



**ChinaNetCenter**

**Healthy CDN Environment Requires Joint Efforts  
of the entire industry**

**2017.10 Macao**

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Prospect and Challenge

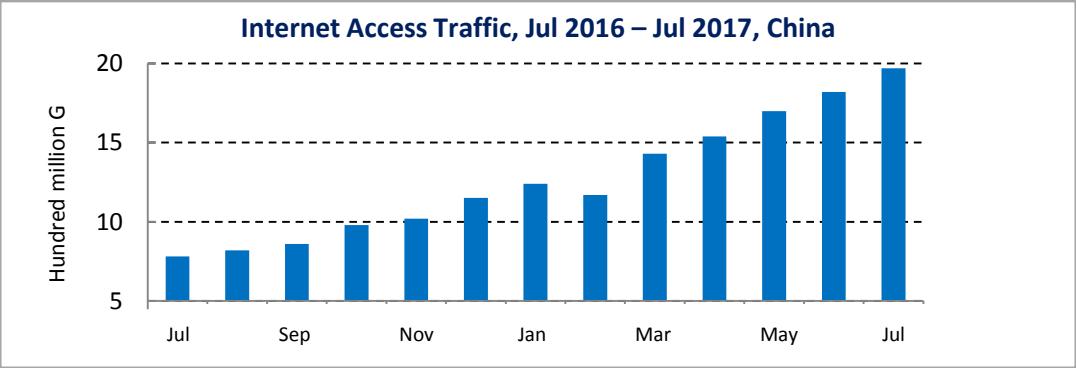
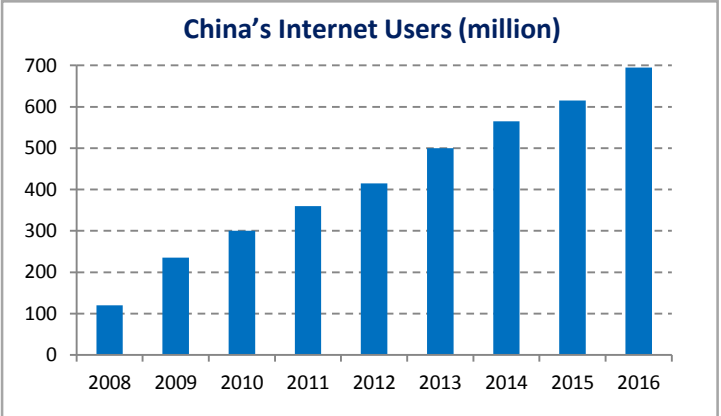
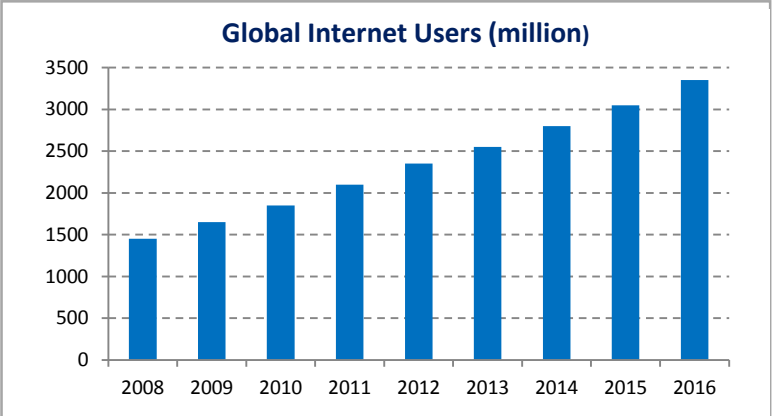
Current Challenge and problem

Solutions and Optimizations

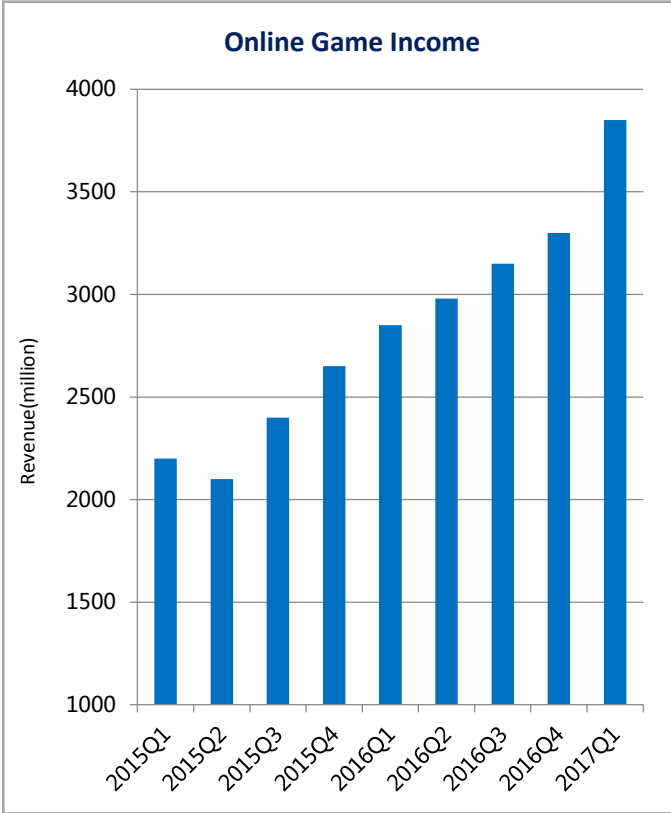
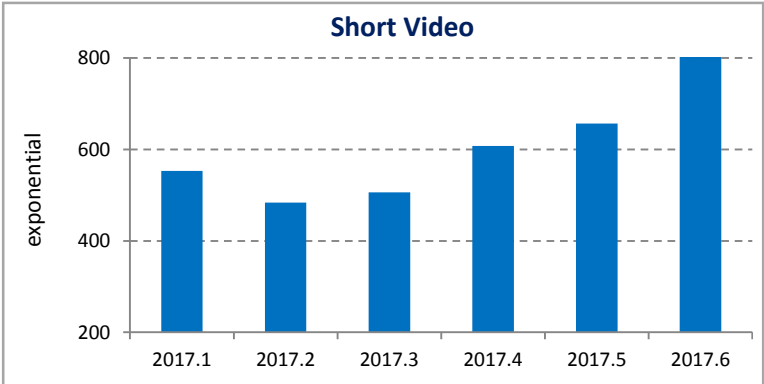
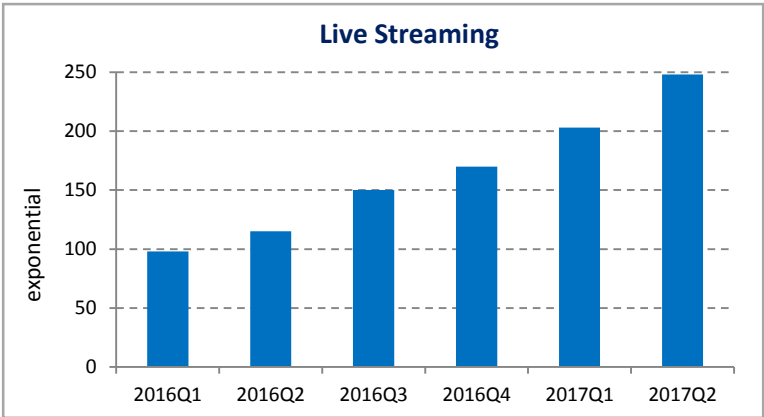
**01**

**Prospect and Challenge**

# Current Internet Users and Access Traffic



# Major Services on Current Internet



# Heavy Contents in the future

## Heavy contents explosion



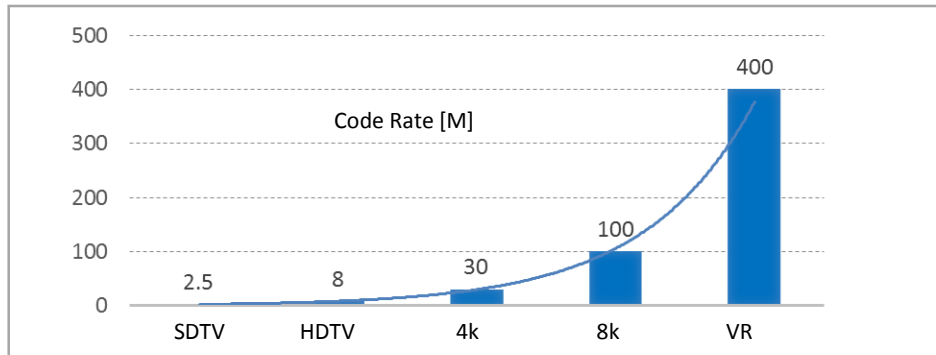
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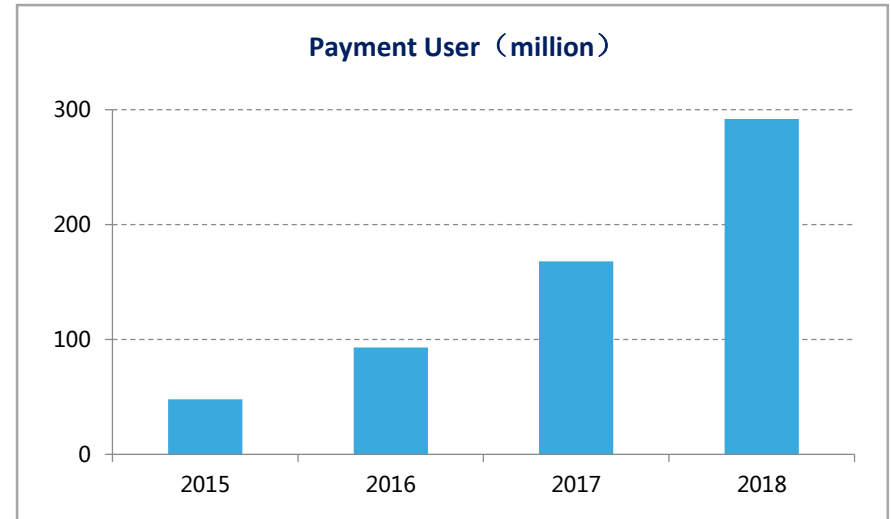
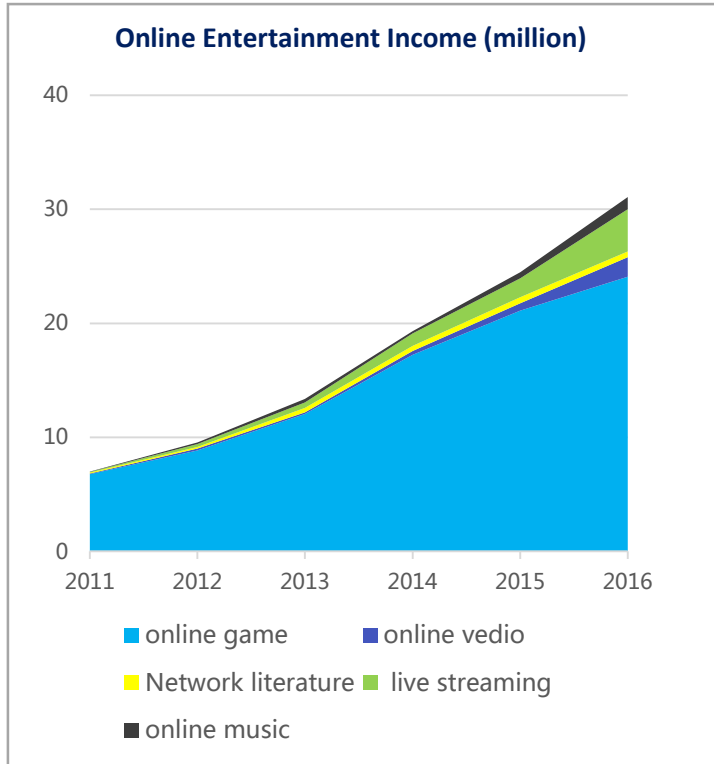
VR/AR



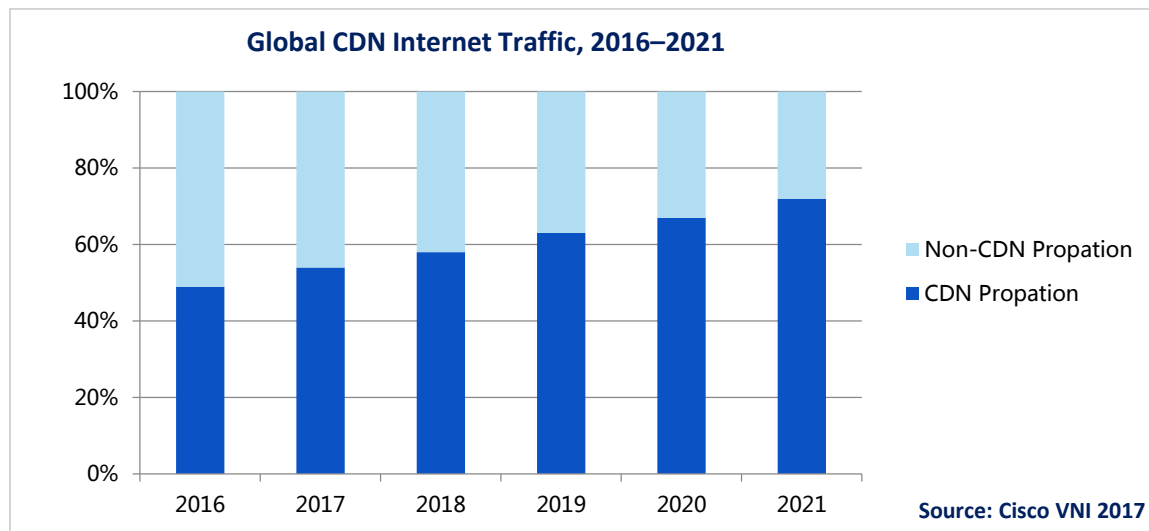
Cloud Service



# More and More People Are Willing to Pay For Online Entertainment



# CDN Internet Traffic proportion



|                      | 2016   | 2017   | 2018    | 2019    | 2020    | 2021    |
|----------------------|--------|--------|---------|---------|---------|---------|
| Total IP Traffic     | 78,250 | 99,777 | 124,689 | 154,935 | 190,474 | 232,655 |
| CDN internet Traffic | 38,340 | 53,888 | 72,893  | 97,636  | 126,793 | 165,651 |
| Proportion           | 49%    | 54%    | 58%     | 63%     | 67%     | 72%     |



# Summary

## Opportunity Always Goes With Challenge

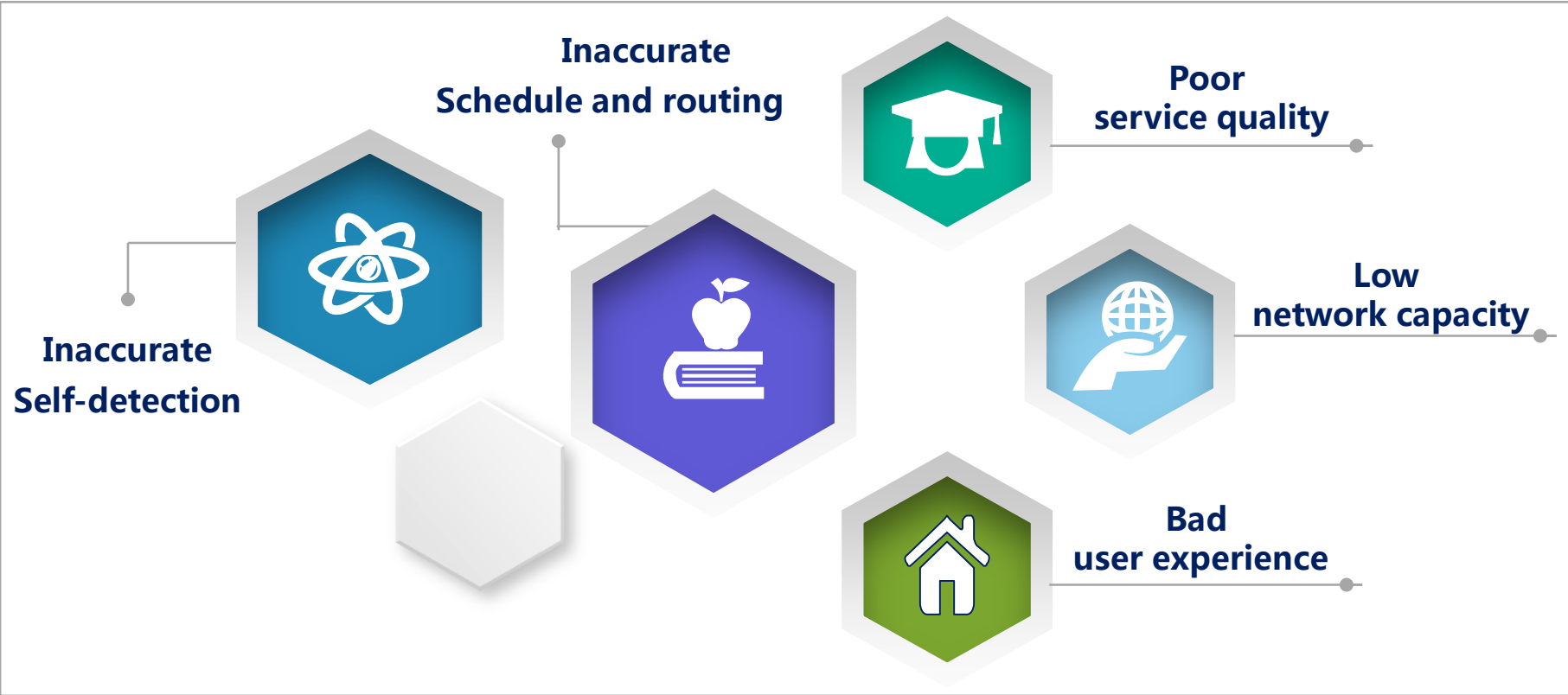
- Opportunity
- Challenges

What are the challenge and problems for CDN?

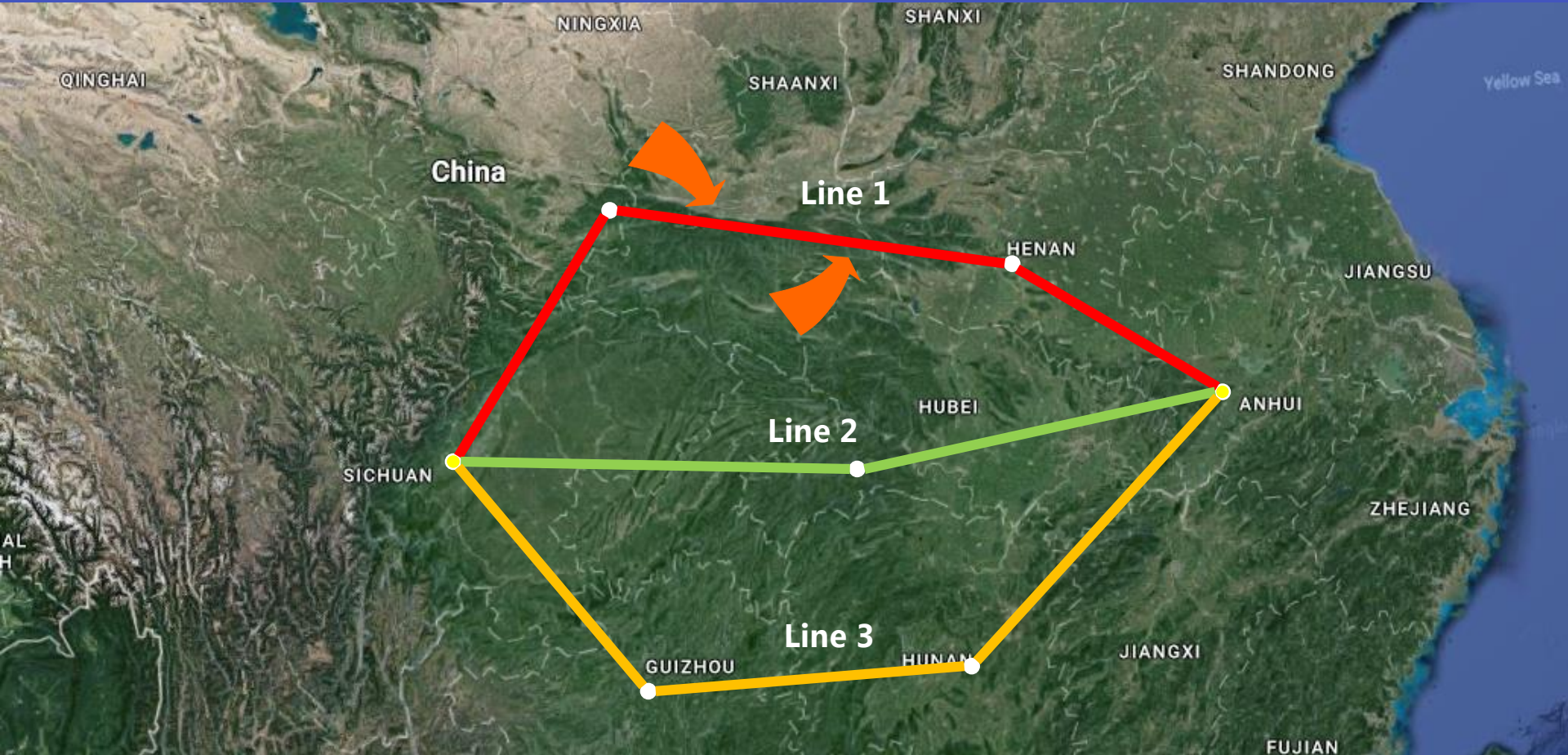
**02**

**Current Challenge and problem**

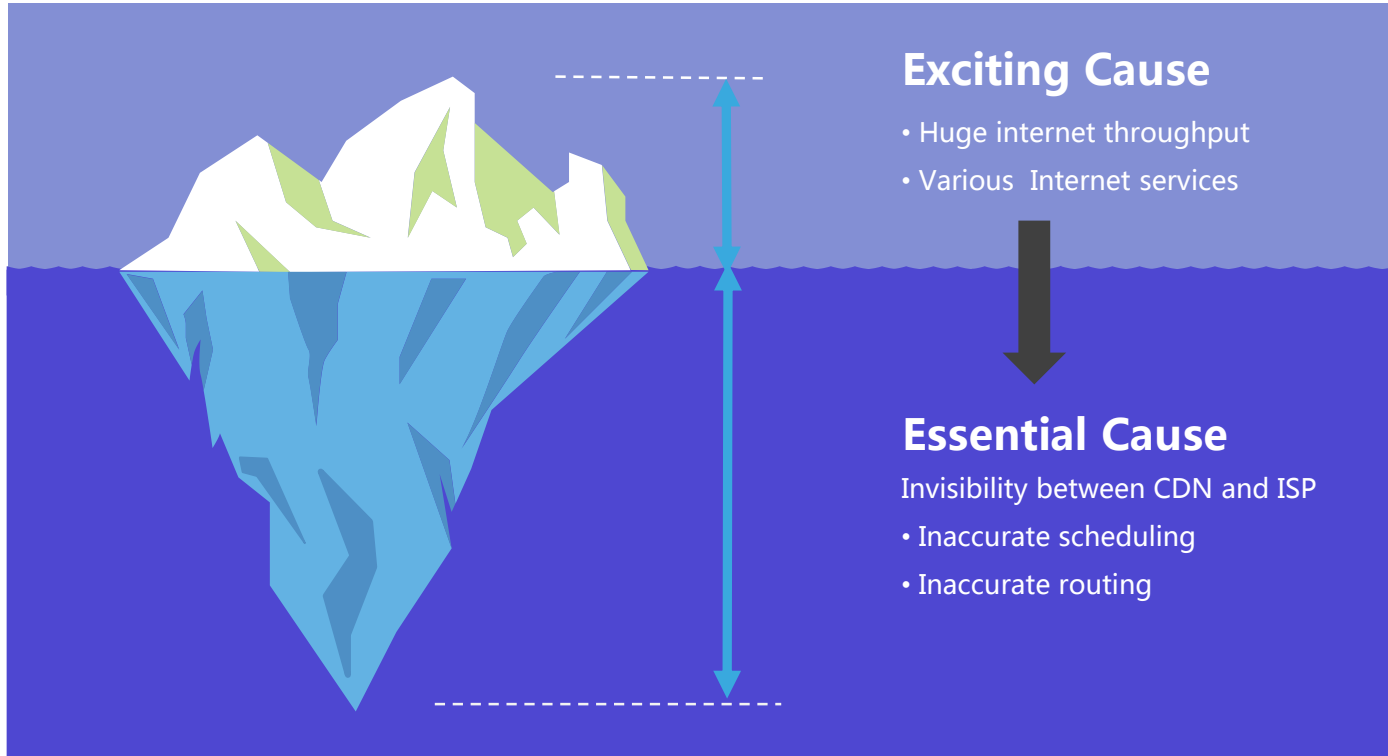
# Importance of Scheduling and Routing



# Current network traffic flow



# Essential Cause



# Cooperation between CDN and ISP

## Challenge

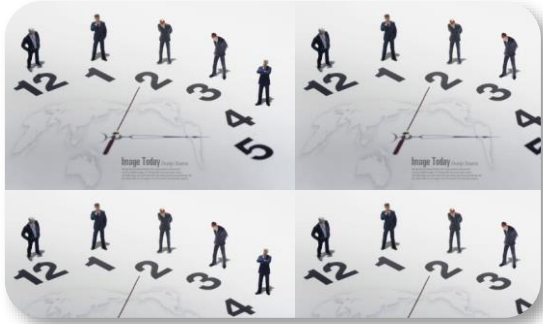
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Congested network  
Deteriorated user experience

## Goals

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Unobstructed network  
Ultra-high user experience  
Substantial pay income

## Cooperation

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Cooperation between CDN and ISP

03

**Solutions and Optimizations**

# Mutual Perception

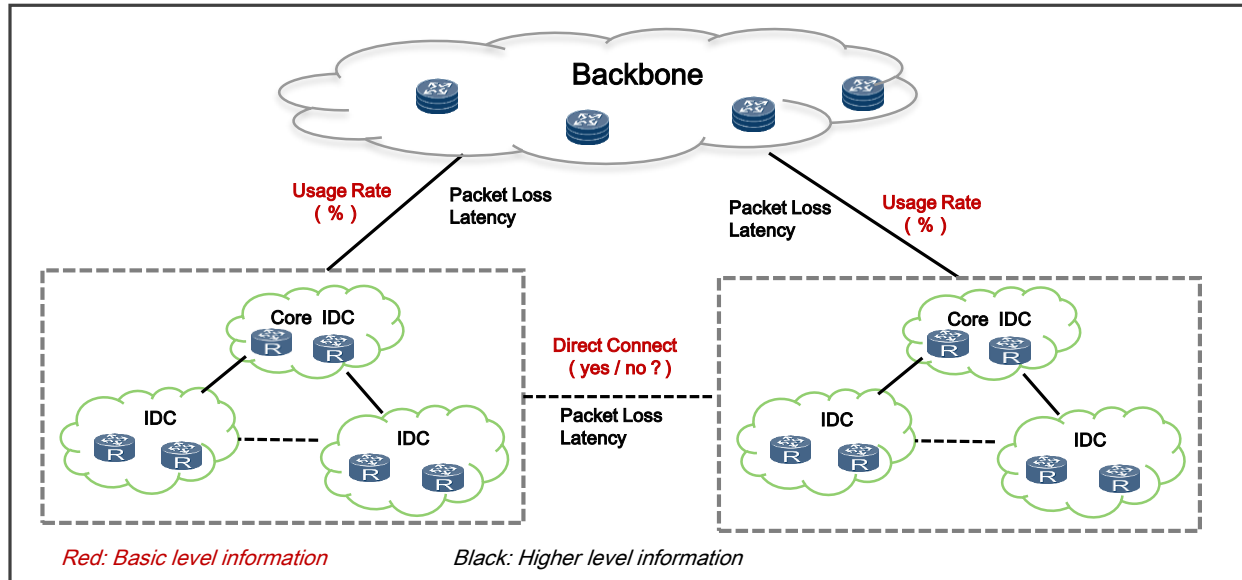
✓ Information Sharing

✓ QoS Guarantee

✓ Communication Interface

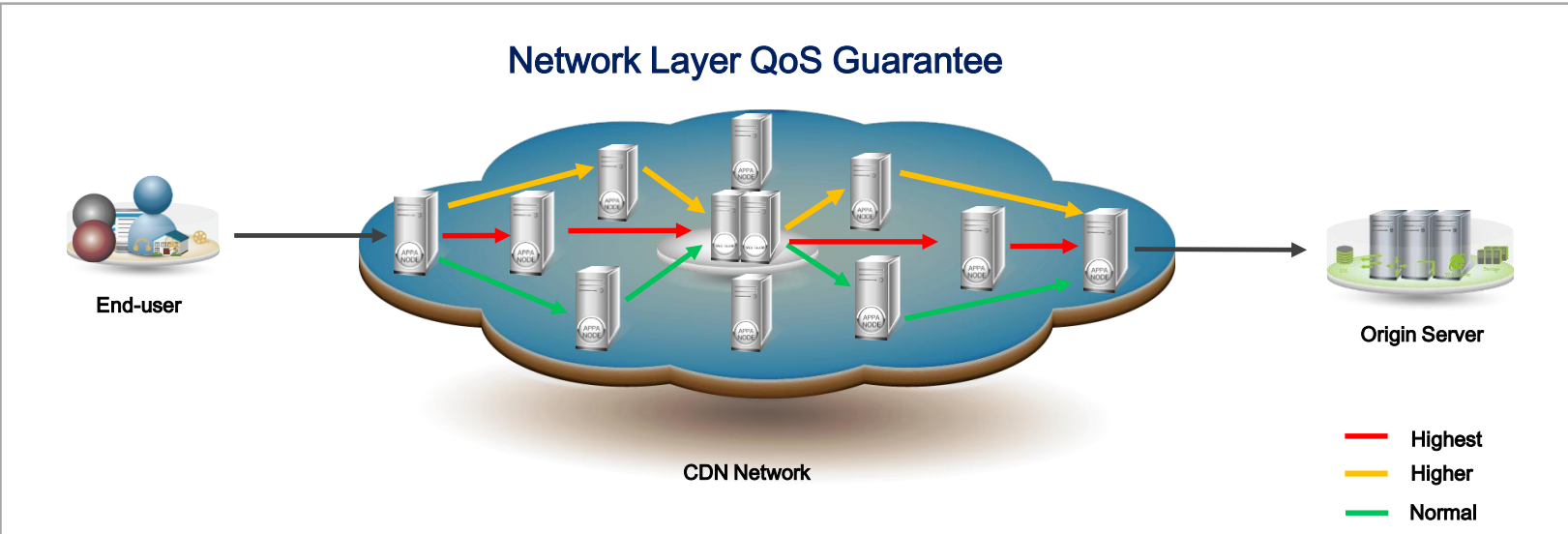


# Information Sharing

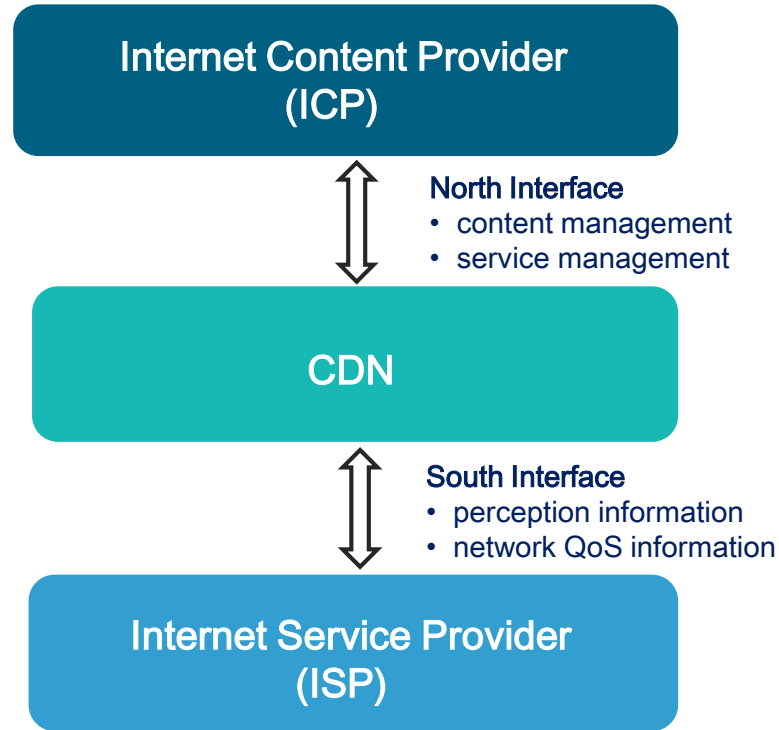


|             |                          |                      |
|-------------|--------------------------|----------------------|
| Information | Basic Level Information  | ISP network topology |
|             |                          | Bandwidth usage      |
|             | Higher Level Information | Packet Loss          |
|             |                          | Latency              |

# Network Layer QoS Guarantee



# North and South Interface



# Scheduling and Routing Algorithm Optimization

|        | Algorithm Optimization   | Parameters   |
|--------|--------------------------|--|
| Normal | $M = k_1A$               | <b>A: Experience parameter</b><br><i>(such as location, health, loading, quality)</i>                |
| Better | $M = k_1A + k_2B$        | <b>B: Network Information</b><br><i>(network topology, bandwidth usage, packet loss and latency)</i> |
| Best   | $M = k_1A + k_2B + k_3C$ | <b>C: Network QoS information</b>  |

Create a better future with CDN industry counterparts

➤ **High Quality Content**

➤ **Smooth Network Condition**

➤ **Extreme User Experience**

Sharing CDN market interests with Value chain members

# Our Mission

Make the Internet faster, better and safer