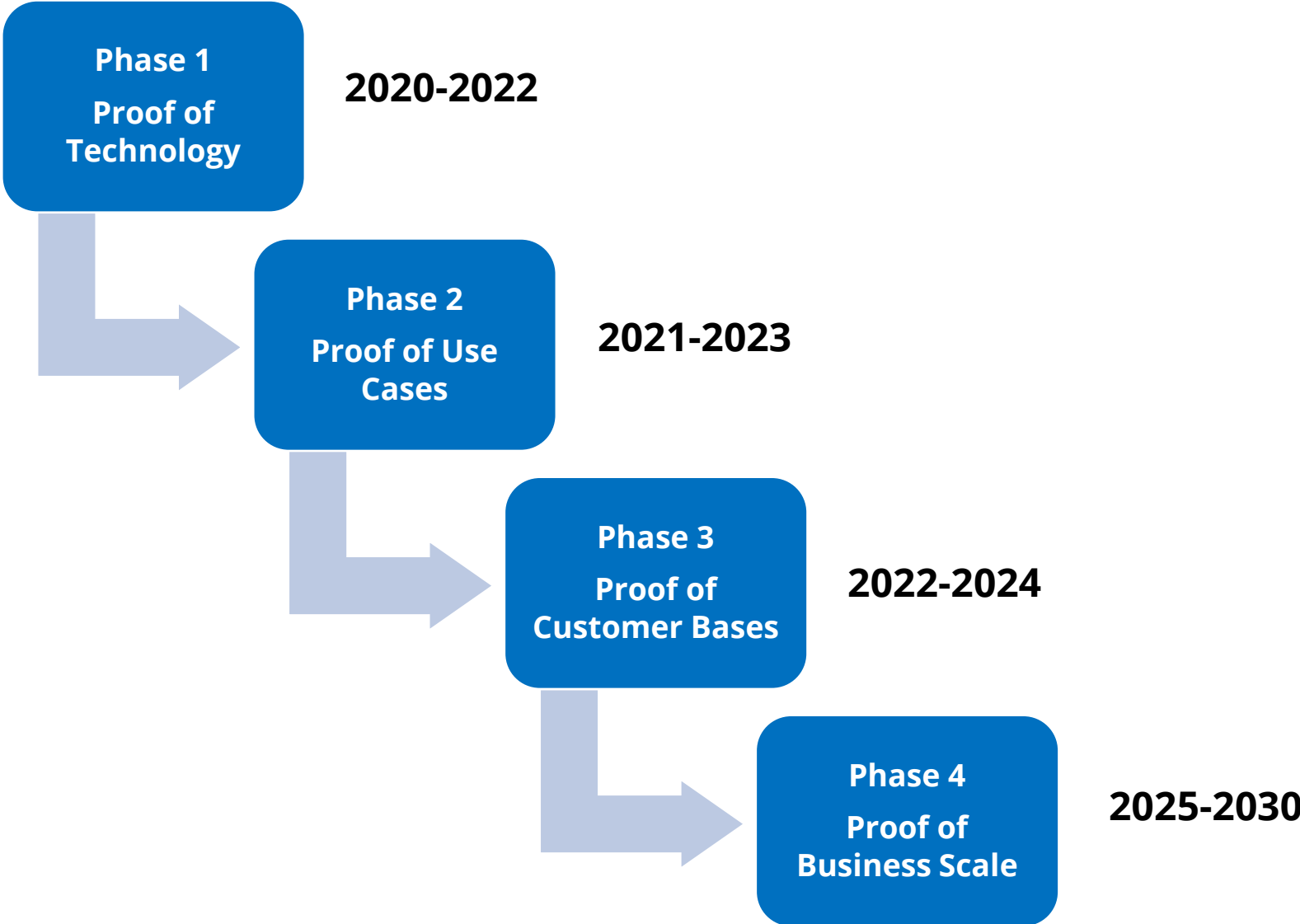# NextGen TV Non-Core Datacasting Revenue Forecast

Rick Ducey, Managing Director
Mark Fratrik, Ph.D., SVP/Chief Economist
BIA Advisory Services

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# Topics

- NextGen TV Datacast Evolution
- Innovators and Ecosystem
- Target Segments and Business Models
- Revenue Forecast: Non-Core and Core Takeaways

# Evolution in the NextGen TV Datacast Marketplace

**Phase 1**
**Proof of Technology**

**2020-2022**

**Phase 2**
**Proof of Use Cases**

**2021-2023**

**Phase 3**
**Proof of Customer Bases**

**2022-2024**

**Phase 4**
**Proof of Business Scale**

**2025-2030**

# NextGen TV Datacasting Business Evolution Phases

Each phase must achieve key proof points to progress to the next phase.

| Phase | Examples |
|---|---|
| 1. Proof of Technology (2020-2022) | • Evolving ecosystem: ATSC 1.0 → ATSC 3.0<br>• Data capacity<br>• Quality assurance/SLAs<br>• SFNs/DTS<br>• Multi-transmitter hand-offs<br>• Fixed and mobile |
| 2. Proof of Use Cases (2021-2023) | • Public safety<br>• Education<br>• Digital signage |
| 3. Proof of Customer Bases (2022-2024) | • ATSC 1.0 adoption provides guidance<br>• Evolution from demos and pilots to products |
| 4. Proof of Business Scale (2025-2030) | • Business models and metrics – USP, TAM, ROI<br>• Sustainable, scalable revenue |

# Target Segments for NextGen TV Datacasting Services

## Examples: Leveraging NextGen TV Core Capabilities for IP Data. Streaming, CDN

| Market Segment | Use Case Examples |
|---|---|
| Agriculture | *Fixed and mobile*: Streaming media, software updates, large file distribution |
| Automotive | *Mobile*: "Connected car," streaming media, software updates, large file distribution (e.g., maps) |
| Digital Signage/DOOH | *Fixed*: Streaming media, large file distribution |
| Education | *Fixed*: Distance learning, streaming video, large file distribution |
| GPS | *Mobile*: GPS location beacon |
| IoT | *Fixed and mobile*: Trigger signals, software updates, data distribution |
| Public Safety | *Fixed and mobile*: Emergency alert and warning, streaming media, large file distribution |
| Telecom | *Fixed and mobile:* Hybrid NextGen TV/5G network applications and services |
| Telemedicine | *Fixed and mobile:* Streaming media, large file distribution |

# Some Leaders in NextGen Datacasting Business Innovation

From ATSC 1.0 to ATSC 3.0, examples of a growing datacasting ecosystem

# Leading NextGen TV Business Model Innovation

| Organization | About |
|---|---|
| **Ark Multicasting** | We are the first, standards based, open, end-to-end, nationwide, wireless, IP, multicast network. In simple terms, we provide a cost effective datacasting pipe for Internet Service Providers, public and private cloud providers, connected car manufacturers and autonomous driving vehicles, OTT streaming providers, smart agriculture, and distance learning. |
| **BitPath** | Our mission is to provide our customers with an entirely new wireless platform, built upon an efficient broadcast architecture, which can meet the exploding demand for data services that cover an ocean of devices simultaneously. |
| **EdgeCast** | We designed our content delivery network (CDN) We identified a smaller number of strategic global locations near primary Internet Exchange (IX) points and built supercharged points of presence we call Super PoPs. These Super PoPs have massive amounts of computing and caching power and are directly connected to all the major backbone networks. |
| **NAB PILOT** | Coalition of innovators, educators and advocates dedicated to advancing broadcast technologies and cultivating new media opportunities. |
| **One Media** | ONE Media 3.0 was established to build and deploy the "Next Generation Broadcast Platform," enabling broadcasting to be competitive across all platforms. Solving the associated business, technical, and political challenges while supporting mobile video broadband services (wired & wireless) provides for the greatest business opportunity in the broadcast / communication / media industry today — providing premium video anytime, anywhere without a data cap. |
| **Pearl TV** | Business organization of U.S. broadcast companies with a shared interest in exploring forward-looking broadcasting opportunities, including innovative ways of promoting local broadcast TV content and developing digital media and wireless platforms for the broadcast industry. |
| **Signal Infrastructure Group (SIG)** | Design, build, finance and operate SFNs, to take advantage of the economic efficiencies of shared infrastructure, while opening new revenue opportunities tied to reaching more people and devices with enhanced Next Gen TV services. Build software platforms to launch new services: distance education, interactive applications, emergency alerting, targeting and addressable content, and ATSC 1.0 and ATSC 3.0 datacasting. |
| **SpectraRep** | Positioned to expand and manage a nationwide wireless network for public safety, remote learning, and other government and commercial entity communications. Uses existing digital television transmission infrastructure and a portion of the broadcast digital capacity of television stations to send IP-based content to low-cost receivers. Supports content encryption and targeting for secure and selective transmission. |

Source: Company websites

# NextGen TV Datacasting Revenue Scenarios – Up to $15B/Year

## Non-Core Datacasting Revenue Based on Anticipated Data Capacity Utilization
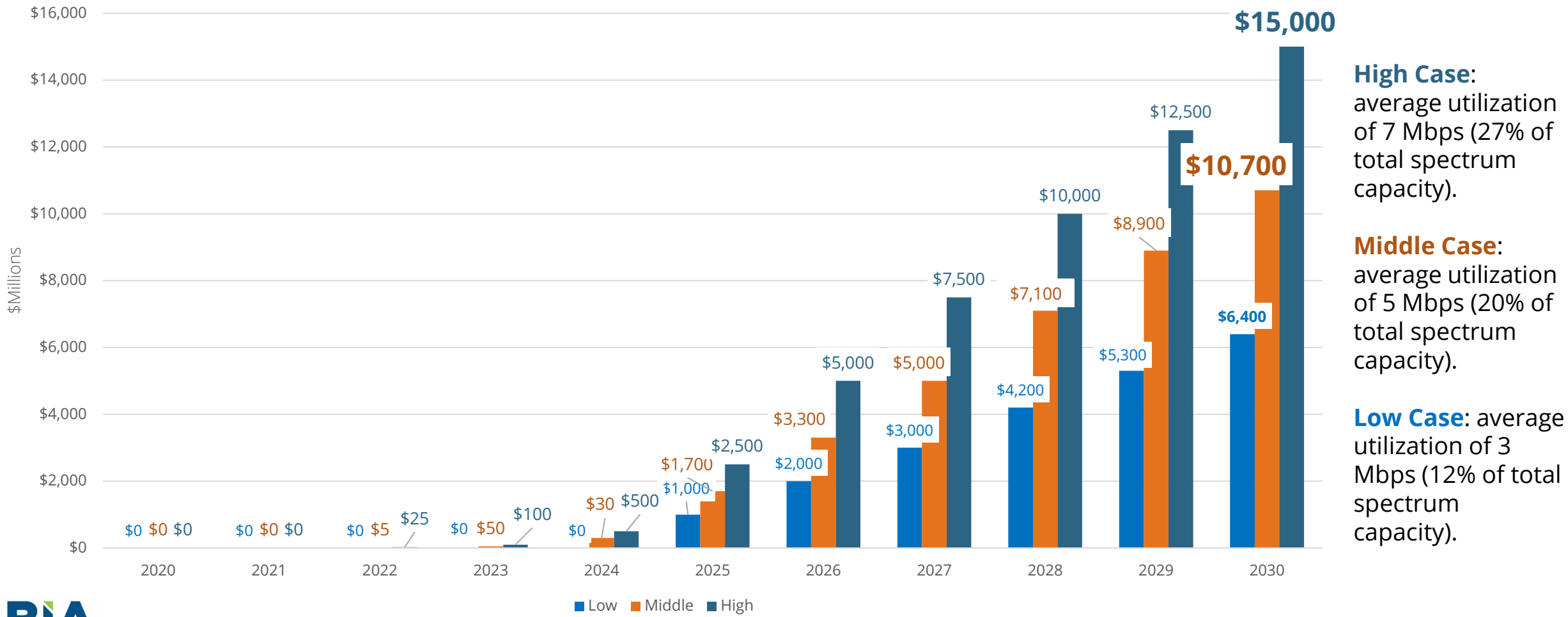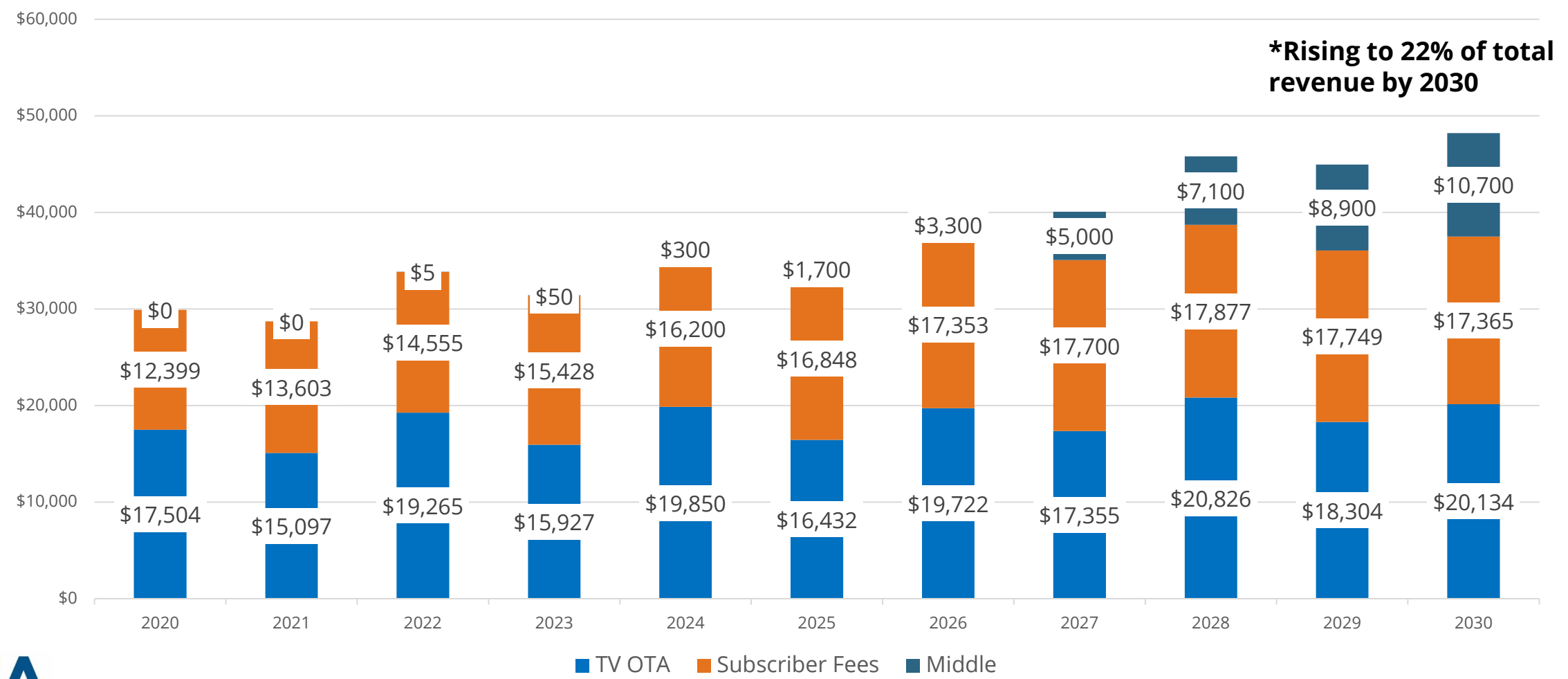


**High Case**: average utilization of 7 Mbps (27% of total spectrum capacity).

**Middle Case**: average utilization of 5 Mbps (20% of total spectrum capacity).

**Low Case**: average utilization of 3 Mbps (12% of total spectrum capacity).

Source: BIA Advisory Services, December 2021

# TV Revenue Scenarios: Core + Non-Core Datacasting Business

## With "Middle Case" Datacasting Revenue Scenario (5 Mbps average 24/7)*

**\*Rising to 22% of total revenue by 2030**



| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Middle | $0 | $0 | $5 | $50 | $300 | $1,700 | $3,300 | $5,000 | $7,100 | $8,900 | $10,700 |
| Subscriber Fees | $12,399 | $13,603 | $14,555 | $15,428 | $16,200 | $16,848 | $17,353 | $17,700 | $17,877 | $17,749 | $17,365 |
| TV OTA | $17,504 | $15,097 | $19,265 | $15,927 | $19,850 | $16,432 | $19,722 | $17,355 | $20,826 | $18,304 | $20,134 |

**Legend:** ■ TV OTA  ■ Subscriber Fees  ■ Middle

Source: BIA Advisory Services, December 2021

# Key Assumptions and Methodology

## Four phases to ATSC 3.0 ecosystem and market evolution to drive revenue growth.

- BIA evaluated three datacasting revenue scenarios: High, Middle and Low cases utilizing 7 Mbps, 5 Mbps, or 3 Mbps of ATSC 3.0 data capacity. Slide 8 shows our non-core datacasting revenue forecast, rising to $10.7B annually in our Middle case scenario by 2030. Slide 9 puts that revenue forecast in the context of TV OTA ad revenue and Subscriber Fees (i.e., retransmission fees).

- Slides 3-5 present the basis for our scenarios. For the three scenarios to hit the revenue marks in our forecast, the market must evolve through the four phases we describe in Slides 3-4. In Slide 5 we highlight early indicators of what we evaluate to be promising signs of an emerging ecosystem capable of supporting the revenue forecast scenarios we developed.

- We valued the spectrum broadcasters would be willing to allocate non-core (i.e., services other than OTA TV advertising and associated OTA subscriber fees) datacasting services by establishing an "opportunity cost" of what revenue allocation of spectrum to core services would return. In other words, we evaluated cases such as the expected revenue that could be generated by adding an incremental digitnet channel versus a datacasting service such as leasing that capacity to a third party such as BitPath who could bring that capacity to an adjacent marketplace in which broadcasters are not currently participating.

- A key assumption is that as OTA broadcasters deploy their 3.0 infrastructure, they also bring more data capacity to the market. This allows broadcasters to offer their current complement of services, new services to enhance their core services and new non-core services.

- Our expectation is that the market and associated revenue flows to be associated with entry into non-core markets will be attractive to OTA broadcasters as the supply and demand ecosystem evolves, particularly in the 2025-2030 period. We include both consumer and non-consumer (e.g., business, government, education) use cases in our non-core revenue forecast.

- The capacity broadcasters deploy into the non-core services market will be attractive in that market immediately as ATSC 1.0 services can be migrated over to the superior 3.0 infrastructure to offer more data capacity and more robust signals suited to mobile and on-the-go use cases. The ATSC 1.0 datacasting marketplace has already revealed some pricing and valuation metrics for capacity we can use to inform our estimates for 3.0 datacasting capacity. When the FCC relaxes its requirement for OTA broadcasters to simulcast ATSC 1.0 services on 3.0, this will free up even more data capacity that can be brought to market. Again, this will occur mostly likely in the 2025-2030 period. These are key drivers in our scenario-based forecast.

# Takeaways

## Entry into the data market provides significant upsides to the broadcast model

1. **New Infrastructure:** NextGen TV provides new data distribution infrastructure and capacity to the marketplace.

2. **Four Phases:** Non-core datacasting services must evolve through four phases from proof of technology to proof of viable use cases, targetable and sustainable customer bases and scalable, profitable business models.

3. **Non-Core Revenue Forecast:** BIA's NextGen TV datacasting scenario forecasts show Low ($6.4B), Middle ($10.7B) and High ($15B) non-core revenue opportunities for local TV operators depending on marketplace acceptance of technology, business models and broadcasters' level of competitiveness in this non-core market.

4. **Non-Core Provides Material Revenue:** NextGen TV's non-core datacasting revenues expected to deliver 22% of total OTA, Subscriber and Data revenues by 2030 using "Middle Case" datacasting business scenario.

5. **Incremental to Core Business:** Broadcaster expansion into adjacent data distribution markets can drive significant *incremental non-core* revenue and valuation growth.

# Contact Us

Rick Ducey

Managing Director

BIA Advisory Services

rducey@bia.com