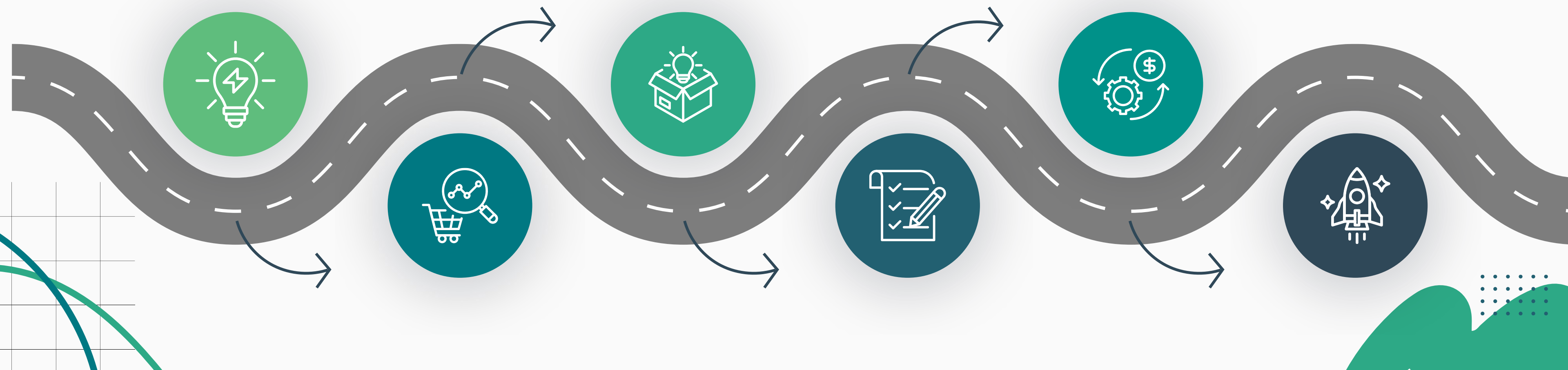


# VIETTEL'S JOURNEY FROM AUTOMATION TO AUTONOMY



# Roadmap To Autonomous Networks



**Context and  
Challenges**



**Achievements and  
Outcomes**

# CONTEXT AND CHALLENGES

## Vietnam Landscape

- Advanced and modern network infrastructure
- Ultra-high capacity and ultra-broadband



## Global Landscape

- Technology: Wifi 7, XGSPON, 5G
- Artificial Intelligence: Explosive growth globally

## Viettel Networks

- Pioneering in mastering core technologies
- Building a modern digital infrastructure
- Superior network quality

# THE CHALLENGES

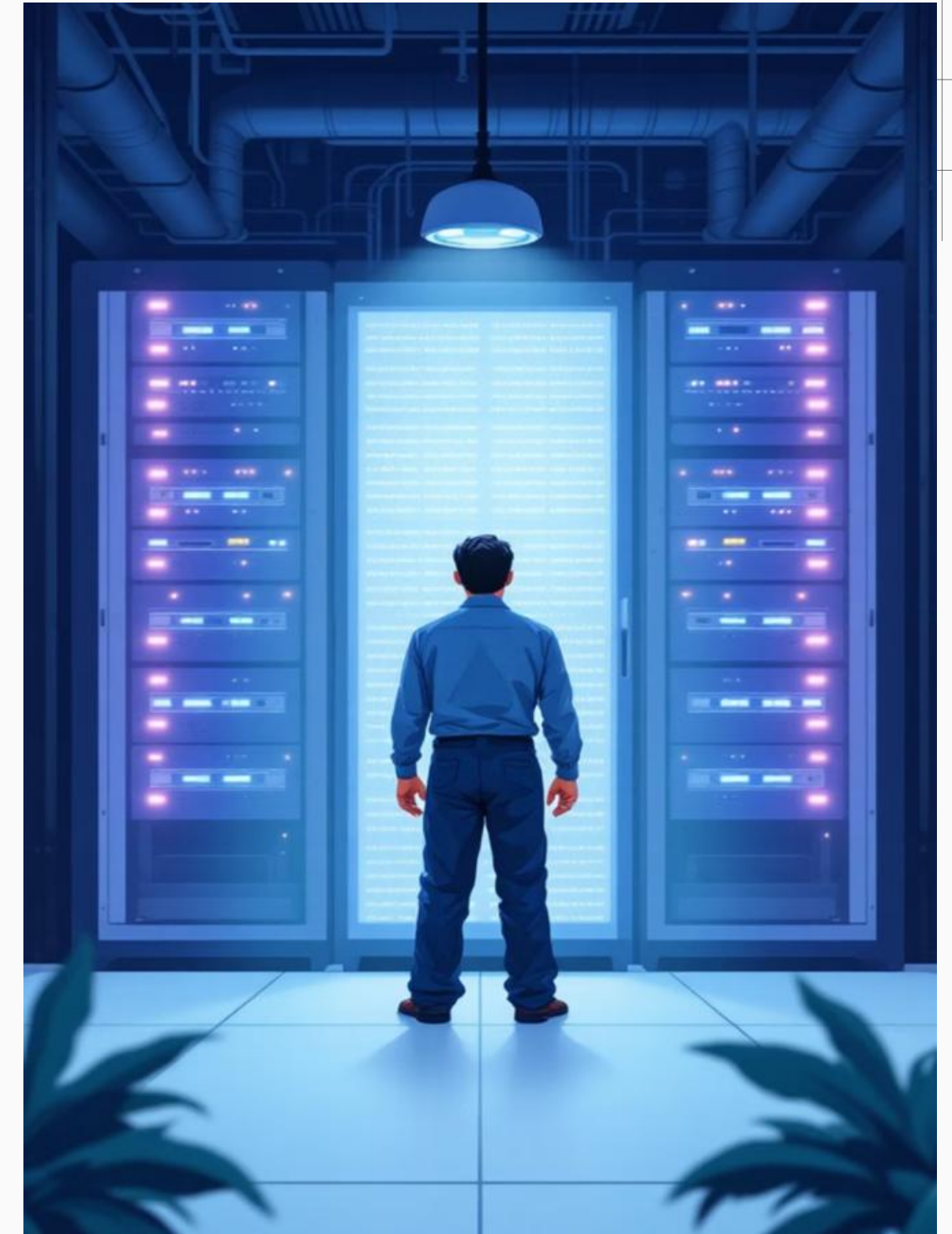
**Multi-Vendor,  
Multi-Technology  
Environment**

**Finite Operational  
Resources**

**Exponential  
Network  
Complexity**

**Real-Time User  
Demand  
Fluctuations**

**Pressure to Ensure  
Service Quality and  
Optimize Costs**

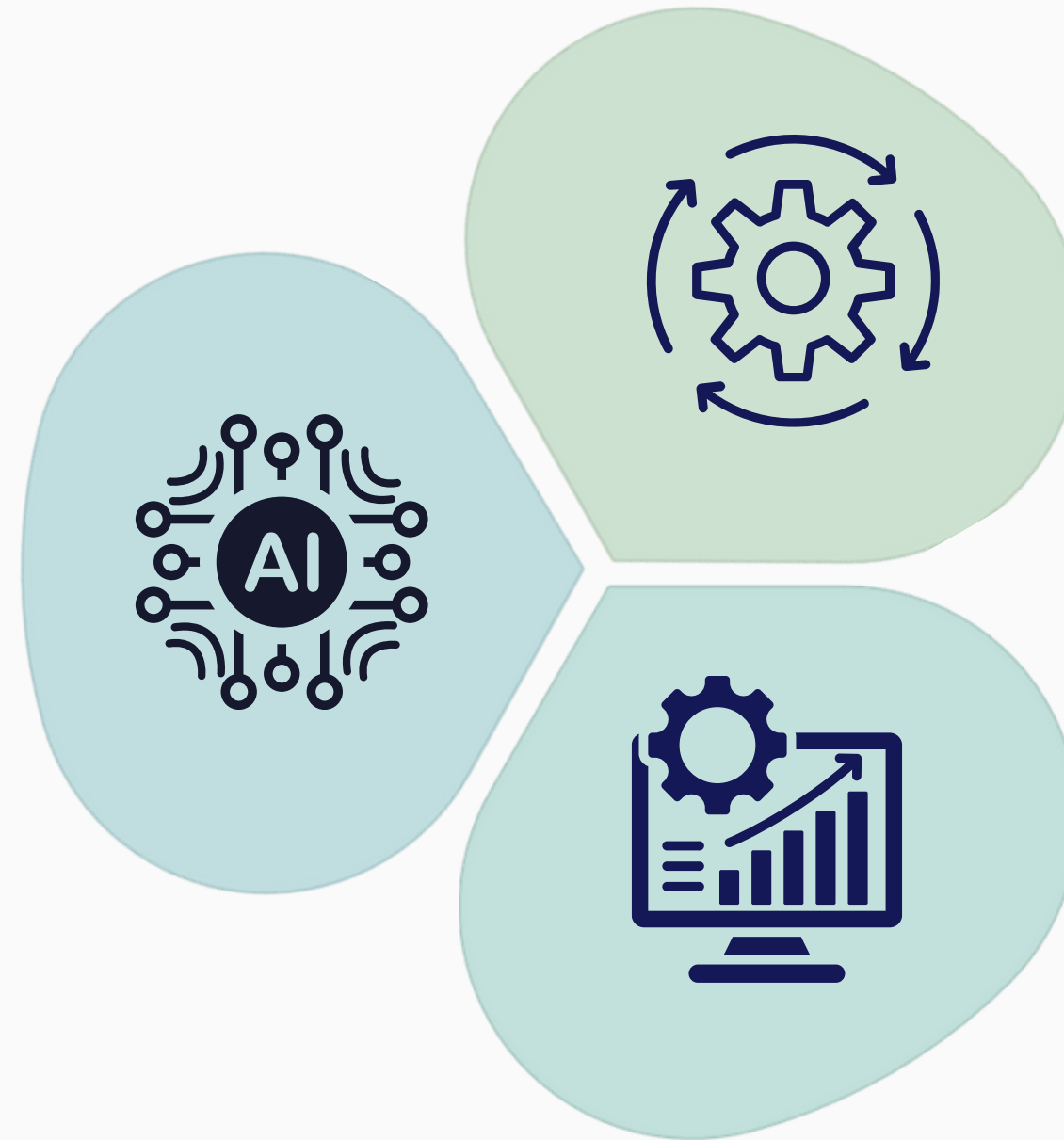


# VIETTEL'S CORE STRATEGY

## FULL AUTOMATION



**AI First**



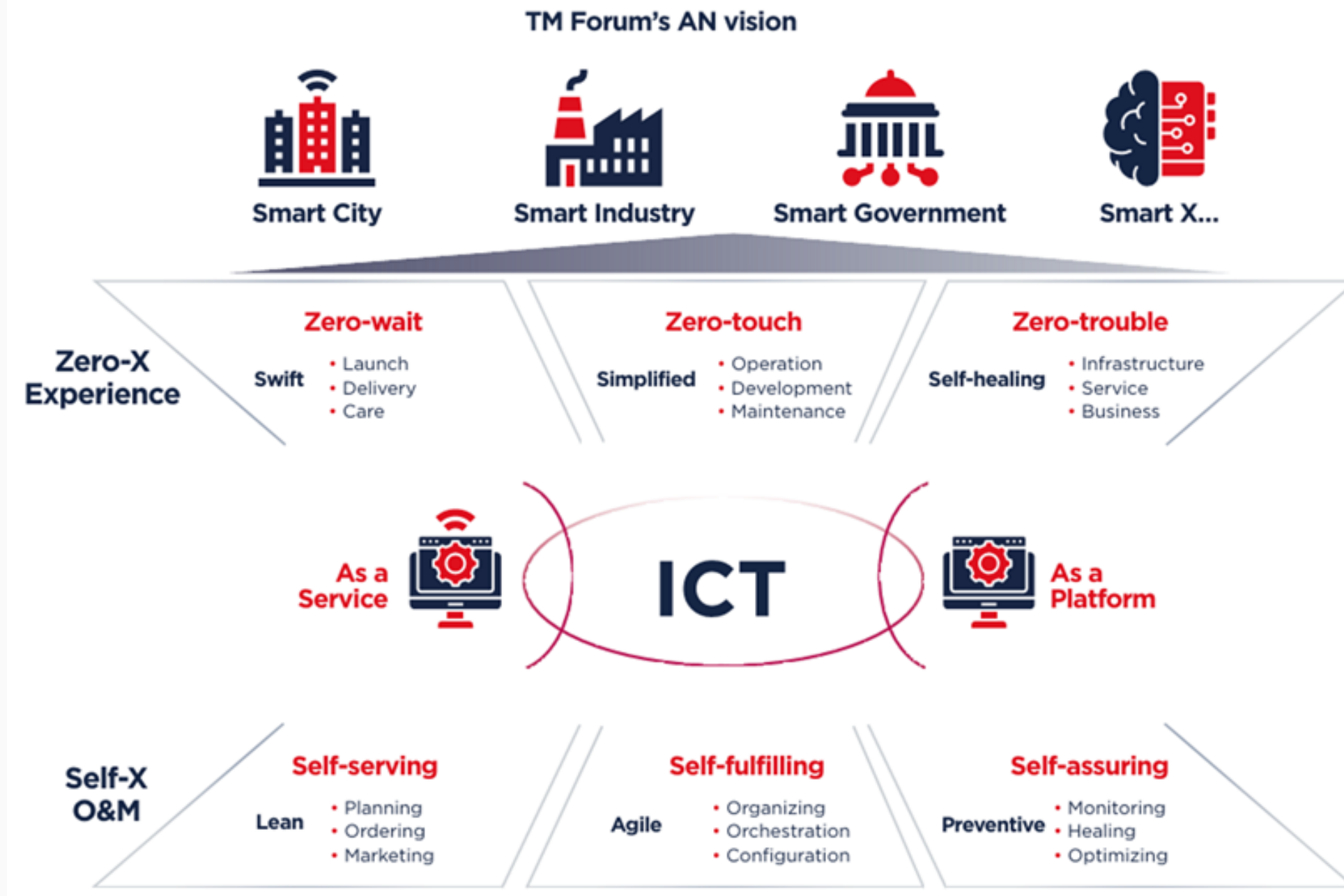
**Full  
Automation**

**Data-driven  
Operations**



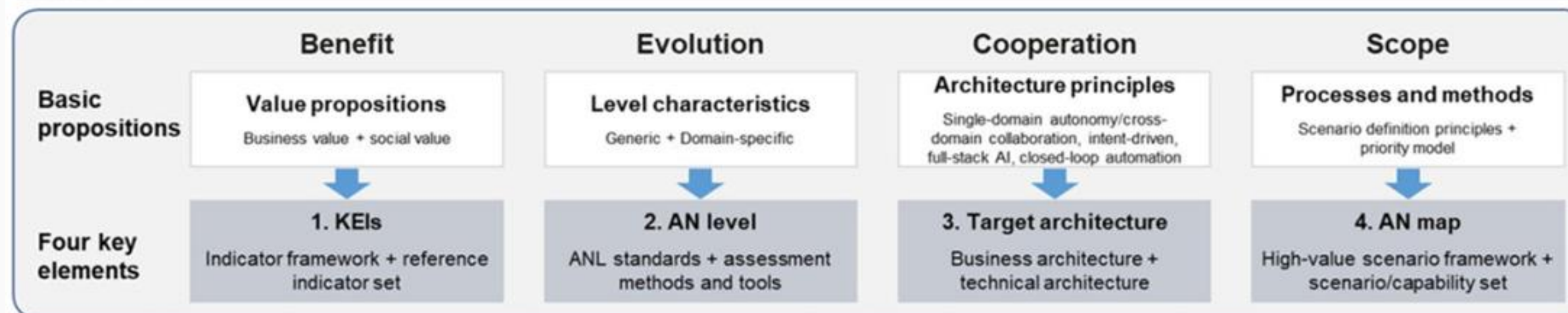
# VISION

- Zero-X
- Self-X



## Autonomous Networks Framework

Vision: Zero-X/Self-X





**METHOD**



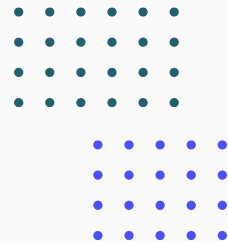
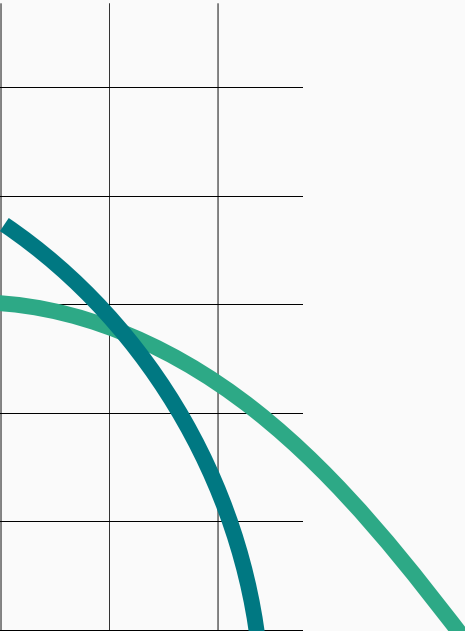
**Data & Sensing  
Layer**



**Intelligence &  
Decision Layer**



**Execution  
Layer**



# VIETTEL QUALITY TEST - ACTIVE PROBE



National Wide Probe Deployment



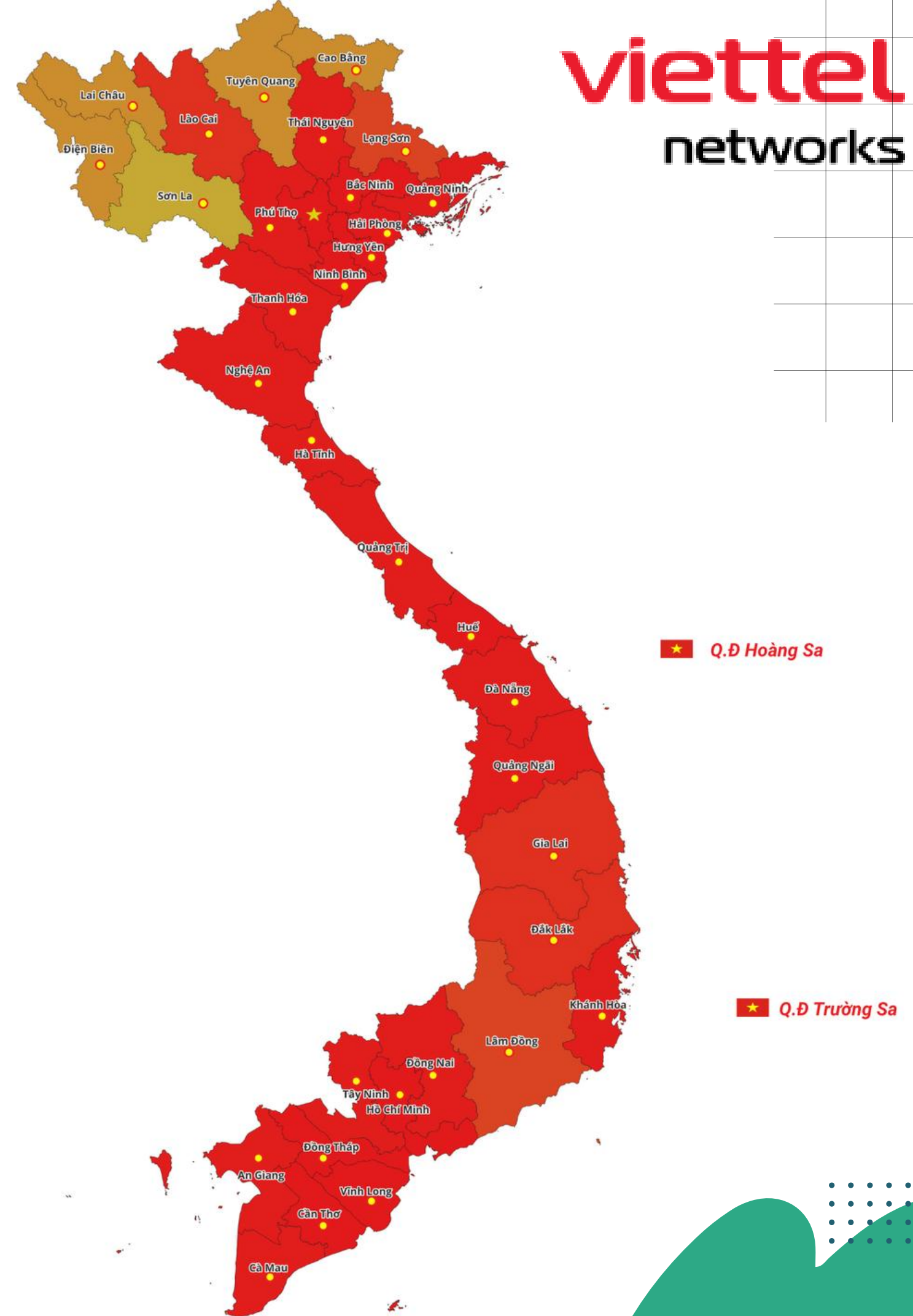
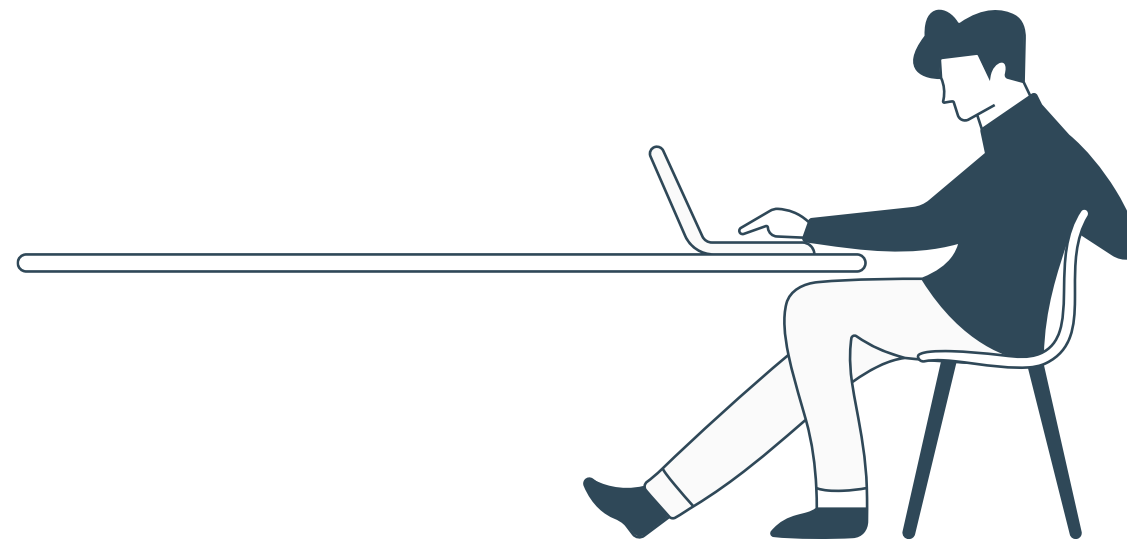
Real-World Experience Simulation



Automated Insight

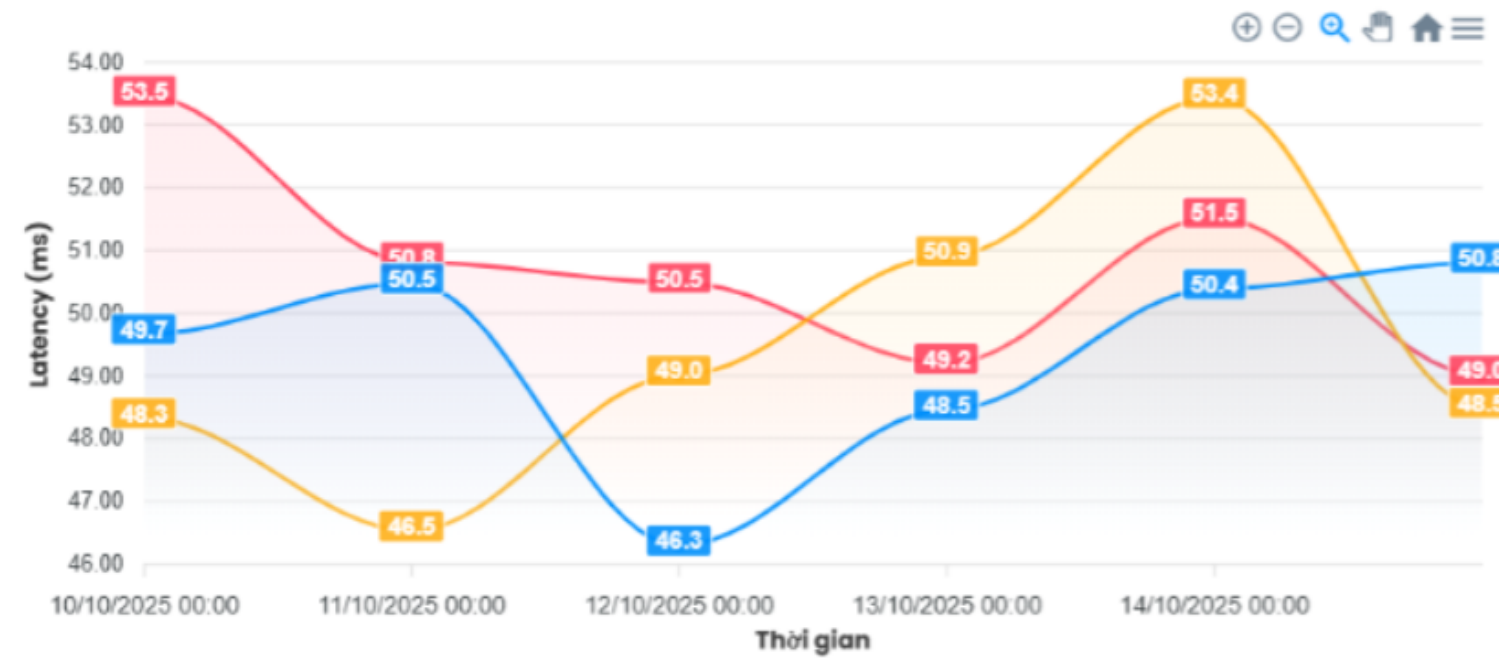


Intelligence Input

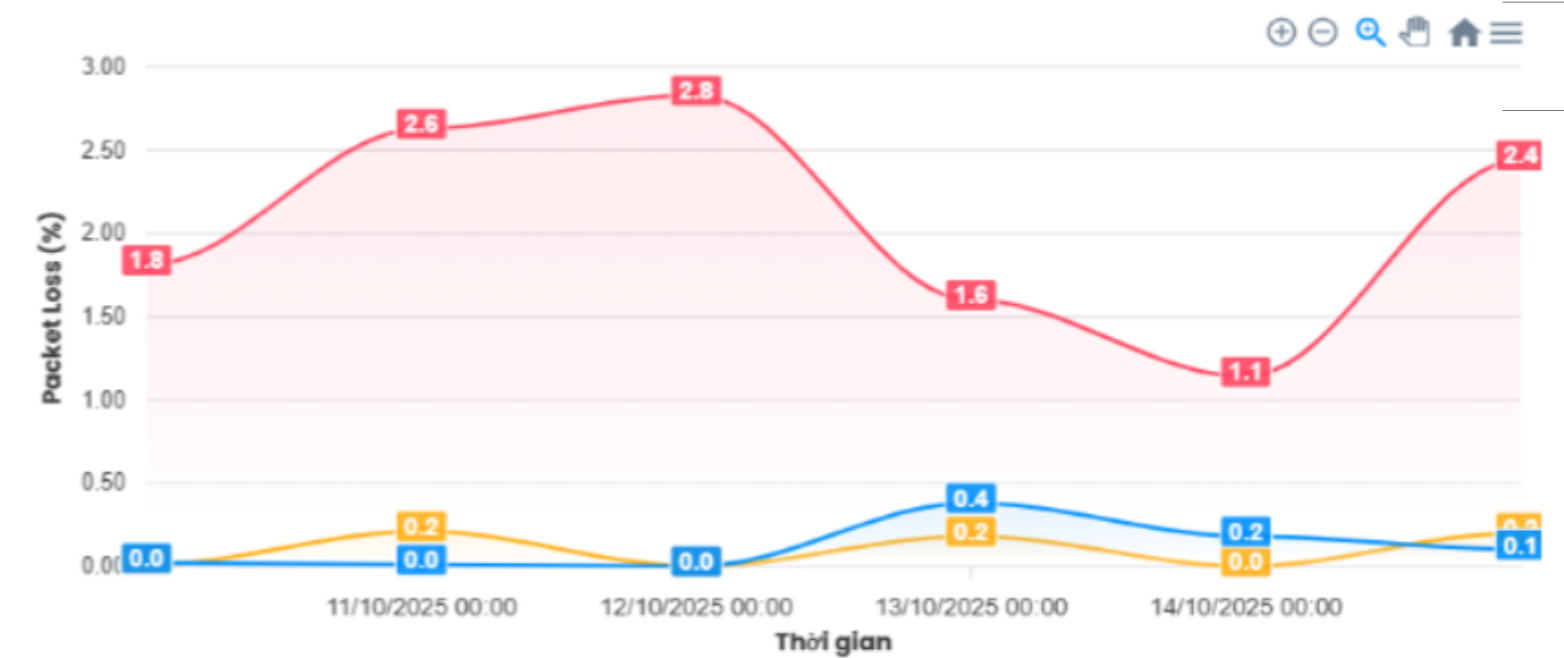


# VIETTEL QUALITY TEST - ACTIVE PROBE

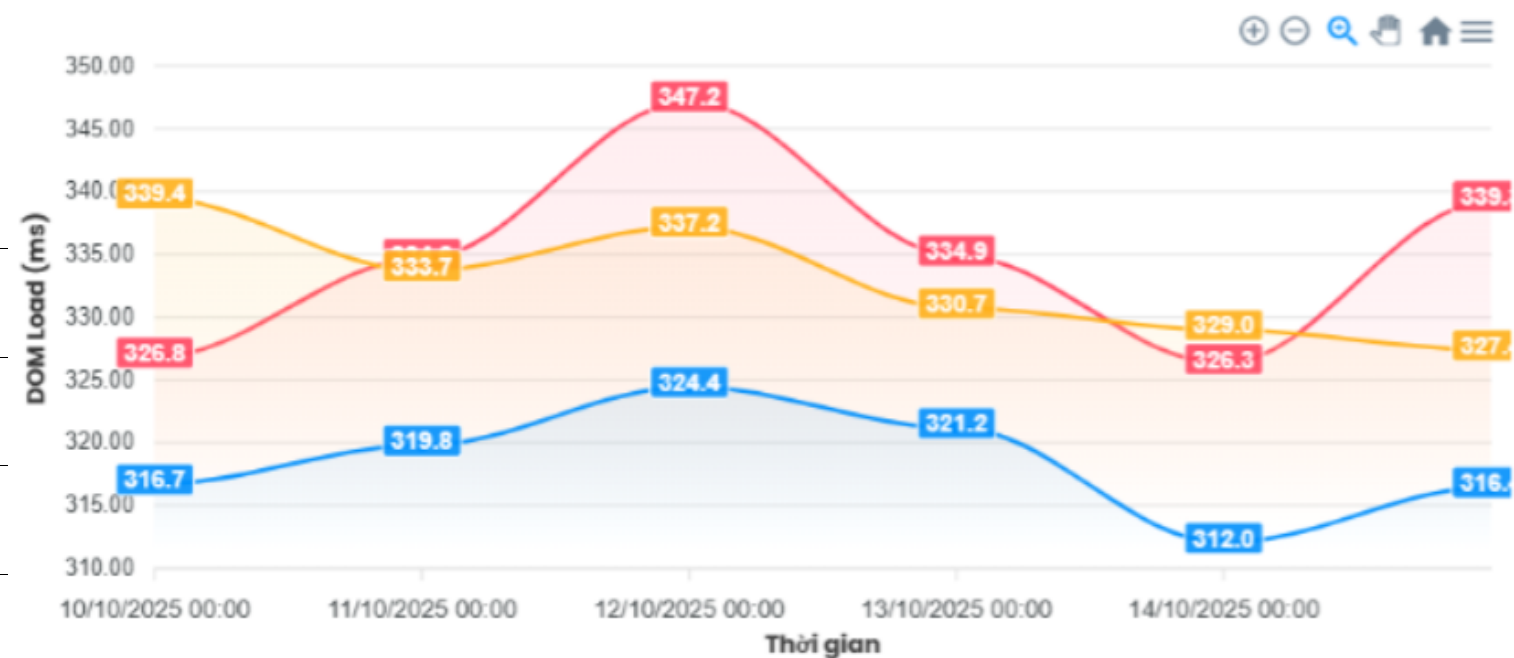
So sánh Latency | Trung bình (Mean) Mức ngày trong vòng 7 ngày



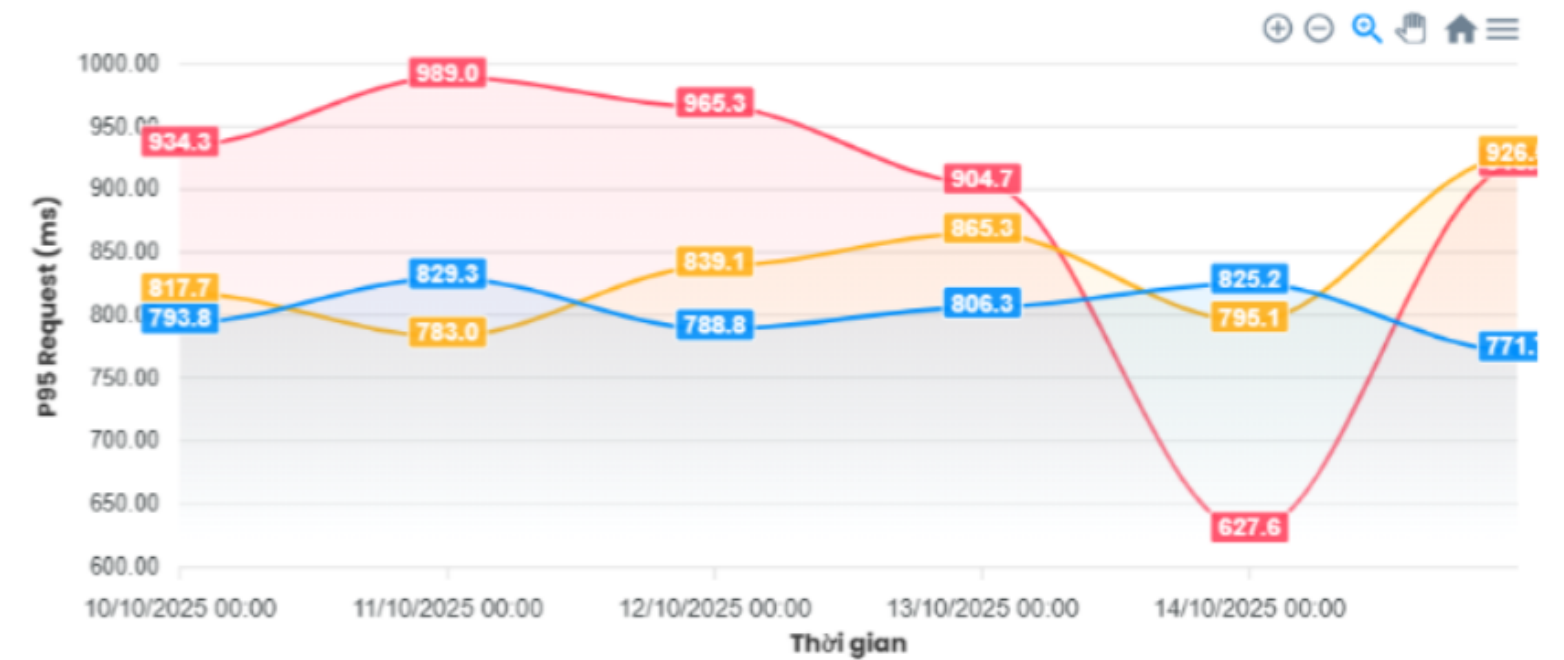
So sánh PacketLoss | Trung bình (Mean) Mức ngày trong vòng 7 ngày



Thời gian tải DOM trung bình | P50 (Trung vị - Median) Mức ngày trong vòng 7 ngày  
Thời gian tải khung trang cơ bản của Website: DOM (Document Object Model).



Thời gian tải các request (P95) | P50 (Trung vị - Median) Mức ngày trong vòng 7 ngày  
P95: 95% các request có thời gian tải nhỏ hơn hoặc bằng giá trị này.

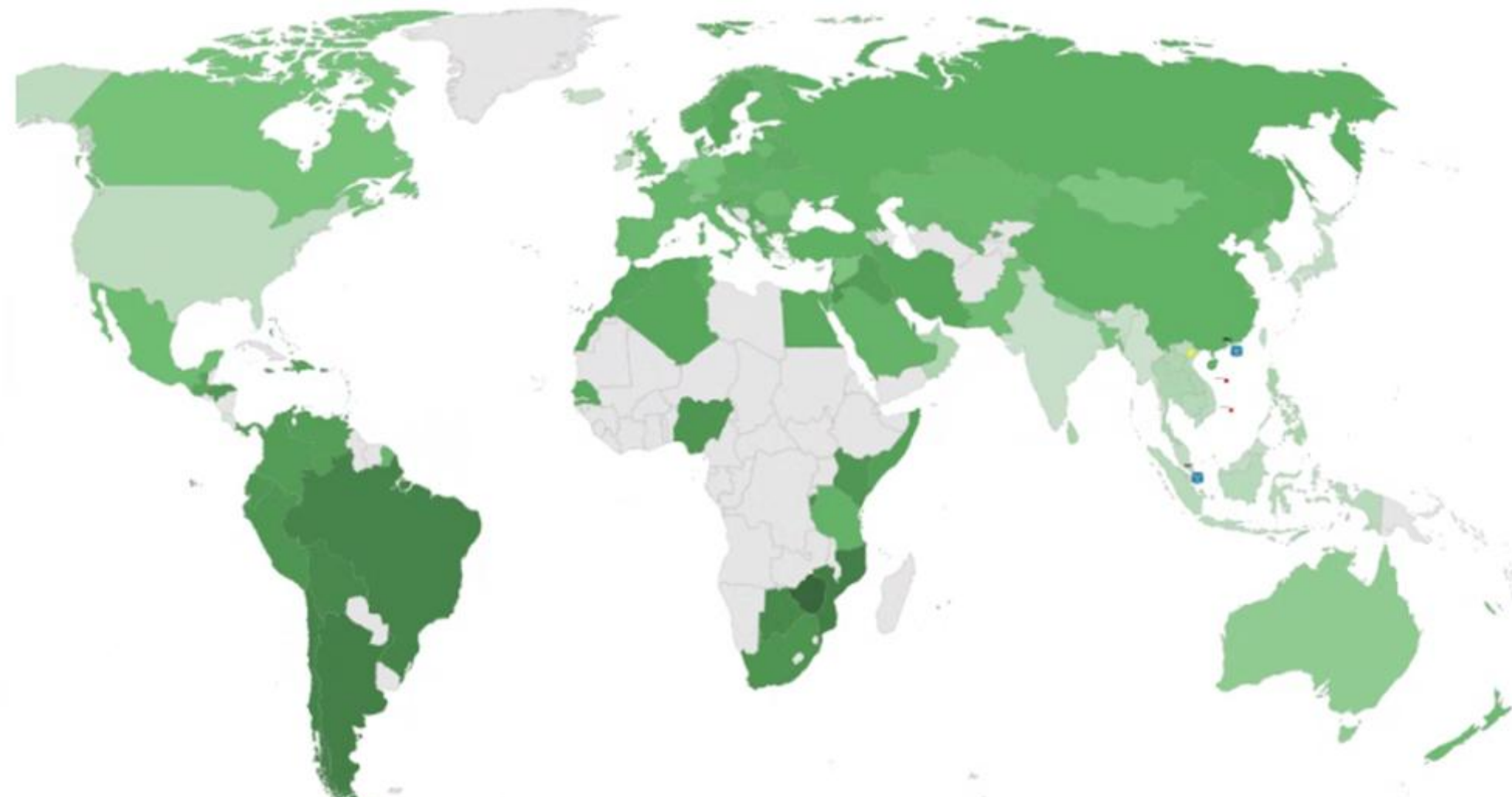


# INTELLIGENT TRAFFIC OPTIMIZATION

- Passive Probe
- Intelligence & Decision

## Chất lượng các quốc gia

Tính trung bình chất lượng theo tỉ lệ lưu lượng

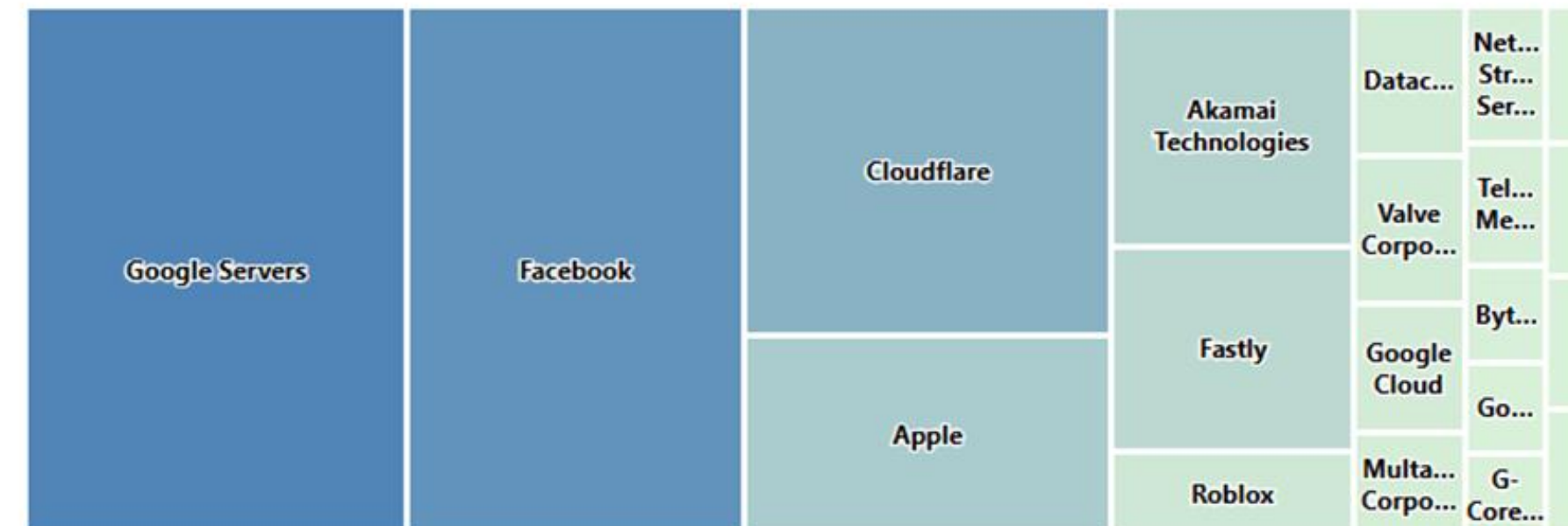


## Xu hướng lưu lượng toàn mạng

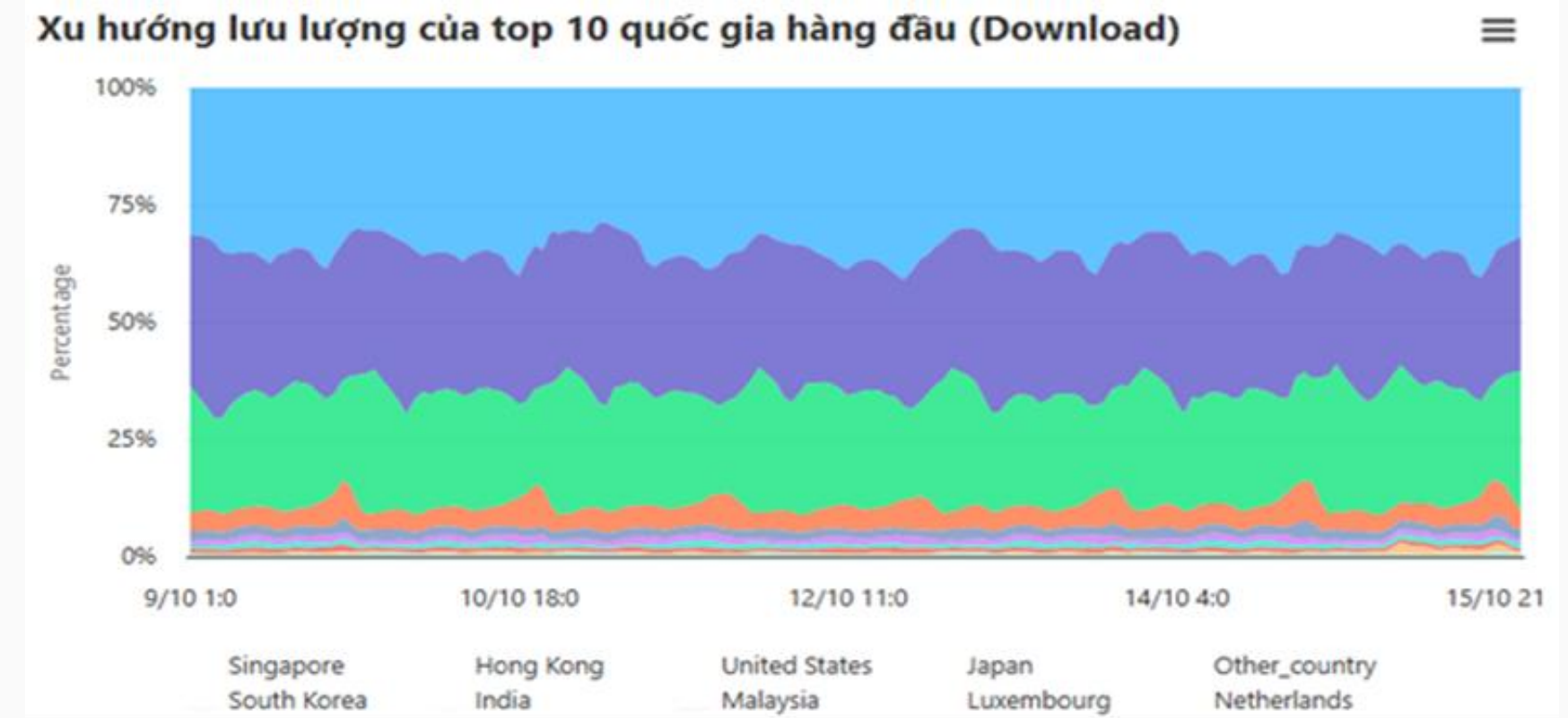
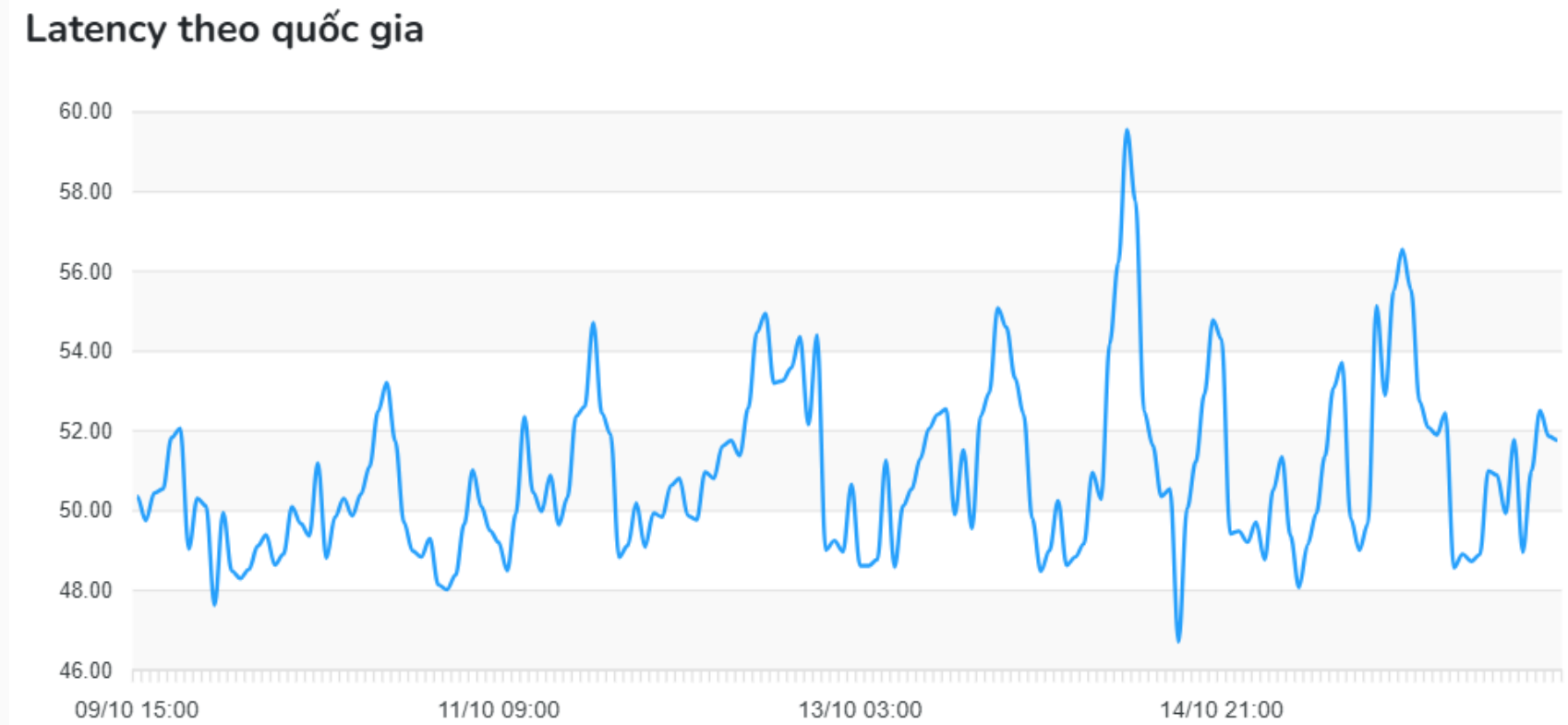
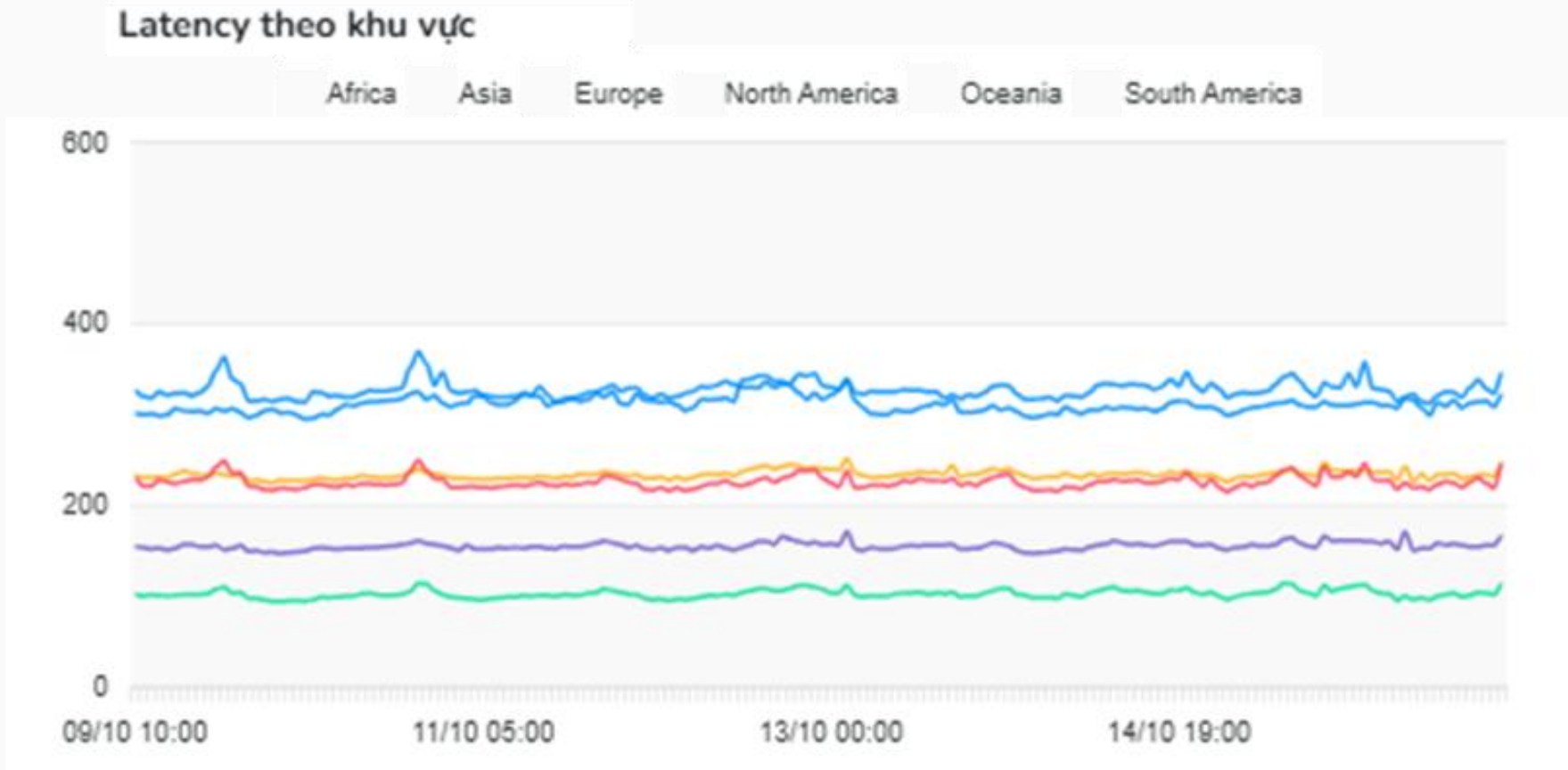
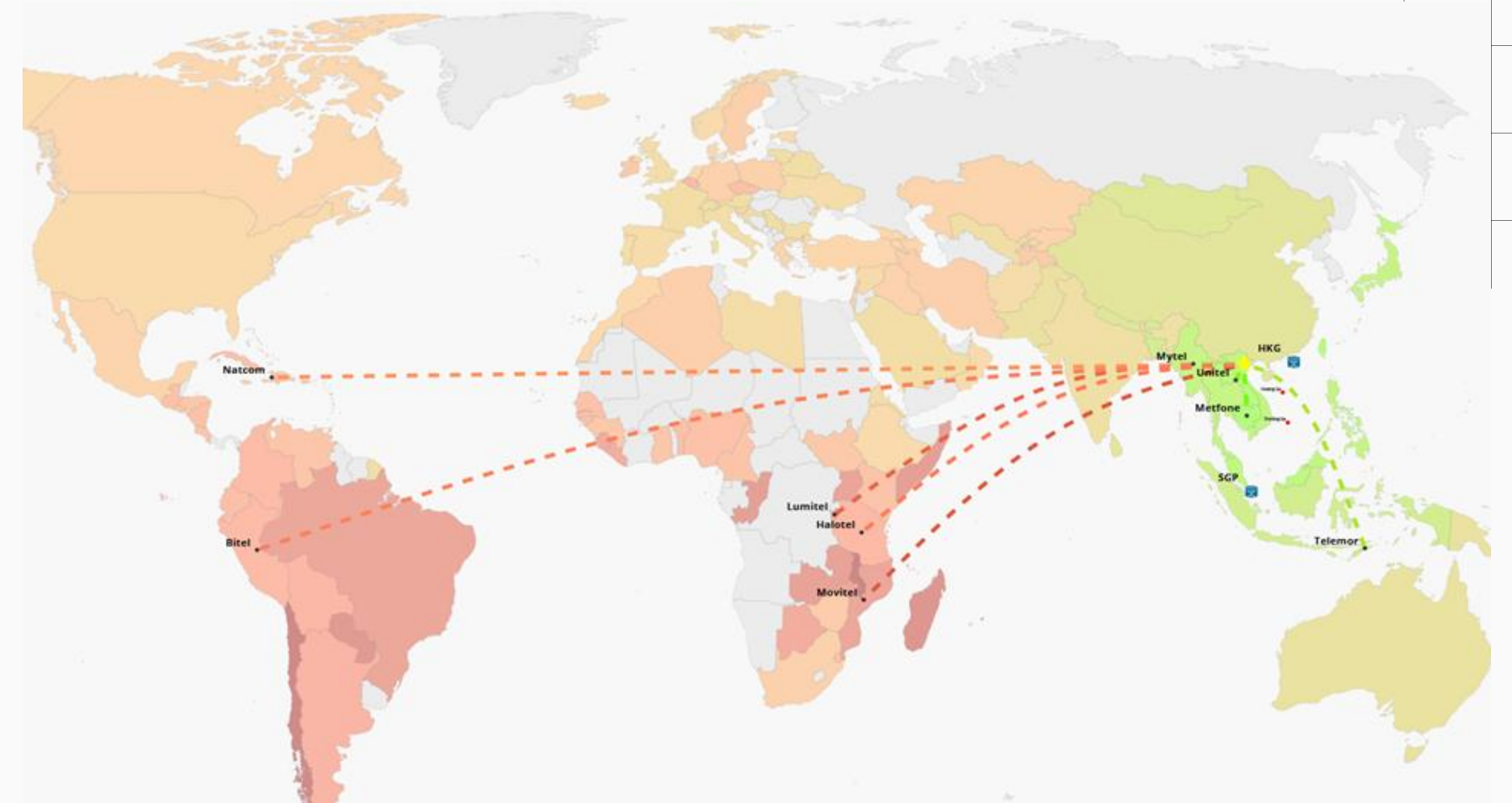


## Tỉ lệ lưu lượng của top 20 ISP

ISP - Quốc gia - Upstream



# INTELLIGENT TRAFFIC OPTIMIZATION



# ACHIEVEMENTS & IMPACT

## Reliability

Improved network stability  
and reduced service  
interruptions



## Experience

Maintained customer  
experience quality and  
minimized complaints



## Efficiency

Enhanced operational  
efficiency and faster incident  
response



## NEXT STEP & CONCLUSION

### *Continue advancing towards AN4*



Enhance systems and supporting tools



Deploy additional advanced automation scenarios



Strengthen automation implementation across the entire network



Aim for a fully autonomous 4.0 network by 2027

*Thank You*