

State of MediaTech



Strategic report prepared for
IBC 2022 by IABM





Introduction

Introductory information
about this report

About this Report

An overview of the contents

- This special report is based on exclusive research conducted by IABM before IBC 2022. It aims to provide a strategic analysis of the MediaTech industry in a data-driven fashion.
- The main body of this report is divided into three sections:
 - The first section analyses macro trends affecting the MediaTech sector.
 - The second explores the three major drivers of change in the industry identified by IABM in 2022.
 - The third analyses investment and adoption trends in MediaTech.
- Each section is opened by an Executive Summary highlighting the major trends covered through text. The rest of the sections are mainly made up by visual slides.
- On the following page, you can find a table of contents of this report which can be used to jump to specific sections.

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Macro Analysis

Analysis of macro trends affecting
MediaTech

Back to the Future

Decoupling, stagflation and bubbles

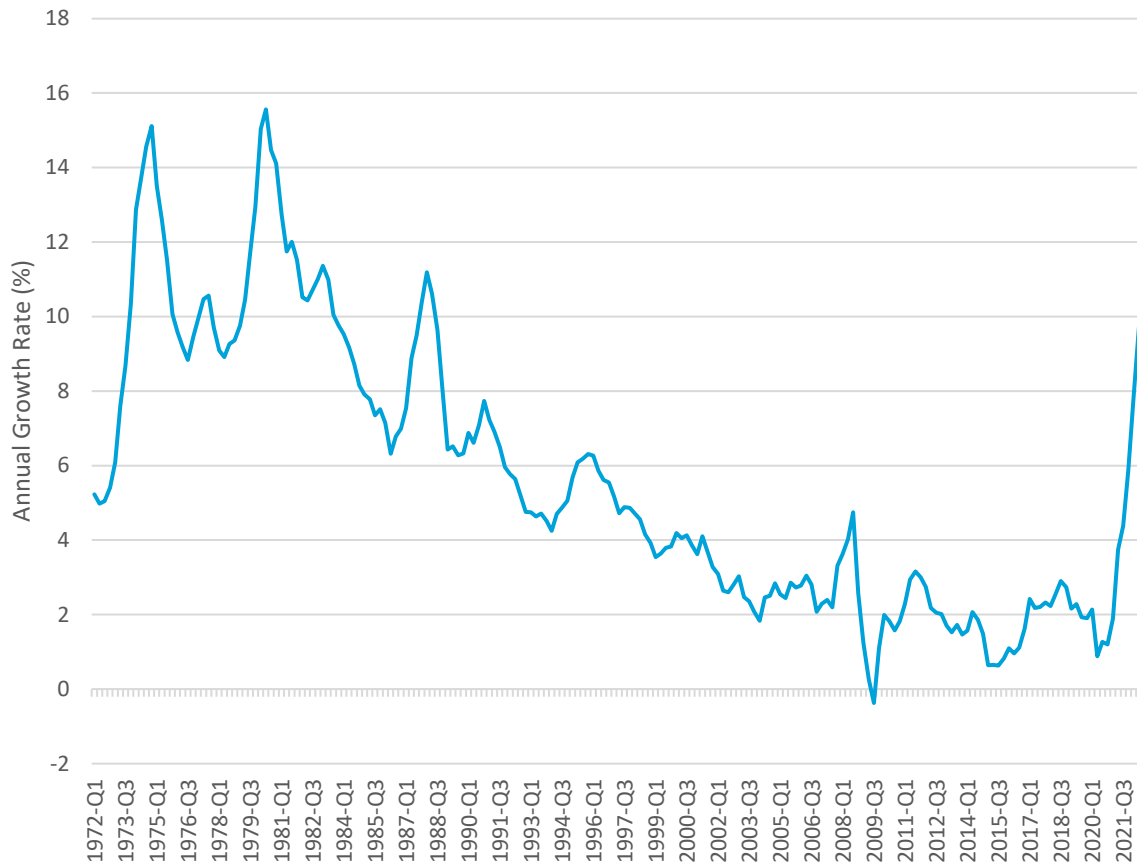
- The emergence of **conflict** in 2022 has **triggered** some **trends reminiscent of the past**. Aside from the **geopolitical decoupling** evocative of cold war times, **pandemic-induced scarcity** has been **exacerbated**, leading to the potential return of **stagflation** (i.e., the combination of high inflation and recession). **Physical business models** and **value stocks** have **benefited** from this macro conjuncture.
- **Inflation** has **caused** central **banks** to **raise rates** while most **pandemic-induced restrictions** have been lifted worldwide leading to a **shift** in **consumer behaviour**. This has led to a **reckoning of digital business models** and **growth stocks** ranging from cryptocurrencies to streaming **after their peak in late 2021**, culminating in some **bubbles bursting**.
- While words such as **decoupling**, **stagflation** and **bubbles** remind us of the past, there are many reasons to believe the **future will be different**. **COVID-19** has **reshaped consumption patterns** irreversibly, particularly for **younger generations**. Their inclination to **digital interactions** is **not going away**.
- The **same applies to** businesses such as **MediaTech** companies. While **digital transformation may not be as rushed** as in COVID times, it is **still underway with no going back**.

Sources: IABM

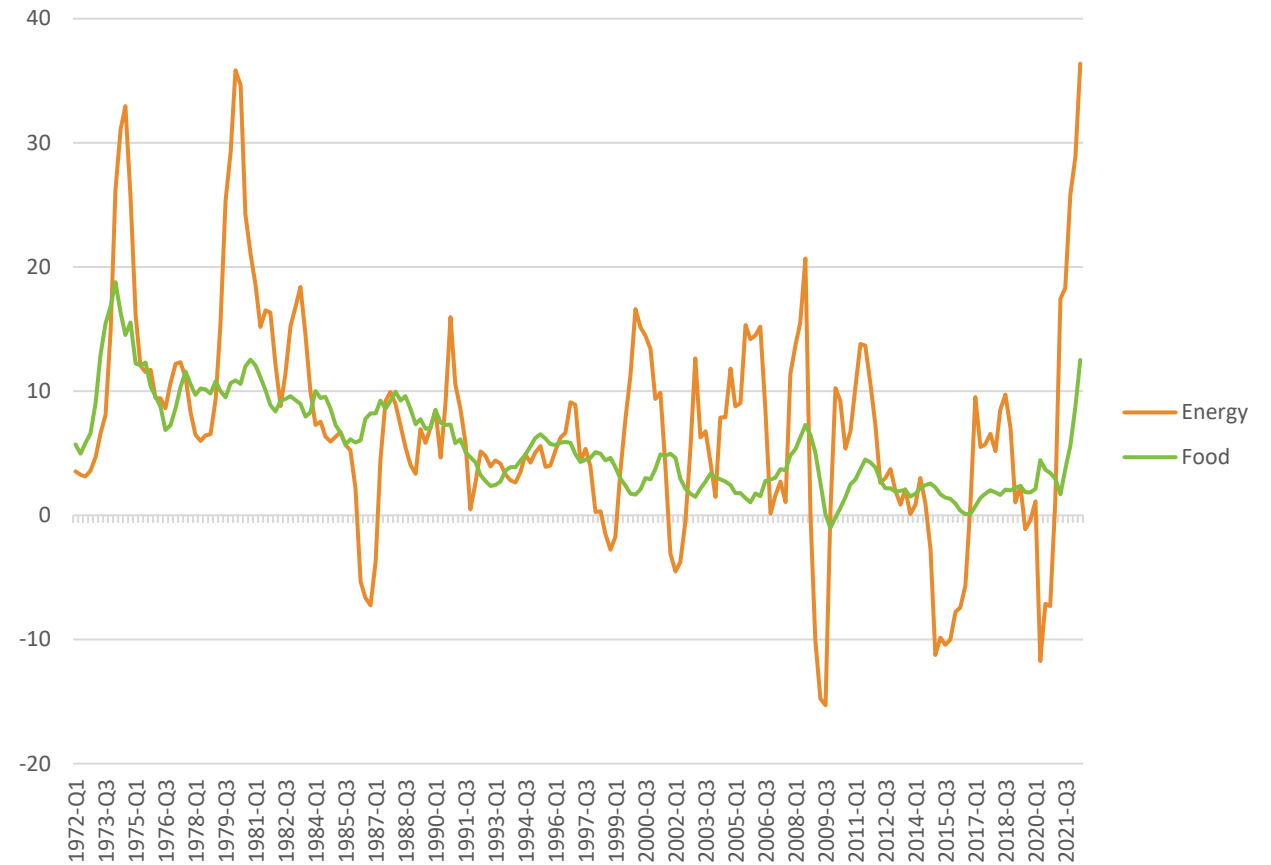
Inflation

Inflation is back after conflict exacerbates scarcity

Total quarterly inflation (CPI) for OECD countries, 1972-2022



Quarterly inflation (CPI) for OECD countries, 1972-2022, by source

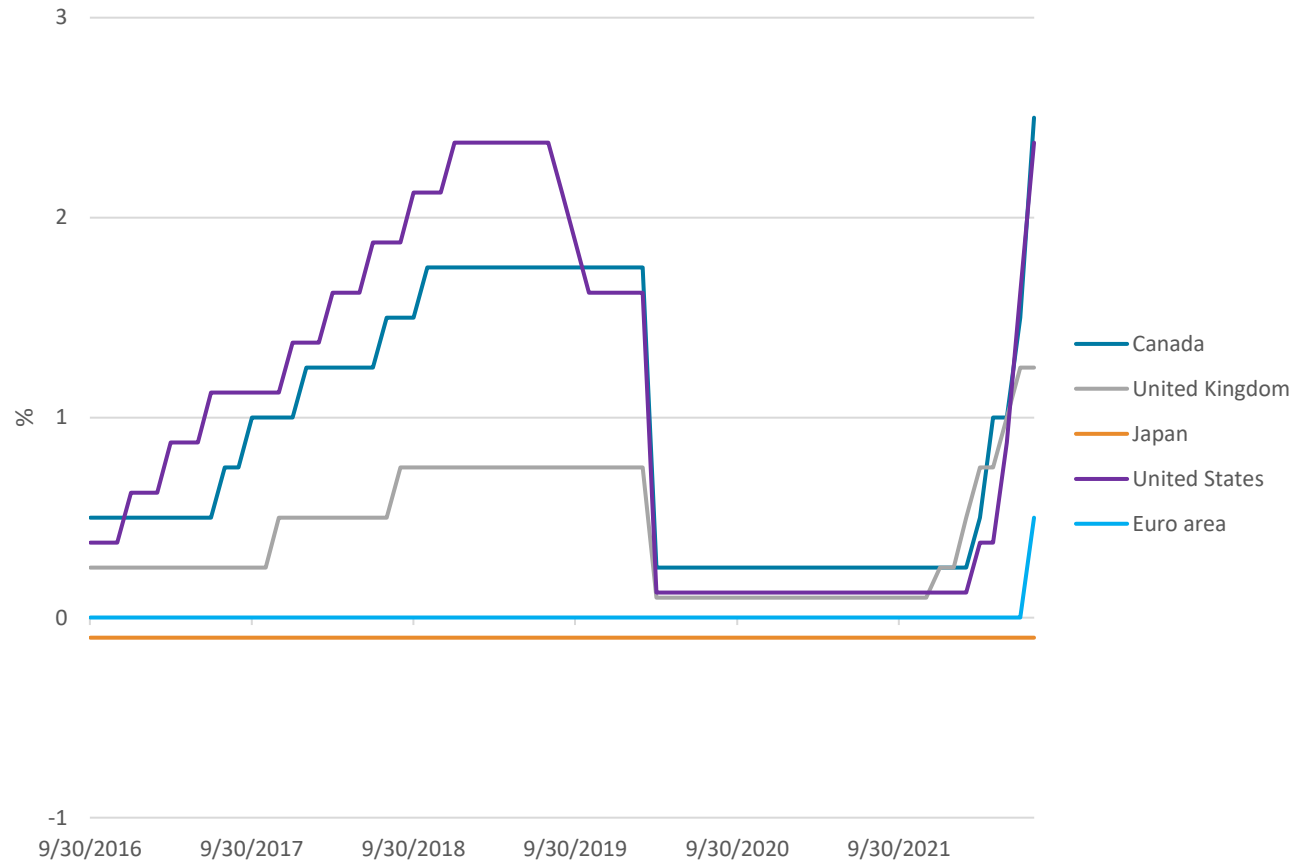


Sources: IABM, OECD

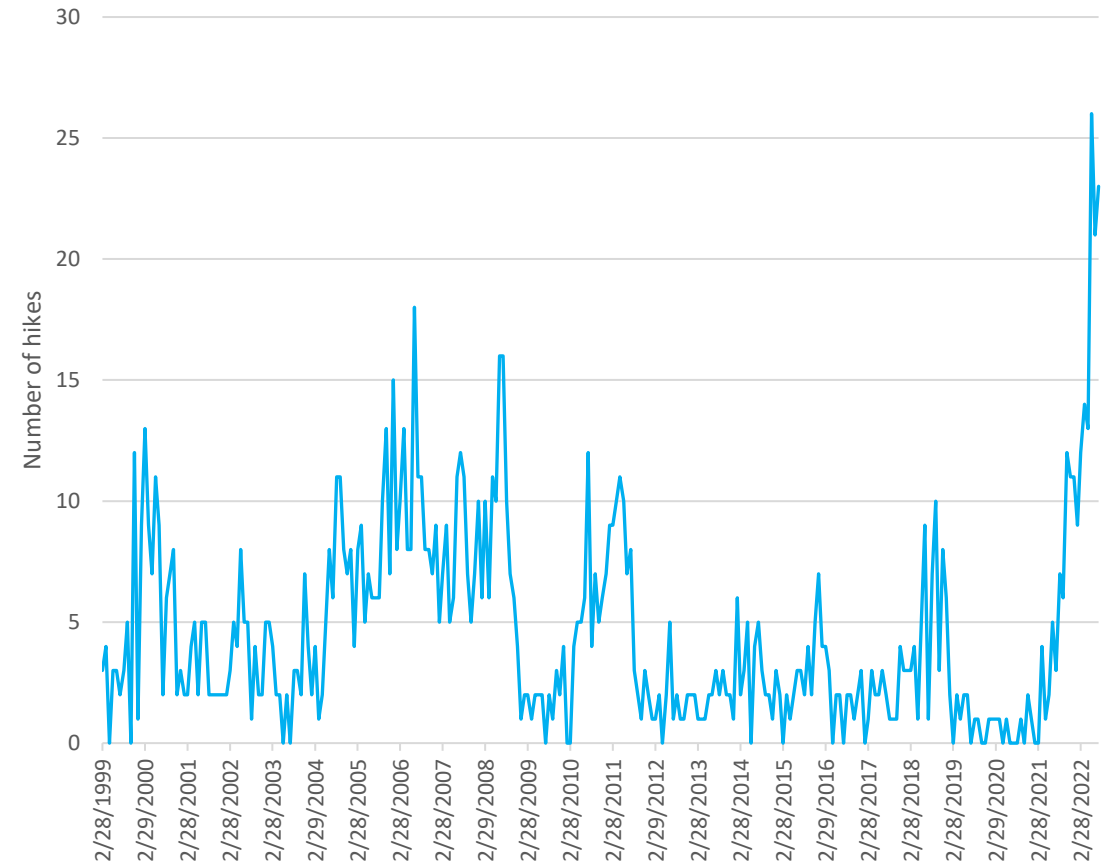
Interest Rates

Rampant inflation forces central banks to raise rates, increasing the likelihood of stagflation

Monthly central banks policy rates for major economies, 2016-2022



Number of rate hikes worldwide, monthly, 1999-2022

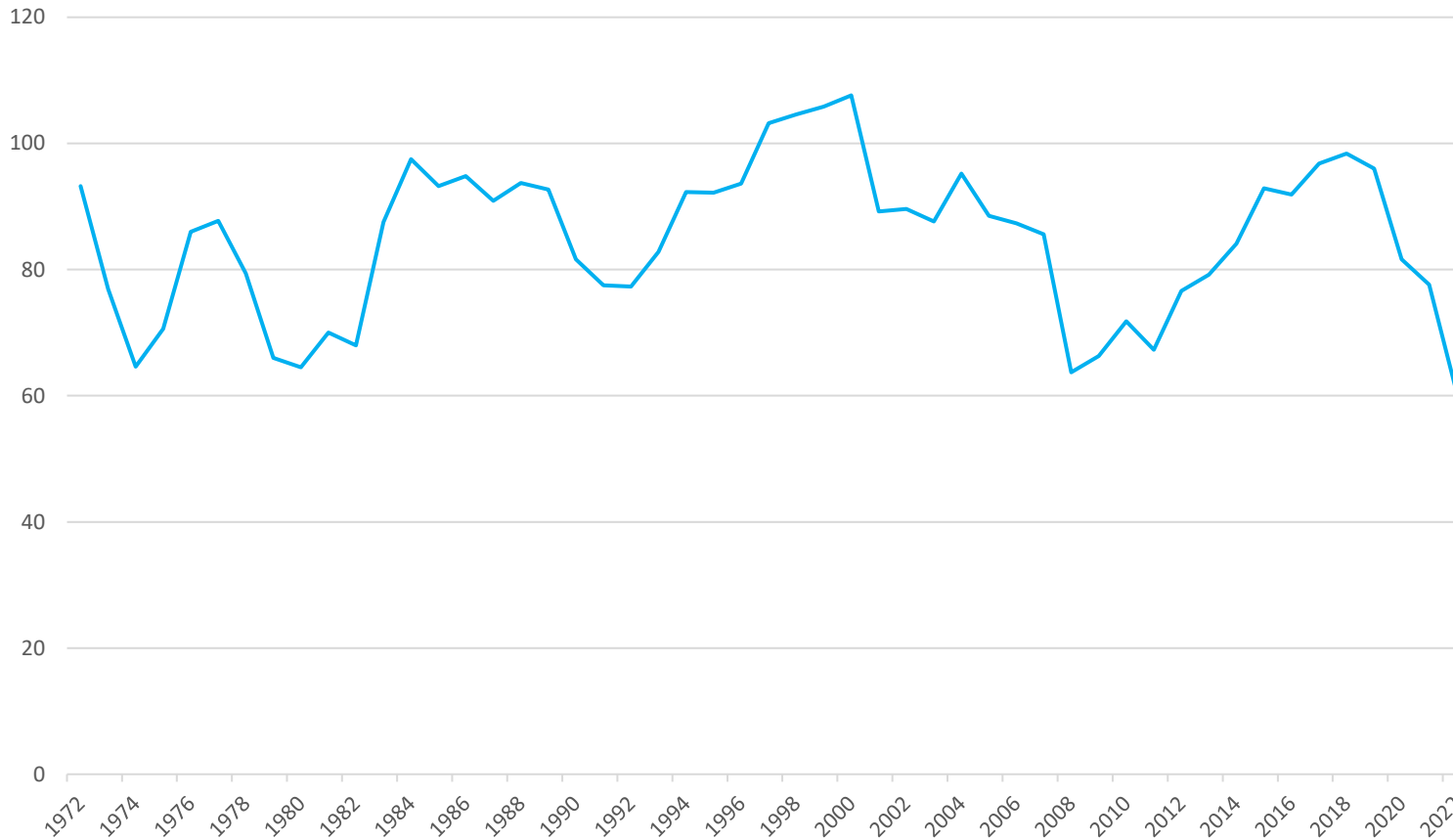


Sources: IABM, Bank for International Settlements

Sentiment

Inflation is having a negative impact on consumer sentiment (and spending)

Yearly index of consumer sentiment in the US, 1972-2022



Inflation

US consumers blaming inflation for eroding their living standards

47%

Discretionary Spending

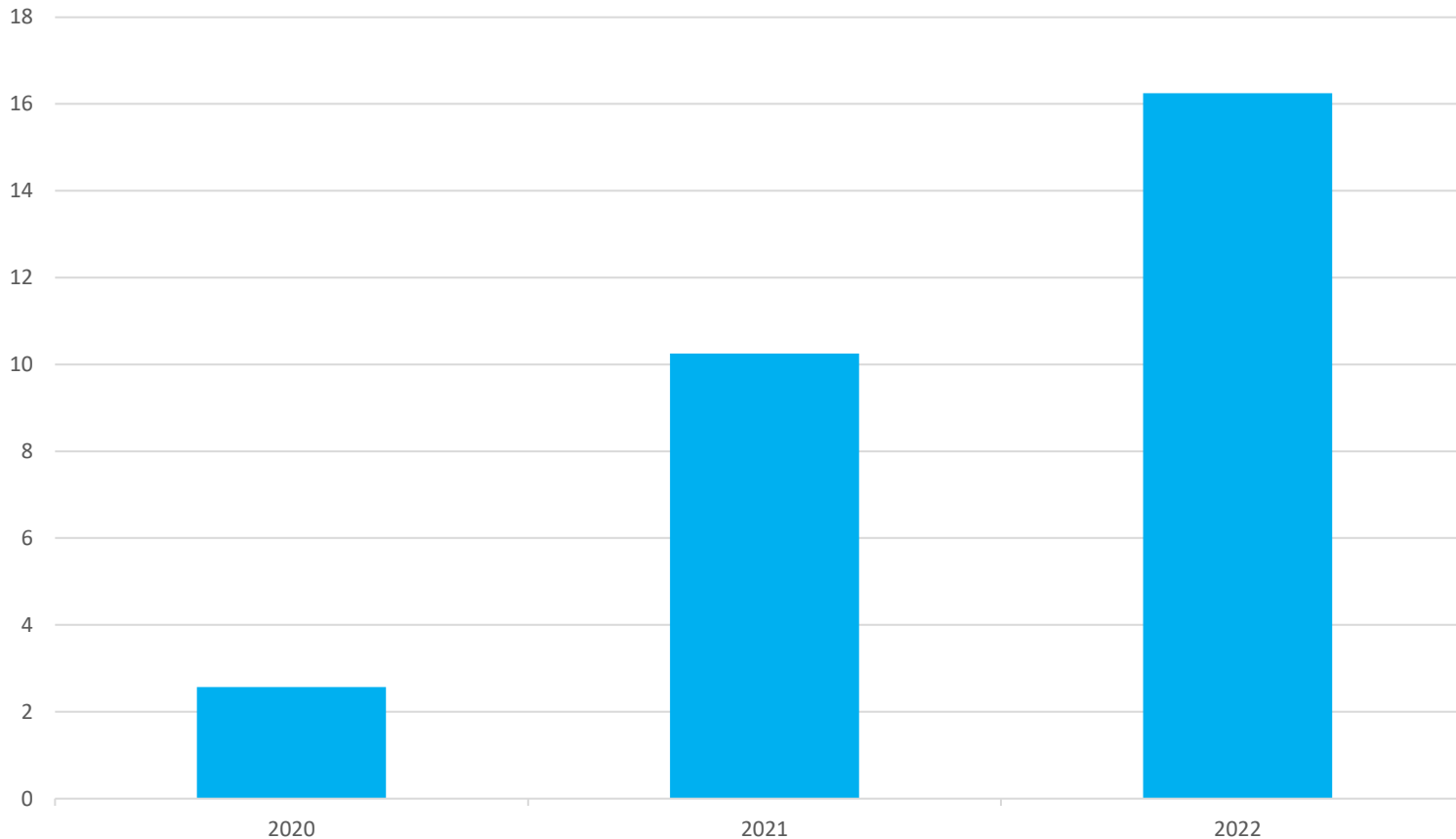
Several consumer discretionary spending indicators are down, including the MSCI World Consumer Discretionary Index, indicating a prioritization of necessities

Sources: IABM, University of Michigan

Sentiment

Confidence in MediaTech is up despite macro headwinds

MediaTech Confidence Ratio, 2020-2022



Confidence by Business

Both media businesses and suppliers bullish in 2022 due to trends such as production restart and continued investment from 2021

Macro Headwinds

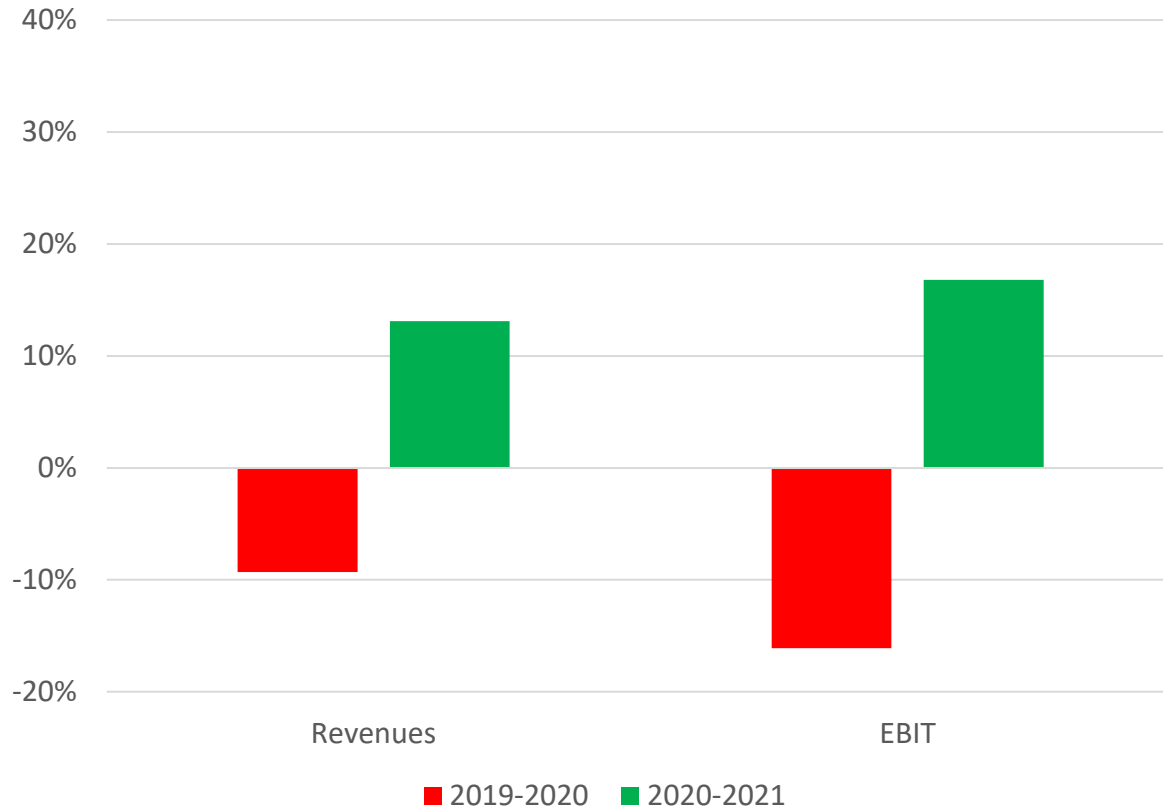
A few comments acknowledge that, despite positive recovery after 2020, macro headwinds might cloud the outlook for MediaTech

Sources: IABM

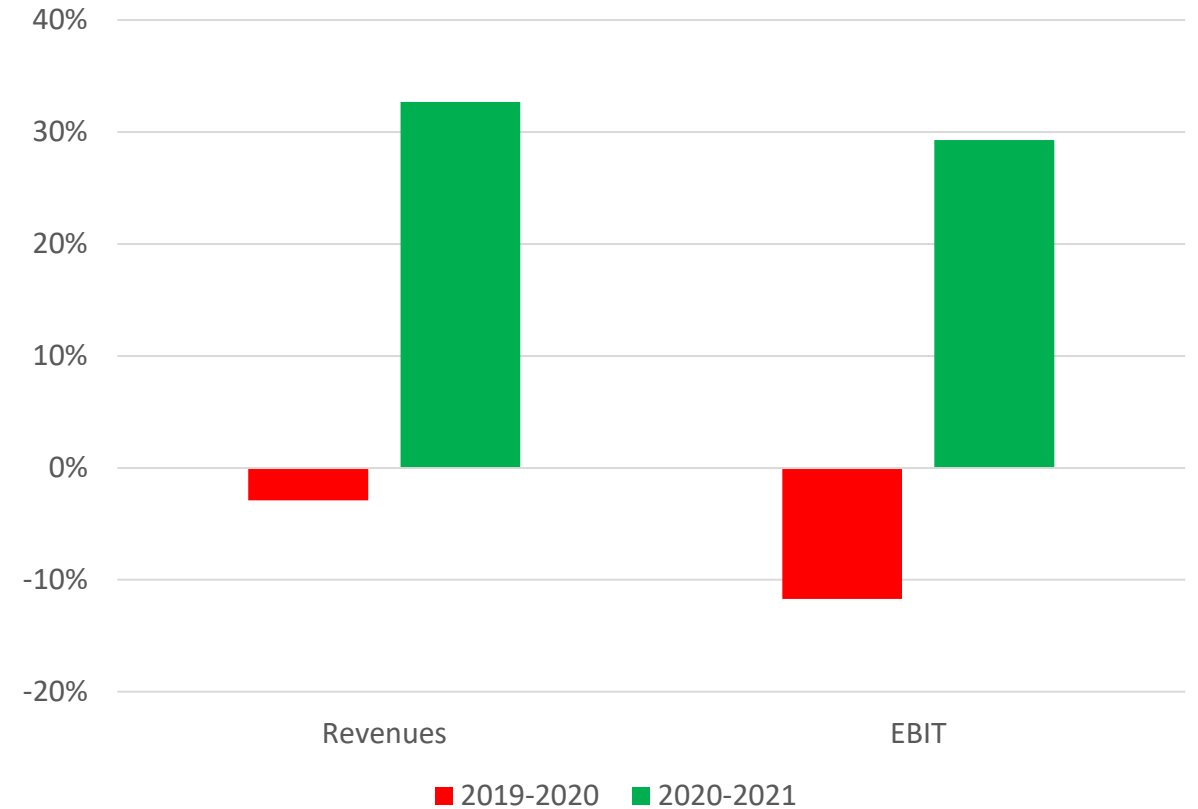
Financials

As revenues and profits bounce back

Change in Median Revenues & EBIT in Broadcast



Change in Median Revenues & EBIT in MediaTech

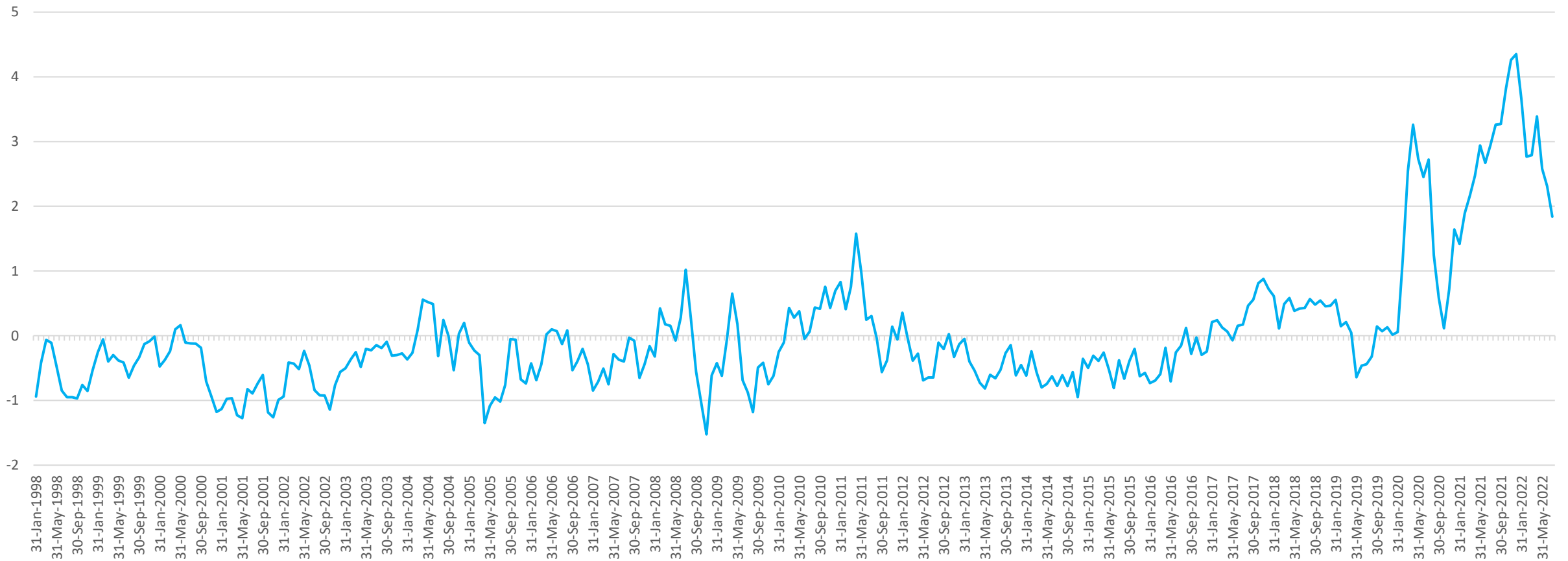


Sources: IABM, Based on an analysis of 20 MediaTech stocks and 132 broadcast stocks

Disruption

Supply chain disruption has reached record highs between 2021 and 2022

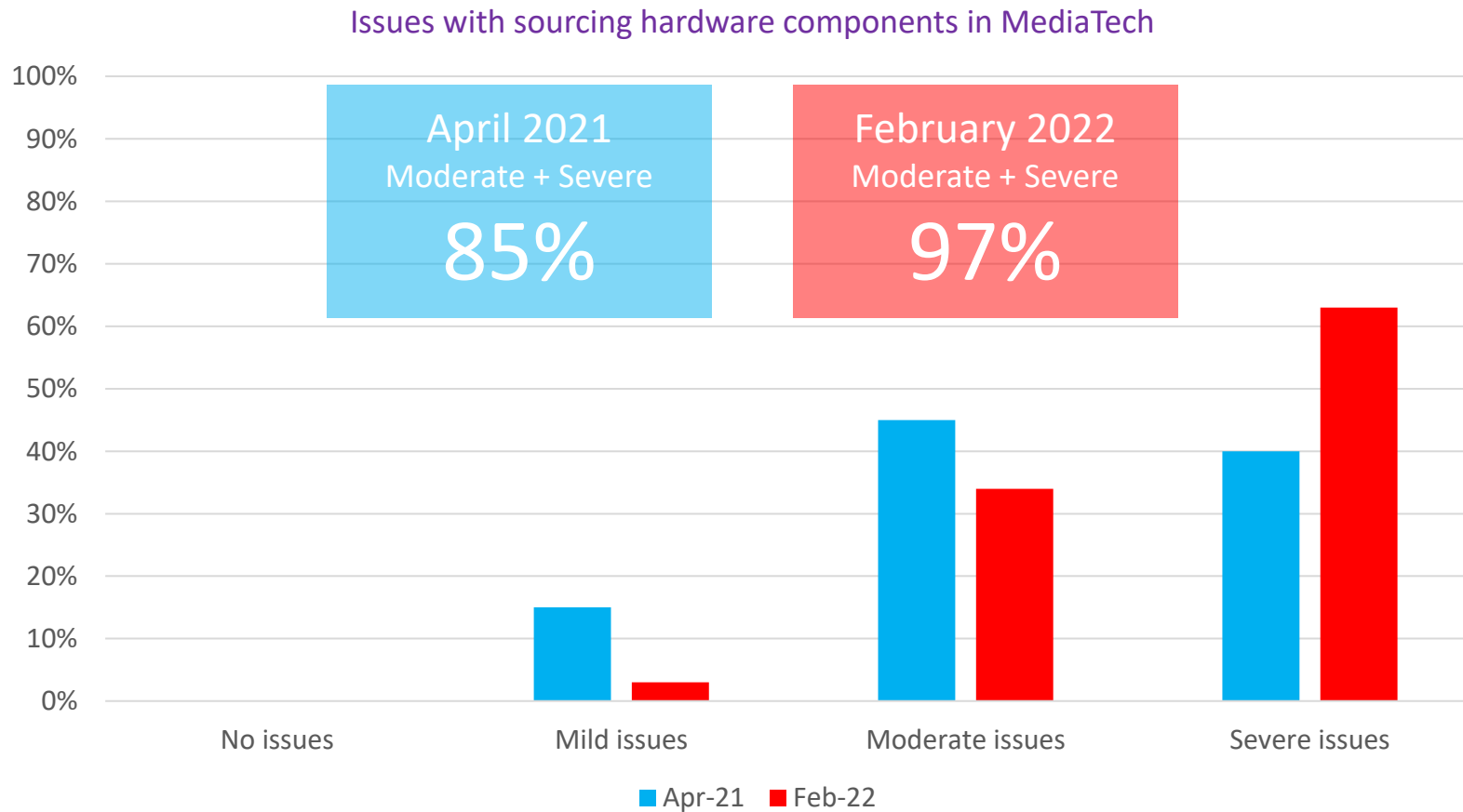
Monthly Global Supply Chain Pressure Index, 1998-2022



Sources: IABM, Federal Reserve Bank of New York

Disruption

Supply chain disruption continues to bite in MediaTech sector as well



Lead Times

Average increase

74.1%

Components Costs

Average increase

44.2%

Product Pricing

Average increase

26.5%

Sources: IABM

Disruption

Disruption goes well beyond components

Supply Chain Disruptions

Year-on-year change
2020-2021

+88%

Human Health disruptions

Year-on-year change
2020-2021

-68%

Extreme Weather Events

Year-on-year change
2020-2021

+130%

Supply Chain Shortages

Year-on-year change
2020-2021

+452%

Labor Disruptions

Year-on-year change
2020-2021

+156%

Cyber Attacks

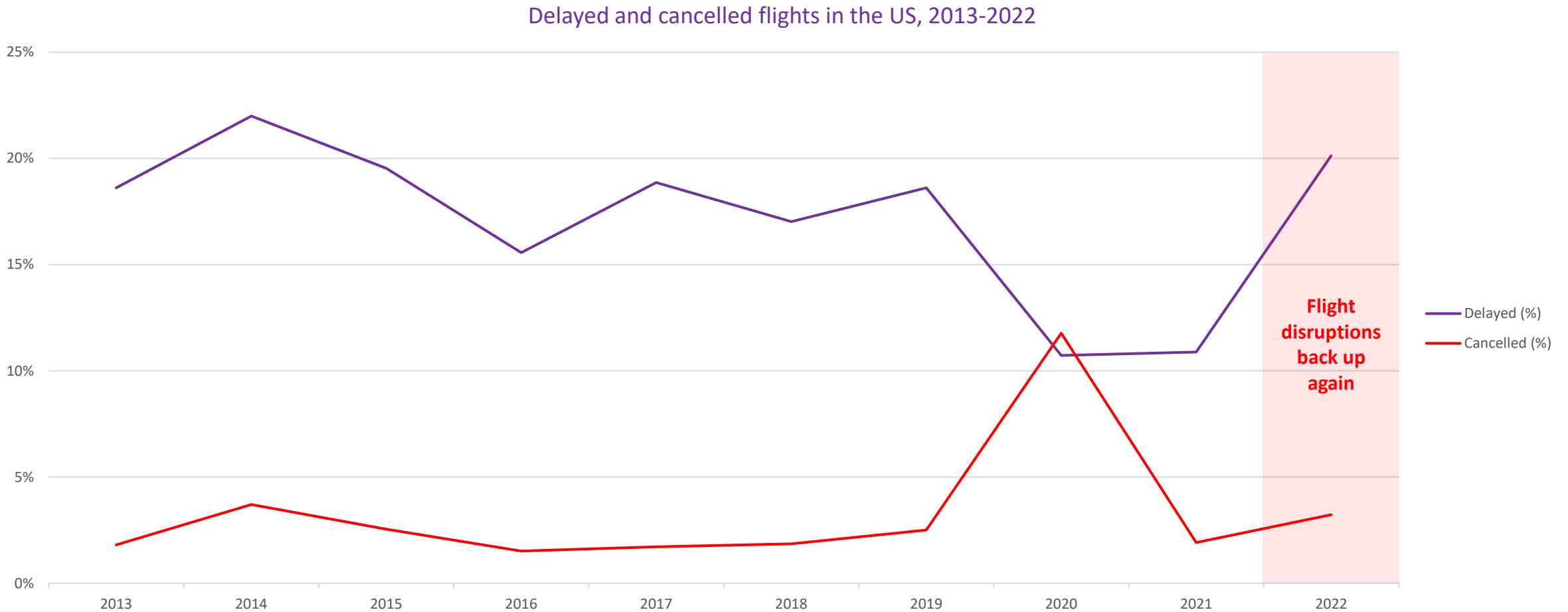
Year-on-year change
2020-2021

+143%

Sources: IABM, Resilinc

Disruption

Travel disruptions are also back as airlines struggle with staff shortages post-pandemic

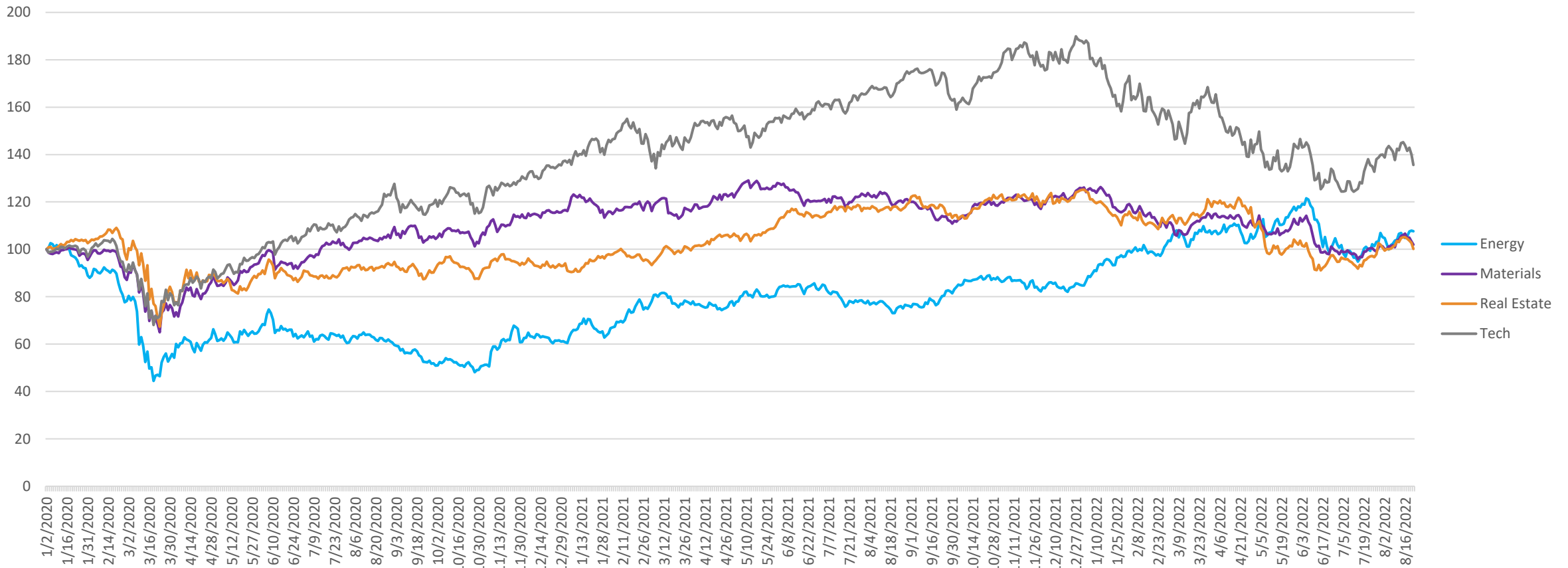


Sources: IABM, Bureau of Transportation Statistics

Physical Business Models

Pandemic losers bounce back between 2021 and 2022 due to scarcity

Energy, Materials, Real Estate & Tech Stock Indices, 2020-2022 (1/2/2020=100)

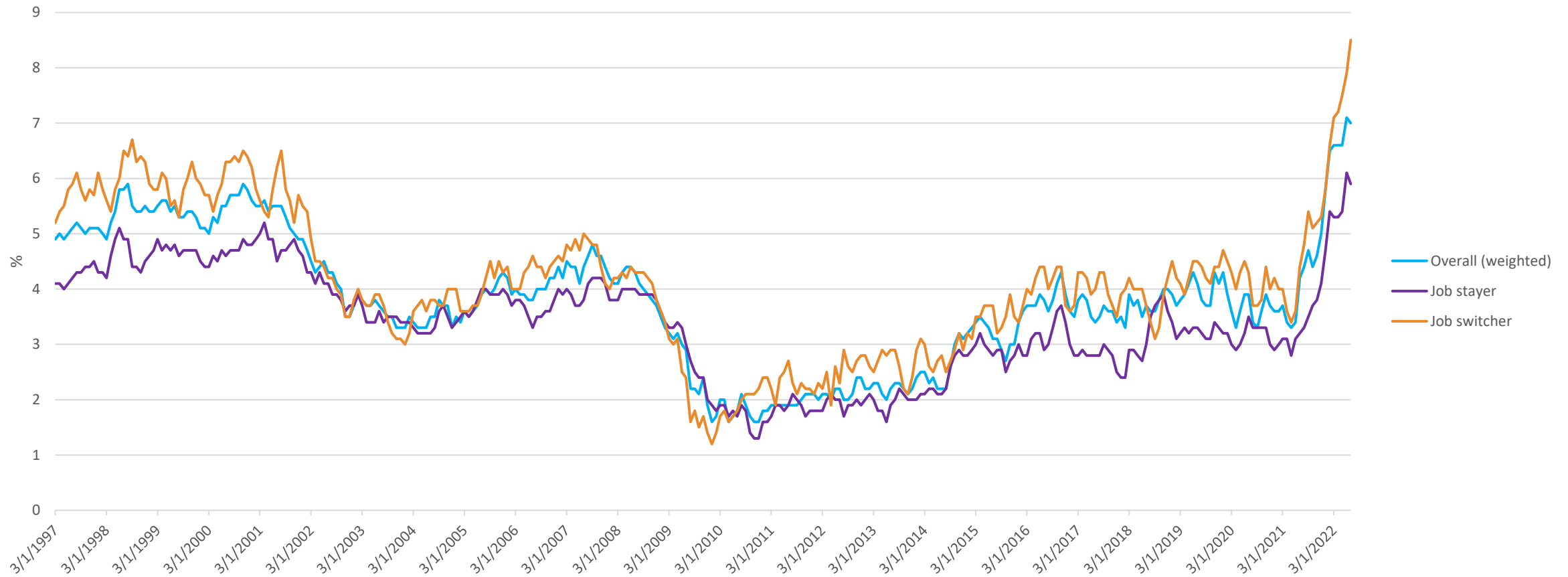


Sources: IABM

Talent Scarcity

Talent scarcity and the Great Resignation are new phenomena driving salary inflation

3-month moving average of median wage growth in the US, hourly data, 1997-2022



Sources: IABM, Bureau of Labor Statistics, Federal Reserve Bank of Atlanta

Scarcity

Scarcity breeds uncertainty for MediaTech businesses

EVS H2 2021 earnings call

In 2021, one of the main risks that we had was linked to the scarcity of electronic components... It has lengthened somewhat our delivery periods for our customers. But all in all, we were able to continue delivering our products. That remains a concern for this fiscal year 2022... Another risk is of course linked to inflation, which, of course, will have an impact on salaries for colleagues wherever they are in the world. But we also see an impact on prices of components... We are not fully clear how that inflation will evolve over the next weeks and months and especially with the facts that we've seen today of Russia invading Ukraine, and that's giving additional unclarity about the future

Serge Van Herck
CEO
EVS
(February 2022)

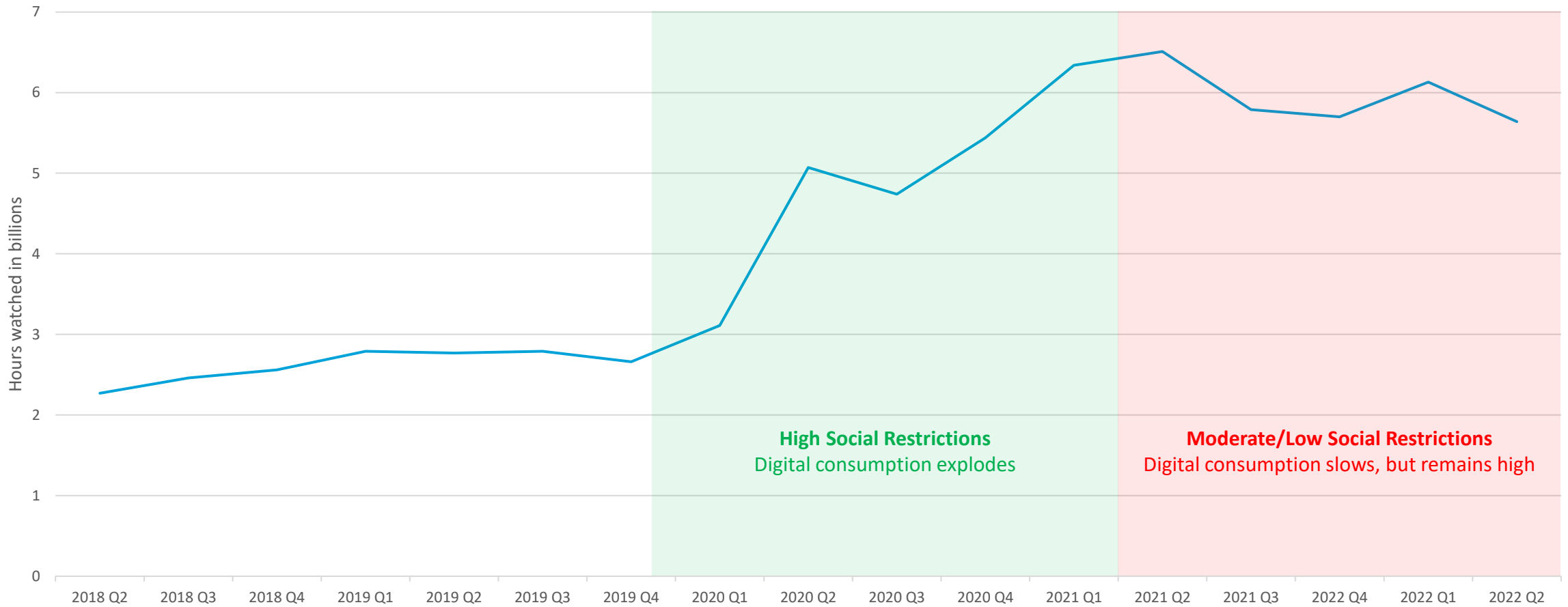


Sources: IABM, Company filings

Viewing Habits

Lifting of pandemic-induced restrictions cools down explosive growth of digital seen in 2020

Quarterly number of hours watched on Twitch, 2018-2022

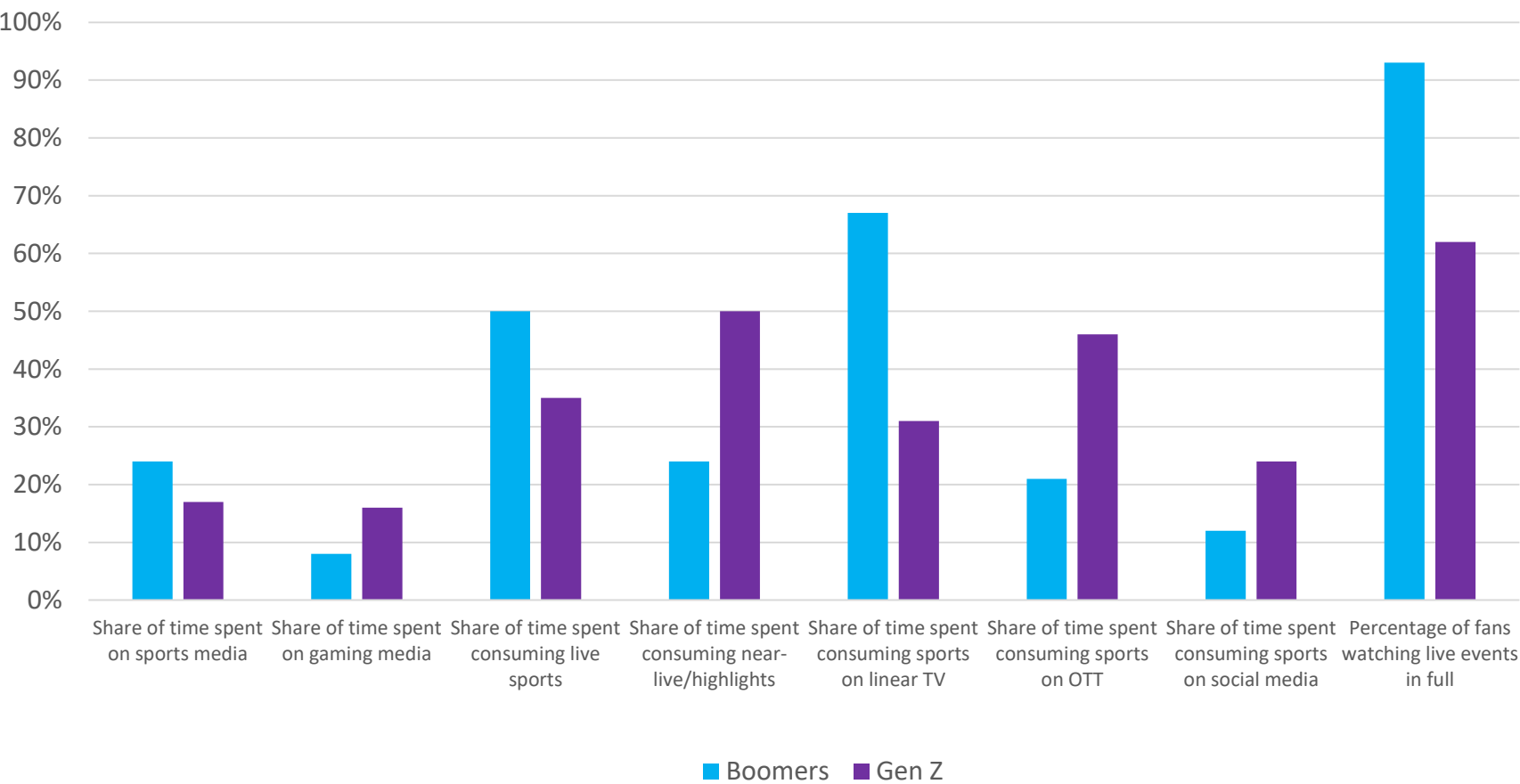


Sources: IABM, Streamlabs, Stream Hatchet

Viewing Habits

Though demographic trends should not reverse digital dominance

Sports consumption habits in 2021, comparison between Boomers and Gen Z



User-Generated Content (UGC)
Percentage of US Gen Z that watch more UGC content than planned

70%

Gaming
Percentage of US Gen Z who play video games

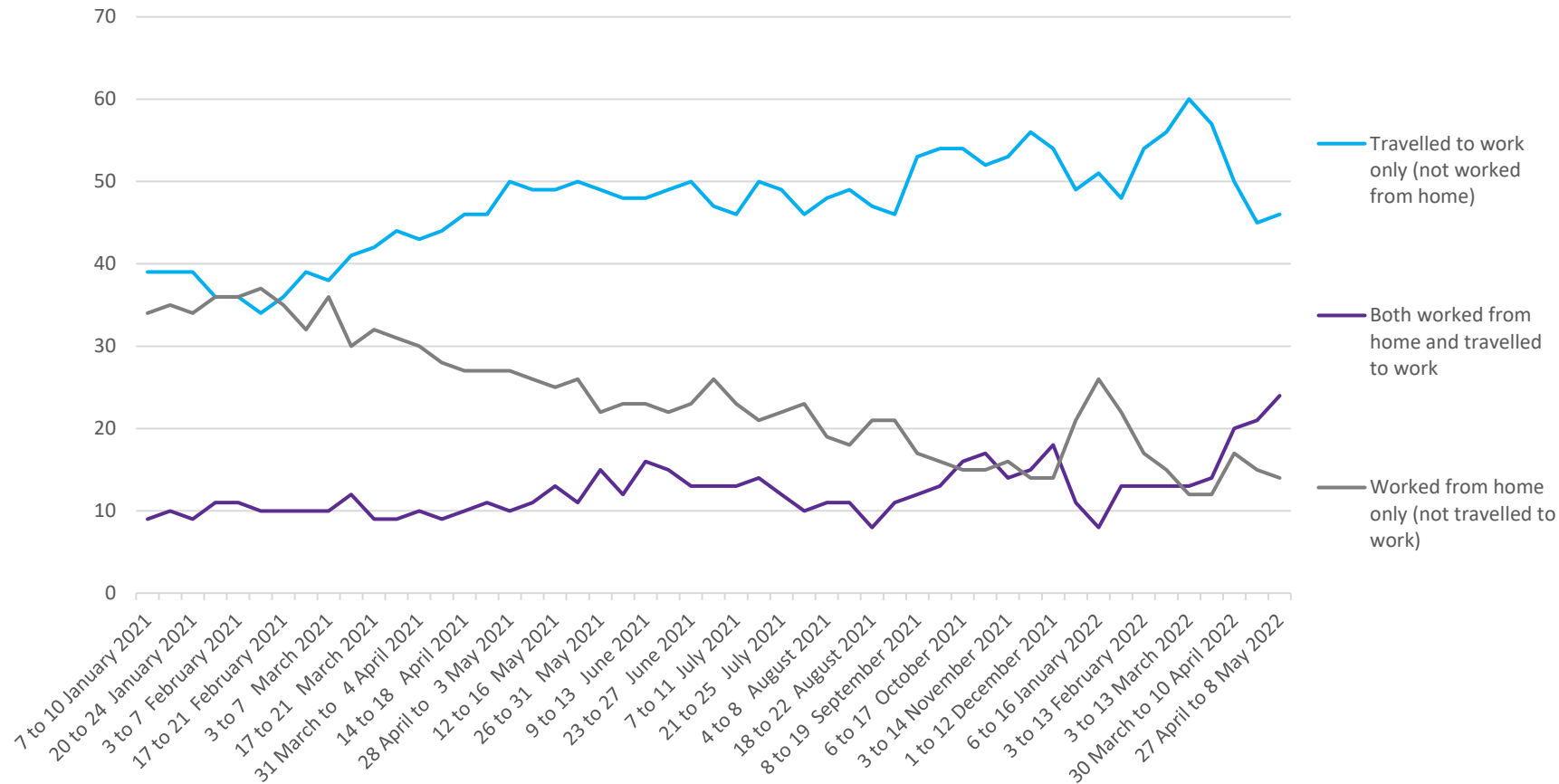
96%

Sources: IABM, PwC Sports Survey, Deloitte

Working Habits

WFH peaked in 2020 though hybrid is the future for businesses

Working habits in the UK, 2021-2022



Remote in the US: May 2020

Percentage of paid full days worked from home

~60%

Remote in the US: 2021-2022

Percentage of paid full days worked from home

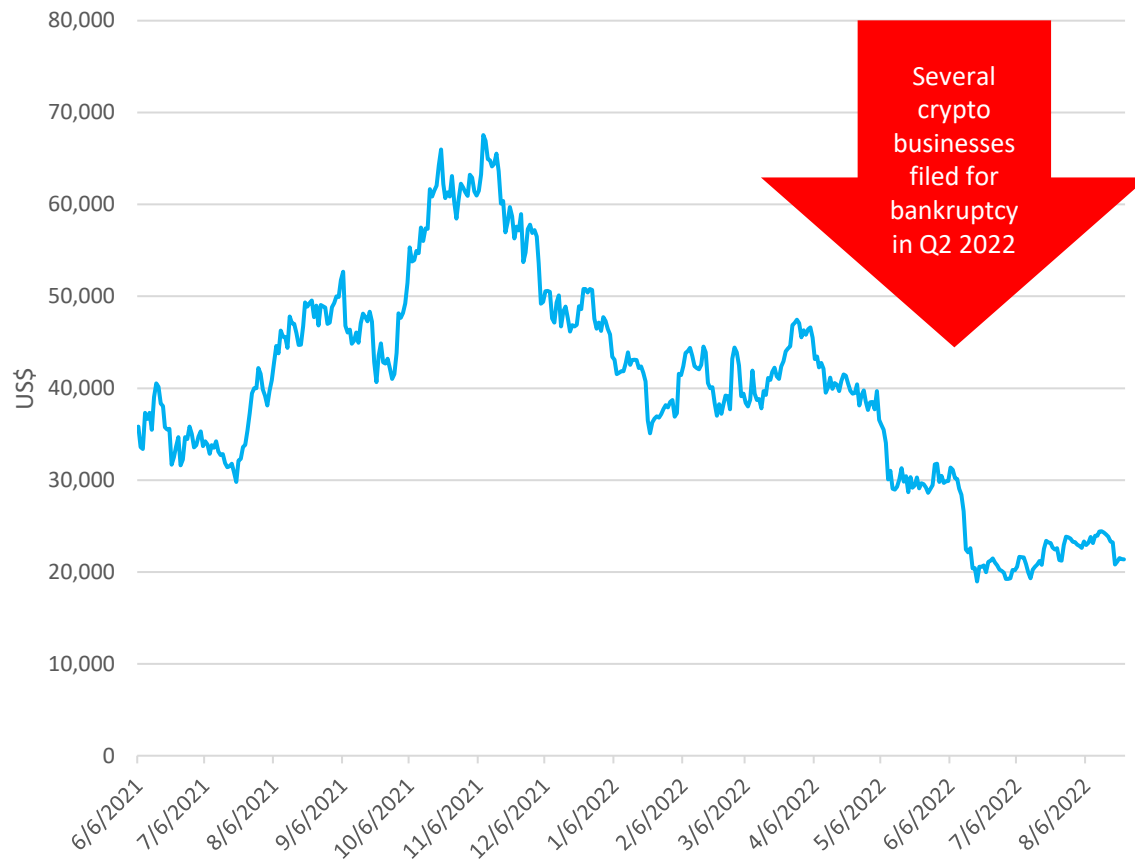
~30-35%

Sources: IABM, ONS, WFH Research

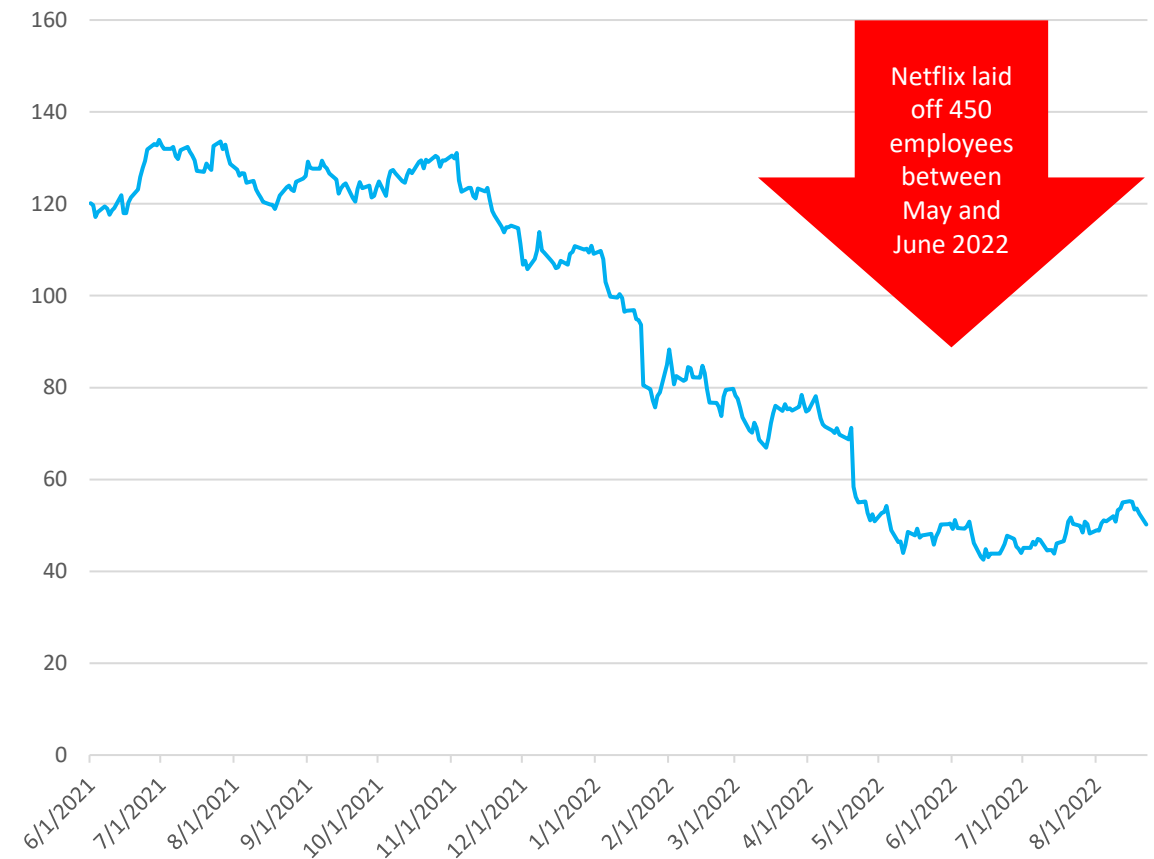
Digital Business Models

Digital business models such as crypto and streaming retreat after buzzing in late 2021

Bitcoin (BTC) price, 2021-2022



OTT stock index, 2021-2022



Sources: IABM, Investing.com – OTT stock index includes 10 OTT stocks

Digital Business Models

Inflation influences churn as SVOD bastions bet on AVOD to weather threats to their businesses

Inflation

Cost became the second reason for cancelling an SVOD service in April 2022

2nd

AVOD growth

2022 AVOD streaming growth in the US –
SVOD grew 21%

29%



Disney

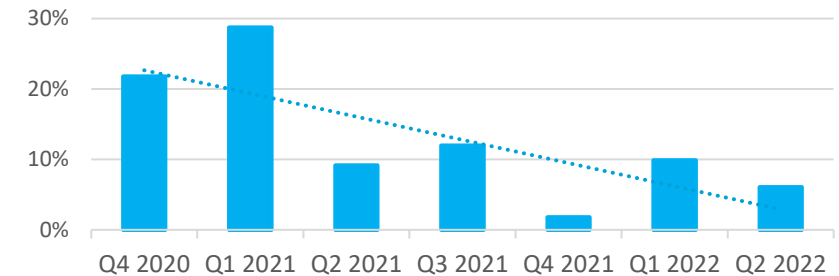
Announced ad-supported offering launch
in March 2022



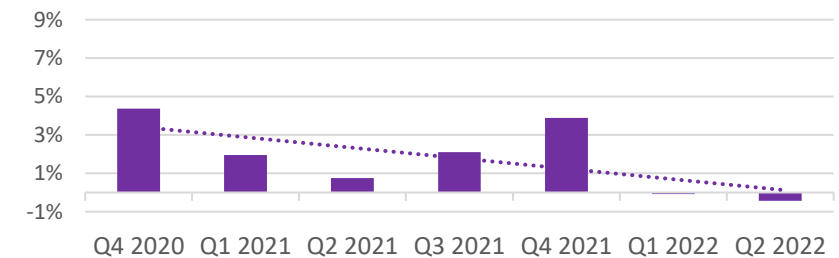
Netflix

Announced ad-supported offering launch
in April 2022

Disney+ quarterly subscriber growth



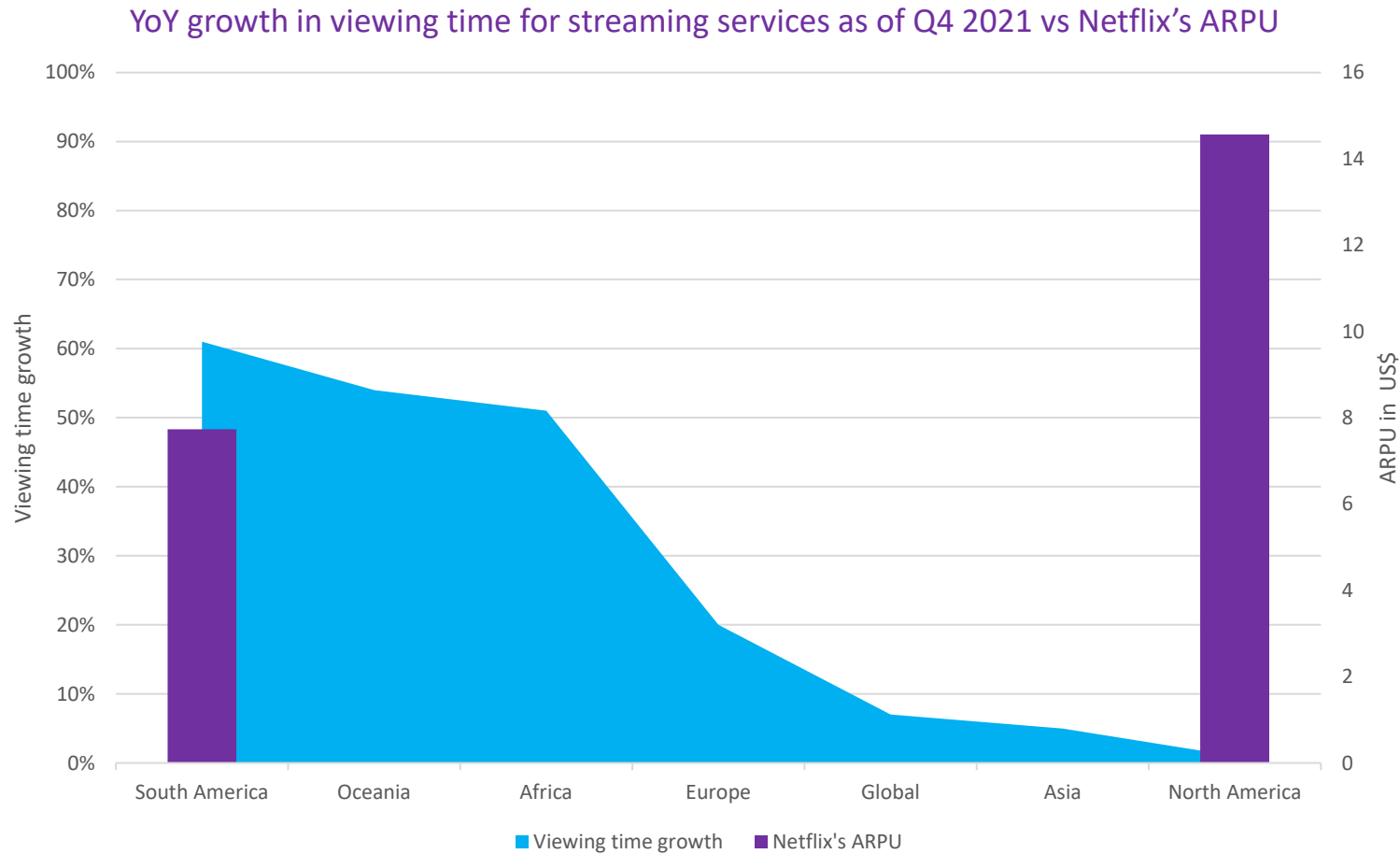
Netflix quarterly subscriber growth



Sources: IABM, The NPD Group, Comscore, Company filings

Digital Business Models

While the world flirts with deglobalization, streaming continues its global expansion for growth



Paramount

To order 150 international originals by 2025



Disney

Expansion to other 40+ countries, over 500+ international originals in production

Sources: IABM, Conviva, Company filings

Digital Business Models

Though strong dollar complicates expansion for US-based businesses

DXY Dollar Index, 2002-2022



Impact of stronger US dollar on international business

For the three and six months ended June 30, 2022, our revenues would have been approximately \$339 million and \$619 million higher had foreign currency exchange rates remained constant with those for the three and six months ended June 30, 2021

10-Q FY2022 Q2

Netflix
(July 2022)



Sources: IABM, Investing.com, Company filings

Digital Business Models

Diversification is helping some go through the streaming market turbulence



4. Key performance indicators

6 months to 30 June	2022	2021	Change %
Group adjusted EPS	6.0p	5.9p	2%
Cost savings	£11m	£21m	-
Profit to cash conversion	81%	72%	9ppt
ITV Studios total revenue growth	16%	26%	(10ppt)
ITV Studios adjusted EBITA margin %	13%	12%	1ppt
Total high-end scripted hours	133 hrs	73 hrs	82%
Number of formats sold in 3 or more countries	9	7	29%
% of ITV Studios total revenue from streaming platforms	19%	16%	3 ppt
Total digital revenue	176m	144m	22%
UK subscribers	1.45m	1.25m*	16%
Total streaming hours	523m	494m	6%
Monthly active users	9.7m	9.7m	-
Share of top 1,000 commercial broadcast TV programmes	94%	93%	1ppt
Share of commercial viewing (SOCV)	33.7%	33.6%	0.1ppt
Total BritBox International subscribers	2.7m	2.4m*	13%

*as at 31 Dec 2021

Sources: IABM, Company filings

Content

Content (International)

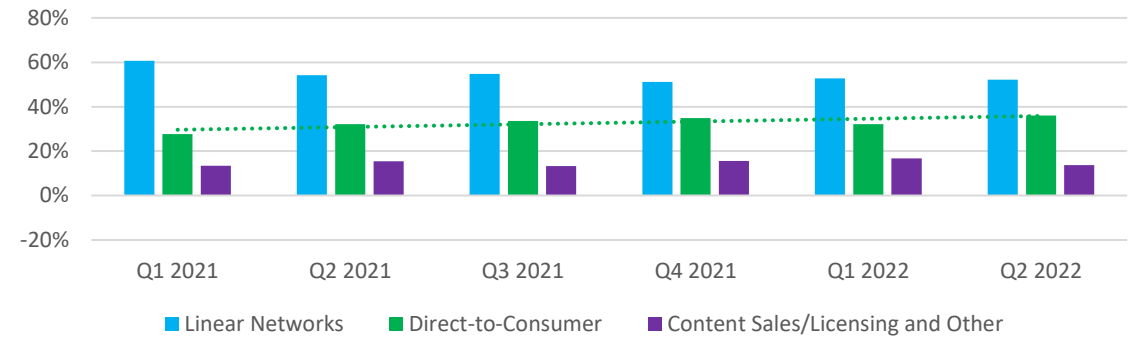
Content (Streaming)

Digital

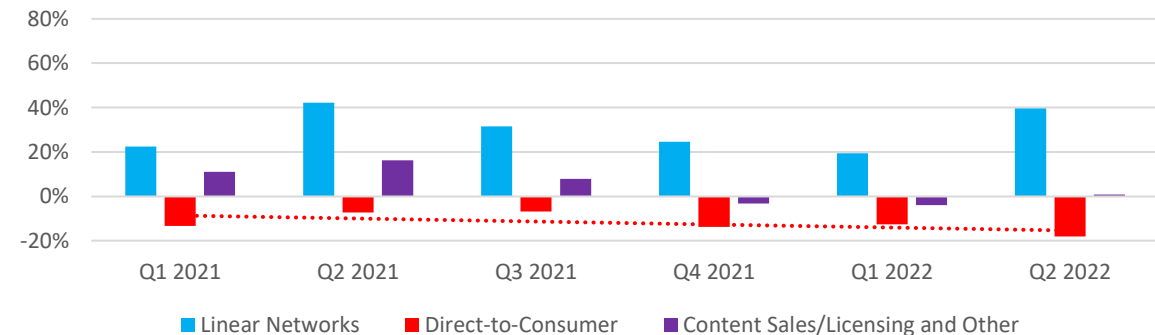
Digital (International)



Revenue Shares at Disney M&E Division



Operating Margin at Disney M&E Division



Publicly Funded Models

Though tough macro conditions may further exacerbate pressure on public broadcasting

Public Funding

Estimated value of European public broadcasting funding

\$40bn



BBC

Funding frozen and license fee may be scrapped in 2027



France Télévisions

License fee to be scrapped in favor of VAT funding

Funding Cuts

Estimated funding cut in Europe between 2015 and 2020

\$881.5m

The UK is the 2nd largest public broadcasting market in Europe

The BBC unveiled plans to cut 1,000 jobs, shut down two channels and reduce programming output to deal with the funding cuts

France is the 3rd largest public broadcasting market in Europe

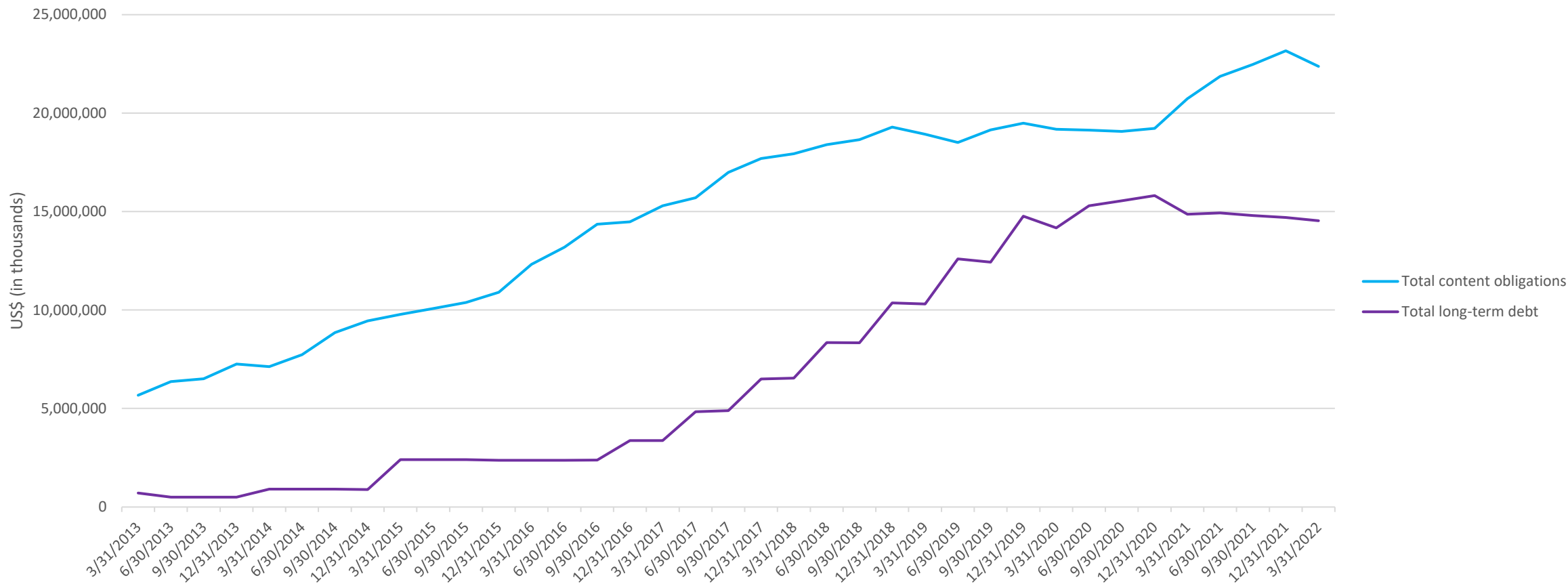
Although funding will remain roughly the same, linkage with VAT is thought to make it more volatile and dependent on political cycles

Sources: IABM, European Audiovisual Observatory

Content Models

Rising interest rates menace debt-driven content binge as well

Netflix's total content obligations and long-term debt, 2013-2022



Sources: IABM, Company filings

Content Models

While a series of market forces drive the growing, though polarized, Creator Economy

Forces driving the Creator Economy

Consumer Attitudes

Consumers have become less concerned about content values such as picture quality and more interested in others such as interactivity

The Great Resignation

COVID-19 has led more people to dedicate more time to creative hobbies or leave their jobs altogether to pursue more fulfilling professional paths

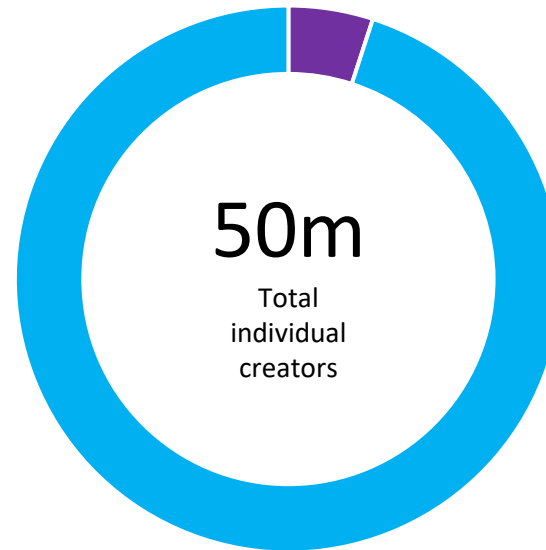
New Platforms/Tech/Business Models

New distribution platforms and technologies that empower content creators with more and better monetization tools have emerged

Technology Democratization

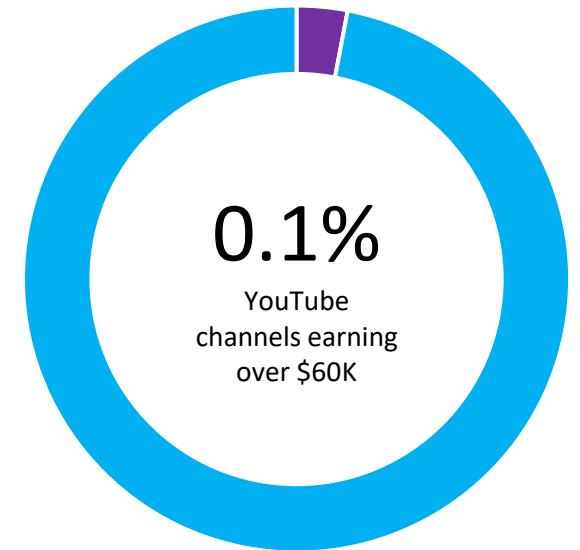
Technology democratization has made an increasing number of professional content creation technology tools more accessible

Estimated size of Creator Economy



■ Professionals ■ Amateurs

Estimated YouTube Income Distribution, 2016



■ Above poverty line ■ Below poverty line

Sources: IABM, Influencer MarketingHub, SignalFire, Offenburg University of Applied Sciences, Tubics – The “0.1%” data point is based on 2022 estimates

M&A

Rising interest rates have not stopped MediaTech M&A (yet)

Selected private investments in MediaTech

2021	2022
 	 
 	 
 	  
 	  

Ad Tech

Ad tech M&A deals were 90 in 2021, up from 30 in 2020 and a median of 49 for the period 2017-2019

Media & Telco M&A

Number of deals in H1 2022
compared to H1 2021

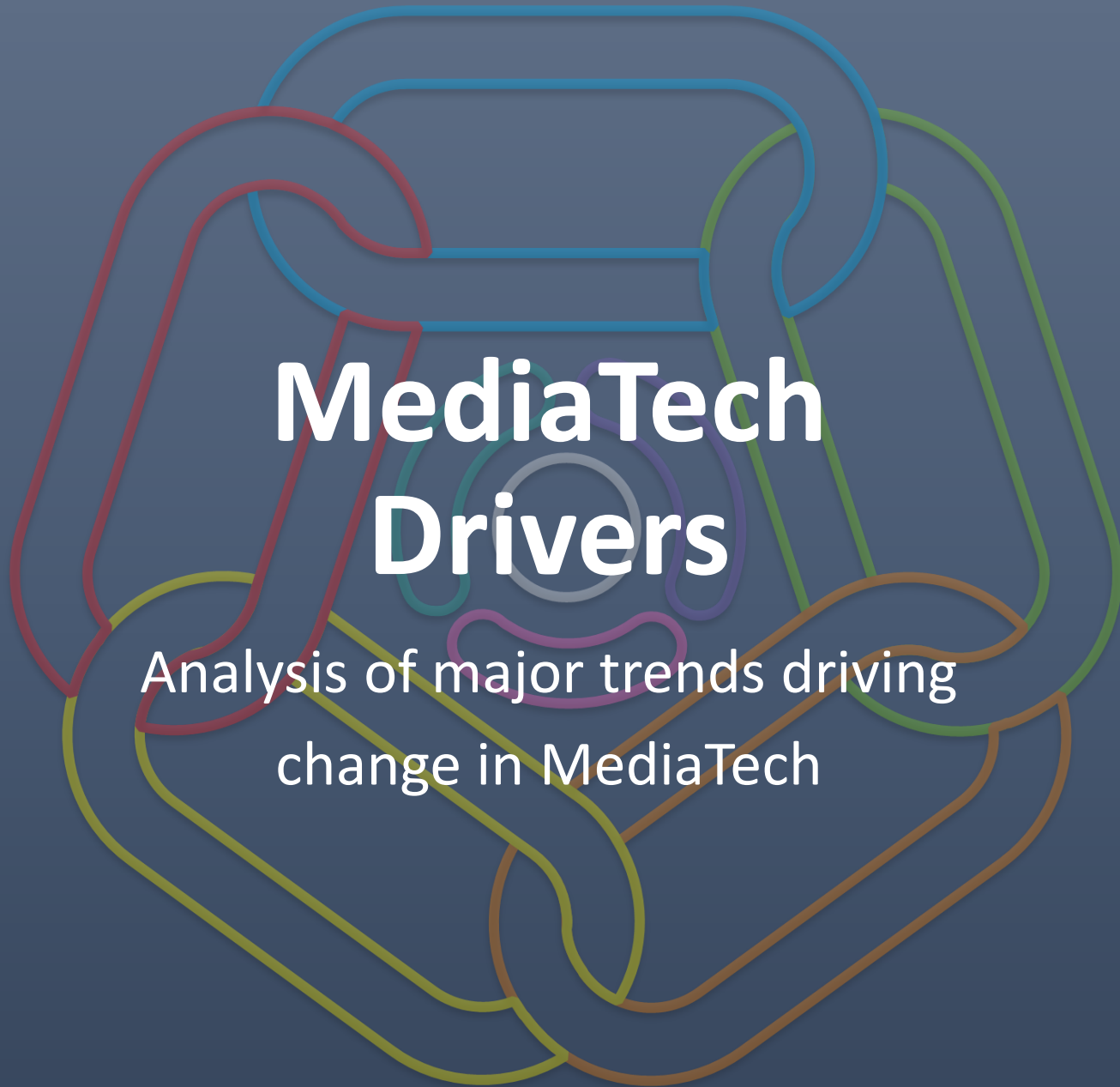
+28%

Private Equity

Private equity acquisitions in media and
telco market, up from 24% in 2018

42%

Sources: IABM, PwC, LUMA Partners, Axios



MediaTech Drivers

Analysis of major trends driving
change in MediaTech

Talking about a Revolution

Convergence, transformation and resilience

- **Convergence** is increasingly **blurring the lines of demarcation between** different sectors in MediaTech, with **gaming becoming** the **epicentre** of this change. An increasing number of media businesses have launched **initiatives that combine data and interactivity** to improve engagement with younger generations as well as **augment and diversify** their **revenue streams**. Convergence is having a **significant impact on production** as well, with the **growth of virtual production being a sign of this**. **Will Web3 be the next phase** for convergence?
- MediaTech businesses have continued their digital **transformation, streamlining** their **traditional** lines of business **to support** their **new digital** divisions. However, the **old remains very much the cash cow**, with **most seeing it as still crucial** to future success. This **transition** can be relatively well **mapped to a technology transition** involving the **move to cloud-based and data-driven workflows** as well as a **move to SaaS on the supply-side**.
- **Resilience** has become a **major business priority** in MediaTech. **Decentralization efforts** in 2020 have **increased vulnerabilities for businesses**, prompting them to **increase investment in support infrastructure**. Moreover, recent **macro headwinds** have introduced **financial pressures** ranging from **supply chain disruption** to **talent scarcity**. **ESG is also becoming** an **important** part of the resilience equation.

Sources: IABM

MediaTech Change

Key business and tech drivers identified by IABM in 2022

Drivers

Impact on business

Impact on tech



Convergence

Engaging with younger generations and augmenting/diversifying revenues

Investing in interactivity, data, consumer experiences etc.



Transformation

Streamlining old linear services to support new digital offerings

Investing in Cloud/SaaS while deprioritizing legacy



Resilience

Managing risk and complexity derived from decentralization

Investing in risk mitigation initiatives and tech talent

Sources: IABM

Convergence

The lines of demarcation between sectors are blurring

Netflix identifying its main competition

*We **compete** with a staggeringly **large set of activities** for **consumers' time and attention** like **watching linear TV**, **reading a book**, **browsing TikTok**, or **playing Fortnite**, to name just a few. As one example of this dynamic, on October 4, **when Facebook experienced** a global **outage** for several hours, **our engagement saw a 14% increase** during this time period*

Netflix's Q3 Letter to Shareholders
(October 2021)



Sources: IABM

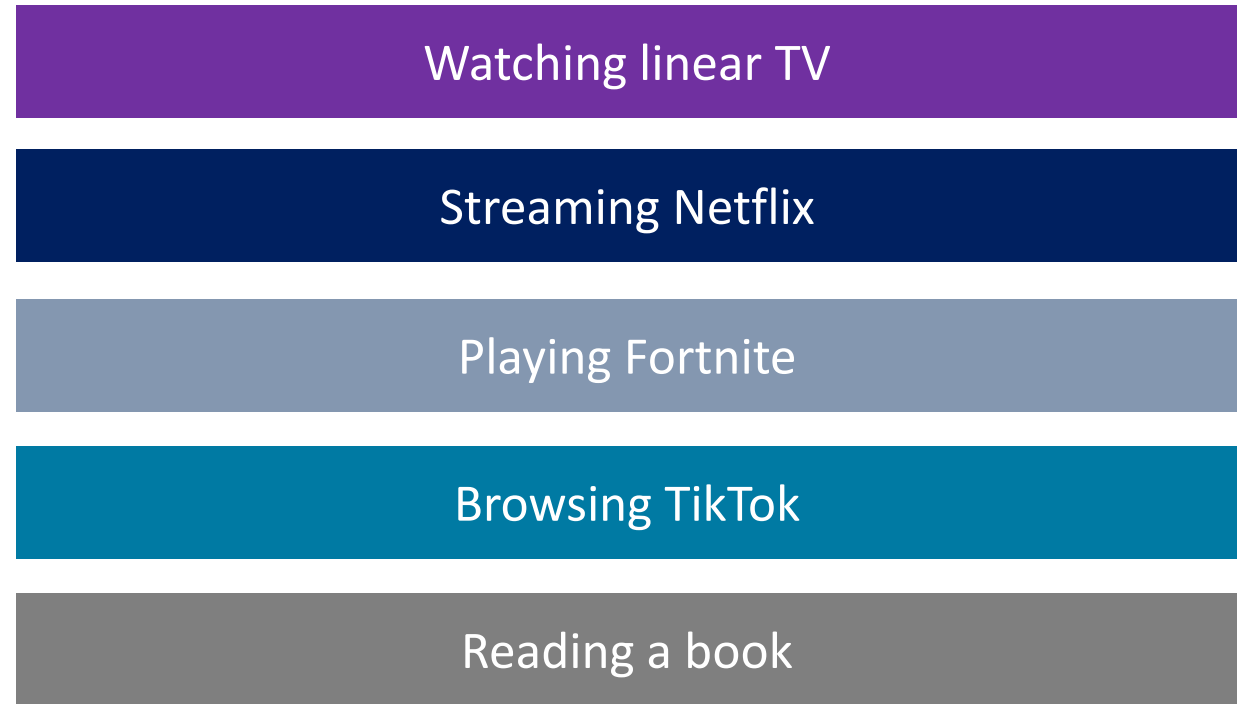
Convergence

MediaTech Before: Clear demarcation

MediaTech Before



Tagging the competitors identified by Netflix



Sources: IABM

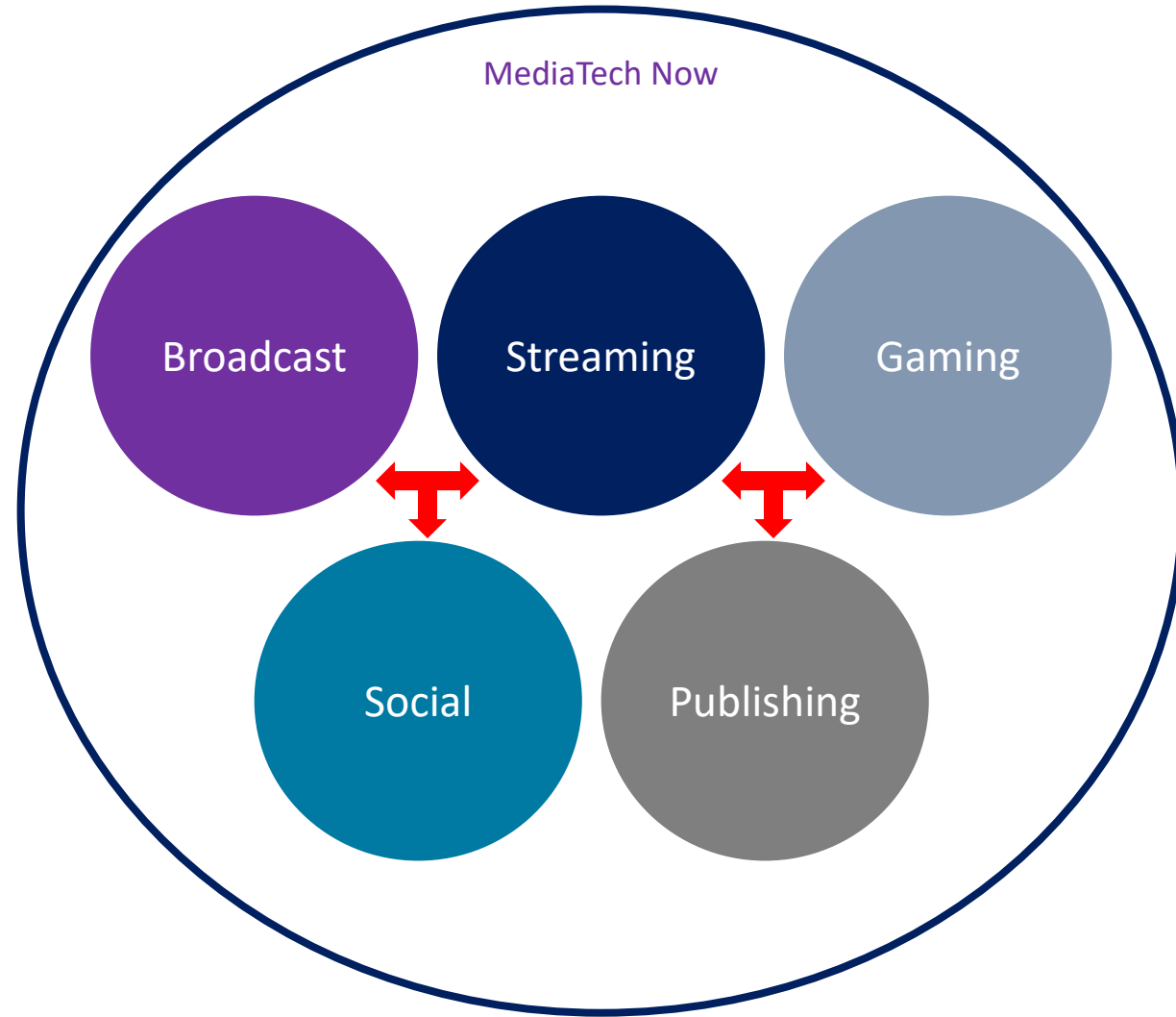
Convergence

MediaTech Before & Now: Convergence

MediaTech Before



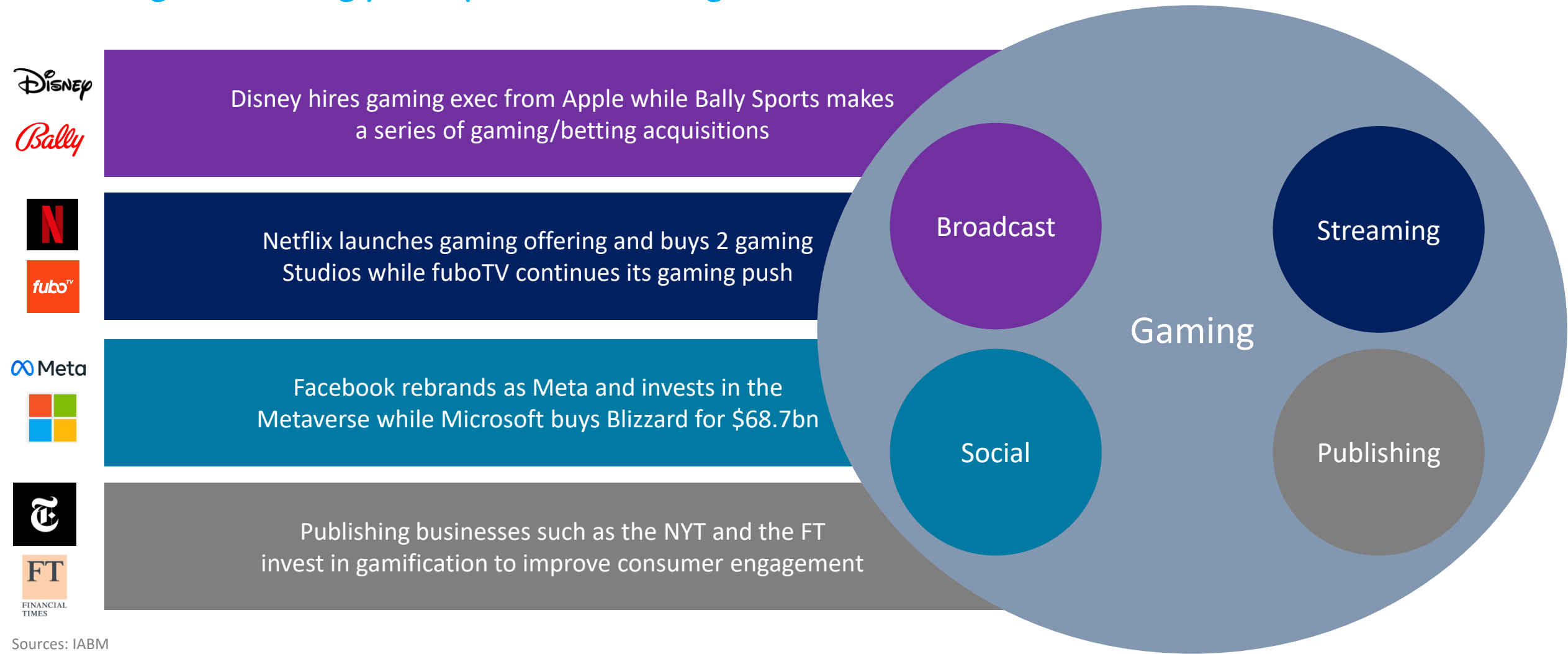
MediaTech Now



Sources: IABM

Convergence

Gaming is increasingly the epicentre of change in MediaTech universe



Sources: IABM

Convergence

Many initiatives in MediaTech combine data, interactivity, gaming and betting

Selected M&E convergence initiatives between 2021 and 2022

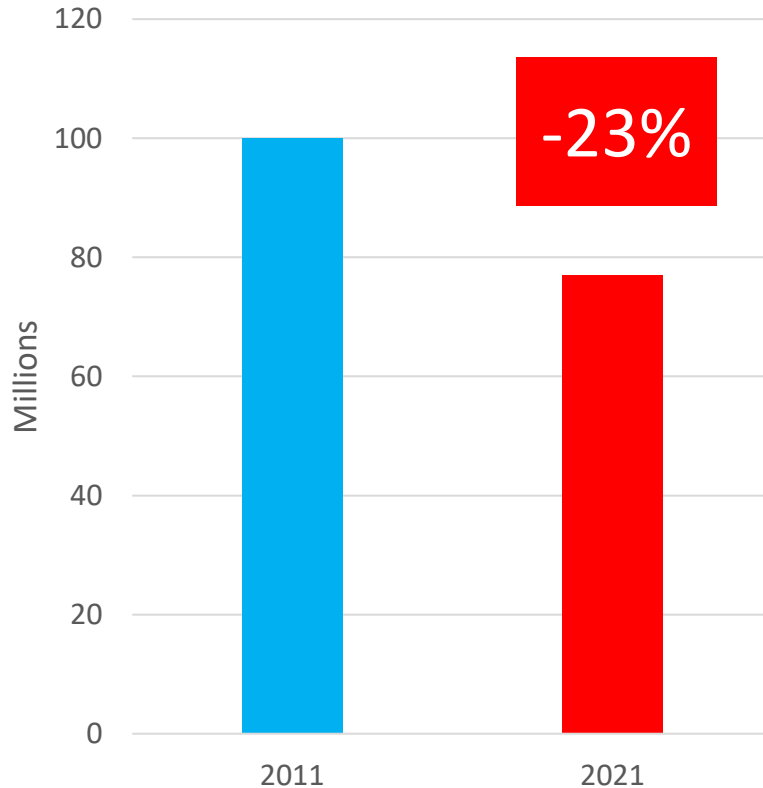
Company		Initiative	Type	Primary Focus
fuboTV		Acquisition of Vigtory	Acquisition	Betting
fuboTV		Acquisition of Edisn.ai	Acquisition	Data
fuboTV		Launch of FanView Live Stats	UX Development	Data
fuboTV		Launch of Free-to-Play Games	UX Development	Gaming
fuboTV		Launch of Fubo Sportsbook	UX Development	Betting
fuboTV		Launch of E-Commerce Shop	UX Development	Commerce
fuboTV		Launch of Pick'em Games	UX Development	Gaming
fuboTV		Launch of SportsGrid	UX Development	Interactivity
DAZN		Acquisition of Texel	Acquisition	Interactivity
DAZN		Launch of DAZN X	UX Development	Interactivity
DAZN		Launch of DAZN Bet	UX Development	Interactivity
Brighcove		Acquisition of HayPak	Acquisition	Interactivity
Brighcove		Acquisition of Wicket Labs	Acquisition	Data
Netflix		Launch of Netflix Games	UX Development	Gaming
Netflix		Acquisition of Next Games	Acquisition	Gaming
Netflix		Acquisition of Boss Fight	Acquisition	Gaming
Netflix		Acquisition of Night School	Acquisition	Gaming
Vimeo		Acquisition of WIREWAX	Acquisition	Interactivity
Bally's Corporation		Acquisition of Telescope	Acquisition	Interactivity
Bally's Corporation		Acquisition of Gamesys Group	Acquisition	Gaming
Bally's Corporation		Acquisition of SportCaller	Acquisition	Gaming

Sources: IABM

Convergence

Disney's plans in sports show that the sector could be a testbed for convergence

ESPN cable subscribers, 2011 and 2021



Disney comments on the strategic importance of the metaverse and sports betting

*While **multiplatform television and streaming** will continue to be the **foundation of sports coverage** for the immediate future, we believe the **opportunity** for The Walt Disney Company **goes well beyond** these channels. **It extends to sports betting, gaming and the metaverse.** In fact, that's what excites us, the opportunity to build a sports machine akin to our franchise flywheel that **enables audiences to experience, connect with and become actively engaged** with their favorite sporting events, stories, teams and players*

Bob Chapek
CEO
Disney
(February 2022)



Sources: IABM, Company filings

Convergence

Augmenting and diversifying revenue streams is the real endgame of convergence

fuboTV on Vigtory acquisition

*We believe **online sports wagering is a highly complementary business** to our sports-first live TV streaming platform. We believe there is a real flywheel **opportunity with streaming video content and interactivity**. We not only expect sports wagering to become a **new line of business and source of revenue**, but we **also expect that it will increase user engagement on fuboTV resulting in higher ad monetization, better subscriber retention, and reduced subscriber acquisition costs***

David Gandler
Co-Founder and CEO
fuboTV
(January 2021)



Sources: IABM, Company filings

Convergence

The rise of virtual production reflects the progression of convergence in media

Unreal Engine

Growth in downloads
(January-December 2021)

+40%

ICVFX

ICVFX stages in January 2022
(up from <12 in 2020)

250

*The Carlyle Group will support disguise to capitalize on the **significant market opportunity for virtual production technology**, a trend that has only accelerated during the Covid-19 pandemic*

Press Release
From Carlyle Group
(March 2021)

THE CARLYLE GROUP



*In the **entertainment market**, we experienced **increased demand for our tracking systems to enable in-camera visual effects (ICVFX) in virtual production environments***

Interim Results
FY 2021
Oxford Metrics
(May 2021)

Oxford Metrics

Sources: IABM, Company Filings, Epic Games, ICVFX stands for "in-camera visual effects"

Convergence

Convergence increases latency in production, leading media businesses to look at the edge

Stephen Kowalski
Director of Digital
Production Infrastructure
Engineering
Netflix
(February 2022)



Christian Kennel
VP Post & Production
Technology
FOX Entertainment
(February 2022)



*Historically, artists had specialized machines built for them at their desks; **now**, we are working to **move** their workstations **to the cloud**. In order to provide a good working experience for our artists, **they need low latency access** to their virtual workstations*

*With AWS Local Zones in **close proximity to our production hubs**, shoots, and the famed FOX lot, we're able to **deliver cloud resources directly to our artists**, allowing them to craft their vision without the limitations of traditional remote solutions*

AWS expanded its Local Zones by 32 new cities in February 2022

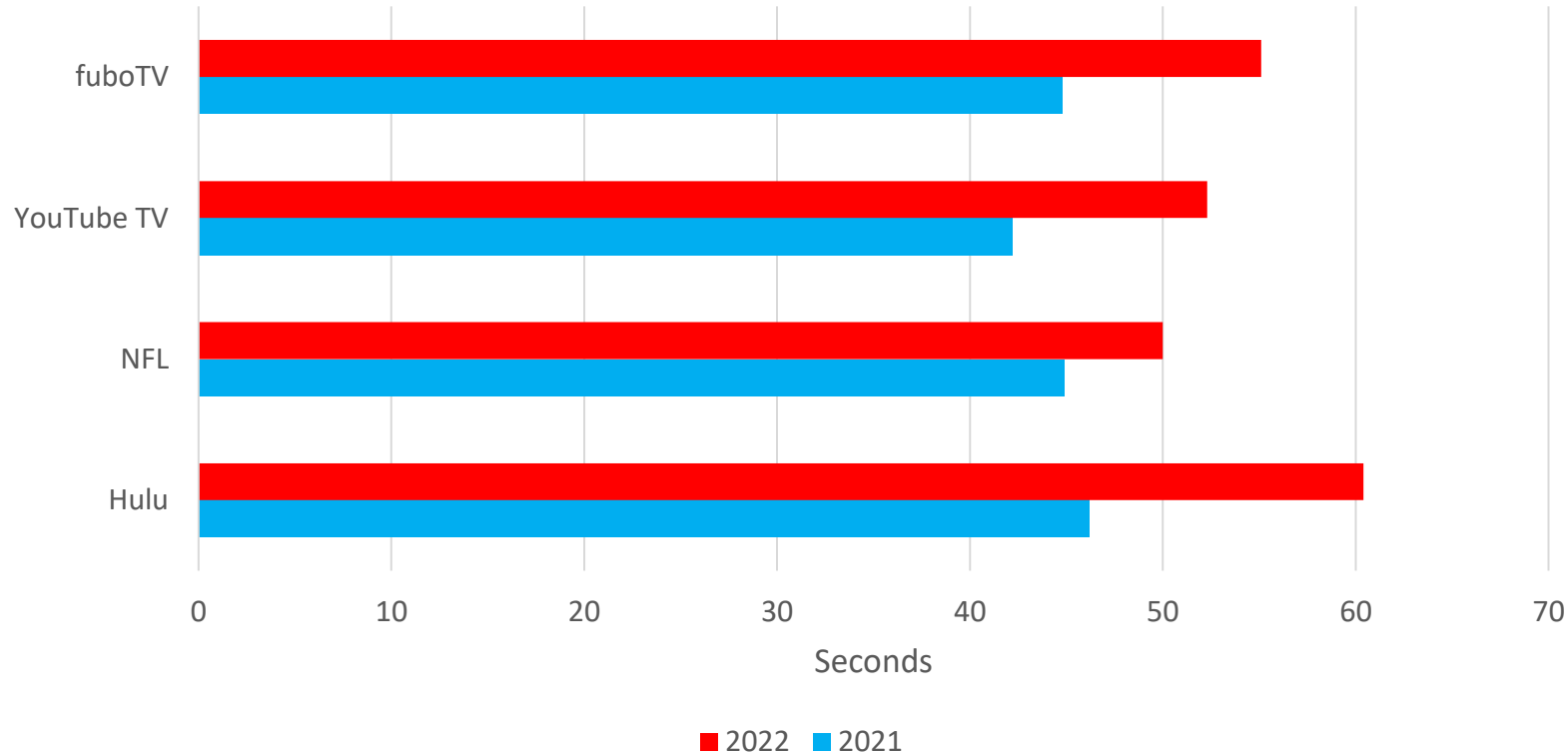


Sources: IABM, AWS

Convergence

Convergence also increases latency in live distribution

Super Bowl 2022 and 2021: Measured lag behind real-time for selected services



OTT Viewing

More viewers streamed the 2022 Super Bowl through the internet, increasing latency issues for providers

Sports Betting

More viewers streamed the 2022 Super Bowl while betting on it in near real-time, making latency more of an issue for providers

Sources: IABM, Phenix, TVTechnology

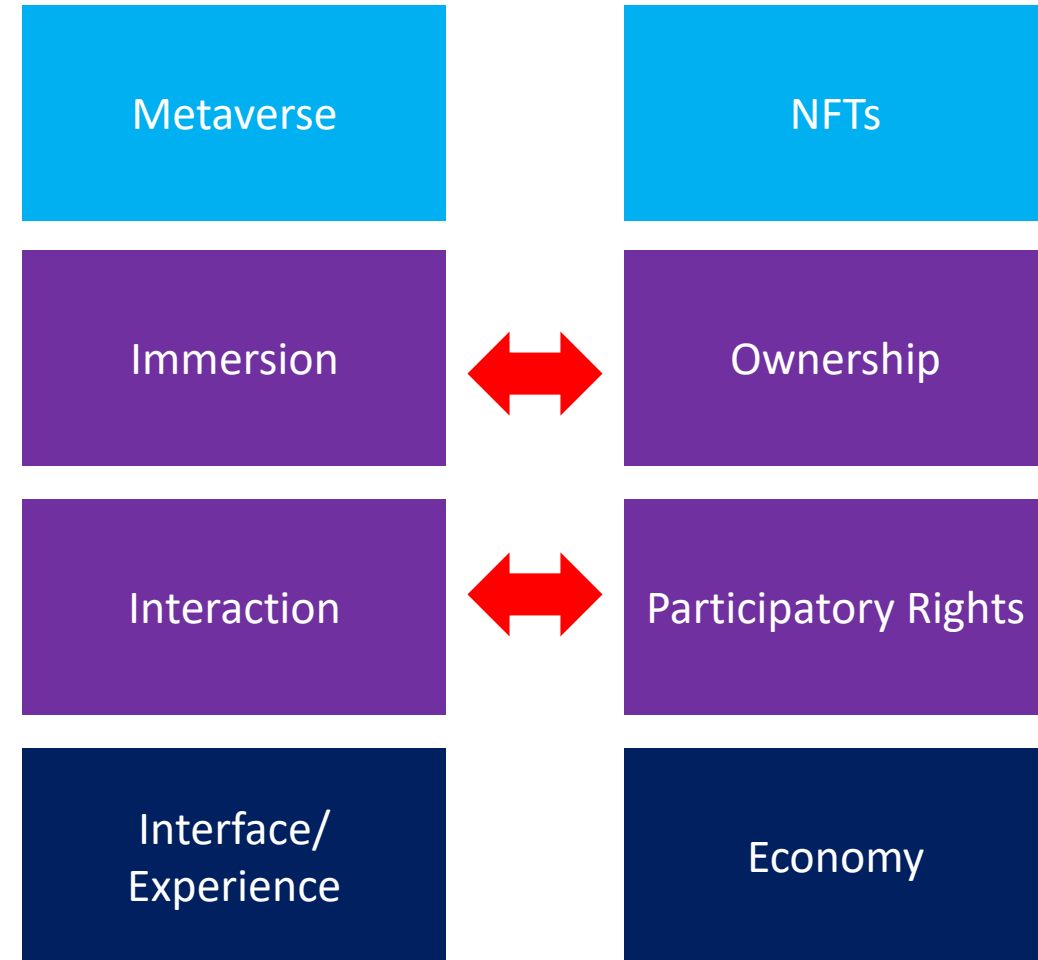
Convergence

Will Web3 be the next phase for convergence?

Meta's Q3 2021 Earnings Call

*If you're in the metaverse every day, then **you'll need digital clothes and digital tools** and different experiences. Our goal is to help the metaverse reach **1 billion people** and **hundreds of billions of dollars of digital commerce** a day*

Mark Zuckerberg
Founder, Chairman & CEO
Meta
(October 2021)



Sources: IABM, Company filings

Convergence

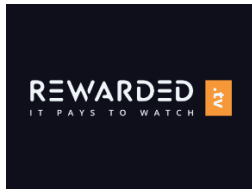
Despite crypto crash, Web3 does offer new business models to media

Rewarded TV

Ad-free and sub-free OTT service rewarding users for time spent on the platform. NFT payments used to pay content providers

*Our **viewers will receive rewards** and **pay for premium content with RPLAY**. RPLAY will be available to exchange for cash, or **can be earned by watching free content** on Rewarded TV...**Users can also earn multipliers** on their RPLAY earnings **through ‘gamified content’***

Krish Arvapally
CEO
Replay
(July 2022)



Script.TV

Service offering linear content schedule with non-skippable ads rewarding users for time spent on the platform.

*Although Script.TV gives **viewers the opportunity to profit from their viewing time** and **personal data in return of SCRIPT blockchain tokens [SCPT]** to reward them, it of course, is **not our business model to purely just give out tokens***

Akeem Ojuko
Co-Founder
Script.TV
(July 2022)



Sources: IABM, TVTechnology

Transformation

Balancing the old and the new

Financial Trends



Linear

Revenues growing slowly or declining

Healthy operating margins



Digital

Revenues growing at a high rate

Still loss-making for most

Sources: IABM

Transformation

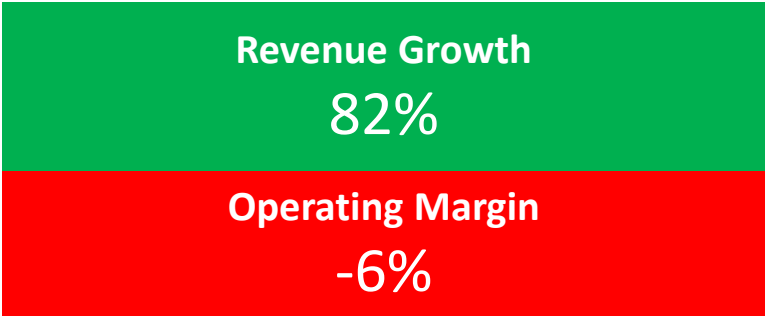
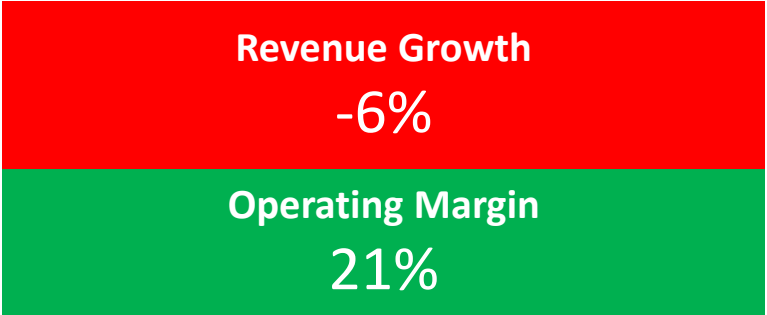
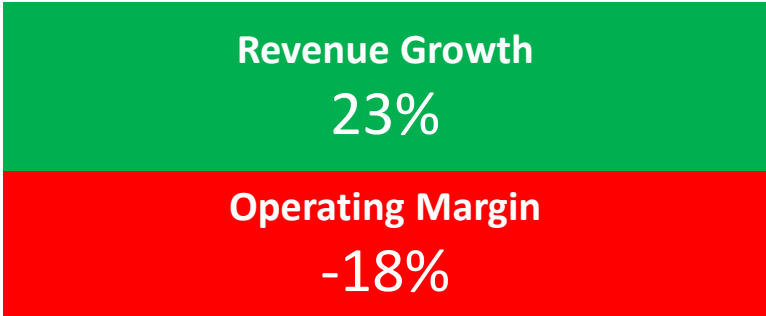
Balancing the old and the new



Linear



Digital



Sources: IABM, Company filings - only M&E divisions considered

Transformation

Linear continues to be rationalized

Selected rationalization initiatives by media businesses



Shut down ESPN Classic, 30 cable channels in 2020, & about 100 in 2021 to focus on streaming

Shut down Pay-TV channels Fox Life & Viajar in Spain

Shut down the National Geographic UK linear channel



Shut down NBC Sports Network and moved sports content to Peacock streaming service

Shutting down the US linear Olympic Channel in September



Sold CBS Studio Center for \$1.85bn to “redeploy capital to strategic growth priorities”

Nickelodeon shut down South Korean linear channel to shift programming to Paramount+

Sale of CBS Studio Center

*This sale is **part of an ongoing optimization of ViacomCBS’ real estate and operations portfolio** and will allow the company to **redeploy capital to strategic growth priorities, including streaming***



Naveen Chopra
EVP and CFO
ViacomCBS (now Paramount)
(November 2021)



Sources: IABM, Company filings

Transformation

As digital is expensive

Pre-Merger Operating Margin

Median of quarterly operating margin at
Discovery from 2018 to 2021

23%

Post-Merger Operating Margin

Operating margin in Q2 2022 at
WarnerBros Discovery

-37%



WARNER BROS.
DISCOVERY

WarnerBros Discovery comments on ways to improve profitability

Efficiency measures

*We have implemented immediate measures to address and redirect the trend line. Most importantly, supported by key leadership changes and the introduction of a **more robust framework for capital allocation based on financial metrics and measured KPIs**. Key measures include: number **one**, the **shutdown of CNN+**. Number **two**, **restructuring the scripted content portfolio** on the linear net, kids and animation, direct to HBO Max films as well as **international local content not sufficiently supported by robust enough investment cases...***

Working on \$3bn synergies/job cuts

Considering ad-supported streaming

Restructuring content portfolio

Gunnar Wiedenfels
CFO

WarnerBros Discovery
(August 2022)

Sources: IABM, Company filings

Transformation

Particularly for PSBs facing flat or declining funding

RTÉ writes letter to Irish Public Accounts Committee after it is criticized for live streaming issues

On-demand and live streaming technology requires extensive investment and infrastructure to deliver parity of service with linear broadcast services, which have been in operation for many decades, with continued investment of significant capital funding to the level of tens of millions...In addition, further evolution of the service needs additional specialist skills which will require increased operating expenditure

Letter to the Irish Public Accounts Committee
(February 2022)

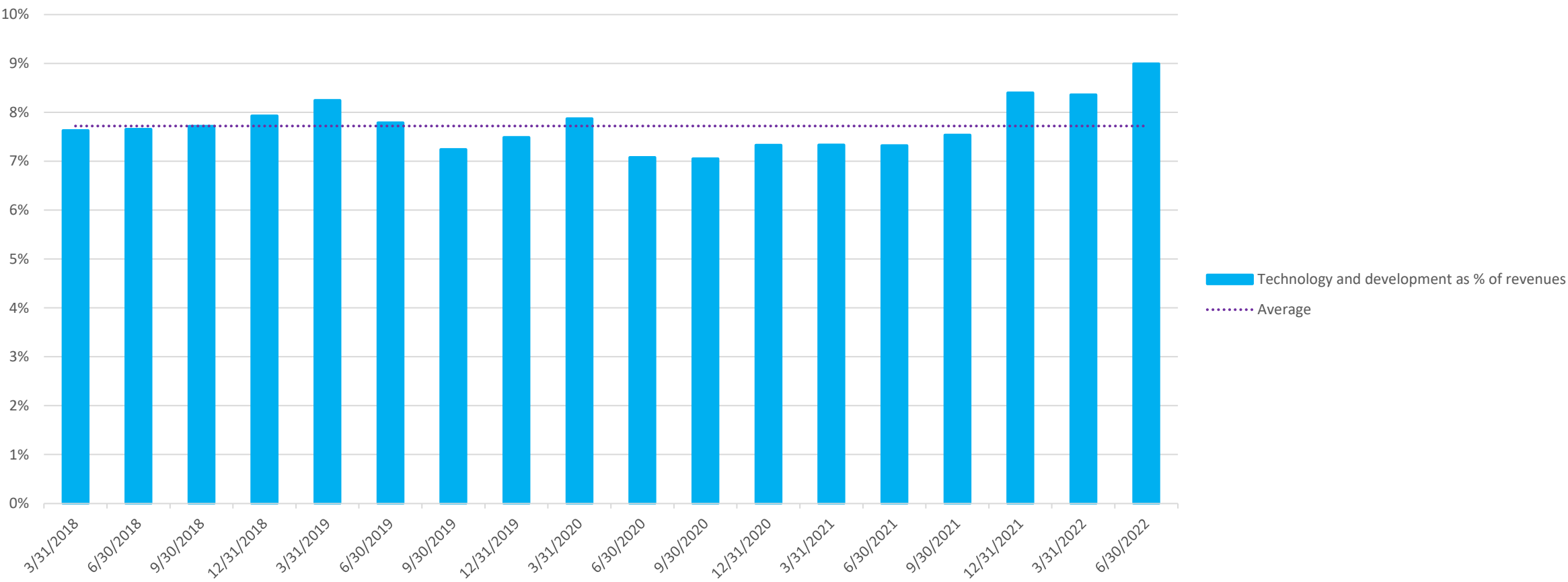


Sources: IABM, Company filings

Transformation

Digital requires continued investment, as shown by Netflix's commitment to tech

Netflix's quarterly investment in technology and development as % of revenues, 2018-2022



Sources: IABM, Company filings

Transformation

Media businesses continue to streamline the old to support the new

Tech Decision-Making



Linear

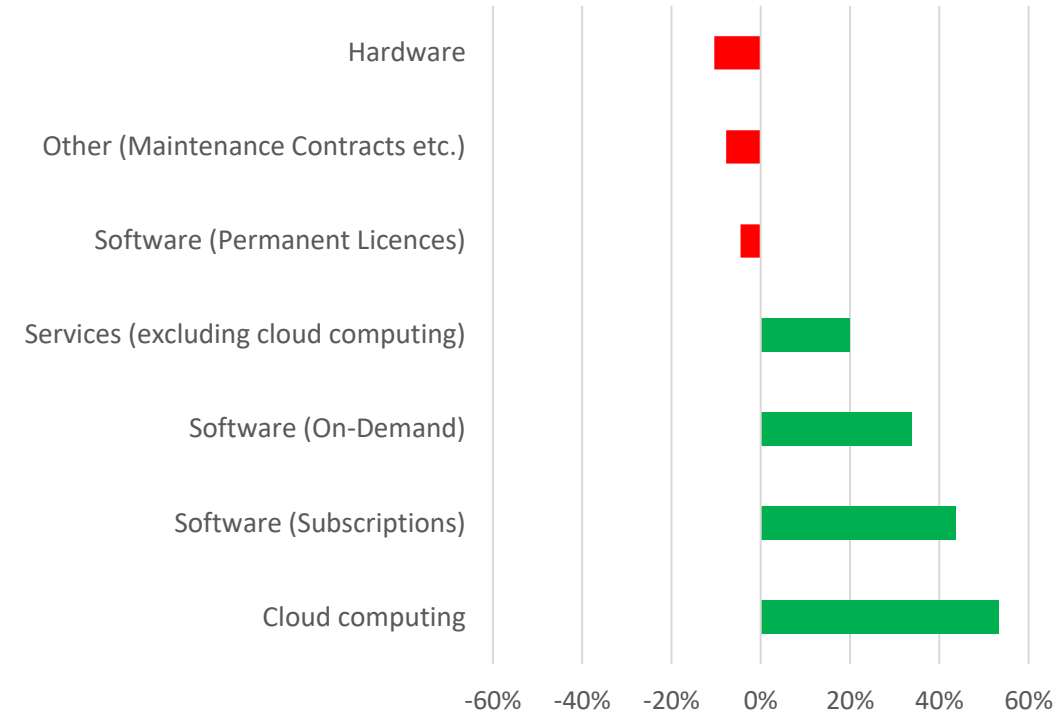
- Keeping costs low
- Doing more with less



Digital

- Not keeping costs low
- Investing in potential

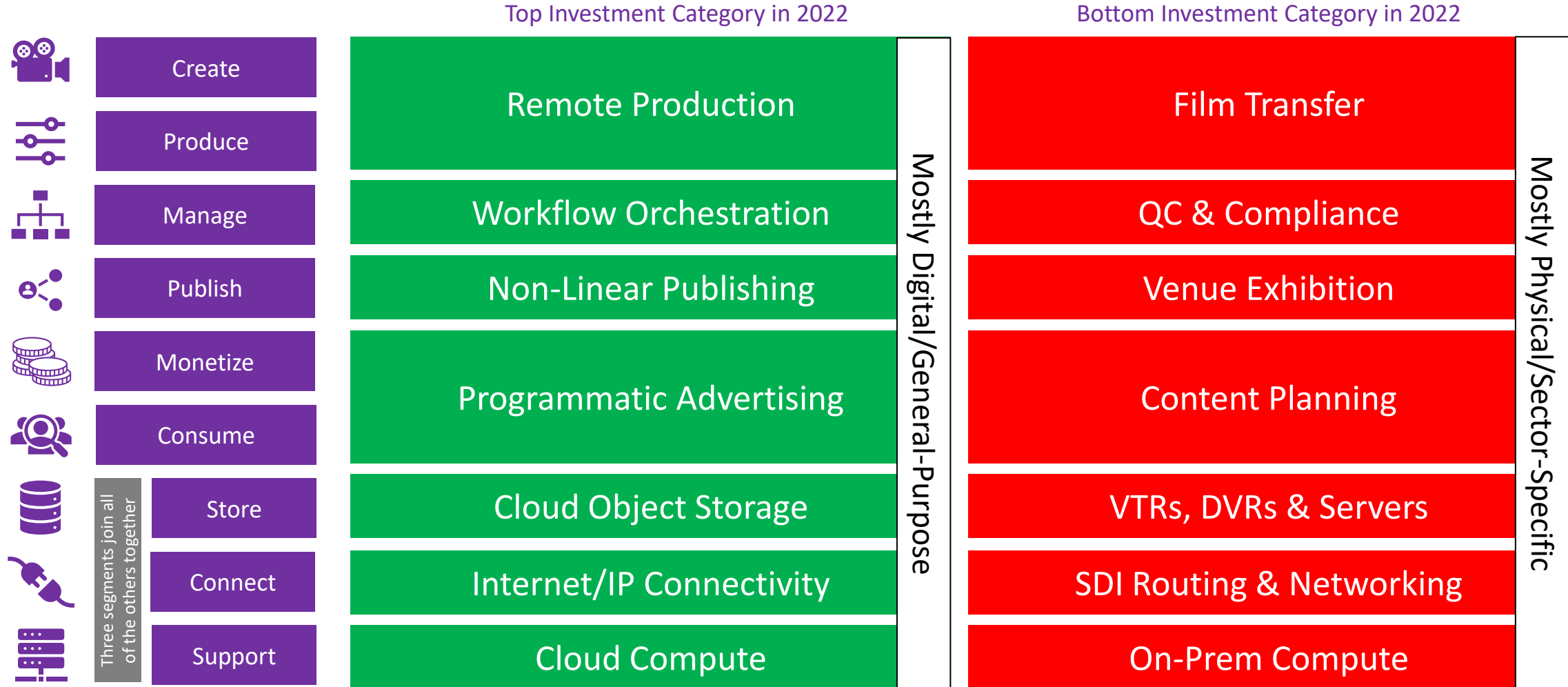
Media tech investment outlook, NET difference in investment



Sources: IABM

Transformation

MediaTech investment patterns show dichotomy between digital and physical



Sources: IABM

Transformation

Many recent transformation initiatives are really about cloud and data

Selected digital transformation initiatives between 2019 and 2022

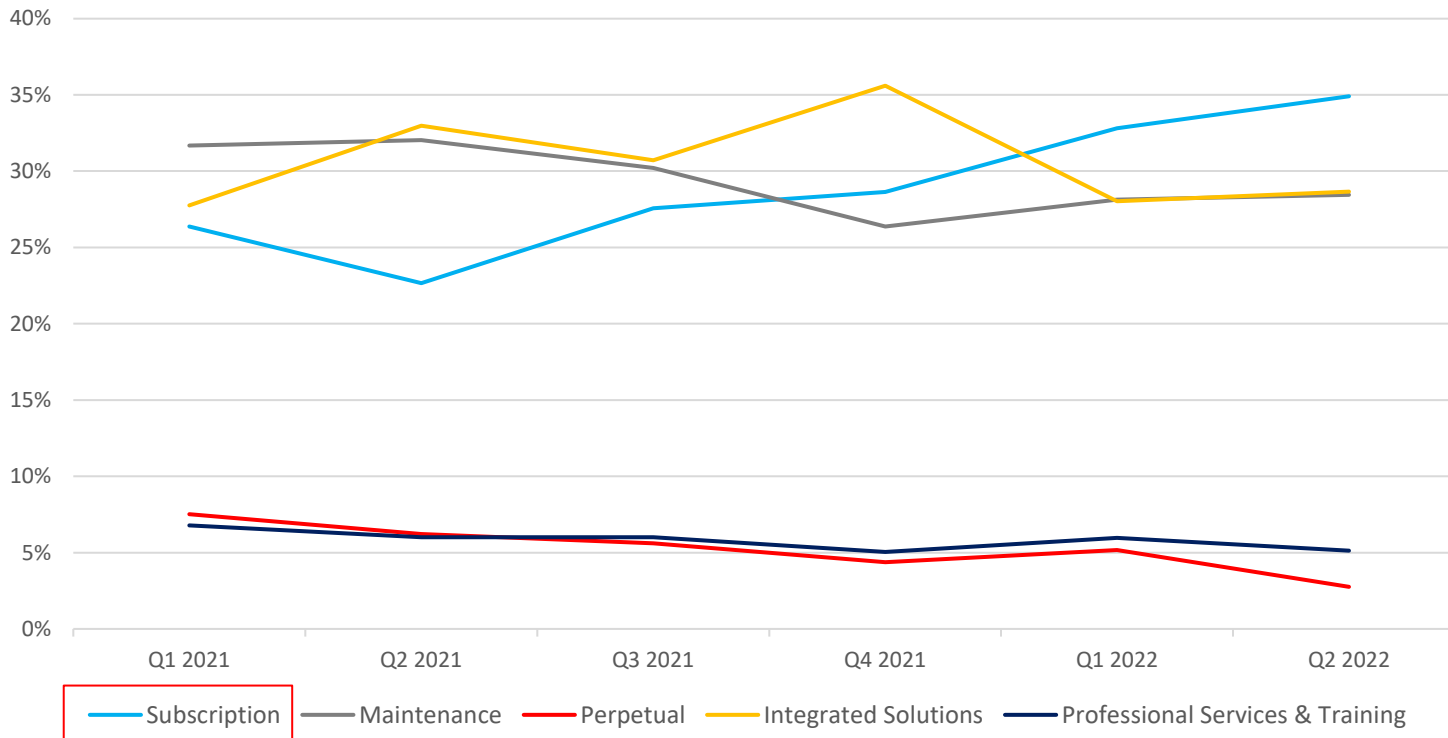
Company	Year	Details	Focus
ProSiebenSat.1	2019	With AWS, ProSiebenSat.1 is improving the time to market of new applications, and introducing advanced analytics and machine learning (ML) technologies across its organization	Global
Fox	2019	Fox's transition to the cloud included the move of its media supply chain for linear and digital delivery as well as the increasing reliance on analytics services	Global
France Télévisions	2020	"Our main objective is to bring together all the data entrusted by producers and the data enriched by AI solutions in order to gauge, for each program, our level of knowledge."	Manage
Globo	2021	Globo's transition to the cloud included the migration of 100% of its data centers to the cloud as well as the increasing use of machine learning services	Global
Disney	2021	Disney+ is expanding its use of AWS's services to include more than 50 technologies, such as machine learning, database , storage, content delivery, serverless, and analytics.	Global
SVT	2021	SVT moved from perpetual licences to Avid's MediaCentral subscription model to benefit from Multisite tool, providing AI-assisted search capabilities with phonetic search and seamless integration between SVT's sites.	Manage
Discovery	2021	Discovery built its new discovery+ streaming service on AWS' fully managed ML service, Amazon Personalize, generating advanced recommendations to improve UX	Consume
TF1 Groupe	2021	TF1 adopted AWS Media Intelligence (AWS MI) solutions , including Amazon Rekognition, Amazon Transcribe, Amazon Translate and Amazon Comprehend enabling faster search and content localization.	Manage

Sources: IABM, Company filings

Transformation

Demand for cloud continues to push SaaS transition in MediaTech

Avid segmental revenues as % of total net revenues



Harmonic Q2 2022 Results

Video segment revenue grew 20%, with the underlying highlight again being SaaS revenue, which was up 69% year-over-year

Patrick Harshman
CEO
Harmonic
(August 2022)



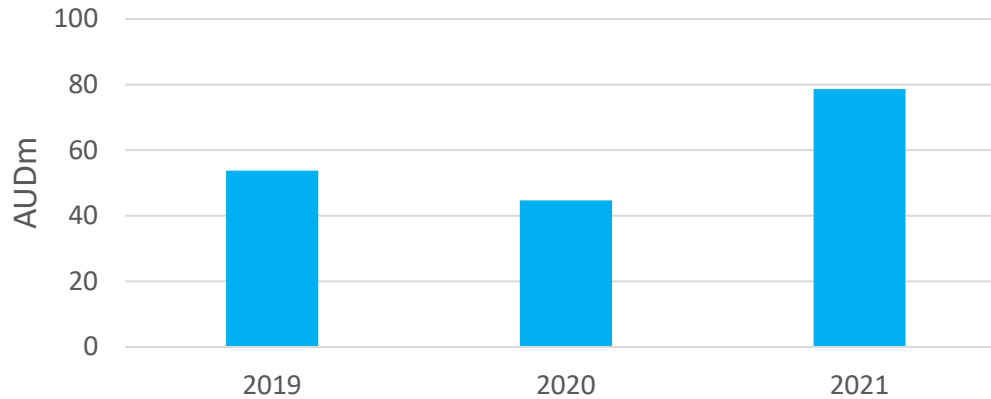
Sources: IABM, Company filings

Transformation

Cloud and SaaS have affected hardware too, which has recovered after the production restart



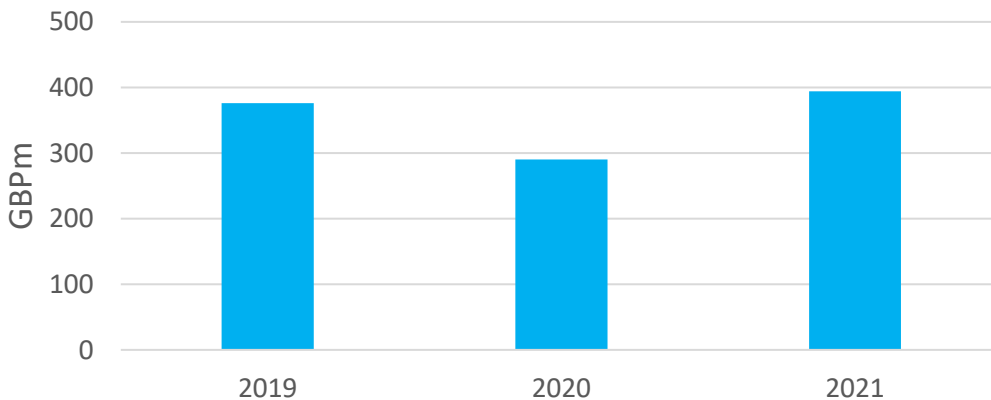
Revenues at Atomos



*Now **Atomos** is evolving the company through **software-enabled products** and applications. We're **building on an ecosystem**... We call this next phase of Atomos' evolution **Series 2**. **In the past, we engineered each product individually**... Soon, we will launch **Series 2** unifying all engineering on a single platform*

Estelle McGeachie
Former CEO
Atomos
(February 2022)

Revenues at Videndum



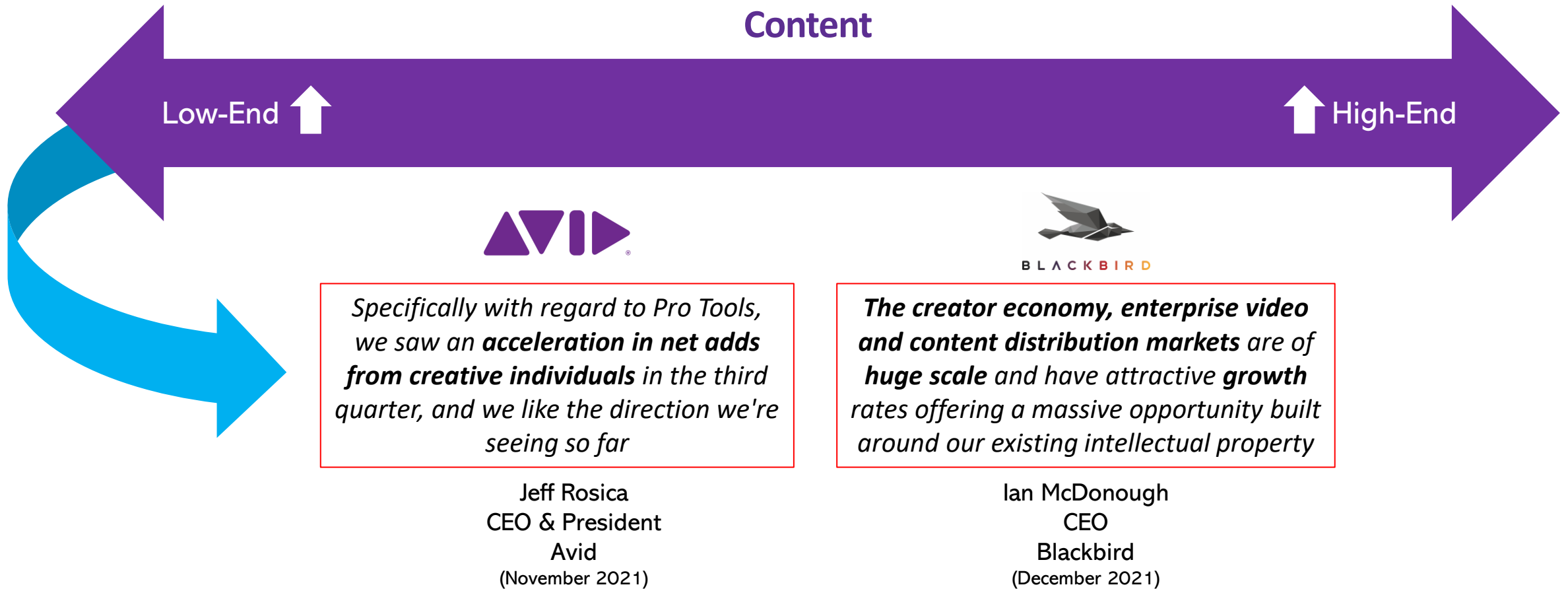
*We protected our R&D investment during the pandemic and **focused our resources** investment on the **fastest-growing segments** of the market, and **increasingly, software-enabled technology***

Stephen Bird
CEO
Videndum
(August 2021)

Sources: IABM, Company filings

Transformation



Creator economy and enterprise media yet another transformation driver for MediaTech



Sources: IABM, Company filings

Resilience

Decentralization: Historical investment patterns

2020	2021	2022
Connectivity Investment 	Support Investment 	
<ul style="list-style-type: none">Connectivity investment rises significantly and urgently to allow for remote working/productionInvestment in other areas of the content supply chain declines out of necessity and to prioritize connectivity needs	<ul style="list-style-type: none">Connectivity investment normalizes on the back of investments made in 2020: it continues, albeit at a slower paceRisks and inefficiencies created by rushed decentralization efforts prompt media businesses to focus on support technologies ranging from monitoring to security solutionsOther areas that had experienced significant growth in 2020 such as cloud archiving slow down as well	

Sources: IABM

Resilience

Decentralization is not just about investment in remote production

Hybrid Cloud

Percentage of media businesses that prefer hybrid cloud

35%

Preference for best-of-breed technology is driving hybrid cloud usage, though this is leading to further resource dispersion, increasing complexity for media businesses

Multi-Cloud

Number of cloud service providers used on average by media businesses

2

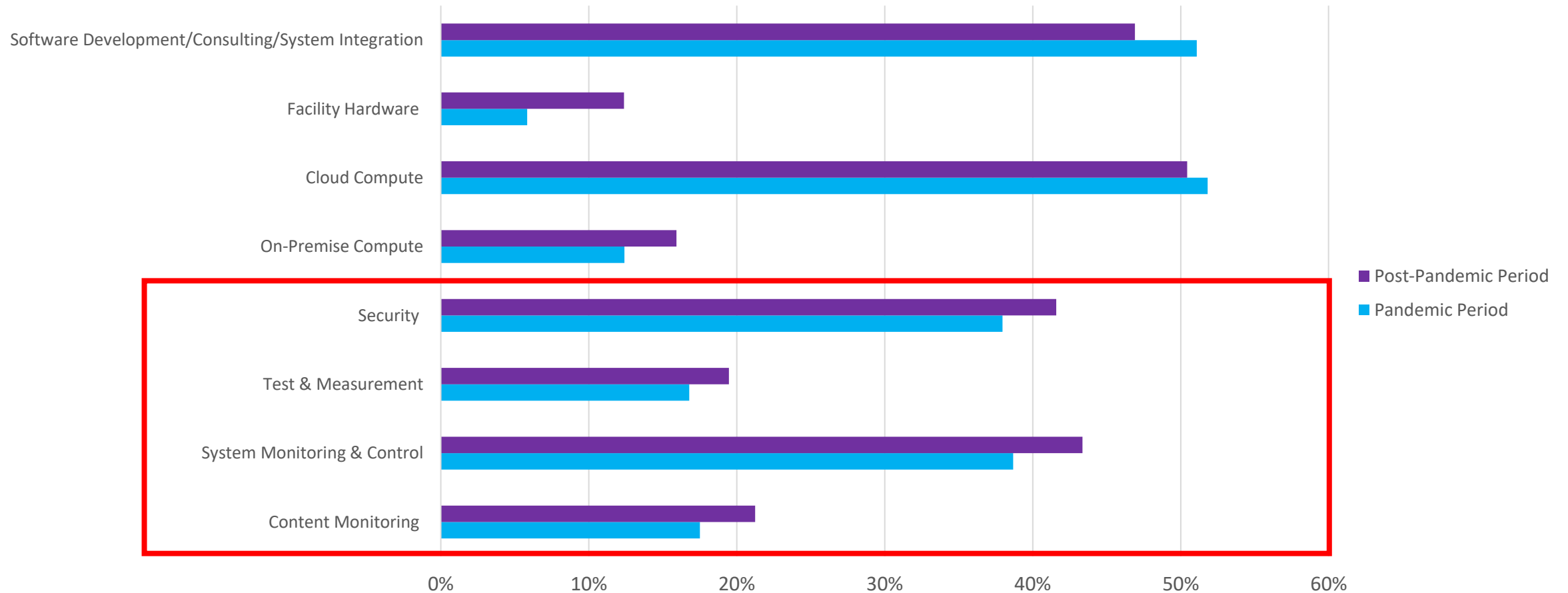
Preference for best-of-breed technology also driving multi-cloud usage, though lack of integration and standardization between providers is increasing complexity for media businesses

Sources: IABM

Resilience

Security and monitoring investment is up as decentralization increases risk

Support investment, Pandemic vs Post-Pandemic



Sources: IABM, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-2022

Resilience

Cyber attacks continue to hit media businesses

March 2021

Australian broadcaster Nine Network was hit by a cyber attack affecting production



June 2021

Cox Media Group was hit by a ransomware attack, affecting live streaming



October 2021

Sinclair Broadcast Group was targeted in a ransomware attack resulting in a data breach



January 2022

Impresa Group was hit by a cyber attack, affecting operating costs



February 2022

Cyber attack on Slovenian TV channel Pop TV affected its graphic capabilities



March 2022

Russia's invasion of Ukraine was followed by warnings about state-backed cyber attacks targeting the media industry

*In the Television segment, **operating costs increased 2.7%**, with this deviation being mostly justified by the **costs of covering the war in Ukraine** and the **cyber-attack that the IMPRESA Group was the target of at the beginning of the year***

H1 2022 Results
IMPRESA Group
(July 2022)



Sources: IABM

Resilience

Talent scarcity and inflation continue to affect MediaTech

Selected quotes on the rise of talent scarcity/inflation

*On the cost side, the primary impact is production. But the reality is **the production impact has primarily been talent**, and that has already happened. So, **talent inflation, if you will, has front run regular inflation***

Robert Bakish
President & CEO
Paramount
(June 2022)



***There's some significant headwinds** here in the US with respect to the **labor situation**. It's **very difficult to hire engineers**. Molotov has a very, very strong team of 100 plus, which if you think about it, our businesses are very similar in many respects*

David Gandler
CEO
fuboTV
(February 2022)



*The remaining increase of \$1.9m reflects a **combination of an increased workforce and salary inflation**, the **latter being driven by competitive labour market conditions** in which the Group operates*

From the Annual Report of
Aferian plc
Owner of Amino and 24i
(February 2022)

Aferian plc

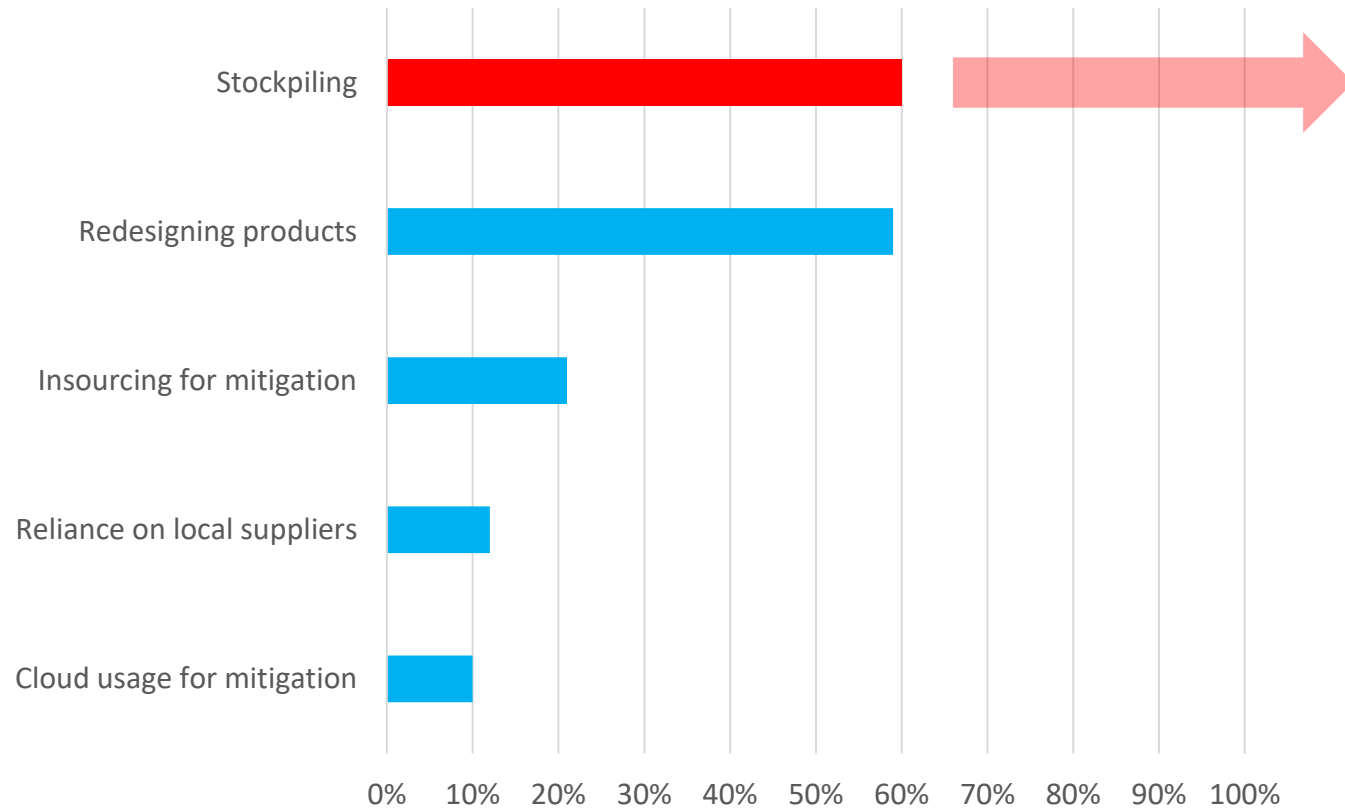
Sources: IABM, Company filings

Resilience

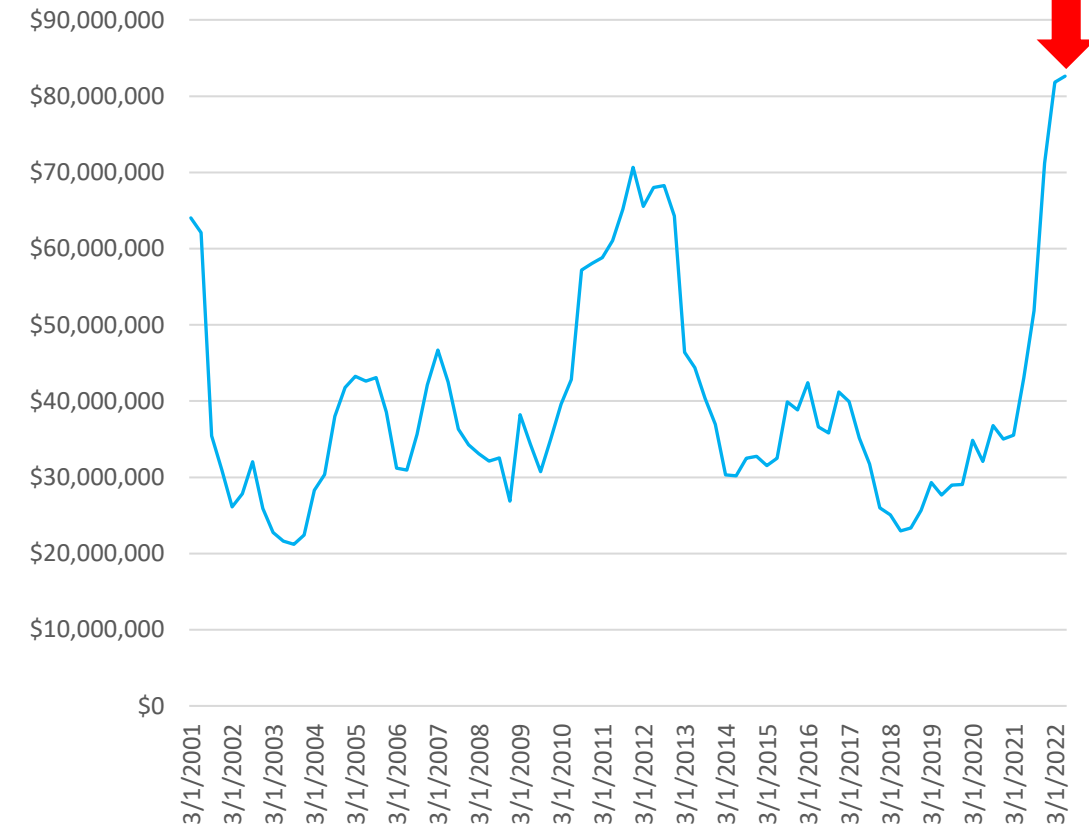
Supply chain disruption pushes MediaTech businesses to stockpile

Harmonic's inventory reached a 10-year high in Q4 2021...

Strategies to mitigate supply chain issues



Harmonic, quarterly inventory



Sources: IABM, Company filings

Resilience

And to increase prices

EVS H1 2022 results

*The high and global inflation has clearly a **negative impact on our BOM (bill of material) costs and on our remuneration costs.** We have **started compensating** for the impact of those increased costs **by applying price increases.** We expect that we will need to continue adapting our pricing to the raising inflation.*

Serge Van Herck
CEO
EVS
(August 2022)



Videndum H1 2022 results

***Price rises were implemented in 2021 and also in the first quarter of 2022.** These price rises **covered the cost inflation** that we experienced in **raw materials, freight, duty, utilities and labor.** **We increased price again in June 2022.** The benefit of these will be seen in the second half.*

Andrea Rigamonti
Deputy Group Finance Director
Videndum
(August 2022)

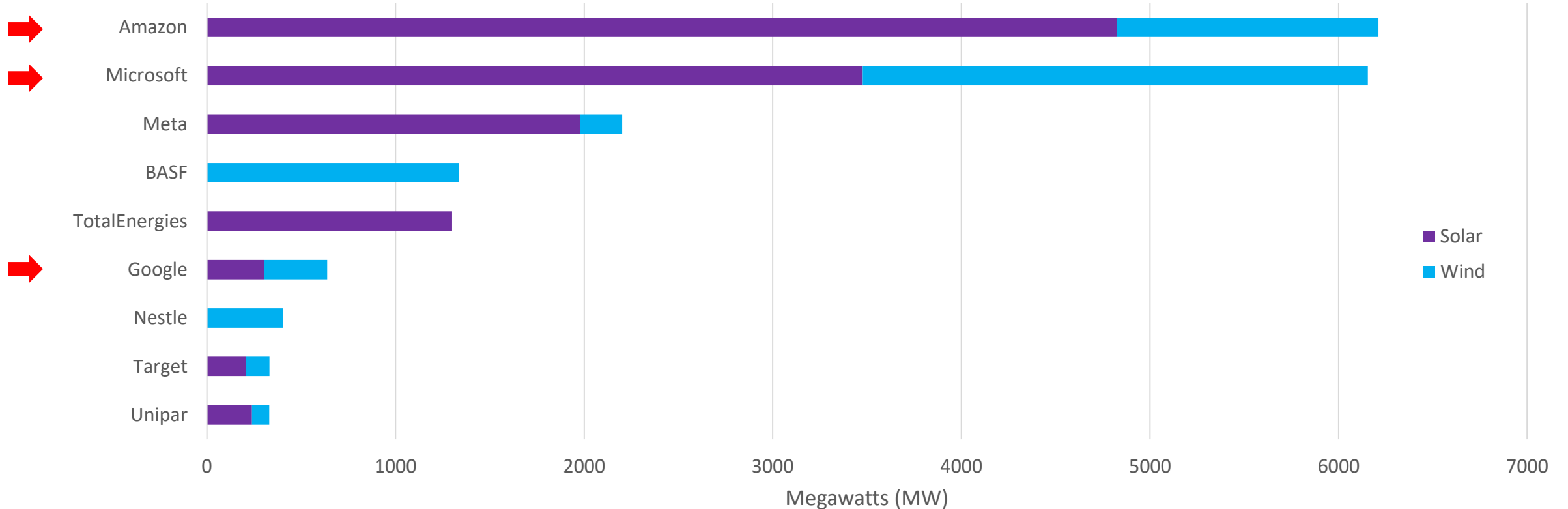


Sources: IABM, Company filings

Resilience

Sustainability is now part of the resilience equation

Top buyers of clean energy in 2021



Sources: IABM, BloombergNEF



MediaTech Investment

Analysis of investment & adoption
trends in MediaTech

Bouncing Back

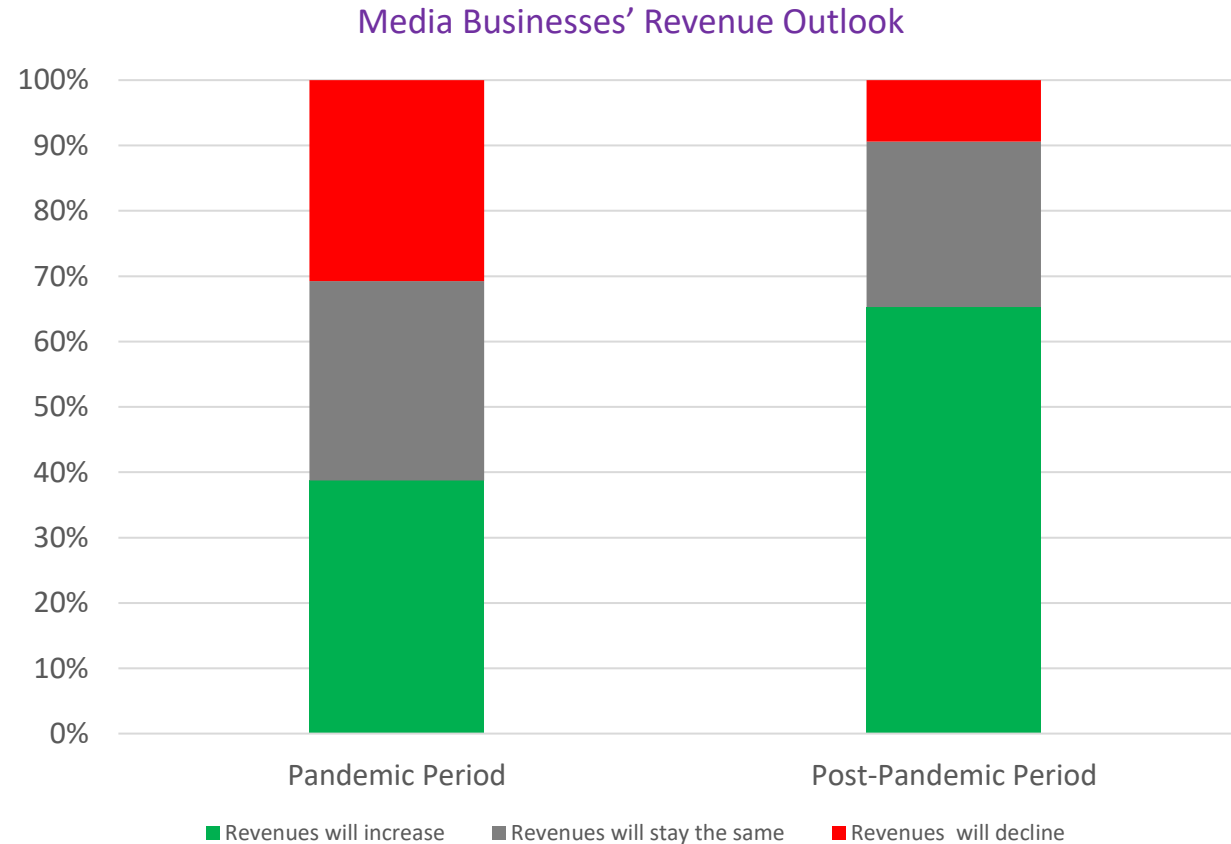
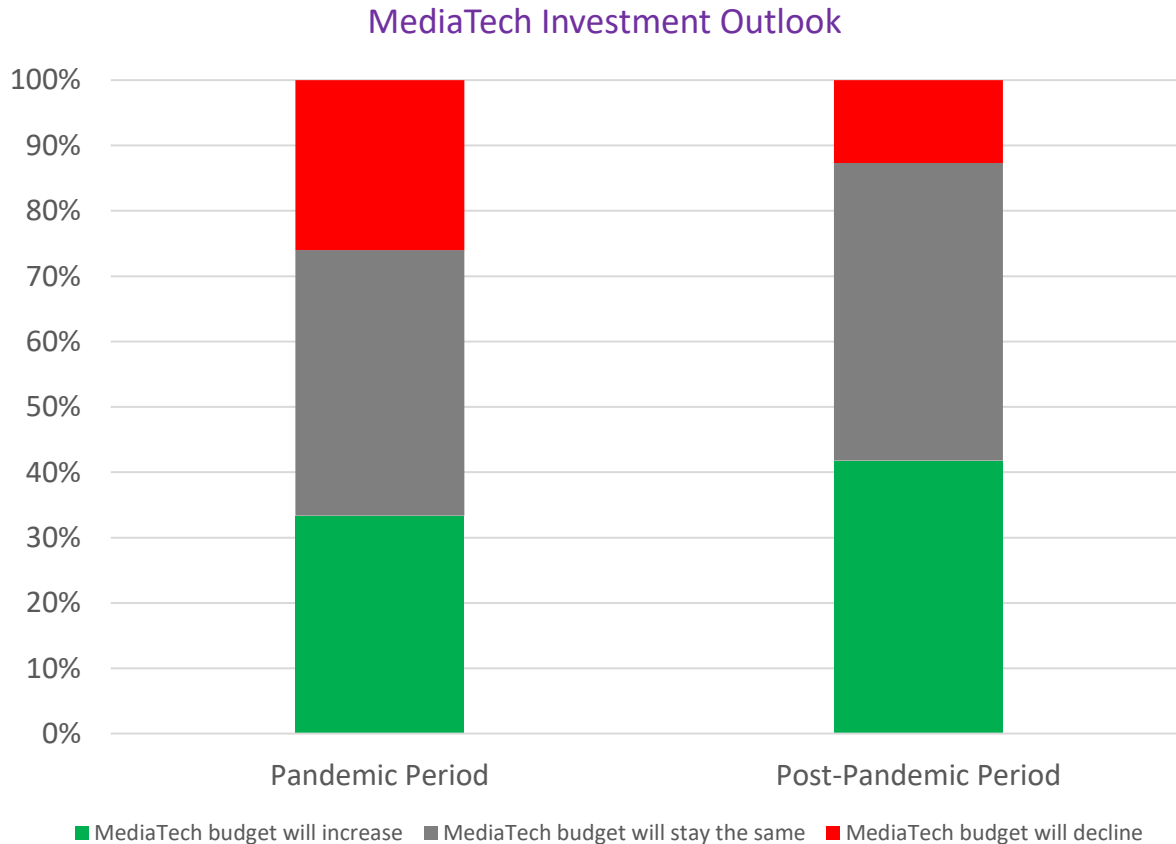
Recovery, change and disconnects

- **General MediaTech investment** has **recovered** from the trough in 2020, **consistent with** the **outlook** for media **revenues** improving as well. The **same applies** to **supply-side** revenues, with **legacy sources** such as hardware and permanent licenses **bouncing back**.
- **Content supply chain investment** shows a **changing picture** reflecting **major demand-side trends**. While **most segments** have **recovered** from their declines in 2020, **investment in Connect** has **slowed** due to the **normalization of connectivity spending** after the exceptional growth of this supply chain area during the pandemic. **Monetize** has **become the top investment area** in the industry, surpassing Consume, **which reflects the growth of AVOD models** in the industry.
- Our data also shows an important **disconnect between demand and supply** in MediaTech. **Spending on insourcing** MediaTech development **continues to grow** while **R&D budgets** on the supply side **slightly decrease**. **Another disconnect** can be traced back to the **future view of the industry**, reflected by the sector's MediaTech roadmap. **Media businesses care more** than suppliers about **social, streaming and security**.
- Our adoption trackers show a **progression of technology adoption** for most technologies post-pandemic.

Sources: IABM

MediaTech Investment

Investment outlook by media businesses improves along with revenue outlook

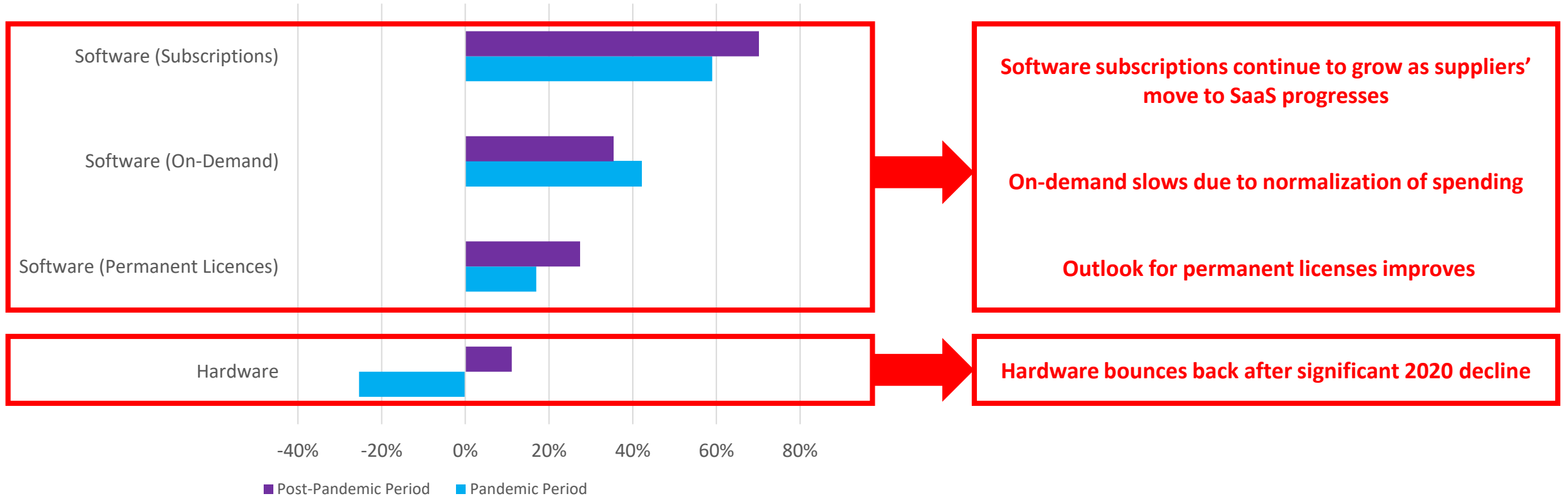


Sources: IABM, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-2022

MediaTech Revenue Models

Revenue outlook by suppliers improves

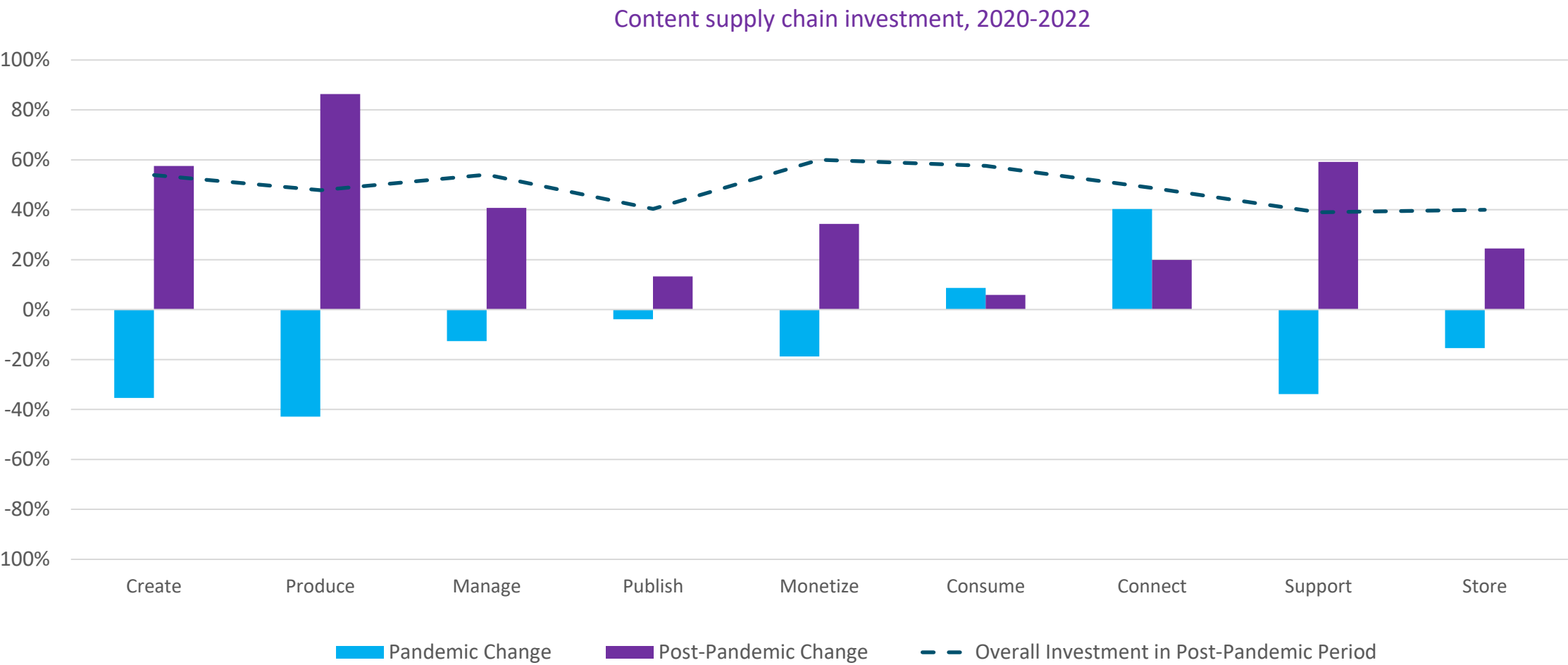
MediaTech NET Revenue Outlook



Sources: IABM, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-2022

Content Supply Chain Investment

Monetize becomes top investment area as streamers shift focus to AVOD

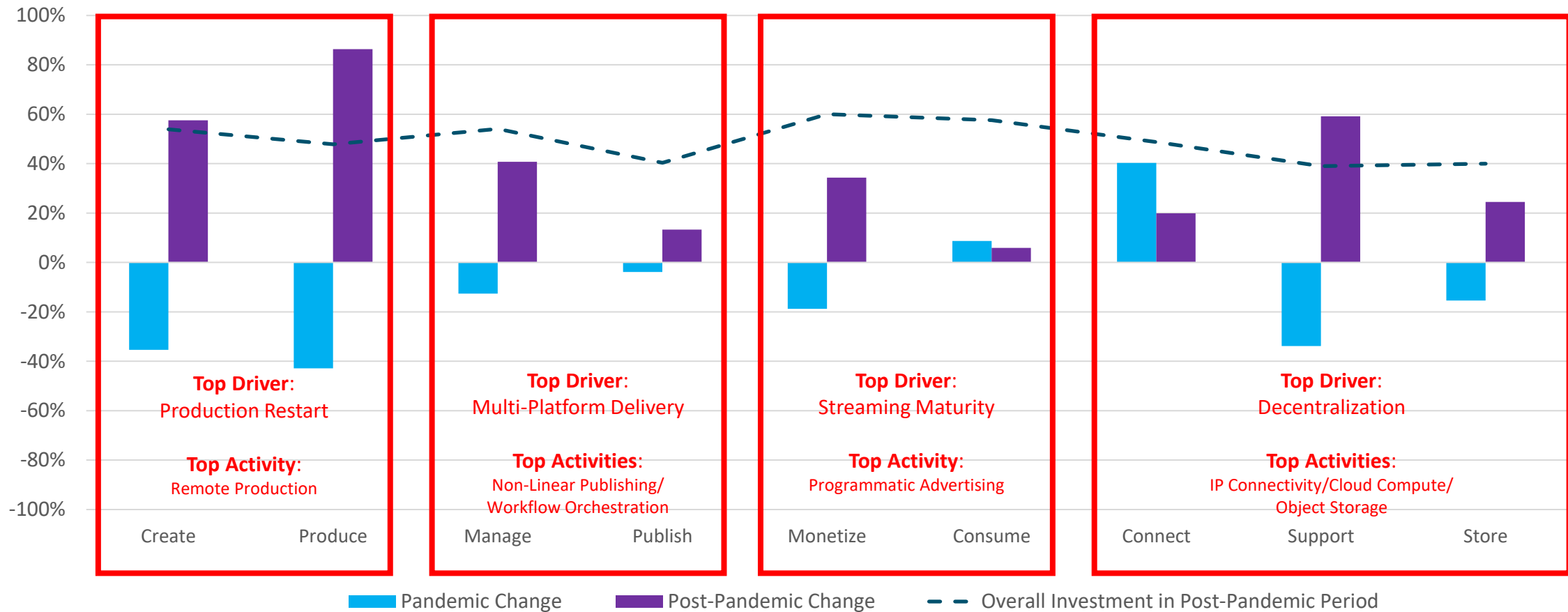


Sources: IABM, “Pandemic Change” refers to 2019 to 2020, “Post-Pandemic Change” refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

Content Supply Chain Investment

Monetize becomes top investment area as streamers shift focus to AVOD

Content supply chain investment, 2020-2022

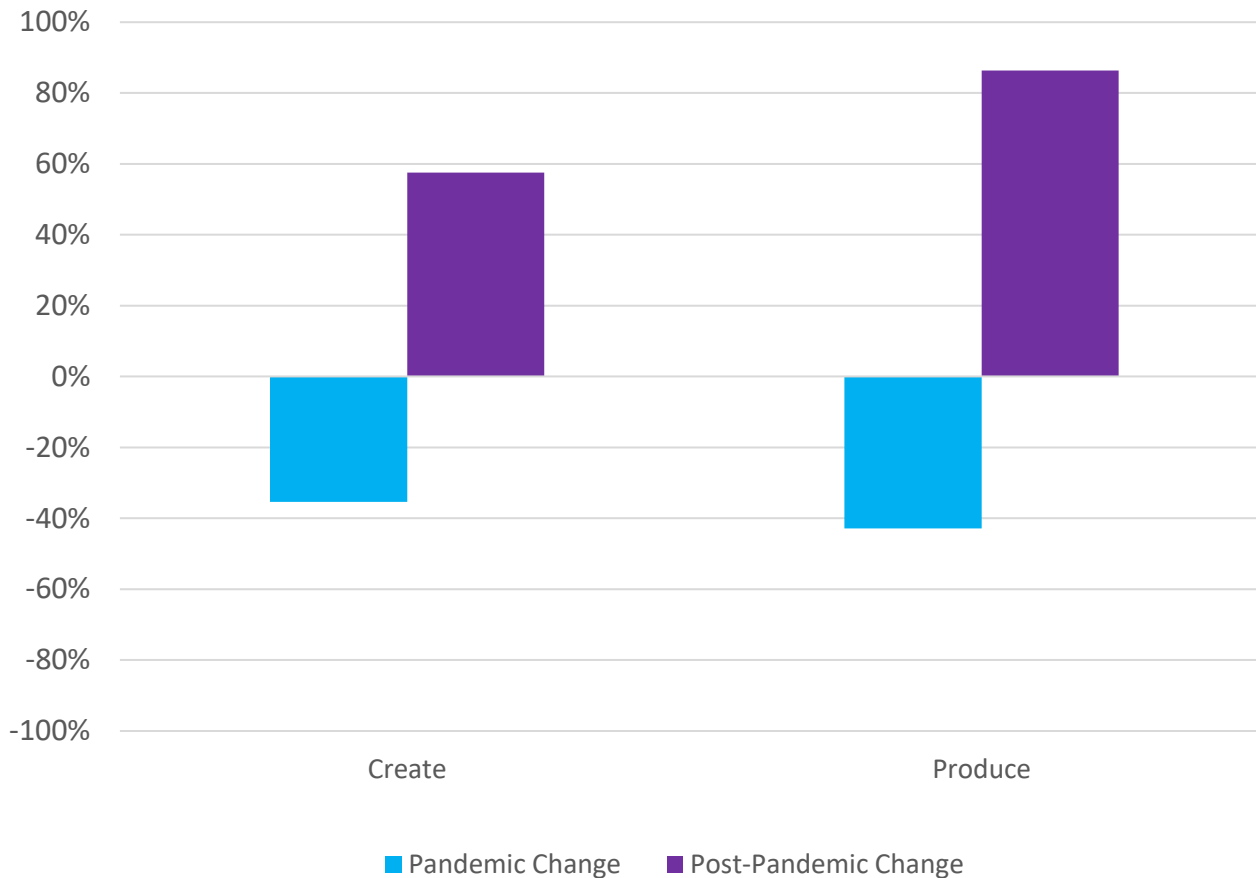


Sources: IABM, "Pandemic Change" refers to 2019 to 2020, "Post-Pandemic Change" refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

Content Supply Chain Investment

Create & Produce bounce back after production hiatus

Content supply chain investment, Pandemic vs Post-Pandemic



Remote Production investment continues to grow post-pandemic



Real-time Production recovers from steep decline in 2020



Investment in Content Acquisition slightly down despite growth in content investment



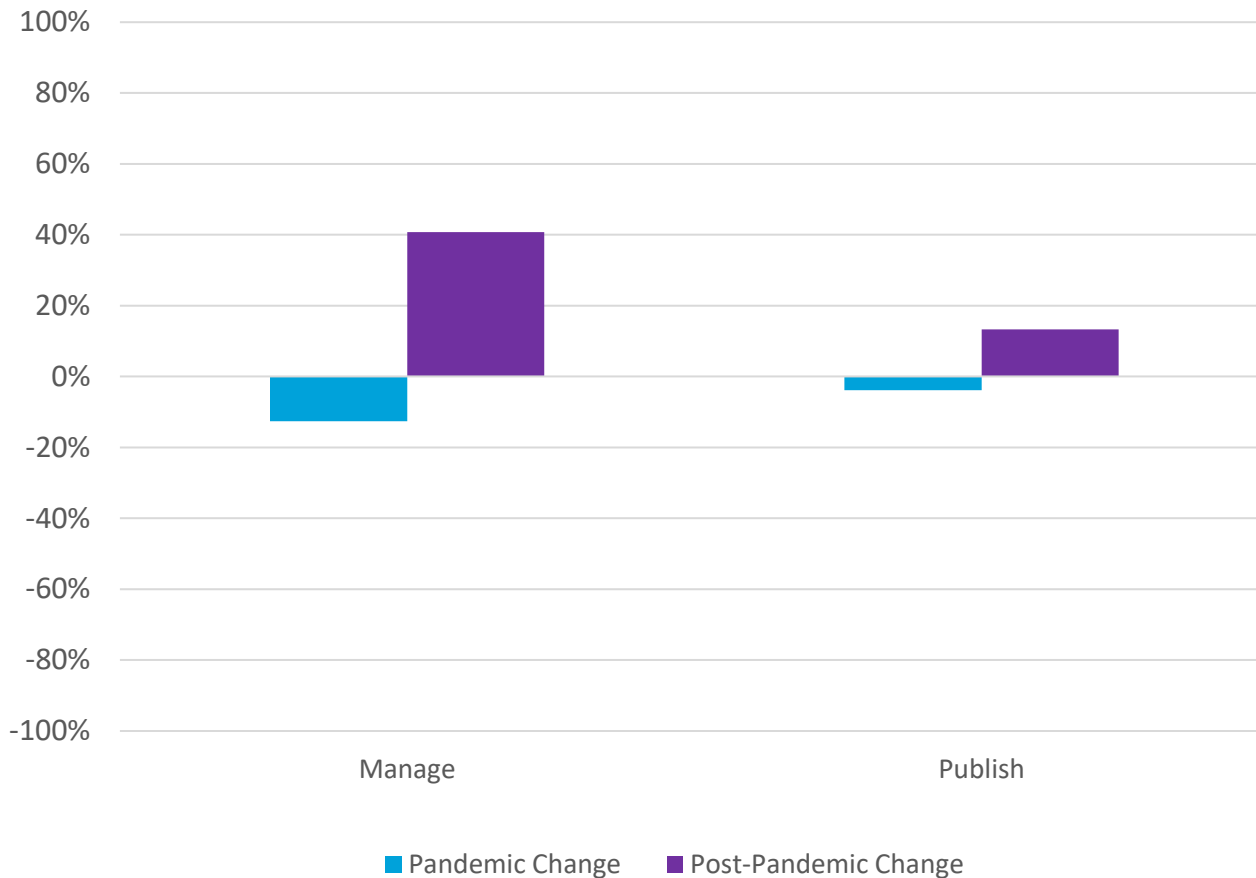
Investment in Post-Production also slightly down compared to 2020

Sources: IABM, "Pandemic Change" refers to 2019 to 2020, "Post-Pandemic Change" refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

Content Supply Chain Investment

Manage & Publish recover as well

Content supply chain investment, Pandemic vs Post-Pandemic



Investment in Orchestration, Data & Metadata Management grows significantly



Investment in Encoding, Edge and Terrestrial Distribution Infrastructure resumes



Investment in Media Asset Management declines post-pandemic



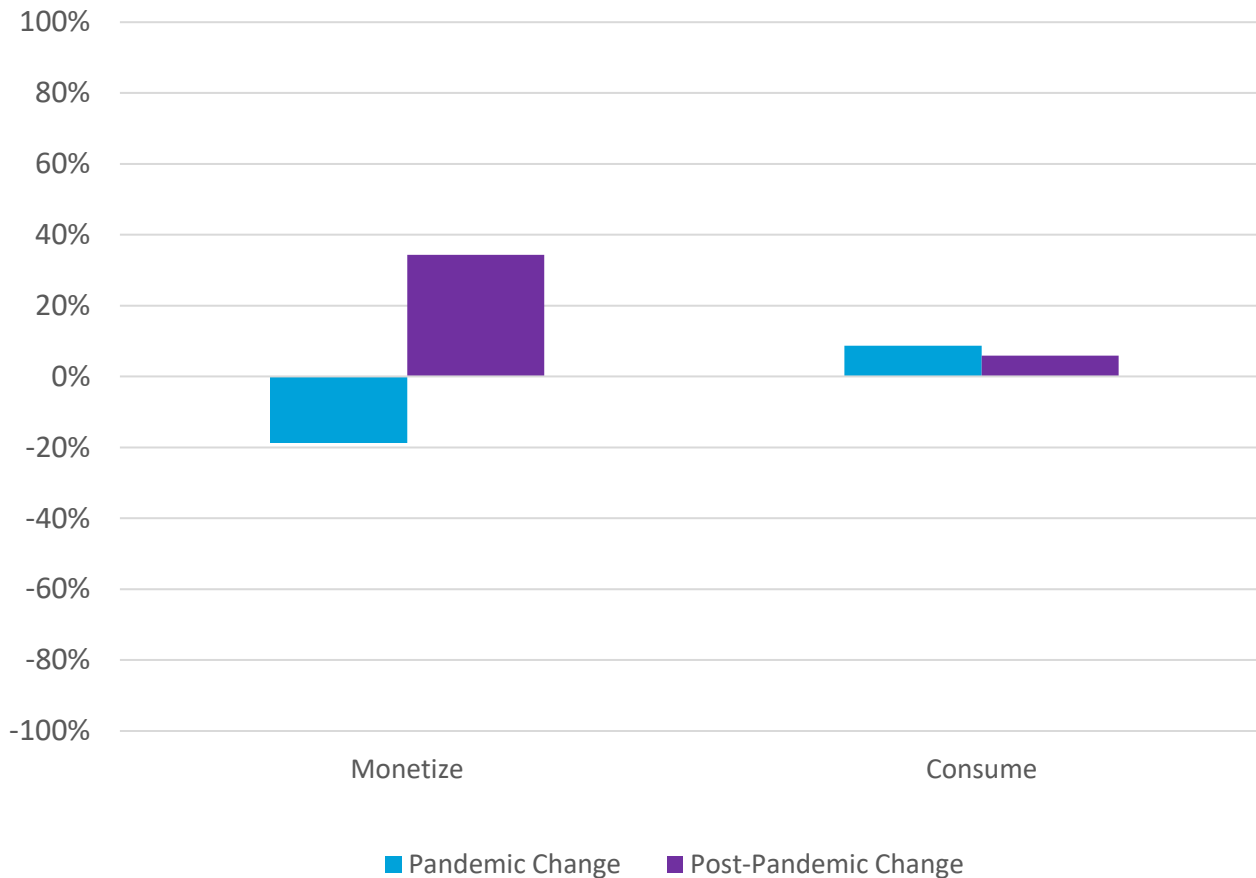
Investment in Internet Distribution slows down after exceptional 2020 growth

Sources: IABM, "Pandemic Change" refers to 2019 to 2020, "Post-Pandemic Change" refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

Content Supply Chain Investment

Consume investment slows down as Monetize surpasses it as the top spending area

Content supply chain investment, Pandemic vs Post-Pandemic



Investment in Programmatic Advertising and Ad Sales is up after slowdown in 2020



Traffic, Scheduling and Rights Management also up, driving growth in Monetize



Data Analytics down from top to second most important priority



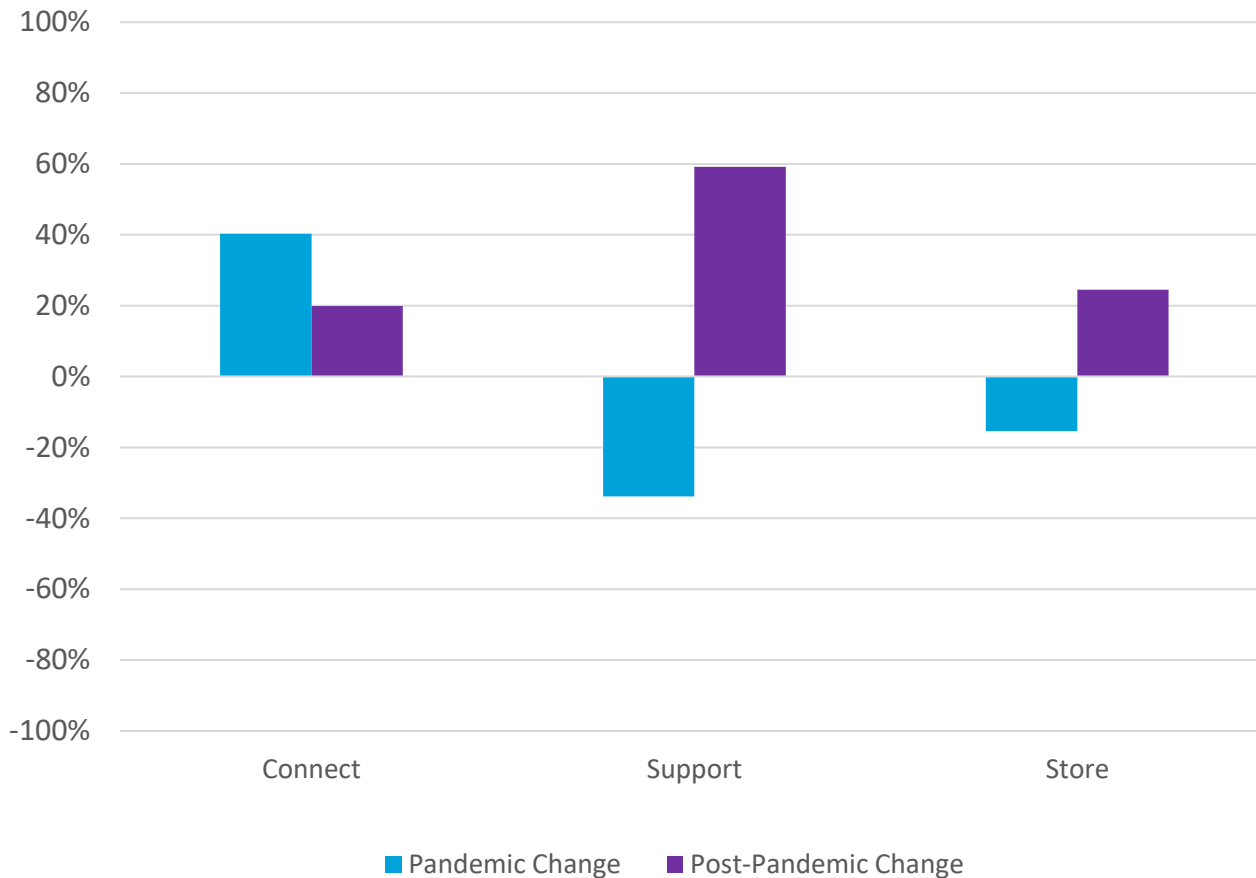
Investment in Consumer Apps also slows compared to 2020

Sources: IABM, "Pandemic Change" refers to 2019 to 2020, "Post-Pandemic Change" refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

Content Supply Chain Investment

Connect slows down after growing exceptionally in 2020, Support & Store bounce back

Content supply chain investment, Pandemic vs Post-Pandemic



Investment in Bonded Cellular grows alongside Inter-Facility Connectivity



Investment in Cloud Object Storage and System Monitoring/Security grows



Investment in IP connectivity slows after exceptional 2020

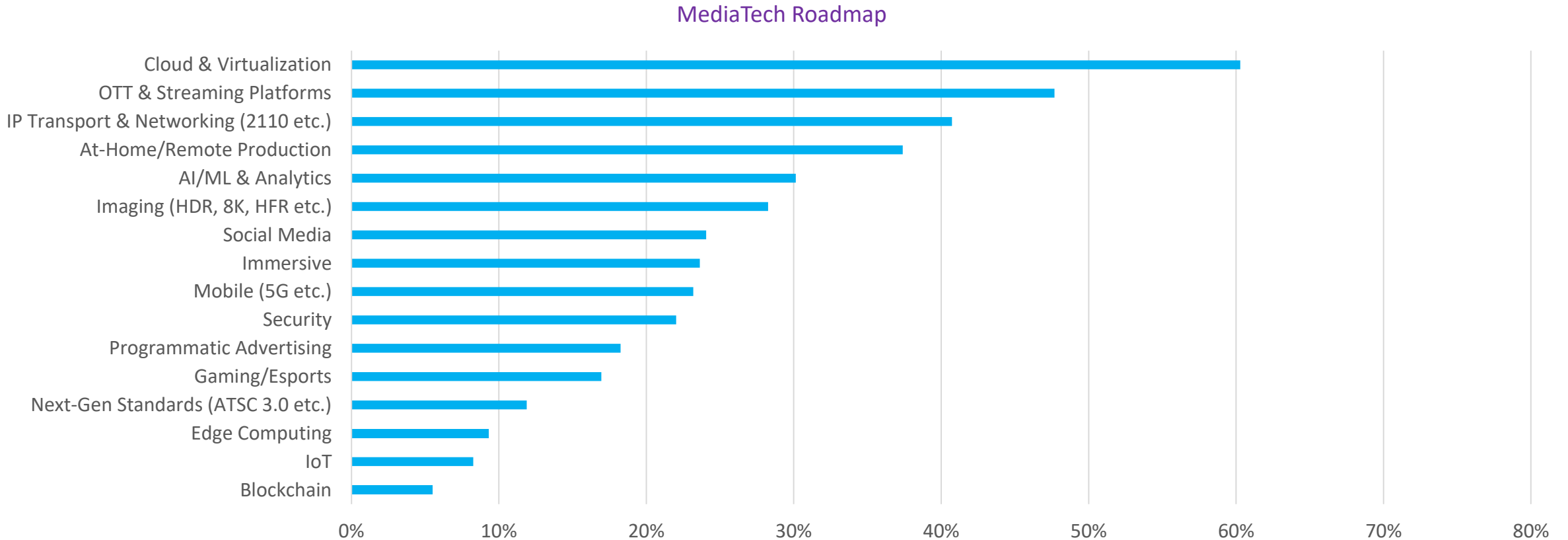


Investment in Cloud Archiving slows after exceptional 2020

Sources: IABM, "Pandemic Change" refers to 2019 to 2020, "Post-Pandemic Change" refers to 2020 to 2021-2022, columns represent growth/decline in NET investment

MediaTech Roadmap

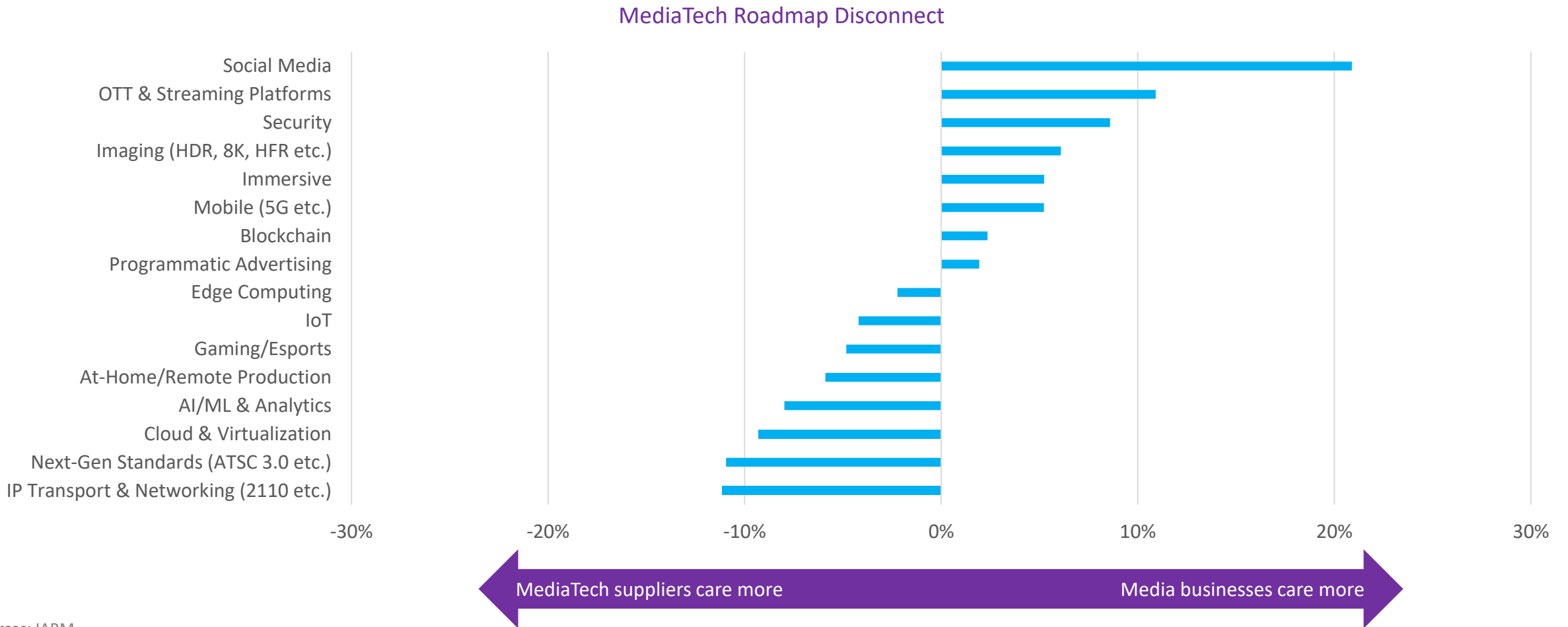
Cloud still dominates the MediaTech Roadmap



Sources: IABM

MediaTech Roadmap

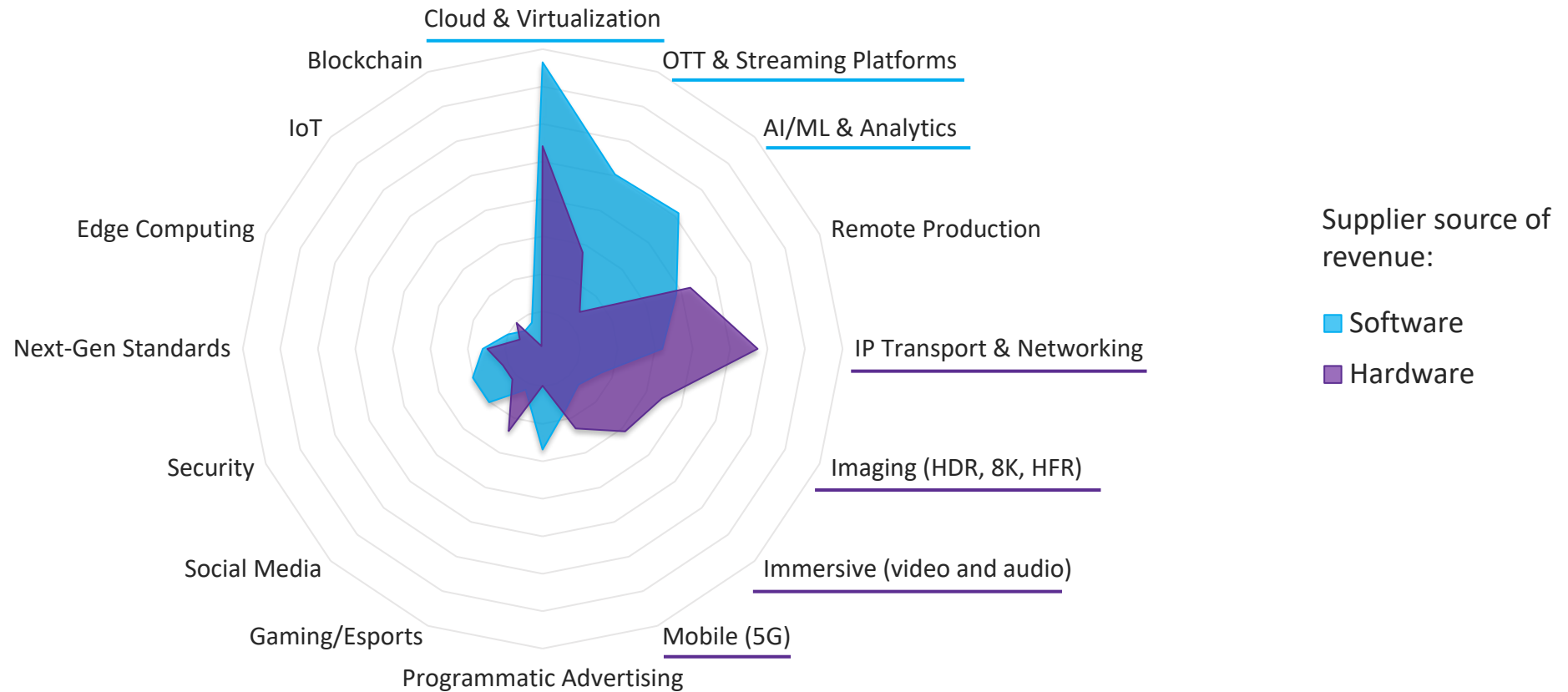
Media businesses care more than suppliers about social, streaming and security



Sources: IABM

MediaTech Roadmap

MediaTech suppliers that rely on software revenue care more about cloud, OTT, and AI/ML



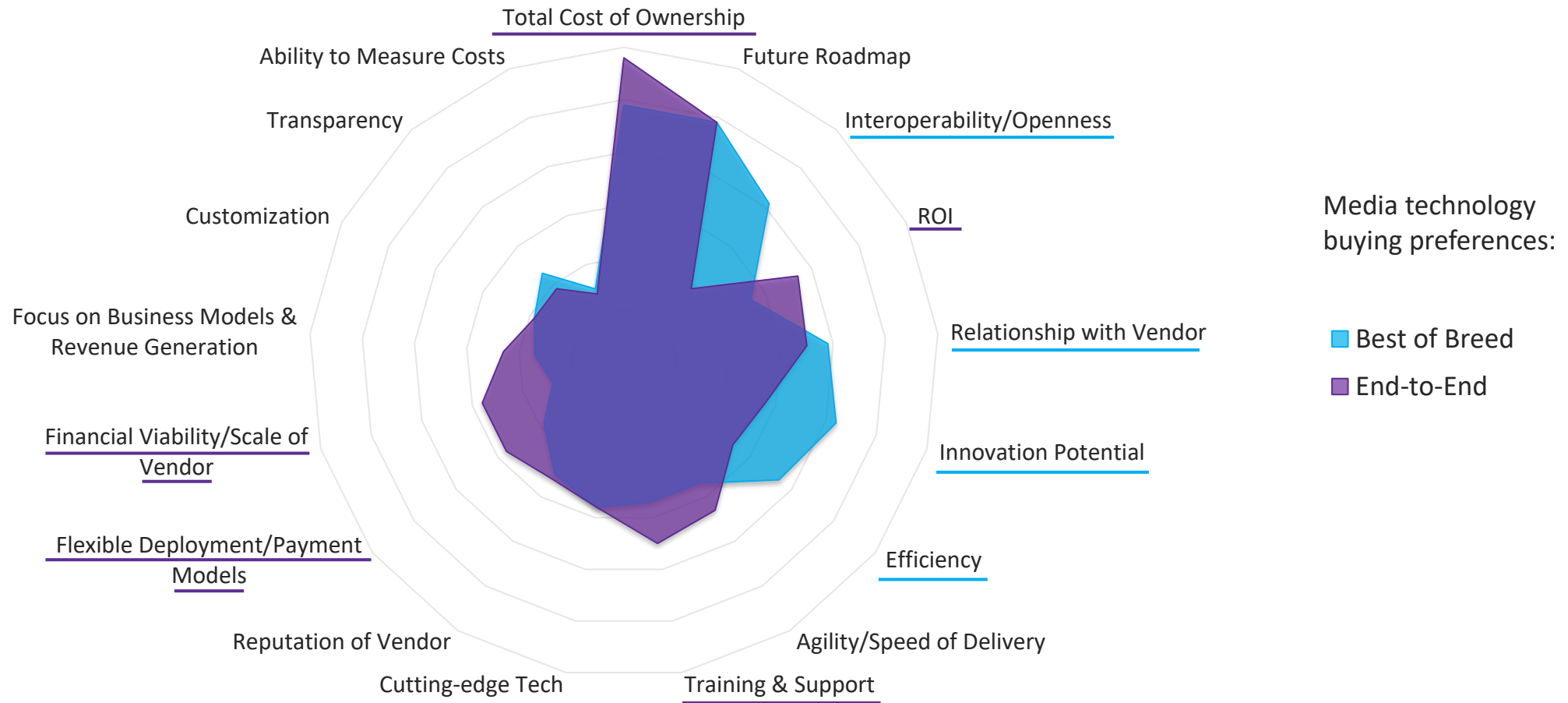
Supplier source of revenue:

- Software
- Hardware

Sources: IABM

MediaTech Purchasing Factors

Best-of-breed buyers care more about innovation, interoperability & partnerships

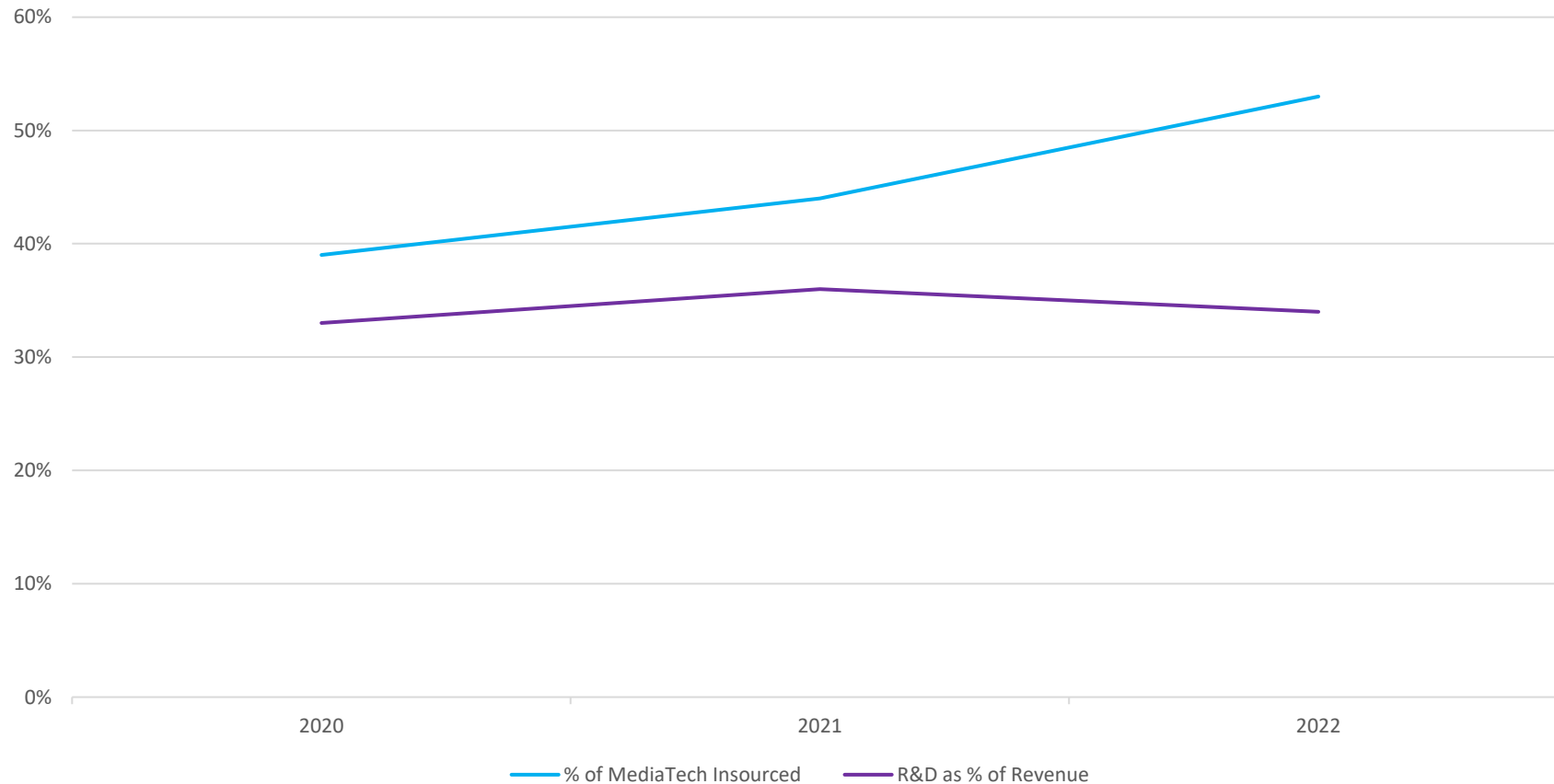


Sources: IABM

Technology Development

Development disconnect between demand and supply grows, driven by greater insourcing

Insourcing & R&D investment, 2020-2022



Insourcing Drivers

Control, customization and integration remain top drivers of insourcing investment for media businesses, most of which still prefer best-of-breed solutions

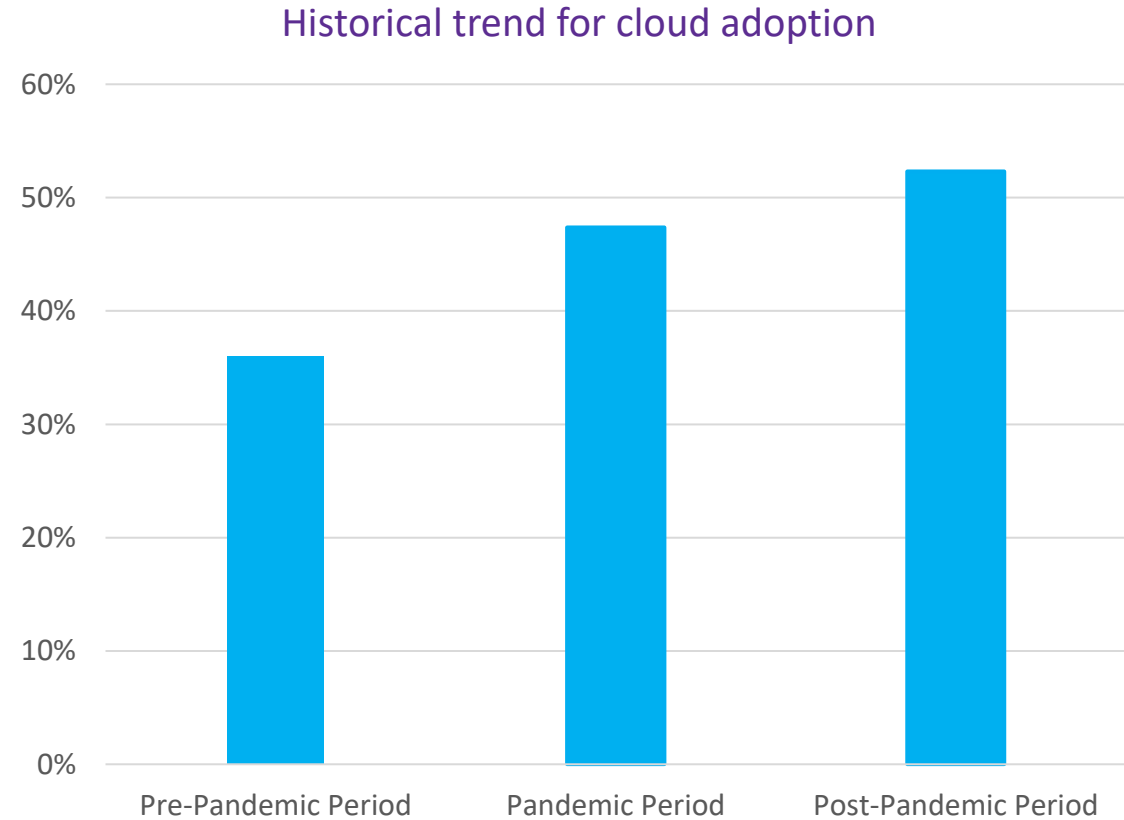
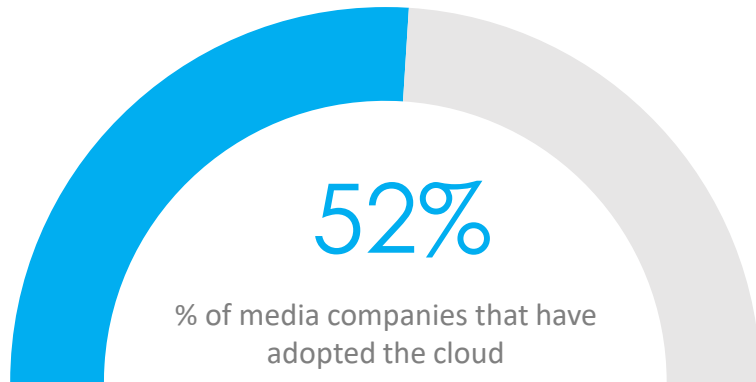
R&D Investment

R&D investment by MediaTech suppliers slightly slows but remains at over 30% of revenues, with almost 50% of them expecting that it will increase

Sources: IABM

MediaTech Adoption

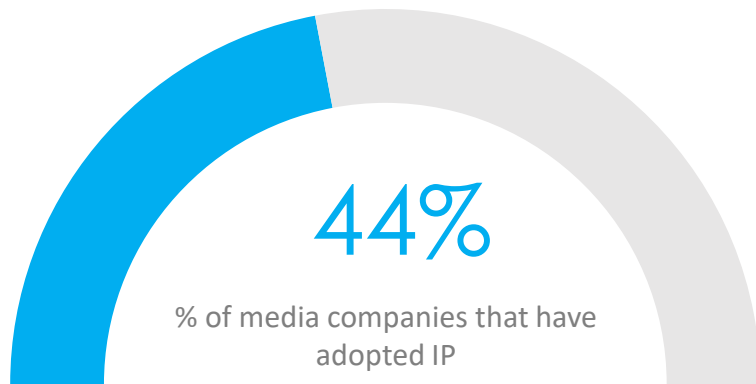
The adoption of cloud technology continued post-pandemic



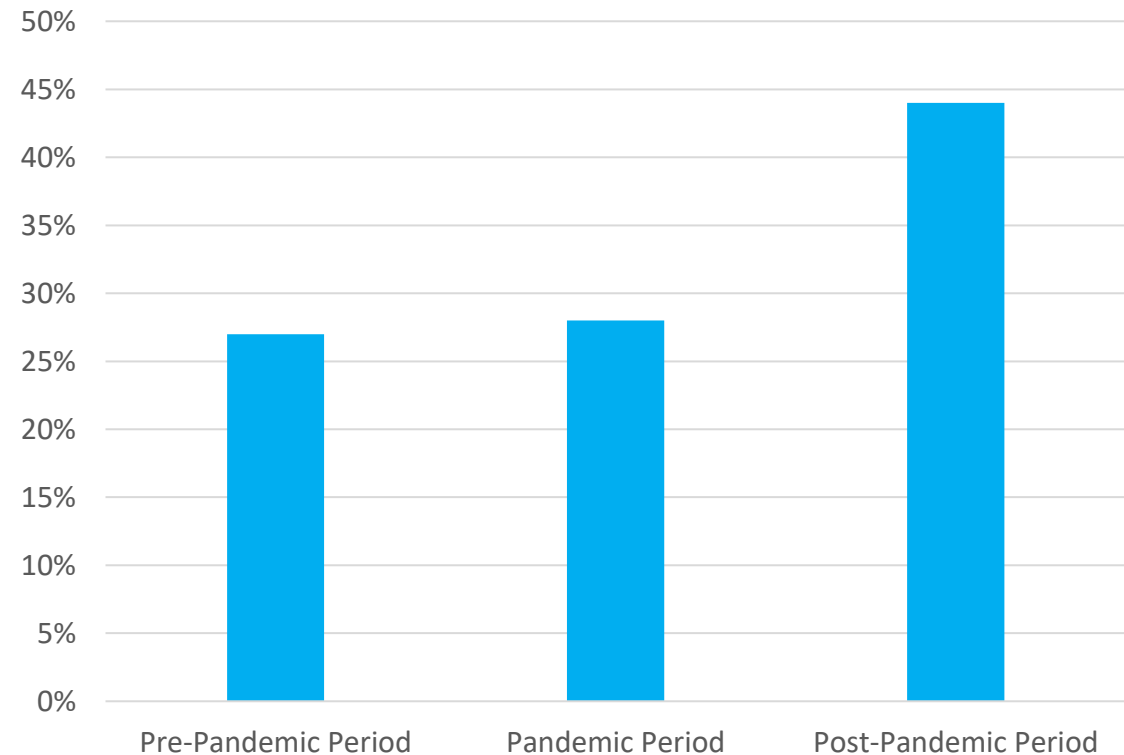
Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22

MediaTech Adoption

IP became much more widely deployed post-pandemic



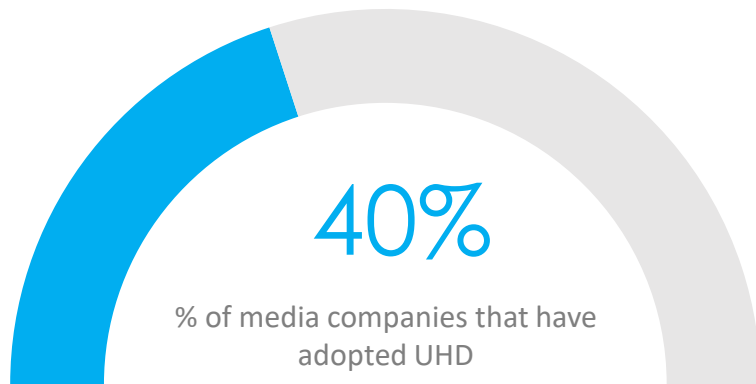
Historical trend for IP adoption



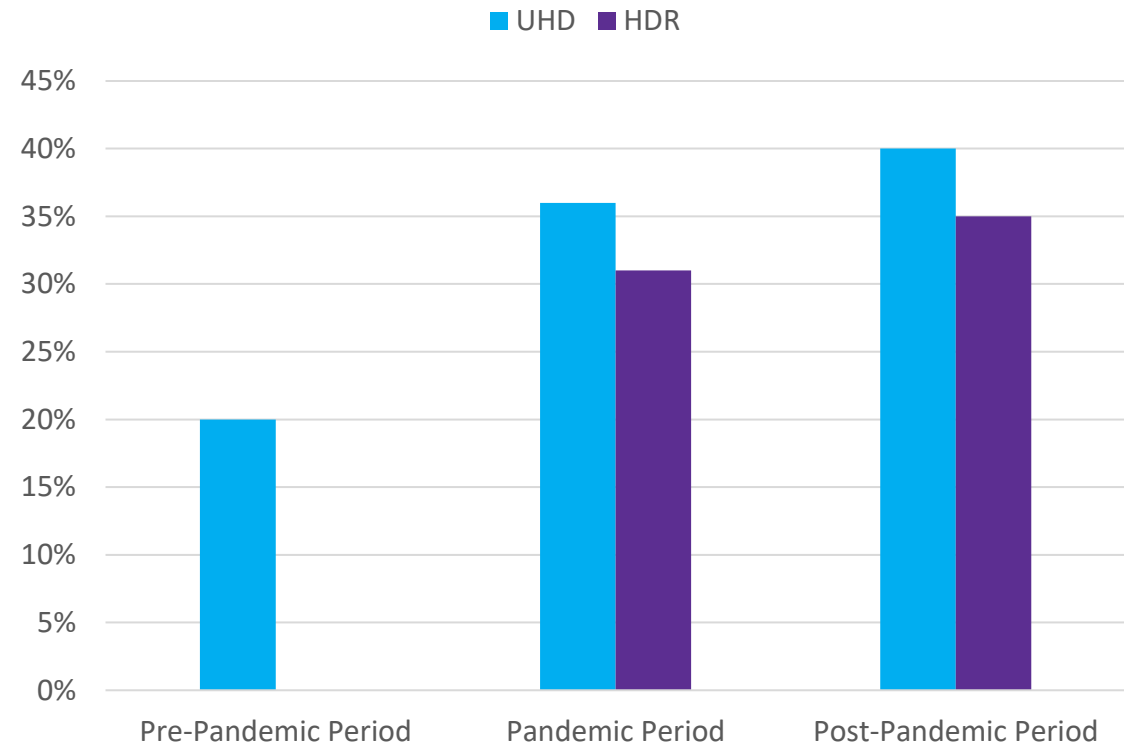
Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22

MediaTech Adoption

UHD and HDR adoption continues



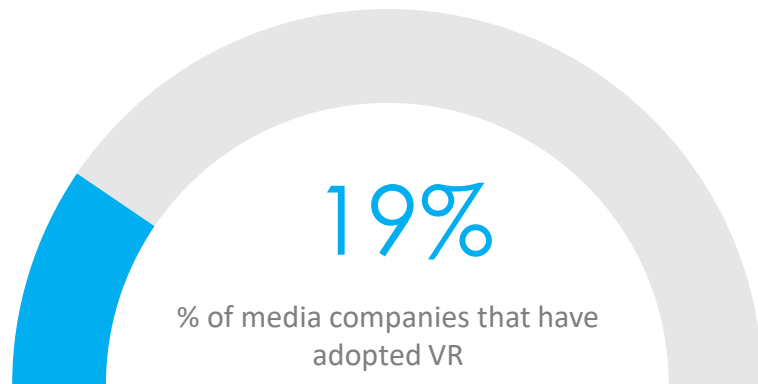
Historical trend for UHD and HDR adoption



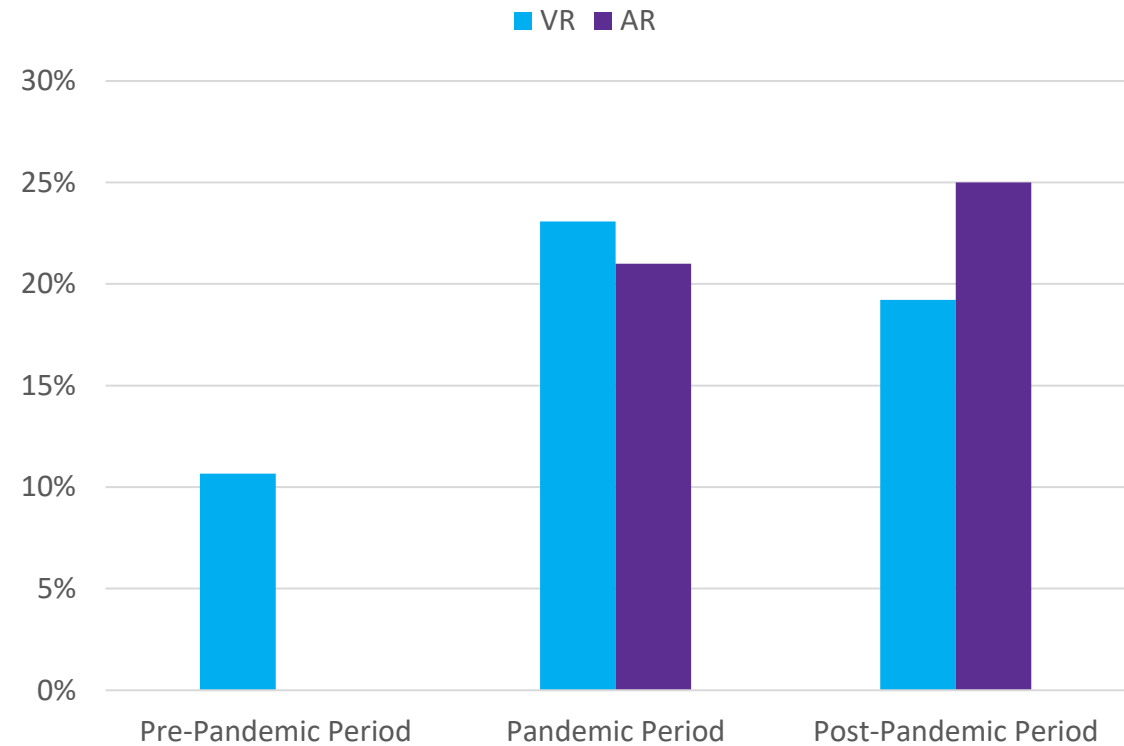
Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22

MediaTech Adoption

VR adoption declines and is surpassed by AR



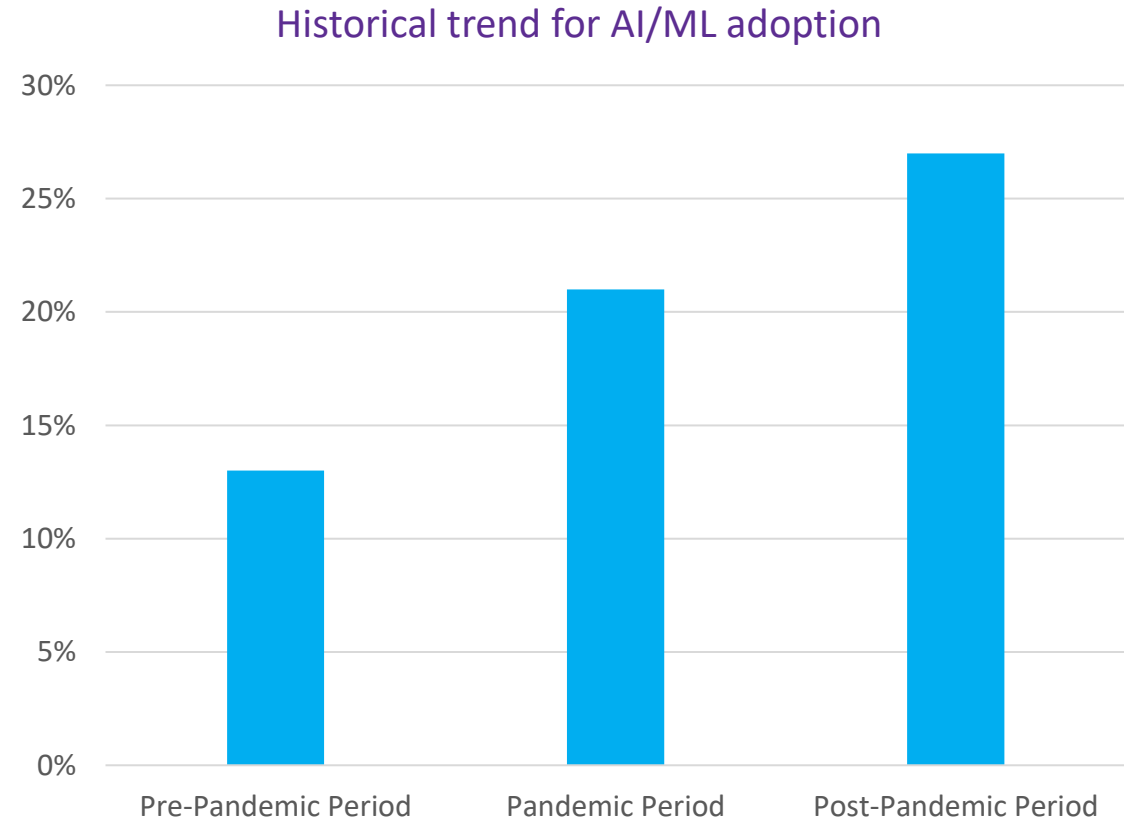
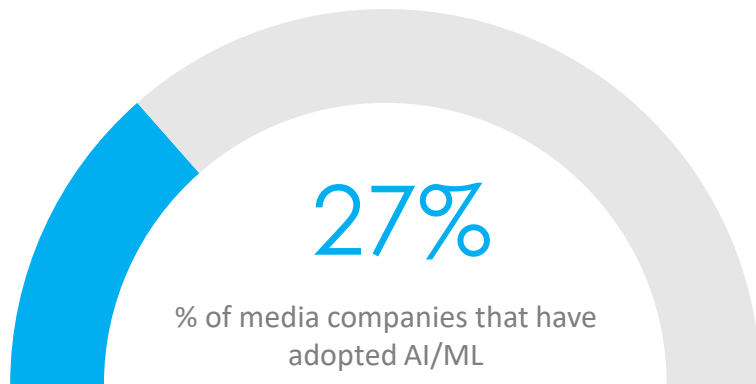
Historical trend for VR and AR adoption



Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22

MediaTech Adoption

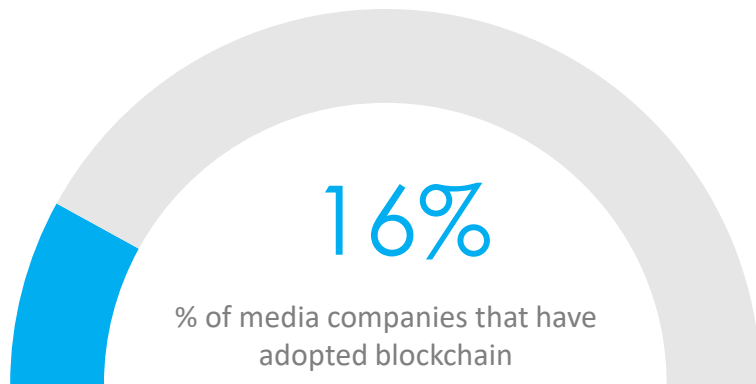
AI/ML adoption continues to grow



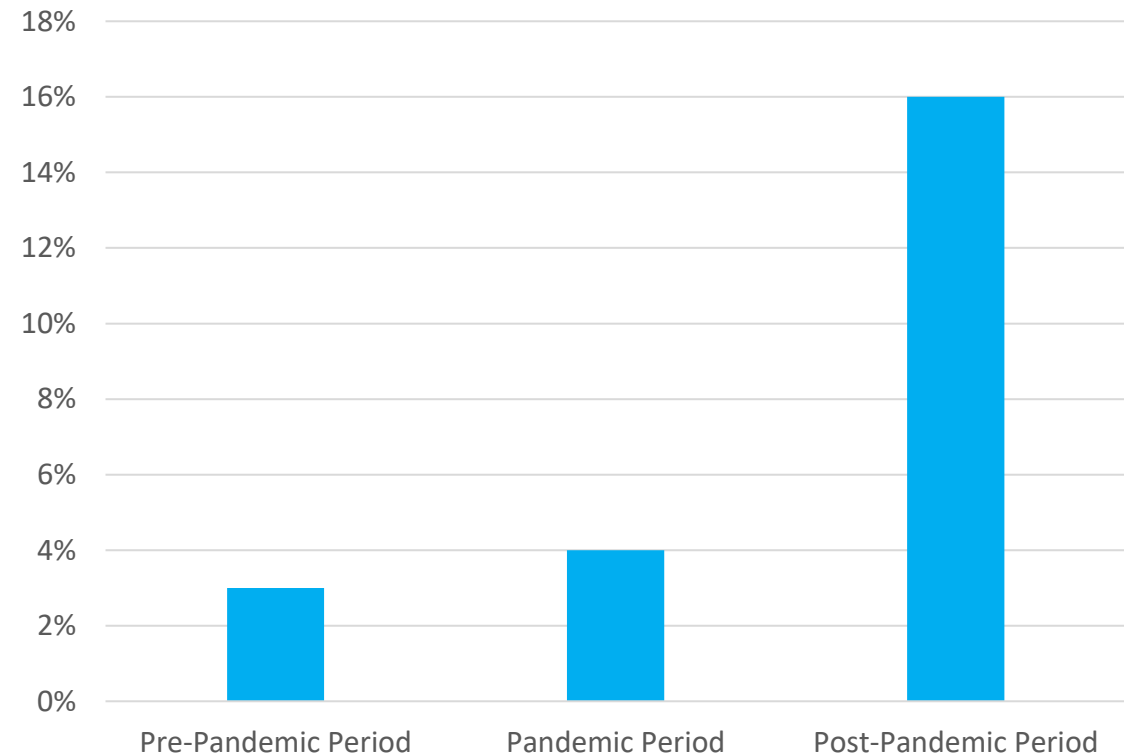
Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22

MediaTech Adoption

Blockchain adoption increased significantly in the post-pandemic period



Historical trend for Blockchain adoption



Sources: IABM, "Pre-Pandemic Period" refers to 2017-19, "Pandemic Period" refers to 2020, "Post-Pandemic Period" refers to 2021-22



Appendix

Additional information

Additional Information

More information about this report

- This report was built using a hybrid research methodology. Although we primary relied on quantitative primary research data from our MediaTech Business Tracker, we complemented this with other sources of data, including: qualitative information gathered through in in-depth interviews; quantitative data points from external sources; public structured and unstructured data points such as quotes from industry executives.
- All sources used are reported at the bottom of each slide. Moreover, some slides include a brief explanation of the data manipulation steps we adopted to better illustrate industry trends.
- IABM Gold and Platinum members can access the MediaTech Business Tracker data powering this report interactively through our [MediaTech Business Analytics](#) platform. This self-service analytics portal enables users to filter the MediaTech Business Tracker data to find the insights that are most relevant to their businesses and then export them in the formats they prefer to inform their organizations.
- If you have any feedback about this report, please contact: insight@theiabm.org. We would really appreciate it as we always strive to improve our research.

About IABM

Connecting and informing the global MediaTech community

Who we are

IABM is the independent, international organization that connects and supports the entire MediaTech ecosystem.

What we do

IABM helps make sense of the digital transformation happening in the Broadcast, Media & Entertainment technology landscape. We are the trusted, effective and influential source for business intelligence, engagement and skills development. We connect, share knowledge and promote collaboration.

Our mission

To connect and inform the global MediaTech community.

Our principles

- **Integrity:** we are independent, transparent and honest
- **Accountability:** we take responsibility for everything we do
- **Commitment:** we are dedicated to serving our members and the wider industry
- **Respect:** we value everyone equally
- **Collaboration:** we believe that working together is fundamental to success
- **Quality:** we continuously strive to improve everything we do

**Thank you for
reading this
report**