



Smart cable TV terminals

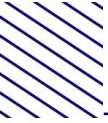
Satoshi Miyaji

KDDI Corporation, Japan

Sep 3, 2019

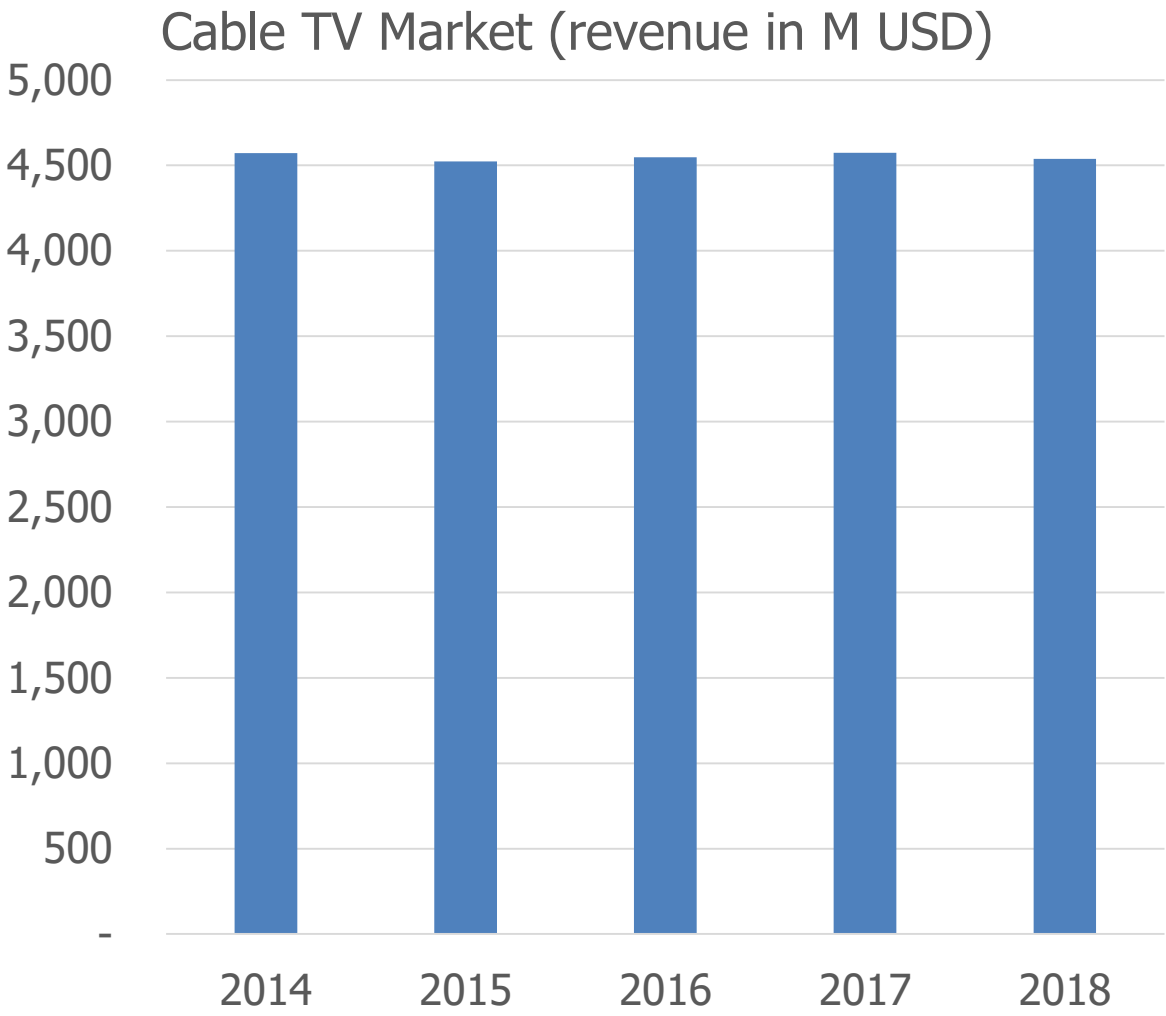
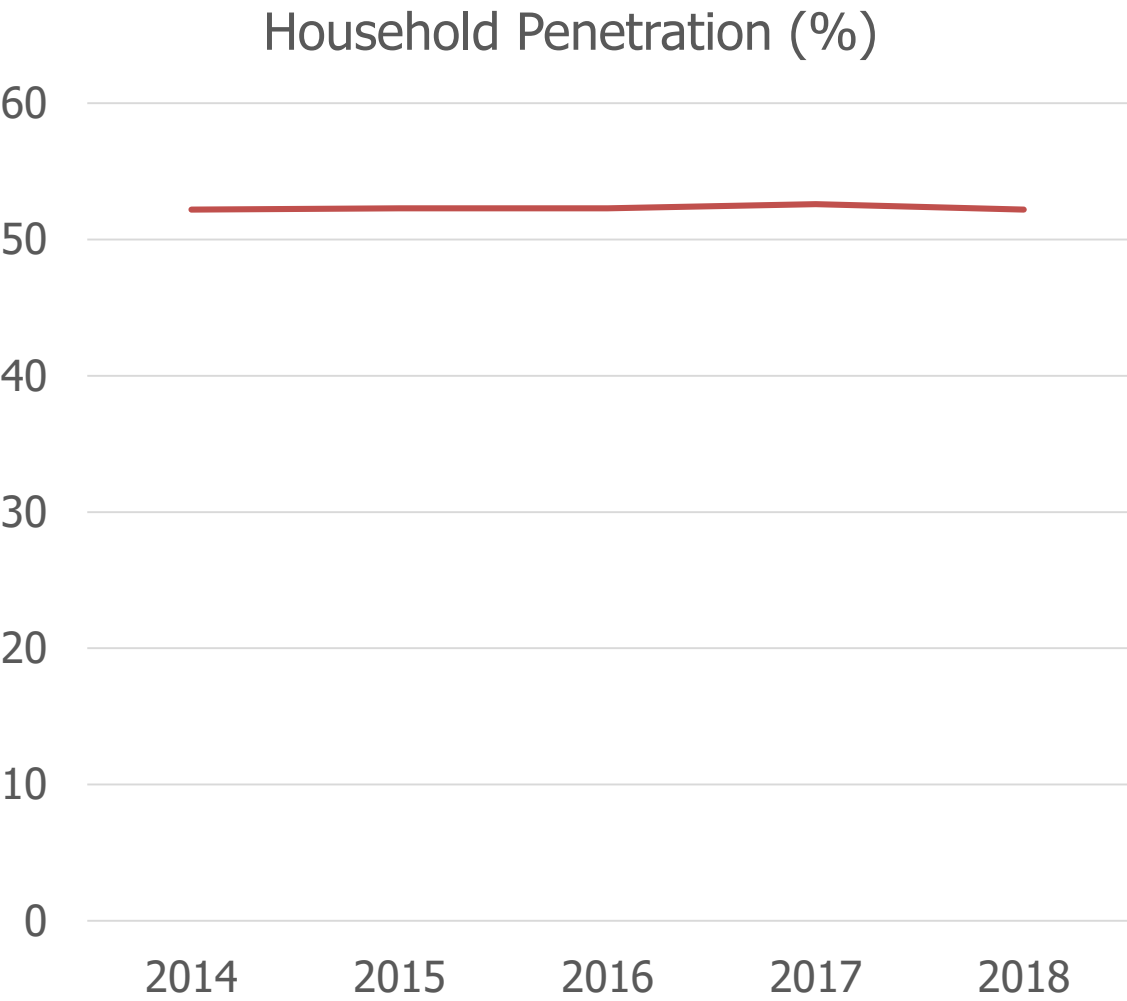
Tomorrow. Together

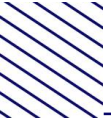




Cable TV business situation in Japan

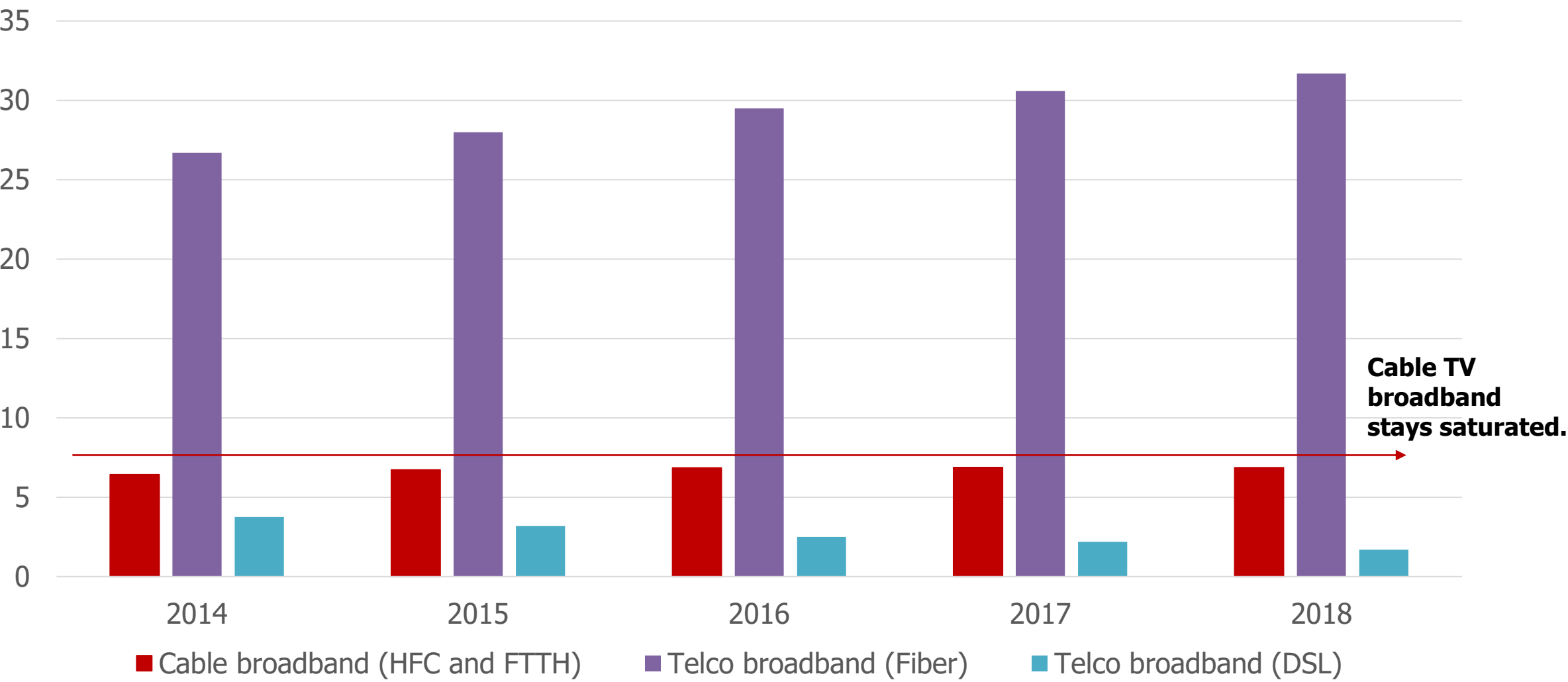
Cable TV is well deployed and stable business. But, cable TV operators need to find the way to further expand their business.





Competition with telco operators

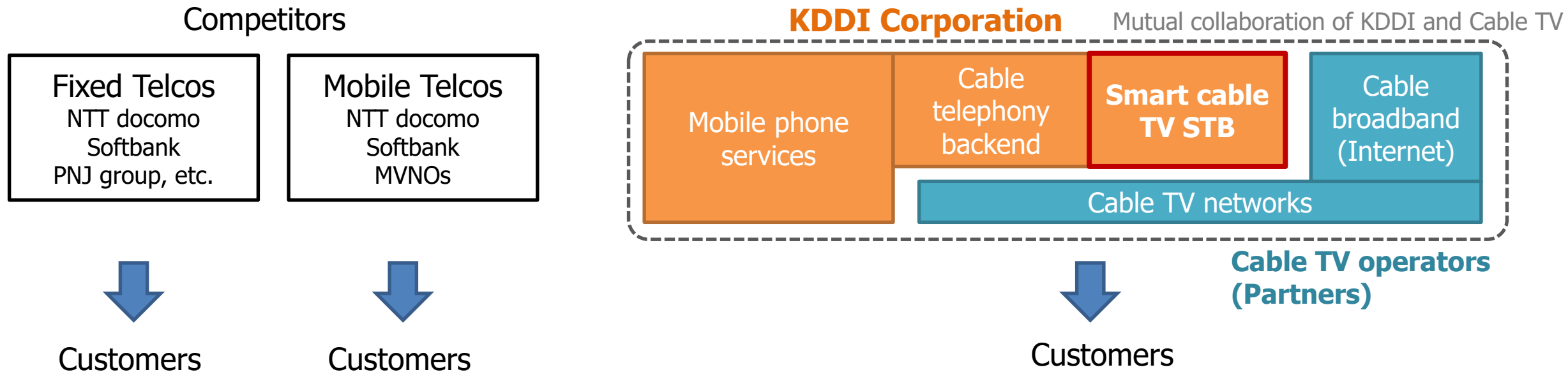
Fixed broadband Internet access in Japan (in millions households)



Our position (of KDDI)

■ KDDI is the second largest telecommunication operator in Japan.

- 56 million mobile subscriptions
- Strong and mutual collaboration with cable TV operators (i.e., not competing with the cable TV industry)



Competitive services and benefits for customers

- Bundling discount of mobile and fixed (cable TV and broadband) services
- Smart cable TV services by the advanced STB by KDDI

Our partners

- Partnership with more than 250 cable TV operators
- Approx. 90% household coverage

+ J:COM (MSO)



Our latest smart cable TV terminal:

Cable Plus STB-2 by KDDI



Smart Cable TV Terminal: Cable Plus STB-2 by KDDI

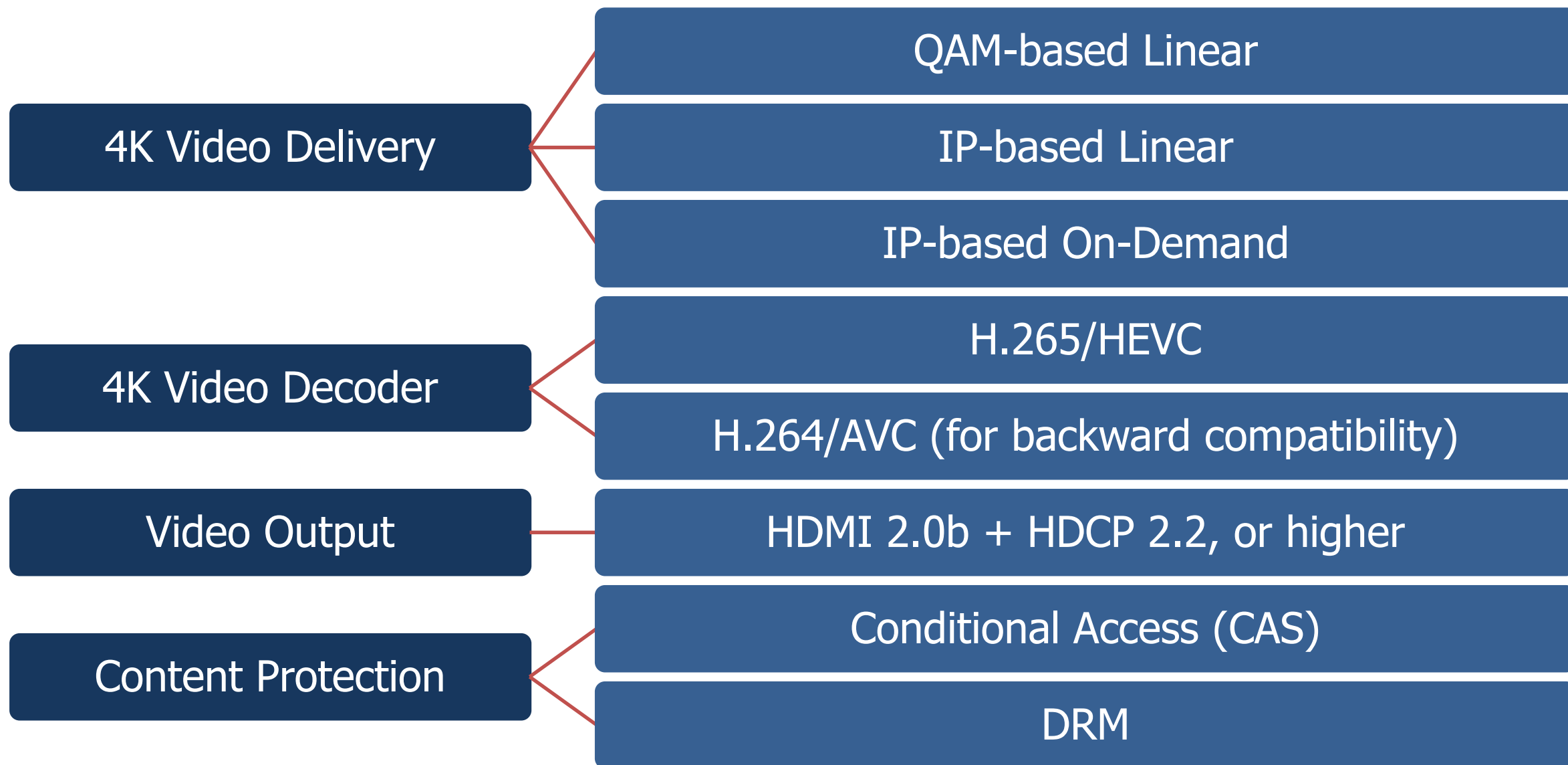


Approx. 240 mm x 172 mm x 33 mm
(9.45 in x 6.77 in x 1.30 in)

- ✓ 4K Broadcasting
- ✓ 4K Video on Demand
- ✓ Android TV 8.0 + Google Play
- ✓ Voice Search and Control
 - Bluetooth LE Remote Control with embedded microphone

ITU-T
J.297

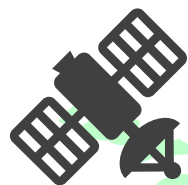
ITU-T J.297: 4K Cable STB Requirements





4K requires bandwidth
up to 35Mbps with H.265/HEVC

ITU-T Recommendations included in J.297 for 4K video transport



Satellite 4K/8K Broadcasting:
ITU-R BO.2098-0 (ISDB-S3)

MMT
/TLV

Cable headend



Cable TV operator's channels
and 4K satellite broadcasting retransmission

QAM-based Broadcasting

ITU-T J.83 + J.183 (QAM channel bonding)
J.288 (TLV Encapsulation)

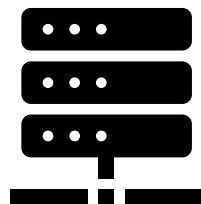
customer



Linear TV IP transport, Video on Demand

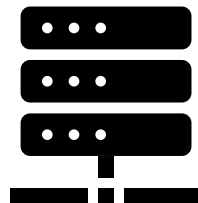
IP-based Streaming

ITU-T J.222 series (DOCSIS 3.0)

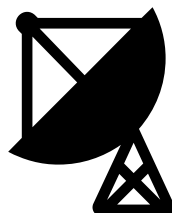


4K Video Content supported by ITU-T J.297

QAM-based Linear TV



Cable operator's channels and
retransmission of the conventional broadcasting
MPEG-2 TS



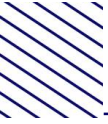
Satellite broadcasting retransmission
MMT/TLV

IP-based video on demand (including OTT)



... and more

Android TV 8.0 + Google Play platform



Collaboration with OTTs for further business growth

■ Possible collaborations (non-exhaustive)

- Promotion
- Customer acquisition
- Discount offer to customers
- Pre-loading of OTT applications on smart cable TV STB
- Billing integration

■ Business opportunity for cable TV operators

- Differentiation and retention of cable TV service to customer by offering
 - integrated experiences of TV broadcasting and OTTs on the **Smart Cable TV Terminal**
 - OTT discount price
- Possible revenue share with OTT providers

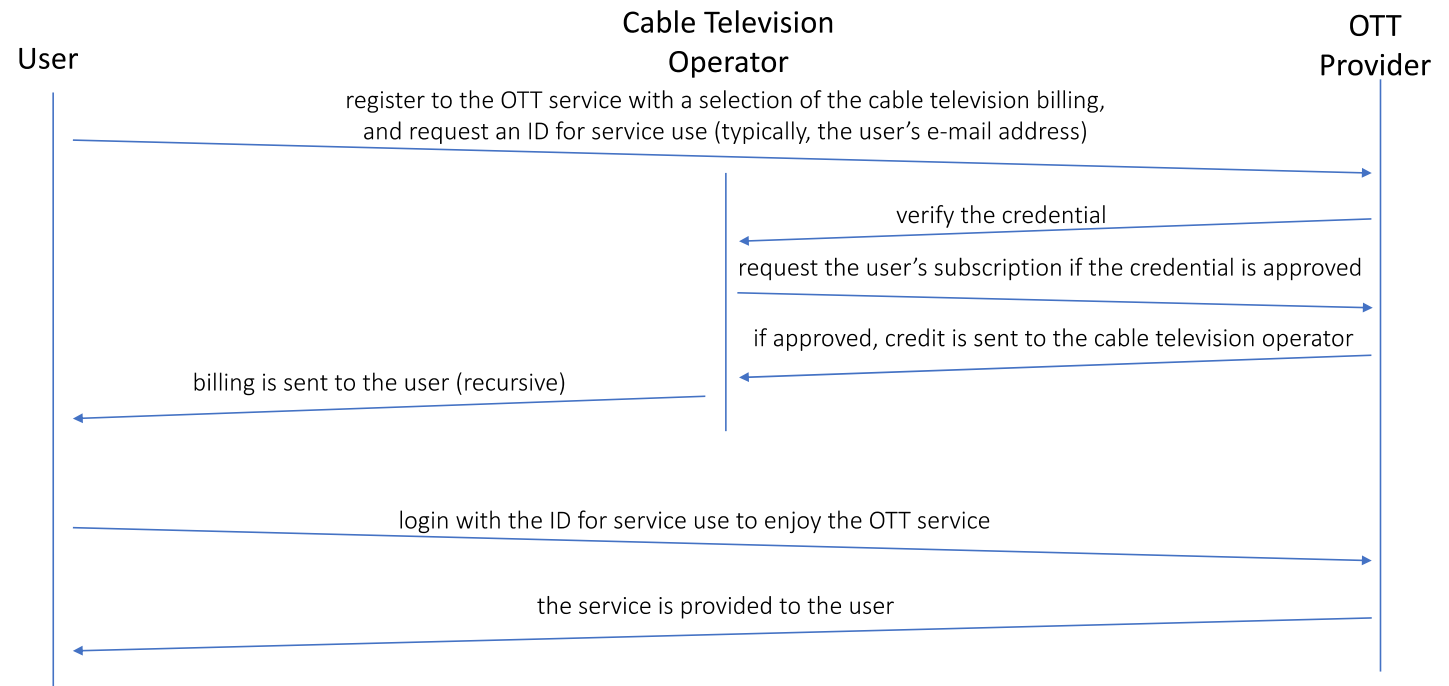
ITU-T draft new Recommendation J.cable-OTT

■ Purpose of this draft new Recommendation J.cable-OTT

- To facilitate cable TV operator's additional business by collaboration with OTT providers.

■ Scope

- J.cable-ott is intended to specify the system architecture and interfaces between a cable television operator and one or more OTT service provider(s).
- For this purpose, J.cable-ott specifies the configuration patterns of relevant entities including a user, a cable television operator and one or more OTT service provider(s), and specifies requirements of interfaces that cable operator side entity provides.



Sequence chart example (for billing integration)

Other features: voice search and Control

Google Assistant (Built-in)

Voice-enabled Bluetooth remote control



Google Home

Voice control by "Ok Google"



Voice search and control



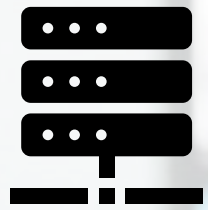
*Ok Google, show me
my favorite anime
movies.*



*Record the TV drama
"Lonely Gourmet"
from this week and
after.*



For competitive cable TV services



Bandwidth
for 4K



Advanced
capabilities



VOD and OTT



AI

Thank you very much for your attention

