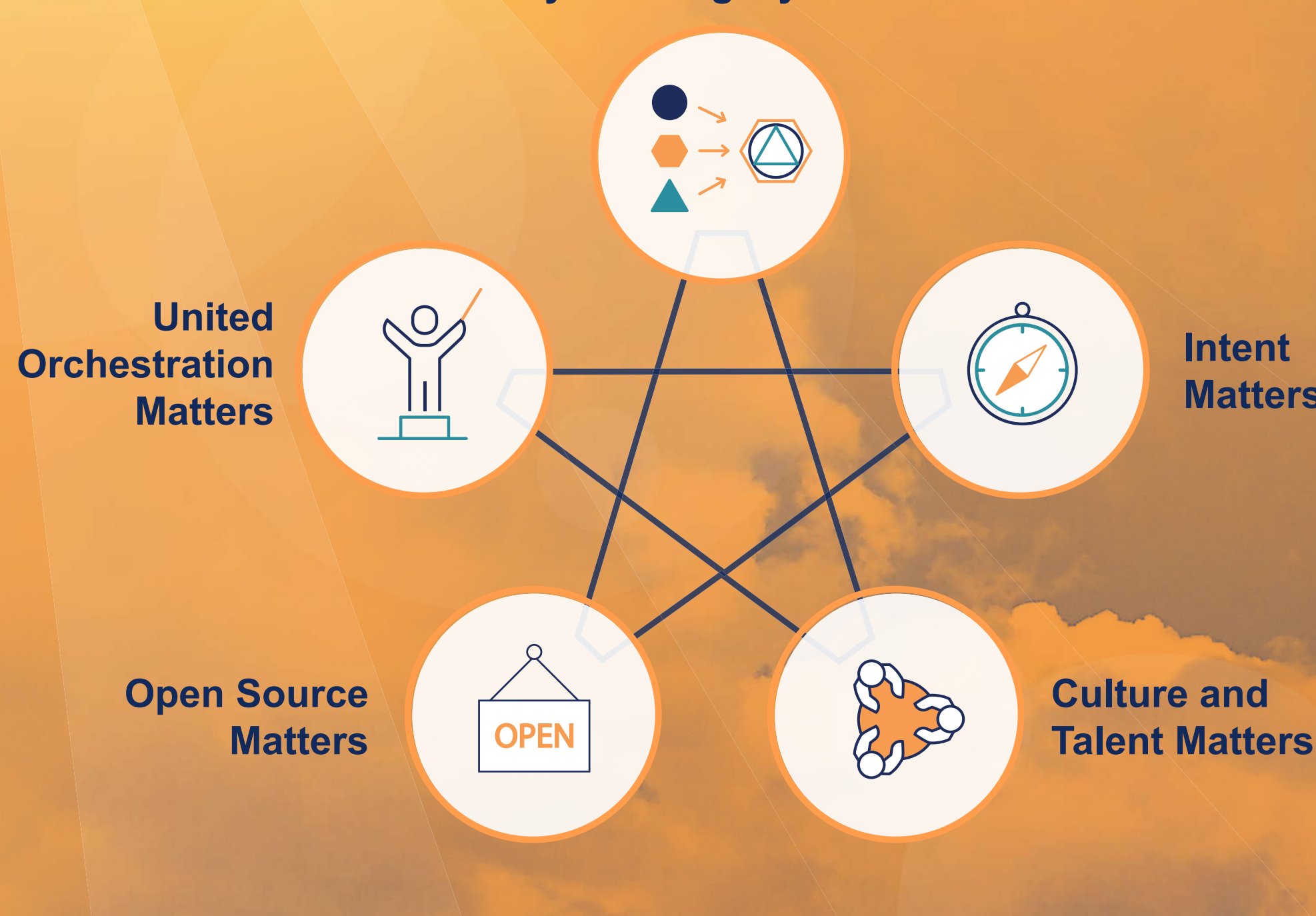


# THE 5 FACTORS OF 5G



## THE 5G PEAK



### The Climb to Automation is Complex

The 5G network evolution mandates change

- High expectations for digital transformation
- Massive numbers of endpoints
- Tighter dependencies between applications/services and infrastructure
- Lack of standardized data models
- Need to support multiple domains and clouds
- Fundamental requirement for multi-vendor support

### 5G FACTOR #1

## Physical Legacy Matters

#### ⚠ Challenge: The challenge of bridging the new world with the old

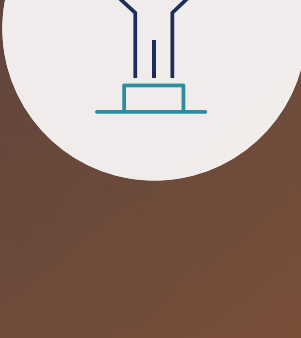
- 5G budgets won't allow for green fields
- Network silos won't offer the flexibility needed for 5G
- Hugely expensive legacy routing equipment still works (No need to replace)
- Lack of standardized languages in legacy devices makes unification a challenge

#### 👍 The answer is ubiquitous networking:

- Single API for programmable and legacy devices
- Supporting end-to-end quality of service (QoS), including latency and throughput guarantees
- Isolation from both the data plane and orchestration/management plane
- Policies to assure service intent
- Failure detection and remediation
- Autonomic slice management and operation



### 5G FACTOR #2



## United Orchestration Matters

#### ⚠ The Challenge is leveraging heterogeneous resources:

- Intent-based functionality on legacy resources is a challenge
- Manual provisioning is too slow and error prone to enable dynamic scaling, shared resources, on-demand services or DevOps innovation

#### 👍 The answer is SDN adaptation:

- Common control plane for different types of resources
- Abstraction of function
- Intent-enabled traffic engineering
- Northbound and southbound interfaces enable closed-loops

### 5G FACTOR #3



## Intent Matters

#### ⚠ The challenge is delivering services in current architectures requires a lot manual provisioning.

- Service delivery is currently focused on the "how" instead of the "what"
- 5G services will require unparalleled customer experiences – this should be the objective of the network. Not connecting X to Y.

#### 👍 The Solution: Intent-based Networking

By leveraging intent, networks will become more flexible foundations for service deployment. Managing service assurance will be simplified with improved security and reduced risk, while dynamic, automated traffic engineering will improve network efficiencies.



### 5G FACTOR #4



## Open Source Matters

#### ⚠ The challenge is regaining control of the network:

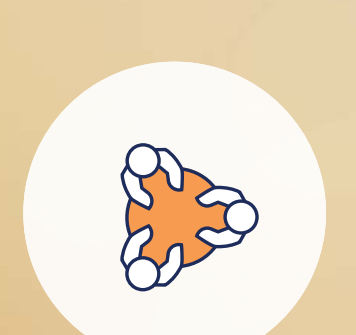
- Vendor Lock-in is expensive and limit innovation
- Community innovation increases opportunities and returns net work control to the network owner.
- Open Source opens up latent capabilities in legacy networks

#### 👍 Open source sheds a light on new opportunities and service potential.

- Ability to redefine customer relationships
- Re-architect network functionality
- Recreate the service innovation process and enable DevOps methodology



### 5G FACTOR #5



## Culture and Talent Matter

#### ⚠ Challenge: In most cases, network teams operate independently of teams focusing on Layer -4 through -7

To transition to the world of agile software and CI/CD and DevOps, organizations need to:

- Pick manageable areas to improve
- Map the whole workflow
- Identify bottlenecks and optimize
- Automate every step that can be automated
- Continually, reliably improve

**Digital transformation means increasing the pace of delivery, responsiveness, and the ability to innovate**

## Partnering to Succeed in 5G

Philosophical alignment • Leadership in Open Source • Vendor agnostic • Unified controls • Unified controls at mass scale • Abstraction • Normalizing interfaces for freedom of vendor choices • Intent-based automation • Business logic-driven Self-organized networks • Innovation-ready platform • Flexible infrastructure to support DevOps processes • Support services • Real production & ongoing support / training

SOLUTION TO ENABLE A SUCCESSFUL DIGITAL TRANSFORMATION



SD-Core



Intent-based Service Automation



Network Visibility