ESOA
EMEA SATELLITE OPERATORS ASSOCIATION

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"The Future of Television for Europe"

ITU Workshop
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Nick Stubbs
Global Network & Services Policy, ESOA

Trending Today

Increased on-demand streaming

⇒ Significant increase in fibre-to-the-home in developed world

⇒ Most new TV's are 'smart' with connectivity built in

Increased viewing on the move

⇒ Steady roll-out of 5G in urban areas

Increased adoption of 4K UHD in the home

⇒ Has become default in premium sports transmission

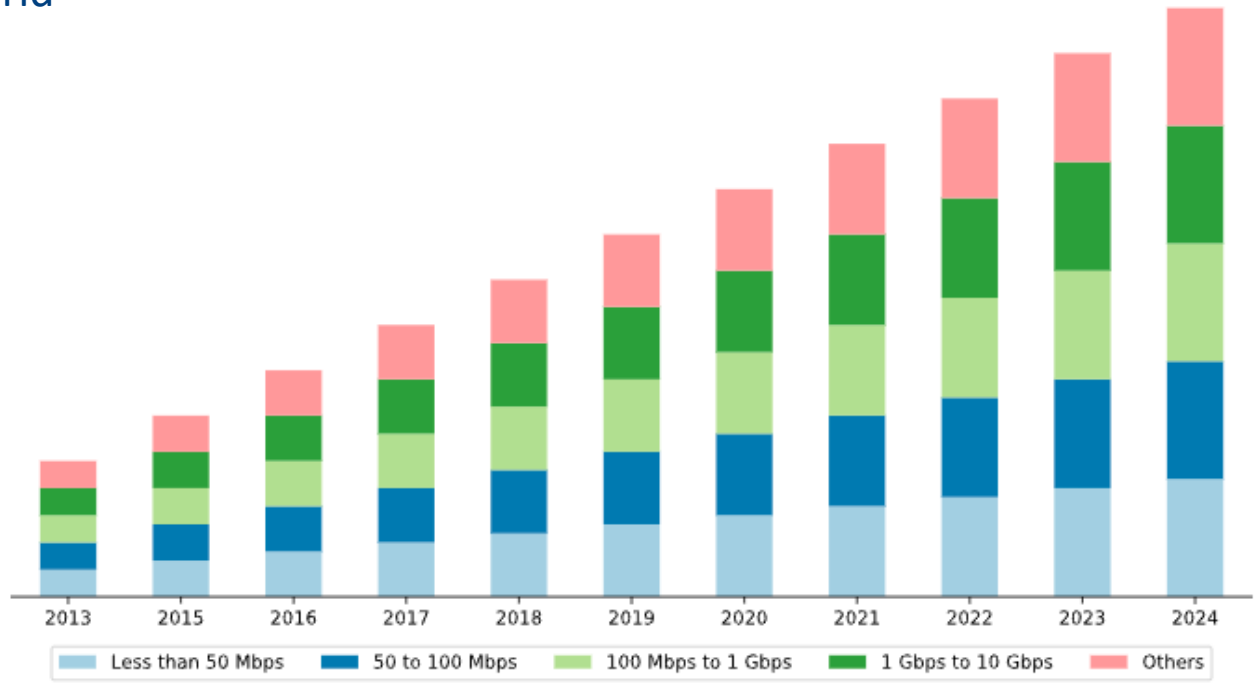
⇒ Large screen 4K TV sets with integrated connectivity

Emergence of global platform operators

⇒ Platforms in their own right

⇒ Consolidation of pay tv platforms

FTTH market size, by product, 2013-2024 (USD Million)
Source: Marketintellica



Increased adoption of targeted advertising

⇒ New advertising models offered with connected viewing personalised for the viewer

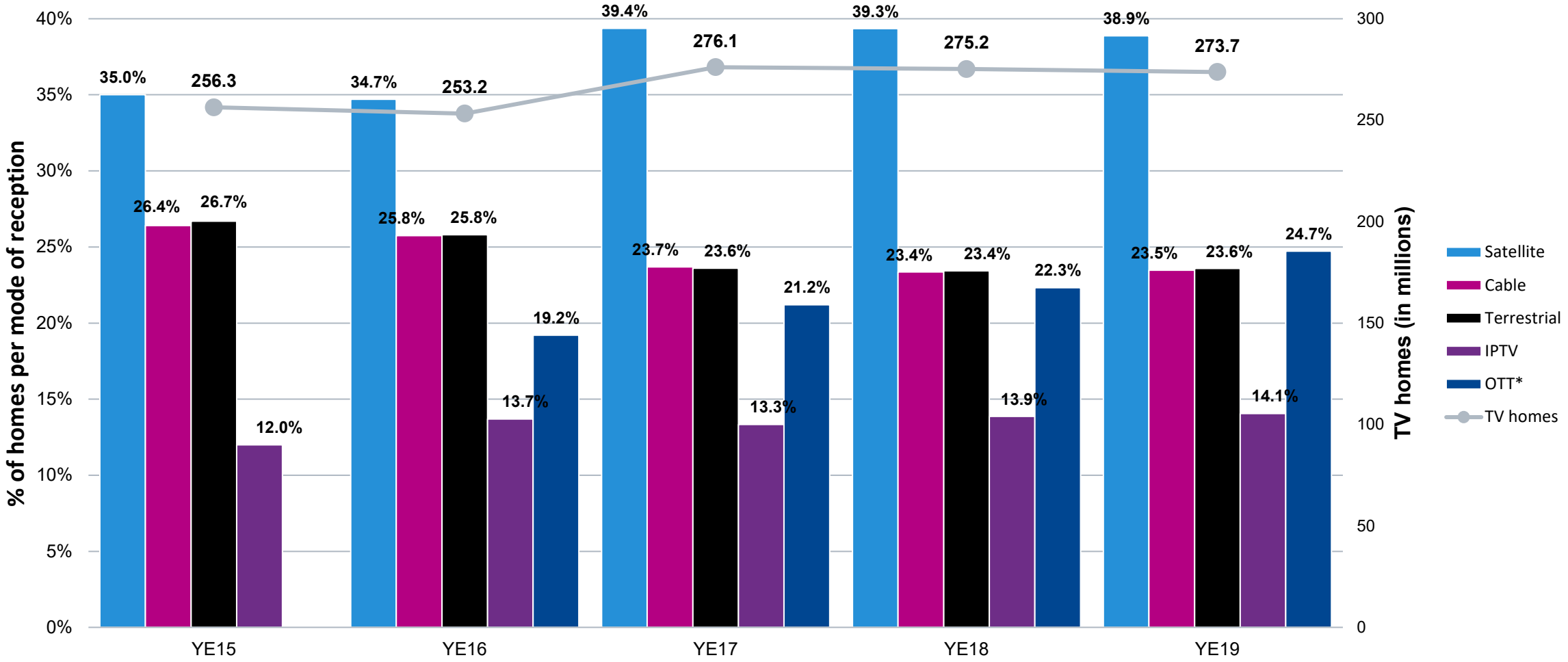
Increased use of AI based personal content scheduling

⇒ In the world of seemingly infinite content, AI is cherry picking content for the viewer based upon learned preferences

Increasing trend towards AVOD from SVOD

⇒ Increased availability of free-of-subscription options based on personalised advertising insertion into content

OTT Complementarity to Linear TV in Europe



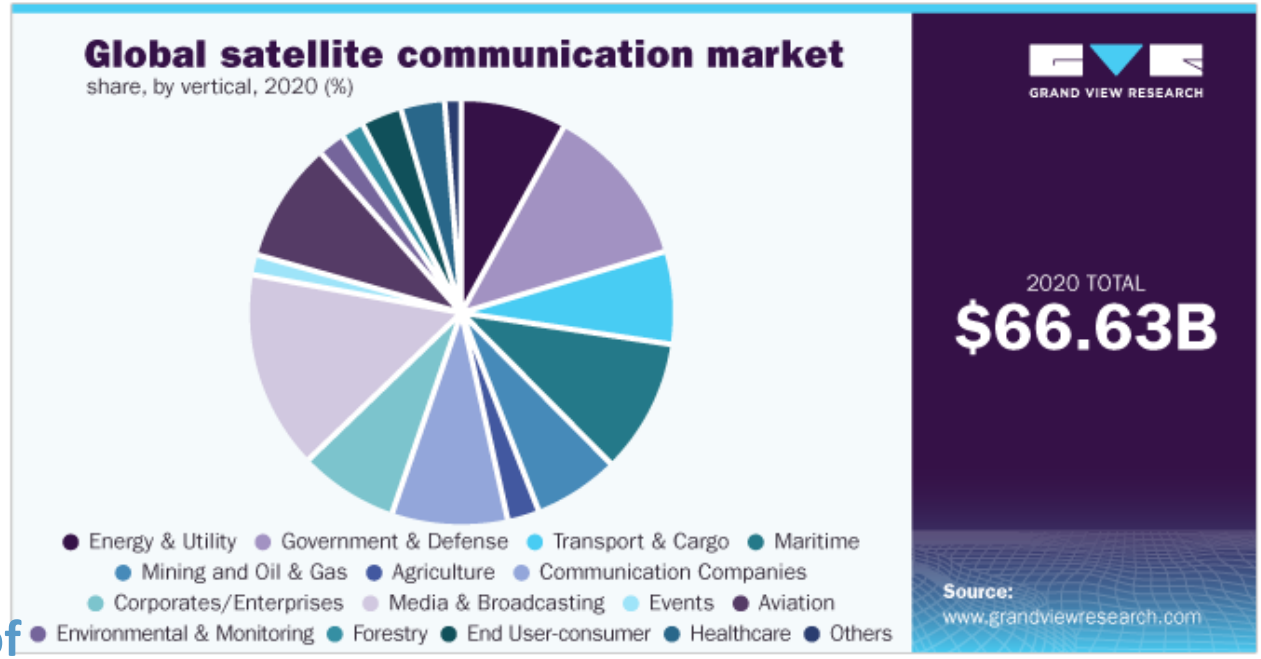
Source: Satellite Monitors YE2019

* OTT measured in addition

Satellite Environment

⇒ **ESOA members carry 10's of thousands of digital channels to 100's of millions of people**

⇒ **Traditional linear broadcast channels numbers stable, increasing in emerging markets**



Complemented by:

1. Huge growth in data services:

- Broadband connectivity
- Cellular backhaul
- Mobile connectivity to ships, planes & land based vehicles
- Government

2. Increase in coverage from ± 60° latitude to coverage of polar regions

3. Increased connectivity with Cloud services

- AWS, Microsoft Azure
- Offer content shop fronts and paywalls

Broadcast & Broadband

Broadcast by Satellite

⇒ Most cost effective & robust way to deliver live real-time video to the mass market

⇒ Resilient infrastructure for national broadcasters and governments
- When terrestrial goes down, satellite will be there

⇒ Highly adaptable to higher and higher bandwidth demands
- Ultra-HD – 4K, 8K, 3D, VR, AR

⇒ Low cost receiver equipment

Broadband by Satellite

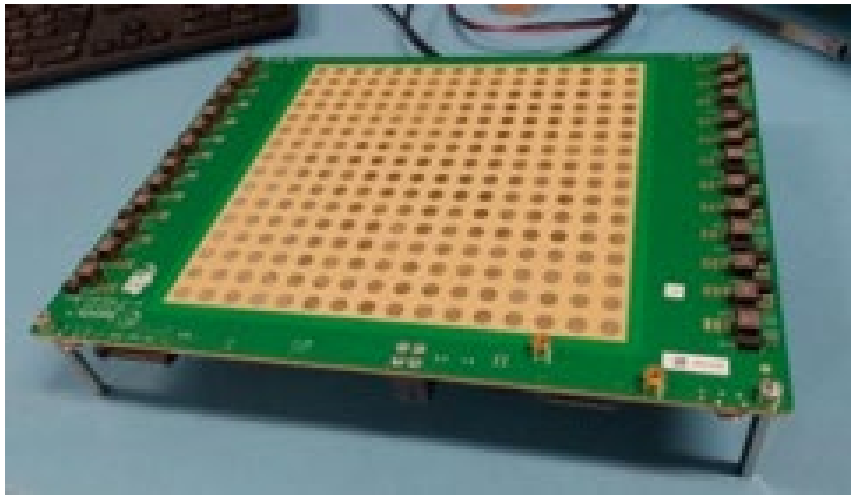
⇒ Most efficient way to reach remote communities
- Direct to home
- Cellular backhaul

⇒ Only way to reach ships & planes

⇒ HTS provides high data throughput

⇒ MEO/LEO provides low latency

⇒ On the brink of low cost consumer ‘smart’ 2-way terminals
- Self-Provisioning - Multi-orbit capable - Wifi access points - Vehicle/home mountable



Satellite Distribution: Generic Architecture

1 Content Origination
Content mastered for multi device reception

2 Uplink
Encapsulated content
- IP - Encryption

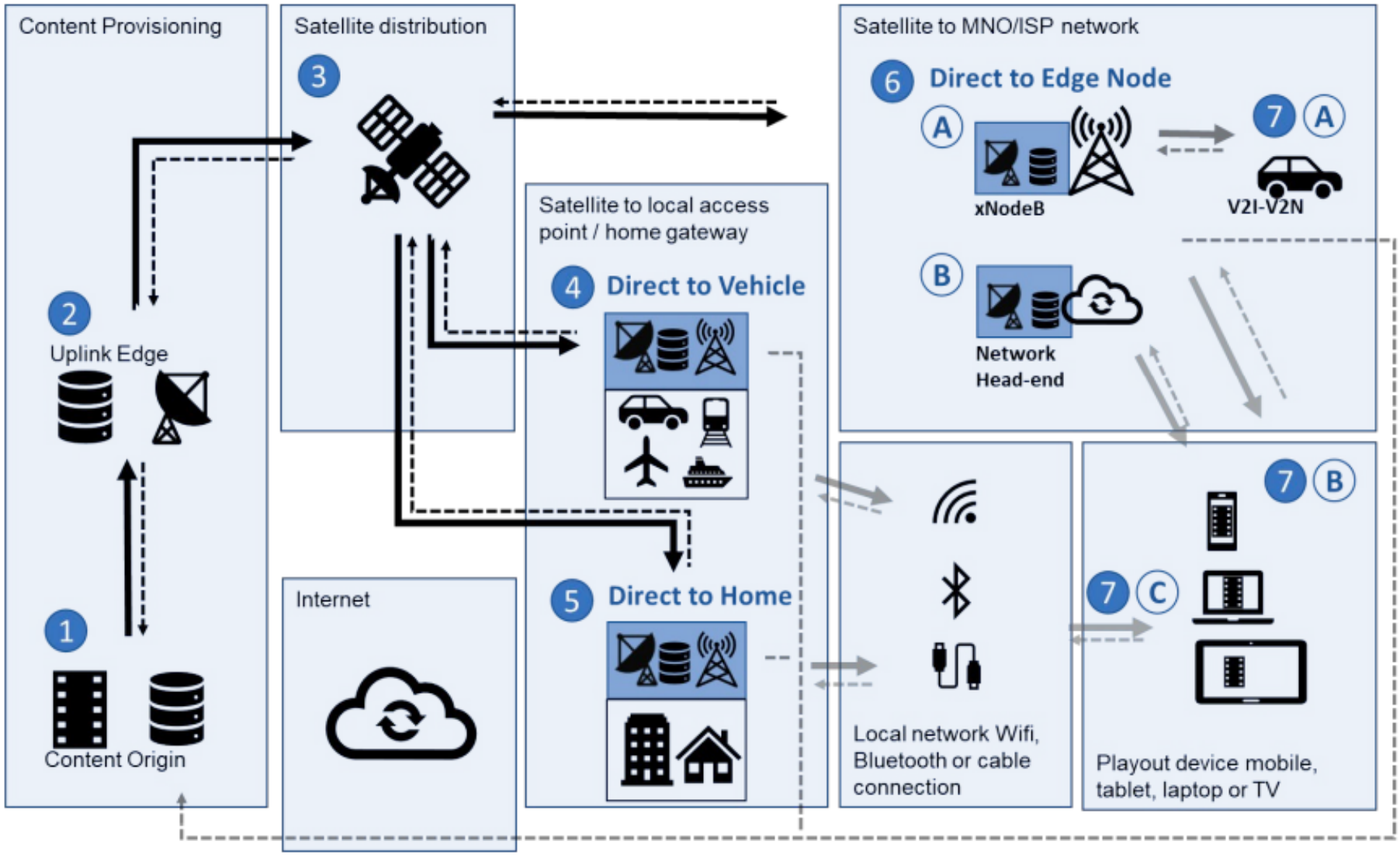
3 Distribution
Content relayed into coverage

4 Direct to Vehicle
Plane, Ship, Train, Car
LAN redistribution

5 Direct to Home
LAN redistribution

6 Direct to Edge Node
Re-distribution via 4G, 5G, WiFi
Uni-cast & Multi-cast

7 Device Receptor
Smart phone, tablet, PC, TV



A. Arcidiacono – EBU - October2020

The Movement to all IP Distribution

- ⇒ **DVBI does for IP services what DVB-T/C/S do for broadcast as a universal standard**
- ⇒ **Specific app / codec no longer required**
- ⇒ **Receiver can present an integrated list of services & content, including DVB-I & broadcast services**
- ⇒ **Users don't have to know or care whether a service arrives via broadcast or IP Broadcasters can deploy a service once to a wide range of devices**
- ⇒ **Manufacturers can make a single consistent user experience for DVB-I (and broadcast) services**

- ⇒ **5G offers multilayer support for IP distribution**
- ⇒ **Linear & non-linear contents supported by 5G standards**
- ⇒ **Present 5G 3GPP specifications include unicast, multicast & broadcast modes. Unified architecture can be configured according to the specific needs of contents to be delivered**
- ⇒ **5G is a global standard with world-wide market reach**
- ⇒ **A practical way to address all devices**
- ⇒ **A UNICAST only model:**
  - ❖ Lacks scalability for increasing audiences
  - ❖ Coverage is dependent on terrestrial network operators (fibre & cellular)
  - ❖ No free access (need to pay monthly subscription) › No guaranteed QoS or service integrity › Distribution cost › High degree of gatekeeping in the distribution chain

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Conclusions

- ⇒ Broadcast via satellite will be around a long time – it is highly resilient and very cost effective
- ⇒ Expect to see continued adoption of 4K / 8K TV sets & greater demand for bandwidth for UHD content especially in sports
- ⇒ Movement towards all IP content distribution
- ⇒ Increased use of satellite for multi-cast content delivery at the edge & cellular backhaul to connect bandwidth demanding remote communities
- ⇒ Continued combination of linear and on-demand viewing
- ⇒ Increased viewing on multi-devices & on the move as 5G networks footprints increase and NGSO constellations are deployed
- ⇒ Increasing use of AI & ML for targeted advertising and viewing recommendations/guidance