



# Cloud Technologies and Solutions

Accelerating Time to Market

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Cisco Video Summit '14

# Agenda

Cloud Transformation

Openstack Cloud Platform

Evolved Services  
Platform Orchestration

Intercloud Workload Portability

Cloud Fusion for Videoscape  
Deployment Flexibility

Case Studies



# The Future of TV

## Drivers for Change

### Technology

- More devices and screens
- Ubiquitous and smarter networks
- Better video quality
- General Purpose Computing
- Elastic Compute Power in the network
- The Home gets a new focus

### Business

- Content rights evolve
- Devices (and UX) lead loyalty
- Advertising is much smarter
- Improved service agility
- New business relationships and competition

### Consumer

- The omnipresent nature of content
- Story-telling from device to device, place to place
- Make it easy for me AND fun
- Minimize the pain of paying, and protect my personal data
- Give me the best experience possible (highest ROI)

# Business Priorities For Service and Content Providers

## Increase Revenue



### Deliver Compelling Video Experiences - Faster

- Differentiate with new services
- Capture new business opportunities
- Anywhere, on-demand, social and personal experiences

## Applications

*Rapid Creation & Deployment*

## Enhance Agility



### Orchestrate, Automate, Simplify

- Flexible resource provisioning to respond to dynamic requirements (demand spikes)
- Accelerate business time-to-market: turn on services @ Internet speed
- Adapt to changing business models: evolving content rights, new consumption patterns

## Orchestration

*Automation, SDN, NFV and Policy*

## Lower Costs



### Deliver More - with Less

- Scale capacity to support business: more content, resolutions, screens, users
- Reduce deployment risk and time
- Improve resource utilization: reduce data center footprint, power and cooling costs

## Infrastructure

*Physical and Virtual Resources*

# Cloud Transformation Advantage

## Benefits of Cloud Deployment

### Faster Time to Market

On-demand, self-service deployment driven by automation and API



### Elastic Economics

Save on on-premise development  
Flexible on-demand pricing  
Centralized management



### Scalable Infrastructure

Robust server infrastructure provides a reliable and consistent quality of service



## Benefits of Cloud Applications

### Portability of Applications

Flexibility and Ubiquity across common platform  
Open architecture, avoid lock-in



### Big Data and Analytics

API-driven service architecture  
Analytics improves insight, visibility and user experience in real-time

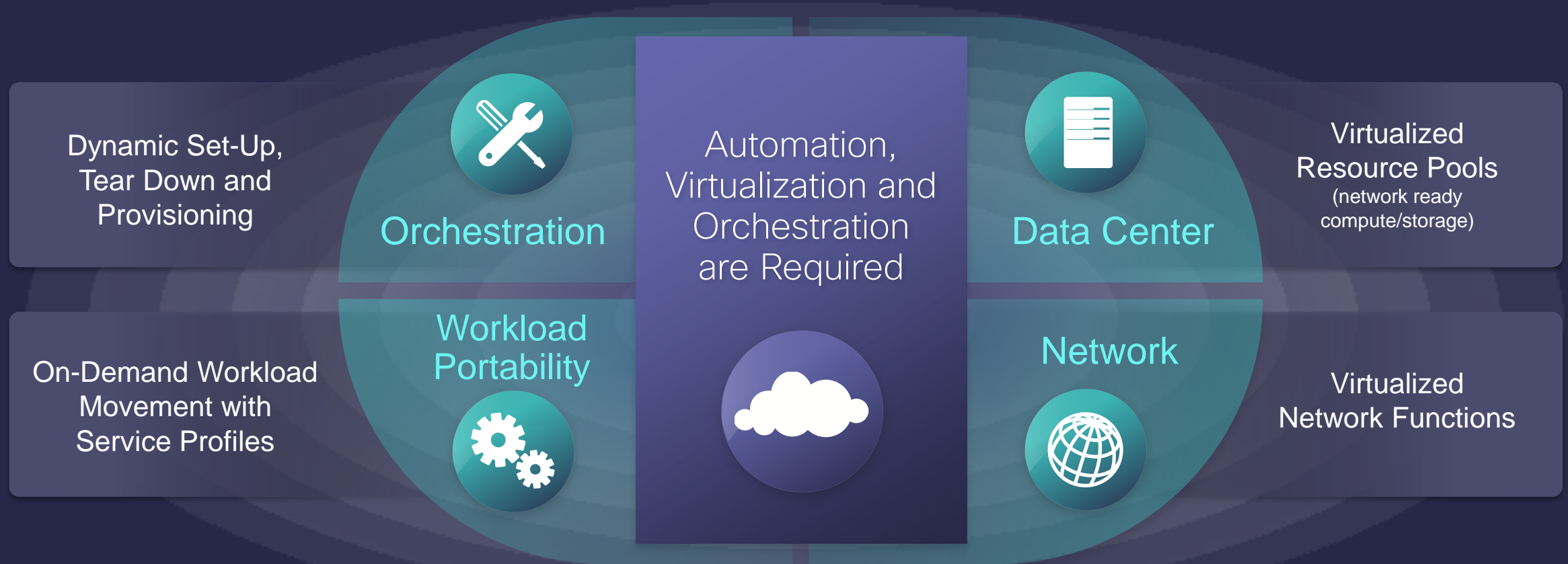


### New Monetization Model

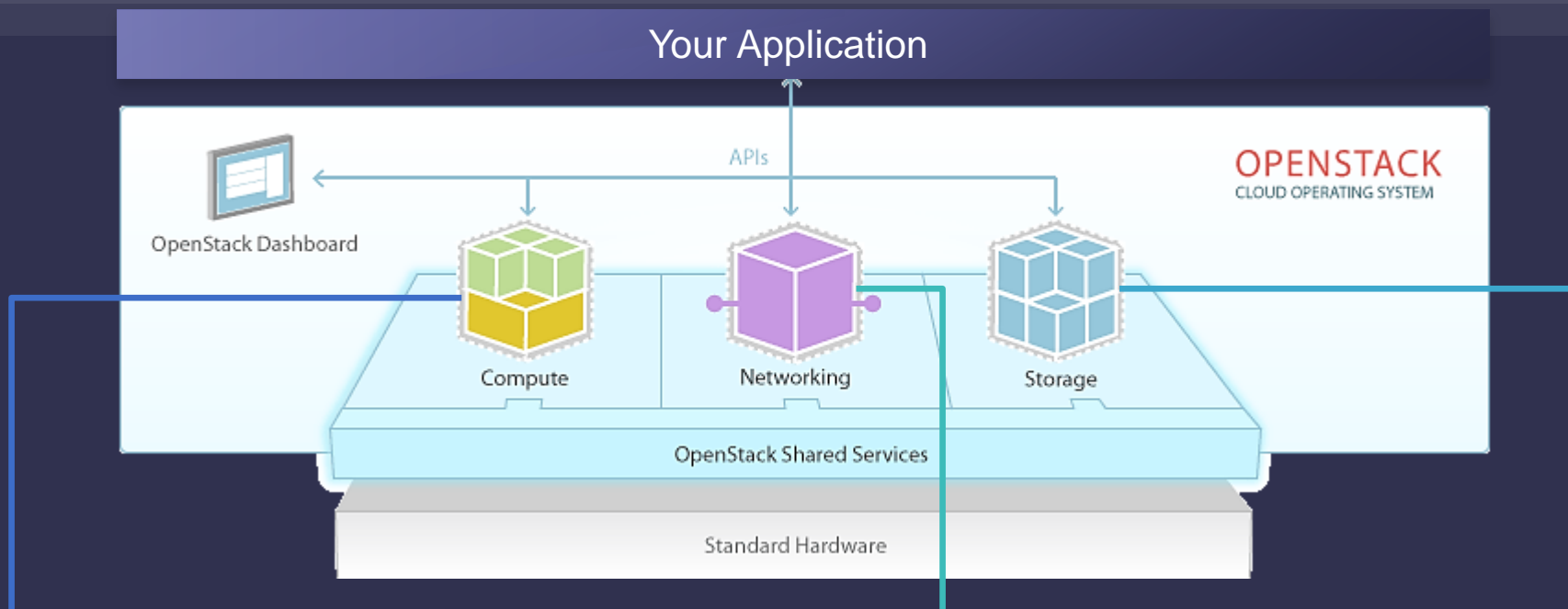
Measurement, location, 2nd screen usage and interaction with social media enables new revenue streams



# The Mission: Service Provider Business Transformation



# OpenStack: Flexible Open Source Cloud Platform



## Compute (Nova)

Self-service provisioning of virtual machines through a software API

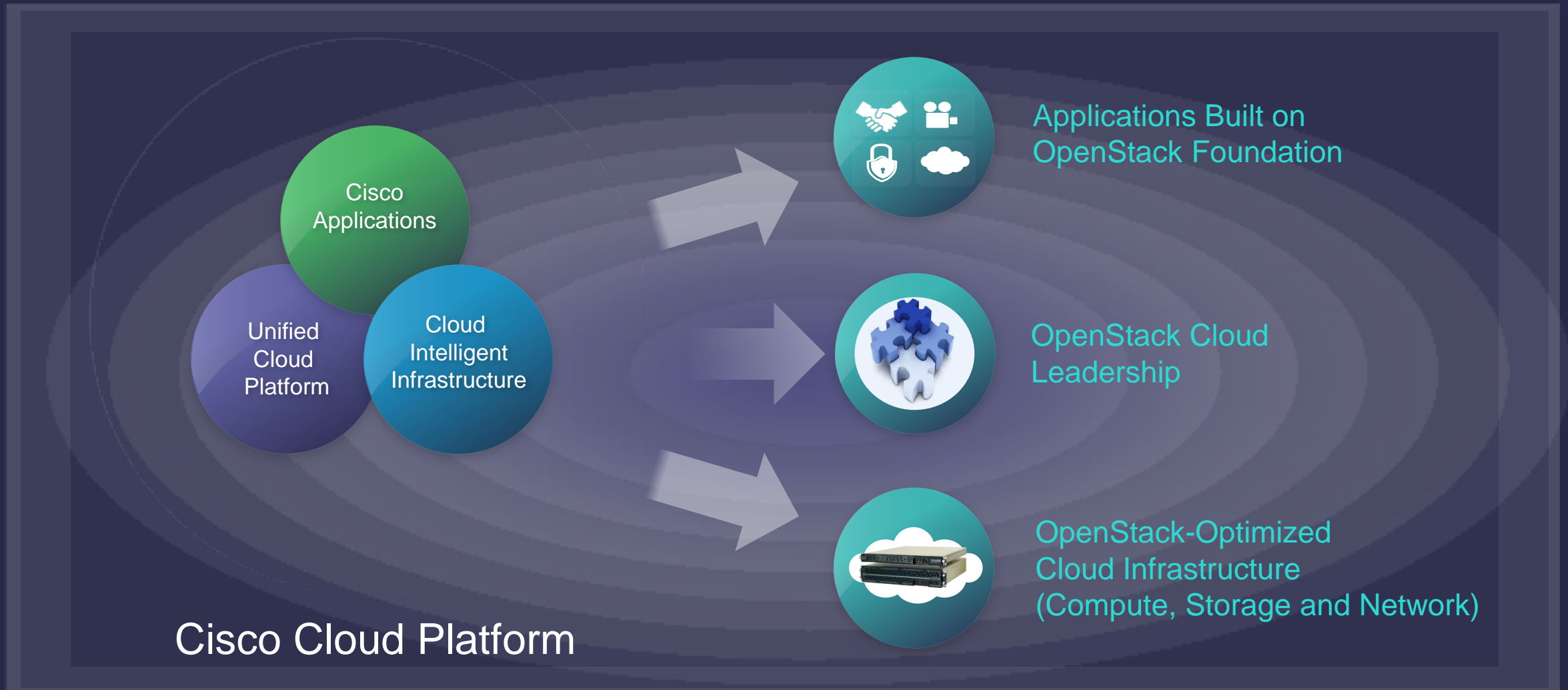
## Network (Quantum/Neutron)

For tenant created, virtual isolated networks and subnets, and services

## Object Storage (Swift)

Massively scalable, distributed object store

# OpenStack Commitment and Leadership





# Flexible Platform for Video Services with OpenStack

## Simplify Operations

- On demand provisioning of media centric services
- Software Centric Applications for modern cloud/data center infrastructure ecosystems

## Facilitate Innovation

- Programmable platform that can be re-purposed across many use cases
- New monetization opportunities

HW/SW  
Separation

Elasticity

Automation

Performance

Simplicity

Cloud

Extensible

Service  
Velocity

Programmable

# Flexible Platform for Video Services with OpenStack

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## Videoscape Applications and Services



Videoscape Open API Framework

Control Plane

Media Plane

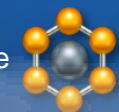


Compute



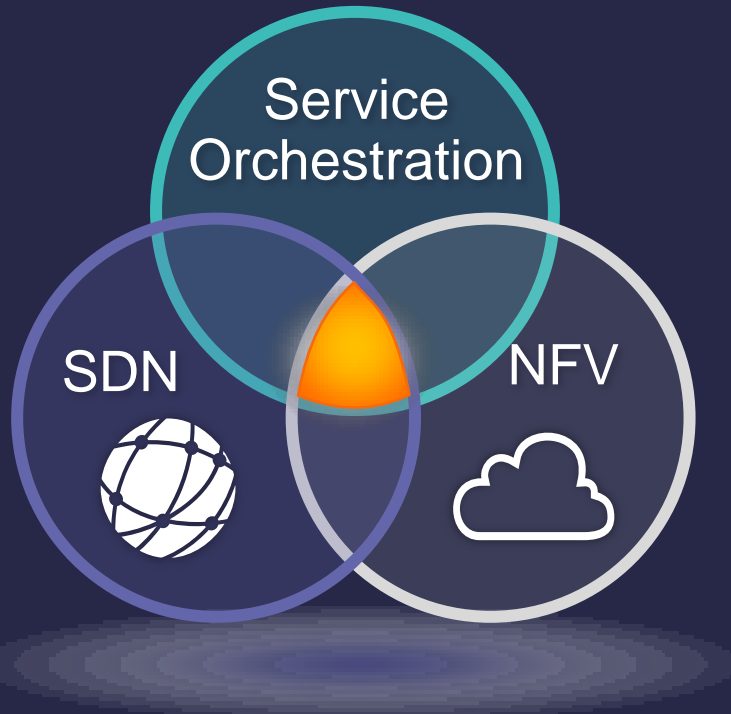
Network

Storage



# Cisco Evolved Services Platform

## Leveraging Innovation and Open Standards



### Orchestration

Automation, provisioning and interworking of physical and virtual resources

### NFV

Network functions and software running on any open standards-based hardware

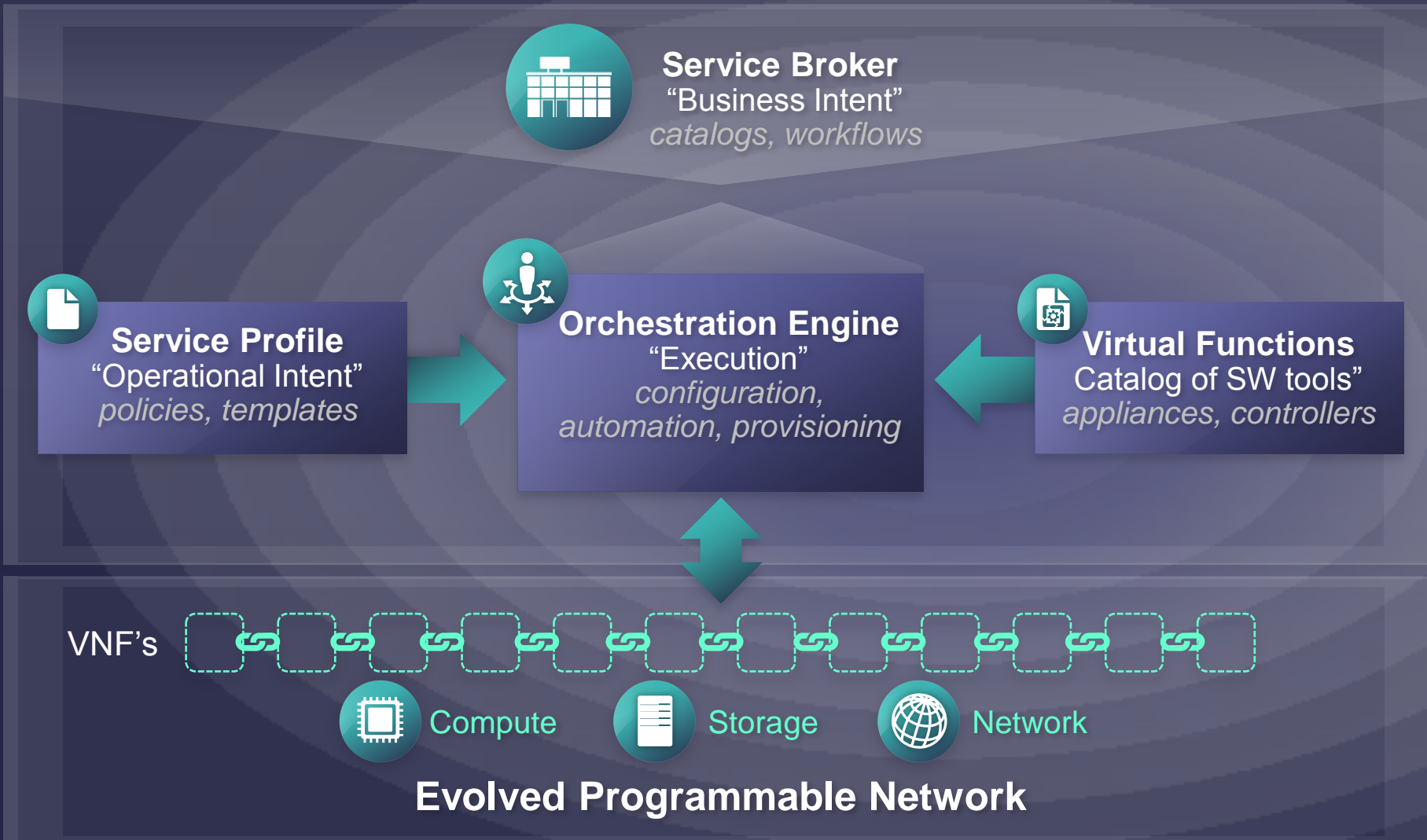
### SDN

Separation of control and data plane

E2E Service Management Platform Integrating Orchestration, SDN and NFV

# Cisco Evolved Services Platform

Building Blocks >> Business Value



## Open

Multi-vendor and based on open standards & API

## Extensible

Comprehensive modular capabilities spanning entire SP architecture—cloud, video, mobile and fixed



## Elastic

Seamlessly and dynamically scale services and resources whenever and wherever needed.



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# Cisco Evolved Service Platform

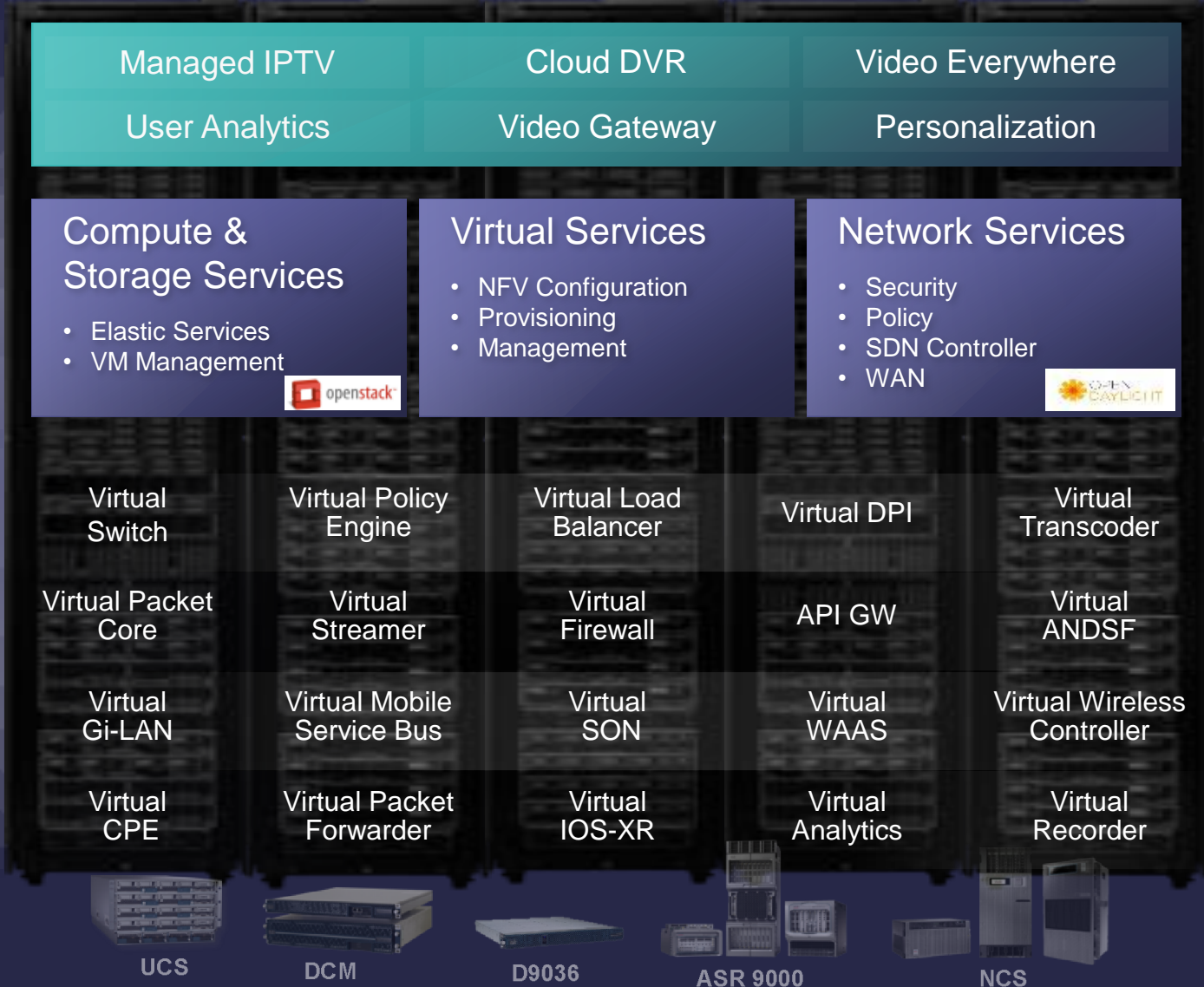
## A New Way To Build Networks

Video Services and Applications

Orchestration Engine

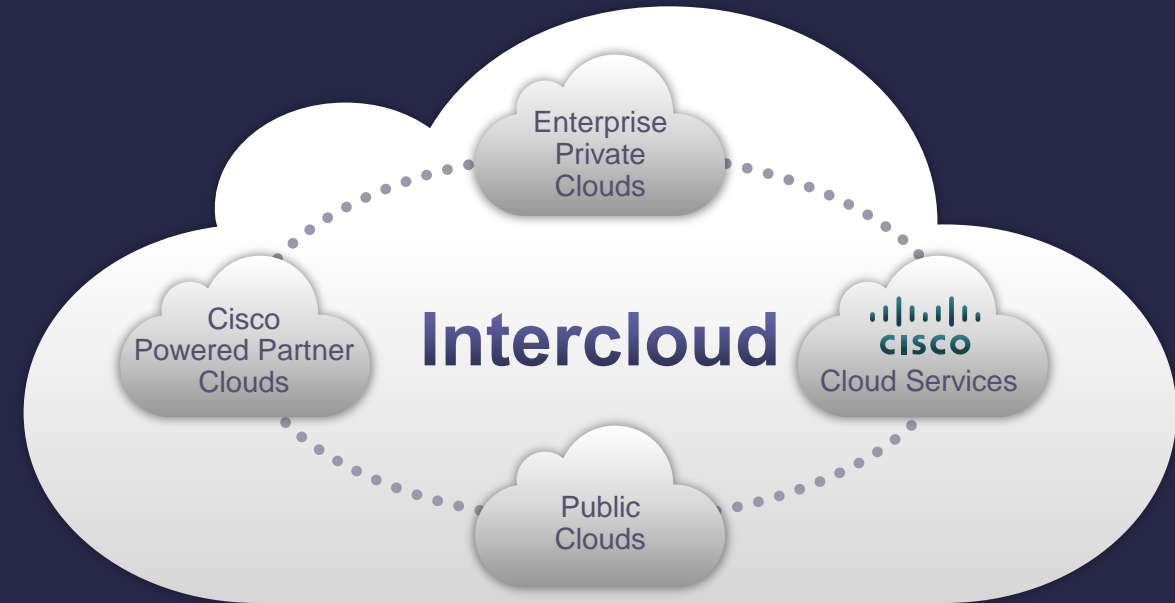
Virtual Network  
Storage and  
Compute Functions

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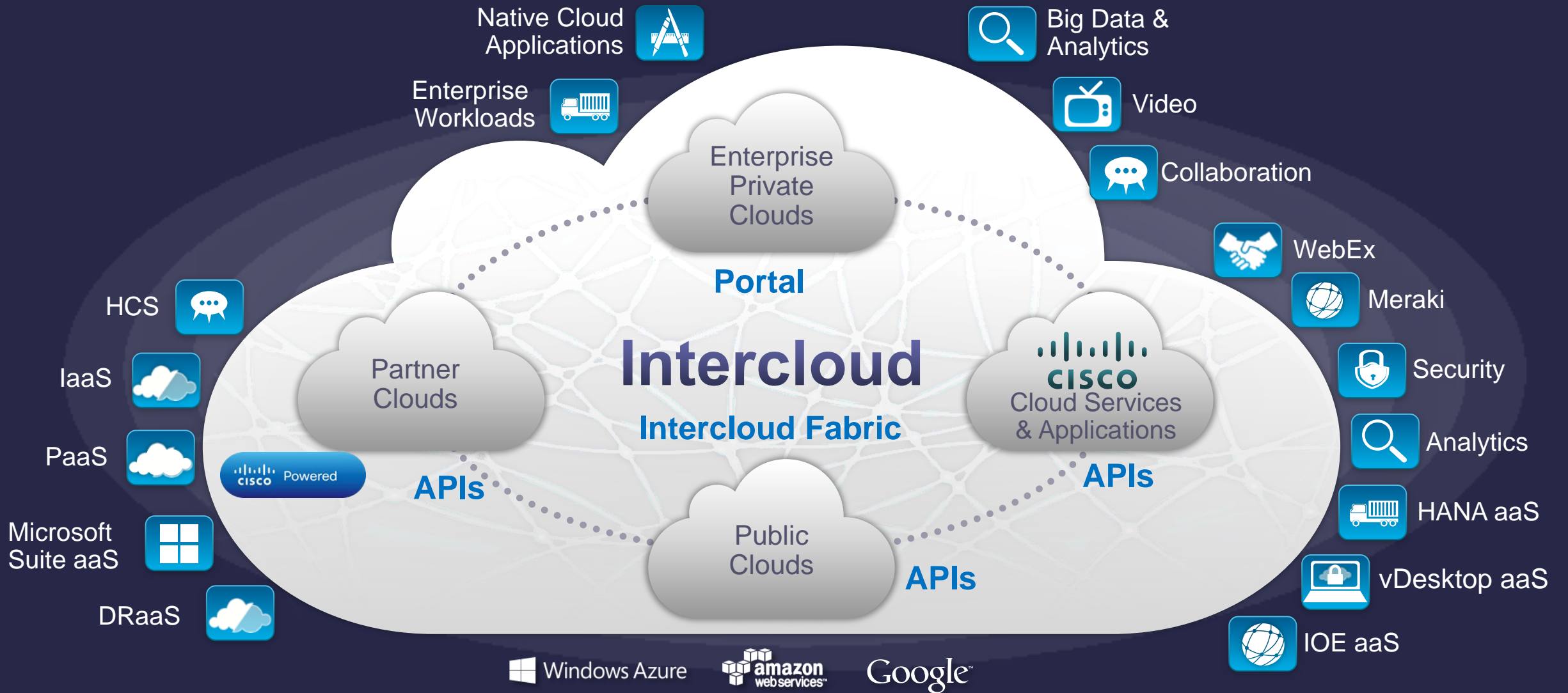


# Expanding Our Cloud Strategy

- Intercloud Initiative
- \$1 Billion investment over next 2 years
- Global footprint of clouds
- Deployed with network of partners
- Openstack based
- Ability to federate or localize workloads



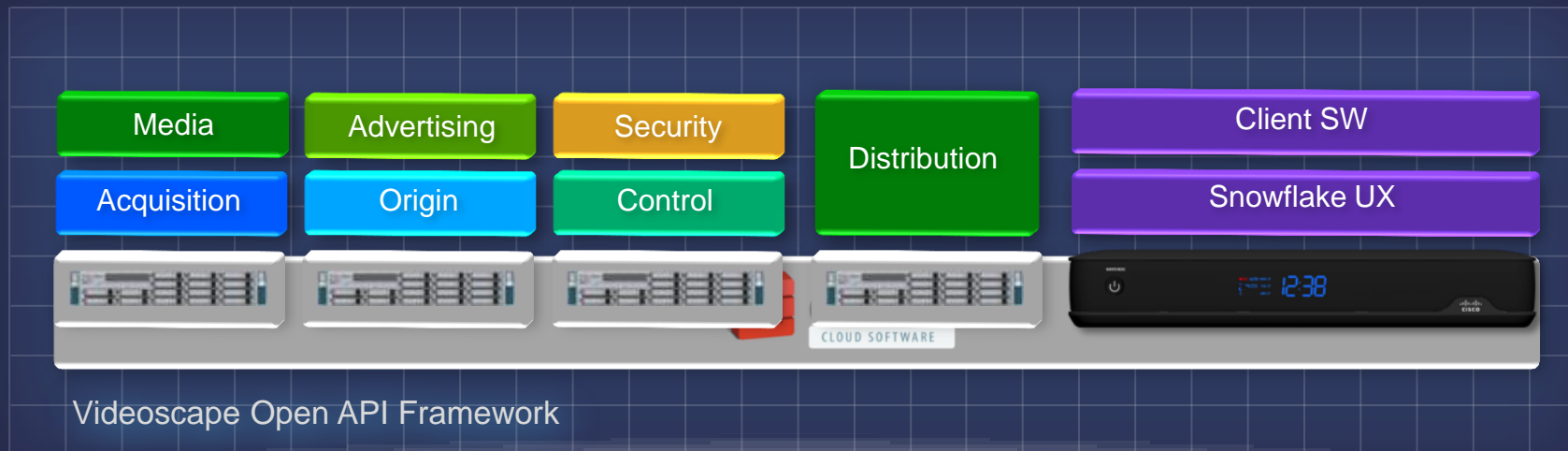
# What We're Doing - Accelerating Cloud Services



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# Videoscape Migration to Openstack

## From Modular and Open to Cloud-based





# Videoscape: Differentiated Experiences, Modular & Open

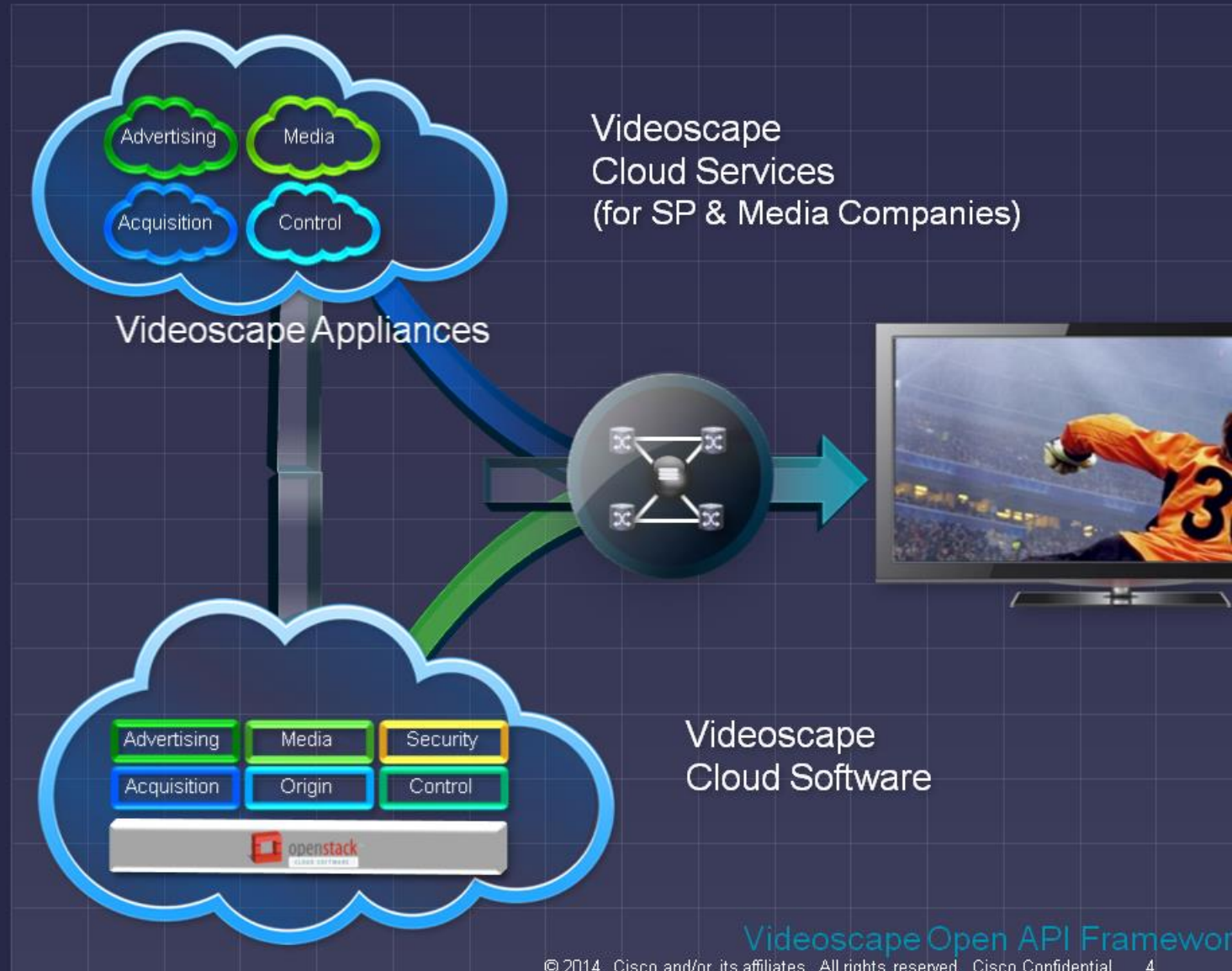
Benefit	Videoscape Appliances
Modular/Open	+
Velocity/Agility	+
Low OpEx	+
Performance	+



# Videoscape Expanding to the Cloud

Benefit	Videoscape Appliances	Videoscape Cloud Software	Videoscape Cloud Services
Modular/Open	+++	+++	+++
Velocity/Agility	+	++	+++
Low OpEx	++	+++	+
Performance	+++	+	+

←-----→  
Same Software, Same API's

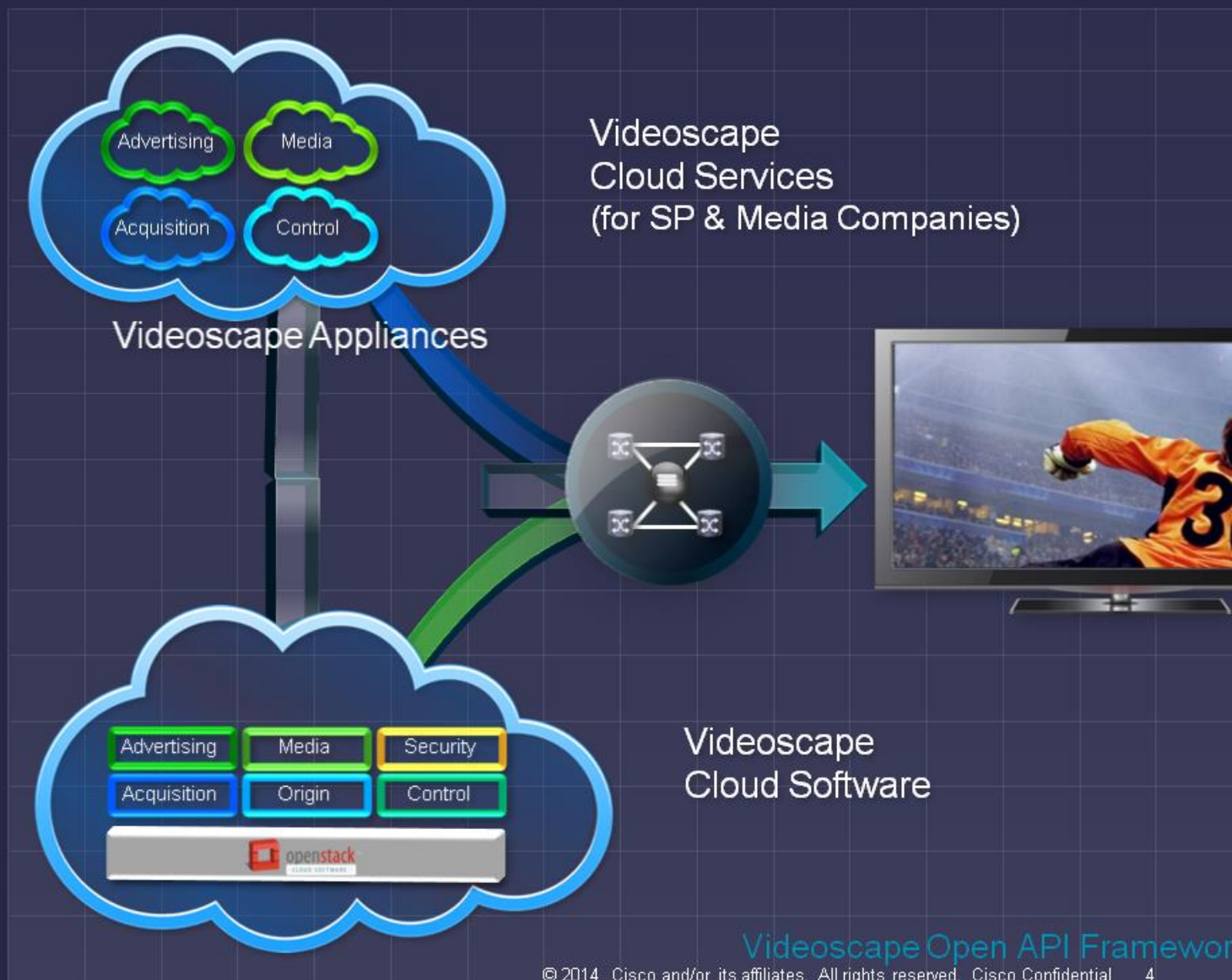


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# Complementary Benefits for Each Deployment Option

Benefit	Videoscape Appliances	Videoscape Cloud Software	Videoscape Cloud Services
Modular/Open	+	+	+
Velocity/Agility	+	++	+
Low OpEx	++	+	+
Performance	+	+	+

←-----→  
Same Software, Same API's



# Cisco Cloud Fusion For Videoscape

Benefit	Videoscape Cloud Fusion
Modular/Open	+
Velocity/Agility	+
Low OpEx	+
Performance	+

Customer Optimized Solutions

Mix & Match Deployment Combinations

Evolve with Customer Needs

**Common Software & API's**

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# Videoscape Cloud Infrastructure – Key Tenets

- Increase service velocity by moving complexity to the cloud
- Reduce burden to develop, test, and integrate per device dramatically with simpler software in end devices
- Leverage web speed innovation
- Can run on a public or private clouds and can be available “as a service” (operated by Cisco)

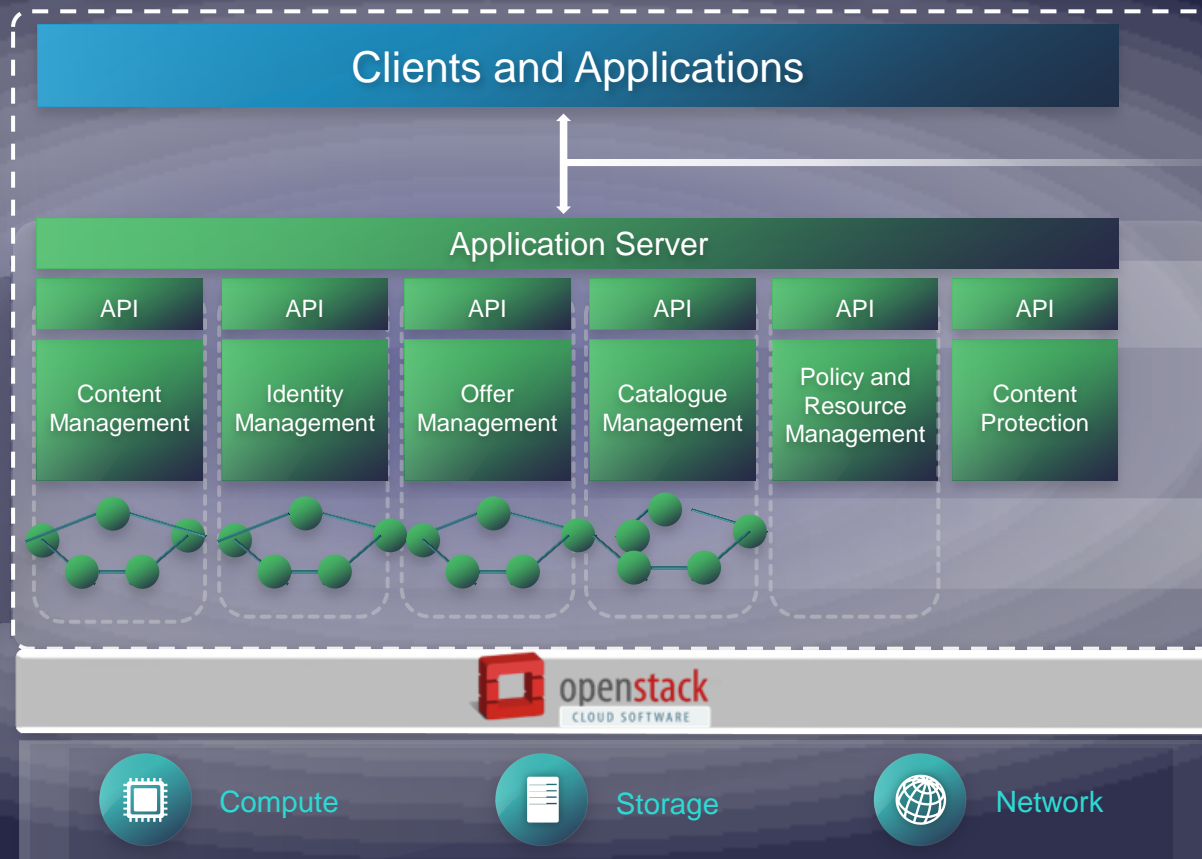
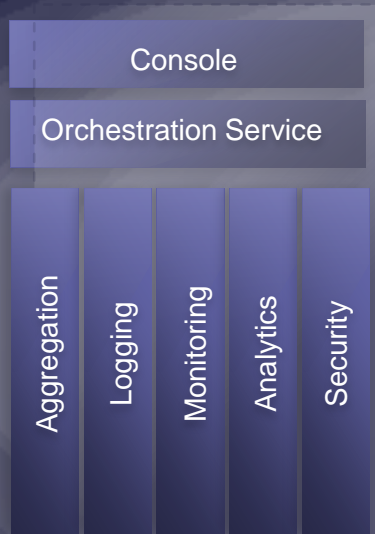


# Videoscape Cloud Infrastructure

Dynamic scale with automated provisioning of control and application plane resources

Increase service velocity by transitioning logic to the cloud

Service decoupling for cloud computing and multitenant implementations



Back Office and Third Party Services

API Gateway – REST Open Interface

Data Persistence Distributed and Scalable

Cloud Infrastructure Private, Cisco, Public

# Seamless Private Cloud and SaaS Deployment

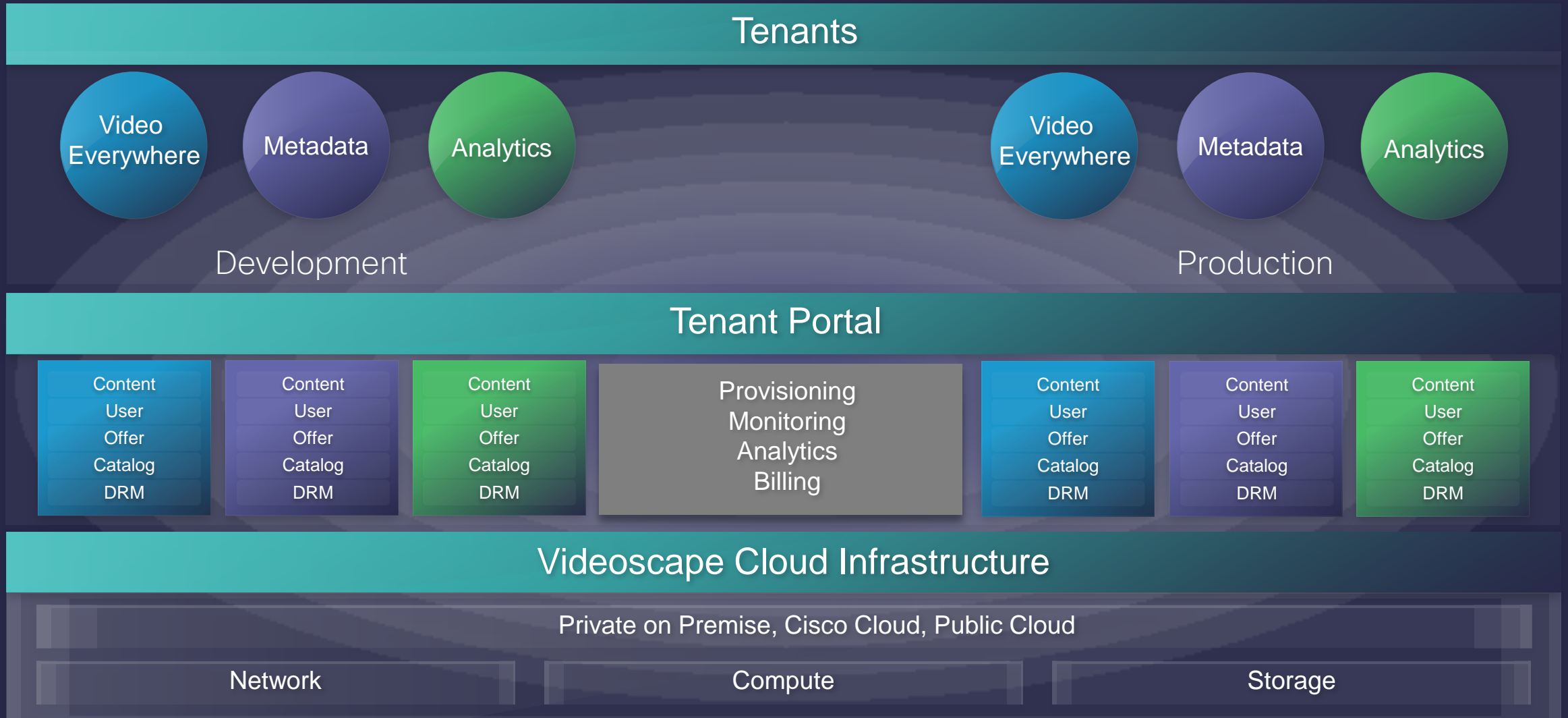
- Rapid Application Development
- Faster Feature Velocity
- Same platform for Cisco cloud and customer private cloud



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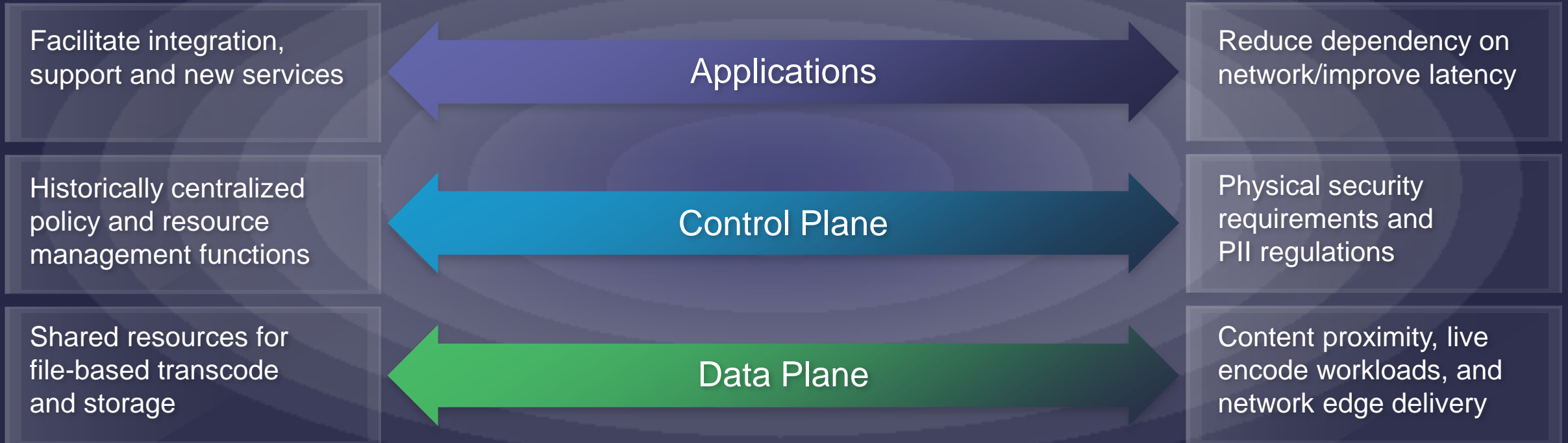
# Multi-tenant + Dev-Ops

Continuous Development, Integration, Testing, Deployment





# Deployment Considerations: SaaS vs. On Premise



# Cloud Fusion Deployment Flexibility

## Fixed Deployment Options

Video Everywhere



Content Management



Transcode



Storage



Origination



CDN Streaming



## Cloud Fusion Deployment

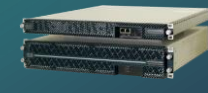
Video Everywhere



SaaS CMS



Transcode Storage



Distributed Encode and Streamers

Cost

Workload-optimized Capex and OpEx

Performance

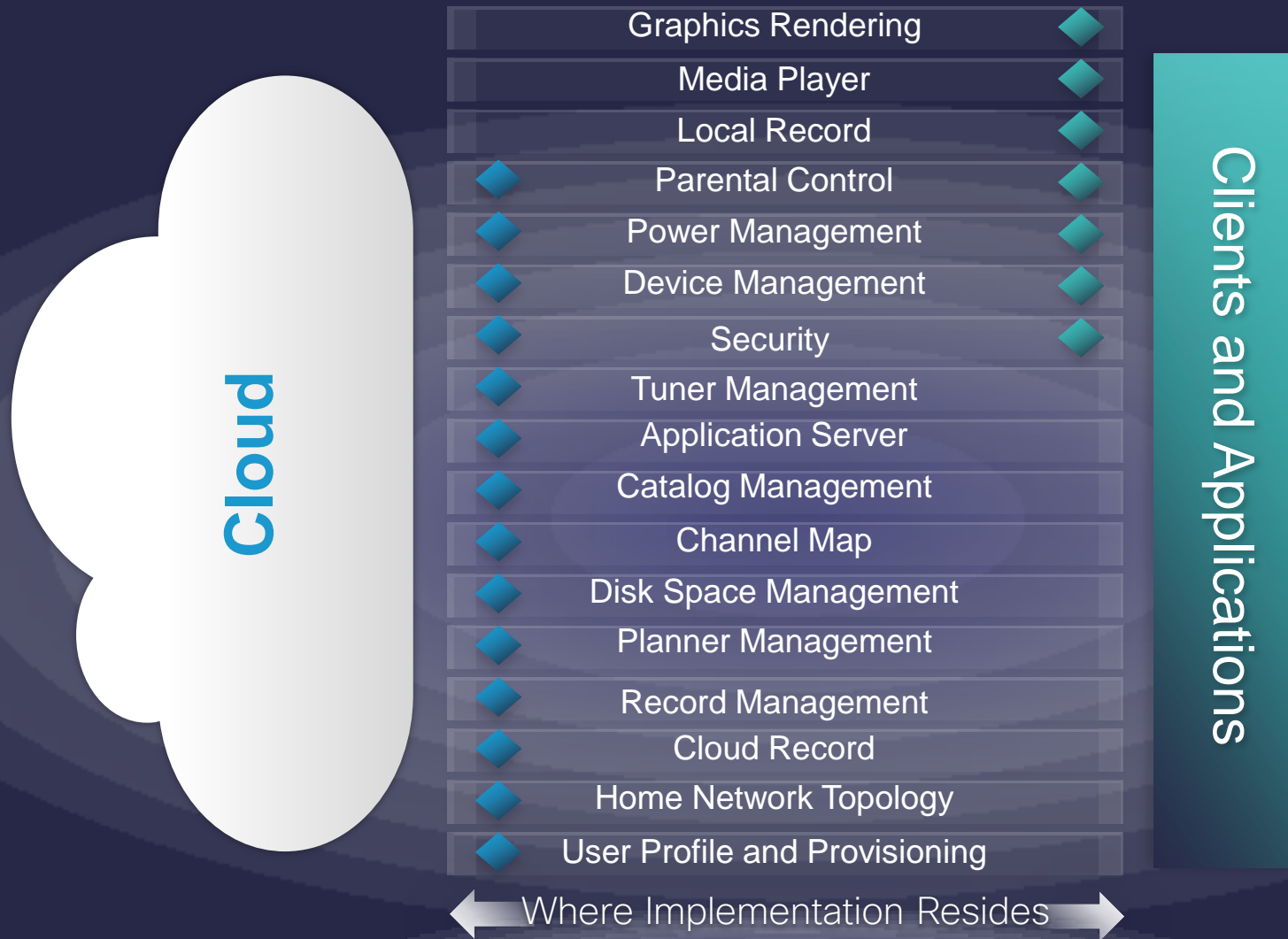
Workload-optimized Performance

Time to Market

Accelerated Service Deployment

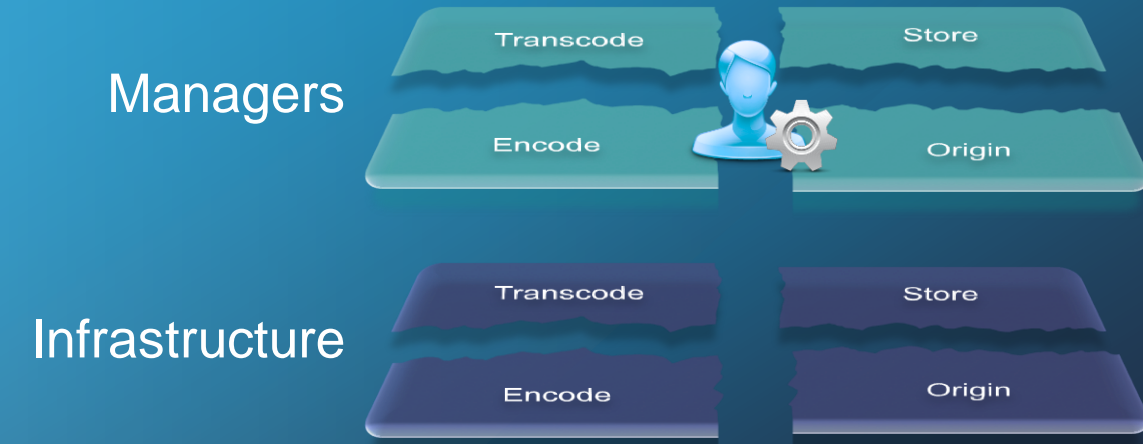
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# Virtual CPE: Thick Cloud / Thin Client Approach

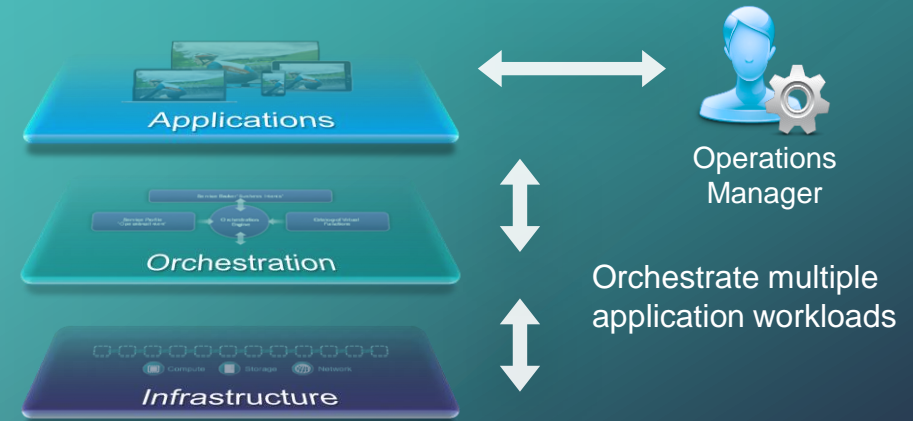


# Multi-screen Live to VOD Transformation

## Manual



## With Orchestration



Cost

Reduced Complexity and Automated Provisioning

Performance

From Hours to Minutes

Time to Revenue

Faster Monetization of VOD and Advertising Inventory

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# Leading Service Providers Partner with Cisco on Cloud

Operator	Deployment	Application	Detail
North American MSO	Hybrid	Video	<ul style="list-style-type: none"> <li>Regional data centers build-out based on OpenStack, doubling by CY15</li> <li>Public clouds based on AWS and Cisco Cloud Services</li> </ul>
North American MSO	Private	Video	<ul style="list-style-type: none"> <li>Private Openstack cloud starting with larger centralized data centers, but looking to move to regional DCs</li> </ul>
North American MSO	Hybrid	Video	<ul style="list-style-type: none"> <li>Public cloud launch on Public Cloud Provider.</li> <li>Building out ~10 Regional DCs, initially on VMWare</li> </ul>
Latin American MSO	Public	Video	<ul style="list-style-type: none"> <li>Initial deployment leveraging Cisco Cloud Services</li> <li>Migrating to on-premise Private Cloud</li> <li>Targeting VEaaS, Video Gateway RDK and virtual CPE</li> </ul>
EMEAR Telco	Hybrid	Video	<ul style="list-style-type: none"> <li>IPTV IPv6</li> <li>Hybrid Cisco and Customer hosted back-end</li> <li>50 days TTM</li> </ul>
EMEAR Telco	Private	Video	<ul style="list-style-type: none"> <li>Network Function Virtualisation (NFV)</li> <li>Elastic CDN, NAT, DNS etc</li> </ul>
North American Telco	Private	Mobile	<ul style="list-style-type: none"> <li>Virtualizing complete Mobile Packet Core</li> <li>Currently in trials</li> </ul>

# 3 Firsts for Hrvatski Telekom

## Cisco Cloud Fusion Delivers in Just 50 Days

### Objective

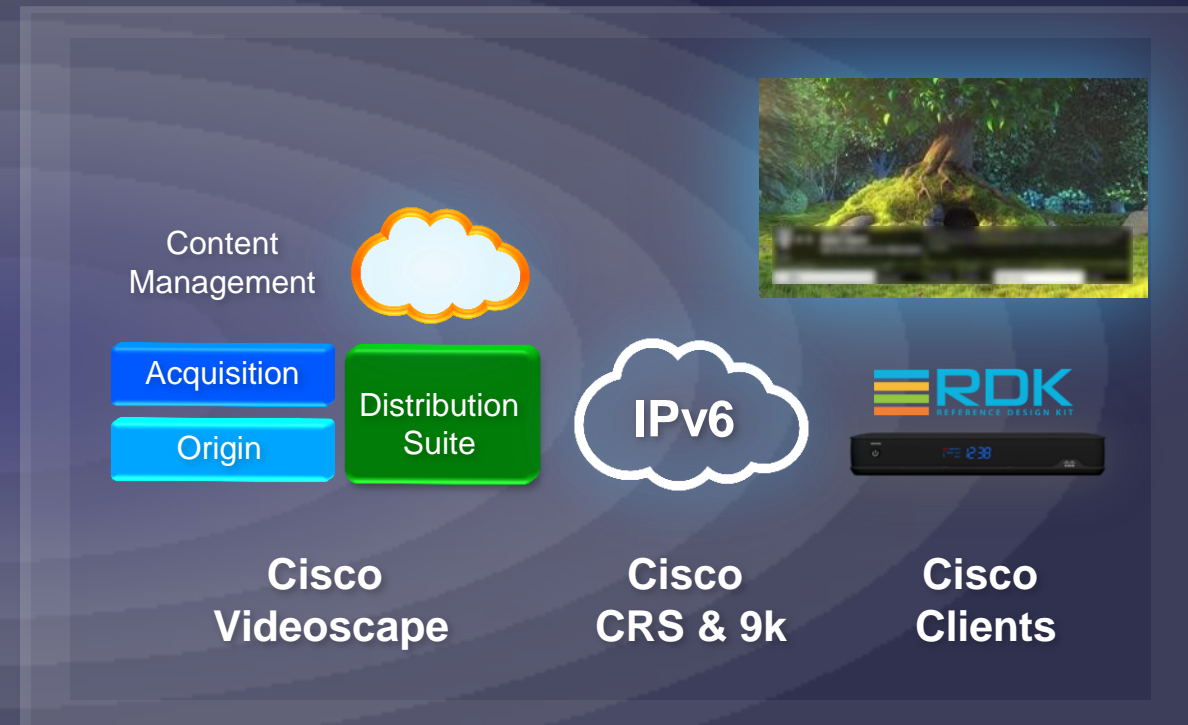
- First IPV6 IPTV Deployment
- Live in just 50 Days

### Solution

- Videoscape Cloud Services
- Videoscape Cloud Software
- Videoscape Appliances
- Cisco IPV6 routing
- Cisco Cloud Fusion
- Cloud Services used to achieve velocity
- Migrated in-house for long term

### Results

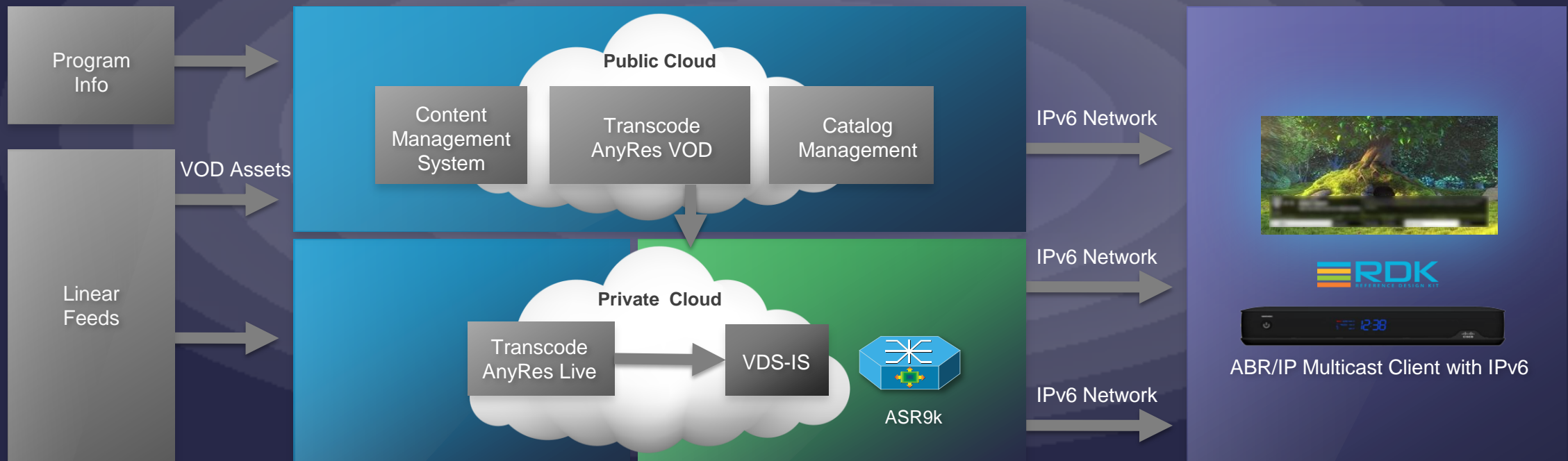
- 1<sup>st</sup> IPv6 IPTV deployment in Europe
- 1<sup>st</sup> RDK IPTV deployment
- 1<sup>st</sup> Private/Public cloud IPTV deployment



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# Hrvatski Telekom Partnership Success

- Proven cloud architecture – tested for IPv6 and RDK
- Mature Videoscape component integration
- Accelerated development and deployment with hosted platform
- Rapidly mobilized a great team



# Videoscape in Cisco Cloud Architecture

Increase Revenue



Applications

Enhance Agility



Evolved Services Platform

Lower Costs



Evolved Programmable Network

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Thank you.

