



Navigating the EU's Digital Single Market

Challenges and strategies for the
Belgian telecom industry

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Introduction

The establishment of the EU's Digital Single Market (DSM) under former President of the European Commission Jean-Claude Juncker is one of the Commission's ten political priorities, aiming to adapt the EU's single market to the digital age.

With numerous initiatives being taken on several fronts, the telco market today appears to be more fragmented than ever. Telcos seem to have made significant investments in sustainable infrastructure, thus far with limited payback.

In Belgium, fiber rollout is going fast, yet it remains one of the most expensive countries for telecommunications services towards the end consumer. Could the arrival of new Belgian telco players change this?

This paper first outlines the DSM EU regulatory framework before addressing some of the key challenges the industry faces today, along with hypotheses for future strategies.



EU regulations and framework

The Digital Single Market

The Digital Single Market (DSM) was established with an ambitious goal to contribute €415bn per annum to the European economy, create jobs, and enhance digital connectivity and usage across Europe. The DSM is built on three main pillars, each aimed at transforming and unifying the European digital market.

Improving access to digital goods and services

The first pillar is aimed at enhancing access for consumers and businesses to digital goods and services across Europe. The objectives are to streamline ecommerce, enforce consumer rules more consistently and rapidly, make parcel delivery more affordable, end unjustified geo-blocking, harmonize copyright law, implement the satellite & cable directive, and reduce the burden of different VAT regimes to facilitate cross-border trade.

Creating the conditions for digital networks and services to prosper

The second pillar is about creating the right conditions and ensuring a level playing field for digital networks and innovative services to prosper. This includes a comprehensive review of EU telecom rules and spectrum coordination, incentives to invest for instance in broadband, analyzing the role of online platforms (incl. illegal content),

data protection and e-privacy directive, as well as partnerships with industry players on cybersecurity.

Maximizing the growth potential of the digital economy

The third pillar focuses on growing the potential of the digital economy, which includes ensuring free flow of data, advancing interoperability, promoting a digital society, and fostering digital skills.

Initiatives in place to support DSM

From a regulatory perspective, the EU seems to be eager to stimulate competition within Member States while reducing expansion costs for telecom operators and refining the regulatory strategies. The goal being to ultimately form a true single market for telecommunications. There are several initiatives, policies, and acts in place to support a truly single telecommunications market.

- ▶ The Digital Decade policy program was launched as the EU's digital transformation strategy to ensure that the associated economic and social changes benefit all EU citizens. The 2030 targets include: minimum 80% of population having basic digital skills, all households having gigabit connectivity, and 75% of EU companies using Cloud, AI, or Big Data.¹ This program will accelerate the implementation of large-scale multi-country projects that could address gaps in the EU's critical capacities as well as support an interconnected, interoperable, and secure DSM.

¹ https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

- ▶ As part of the Digital Decade policy program, the upcoming Gigabit Infrastructure Act is a proposal aimed to have all households covered by gigabit-capable networks by 2030. This proposal demands significant investments in digital infrastructure.²

NextGenerationEU is the EU's circa €807 billion temporary recovery instrument to improve the economic and social conditions following the coronavirus pandemic.³ One of the key objectives is to support Member States to invest in ubiquitous and fast 5G, public online services, smart cities, ecommerce, and artificial intelligence.

- ▶ The Digital Market Act (DMA) and Digital Services Act (DSA) form a single set of rules in the EU to achieve two main objectives. The first objective is to establish a level playing field to encourage innovation and growth while preventing anti-competitive behaviors of large online platforms. The second objective is to provide harmonized rules for digital services and protection of fundamental rights for users of digital services across the EU.⁴
- ▶ The Directive (EU) 2018/1972 establishing the European Electronic Communications Code (EECC)⁵ revised and consolidated the regulatory framework for electronic communications networks, services, and associated facilities in the EU. It aims to promote competition, efficiency, innovation, and improve consumer protection and rights.⁶ Below we detail some of the key articles of the EECC to achieve the above-mentioned aims:
 - ▶ To promote competition, efficiency, and innovation, Article 61 of the EECC sets out the power and responsibilities of the national regulatory authorities (NRAs) to ensure access, interconnection, and interoperability in the market. This article envisages the setting up of guidelines to impose obligations on providers with significant market power (SMP, further defined in Article 63 of the EECC) to grant access to other network operators. The ultimate objective of access and interconnection is to set a level playing field, encourage more market participants, prevent monopolistic or anti-competitive behaviors, and offer more diverse services and choice to consumers.
 - ▶ To encourage innovation, Article 82 of the EECC promotes the deployment of very high-capacity networks, as defined by BEREC guidelines to be regularly updated after 2025, including by using existing physical infrastructure. Article 28 of the EECC on Radio Spectrum Coordination among Member States also aims to facilitate co-investment agreements in high-capacity networks, including the sharing of risks and cost.
 - ▶ To balance between encouraging competition and

providing regulatory certainty to telco operators to make long-term investments and innovate in network infrastructure, Article 49 of the EECC sets a minimum duration of 15 years for spectrum licenses. This is considered to be a reasonable amortization time for telco investments.

- ▶ Finally, to prevent digital exclusion and ensure that all EU citizens can access essential communication services, Article 84 of the EECC ensures the affordable access for all EU citizens to broadband internet and voice communication services at a fixed location. Under Article 86 of the EECC, Member States may impose universal service obligations (USO) if they cannot be ensured under normal commercial circumstances. Member States can also impose additional services as per Article 92 of the EECC.

These measures promote high-capacity networks, manage spectrum effectively, encourage market competition and access, and ensure the provision of affordable broadband services. Enforcing these policies are regulatory bodies such as BEREC and national regulators, keen to drive competition, affordability, accessibility, and quality in all areas of the sector.



² <https://www.consilium.europa.eu/en/press/press-releases/2023/12/05/gigabit-infrastructure-act-council-adopts-position-for-faster-deployment-of-high-speed-networks-in-the-eu/>

³ https://next-generation-eu.europa.eu/index_de

⁴ <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package>

⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L1972>

⁶ <https://eur-lex.europa.eu/EN/legal-content/summary/european-electronic-communications-code.html>



Current market challenges and future strategies

High investments and low returns

Increased connectivity access and incentivized investments in broadband networks have been the key regulatory impacts well-felt over the last decade. Despite no significant impact on established infrastructures, substantial challenges lie ahead for future technologies such as FTTP and 5G.

Moreover, the sector has seen significant capital expenditure (CAPEX) from companies for infrastructure upgrades. This often leads to market consolidation instead of competition. Investments have varied between fixed network infrastructure and mobile infrastructure, impacting operators' financial stability. As a result, telcos are currently facing profitability pressures due to substantial CAPEX demands. They are trying to increase Average Revenue Per User (ARPU) by raising prices, but they still experience a low return on capital.

This pressure leads to industry transformation and change in the business value framework, moving from a traditional telco model to a decoupled telco model. The business value framework for each entity—NetCo, ServCo, TowerCo, and FiberCo—is shaped by their specific roles in the telecommunications value chain. NetCo focuses on network infrastructure management, ServCo on customer-centric services, TowerCo on tower infrastructure, and FiberCo on fiber-optic network deployment. Understanding these differences is essential for optimizing operations, driving value creation, and delivering superior services in the telecommunications industry.

Unresolved fair share debate

The "Fair Share" debate has been a significant matter between European regulatory authorities and telecommunications operators since 2021. This debate centers around how revenues and benefits are distributed in the digital ecosystem. Telcos argue that digital platforms of big tech companies exploit networks without sufficiently investing in infrastructure costs or contributing to their maintenance, leading to an inequitable distribution of profits. Moreover, these "over-the-top" services also compete with traditional offerings from telco operators, like voice calls and SMS.

Telecom companies argue that regulatory disparity exists, as these digital platforms face fewer regulatory burdens, despite using network infrastructure heavily. For instance, operators face stringent data protection and consumer laws compared to digital platforms, which they believe creates an unlevel playing field. The European Commission's Digital Services Act and the Digital Markets Act are pivotal regulatory attempts at addressing some facets of this debate. The aim is to create a fairer and more competitive digital market.

However, the telecom industry calls for more comprehensive regulations, ensuring greater investment from digital platforms in network infrastructure and aligning data and consumer protection laws across the board. The fair share debate is ongoing and impacts the future path of the European digital policy.

Limited uptake of 5G

Despite heavy investments in 5G by operators, quite a few of them, particularly in Belgium, are seeing limited uptake from B2B customers. Additionally, from a retail perspective, end consumers are not willing to pay more for the service as they do not see the added value.

In 2022, the Belgian Institute for Postal Services and Telecommunications (BIPT) closed the main phase of the radio spectrum auction of the new 5G spectrum—700 MHz, 3600 MHz—and the existing 2G and 3G radio spectrum—900 MHz, 1800 MHz, and 2100 MHz. The total generated proceeds amounted to €1,202,192,400.

In the mid-band 5G spectrum, BIPT remains unsuccessful and lacks investment. During the multi-band auction of 2022, the 3410-3430 MHz band remained unsold. After a first unsuccessful call for candidates to grant usage rights for this frequency band, the BIPT launched a second call, published in the Belgian Official Journal. For this second invitation, the spectrum cap was increased to 120 MHz, making more operators eligible to bid. However, following the transfer of NRB's rights, one of the major telecom providers already holds 120 MHz in the 3600 MHz band and was therefore unable to participate.

One rationale behind the limited investment is the limited return telcos have on the B2B side as end users (enterprises) are still struggling with identifying the right use cases. On top of that, the jump to new technologies has experienced quite a significant acceleration over the past 10 years, with 6G being around the corner. However, 6G will most likely focus on the Radio Access Network (RAN) and not the Core Network (COR), given the industry as a whole cannot keep up.

This calls for a closer collaboration between telcos and businesses, as one cannot survive without the other. Despite several government initiatives for submitting use cases, the true value lies in: (1) bringing greater understanding of what 5G can do and what type of network is required (private network, hybrid...), and (2) enabling the quantification of its value-add.

Complicated market consolidation

Other challenges like demand uncertainties related to improved connectivity, and monetization difficulties due to excess investments drive market consolidation. Regulatory burdens such as lengthy administration processes, unavailability of information about usable infrastructure, and stringent rules on mergers and acquisitions (M&As) further complicate the situation for telecom operators.

Ultimately, the European Union aims for market consolidation among major players. However, this is unlikely to result in significant economies of scale as most operators use different COR networks (for mobile), and starting from scratch with rolling out fixed networks (FTTx) is a lengthy process.

Pricing issues related to broadband access and adoption

Broadband access and adoption are critical factors in the digital age, influencing economic opportunities and social inclusion. To fully grasp the challenges in this area, it is important to explore how both economic and political factors, such as inflation and government regulation, affect both the affordability and accessibility of broadband services. In this section we will first look at inflation trends to provide the economic background to the government initiatives and challenges examined further on.

Impact of inflation trends

To understand the economic pressures impacting broadband access and adoption in both the EU and the US, it is essential to examine inflation trends in these regions over the past decade. By analyzing how inflation has influenced the communications sector compared to overall economic conditions, we can better grasp the financial challenges faced by both consumers and providers in the broadband market.

Within the EU, the inflation trend over the last decade (measured by Harmonized Index of Consumer Prices, or HICP), averaged an annual growth rate of 2.1% from 2014 to 2023. This rate surpasses the average yearly change in the communications sector, which experienced a deflationary trend with an average decrease of 0.4% over the same timeframe. The discrepancy between overall inflation and communications-specific inflation persisted into 2023, with general inflation rising to 6.4%, while the communications sector saw an increase of only 1.1%.

Similar to the EU, the Consumer Price Index (CPI) for all urban consumers in the US increased at a CAGR of approximately 2.8% from 2014 to 2023. Meanwhile, the communications sector registered an average annual decrease of 0.9% for the same period. The same pattern took place in 2023: the overall inflation rate stood at 4.1%, where the communications sector prices decreased 0.9% that year.

In short, while the overall prices of products and services have been increasing, the cost of communication services has either stayed the same or decreased. This helps consumers afford these services, but it also creates financial challenges for the companies that provide them.

Impact of US and EU government initiatives for universal adoption

In today's rapidly advancing digital landscape, where internet access is increasingly essential and intertwined with every aspect of daily life, access to fast and affordable connectivity is evident. Although communication prices have generally been lower than those in other sectors, most governments prioritized the provision of high-quality, reasonably priced, and universally accessible electronic communication services for all consumers. In what follows, we compare the initiatives put in place between the US and the EU government and we highlight the accompanying challenges.

Initiatives of the US government

The US Government focuses on the universal service concept to guarantee minimum essential communication services are accessible to all end users. They put in place several initiatives over the past decades to address the digital divide in the country.

The US Telecommunications Act

In 1996, the US Telecommunications Act broadened the scope of universal service. The aim was to increase access to telecommunications services, including advanced solutions like high-speed internet, ensuring these are available to consumers at just, reasonable, and affordable rates. The Act required telecommunication providers to allocate a calculated share of their interstate and international end-user revenues towards the Universal Service Fund.⁷ These costs are often passed to consumers, with a "Universal Service Fund" line-item surcharge normally included in the monthly bills.

Other US initiatives

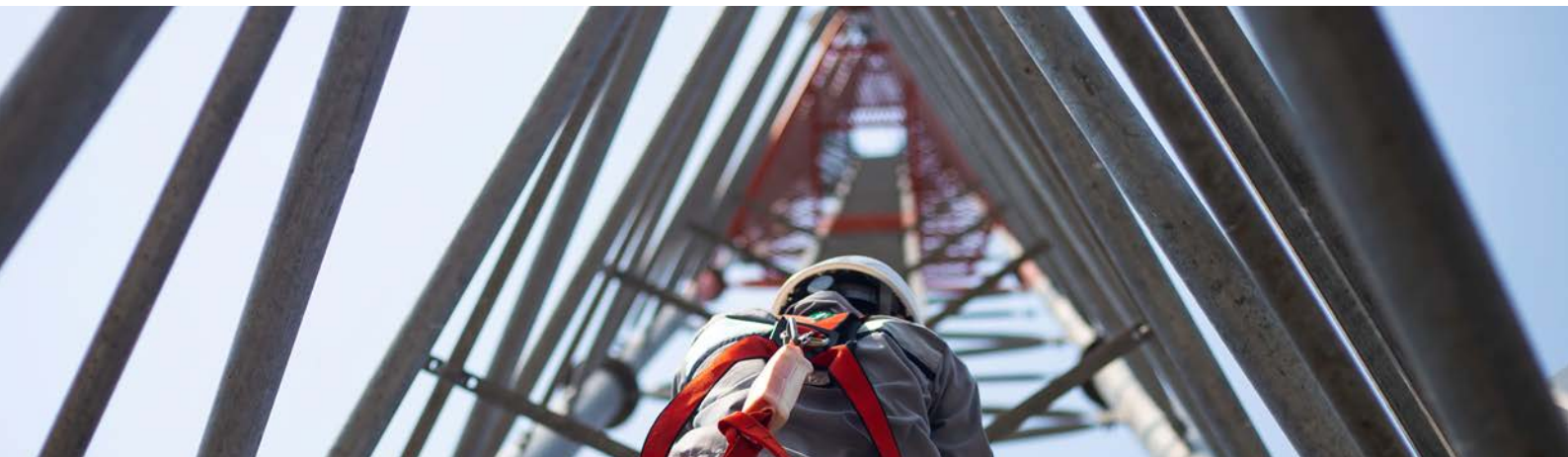
In response to the 2008 recession and later to the impact of the COVID-19 pandemic, the US government shifted its approach to address the digital divide by providing direct subsidies for broadband infrastructure and adoption. Initiatives such as the American Recovery and Reinvestment Act of 2009, the 2020 Coronavirus Aid, Relief, and Economic Security Act, and the Consolidated Appropriations Act of 2021 allocated funds for broadband deployment and adoption. Most recently, the Infrastructure Investment and Jobs Act earmarked \$65 billion to ensure affordable, reliable high-speed internet access for all citizens.⁸

Main challenges in the US

Despite improvement in connectivity, affordability remains a significant obstacle to widespread broadband adoption in the US. More than 2.5 million Americans lack access to broadband (25 Mbps/3 Mbps). This figure rises to 44 million when considering those without access to mobile LTE at 10 Mbps/3 Mbps.⁹

To tackle this challenge, the USF in the United States operates through four major programs, which distributed over \$7.4 billion in 2022:¹⁰

- ▶ Lifeline program
This program provides monthly discounts on phone and broadband services for low-income individuals.
- ▶ E-Rate program
This program subsidizes a portion of telephone and broadband costs for schools and libraries.
- ▶ Rural health care program
This program offers a 65% discount on various communication services for eligible healthcare facilities.
- ▶ Connect America fund
This program supports the expansion of voice and broadband infrastructure in rural, insular, or high-cost areas.



⁷ <https://www.fcc.gov/general/universal-service>

⁸ <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/06/fact-sheet-the-bipartisan-infrastructure-deal/>

⁹ "Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion", Federal Communication Commission, <https://docs.fcc.gov/public/attachments/FCC-18-10A1.pdf>.

¹⁰ "Annual Report, 2022", USAC, https://www.usac.org/wp-content/uploads/about/documents/annual-reports/2022/USAC_2022_Annual_Report.pdf

Initiatives of the European Union

The European Union also focuses on the universal service concept to guarantee minimum essential communication services are accessible to all end users. To that end, the EU put in place several initiatives.

The Electronic Communications Code Directive

In December 2018, the EU adopted the Electronic Communications Code Directive (EU 2018/1972), which sets an EU-level legal framework for coordinating national laws on electronic communications, including telephony and basic internet access services, which are now required as a universal service in EU countries. The Directive aims to ensure good quality, affordable, and publicly available electronic communication services for end users.

Universal service implementation varies across EU Member States (MS), as the definition of what constitutes adequate broadband internet access service (IAS) depends on each territory's infrastructure. Some MSs (Croatia, Cyprus, Greece, Finland, Hungary, Iceland, Lithuania, Slovenia, and Spain) have appointed universal service providers, while others, like Sweden, use state aid measures instead. To help low-income consumers or those with special social needs, 12 MSs (Austria, Belgium, Czech Republic, Cyprus, Croatia, Hungary, Lithuania, Luxembourg, Malta, Portugal, Slovenia, and Spain) have implemented affordability measures such as vouchers, discounts, or price caps.

The Universal Service Obligations

As part of the Electronic Communications Code Directive, Universal Service Obligations (USOs) in EU telecommunications aim to address challenges related to accessibility and affordability, ensuring equitable access to these essential services. USOs in the sector are predominantly financed by the industry, placing the burden mainly on electronic communication providers.¹¹

To support the implementation of USOs, and by extension the goals of the EU's universal service, the EU has set ambitious targets under the Digital Decade Policy Program 2030. By 2030, all European households should be served by gigabit networks, and all populated areas should be covered with next-generation high-speed wireless networks with performance equivalent to 5G.

Funding for universal service obligations also differs among MSs, with approaches including industry-funded models (in 10 MSs), publicly funded systems (in Czech Republic, Latvia, and Sweden), mixed models (in Finland and Slovenia), or case-by-case decisions.¹²

Main challenges in the EU

Achieving the targets set out in the Universal Service Obligations will require substantial investments. According to an evaluation by the European Commission, an estimated €114 billion is needed to achieve gigabit coverage.¹³

The main portion of this investment is expected to come from private investors, meaning that the success of these initiatives relies heavily on the financial situation of the industry to attract investment. However, there are concerns about the current financial state of the EU's electronic communications sector, as the average revenue per user of electronic communications operators in the EU (€15.0) is significantly lower compared to that in the US (€42.5).¹⁴

The USO framework within the EU places an additional financial burden on a telecommunications industry that is already contending with economic challenges. This pressure could potentially stifle innovation and deter much-needed investment. Furthermore, feedback from a European Commission stakeholder consultation suggests an expectation of declining broadband access prices, which may diminish the role of USOs in maintaining affordability.

Moreover, research suggest that competition and technology have largely addressed the problems with universal access and that the legitimating effect of USO is greater than its practical effects.¹⁵ In addition, the industry of telecommunication argues that the competitiveness of markets and sufficient network coverage, rather than USOs, have been pivotal in ensuring availability and affordability of internet access in Member States.

Despite this, the imperative to guarantee widespread access to connectivity remains undiminished. The EU has recognized the importance of ensuring universal service in the future, as outlined in the "European Declaration on Digital Rights and Principles for the Digital Decade".¹⁶ In recognition of these factors, it is crucial that the USO framework undergoes significant reform to alleviate the potential financial strain on the telecommunications sector. Concurrently, it is essential to designate USO funds specifically for enhancing and expanding the accessibility of connectivity and meet the future demands.

This reformed USO framework should prioritize innovative funding mechanisms, regulatory incentives for competition, and collaborative efforts that can collectively ease the industry's financial constraints. By doing so, the EU can foster a more sustainable telecommunications landscape that is conducive to both growth and the equitable provision of services across all regions.

¹¹ White Paper - How to master Europe's digital infrastructure needs?

¹² "BEREC Report on Member States' best practices to support the defining of adequate broadband internet access service", 2024, <https://www.berec.europa.eu/en/document-categories/berec/reports/berec-report-on-member-states-best-practices-to-support-the-defining-of-adequate-broadband-internet-access-service-0>.

¹³ Investment and Funding needs digital connectivity targets

¹⁴ The State of Digital Communications 2024 - ETNO (2024)

¹⁵ Eliassen, K. A., & From, J. (2009). Deregulation, privatisation and public service delivery: Universal service in telecommunications in Europe. *Policy and Society*, 27(3), 239-248. <https://doi.org/10.1016/j.polsoc.2008.10.001>

¹⁶ <https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles>

Summary of the challenges related to broadband

In summary, both the US and the EU have undertaken various measures to ensure universal broadband adoption. However, distinct challenges remain for each region. In the US, affordability continues to be the primary barrier to widespread broadband access. In the EU, the main concern is the financial burden on the telecom industry, driven by ambitious targets for USOs and gigabit network coverage by 2030. Additionally, the EU industry's lower average revenue per user compared to the US exacerbates this issue, making it difficult to attract the necessary private investment.

Looking ahead, both regions will have to navigate geopolitical changes and evolving economic conditions that could impact their strategies. For the US, this may involve further enhancing affordability initiatives. For the EU, reforming the USO framework to alleviate financial strain on the telecommunications sector while fostering innovation and investment will be crucial. Continuous adaptation will be crucial to address emerging needs and ensure that communication services remain accessible and affordable for all users.

Opportunities for new telco players

New entrants in the telecommunications sector have a prime opportunity to leverage advancements in network technologies like 5G and the upcoming 6G. By focusing on these high-speed, low-latency networks they can offer differentiated services that appeal to consumers and businesses eager for the latest in connectivity. The ability to provide customer-centric solutions tailored to specific needs allows these new players to establish a strong market presence and build a dedicated customer base.

The regulatory environment in the EU, particularly initiatives aimed at fostering competition and encouraging investment in digital infrastructure, creates a favorable landscape for new telcos. Participation in the EU's Digital Decade policy program and related large-scale projects can further enhance their visibility and credibility.

Crucially, new entrants have the potential to disrupt the market with more competitive pricing strategies. Without the burden of legacy systems, new telcos can operate with greater cost-efficiency, passing savings onto consumers and businesses. This approach can be particularly attractive in a market where customers are increasingly price-sensitive, providing a strong incentive for users to switch to new providers offering lower prices for comparable or superior services.



Conclusion

The EU telecom industry stands at a critical juncture as it adapts to the evolving demands of the EU's Digital Single Market. High capital investments, the unresolved fair share debate, limited 5G adoption, complex market consolidation, and economic pressure impacting broadband access present substantial challenges for telcos. Yet even though it is a challenging time for telcos today, exciting times are ahead.

Consolidation in the market for both fixed and mobile is becoming a defining trend, driven by the high investments required to stay competitive. As telecom services increasingly become commoditized, ecosystem players and hyperscalers will play an important role in the Core Network. Collaboration between industry stakeholders will be key to provide enhanced services in the future.

The role of the regulator, too, will remain important to ensure proper and fair competition within the market, not just in Belgium, but across the whole of Europe. Effective regulation and thoughtful investment strategies will be crucial in addressing financial pressures.

As the industry evolves, embracing these dynamics will be essential to sustain growth and enhance digital connectivity across Europe.

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