

# Fernsehtechnologie im Wandel der Zeit - Chancen und Risiken



Dr. Thomas Stockhammer  
Senior Director Technical Standards  
Qualcomm Technologies

# Today's agenda

# Über mich

# Qualcomm, QSIO and daily work

# History of Television and new Trends

# Foundational Technologies

# The Gen-Z shift

# AI changes everything?

# Discussion



## Presenter



Dr. Thomas Stockhammer

Senior Director, Technical Standards  
Qualcomm Europe, Inc., IEEE Fellow

Leading and driving among others

- DVB: 5G TF, DVB-I
- MPEG: MPEG-I, CMAF and DASH
- 3GPP: XR, 5G Video, AMD, 6G Media, AI
- SVTA DASH-IF WG
- ETSI & 5G-MAG: 5G Broadcast and 5GMS
- CTA WAVE: CMAF Device PB, Test
- Metaverse Standards Forum: Board

# Ganz kurz über mich

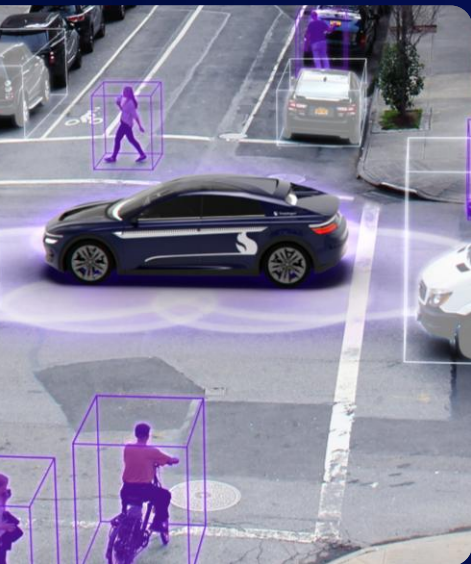
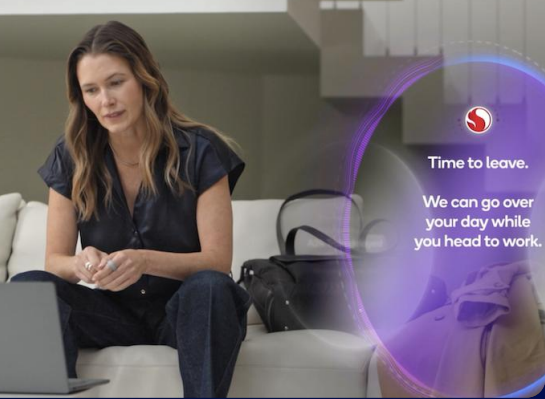
Dr. Thomas Stockhammer (geboren 1971 in Traunstein, wohnhaft in Bergen, Elternhaus in Trostberg)

- Abitur 1990: Hertzhaimer-Gymnasium Trostberg
- Von 1991 - 2004: Studium und Promotion an TU München, Elektro- und Informationstechnik
  - Dissertation: Cross-Layer and System Design for Mobile Video Transmission
- Von 2004 bis 2014: Gründer und Geschäftsführer Nomor Research GmbH in München
  - Ausgründung aus der TU München, Consulting und Prototypenentwicklung, bis zu 60 Mitarbeiter, Teilverkauf 2013
- Seit 2006: Beratend tätig für Digital Fountain (Tech Firma Bay Area), 2009 gekauft von Qualcomm
- Seit 2009 beratend und seit 2014 festangestellt bei Qualcomm Germany GmbH
- Einige Daten:
  - Ca. 250 Patente, davon ca, 150 erteilt und 100 im Anmeldestatus
  - Ca. 300 wissenschaftliche Publikationen, davon 40 in Magazinen
  - Standard-Highlights: H.264, DASH, CMAF, Raptor/RaptorQ, DVB-I, 5G Broadcast, XR, 6G Media, AI
  - Ausgewählte Auszeichnungen: IEEE Fellow, 2x Emmy Inventor, 3GPP & ISO/IEC Excellence Award, QC Inventor
  - Privat: früher Fussball (FAT), heute MTB, Ski alpin und Tour, Tennis, Beachvolleyball und am liebsten daheim
- Weitere Details hier: <https://www.linkedin.com/in/stockhammer/>

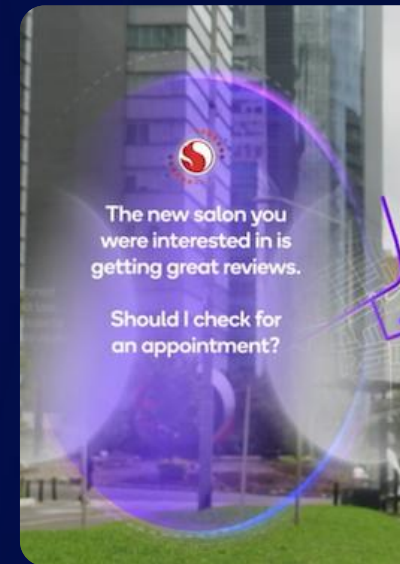


**Qualcomm**  
Engineering Human Progress

Founded in 1985 by Irwin Jacobs and six colleagues



# Enabling intelligent computing everywhere



# Global presence

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**35+**  
countries

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**200+**  
office locations

---

**50,000+**  
employees worldwide

- San Diego (HQ) → strategy + core
- R&D India (Bangalore / Hyderabad) → largest engineering engine
- US + Silicon Valley hubs → advanced R&D + ecosystem
- China / Asia hubs → OEM & market integration
- Europe (incl. Munich) → standards + automotive + operators



**~3.5B devices**





Snapdragon  
X SERIES

# Leadership for the next generation

Performance  
per watt

Multi-day  
battery life

On-device  
AI

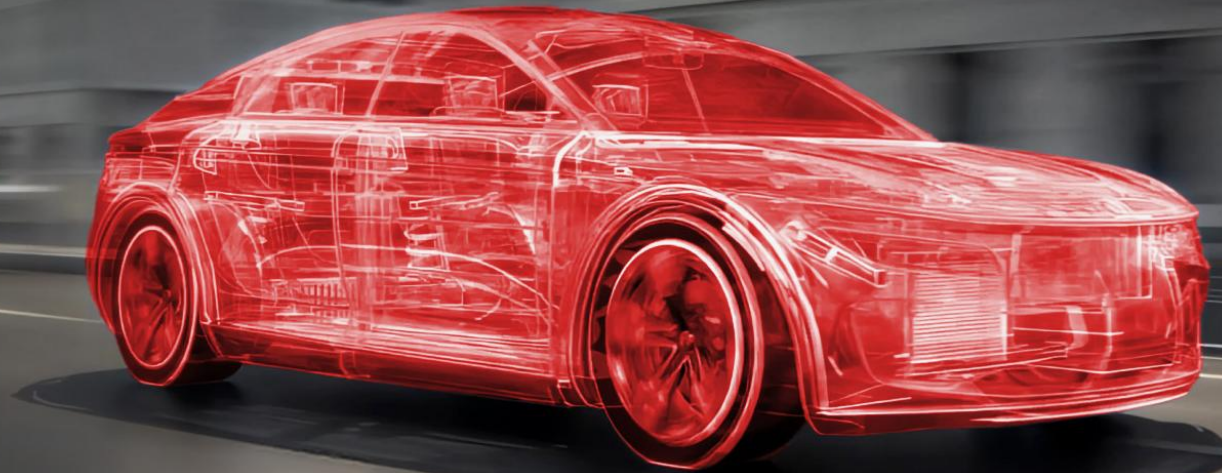


# Raising the bar for automakers

Personalized  
AI cockpits

Assisted and  
automated driving

Faster design  
cycles





Empowering businesses  
and industries to scale  
to new heights



Networking  
infrastructure



Cellular  
infrastructure



Industrial and  
embedded IoT



# Transforming businesses and industries



Public safety  
Law enforcement  
Traffic control



Frictionless retail  
Loss prevention



Dash camera  
Vehicle gateway



Integrated physical security  
Video SaaS



Robotics as service workers



Sensing  
Worker safety  
Risk mitigation



### Cristiano R. Amon

President &  
Chief Executive Officer  
Qualcomm Incorporated

Fiscal  
2025 GAAP  
results

\$44.3B

Revenues

\$12.7B

EBT

\$5.5B

Net income

\$5.01

Diluted EPS



### Dr. Baaziz Achour

EVP and Chief  
Technology Officer  
Qualcomm Technologies, Inc.

## 85–87% of revenue

**QCT (Semiconductors):** This is the engine of the company, representing approximately 85% of total revenue. It develops and supplies integrated circuits and system software for smartphones, laptops, and cars. Within QCT, the "Snapdragon" brand has become synonymous with premium mobile experiences.

## 12% of revenue

Antenn  
RF swit  
Piezo t  
mmW

**QTL (Licensing):** This high-margin segment holds the vast portfolio of patents essential to cellular standards (3G, 4G, 5G, and emerging 6G). Even if a manufacturer does not use Qualcomm chips, they typically must pay a royalty to Qualcomm for using its patented wireless technologies.



### Lorenzo Casaccia

VP and Head of Standards  
Qualcomm Technologies, Inc.



### Industrial and Embedded IoT (IE-IOT)

- Retail and payment
- Robotics and automation
- Tracking and logistics
- Building and enterprise
- Energy and utilities



### Qualcomm Government Technologies (QGOV)

Trusted U.S. government partner



### Qualcomm Technologies Licensing (QTL)

- Licensing
- Intellectual property
- Portfolio management



# Qualcomm technology standards department (QSIO)

- QSIO is the group that turns Qualcomm technology into industry-wide standards and ecosystem reality.
- Cross-functional group in Tech & Engineering under CTO
  - Drives standards (3GPP, MPEG, IETF, ISO, ITU-T, AI, etc.)
  - Shapes ecosystem adoption (OEMs, operators, developers)
  - Aligns open source, products, and licensing strategy
  - Bridges research, product engineering (QCT), and business (QTL)
- Approx 160 people in 16 different countries
- Numerous industry experts with extensive external recognition / board positions etc.
- Sizeable presence in China, Europe, India, Japan, Korea standards
- **Telecommunication standards are agreed technical rules and specifications that define how communication systems (networks and devices) operate and interact to ensure global compatibility and interoperability.**



# Example of a standards meeting

3GPP Working Group meeting in Montreal, May 11- 15, a small meeting → SA4 is responsible for media

- 400 documents
- 100 delegates from all around world: Apple, Samsung, Xiaomi, Orange, Vodafone, Huawei, China Mobile, BBC, Skylo, etc.
- 1 week packed scheduled plus many offline discussions
- Happens 4-6 times a year
- 3GPP has around 18 WGs with up to 1000 delegates per meeting
- 1-2 weeks pre, 1 week post
- Global tech leadership battle

11-15 May 2026	Monday 11			Tuesday 12			Wednesday 13			Thursday 14			Friday 15
Meeting room / local time	Room D	Room AB	Room C	Room D	Room AB	Room C	Room D	Room AB	Room C	Room D	Room AB	Room C	Room ABC
0800 - 0830				FS_6G_MED agenda item 11			TBD	Video (FS_3DGS_MED) (Imed, Aytac)	TBD	TBD	Video (washup) (Thomas, Aytac)	TBD	Plenary re-starts at 0800 Agenda items 11-21
0830 - 0900							Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)		MBS (FS_Energy_Ph2_MED) (Thomas)	Audio (washup) (Nik, Liangping, Stephane, Zisis)	RTC (washup) (Imed)		
0900 - 0930	0900 - Start of SA4 Plenary Agenda items 1-6						Coffee break			Coffee break			
0930 - 1000													
1000 - 1030													
1030 - 1100	Coffee break			Coffee break			Coffee break			Coffee break			Coffee break
1100 - 1130	Agenda items 1-6 FS_6G_MED agenda item 11 (Thomas, Imed, Aytac)			Audio (Rel-19 and earlier, FS_ACAP1) (Andre, Imed)	Video (Maintenance, FS_AIF_MED) (Thomas, Aytac)	RTC (FS_DCTC_eQOS_MED) (Liangping)	Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)	Video (FS_AVFOPS_MED) (Imed, Aytac)	MBS (FS_AMD_Ph2, New work) (Thomas)	Audio (washup) (Nik, Liangping, Stephane, Zisis)	MBS (washup) (Thomas)	RTC (washup) (Imed)	Agenda items 11-21
1130 - 1200													
1200 - 1230													
1230 - 1300	Lunch break			Lunch break			Lunch break			Lunch break			Lunch break
1300 - 1330				Lunch Meeting 6G						Lunch Meeting 6G			Lunch break
1330 - 1400													
1400 - 1430	Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)	MBS (Rel-19 and earlier) (Thomas)	RTC (Maintenance) (Imed)	Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)	MBS (FS_Energy_Ph2_MED) (Thomas)	RTC (FS_DCE_MED)	Audio (DaCAS, ATIAS_Ph3) (Nik, Liangping, Stephane, Zisis)	Video (FS_AVATAR_Ph2_MED) (Imed, Aytac)	RTC (FS_Q4RTC_MED) (Thomas)	Agenda items 11-21			Agenda items 11-21 1600 - End of plenary
1430 - 1500													
1500 - 1530													
1530 - 1600	Coffee break			Coffee break			Coffee break			Coffee break			
1600 - 1630	Audio (DaCAS, ATIAS_Ph3) (Andre)	MBS (FS_AMD_Ph2) (Thomas)	RTC (AIML_IMS_MED) (Imed)	Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)	Joint MBS/RTC (FS_QStream_MED) (Thomas, Imed)		Audio (FS_ULBC) (Nik, Liangping, Stephane, Zisis)	FS_6G_MED (Room AB) agenda item 11 (Thomas, Imed)		Agenda items 11-21			
1630 - 1700													
1700 - 1730													
1730 - 1800													
1800 - 1830	TBD	6G Video Topic (Aytac, Thomas)	TBD	TBD	Joint MBS/FS_6G_MED on emulator (Thomas, Imed)		TBD						
1830 - 1900													
1900 - 1930							Meeting with Khronos			Social event InterDigital			Flight Munich - Montreal
1930 - 2000													
2000 - 2030													
2030 - 2100	Business Dinner with Samsung												
DaCAS							Qualcomm Dinner						

Defining the next generation mobile system - 6G





# THE DEVELOPMENT OF TELEVISION (1930S-1980S) AND ITS HISTORICAL INFLUENCE

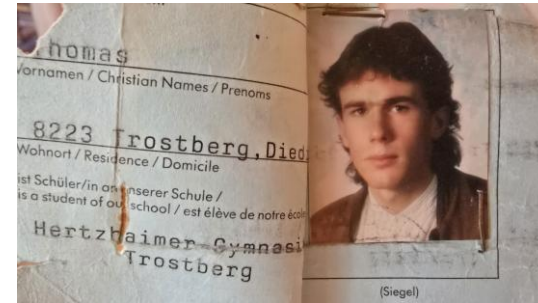
Television's growth shaped society and culture profoundly

# FROM EXPERIMENTAL TECHNOLOGY TO GLOBAL MASS MEDIA (1930S-1980S)

Decade	Key Developments	Historical Influence	Germany
1930s	Experimental black-and-white broadcasts	Introduced the concept of visual mass communication	First regular broadcasts (Berlin)
1940s	Post-war commercialization of TV sets	Changed home life and leisure after WWII	Radio remained the dominant mass political medium.
1950s	Mass adoption and network television	Shaped popular culture and political campaigning	ARD, household adoption
1960s	Color TV and global live broadcasts	Unified audiences around major world events	ZDF, color TV (PAL 1967)
1970s	Growth of cable television	Increased media diversity and specialization	Third programs
1980s	Satellite TV and 24-hour news	Accelerated global information flow	private TV,cable/satellite

# TV and Media in the 80s and 90s: only 40 years ago

Linear, dedicated access and distribution, professionally produced, domestic, FTA



TV  
Broadcaster

Radio  
Broadcaster

News  
Publisher

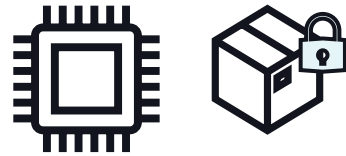


# In the 2000s (Worldcup in Korea): Digital TV, PCs and Internet, GSM



Live, linear contents

Cameras

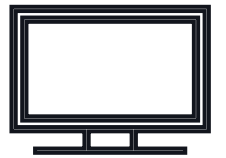
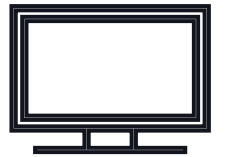
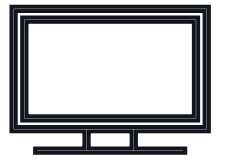


Encoding, packaging and encryption

Terrestrial TV broadcast network

Vertical inflexible pipes, dedicated networks

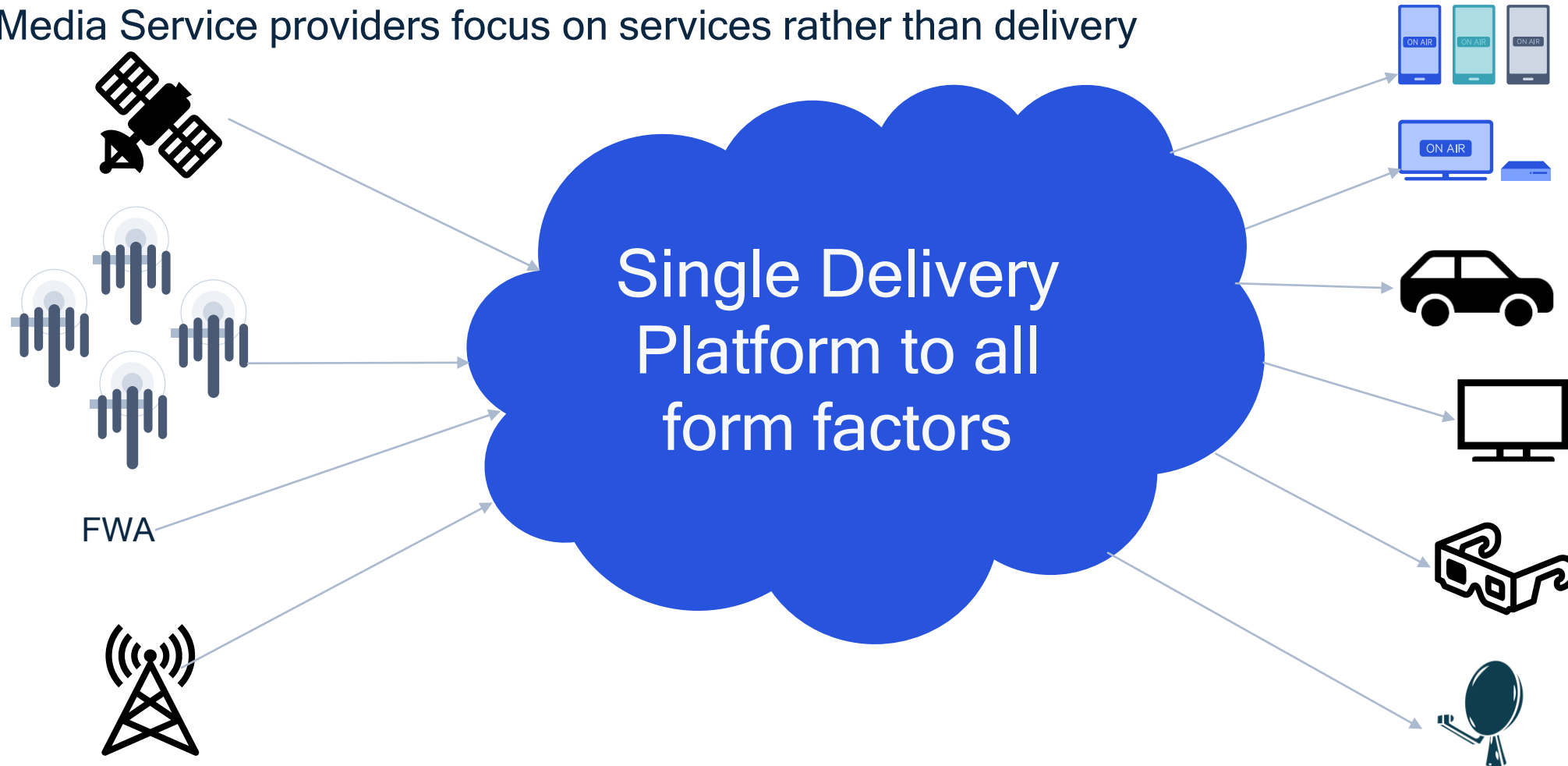
Cable TV broadcast network



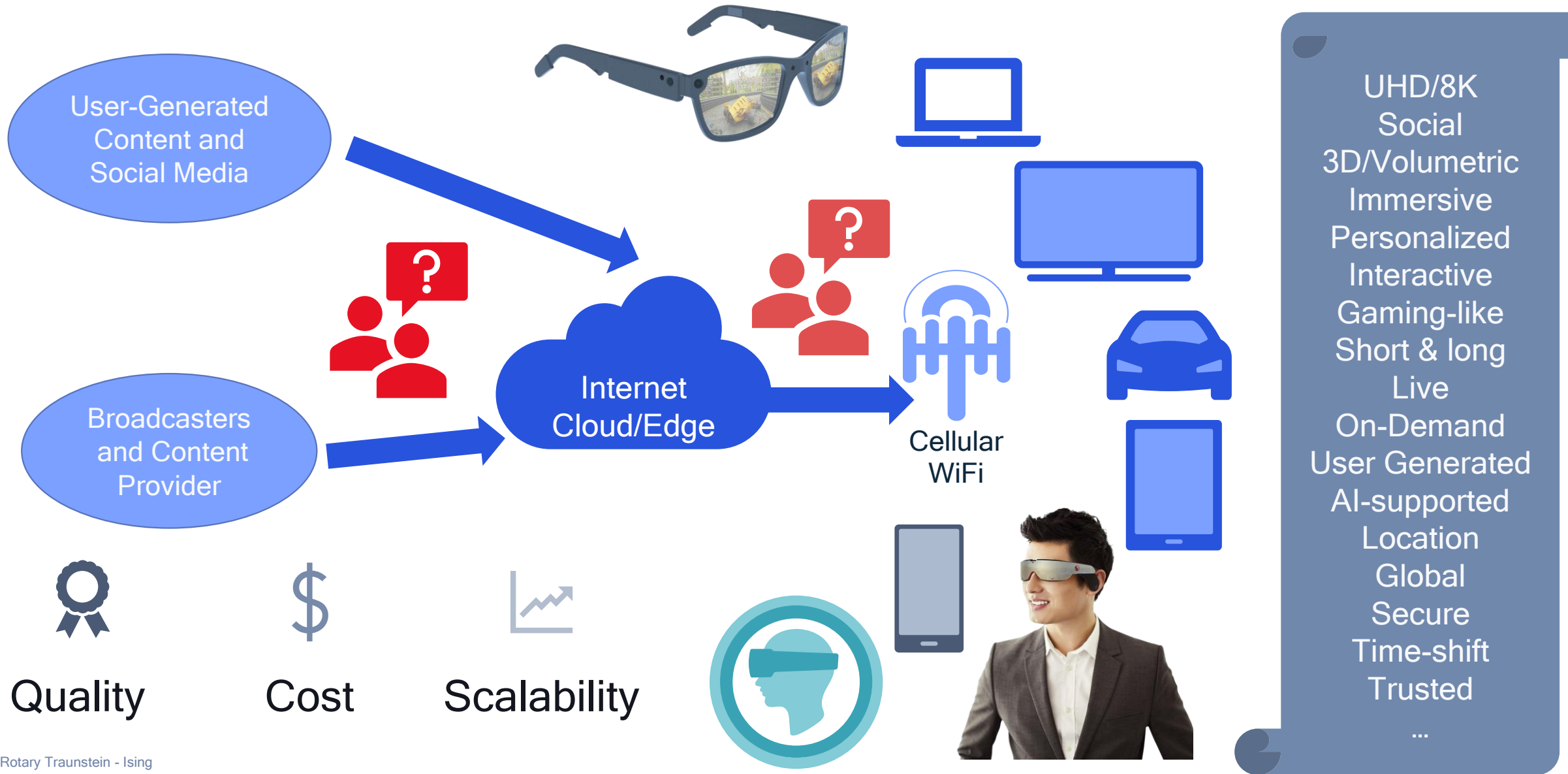
# Qualcomm in the TV and Media Domain

Continue and accelerate the integration of Media Verticals to global delivery platform - economy of scale

- Unified technology - many emitters can access many devices
- Media Service providers focus on services rather than delivery

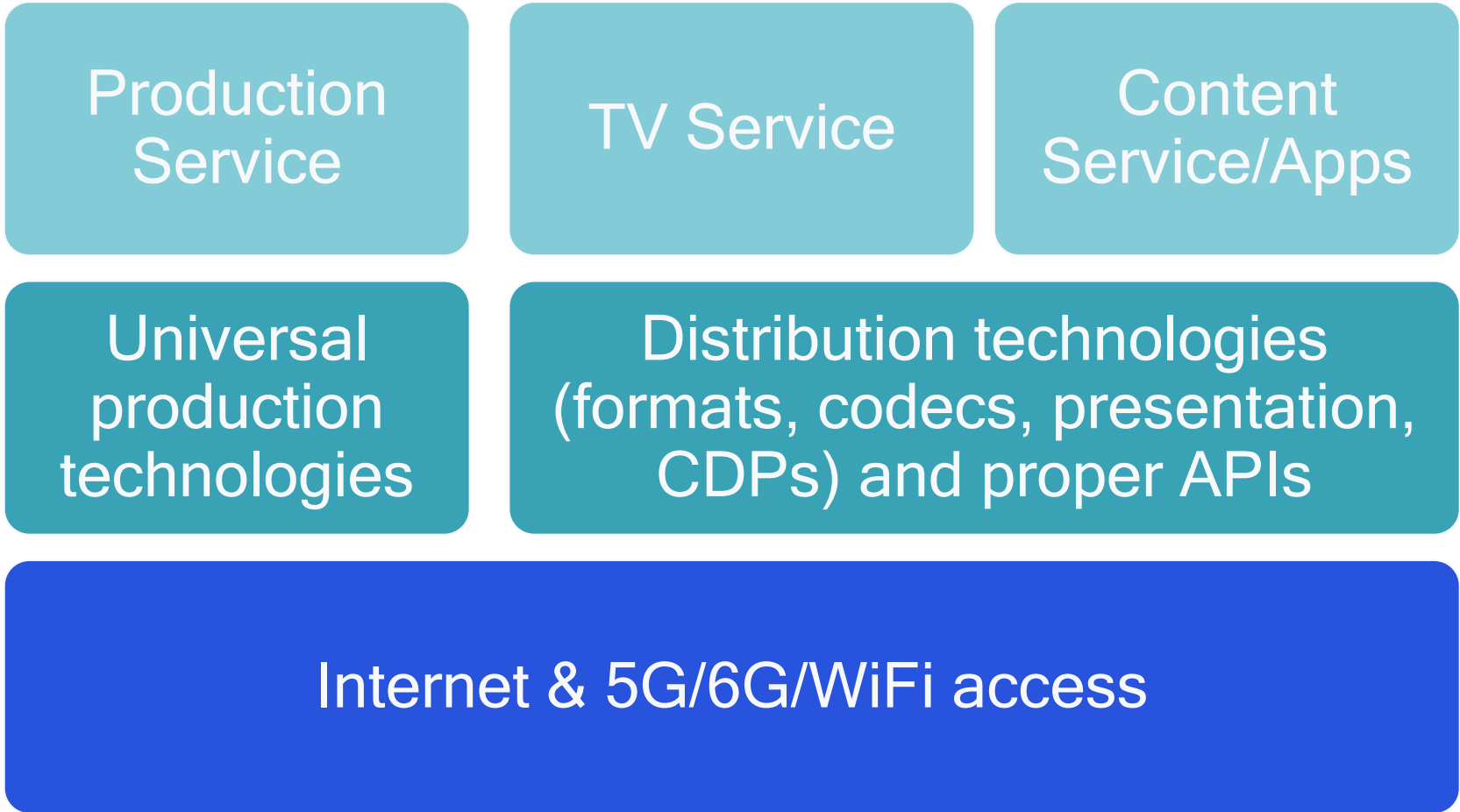


# The new world of Media and Broadcasters: Devices, Formats, Users



# A viable approach for Media Providers and Broadcasters

Focus on services - rely on global media and access technologies

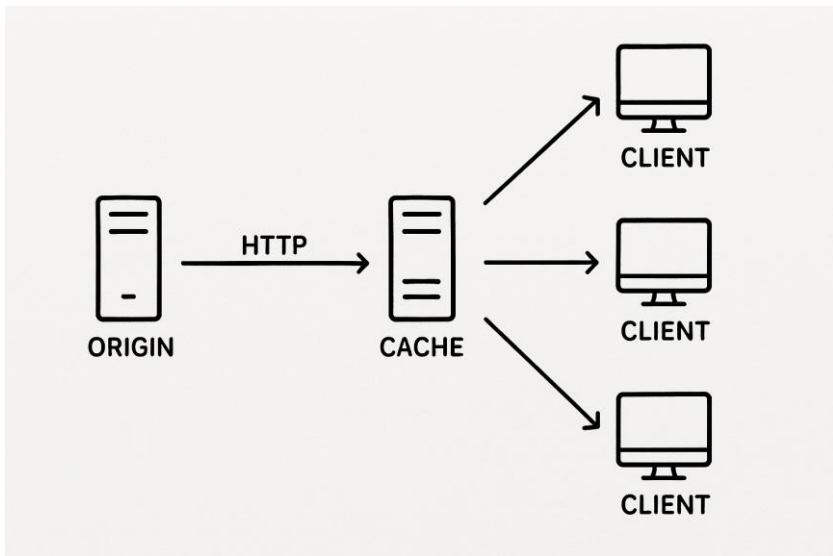


## Example Standards



# Traffic on the Akamai network over the past 10 years

Content Delivery Networks (CDNs) use a globally distributed network of "edge servers/caches" to store and deliver HTTP-based objects—such as images, videos, scripts, and HTML files—closer to end users. By reducing the physical distance between the requester and the data, CDNs minimize latency and offload traffic from the central origin server.



# Traffic grows, but software & gaming downloads cause peaks, not streaming

## Why gaming & software downloads?

- Concurrent and often global demand.
- One 90min football game at 16Mbps HEVC 4K is ~11GB
- One gaming download is 4x – 20x larger

Sporting events traffic peaks are now measured in terabits per seconds, volumes in petabytes. Increase in resolution offsets more efficient codecs.

Superbowl 2023 for > 60Tbps . That is greater than entire Akamai capacity just 5 years ago.

### List of the largest games by file size

- 275 GB: ARK: Survival Evolved with all the DLCs.
- 231 GB: Call of Duty: Modern Warfare.
- 178 GB: Quantum Break.
- 165 GB: Destiny 2: ShadowKeep.
- 165 GB: Call of Duty Black Ops: Cold War.
- 150 GB: Red Dead Redemption 2.
- 150 GB: Final Fantasy XV.
- 149 GB: Hitman 2.

How does OTT keep growing?

Traffic has grown an average of 29% per annum over past 22 years

June 2001

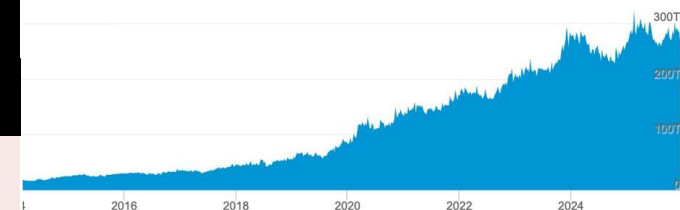
October 2017

April 2022

1 Gbps

715 Gbps

250Tbps



# Access and Distribution Technologies

Two tracks: Brute force and smart technologies

Addition of p2p, multicast and broadcast to CDN distribution

- More to come later, e.g. 5G Broadcast

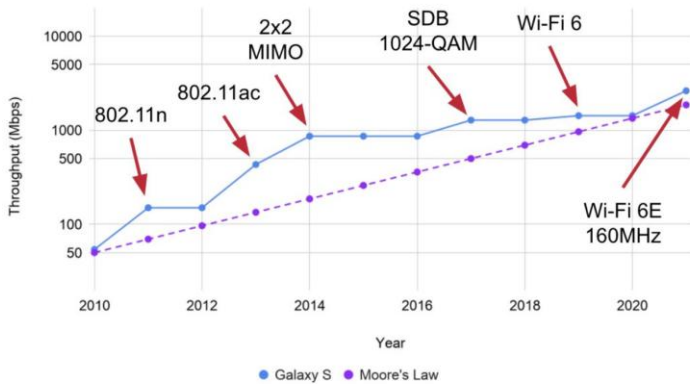
More efficient codecs

- Coding gains of 50% every 10 years

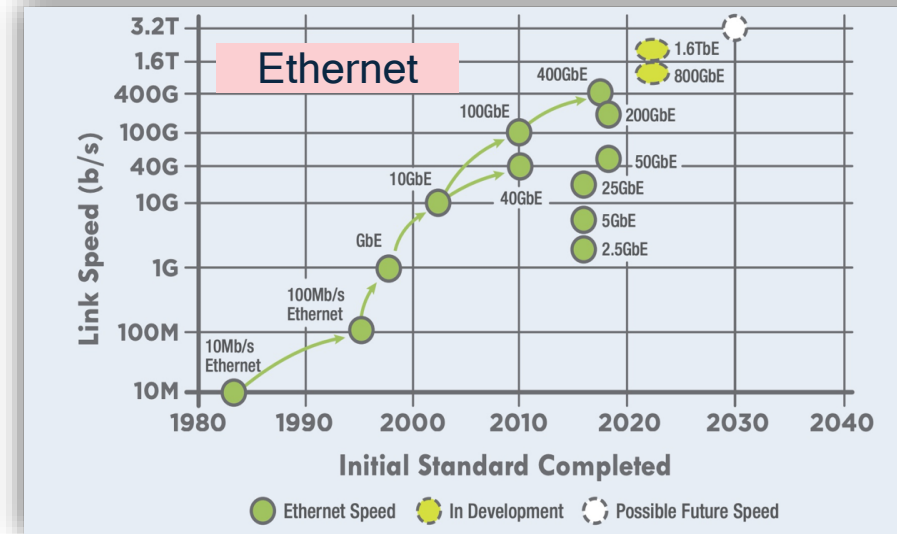
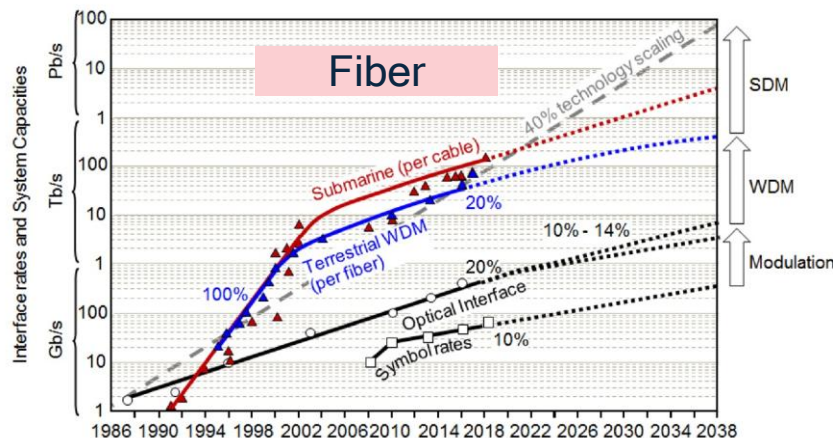
Brute force (the same way we got here)

- Access networks double bitrate every 2-5 years

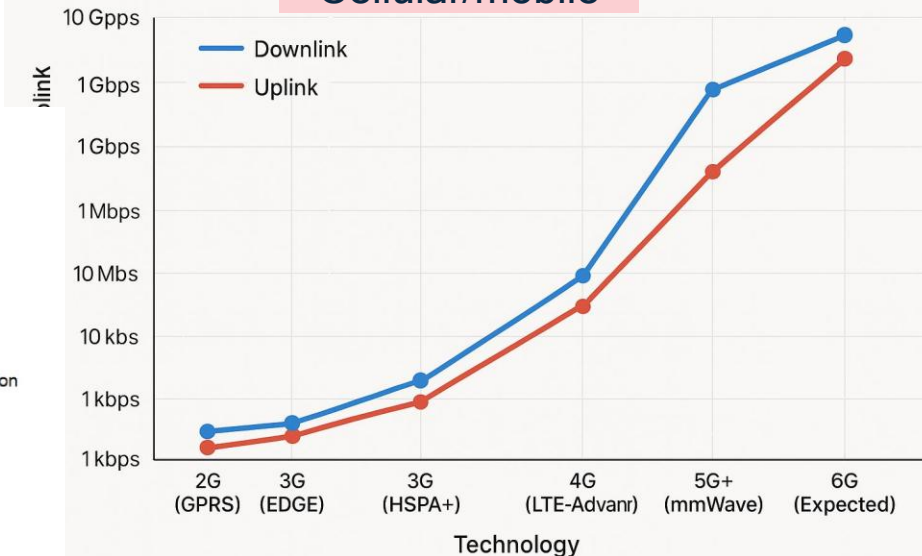
## WiFi



Above: Moore's Law (purple) plotted together with the evolution in Wi-Fi throughput for the Samsung Galaxy phone series for the past 10 years. Graph courtesy Gabriel Desjardins, Director Wireless Connectivity at Broadcom.



## Cellular/mobile

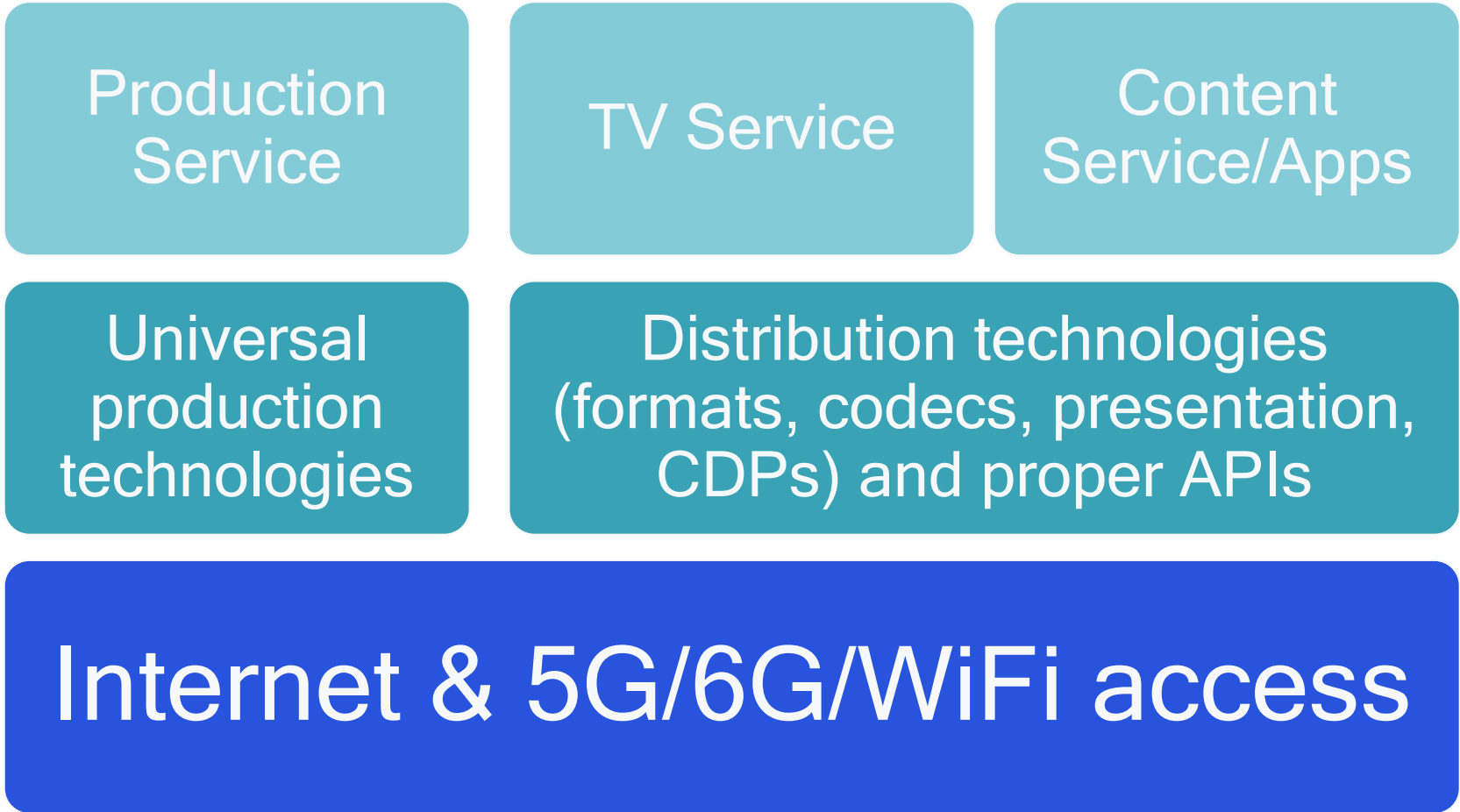


# Foundational Technologies

How to deliver video over the Internet?

# A viable approach for Media Providers and Broadcasters

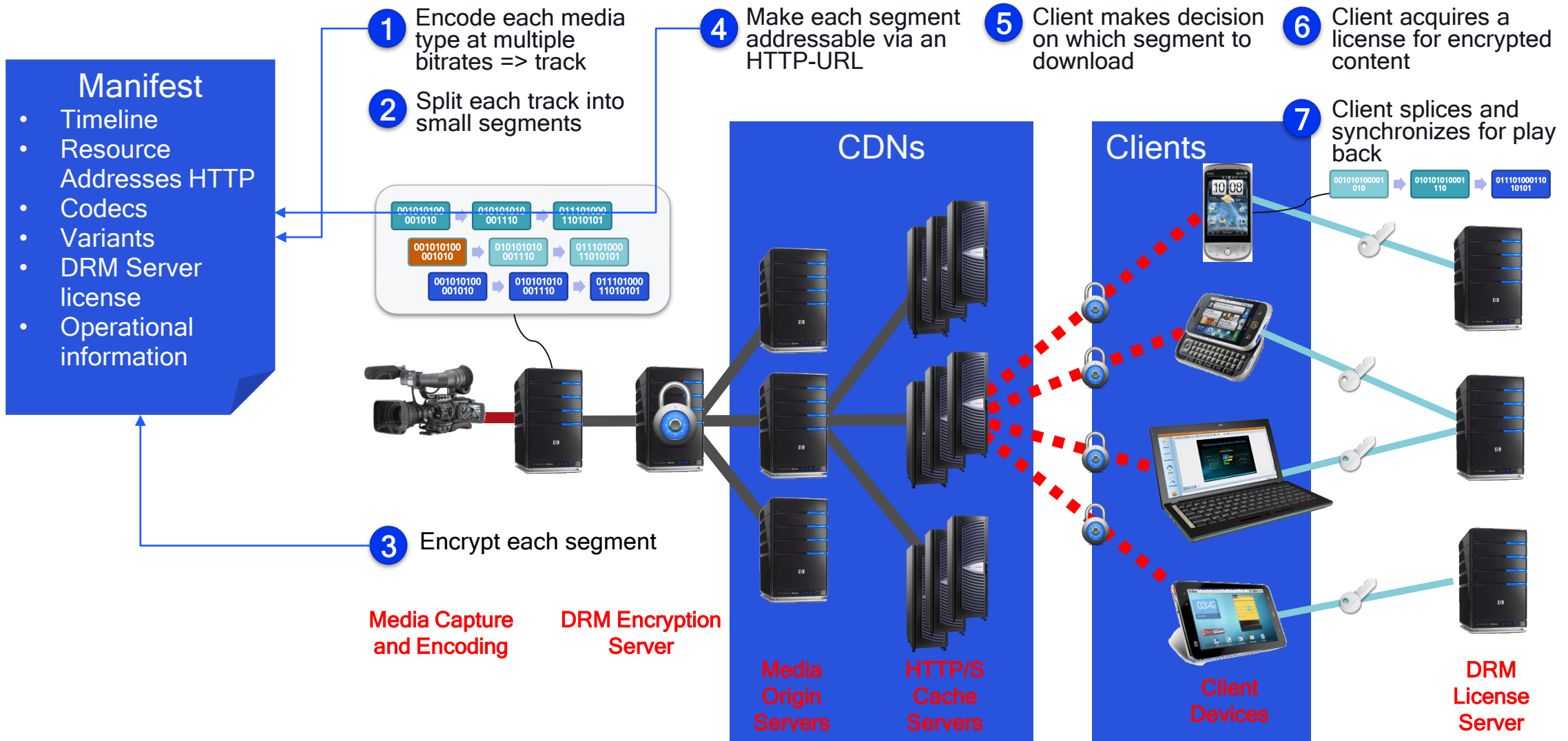
Focus on services - rely on global media and access technologies



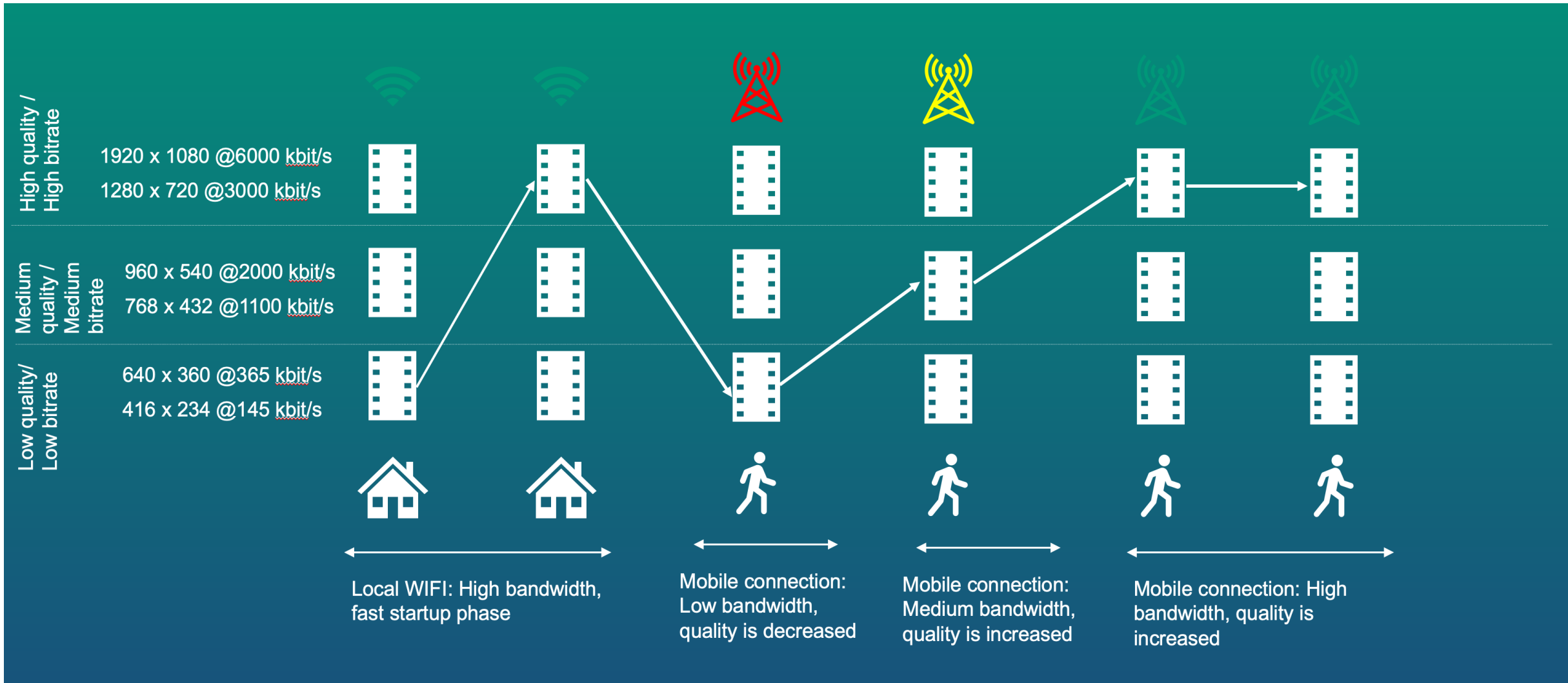
## Example Standards



# Content Delivery Protocol - Adaptive HTTP Streaming



# Principle operation



# DASH Standard - Editions, Parts and Editors

1	2011	ISO/IEC 23009-1 Media Presentation Description and Segment Formats	<b>Thomas Stockhammer</b> and Per Fröjdh
1	2012	ISO/IEC 23009-1:201x 2 <sup>nd</sup> edition	<b>Thomas Stockhammer</b> , Per Fröjdh
1	2013	ISO/IEC 23009-1:2014 AMD 1 Extended profiles and time synchronization	<b>Thomas Stockhammer</b> , Alex Giladi
1	2014	23009-1:2014 AMD 2 Spatial Relationship Description, Generalized URL parameters and other extensions	Emmanuel Thomas, Sylvain Kervadec, Cyril Concolato
1	2014	23009-1:2014 AMD 3 Authentication, Access Control and multiple MPDs	<b>Thomas Stockhammer</b> , Alexander Giladi
1	2014	23009-1:2014 AMD 4 Segment Independent SAP Signalling, MPD chaining and other extensions	<b>Thomas Stockhammer</b> , Iraj Sodagar, Alex Giladi
1	2015	23009-1 3 <sup>rd</sup> edition Media presentation description and segment formats	<b>Thomas Stockhammer</b>
1	2016	23009-1 3 <sup>rd</sup> edition AMD 1 on device information and other extension	Ali C. Begen, <b>Thomas Stockhammer</b>
1	2019	23009-1 4 <sup>th</sup> edition	
1	2020	23009-1 4 <sup>th</sup> edition AMD 1 CMAF support, events processing model and other extensions	Iraj Sodagar, <b>Thomas Stockhammer</b> , Mike Dolan
<b>1</b>	<b>2022</b>	<b>23009-1 5<sup>th</sup> edition</b>	<b>Thomas Stockhammer</b> , Mike Dolan
2	2012	ISO/IEC 23009-2 DASH Conformance and reference software	<b>Thomas Stockhammer</b> and Christian Timmerer
2	2017	23009-2 2 <sup>nd</sup> edition DASH Conformance and reference software	Christian Timmerer, Waqar Zia, Brendan Long
2	2017	23009-2 AMD 1 Conformance vectors and reference software for SRD, SAND and Server Push	Emmanuel Thomas
2	2020	23009-2 3 <sup>rd</sup> edition	
3	2012	23009-3 DASH Implementation Guidelines	Yuriy Reznik, Kilroy Hughes, <b>Thomas Stockhammer</b>
3	2014	23009-3 2 <sup>nd</sup> edition DASH Implementation Guidelines	<b>Thomas Stockhammer</b> , Alex Giladi
3	2014	23009-3 2 <sup>nd</sup> edition AMD 1 DASH Implementation Guidelines	Iraj Sodagar
3	2015	23009-3 3 <sup>rd</sup> edition DASH Implementation Guidelines	Ali C. Begen
4	2013	ISO/IEC 23009-4 Segment encryption and authentication	Alex Giladi
4	2018	23009-4 2 <sup>nd</sup> edition Segment encryption and authentication	Alex Giladi and Yasser Syed
5	2017	23009-5 Server and Network Assisted DASH	Mary-Luc Champel, Emmanuel Thomas
5	2020	23009-5 AMD 1 Improvements on SAND messages	Mary-Luc Champel
6	2017	23009-6 DASH with Server Push and WebSockets	Viswanathan (Vishy) Swaminathan, Kevin Streeter, <b>Imed Bouzazi</b> , and Franck Denoual
7	2023	23009-7 Delivery of CMAF contents with DASH	Iraj Sodagar
8	2020	23009-8 Session based DASH operation	Ali C. Begen, Iraj Sodagar, Alex Giladi
8	2022	23009-8 AMD 1 URL customization other extensions	Iraj Sodagar

# Core Principles of DASH - executed in DASH-IF

## CHARTER MEMBERS



## CONTRIBUTOR MEMBERS



## ASSOCIATE MEMBERS



CDN and Cache friendly

Stateless Server & Client-Driven

Works with DRM/Encryption

Low manifest traffic (small size and low update frequency)

Carrying ISO BMFF/MP4

Late Binding

Works with HTML-5 and MSE

HLS Convergence

Live and On-Demand

# Dynamic Adaptive Streaming over HTTP (DASH) for MPEG and 3GPP

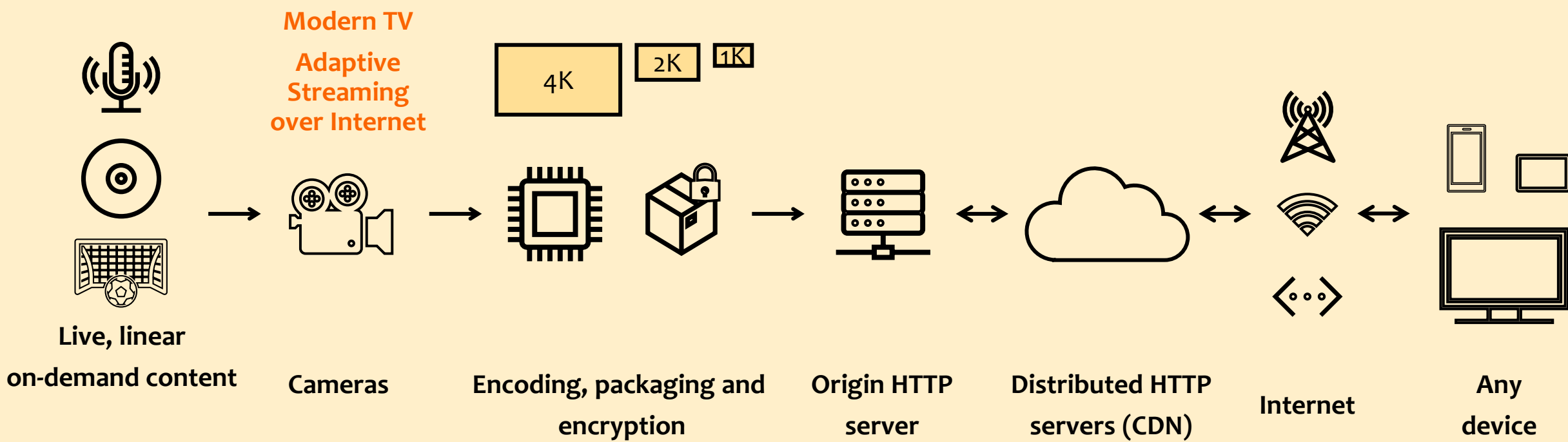
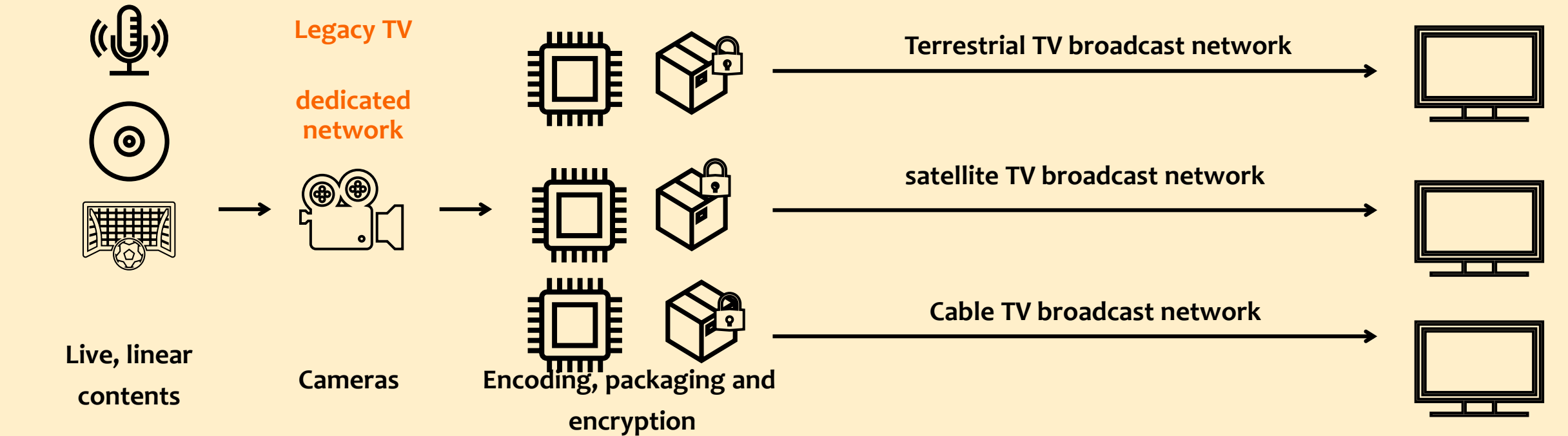


# April 2022 – Las Vegas

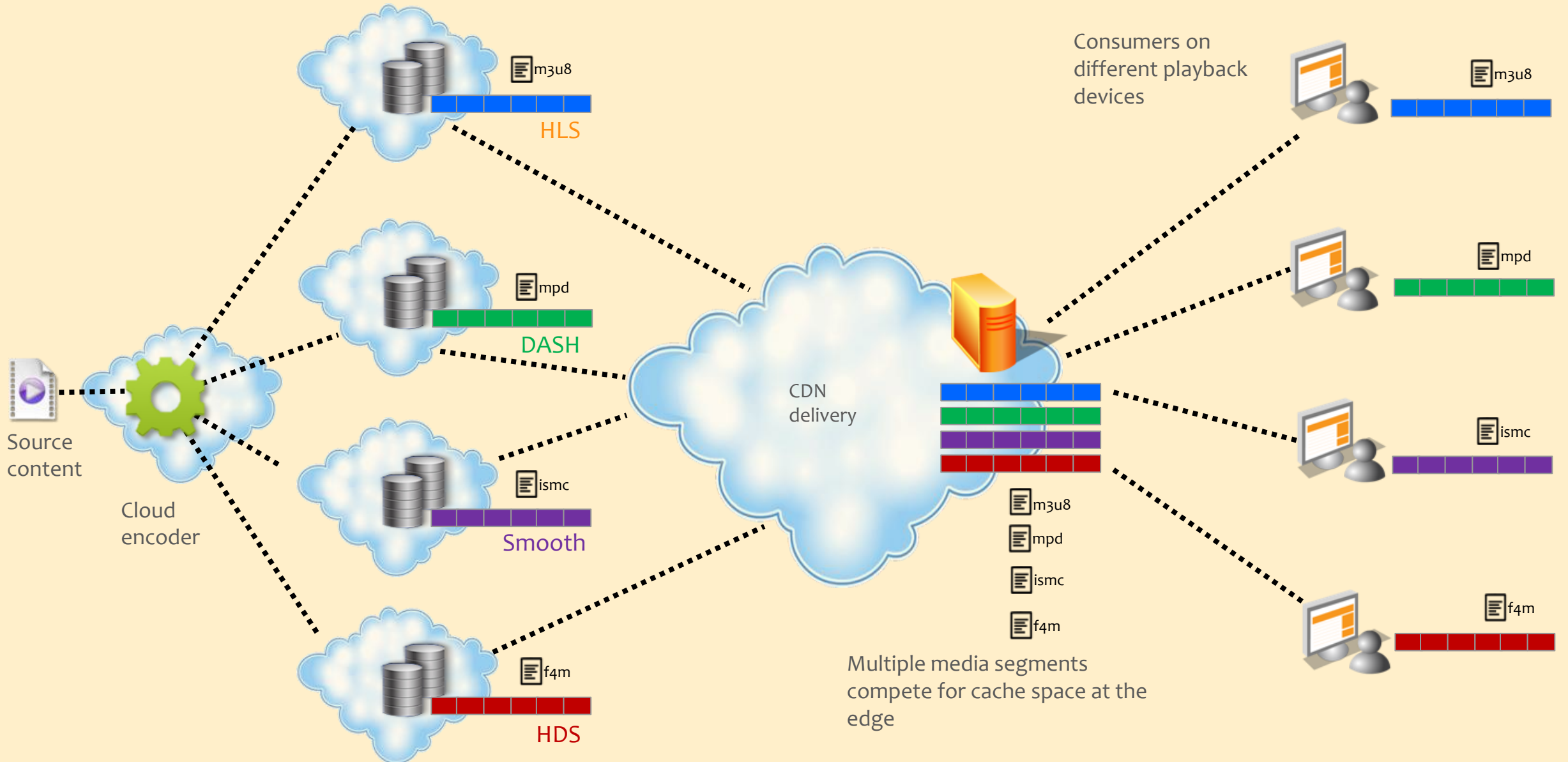


# CMAF

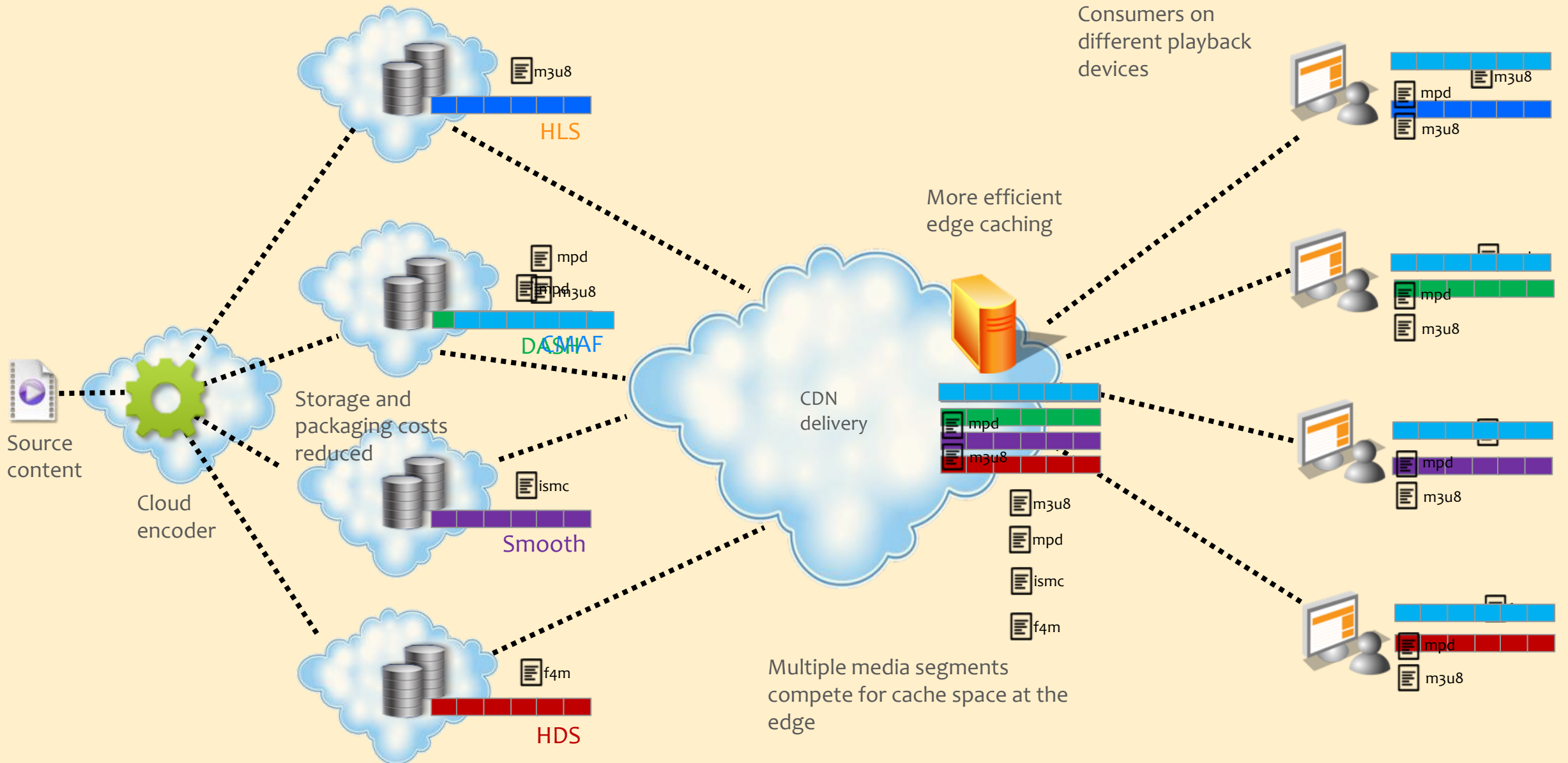
A commercially driven evolution of ABR Streaming



# Adaptive Streaming up to 2016



# Adaptive Streaming with ISO/IEC 23000-19: CMAF



# Standardization of Common Media Application Format (CMAF)



# December 2025 – New York



# We have technically democratized TV

... but it is for a the better or the worse?

# Trends resulting from the new technology enablers

## 1. Linear → Streaming / On-Demand

- Streaming surpassed **linear TV viewing** (~2025)
- ~45-47% of TV time now streaming vs. declining broadcast/cable. Viewer control replaces fixed programming schedules
- 👉 **Shift:** *Schedule → User control*

## 2. Cord-Cutting & OTT Dominance

- Pay TV penetration fell from ~88% to <50%
- ~80M+ households moving to non-pay TV [[wifitalents.com](http://wifitalents.com)]
- Streaming now exceeds **combined cable + broadcast viewing**
- 👉 **Shift:** *Bundled distribution → Internet delivery*

## 3. Explosion of On-Demand & Subscriptions

- VoD market growing ~10-11% CAGR globally
- Households subscribe to **multiple platforms (2-4 typical)**
- Content becomes **always available across devices**
- 👉 **Shift:** *Scarcity → Infinite library*

## 4. Hybrid Monetization Models

- Rise of **AVOD + SVOD combinations**
- Majority of viewing still **ad-supported (~70%+)**
- Subscription fatigue drives lower-cost ad tiers
- 👉 **Shift:** *Pure models → Hybrid revenue stacks*

## 5. Advertising: Linear → CTV / Digital Video

- Digital video ad spend **exceeds linear TV** (~2024)
- Linear TV ad spend down ~27% over decade
- Growth in **connected TV (CTV)** and OTT advertising
- 👉 **Shift:** *Mass reach → Measurable digital TV*

## 6. Targeting & Addressable Advertising

- Ads delivered at **household level using data**
- Enables **precision segmentation + personalization**
- Increasing adoption across advertisers
- 👉 **Shift:** *Broadcast → Data-driven targeting*

## 7. Short-Form Video Disruption

- ~63% of users consume short-form video daily
- TikTok/Shorts drive **algorithmic content discovery**
- Strong shift among younger audiences
- 👉 **Shift:** *Long-form viewing → Snackable formats*

## 8. Search & Recommendation-Driven Consumption

- Content discovery increasingly **algorithm-driven, not schedule or channel-based**
- Platforms use **AI/behavioral data to surface content**
- Short-form and streaming platforms excel at **predictive recommendations**
- 👉 **Shift:** *Browsing channels → Being "served" content*

## 9. Device Shift: TV Screen No Longer Dominant

- Strong growth of **mobile and multi-device viewing**
- Smartphones account for a large share of streaming usage
- Social/short-form platforms become **"new TV screens" for younger users**
- 👉 **Shift:** *Living room TV → Multi-screen / mobile-first*

## 10. Sports Rights Transformation

- Sports used as **key driver for streaming subscriptions**
- Increasing shift of rights to **streaming platforms**
- Complemented by **short-form highlights and social distribution**
- 👉 **Shift:** *Broadcast monopoly → Multi-platform ecosystem*

# But we actually created even more monopoly - the FAANGs!

... so let's do more ... DVB-I, 5G Broadcast, EUTube

... but you need to learn to be patient in good old Europe

# DVB-I - a modern TV service layer

<https://dvb-i.tv/>

- Use case idea:

- A consumer buys a TV Set in the retail store and connects it to Ethernet/WiFi
- It finds in the configuration whether an Broadband TV channel lineup should be created (DVB-I services)
- It selects it and the TV set adds the Broadband channels in the channel lineup as DVB services
- Such services are accessed DVB-DASH
- The consumer does not differentiate whether the channel comes through broadband or other DVB means
- The consumer observes the same quality in terms of latency and channel line-up
- The consumer can get new experiences on these channels

## Germany defines framework for DVB-I rollout

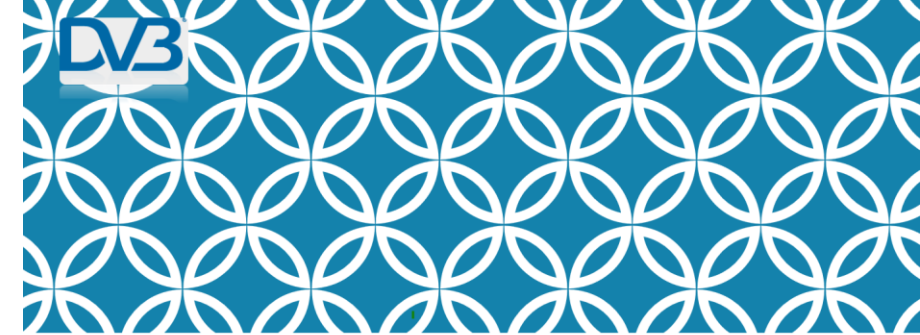
MARCH 19, 2026 20:55 EUROPE/LONDON BY JÖRN KRIEGER



Deutsche TV-Plattform (DTVP) has released the first DVB-I Implementation Profile for Germany, marking a significant step towards the market introduction of DVB-I services in the country.

According to the industry organisation, the document is the result of a two-year development process led by the DTVP Task Force DVB-I under

the Chairmanship of Frank Heineberg (RTL Deutschland) and Remo Vogel (rbb/ARD), working in close cooperation with the industry forum Round Table DVB-I.



## DISCUSSION ON DVB-I SERVICES

Dr. Thomas Stockhammer  
Qualcomm Incorporated  
October 5, 2017



# 5G Broadcast - re-using infrastructure

## Motivation for broadcasters

- Reach new audiences (mobile-first consumption)
- Efficient delivery of mass live content
- Leverage the 5G ecosystem (device + chipset reuse)
- Enable new services and revenue models
- Gradual migration and protection of existing investments
- Spectrum and infrastructure efficiency
- Convergence with IP and mobile services

2017

Thomas Stockhammer

SA4 - Codec



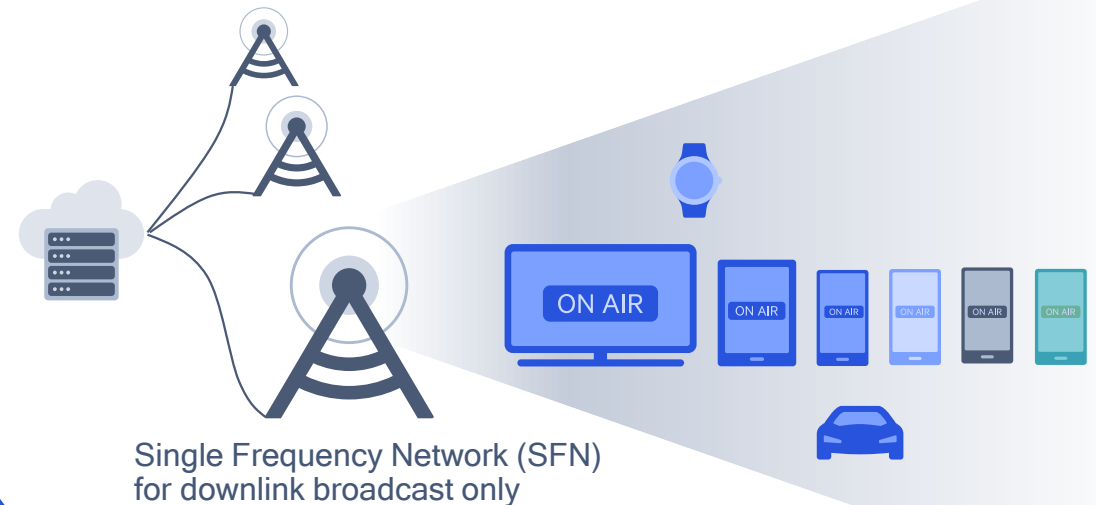
"It is a pleasure that you receive this award for the excellent contribution and leadership you demonstrated in achieving Rel-14 Enhanced Television Services over 3GPP eMBMS.

You have provided technical inputs, given support for the work to progress and – at the same time – made sure the 3GPP status and progress was understood by broadcasters."

*Frédéric Gabin, Chair 3GPP SA Working Group 4*

## 5G broadcast

- Broadcast spectrum (e.g. **UHF**)
- No unicast. **Downlink – only** traffic.
- Delivery of linear content (e.g. TV) or IP file delivery
- Dedicated broadcast infrastructure (can be **high power**)



# Status

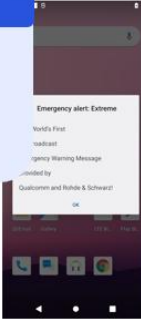
## Linear TV and Radio

- One-way communication directly to handsets
- More cost efficient than unicast (RAN and CDN)
- Live sports, special events, general programming
- Key for massive events (e.g. World Cup)



## Emergency messages

- Emergency notifications to smartphones from broadcast infrastructure.
- Possibility of sending text-only notifications and multimedia content



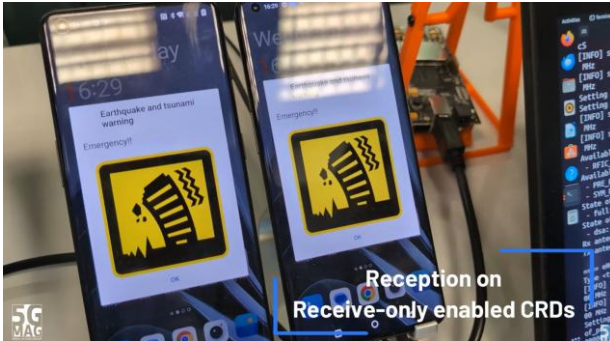
## Interactive media

- Combine linear video with interactivity.
- Linear content from broadcaster, unicast using mobile network.
- Comments, ratings, e-commerce, advertising



## General file download

- Software / firmware upgrades.
- Download and storage of popular content:
  - TV shows
  - "Viral" videos in social media.



## FUTURE MEDIA TOWNHALL

INSIGHTS FROM AND FOR THE MEDIA INDUSTRY



## 5G Broadcast - Ready for launch?

Where: Main IBC Conference Center Room E102  
When: Saturday, September 13, 12:15 - 13:00

#FMT

## Multi-Player Business Model



FUTURE MEDIA TOWNHALL  
INSIGHTS FROM AND FOR THE MEDIA INDUSTRY

## 5G Broadcast - Ready for launch?

Where: Main IBC Conference Center Room E102  
When: Saturday, September 13, 12:15 - 13:00

9/25/2025



EUTuBe

<https://eutube.tv>

**Thomas Stockhammer**

Senior Director Technical Standards, Qualcomm Incorporated

**March 19, 2026 – Unconference Session**

# What is EUTuBe

- A global open platform that performs five core functions:
  - Ingest videos from creators (UCG and professional, live and on-demand)
  - Process & store videos at massive scale
  - Distribute video efficiently to viewers worldwide
  - Discover & recommend relevant content
  - Monetize & govern content (for example including public media fees)
- All of this is built with EU values, is open, is built on standards potentially from DVB and related orgs

# What differentiates EUTuBe from YouTube?

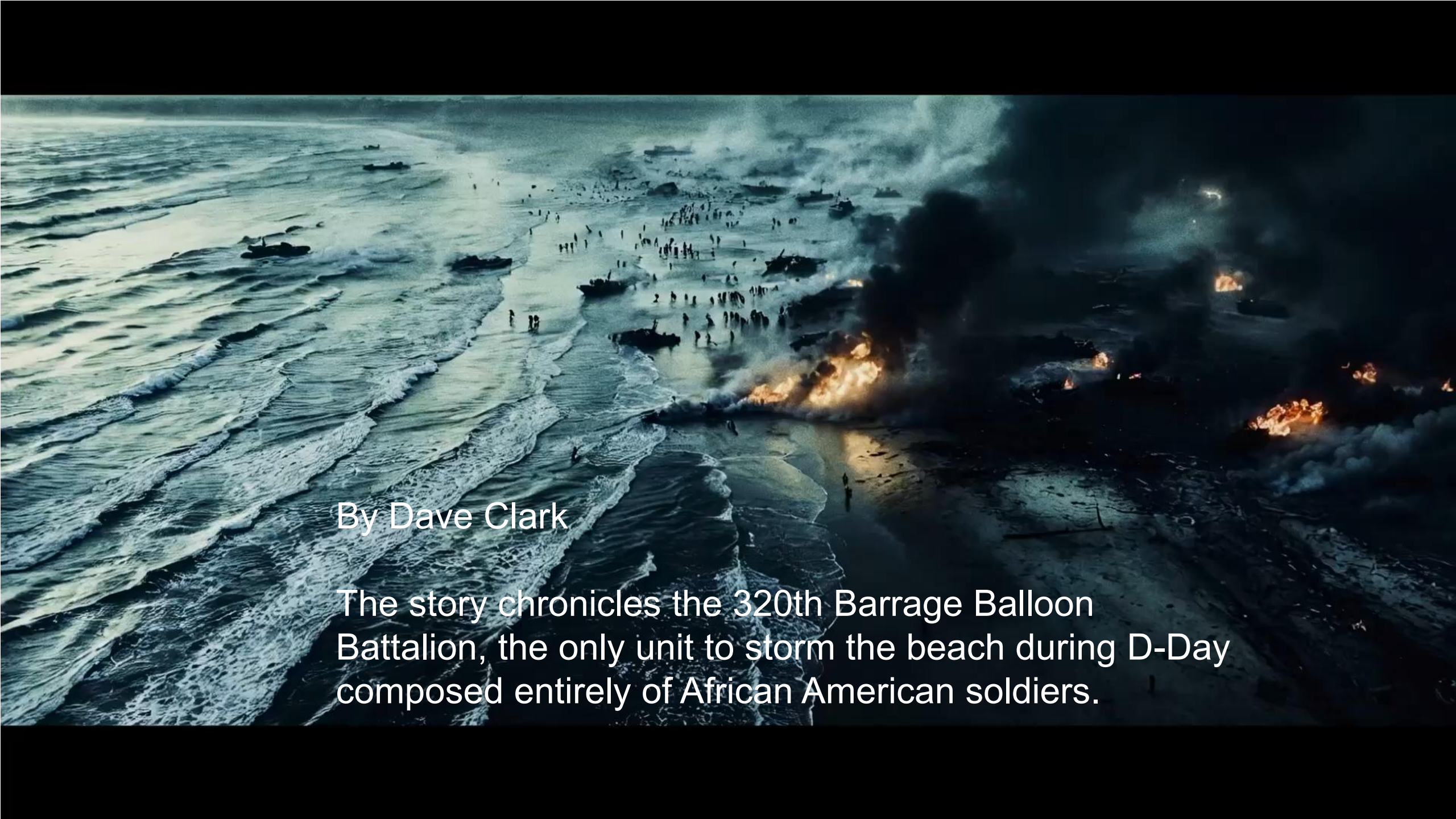
YouTube's most questioned aspects in a European context cluster around:

- Algorithmic power vs. media pluralism
- Commercial optimization vs. cultural diversity
- Data exploitation vs. privacy rights
- Platform governance vs. democratic accountability
- Market dominance vs. fair competition
- Global moderation rules vs. European constitutional traditions
- Closed ecosystem vs. open-source community

**EUTuBe must not pre-overregulated platform**

# Does AI change everything?

I strongly believe so - and it could be for the worse or the better, our choice!



By Dave Clark

The story chronicles the 320th Barrage Balloon Battalion, the only unit to storm the beach during D-Day composed entirely of African American soldiers.

## **Saving Private Ryan**

The opening Omaha Beach battle was the most demanding scene, costing \$12 million to film over a four-week period, and using 1,500 background actors.

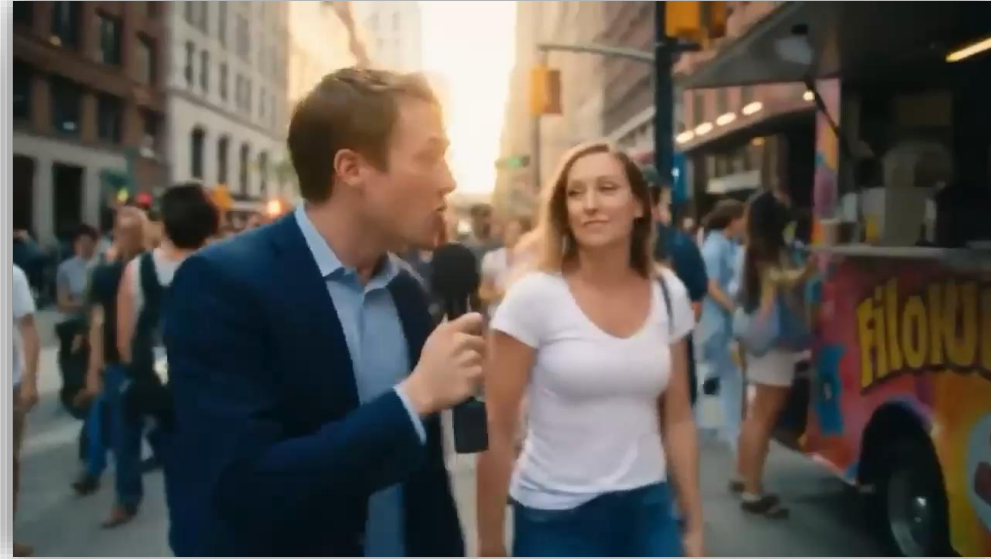
## **Battalion**

Made with Google Flow/Veo for ~\$250/month. That is 60,000x cheaper.

Google Flow, the AI video tool transforming video creation with text prompts, cinematic quality, and seamless storytelling for creators.

No actors. No extras. No Sets. No cameras. No encoders

# Social media moving quickly to synthesized content



Experience the Edge

# The Disruptive force of Synthesized video

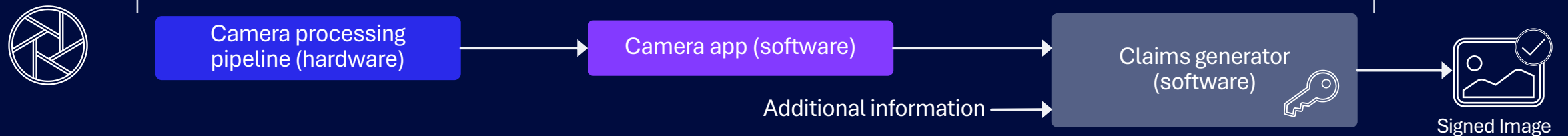
- Highly addictive, because it can be targeted to an individual's tastes
- Bypasses the traditional production, encoding and content preparation workflows
- It is distributed by a very small number of companies, using private networks – Facebook, TikTok, Instagram, YouTube etc.
- We can contemplate a future in which video we want to watch is made for us on-demand.
  - No more searching through catalogs.
  - Just instant gratification using edge compute and an internet connection.

# Media Authentication

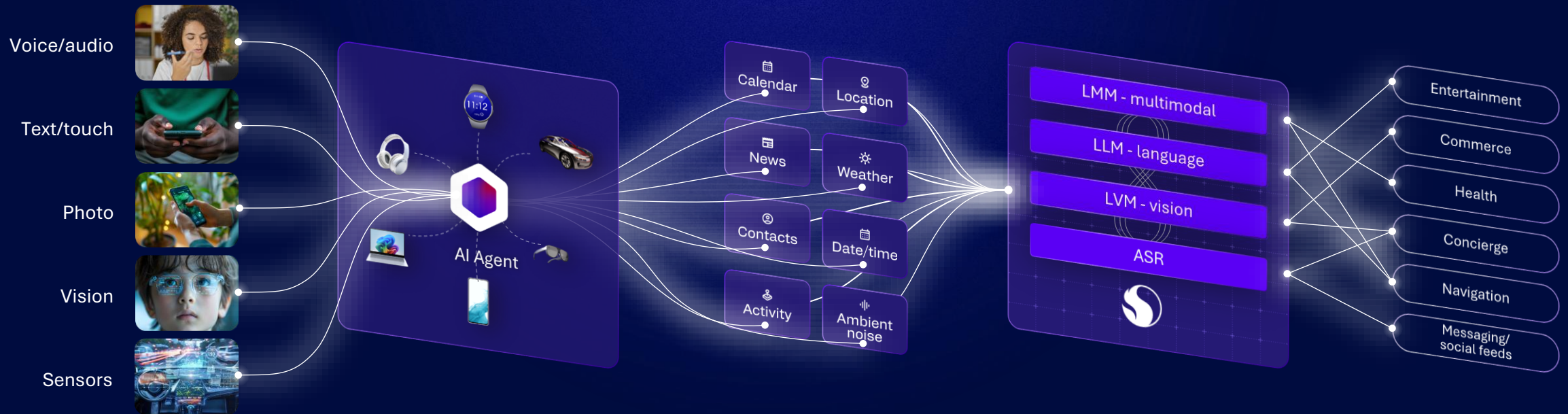
- Relevant for global brands and user-generated content
- Active research work



**Goal: trustworthy (beyond high-level OS) sensor-to-signed-media path  
(assertions creation & claim signing)**



# AI is the new UI



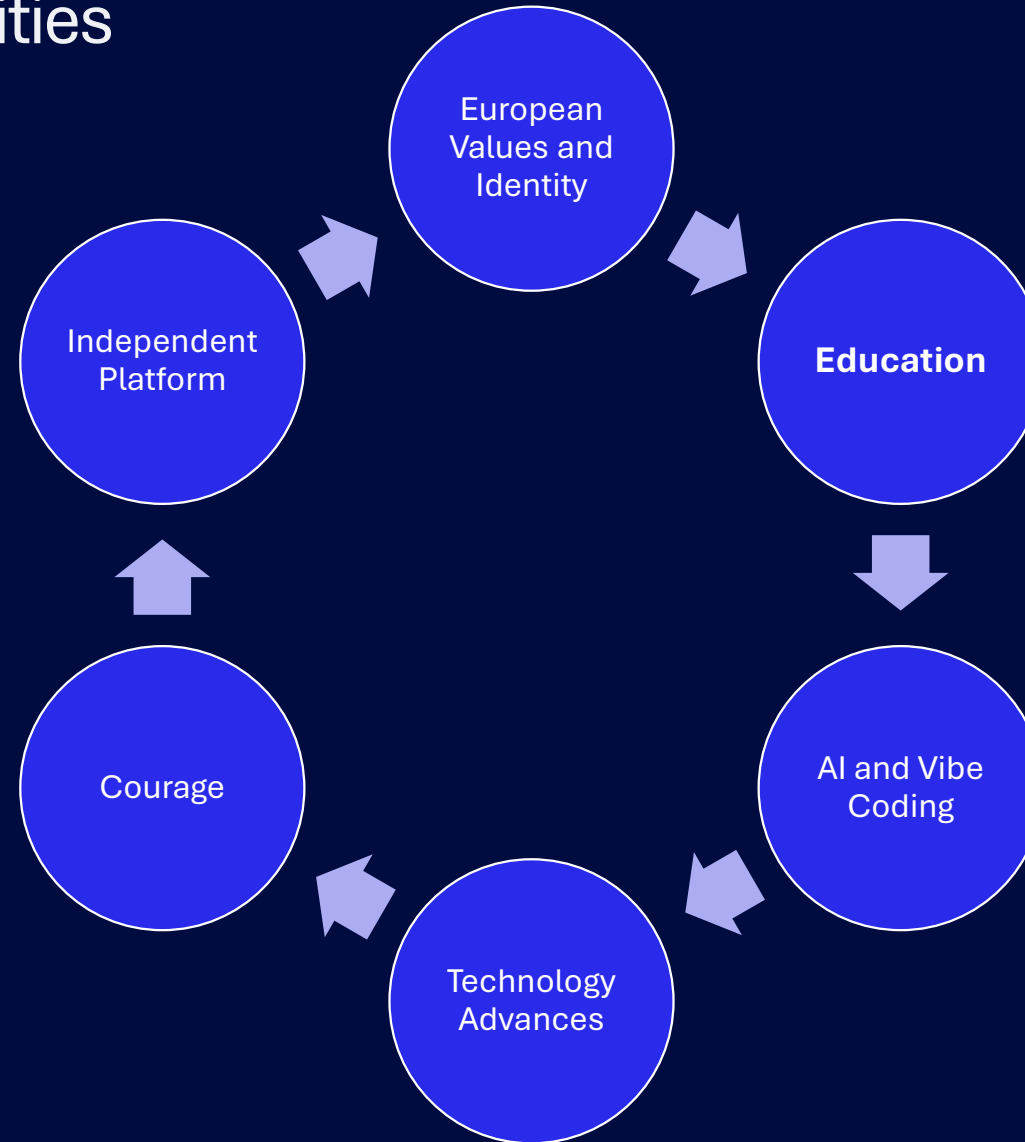
# Value is created at the edge

6G and advanced wireless technologies are key to unlocking AI's full economic potential



Connected AI and compute enable new use cases for the merging physical, digital, and virtual worlds

# Vision – lot's of opportunities



# Thank you

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