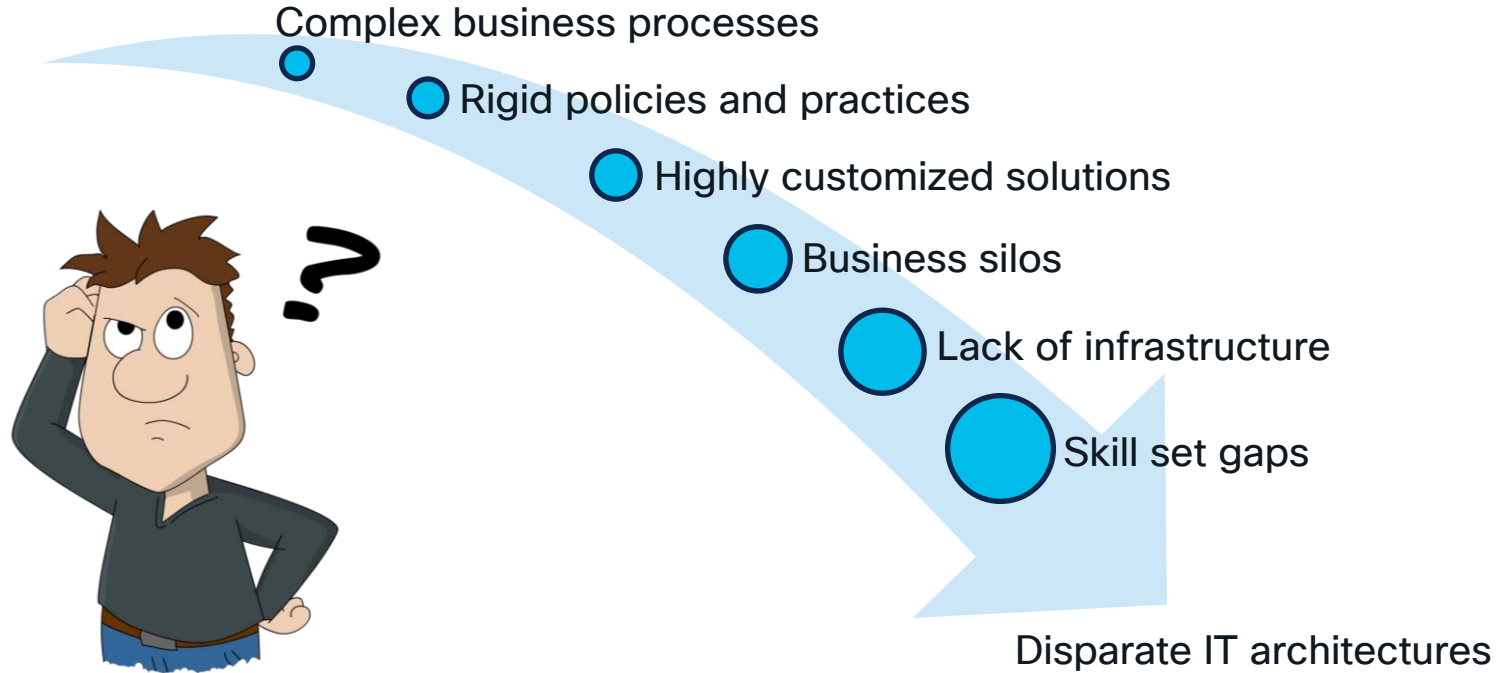
Journey to Digital Transformation
It's all about embracing new processes and technology

Digital Transformation mayor factors to be considered

Growth

Operational
Efficiency

Innovation

Competition

Technology

Customer

Enterprise
Capabilities

Enterprises need to accommodate new customer demands by modernizing their existing business segments

Digital Transformation barriers

Complex business processes

Rigid policies and practices

Highly customized solutions

Business silos

Lack of infrastructure

Skill set gaps

Disparate IT architectures

The digital transformation is an experience transformation

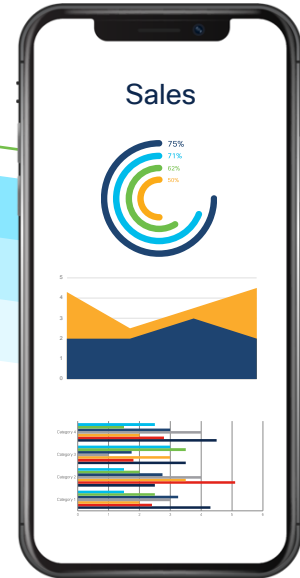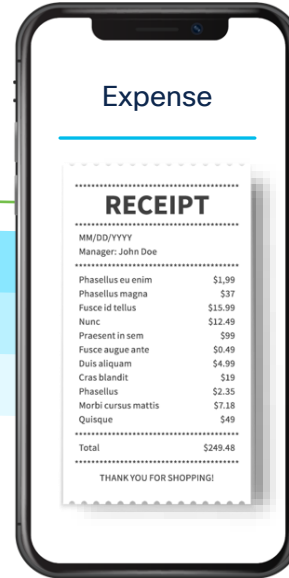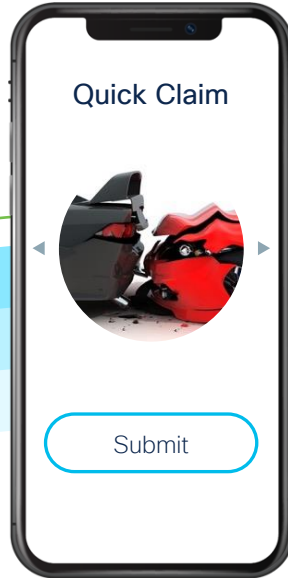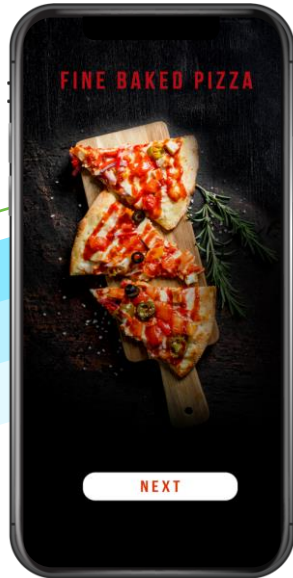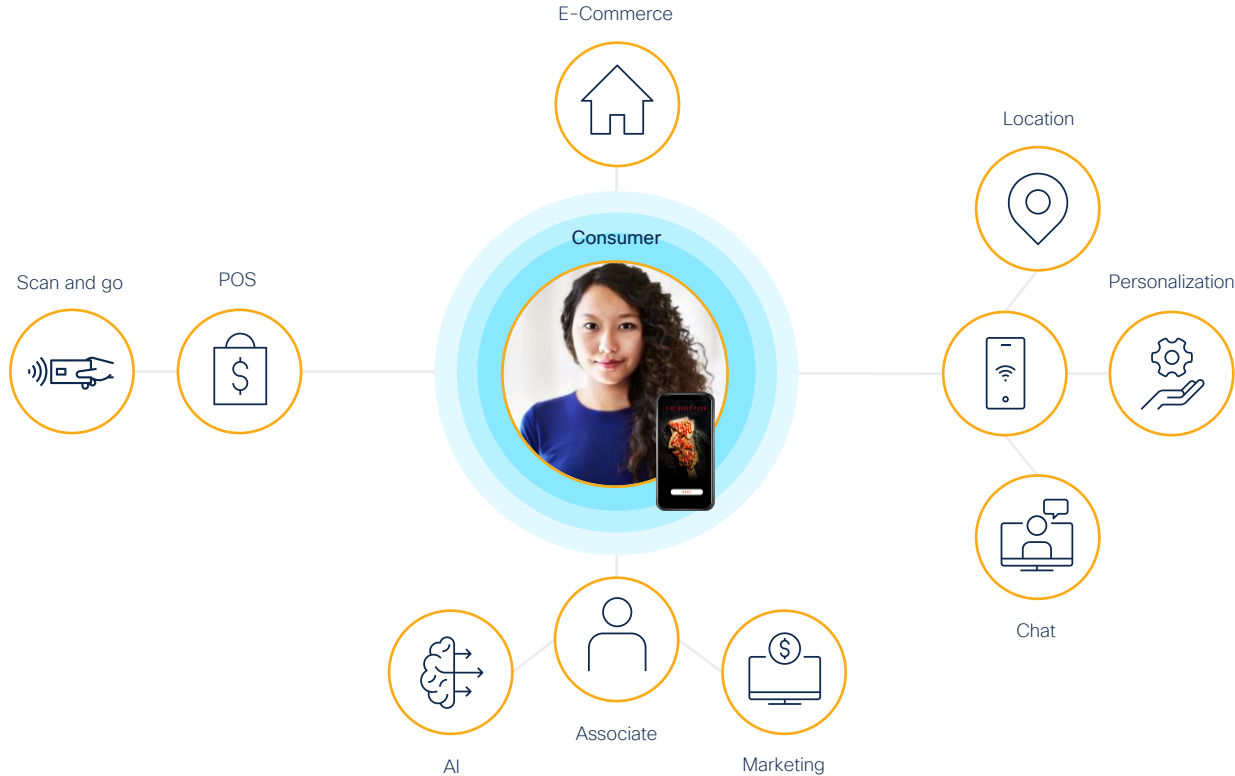|		
Adoption of a cloud experience	**Technology experience** for developers, IT, and business
Applications are now the lifeline of every business	**Application experience** for how business is conducted
Shift to hybrid work	**Work experience** for productivity, balance
Security is moving to the cloud	**Protecting the experience** securing stakeholders and trust
Transition to 5G and Wi-Fi 6	**Connected experience** always-on and connected
Apps and workloads are moving closer to users and devices	**Real-time experience** for IoT, context sensitive apps

Hybrid Applications and Support Challenges

Applications are the front door

...to an evolving and expanding digital experience

E-Commerce

Location

Consumer

Personalization

Scan and go

POS

Chat

AI

Associate

Marketing

But the app landscape is complex

75% Wrestle overwhelming 'data noise', without the resources and support they need

85% Struggle to quickly cut through noise to identify root causes of performance issues

96% Face negative consequences of not having genuine visibility and insight into the performance of the whole technology stack

Islands of operations are inefficient and ineffective

AppOps and DevOps

NetOps

InfraOps

SecOps

SaaS

Azure

IBM Cloud

Cloud providers

SaaS

Service providers

aws

Colocation

Security

Google Cloud

SaaS

SaaS

SaaS

Hybrid cloud

Private cloud

Campus

Home

Data center
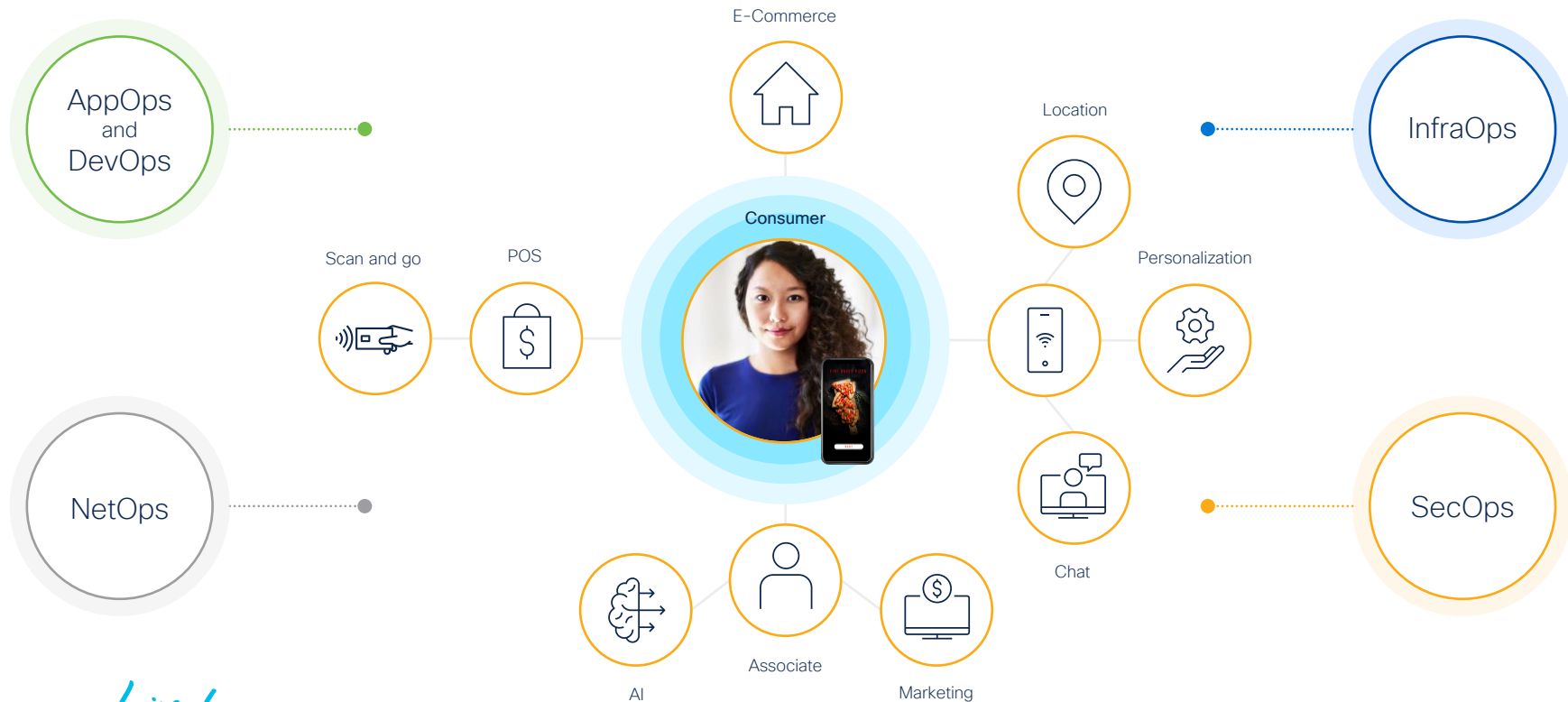
Edge | IoT and OT

There is no **business context**

You need to see more to solve more.

Your teams need to see the full stack of available data

Business context across the digital experience

AppOps and DevOps

InfraOps

NetOps

SecOps

E-Commerce

Location

Personalization

Scan and go

POS

Consumer

Chat

AI

Associate

Marketing

Full-Stack Observability
Builds on monitoring and visibility, and adds business context

Full-Stack Observability
Multiple domains and cross-functional teams

Business context and Impact
Real-time, distributed and hybrid apps
Issues and Incident remediation

Cross-domain full MELT and **security**
Cloud and Edge native

DevOps and SRE
KPI: SLO with business context, insights driven actions/automation,

Visibility/Observability
Per domain/team

Active and modern apps
Root Cause Identification

Telemetry based (MELT) subset
Tools sprawl, some integrations

KPI: performance, experience
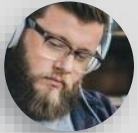
Monitoring
Per domain/team

Passive and traditional apps
Health and reporting

Events sampling
Dashboards/views

KPI: Availability, capacity

Using Full Stack Observability as Toolset

The role of team for modern applications

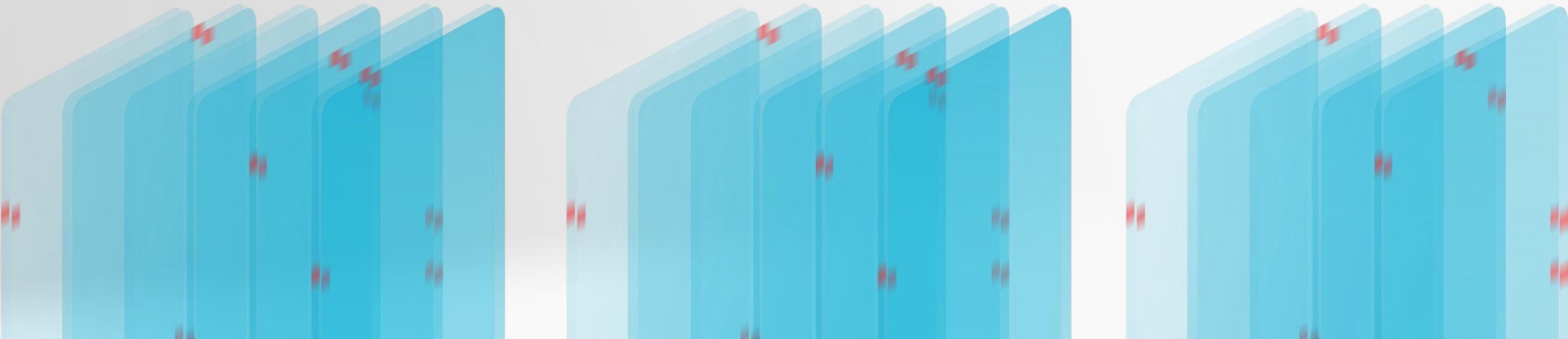**DevOps and AppOps**

NetOps

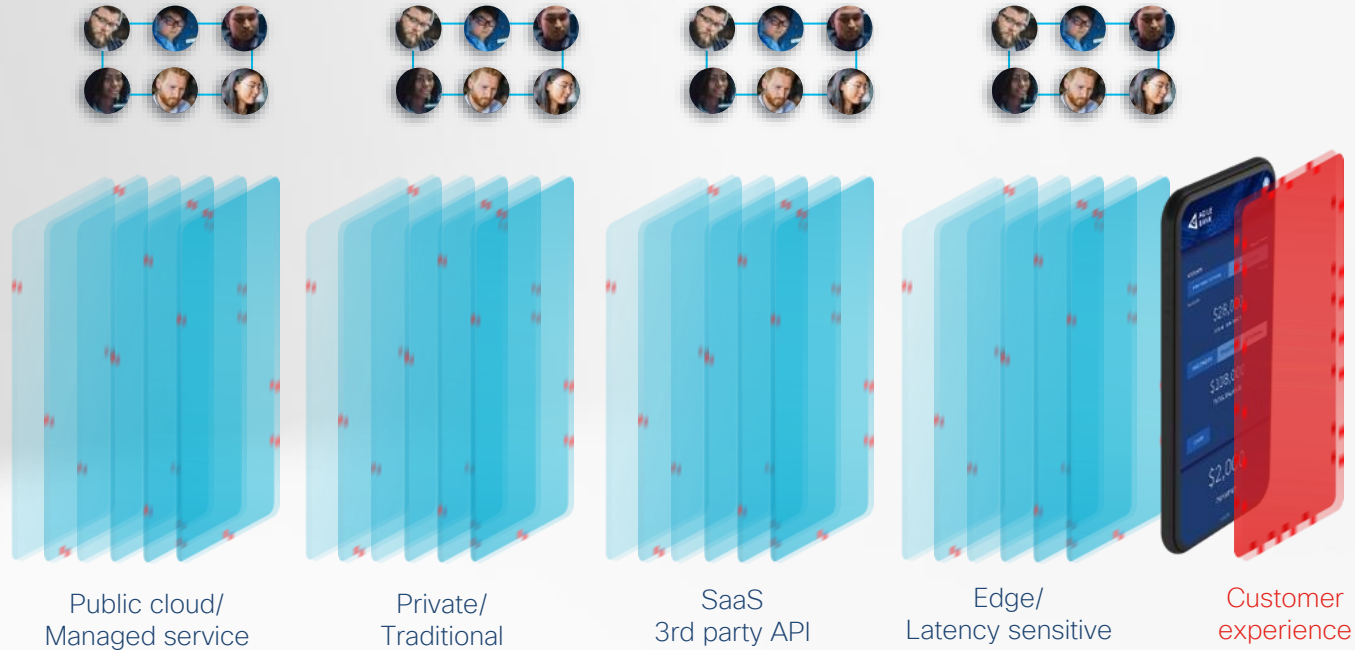**InfraOps**

SecOps

Line of Business

Developers

Multi-cloud is multi-team

Public cloud/
Managed service

Private/
Traditional

SaaS
3rd party API

Edge/
Latency sensitive

Customer
experience

Digital services have their own team
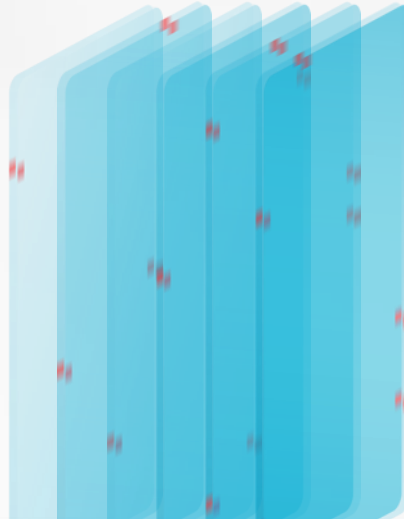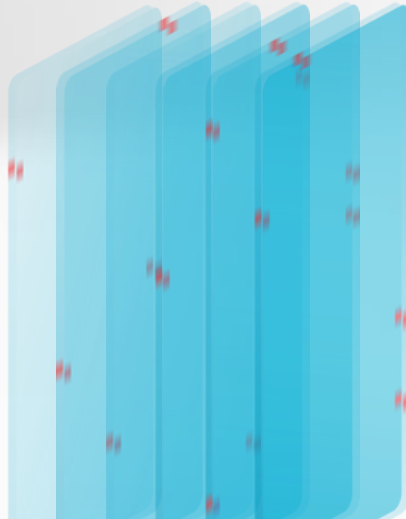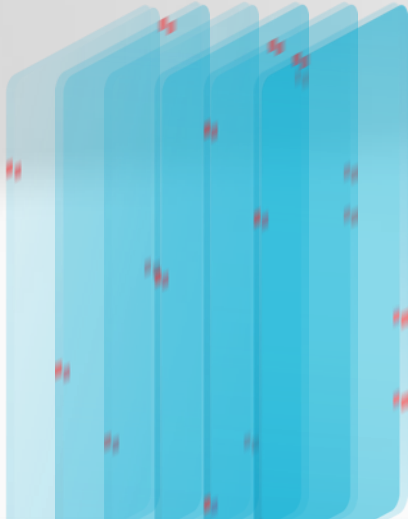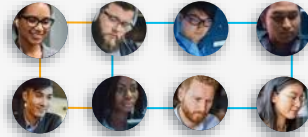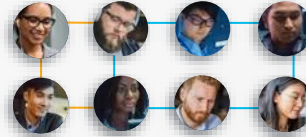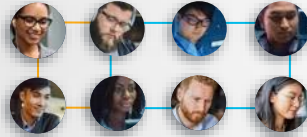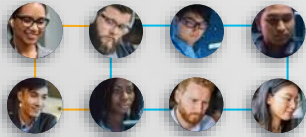
Point monitoring tools

User experience
monitoring

Data service
monitoring

Security
monitoring

The Idea is to find Blind Spots

Compute service
monitoring

Network service
monitoring

Cisco Full-Stack Observability

Full-Stack
Visibility

Observable
and optimizable
technology stack

Full-Stack
Insights

Application and
business insights
across stack

Full-Stack
Actions

Prioritized remediations
and optimizations
across stack

Differentiated solution with business context

Full-Stack actions for the business

Visibility

Observable and optimizable technology stack

Application performance, services and development

Network and internet

DC infrastructure and clouds

Security (dev and runtime)

Business outcomes and transactions

End user experiences

> MELT and open telemetry

Insights

Application and business insights across stack

End-to-end correlation and dependencies

Shared common context of performance issues

Prioritize issues with business and experience impact

> Transactions, incidents, KPIs

Actions

Prioritized remediations and optimizations across stack

Application to infrastructure performance

Cost and workload optimizations

Application security detection and policy enforcement

Prioritize issues with business context

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Business Context
Drive benefits for the organization together

AppOps and DevOps

NetOps

InfraOps

SecOps

Increase business impact

Elevate business experience

Optimize business operations

Reduce business risk

Cisco Full-Stack Observability Use Cases

AppOps and DevOps

NetOps

Performance

Hybrid application Monitoring

Modern (cloud native) application monitoring

Customer digital experience monitoring

Application dependency monitoring

Optimization

Hybrid cost optimization

Application resource optimization

Security

Application security

InfraOps

SecOps

Business Context
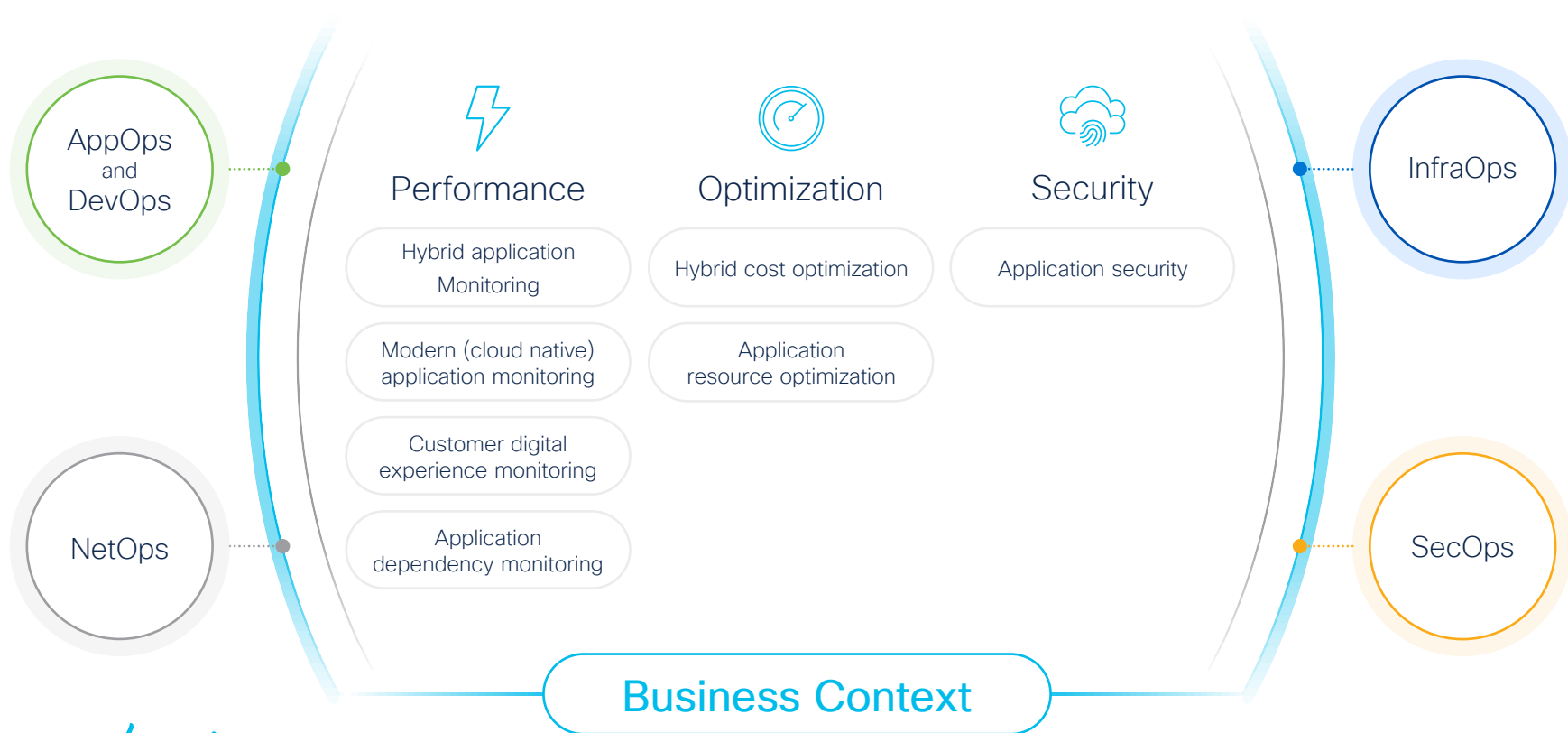
Extend your Observability

Simplified experiences and extensibility

The Cisco FSO Platform
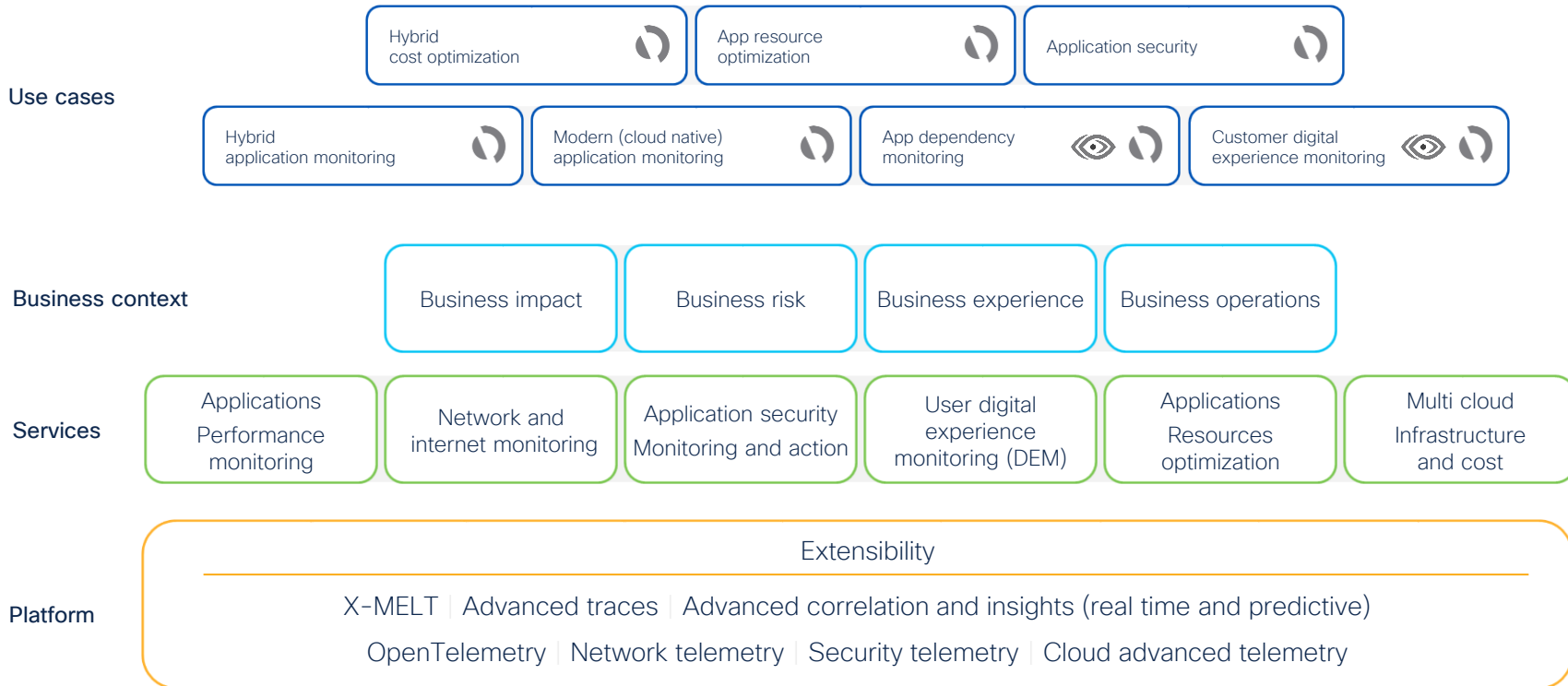
Scale
and performance

Unified
experience

Extensible

Extensibility

X-MELT | Advanced traces | Advanced correlation and insights (real time and predictive)

OpenTelemetry | Network telemetry | Security telemetry | Cloud advanced telemetry

# Cisco Full-Stack Observability architecture foundation

Use cases

Hybrid cost optimization	App resource optimization	Application security

Hybrid application monitoring	Modern (cloud native) application monitoring	App dependency monitoring	Customer digital experience monitoring

Business context

Business impact	Business risk	Business experience	Business operations

Services

Applications Performance monitoring	Network and internet monitoring	Application security Monitoring and action	User digital experience monitoring (DEM)	Applications Resources optimization	Multi cloud Infrastructure and cost

Platform

Extensibility

X-MELT | Advanced traces | Advanced correlation and insights (real time and predictive)

OpenTelemetry | Network telemetry | Security telemetry | Cloud advanced telemetry
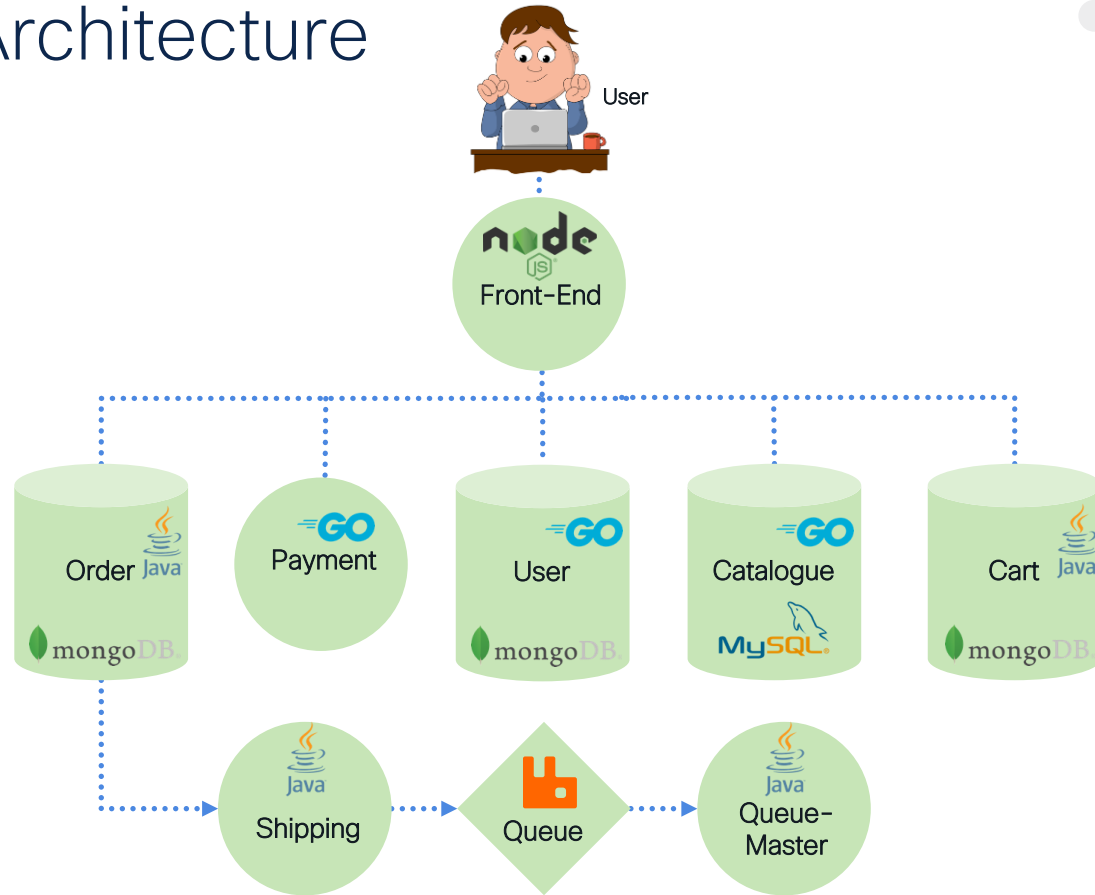
Demo

CoolSox Demo Application

- Microservices based eCommerce application

- Fully automated multicloud deployment

- Can be instrumented using AppDynamics, ThousandEyes, and Intersight
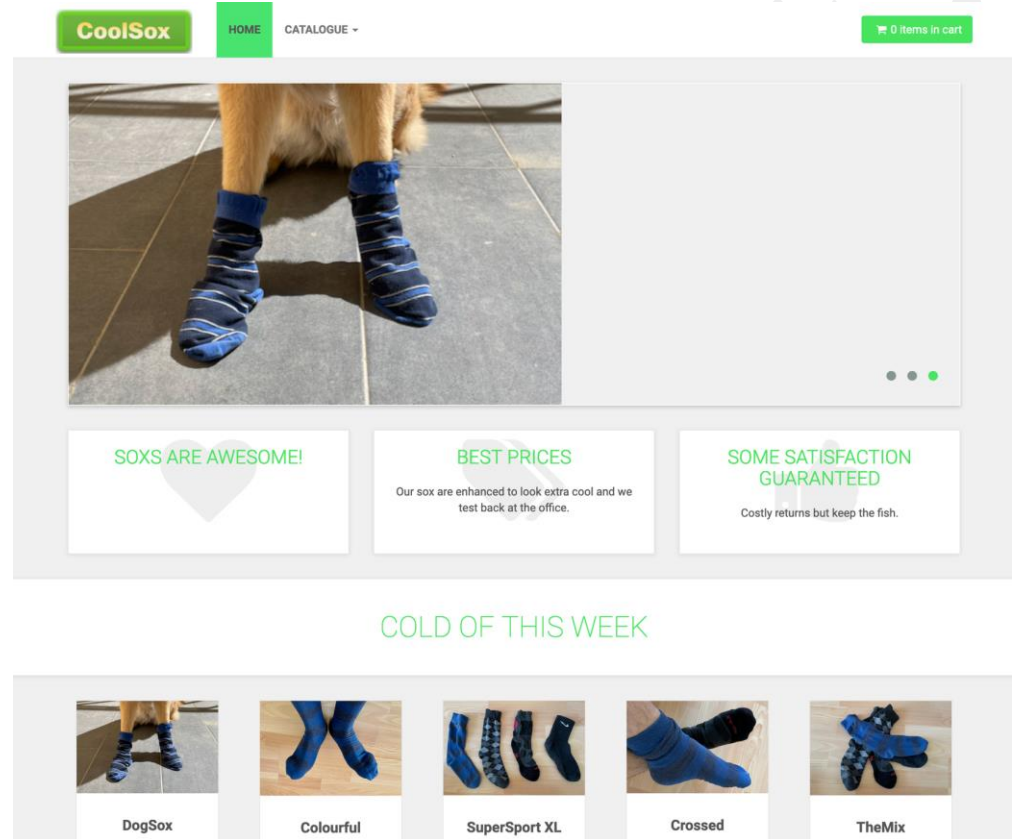
CoolSox Architecture

How to support modern environments

Performance

Security

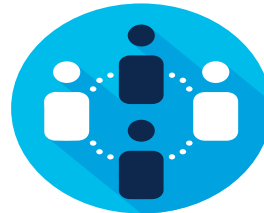## Can you identify the issues?
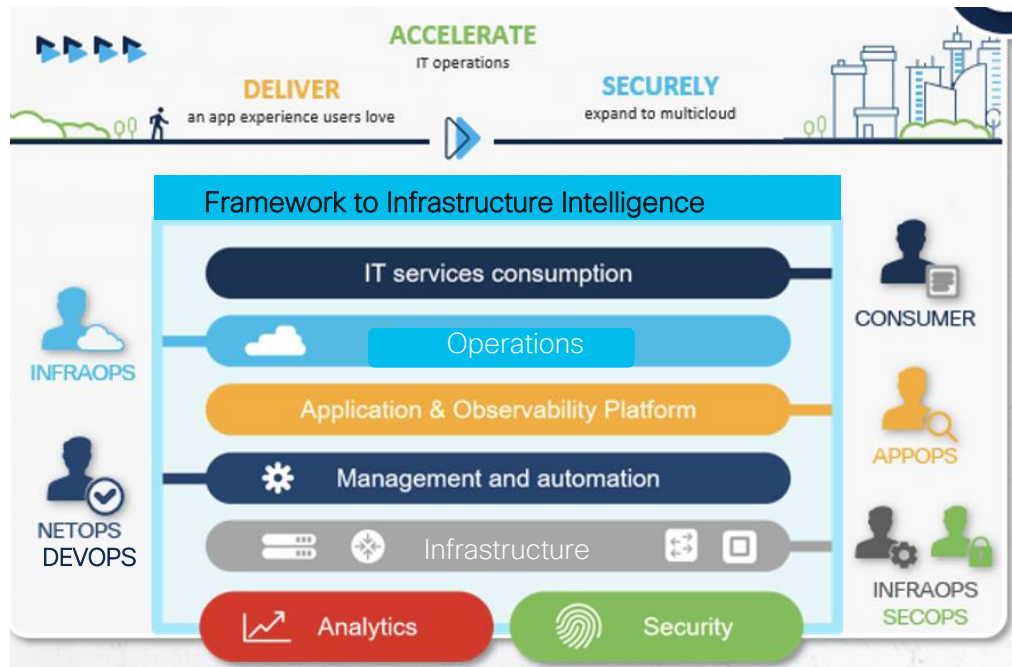
What is the business impact?

Economics

Availability

Collaboration

The new Hybrid Environment requires a Full Stack Support Model
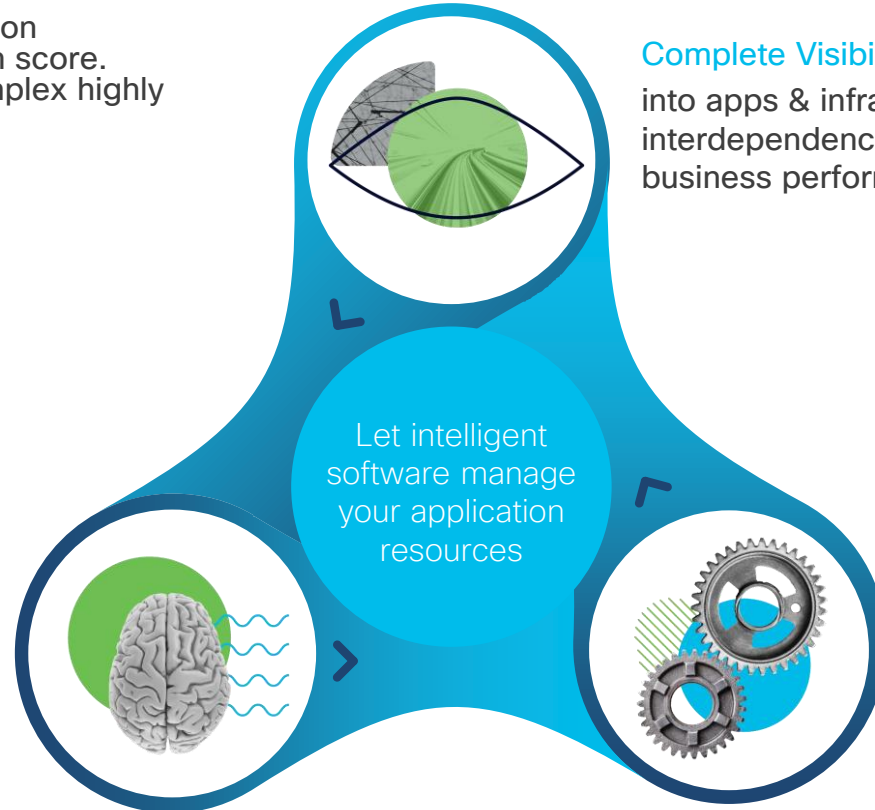

Building Blocks

- Security
- Automation
- Visibility
- Adoption
- Governance
- Business Use Cases to Technology Capabilities

The Support Model Approach

IT needs to assure application performance and reputation score. Reduce cost in today's complex highly distributed landscape ...

Complete Visibility

into apps & infrastructure interdependencies + impact on business performance

Let intelligent software manage your application resources

Real-time

Analytics & Insights

powered by AI to drive the right resource decisions

Full-stack Automation

allocates and optimizes resources in real-time

Establishing Best Practices to Engage Support Teams

Create Center of
Excellence (COE)
and Establish Vision

Assess Environment

Improve People and Processes

Collect and Analyze data

Run Periodic Health Checks

Establish Base Lines

Collect User Application Feedback

Deploy and Improve Decision

Configure and On-board Applications

On-board Stake Holders
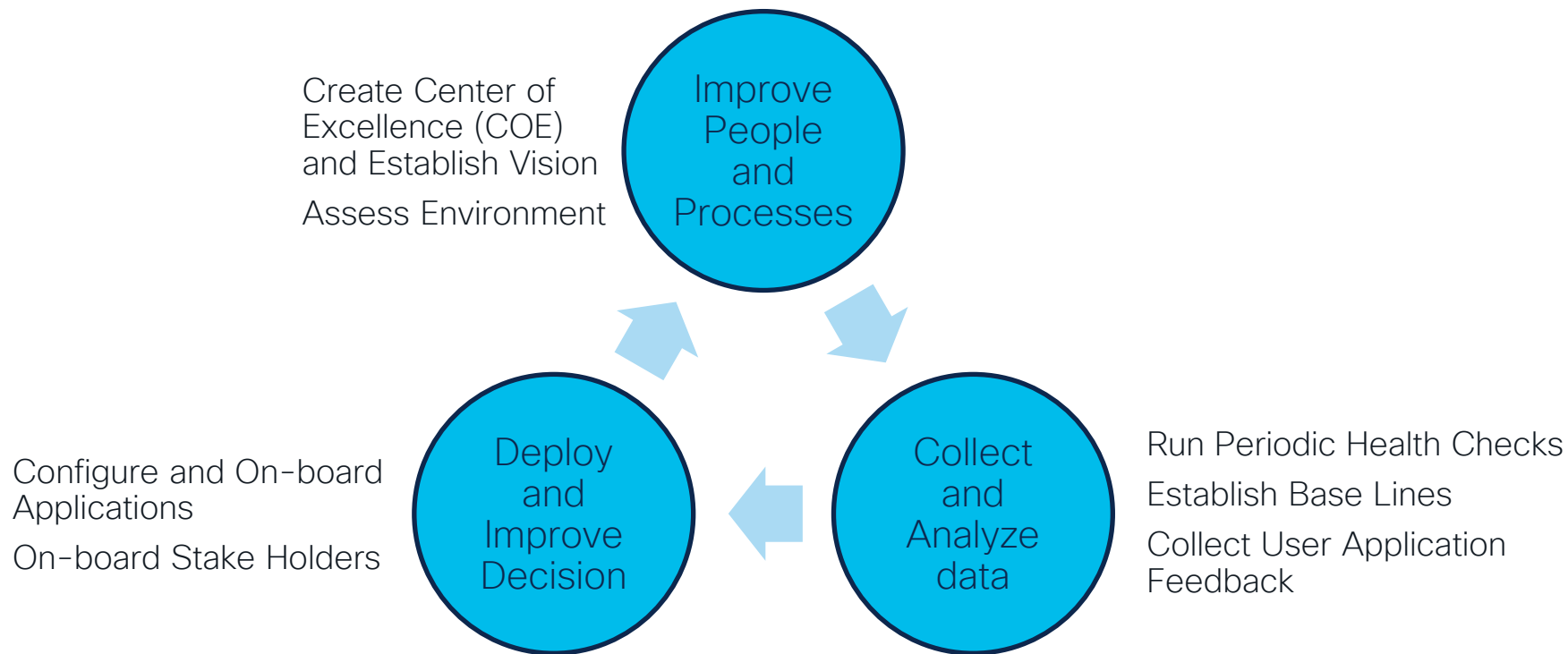
Believe in a plan that makes sense, simple and cost effective

Conclusion and Takeaways

Observability trends

Observability applied to the software lifecycle

Consolidated data driven strategies with multi-tool platforms

Adoption of open-source tools and standards, (OpenTelemetry, OpenMetrics, eBPF, etc.)

Distributed tracing platforms

![Cisco Customer Experience CX logo]

Discover how full-stack observability services accelerate outcomes

CX helps you identify and deliver exceptional digital experiences. We assess your use cases, implement KPIs, and deliver recommendations for optimizing your application and networking experience.

[QR code]

Visit CX FSO Services to learn more

CISCO *Live!*

How we can help

Strategy and Solution Discovery
Discover and document business and technical use cases, identify sources of information and drive observability roadmap

Optimization and Monitoring Support
Unleash the full power of full-stack observability tools

Assessments
Assess application and networking environment readiness to gather necessary metrics

Knowledge Transfer
Receive consulting support with dedicated advisors driving recommendations

Planning, Design, Implementation
Accelerate success implementing unified dashboards and correlating available information for business related KPIs

Learning | Certifications
Empower your workforce with efficiency and innovation

Optimize
the user experience with the power of FSO

Innovate
with Cisco® certified application experts

Stay Agile
to resolve application issues with predictable analytics

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