



Reforming Yemen's telecommunications sector: Policy options

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- Telecommunications are a vital pillar of Yemen's economy. However, Yemen scores poorly on key ICT development indicators by regional and global standards.
- Weak infrastructure, government policies lacking efficiency and transparency, and war-related impacts critically hold back the sector's development.
- Telecommunications' economic, military, and political importance has intensified over time and the parties' decisions in relation to the sector have become deeply tied to conflict dynamics.
- Strengthening and de-politicising telecommunications should be a priority for the internationally recognised government of Yemen (GOY) and its partners: modern, reliable, and affordable telecommunications services are crucial to Yemen's socio-economic development and the sector's centrality to the conflict suggests it could influence war outcomes.
- Given the GOY's capacity constraints – and in line with international good practice – ICT development should be led by private operators, with the government playing a regulatory and policy-setting role. Despite high market risks and sizable institutional, economic, and political obstacles, opportunities for private sector-led development do exist in Yemen.
- This policy brief and its underlying report discuss short-, medium-, and long-term policy options to promote private sector investment and participation in Yemen's telecommunications and realise the sector's potential.

Overview

Telecommunications have historically been a critical sector for Yemen's economy. The sector's contribution to economic output grew steadily, at an average of 7% between 2015 and 2018, with a large number of jobs being directly or indirectly linked to the sector. Before the conflict, telecommunications provided the second largest source of revenue, after oil receipts. Today, taxes and fees levied on operators make up the largest share of Houthis Authority or De Facto Authority, DFA's public revenues, estimated at over USD 150 million per year. In addition to supporting public budgets, these revenues have historically had a stabilising effect on the Yemeni rial (YER) due to being partly denominated in foreign currency.

Notwithstanding its economic importance, Yemen's telecommunication sector acutely underperforms regional and global trends. Gaps are especially large with regards to access, quality, and affordability. Access to telephone services, especially mobile-based services, has slightly contracted since the start of the war and, as of 2017, only 27% of the population had access to some form of Internet connectivity. This compares poorly to the averages for the Middle East and Northern Africa (MENA) region (65%) and the world (49%) (**Figure 1**). Not only is access limited, but quality is also weak, given the abysmally low speed of Internet services and the low bandwidth capacity available to users (**Figure 2**). Costs of telecommunications services, particularly Internet, are high: a data-only mobile broadband package cost 10% of monthly GNI (gross national income) per capita – well above the UN 2% affordability target for entry-level broadband services to be reached by 2025.

FIGURE 1: Internet access as of 2017

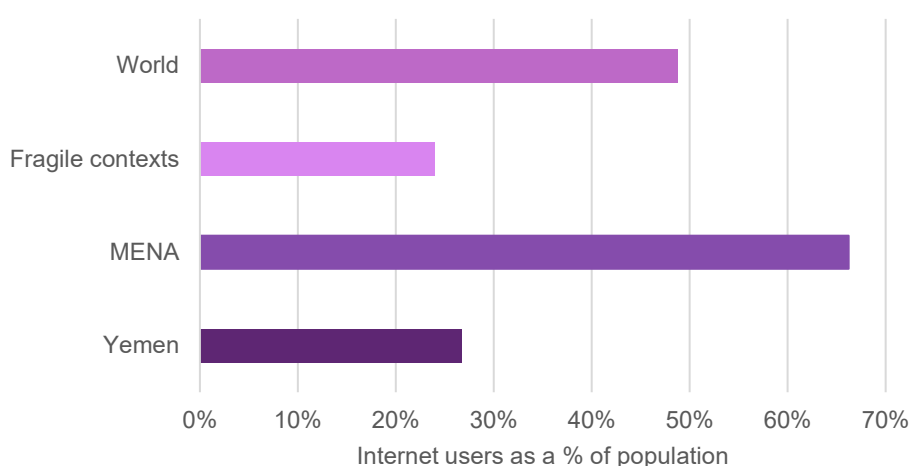
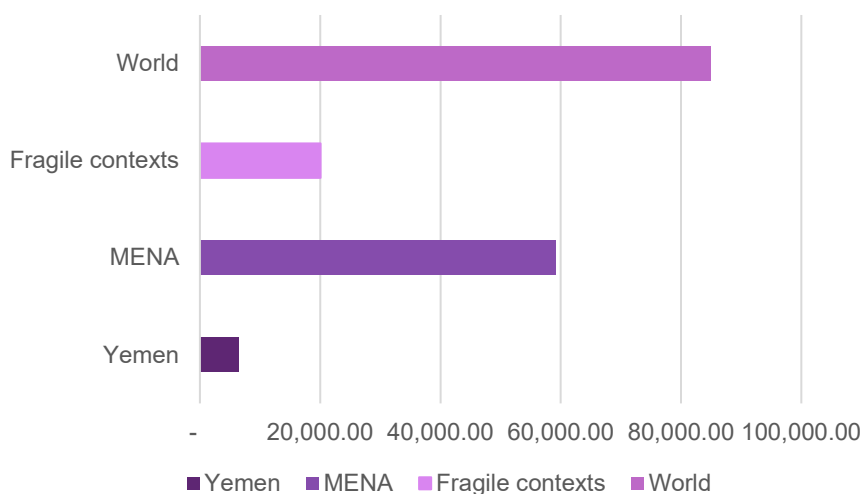
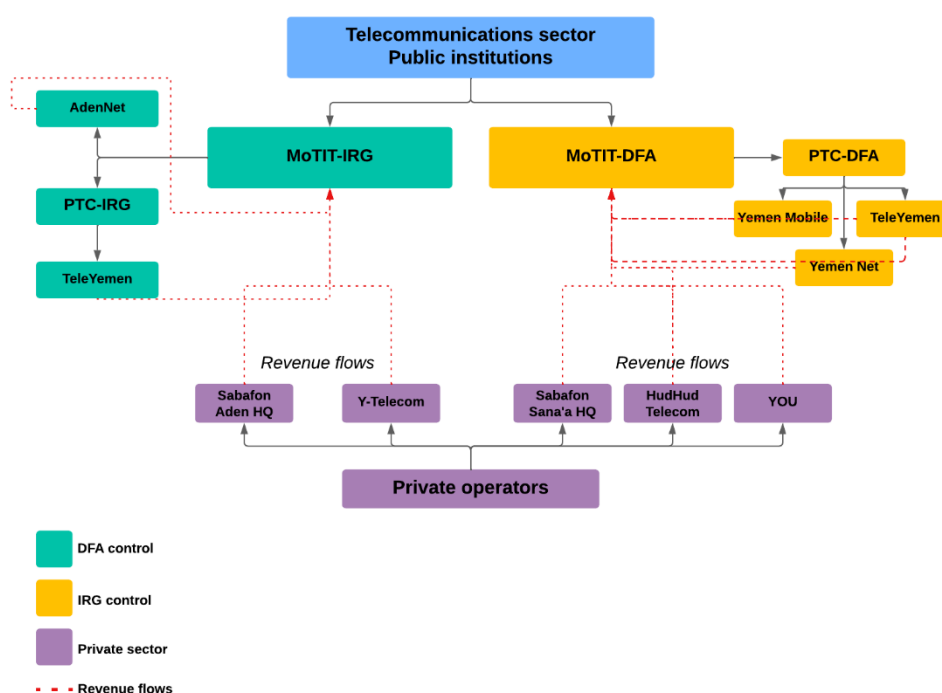


FIGURE 2: International bandwidth per Internet user, 2017 (bit/s)

The poor performance of the sector is driven by a wide array of factors. First, the sector's infrastructure is weak, outdated, and often non-operational. Only two out of the five submarine cables that could provide international connectivity to Yemen are currently functioning, and it is estimated that 25% of the telecommunications infrastructure has been irreversibly impaired due to war-related damages. The regulatory and institutional environment is not conducive to private sector development and government policy is highly inefficient. Finally, low levels of digital literacy, cultural norms opposed to the use of internet (especially for women), and Yemen's rugged and mountainous territory also contribute to the limited development of the sector.

The war has notably made matters worse, with telecommunications becoming tightly linked to conflict dynamics. Assets and infrastructure are frequently impaired by the fighting and there is evidence of Ansar Allah *de-facto* authorities, or DFA, frequently exploiting its control over much of the network for spying, surveillance, censorship, and propaganda activities. Key sector institutions are now split between Sana'a and Aden, leading to bifurcated revenue flows (with the largest share captured by DFA), regulatory gaps and inconsistencies, and the creation of new government bodies (**Figure 3**). The institutional fragmentation has trickled down to the private sector, with operators exiting the market, forcibly relocating their headquarters from Sana'a to Aden, or splitting into fully separate branches in Aden and Sana'a.

FIGURE 3: The fragmentation of Yemen's telecommunications sector



Notwithstanding this dire scenario, the sector has shown remarkable resilience. Similar to other fragile settings, such as Afghanistan, Iraq, and Somalia, operators have largely continued to provide a basic level of services to the population through years, albeit at lower quality. This has sustained economic activity by linking firms to markets and consumers, has maintained societal ties by keeping communities connected, and enabled urgent humanitarian operations.

Challenges to private sector development

The private sector should play a prominent role in the development of Yemen's telecommunications sector. First, government resources and expertise are insufficient to ensure widespread and reliable service delivery. Second, in line with international good practice, the development of a modern telecommunications sector is associated with a competitive, market-driven ecosystem of private firms, with governments retaining regulatory, oversight, and policy-setting responsibilities. In Yemen, the combination of long-standing issues, misaligned incentives, and conflict-related challenges make the telecommunications market one of the hardest and riskiest to do business in, critically hindering private operations and investment. The main obstacles and risks faced by private actors include institutional and regulatory challenges, economic challenges, and obstacles related to the political economy.

TABLE 1: Summary of obstacles and risks to private sector participation and development

Institutional and regulatory	<ul style="list-style-type: none"> • Outdated and incomplete legislative, regulatory, and institutional frameworks • Legislative fragmentation • Lack of safeguards against anti-competitive practices • Uncertain licensing frameworks • Opaque and fragmented fiscal frameworks • Cumbersome bureaucracy • Embargo on telecommunications equipment
Economic	<ul style="list-style-type: none"> • Burdensome fiscal obligations • High electricity outages and fuel scarcity • Shrinking profits
Political economy	<ul style="list-style-type: none"> • High politicisation, rent extraction, and state interference

Institutional and regulatory challenges

Laws and regulations are incomplete and outdated and existing frameworks fail to deal with issues of privacy and security, disputes, competition, network service providers' responsibilities and obligations, tariffs, consumer protection, and investment in advanced technologies. The Ministry of Telecommunication and Information Technology (MoTIT) retains nearly exclusive powers to organise, supervise, and set policy for the sector, in addition to participating in service provision, often through government monopolies. This has contributed to a poorly transparent and uncompetitive environment, with high barriers to entry for private firms.

The lack of a single source of authority over the sector, given the sector's institutional fragmentation, has exacerbated these challenges. For example, licenses not only lack clear criteria for their assignment, upgrading, renewal, and symmetry across operators, but there is no mutual recognition of licenses issued across GOY and DFA. Moreover, fiscal policy has also become increasingly obscure and fragmented, with reports of companies incurring double taxation, getting embroiled in legal disputes, being fined or forced to terminate operations for not complying with fiscal obligations to either party. Complex and lengthy bureaucratic procedures, such as for registration, licensing, and trading activities have resulted in high and rising operating costs. The security embargo on telecommunications equipment imposed by the Saudi-led coalition is a case in point. Together, these elements drastically reduce certainty and increase risks, hurting companies' profitability and limiting their incentives to scale or start-up activities in Yemen.

Economic challenges

Operators' profitability has been plummeting due to a shrinking and increasingly fragmented market which has reduced revenues and to soaring costs. Notably, the fiscal regime is highly extractive, with mobile operators facing a 50% corporate tax rate.¹ In addition to high taxes, fees are denominated in foreign currency (USD or SAR). This has translated into spiralling costs for operators given the YER's depreciation. Further, operators' electricity bill has been growing due to their reliance on fuel generators and the rising cost of fuel.² Relatedly, recurring blackouts and fuel shortages have led to a reduction in the number of operational power stations, weakening or eliminating mobile coverage in parts of the country. Finally, high security, infrastructure maintenance, and rehabilitation costs have been hurting profits further.

Obstacles related to the political economy

Private operators must also navigate the complex political economy that has historically characterised Yemen's telecommunications sector. Due to its financial and strategic importance, political elites tend to exploit the sector as a source of rent extraction. Powerful groups often leverage their social and political influence to obtain licenses, partner with international firms, win government contracts, and participate in the formal economy. Notably, all operators are either publicly owned or controlled by figures that are closely associated with different political groups. Ultimately, vested interests of entrenched elite networks undermine, block, and distort competition and forward-looking, market-based reforms and policies, thereby hindering the sector's sustainable development

Opportunities for private sector engagement

Notwithstanding the pressing challenges described above, a few, key opportunities to support private sector operators in upgrading and expanding the provision of services do exist. Importantly, the sector's resilience throughout conflict indicates that telecommunications is a segment of the economy that can see some development even as hostilities continue, and as such should be prioritised in reconstruction efforts. The market for telecommunications services, especially high-speed Internet connectivity, is large and growing, yet is underserved, highlighting the potential to attract private investment. Scope for greater private sector participation is especially evident in satellite-based Internet, local community networks, and financial technologies, such as mobile money. Public-private partnerships are an important and currently underexplored approach that could help to overcome GOY's fiscal capacity

¹ Among the world's highest tax rate for telecommunications companies.

² The unreliability of the national grid has meant that operators often rely on fuel generators for electricity.

constraints while creating a way to concretely engage the private sector and mitigate its risks, especially for the roll out of country-wide infrastructure.

Policy recommendations

To realise these and future opportunities, GOY will need to commit to developing and implementing a realistic, forward-looking reform agenda that can effectively increase private sector participation in telecommunications and strengthen its development. It is paramount for reform efforts and policy decisions to be anchored on a few key grounding principles, some of which will require a considerable change in the way the government has traditionally interacted with the sector. These will include shifting away from managing the sector in a hands-on manner, viewing the sector as an essential service provider rather than a source of public finances, committing to greater transparency and accountability, and aiming to limit the politicisation and fragmentation of the sector. Sustained political will and prioritisation will also be necessary. Further, given Yemen's challenges and constraints, a step-by-step, incremental approach to policymaking is warranted.

FIGURE 1: Underlying policy principles



The [“Reforming Yemen’s telecommunications sector”](#) report can be reviewed for a deeper understanding of the context informing the following policy recommendations.

Short term – 6 months to 1 year

In the short term, the government should consider the following four objectives and related policy actions.

Restore local and international connectivity by:

1. Reinstating and upgrading licenses of Aden-based operators to long-term 4G or technologically neutral licenses, potentially made conditional on the companies achieving set performance indicators.

2. Encouraging private investment in local community network and satellite-based internet providers by issuing licenses and engaging with international investors working in this space.
3. Rebuilding the international submarine cable capacity. This would entail (1) maximising the use of the Aden-Djibouti cable; (2) activating the Asia-Africa-Europa 1 (AEE-1) link; (3) exploring scope to link the domestic network to the South East Asia-Middle East-West Europe 6 (SEA-ME-WE-6) cable.
4. Channelling available financing towards network rehabilitation, prioritising the restoration of mobile broadband coverage. Strengthening state-owned institutions that have been fully re-established in Aden should also be considered as a key area in which to allocate available financing, with a focus on upgrading core infrastructure, hiring qualified technical staff, building capacity, and revising regulations and legislation.

De-escalate and de-politicise key sectoral issues by:

1. Establishing technical working groups among the parties, as well as among operators, to negotiate issues that are linked to conflict dynamics (e.g., revenue sharing mechanisms, market fragmentation), within or in parallel to the UN-led economic track of the peace process.

Mobilise external support by:

1. Reconnecting with international institutions working on telecommunications sector development issues, such as ITU, OECD, ICANN, and GSMA.

Leverage quick wins to build greater transparency by, for example:

1. Launching an ICT data initiative focused on collecting and publishing key telecommunications sector information – a low-cost but high-value effort for GOY's MoTIT to consider. In addition to promoting transparency and trust in telecommunications institutions, the availability of data could also strengthen private sector investment, as operators would be better equipped to conduct feasibility studies, assess risk, and make business decisions.

Medium term – 1 to 3 years

Medium-term policy objectives and actions to consider include:

Strengthen transparency and oversight by:

1. Empowering existing regulatory bodies (e.g., the Central Organization for Control and Accounting, the High Authority for Tender Control, Anti-

corruption Commission, the Central Bank) with some oversight responsibilities over public and private telecommunications sector players in the areas of licensing, taxation, competition, appeals, and financial disputes, for example, as an interim solution prior to establishing an independent regulator.

2. Establishing a legal framework for AdenNet, including articles of association and rules of procedure, forming a board of directors, auditing financial statements, and issuing spectrum and operating licenses.
3. Removing any overlaps in mandate, responsibilities, functions among institutions, particularly AdenNet and TeleYemen-Aden.
4. Entrusting a neutral body with authority over the country's top-level domain, .ye, currently controlled by DFA.

Tackle legislative and policy bottlenecks

1. Revising and updating the telecommunications law and the tax policy.
2. Developing transparent and adequate licensing regulatory frameworks to ensure that licenses are rolled out in a fair and symmetrical way across operators and that issues such as certainty in licensing contracts and risk of corruption are adequately addressed.
3. Negotiating domestic roaming agreements with operators and develop the relevant regulations.
4. Tackling political and economic risk indicators, given the sensitivity of infrastructure investors to improvements in country risk ratings in conflict-affected countries. Priority areas include construction permits, access electricity, and cross-border trade.
5. Scaling mobile money services by updating relevant legislation, improving the necessary telecommunication infrastructure, and allowing mobile operators to use the specific technologies needed to provide these services.³

Leverage diplomacy to unlock key bottlenecks by:

1. Seeking to unfreeze TeleYemen's USD 300 million, currently held in a Saudi bank since 2015, with the support of bilateral and multilateral partners. The release of the funds could be made conditional on it being allocated to development and politically-neutral projects. Alternatively, the funding could be placed in an escrow account.

³ Such as unstructured supplementary service devices (USSD) and integrated voice recording (IVR) services through encrypted SMSs.

2. Regaining access to most international gateways to restore high-speed connectivity and improve the sector's resilience by (1) seeking recognition for TeleYemen-Aden from the cable consortia of both FALCON and SEA-ME-WE-5 and by (1) connecting the national network to the Africa 1 cable by building a landing station in Mocha and purchase internet capacity.
3. Negotiating with foreign governments to re-route international calls through Aden rather than Sana'a (as mostly happens today), via the Aden-Djibouti cable. Currently, this would only apply to calls towards Aden-based operators. The re-routing of calls would not only increase revenues for GOY but also carry security benefits as it may mitigate DFA's espionage and interception activities over international calls.

Long term – 3+ years

Long-term government policy is highly uncertain and critically dependent on the evolution of the war and prospects for peace. This will require GOY's plans for the sector to be flexible and adaptable to changing circumstances. As (hopefully) the situation in the country and in the sector stabilises, GOY should aim to:

Implement a modern and independent regulatory framework, conducive to private investment and healthy market-based competition by:

1. Establishing an independent regulator to ensure more neutrality and stability in the way the sector is managed. The regulator should also be assigned a clear role for managing spectrum between different users.
2. Regulating termination rates and adopting some level of price regulation, through a price cap or price floor, to address the risks of monopolistic behaviours by large operators.

Define and implement a sectoral long-term, national vision by:

1. Developing a comprehensive and inclusive digital development strategy, drawing on the experience of other countries. Important areas of focus may include rolling out e-governance services (such as in taxation, education, health) to increase transparency, tackle corruption, and encourage the return of investment, and developing financial technologies.