

Market review of the Mobile market¹

April 2024

¹ Revised version following informal consultations

In this revised version, corrections made after the informal consultations are highlighted as follows:

- (i) References to the Methodological Rules were substituted by references to the applicable provisions in ComCom's revised Methodological Rules enacted after the informal consultation was launched. These corrections are highlighted in green.
- (ii) Corrections relating to technical clarity and finetuning or updating the argumentation are highlighted in yellow.

Contents

1. Executive summary	7
1.1. Market definitions	7
1.2. Assessment of significant market power	9
1.3. The envisaged regulatory remedies.....	10
2. Introductory statement.....	12
3. Description of the legal framework related to market analysis and market analysis process in Georgia.....	14
3.1. The Association agreement.....	14
3.2. Applicable provisions from the Georgian ‘Law on Electronic Communications’	16
3.3. Main divergences between the ‘Law of Georgia on Electronic Communications’ and the EU Framework	19
3.3.1. Joint dominance is not (yet) clearly distinguished from collusion	19
3.3.2. Regulation of closely-related segments of a service market	20
3.4. The successive steps of the market review process in Georgia	21
3.4.1. Applicable legal provisions	21
3.4.2. First step: Determining the relevant and closely-related markets and appropriate geographic boundaries of the market.....	22
3.4.2.1. Demand-side and supply-side substitution.....	23
3.4.2.2. Geographic market definition	23
3.4.3. Second step: Determining whether the relevant retail market is competitive	23
3.4.4. Third step: Identifying wholesale markets for which regulatory intervention is appropriate to address the lack of competition in the retail market being investigated.....	23
3.4.5. Fourth step: The ‘Three Criteria Test’	24
3.4.6. Fifth step: Determining the authorised persons with significant market power in the relevant segment of the service market	26
3.4.7. Sixth step: Imposition of specific obligations.....	27
4. Analysis of the relevant retail market of mobile services	28
4.1. Demand side substitution	34
4.2. Supply side substitution	42
4.2.1. Switching focus between supplying customised business and mass-market segments of the market.....	42
4.2.2. Supply by publicly available satellite services	43
4.2.3. Voice and data services accessed by mobile devices using local Wi-Fi networks.....	44
4.2.4. Mobile network operator using 5G or further generations of mobile technologies	45
4.3. Geographical market definition	46

4.4.	Conclusion on market definition of relevant market	46
4.5.	Prospective assessment of competitive conditions on the retail mobile access market	47
4.6.	Effects on consumers	54
5.	Analysis of the upstream market of mobile wholesale access.....	56
5.1.	Demand-side substitution analysis.....	58
5.2.	Supply-side substitution analysis	61
5.3.	Definition of the geographical market	61
5.4.	Conclusion on relevant wholesale market definition.....	62
5.5.	Three-criteria test.....	62
5.5.1.	First criterion: The presence of high and non-transitory entry barriers	62
5.5.2.	Second criterion: The market is not tending towards effective competition	69
5.5.3.	Third criterion - Competition law alone is insufficient to adequately address the identified market failure(s).....	81
5.5.4.	Conclusion on whether the market is susceptible to <i>ex-ante</i> regulation	82
6.	SMP assessment	83
6.1.	Background and goal of the SMP assessment phase	83
6.2.	Assessment of SMP using the relevant criteria	83
6.2.1.	Market share	83
6.2.1.1.	Market share based on the retail market	85
6.2.1.2.	Summary of market shares based on the retail market.....	92
6.2.1.3.	Limitations related to available network capacity and network coverage from competitors from the integrated operators.....	92
6.2.1.4.	Summary of the assessment on available capacity	97
6.2.1.5.	Overall summary of the analysis	97
6.2.2.	Absolute and relative size of the operators	99
6.2.3.	Control of infrastructure not easily duplicated.....	100
6.2.4.	Access to spectrum.....	101
6.2.5.	Absence of potential competition.....	105
6.2.6.	Vertical integration.....	106
6.2.7.	Economies of scale	107
6.2.8.	Economies of scope	107
6.2.9.	Absence of or low countervailing buying power, conclusion of long-term and sustainable access agreements	109
6.2.10.	Easy or privileged access to capital markets/financial resources	110
6.2.11.	Profitability	111

6.3.	Conclusion on the finding of SMP in the wholesale market of mobile access.....	113
6.4.	Joint dominance	114
7.	Analysis of the possible competition problems on the relevant wholesale market in absence of regulation	118
7.1.	Raising rivals' costs	120
7.2.	Refusal of supply/ denial of co-location and national roaming	120
7.3.	Leveraging by means of pricing.....	124
7.3.1.	Excessive pricing and margin squeeze	124
7.4.	Refusal of supply/Denial of access	125
7.5.	Leveraging by means of pricing in the case of MVNO access	126
7.5.1.	Cross subsidising leading to a margin squeeze	126
7.6.	Leveraging by means of non-price variables	127
7.6.1.	Discriminatory use of information or withholding of information	127
7.6.2.	Discrimination by quality of service	128
7.6.3.	Delay tactics.....	129
7.6.4.	Unjustified claims	130
7.6.5.	Unjustified use of information about competitors	131
8.	Regulatory remedies	132
8.1.	The obligation of transparency	132
8.1.1.	Definition of transparency obligations.....	133
8.1.2.	Minimum content of a reference offer	134
8.1.3.	Timetable of implementation.....	137
8.2.	The obligation of access	138
8.3.	The obligation of non-discrimination	140
8.3.1.	Key performance indicators (KPIs)	142
8.3.2.	Margin squeeze test for MVNO access	143
8.4.	The obligation of accounting separation.....	144
8.5.	Obligations for price control and cost accounting	145
8.5.1.	Wholesale pricing	145
8.5.2.	Cost accounting	146
8.6.	How the regulatory remedies address the competition problems.....	147
9.	Annex 1.....	149
9.1.	Current vs. proposed regulation	149
9.2.	List of abbreviations	155

List of Figures

<i>Figure 1: Total number of mobile subscriptions (2022)</i>	33
Figure 2 EBITDA margins – Georgian mobile operators 2019-2022.....	49
Figure 3 EBITDA margins –World mobile operators 2013 – 2021.....	50
<i>Figure 4 Development of market shares of MNOs</i>	51
<i>Figure 5 Revenues of MNOs</i>	51
<i>Figure 6 ARPUs of MNOs</i>	52
Figure 7 Affordability of mobile services in Georgia and selected countries.....	54
<i>Figure 8 MVNO types</i>	58
<i>Figure 9 Development of mobile market shares</i>	72
<i>Figure 10 Mobile data traffic growth</i>	72
<i>Figure 11 Mobile market concentration (HHI)</i>	75
Figure 12 Mobile market concentration in Europe (HHI).....	76
<i>Figure 13 Mobile prices development</i>	78
Figure 14: Mobile sector total revenues (2017-2022).....	85
Figure 15: Mobile voice and data revenues (2017-2022)	86
Figure 16: Mobile broadband market shares by revenues (2017-2022).....	86
Figure 17: Mobile broadband data revenues (2017-2022)	87
Figure 18: Mobile M2M market revenues (2020- 2022).....	88
Figure 19: Mobile voice revenues (2017- 2022).....	88
Figure 20: Mobile voice revenues market shares (2017- 2022).....	89
Figure 21: Mobile voice and data subscriptions (2017- 2022)	90
Figure 22: Business customer mobile data subscriptions market shares (2017- 2022).....	90
Figure 23: Mobile M2M subscriptions (2020- 2022).....	91
Figure 24: Mobile M2M market shares (2020- 2022)	91
Figure 25: Mobile data traffic (2017- 2022)	92
Figure 26: Shares of Mobile data traffic (2017- 2022)	93
Figure 27: Mobile infrastructure and hardware expenditures (2019-2022).....	94
Figure 28: Mobile infrastructure and hardware expenditures shares by operator (2019-2022)	94
Figure 29: Mobile cell-site locations (2022)	95
Figure 30: Mobile cell-site locations added (2019-2022).....	95
Figure 31: Mobile UMTS cell-site locations (2018-2022)	96
Figure 32: Mobile LTE cell-site locations (2018-2022)	96
Figure 33: Summary of Magticom mobile market shares based on various retail and capacity data ..	98
Figure 34: Mobile revenues and subscribers and size differences (2022)	99
Figure 35: Overall revenues and subscribers and size differences (2022)	99
Figure 36 Mobile spectrum allocation before September 2023	102
Figure 37 Spectrum assignments by operator prior to September 2023	102
Figure 38 Spectrum assignment after the auction concluded in September 2023.....	103
Figure 39 Spectrum assignments after the auction concluded in September 2023	103
Figure 40 Unassigned mobile spectrum	104
Figure 41 Available mobile spectrum and its usage.....	105
Figure 42: Retail market shares based on number of subscriptions (2022)	108
Figure 43: Key financial resource indicators 2019-2022 (GEL millions)	110

Figure 44: Key financial resource indicators 2020-2022	111
Figure 45: Overall operations	112
Figure 46: ARPU	113
Figure 47: The main retail offers of the mobile operators.....	121
Figure 48: The MVNO ladder of investment	139
Figure 49: Competition problems and remedies addressing them.....	147
Figure 50: Comparison of the existing and proposed new regulations	149
Figure 51: Comparison of scenarios of market responses on regulation.....	154
Figure 52 List of abbreviations	155

1. Executive summary

This document contains the analysis carried out during 2023 of the mobile market in Georgia. Within the legal and regulatory framework of Georgia and in harmony with the EU's regulatory framework and best practices, the retail mobile access market is first defined, followed by the upstream wholesale mobile access market. Both markets were found to be of national scope in Georgia.

In the nationally defined market for wholesale mobile access, Magticom was found to have significant market power (SMP), in accordance with the law of Georgia on Electronic Communications.

After SMP has been determined, proportionate regulatory remedies were defined that will address the potential competition problems arising from Magticom's possession of SMP. These regulatory remedies seek to remove the existing barriers to entry and expansion currently present in the Georgian mobile market to foster competition in the retail market. To achieve this objective, obliging Magticom to offer wholesale MVNO access, national roaming and co-location are considered to be proportionate. The implementation of these *ex-ante* remedies will in a forward-looking perspective prevent Magticom from inflicting harm on consumers with its inherent ability (arising from its SMP position) to limit further competition in the retail market.

The analysis and conclusions contained in this report are now being subject by ComCom to the legally required public consultation procedure, with a view to the adoption of a formal decision closing the market review and, possibly, imposing the relevant obligations on Magticom.

1.1. Market definitions

ComCom concludes, based on the analysis of demand and supply-side substitution, that the retail mobile access market consists of the market for users (including individuals and businesses) to originate and receive voice calls and text messages, to access data services (including the uploading and downloading of data) plus the possibility for international roaming.

The retail market is defined as the market for mobile broadband access services, without regard to whether access is offered to specified services separately or bundled with other electronic communications services and regardless of the access quality, speeds or technologies used to provide the retail mobile access service. The market is defined as the mass market, available both to individual users and business, especially small to medium enterprises. The more complex needs of large enterprises are generally supplied differently by mobile operators with individual tailoring and pricing schemes. These more specialised

mobile services are not included in the relevant market definition for the purposes of this market analysis.

The geographical dimension of the market is considered to be national because the legal and regulatory conditions plus the terms and conditions of service provision are homogeneous and that the operators offer their mass market mobile retail services at the same price throughout the whole of Georgia.

The assessment of the retail mobile access market as defined reveals that the market is not effectively competitive. This conclusion is based on a few dynamic indicators, including the stagnation in market shares, the lack of investments in new technology and services innovation, the imbalances in market size, scale and scope of the three main operators, plus the absence of any significant emerging of potential competition. From a market structure perspective, it is noted that only two operators in Georgia can currently offer fully bundled (fixed plus mobile) service options. This could in the future severely harm the competitive choices available to Georgian consumers.

The relationship between the mobile retail and mobile wholesale access markets.

In the next stage, the review examined upstream wholesale markets to identify where *ex ante* intervention would be the most appropriate to solve the competition problems identified at retail level. The review identified the wholesale mobile access market as the market on which *ex ante* regulation would enable new entry in the retail mobile market or an existing operator improving its retail market position and, ultimately, increasing consumer choice and service innovation.

Based on the analysis made, it was concluded that the wholesale mobile access market consists of following services:

- Wholesale MVNO access, including any form of MVNO business model desired by an access-seeker from an initial start-up to an MVNO having its own network infrastructure.
- Wholesale national roaming access, primarily for an operator wishing to expand its geographical spectrum coverage or improve the quality of its retail mobile services.
- Wholesale co-location services for an operator wishing to reduce its infrastructure costs by utilising the physical assets of another operator (including buildings, transmission masts and towers).
- The self-supply of network capacity and physical infrastructure used by each mobile network operator for serving their mobile retail access.

The relevant wholesale mobile access market is defined as having a national geographical scope mainly because:

- The legal and regulatory conditions applicable to the wholesale mobile access market are the same in the whole territory of Georgia. In particular, all three mobile network operators are obliged (in their licences) to provide national coverage.
- So far, Georgian mobile operators providing MVNO access have not differentiated their offered services or tariffs on the basis of geography and there is no indication that the operators intend to introduce such differences. Therefore, there are no diverging competitive conditions in parts of the country which would justify a geographical segmentation of the market.

It is therefore considered that there are no material geographical differences with respect to either product quality or pricing in the Georgian market.

1.2. Assessment of significant market power

In next stage, the ‘three criteria test’ was undertaken and it was concluded that the test requirements are met. This means that the market of wholesale mobile access is considered to be susceptible to *ex-ante* regulation. It is important to note that in most EU countries, the wholesale mobile access market is not considered to be susceptible to *ex-ante* regulation largely because the retail market is deemed sufficiently competitive. The existence of wholesale mobile access in European markets (in particular giving rise to many active MVNOs) has resulted in a significant improvement in the competitiveness of the EU retail mobile markets over the last 10 years, as evidenced by the recorded decline in market concentration².

As required by the law of Georgia on electronic communications, an assessment of competition in the relevant wholesale market of mobile access has been performed. Under Georgian law, there is a primary presumption of SMP if an operator possesses at least 40% market share. In addition, a number of secondary criteria need to be examined to confirm a finding of SMP. Using the defined analysis method, it is concluded that Magticom possesses SMP in the wholesale mobile access market, based on its high market shares using both its corresponding downstream retail market shares (with market shares based on revenues, subscriptions, traffic and investments of between 40% and 83%) and backed-up by an analysis of the secondary criteria, notably:

- The existing barriers to market entry and expansion evidenced by the existing lack of competition and potential competition within a forward-looking timescale of three years.
- Magticom’s absolute and relative size compared to its competitors.
- Magticom’s control over infrastructure not easily duplicated by its competitors.
- Absence of countervailing buying power from access-seekers and Magticom’s lack of incentive to conclude long-term and sustainable wholesale agreements.

² See: <https://www.gsma.com/publicpolicy/wp-content/uploads/2022/11/Competition-Dynamics-in-Mobile-Markets.pdf>

- Magticom's significant economies of scale and scope gained through its national infrastructure for both fixed and mobile services, its national distribution channels and vertical integration.
- Magticom's overall profitability and consequent ease of access to investment funding.

A finding of joint dominance of Magticom and any other mobile operator is not a possibility in the wholesale mobile access market because the required legal conditions are not considered to be fulfilled.

1.3. The envisaged regulatory remedies

A provider with SMP would be able to exercise behaviour with the purpose or consequence of restricting competition, including driving competitors out of the market, preventing new operators from entering the market or exploiting consumers. This kind of anti-competitive behaviour is also referred to as 'competition problems'.

Under the Georgian law on Electronic Communications, a set of regulatory remedies is available to apply for ensuring that competition can fully develop nationally, and the chosen remedies must be proportional to address the potential competition problems identified.

Competition problems are likely to arise because Magticom could have the ability or intention to use its significant market power over the mobile market.

In the context of this market analysis, the emphasis is put on the issue of vertical leveraging, which is related to the following usual practices "*... any dominant firm's practice that denies proper access to an essential input it produces to some users of this input, with the intent of extending monopoly power from one segment of the market (the bottleneck segment) to the other (the potentially competitive segment)*"³.

In order to prevent these types of behaviour by Magticom (as an SMP operator seeking to act without regard to its competitors), the following regulatory remedies are proposed to ComCom in proportion to the competition problems identified:

- Obligation of access in accordance with the Law on Electronic Communications and applied to wholesale MVNO access, national roaming and co-location access.
- Obligation of transparency, including accounting data, technical specifications, the terms and conditions of wholesale access including pricing. The minimum contents of the required wholesale access offers by Magticom are fully defined in this report.
- Obligation of non-discrimination in accordance with the Law on Telecommunications and applied to Magticom's required wholesale mobile access offers.

³ Rey/Tirole, A Primer on Foreclosure 1997, p. 1, quoted in Revised European Regulators' Group ("ERG") Common Position on the approach to Appropriate remedies in the ECNS regulatory framework Final Version May 2006 ERG (06) 33;

A set of Key Performance Indicators (KPIs) are defined in this report for ComCom to be able to monitor Magticom's full implementation of its required obligations. The various sets of KPIs are specific to the three types of wholesale mobile access to be monitored.

A 'margin squeeze test' is also defined in order to prevent price discrimination.

The linkages between the recommended regulatory obligations and the competition problems identified in the Georgian mobile market are listed in a summary table. This table confirms the proportionality and scope of the *ex-ante* remedies proposed in order to prevent competition problems occurring as a result of Magticom's ability, from its position of significant market power, to act independently of its competitors.

This report also includes a summary of the main differences between the remedies proposed here compared with ComCom's previous decisions regarding MVNO access. The main difference is that this report proposes *ex-ante* remedies only on the SMP operator Magticom.

Finally, this report presents three different scenarios of the impact of the imposed regulatory remedies (including the main opportunities and risks faced) on the overall Georgian telecommunications market. This concludes that, even with only a light response, the market opportunities for new entrants and expanding players outweigh the foreseen risks. With a medium response, in the form of new MVNO players (including existing fixed-only operators wishing to offer full-service bundles), there will be an increase in competitiveness and consumer choice without undue loss of profitability by Magticom. With a full market response, significant new competition arises, stimulating overall revenues and investments and giving considerably better service choices to consumers.

If the full opportunities of this report's proposed *ex-ante* measures are taken by Magticom and its current and potential competitors in the Georgian market, then all market participants plus consumers will benefit.

Note: Although the main data used in this analysis represents the situation in Georgia up to end of 2022, the subsequent data throughout 2023 has been examined to check the validity of the analysis and whether any new factors indicated by the new data should influence the analysis in any material way. Having examined the newer data, we have concluded that there are no changes to the fundamental conclusions reached on market definition, susceptibility to ex-ante regulation, the finding of SMP or the choices of the recommended regulatory remedies.

2. Introductory statement

The two leading players (Magticom and Silknet) have both become integrated fixed and mobile broadband service providers, achieved largely by acquisition of smaller internet and media players. Magticom, originally a mobile network operator, acquired Caucasus Online's retail fixed broadband business in 2016 and internet service provider Deltacomm in 2017. Silknet, the pre-liberalisation fixed-line incumbent, acquired the mobile network Geocell in 2018, followed by TV, software and fixed wireless assets. The Magticom and Silknet acquisitions represented the largest mergers in the Georgian telecommunications market to date. As vertically integrated operators, both Magticom and Silknet now offer separate and bundled packages of fixed and mobile broadband with high-speed internet access, voice, text messaging and IPTV.

Outside the two largest players (Magticom with 49% of total telecommunications revenues and Silknet with 34% of total telecommunications revenues) there are a number of smaller providers. The largest of these, Cellfie, (with 11.5% of total telecommunications revenues) only offers mobile services. The others are fixed broadband services providers, of which the largest are SkyTel and Akhali Kselebi (NewNet). The current situation, where the smaller operators do not offer integrated fixed and mobile packages puts these at a significant market disadvantage. For these many single-product players to become capable of offering all services, they currently face significant barriers to full market entry. This is because they would have to invest in their own national infrastructures, not only in the market in which they are active, but also in the other adjacent markets, in order to compete effectively with Magticom and Silknet. The two largest players already have large fixed and mobile infrastructures and can respond to the growing demand for 'one stop shop' fixed, mobile and IP-TV services.

The other factors that contribute to this competitive market problem include the need for the smaller operators to contest markets already served by two much larger multi-service players who have superior economies of scale and highly-developed sales and distribution networks, including strong brands.⁴

Many other markets, including within the EU, have already addressed competitive market imbalances by significantly reducing the barriers to market entry and expansion faced by the smaller and newer players. These more mature competitive markets are now characterised by multiple fixed, mobile and converged players offering a full range of telecommunications service choices to consumers.

⁴ "The Group's mobile services have a strong brand in Georgia as a result of being a leader in distribution network and customer service in the Georgian telecommunications market. It has provided a number of customer service innovations including the digitisation of customer channels, online self-service portals, customer service contacts through social media and e-signatures", Silknet, offering to investors 26 January 2022, available on: <https://silknet.com/static/file/20220220612-silknet-listing-particulars.pdf>.

At the time when these competition problems were being addressed in the EU and elsewhere, the demand from end-users for converged fixed, mobile and IPTV offers was not so advanced as it is in today's telecommunications market. In the current Georgian situation, players who cannot offer a portfolio of products, including mobile, fixed broadband and IPTV, risk being marginalised⁵ in a role of niche players for specific groups of consumers, in markets that are not necessarily the most profitable. In this case, the market in Georgia will become less competitive, with the resulting reductions in innovation, consumer choice and value. It is considered that in Georgia, one or two strong players are not enough to guarantee competitive market outcomes. Further consideration of competition problems in the retail mobile market is given in Chapter 4.5.

⁵ Oliver Wyman warns operators to define their fixed-mobile strategy now "and be ready to anticipate [fixed-mobile convergence] disruption in the market. (...)".

See Fixed-Mobile convergence as a competitive weapon, available at: https://www.oliverwyman.com/content/dam/oliver-wyman/europe/germany/de/insights/publications/2015/july/2015_OliverWyman_Fixed_mobile_convergence_final_digital.pdf. This is all the more the case that with "the advent of 5G and CBRS shared spectrum, Cable operators are planning a new level of convergence of fixed and wireless services from the bundled offer side of the business to the network side where devices will be able to connect to multiple networks simultaneously to access services from the most efficient and cost-effective network available using technology such as DSDS (Dual Sim Dual Standby)" as recalled by Bob Hallahan, How to converge fixed and mobile networks to optimise your cable business, 31 Mar 2022, available on: <https://www.nokia.com/blog/how-to-converge-fixed-and-mobile-networks-to-optimize-your-cable-business/>.

3. Description of the legal framework related to market analysis and market analysis process in Georgia.

3.1. The Association agreement

Under the Association Agreement between the European Union and Georgia⁶ signed in June 2014,⁷ Georgia undertook gradually to approximate its legislation within stipulated timeframes⁸ to incorporate (among other things) the provisions of Directive 2002/21/EC (‘Framework Directive’) “...defining the relevant product and service markets in the electronic communications sector that are susceptible to ex-ante regulation and analyse those markets with a view to determining whether significant market power (SMP) exists on them”⁹. The provisions concerned are Articles 14 and 15.

Article 14 of the Framework Directive determines which undertakings can be designated as having significant market power (SMP) on the markets defined in accordance with the principles of competition law. The concept of SMP is equated to that of dominance under competition law: *“An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers”*.

As regards joint SMP, Article 14 of the Framework Directive is complemented by Annex II which lists criteria to be used in assessing joint dominance in accordance with Article 14(2). These criteria are inspired by the case law from the EU Court of Justice. The Directive nevertheless highlights that the list of criteria *“...is an indicative list and is not exhaustive, nor are the criteria cumulative. Rather, the list is intended to illustrate only the type of evidence that could be used to support assertions concerning the existence of joint dominance”*.

In addition, Article 14 of the Framework Directive provides that in case *“...an undertaking has significant market power on a specific market (the first market), it may also be designated as having significant market power on a closely related market (the second market), where the links between the two markets are such as to allow the market power held in the first market to be leveraged into the second market, thereby strengthening the market power of the undertaking”*.

The ‘Three Criteria Test’ was not mentioned in the relevant provisions of the Framework Directive,¹⁰ and does therefore not need to be carried over into the Georgian legislation under

⁶ For the purpose of this report, where we refer to Georgia, or the territory of Georgia or any other references to Georgia in the text, we exclude the Autonomous Republic of Abkhazia and South Ossetia.

⁷ Footnote 9 Association Agreement between the European Union and the European Atomic Energy Community and their Member States, of the one part, and Georgia, of the other part, Official Journal of the European Union L261/4, 30.08.2014

⁸ within three years of the entry into force of the Agreement.

⁹ ANNEX XV-B, Rules applicable to telecommunication services.

¹⁰ The test was introduced in a binding EU only in 2018, in Article 67 of the EECC which states that “A market may be considered to justify the imposition of regulatory obligations set out in this Directive if all of the following criteria are met:

the Association Agreement. This being said, the first two criteria of the test correspond to standard competition law market assessment and should therefore be mandated also in Georgia, taking into account the requirement to define markets *“in accordance with the principles of competition law”*.

Article 15 of the Framework Directive establishes the procedure for the identification and definition of markets. The main element is the requirement in paragraph 3 that National regulatory authorities should be *“...taking the utmost account of the Recommendation and the Guidelines, define relevant markets appropriate to national circumstances, in particular relevant geographic markets within their territory, in accordance with the principles of competition law”*. Neither the EU Commission recommendations on markets susceptible to *ex-ante* regulation¹¹, nor the SMP guidelines¹² are legally binding. It does therefore not seem that there would be any international law obligation resting upon Georgia to ‘integrate’ them into the national legal order. At the same time, the Association Agreement contains a clear commitment by Georgia to define markets *“...in accordance with the principles of competition*

(a) high and non-transitory structural, legal or regulatory barriers to entry are present.

(b) there is a market structure which does not tend towards effective competition within the relevant time horizon, having regard to the state of infrastructure-based competition and other sources of competition behind the barriers to entry;

(c) competition law alone is insufficient to adequately address the identified market failure(s)”. However, recital 27 of the 2002 Framework Directive – though not binding as such – provided that “(i)t is essential that ex ante regulatory obligations should only be imposed where there is not effective competition, i.e. in markets where there are one or more undertakings with significant market power, and where national and Community competition law remedies are not sufficient to address the problem”, thus advocating a two criteria test. The concept of ‘three criteria test’ appears for the first time in Article 2 of the (non-binding) 2007 Recommendation on markets susceptible of ex ante regulation (available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2007.344.01.0065.01.ENG): its recital 5 provides that “(i)n order to identify markets that are susceptible to ex ante regulation, it is appropriate to apply the following cumulative criteria...” Point 2 of the Recommendation says “When identifying markets other than those set out in the Annex, national regulatory authorities should ensure that the following three criteria are cumulatively met (...) the insufficiency of competition law alone to adequately address the market failure(s) concerned.” But the Commission does not tell the NRAs to examine the third criterion BEFORE assessing which remedy should the best address the market failure. On the contrary, the way the third criterion is formulated clearly implies that the remedy must first be defined in order to perform the third criterion of the test. The 2007 Recommendation was complemented by an ERG document

(https://www.berec.europa.eu/sites/default/files/files/documents/erg_08_21_erg_rep_3crit_test_final_080604.pdf), which acknowledged that “... experiences with the three criteria tend to confirm that in cases where both the three criteria test and SMP analysis is undertaken, it is difficult to dissociate the first criterion (barriers to entry) and the second criterion (tendency towards effective competition) from the elements that are considered in an SMP analysis. (...)”. Also, generally NRAs consider that the level of detail required in the assessment of the three criteria was in no instances higher than the level of detail required for SMP assessment. The same conclusions apply in relation to the burden of proof, where again the common view is that in no circumstances was the burden of proof for assessment of the three criteria higher than the burden of proof necessary to show the existence (or absence) of SMP”

¹¹ Commission Recommendation (EU) 2020/2245 of 18 December 2020 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive (EU) 2018/1972 of the European Parliament and of the Council establishing the European Electronic Communications Code (“2020 Markets Recommendation”), OJ L 439, 29.12.2020, p. 23–31, available at: EUR-Lex - 32020H2245 - EN - EUR-Lex (europa.eu)

¹² Communication from the Commission — Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (“2018 SMP guidelines”), OJ C 159 of 7 May 2018, p. 1–15, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52018XC0507%2801%29>

law". Therefore, provisions of the EU Commission recommendations explaining the principles of competition law, relevant for market definitions and SMP designation should be 'integrated' in Georgian regulation or, at least, complied with.

At the same time, international agreements such as Association Agreements have no 'direct effect', if not explicitly provided for. According to the case law of the EU Court of Justice, signatory Parties to international treaties are, under international law, free to agree on the effects those agreements will give rise to in their respective internal legal orders.¹³ In the case of Georgia, the organic law on normative acts¹⁴ is however equating into national treaties with "normative acts". Therefore, international treaty provisions which are specific enough may potentially have direct effect.

3.2. Applicable provisions from the Georgian 'Law on Electronic Communications'

Before examining the provisions of the law governing market definition and SMP designation, it is necessary to mention that the Georgian law is currently under revision, with the aim to further approximate its provisions to the EU *acquis* included in the Annex XV-B to the Association Agreement in accordance with Article 113 of the latter.¹⁵

In its current wording, Article 2 of the Law on Electronic Communications provides definitions of a number of competition law concepts (the individual paragraph references are given below following each definition):

- *Significant joint market power of authorised persons*: A significant joint market power of two or more authorised persons over a relevant segment of the service market, which is a situation where an analysis conducted by the Georgian National Communications Commission confirms that the situation created in this segment of the market and characteristics of competition allow them to act in concert and obtain a joint non-competitive advantage in the market even when there are no structural or other types of links, including contractual relations, between them (g).
- *Supply-side substitution*: The possibility of providing interchangeable service types to users by authorised persons in a competitive service market (z¹¹).
- *Significant market power*: A significant market power of an authorised person over a relevant segment of the service market, which is a situation where the analysis conducted by the Commission confirms that an authorised person has no competitors, is protected from significant competition or its competitive position allows it to have

¹³ See e.g. Casolari, Federico, The Acknowledgment of the Direct Effect of EU International Agreements: Does Legal Equality Still Matter? (July 8, 2017). L.S.Rossi, F. Casolari (eds) The principle of Equality in EU law (Springer, Forthcoming), p.32. Available at SSRN: <https://ssrn.com/abstract=2999039>

¹⁴ See Art, 7, of the Organic law on Normative acts

<https://matsne.gov.ge/ka/document/view/90052?impose=translateEn&publication=34>

¹⁵ Annex XV- B refers to a number of provisions from among other Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), OJ L 108, 24.4.2002, p. 33 and from Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive), OJ L 108, 24.4.2002, p. 7, some of which are relevant for the process of market definition and SMP designation.

unilateral substantial influence over this segment of the market and to limit competition (z¹³).

- *Relevant segments of a service market*: Service types, including interchangeable service types, identified by taking into account factors such as tariffs, conditions, competition, and demand-side and supply-side substitution(z¹⁴).
- *Relevant geographic boundaries* of a service market: A geographical (territorial) segment with homogeneous competitive conditions (z¹⁵).
- *Demand-side substitution*: Ability of a user to switch to available substitute services that satisfy their requirements with a similar price, quality and volume (z¹⁸).
- *Closely related segments* of a service market: Relevant segments of a service market where, due to contractual relationships among one or more authorised persons or due to a structural link among their networks, authorised persons may use, separately or in concert, their significant market power in one market segment in order to obtain or strengthen their significant market power in another segment (z¹⁹).¹⁶

The *ex-ante* market review procedure and rules are set out specifically in Articles 21 and 22 of the law.¹⁷ Article 21(3) of the law provides that the market reviews shall be conducted by ComCom on the basis of the methodology approved by a resolution of ComCom. Under Article 64(1) e) of the law, the '*Methodological Rules for Determining Appropriate Segments of the Service Market and for Analysing Competition*' had to be adopted within one year after the entry into force of the law. The methodological rules ("ComCom's Methodology") were eventually enacted on 31 August 2007 by Resolution No.5 '*On Approval of the Methodological Rules for Determination of Relevant Market Segments and Analysis of Competitiveness*'.¹⁸ This Methodology has been recently reviewed based on a study financed by the EBRD, drafted by Grant Thornton, Pierstone and Analysis Mason, and are again, at the time of the writing of this report, subject to a comprehensive revision aiming to align the approach fully with the methodology recommended by the EU Commission to the EU national regulators in its 2018 SMP guidelines.

Key provisions governing the market reviews are the following.

- *The criteria for assessing significant market power (SMP)*

¹⁶ Article 14(3) Framework Directive says that "Where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking".

¹⁷ Law of Georgia on Electronic Communications, Consolidated versions (15/07/2020 - 16/09/2020), available on: <https://matsne.gov.ge/en/document/view/29620?publication=40>

¹⁸ Georgian Legislative Herald, 06.09.2007 No.126, Article 1375

Article 21(4) of the law lists the principles¹⁹ under which, among other, “...the identification of authorised persons with significant market power (...) in accordance with the primary and secondary criteria shall be carried out”.

- Primary criteria to identify significant market power

Article 22 (8) refers to the primary criterion as follows: “In the process of the study and analysis of the competitiveness of a relevant segment of the service market, the main criterion for designating a person as having significant market power shall be the relative market share held by the authorised person or by a group of interrelated persons in this segment of the market. The relative market share held by an authorised person in the relevant segment of the market shall be determined by the income received by the person, by the number of end-users or subscribers or by the percentage of the total volume (traffic) of service provided in the specified period, as well as by taking into account the loaded and free capacities or the functional resources of the relevant elements of the network held or owned by the authorised person. Taking into account the characteristics of the relevant segment of the market, the Commission shall, in each specific case, on the basis of the principle of objectivity, make a decision to measure the share held by the authorised person in the relevant segment of the market and to apply the relevant primary criteria.”

Article 22(10) provides the definition of the market share requirements for a finding of significant market power as follows: “In accordance with the primary criterion for determining a significant market power in the relevant segment of the service market, an authorised person shall be designated as having significant market power if it holds at least 40 per cent of the market share in the relevant segment of the market.

- The definition of joint dominance in Georgia

Article 22(11) states that several “...authorised persons shall be considered as persons having joint significant market power if in the relevant segment of the service market:

- a) the total market share of two authorised persons is at least 60 per cent; at the same time, the market share of each of them must be at least 25 percent;
- b) the total market share of three authorised persons is at least 80 per cent; at the same time, the market share of each of them must be at least 15 percent”.

- Secondary criteria to identify significant market power

According to Article 22(12) “...in addition to the primary criteria, use shall be made of secondary criteria which, in accordance with primary criteria, objectively determines the possibilities of persons with significant market power to restrict competition and carry out non-

19 In Article 21.4 the principles are listed as “...objectivity, technological neutrality, functional equivalence (homogeneous use of functional criteria), the minimum required regulation, as well as the principles of the imposition of proportionally balanced specific obligations, the stimulation of effective competition, transparency and non-discrimination.”

competitive actions in the relevant segment of the service market. Secondary criteria shall be determined by the Commission taking into account analytical factors”.

These secondary criteria are further detailed in ComCom’s Methodological Rules.

3.3. Main divergences between the ‘Law of Georgia on Electronic Communications’ and the EU Framework

3.3.1. Joint dominance is not (yet) clearly distinguished from collusion

Joint dominance is defined in Article 2(g) of the law as a *“situation created in this segment of the market and characteristics of competition allow them to act in concert and obtain a joint non-competitive advantage in the market even when there are no structural or other types of links, including contractual relations, between them”.*

This definition deviates from the competition law acceptance of the concept, i.e. where *“even in the absence of structural or other links between them, [two or more undertakings] operate in a market the structure of which is considered to be conducive to coordinated effects. (...) this is likely to be the case where the market satisfies a number of appropriate characteristics, in particular in terms of market concentration, transparency and other characteristics”*²⁰.

Under EU competition law, a clear distinction is drawn between, on the one hand, ‘concerted practices’ which are considered as potentially anticompetitive collusion and on the other hand situations where *“...as a result of the characteristics of the limited marketplace, these same companies indirectly synchronise the pricing and policy decisions they make, an action often labelled ‘tacit coordination’ or ‘conscious parallelism’ (...) an oligopoly does not necessarily intend collectively to raise prices and consequently harm consumers. It is perhaps natural that participants in ‘tight’ oligopolistic markets (markets where only a few undertakings dominate) subtly observe and monitor each other’s actions in order to calculate and predict each other’s behaviour and adjust and adapt their own products, services, and prices accordingly.”*²¹

The difference of approaches between Georgian and EU law has repercussions on the criteria used to find joint dominance.

The Georgian law is setting the legal test at a lower level than in the EU, by considering any ability to collude (*“...allow them to act in concert and obtain a joint non-competitive advantage”*) as sufficient to conclude joint dominance. Conversely, in the EU, *“...three cumulative conditions are necessary for a finding of collective dominance (...):*

- *First, each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting a common policy. It is not enough for each member of the dominant oligopoly to be aware that interdependent market conduct is profitable for all of them but each member must also have a means of knowing whether the other operators are adopting*

²⁰ Definition provided in Annex II of the 2002 Framework Directive.

²¹ Patrick Ryan, European competition law, joint dominance, and the wireless oligopoly problem, Columbia Journal of European Law, Vol. 11, 2005. 356.

the same strategy and whether they are maintaining it. There must, therefore, be sufficient market transparency (...).

- *Second, the situation of tacit coordination must be sustainable over time, that is to say, there must be an incentive not to depart from the common policy in the market. (...) The notion of retaliation in respect of conduct deviating from the common policy is thus inherent in this condition. (...)*
- *Third, to prove the existence of a dominant position to the requisite legal standard, it must also be established that the foreseeable reaction of current and future competitors, as well as customers, would not jeopardise the results expected from the common policy”.²²*

To address this divergence, ComCom is considering integrating these three criteria in its revised methodological rules.²³ In this market review, though not necessary, these criteria have nonetheless been applied to the market reviewed (see Chapter 6.4).

The current rules differ also as regards the prospective assessment put forward in the EU approach, where “...for the purposes of determining whether to impose ex-ante regulatory obligations on [undertakings having joint SMP], NRAs²⁴ must conduct an analysis of likely developments during the next review period”.²⁵ This forward-looking dimension is currently missing in the Georgian regulatory framework. However, where relevant, this market review is also integrating this forward-looking dimension, in particular in the design of the criteria for the geographic segmentation of remedies.

3.3.2. Regulation of closely-related segments of a service market

Another difference is the way ‘closely related segments of a service market’, are dealt with. In Georgia, the term is defined in Article 2, point z¹⁹, in a restrictive manner; the term designates only those markets, “...where, due to contractual relationships among one or more authorised persons or due to a structural link among their networks, authorised persons may use, separately or in concert, their significant market power in one market segment in order to obtain or strengthen their significant market power in another segment”. Markets are only considered closely related, where a dominant undertaking on one of these markets is susceptible to leverage its dominant position to the other distinct market. In the EU, the term is not defined and the usual understanding of the term applies.

Article 14(3) of the EU Framework Directive says that the presumption of dominance on ‘closely-related markets’ may only apply “...where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking”. The earlier 2002 SMP Guidelines²⁶ explained that Article 14 (3) of the Framework Directive 2002/21/EC was intended to address a market situation comparable to the one that gave rise to the Tetra Pak II judgment from the

²² 2018 SMP guidelines, point 67.

²³ See Article 12 of the revised methodological rules.

²⁴ National Regulatory Authorities

²⁵ 2018 SMP guidelines, point 69.

²⁶ Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (“2002 SMP guidelines”), OJ C 165, 11.7.2002, p. 6–31, available at: EUR-Lex - 52018XC0507(01) - EN - EUR-Lex (europa.eu)

Court of Justice.²⁷ The SMP guidelines add that close associative links between different markets are most likely to be found in vertically integrated markets.²⁸ According to the SMP guidelines this is regularly the case in the telecommunications sector, where an operator often has a dominant position on the infrastructure market and a significant presence on the downstream services market.²⁹

The practical consequence of the different approach is that the wording of Article 22(1) a) of the law suggests that the ComCom would in all case have to, from the market definition stage, identify and review ‘closely-related’ markets, while in the EU the question will only arise at the stage of the SMP designation. In other words, the Georgian approach requires that even when markets are found competitive at the market definition stage, an additional test is required to ascertain that an operator which is dominant in a closely related market is not capable of leveraging its dominant position into that closely related market.

The EU Article 14(3) of the Framework Directive was never applied by NRAs. Where there was a risk of leveraging, the competitive problem was addressed in the market review by imposing remedies (for example obligations for economic and technical replicability of services on the downstream market) on the upstream market on which the regulated undertaking was found to have SMP. In addition, remedies were imposed in ‘closely-related markets’ without requiring an SMP finding, in the form of ‘ancillary’ remedies. For example, access to ducts was imposed as an ancillary remedy in the broadband local access market to complement unbundling obligations and foster the deployment of own network elements by the access seeker. In view of that practice, Article 14(3) of the Framework Directive was carried over into the EU’s European Electronic Communications Code (EECC)³⁰, with an additional sentence, providing that “Consequently, remedies aiming to prevent such leverage may be applied in the closely related market (...)” (Article 63(3) EECC).

This aspect is not relevant in the context of this market review.

3.4. The successive steps of the market review process in Georgia

3.4.1. Applicable legal provisions

Article 21 (2) and (3) of the Law provides that markets shall be defined according to criteria determining the service types and geographic boundaries of electronic communication services, on the basis of the methodology and procedures for determining market competitiveness. The methodological rules to be used are detailed in ComCom’s Resolution No. 5 ‘on approval of the methodological rules for determination of relevant market segments and analysis of competitiveness’, already mentioned.

Article 22 (1) of the law lists the steps for *ex-ante* market reviews, of which the first two are:

²⁷ 2002 SMP guidelines, para. 84.

²⁸ *idem*, para. 75.

²⁹ *ibidem*

³⁰ [https://uk.practicallaw.thomsonreuters.com/w-020-5855?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/w-020-5855?transitionType=Default&contextData=(sc.Default)&firstPage=true)

- a) *“Determining the relevant and closely-related markets, and appropriate geographic boundaries of the market”;*
- b) *“Conducting an analysis of the competitiveness of the relevant markets.”*

Effective competition can only be assessed by reference to the relevant market defined in product/ service and geographical terms. In this regard, Article 22 (7) of the law clarifies that *“Competition in the relevant market shall be deemed effective if no authorised persons with significant market power carries out its activities in that market. Competition in the relevant segment of the market shall not be deemed to be effective if one or several authorised persons operating in that market have joint significant market power”*.

Article 22 (4) of the law requires to take the following elements into account during this exercise:

- a) *“The conditions prevailing in the relevant market, the concentration level and relative market shares held by authorised persons.*
- b) *The demand and supply characteristics (flexibility, increase in the demand, etc.) of the service types in the relevant segment of the service market, as well as conditions for demand-side and supply-side substitution.*
- c) *Levels of tariffs set on potentially non-competitive and interchangeable service types, as well as past changes in the tariffs.*
- d) *Financial and economic indicators of authorised persons in the relevant segment of the service market, the degree of their interdependence and opportunities for authorised persons interested in starting activities in this segment, also infrastructural and dynamic factors impeding entry into the market, and relevant investment risks”*.

3.4.2. First step: Determining the relevant and closely-related markets and appropriate geographic boundaries of the market.

The definition of the relevant market is of fundamental importance in assessing whether there is effective competition in the market.

In order to determine the relevant market, it is necessary to define the market in terms of all the products/ services that are substitutes and belong to a particular market and also the geographical boundaries within which these services are offered in largely homogeneous conditions. The whole procedure is based on determining the substitution on the supply and demand-sides of the market.

The relevant market comprises all services which are sufficient substitutes³¹, either on the demand-side or on the supply-side, not only in terms of their objective characteristics, prices or intended use, but also in terms of conditions of competition in the relevant market. A substitute is any service that, given its characteristics, price, purpose and habits of the user, can replace another service and thus meet the same needs of the user. Services that are substitutes only to a lesser or relative extent do not form part of the same relevant market.

³¹ According to paragraph 7 of the 1997 EU Commission’s Notice on Market Definition, a relevant product market ‘comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their prices and their intended use’.

Therefore, in the market analysis process, the relevant market should be defined by grouping only those services that consumers use for the same purpose.

3.4.2.1. Demand-side and supply-side substitution

The Methodological Rules provide guidance for the demand-side substitution analysis, as well as for the supply-side substitutability.³²

3.4.2.2. Geographic market definition

Once the relevant market in the services dimension has been identified, the next step is to define its geographic dimension. Only when the geographical dimension of the services market has been defined can the conditions of market competition in the relevant market be properly assessed. The Methodological Rules also provide guidance on the definition of the geographic dimension of markets.³³

According to Article 22 (4) of the law, the geographic dimension of the market may be defined based on “...*the conditions prevailing in the relevant market*”. For example, if some services are not offered or are priced differently or are at different quality levels in parts of the country, then geographical segmentation may be relevant.

Geographical markets within electronic communications have traditionally been defined on the basis of the relevant network's area of coverage.

3.4.3. Second step: Determining whether the relevant retail market is competitive

The goal of the assessment is to understand whether the relevant retail markets are effectively competitive in the absence of regulation. The objective is to check whether competition on the market can improve into the future, or whether there are tendencies that could have a negative impact on the current level of competition, potentially leading to emergence or strengthening of single or joint dominance. The assessment of competition at the retail level should be carried out using a “modified greenfield approach”³⁴.

This means that the competitive conditions should be assessed under the hypothesis that the market reviewed is not subject to *ex-ante* regulation relating to that market. A key question will thus be the extent to which the current market conditions can be attributed to current obligations in order to determine whether retail markets could be effectively competitive without any *ex-ante* regulatory obligations imposed.

3.4.4. Third step: Identifying wholesale markets for which regulatory intervention is appropriate to address the lack of competition in the retail market being investigated.

The primary focus for regulation in the sector, in line with EU practices, should be at the wholesale level, such that any necessary *ex-ante* measures can be aimed at preventing any potential for service providers to cause harm to consumers. Preference should be given to

³² Article 7 of the revised methodological rules

³³ Article 8 of the revised methodological rules

³⁴ Provisions from points 17 and 18 of the 2018 SMP Guidelines

intervene in the most upstream market in order to minimise distorting investment incentives in the retail market. This objective is reflected in the current 2020 Markets Recommendation, as well as the previous Recommendation of 2014³⁵, which do not list retail markets as markets susceptible to *ex-ante* regulation for EU Member States. The European Commission believes that, where there are still competition issues at the retail level, effective *ex-ante* regulation at the wholesale level will ensure competition at the retail level.

When reviewing wholesale markets, the limited share of wholesale offers may influence the assessment of market power of the respective players on that market. In such cases, the Methodological Rules allow taking into account the theoretical self-supply of vertically integrated operators.³⁶

3.4.5. Fourth step: The ‘Three Criteria Test’.

The three criteria test is not mentioned in the law but is included in the methodological rules.³⁷ According to this test, a relevant market is only susceptible of *ex-ante* regulation if this market fulfils the following three criteria simultaneously:

- a) The market is characterised by high and non-transitory market entry barriers. Barriers to entry can be structural, legal or regulatory.
- b) The market is not prone to effective competition irrespective of the possible barriers to entry. In considering this second criterion, it is acknowledged that even if there are barriers to entry (that is the first criterion is fulfilled), then the second criterion is not necessarily fulfilled,³⁸ ComCom must demonstrate first that the market is not likely to become effectively competitive in the absence *ex-ante* regulation during the review period, for example by providing evidence of the absence of any positive dynamics in the market at time of the review. Indicators of such positive dynamics include the existence of commercial agreements, including wholesale access, co-investment agreements and bilateral access agreements between operators, which are long-term and sustainable and have the potential to improve competitive dynamics.
- c) General competition law does not suffice to address the identified market barriers, for example because of the need to intervene in a preventive manner, before anti-competitive behaviour that would affect significantly the market structure, is implemented.

On performing the three-criteria test, the starting point is today's market conditions, then an extended view to incorporate a forward-looking perspective.

The assessment of whether the three criteria are fulfilled will also be based on the “modified greenfield approach”³⁹. At the same time, regulation in adjacent markets must be taken into account.

³⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014H0710>

³⁶ Article 7(10) of the revised methodological rules

³⁷ Article 12 of the revised methodological rules

³⁸ For example, “there may be sufficient players active in the market for effective competition to emerge behind the barriers to entry, e.g. on the relevant retail market, even without *ex ante* regulation” (Commission Staff Working Document Explanatory Note accompanying the 2014 Markets Recommendation, SWD(2014) 298, p.9)

³⁹ Provisions from points 17 and 18 of the 2018 SMP Guidelines

When applying the third criterion of the above three criteria test, a specific feature Georgian law must be considered, the fact that ComCom is also entrusted with competition law powers. Article 31(1) of the Georgian law on competition⁴⁰ states that *“If a complaint regarding an alleged distortion of competition in a regulated sector of the economy is submitted to the Agency, the Agency shall forward this complaint to the regulatory authority of the relevant regulated sector of the economy”*. In the case of the broadcasting and electronic communications sectors, the competent regulatory authority to apply competition law is ComCom.

ComCom has adopted procedural rules for the implementation of its competition law powers by Resolution No. 4 of 15 July 2021, which also amended Resolution No. 1 of the National Communications Commission of Georgia dated June 27, 2003 on *“the Approval of the Regulatory Rules of the National Commission of Communications of Georgia”* (“Competition law procedural rules”).

Article 15 of the Competition law procedural rules limits the duration of the procedure to six months from the opening of the formal investigation, which needs to be launched at the latest 18 months after receiving complaints. The effective duration may be much shorter, given that ComCom has the expertise in-house as well as detailed data about the sector, rendering preliminary data-collection superfluous.

Article 31 of the Competition law procedural rules gives the parties no more than 25 working days to react to any draft final decision of ComCom before a final hearing. In the EU, parties have nearly double that period (two months) and in addition, the document that parties receive does not yet have the status of a draft final decision but is a 'statement of objection' written without prejudice to the final decision. The statement of objection only sets out the competition concerns and the theory of harm but does not specify in detail the breach. Therefore, in the EU the effective drafting of the decision only starts when the comments on the statement of objection are received, leading to a duration of the procedure which is necessary longer than in Georgia.

Article 16 of the Competition law procedural rules allows ComCom to impose provisional measures – a power that they do not have under the SMP rules. This means that in the case of a complaint by the beneficiary of an existing facility for which prices would be increased or terminated by a dominant operator, ComCom could issue an injunction to the dominant operator to suspend the price increase or continue the access until a final decision is adopted on the basis of the competition rules.

Moreover, Article 30 of the Competition law procedural rules empowers ComCom to accept commitments from dominant operators against which a competition law procedure was initiated and close the proceedings without a final decision on the existence of a breach. This competition law procedure tool, allowing for a speedier resolution of disputes, is not available to ComCom under its SMP regulatory powers.

⁴⁰ The English translation is available on: <https://matsne.gov.ge/en/document/view/1659450>

Overall, it therefore seems that the *ex-post* competition law procedure would not, as such, take longer than *ex-ante* regulation of markets, at least in cases where showing the existence of an abuse is straightforward, for example in margin squeeze⁴¹ cases.

3.4.6. Fifth step: Determining the authorised persons with significant market power in the relevant segment of the service market

Art.22 of the law specifies that ComCom must determine persons deemed to enjoy significant market power on the markets passing the three criteria test, “...by taking into account the primary and secondary criteria” (paragraph 1, d), i.e.:

“10. In accordance with the primary criterion for determining a significant market power in the relevant segment of the service market, an authorised person shall be designated as having significant market power if it holds at least 40 per cent of the market share in the relevant segment of the market.”

“11. Several authorised persons shall be considered as persons having joint significant market power if in the relevant segment of the service market:

- a) the total market share of two authorised persons is at least 60 per cent; at the same time, the market share of each of them must be at least 25 percent;*
- b) the total market share of three authorised persons is at least 80 per cent; at the same time, the market share of each of them must be at least 15 percent.”*

“12. In designating an authorised person as having significant market power in a relevant segment of the service market and in imposing specific obligations on such person, in addition to the primary criteria, use shall be made of secondary criteria which, in accordance with primary criteria, objectively determines the possibilities of persons with significant market power to restrict competition and carry out non-competitive actions in the relevant segment of the service market. Secondary criteria shall be determined by the Commission taking into account analytical factors”. Secondary criteria are listed in the methodological rules adopted accordingly by ComCom.

It should be noted that these secondary criteria are overlapping partly the first and second criteria used for the three criteria test. The indicators used for the assessment whether a market is tending to competition are indeed equivalent to those that are used in an analysis of whether there are operators in the market with significant market power, given that according Article 22 (7) of the law, a market is deemed not competitive “...if one or several authorised persons operating in that market have joint significant market power”.

The difference is that the three criteria test focuses on the overall characteristics and structure of a given market, in a forward-looking perspective, while the assessment of SMP focuses on understanding whether an operator active in a market should be made subject to *ex-ante* regulation based on past and present indicators. The set of indicators that are used for performing the second criterion of the three criteria test may therefore be more limited than

⁴¹ <https://law-store.wolterskluwer.com/s/product/margin-squeeze-in-eu-competition-law-analysis-decisional-practic/01t0f00000J3jECAAZ>

for the SMP assessment which will, if fulfilled, bring about possibly intrusive regulatory obligations. This means that different indicators related to market structure, market performance and market dynamics (market shares and trends, market prices and trends) as well as the ones related to the extent and coverage of competing networks or infrastructures, could be used in both steps of the market review process, if appropriate.

3.4.7. Sixth step: Imposition of specific obligations.

According to Art. 29 of the law: *“1. The Commission may, by a decision, impose on an authorised person with significant market power in the relevant segment of the service market one or several of the following specific obligations:*

- a) obligation to ensure transparency of information.*
- b) obligation to prohibit discrimination.*
- c) obligation to record expenditure and income separately in accordance with the methodological rules approved by the Commission.*
- d) obligation to provide access to relevant elements of an electronic communication network.*
- e) obligation to regulate tariffs and prepare cost estimates”.*

4. Analysis of the relevant retail market of mobile services

Context and holistic approach

The overall trends in the mobile market in Georgia could be summarised as:

- A very significant and sustained growth in mobile data services (see Figure 10)
- A gradual and on-going decline in mobile voice services
- A significant and continuing decline in mobile text messaging services

The fixed broadband access market analysis has led to the following initial conclusions:

- There is a constant and stable demand for all (fixed and mobile) broadband services in Georgia;
- Although there are some variations in take-up rates, the fixed broadband and mobile broadband services have characteristics of complementary services as an increase in the usage of one service does not lead to a decrease in usage of the other. It was considered in the market definition of fixed broadband access that in the broadband access market below data speeds of 10 Mbps (basic broadband access), mobile broadband access services are substitutes for fixed broadband access services.
- Comparisons between the broadband markets in EU member states as well as with EU averages and related findings should be taken into account in the process of this market analysis.

These conclusions relate primarily to the retail markets for fixed broadband and mobile broadband.

Over the next five to ten years, worldwide trends⁴² are expected to include:

- a) Mobile data use continuing to increase, with a growing demand for higher quality mobile services to support the services customers want to use when and where they want to use them;
- b) Growth in the use of consumer smart technology, some of which relies on mobile services;
- c) Some further increase in the use of mobile services to provide fixed wireless access (FWA) services, at least in the short term;
- d) More significant new uses will emerge in industry and the public sector.

⁴² https://assets.mobileworldlive.com/wp-content/uploads/2023/02/16113937/gtr_23.pdf
<https://www.statista.com/statistics/245501/multiple-mobile-device-ownership-worldwide/>
<https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/thinking-like-a-servco-how-telcos-can-drive-b2c-growth?stcr=A1501EF5D05C45628BD1AD5F59881184&cid=other-eml-alt-mip-mck&hlkid=ebf55c80c6a84c2f8ed36abdca35671b&hctky=11834353&hdpid=1bcee8c2-d830-4d12-9fcd-f2e741d01a61>
<https://data.gsmainelligence.com/research/research/research-2022/5g-fwa-assessing-trends-rollout-and-adoption>

Mobile operators now include data access as well as traditional voice calls and text messages. Since the introduction of 3G and LTE technology into the networks, all the operator's current networks are capable of offering all these services together in the geographical areas covered.

The mobile service offerings from the three network operators do not differ greatly in their content or pricing structures. Each operator offers internet access, with various limits on total monthly data consumption at different pricing levels, plus more expensive options offering customers unlimited data usage.

During the 15-year period between 1998 and 2013, the objective of each mobile operator appeared to be to win as many new customers as possible as their networks expanded. This period was characterised by mainly price-based competition between the three mobile operators. Since 2014, market growth has largely ceased with a total penetration at around 150 subscriptions per 100 population. In this saturated market, most of the marketing activity is now based on special promotional offers that last for a limited advertised period. Users can switch from one mobile operator to another (using the independent portability service) without undue restrictions. However, many users chose to buy subscriptions from more than one operator so that they can take advantage of the best current deal offered.

The practice of targeting special service packages at particular groups of consumers has become a significant feature of mobile markets in EU countries. Special mobile packages can be aimed at clusters of consumers with specific needs, for example students, ethnic minorities or different cultural, special interest or language groups. Other offerings can focus on special tariff packages for calls within family or friendship groups or within business organisations. These more customised offerings increase innovation in the market, such that when different services are tailored to different target groups and a particular service feature becomes very popular within that group, this feature can then be copied and refocussed across different niches. This level of innovation has the potential to bringing full range of options to the market that can satisfy most needs, ultimately right down to the level of the personal needs of individual customers.

The Georgian mobile services market is currently based on fairly standardised mass-market competitive offerings, where customers wishing to widen their choices do so by using multiple subscriptions so that, for example they can take advantage of discounted deals as they are announced by the mobile operators.

The Georgian economy is characterised by a relatively low average purchasing power (compared to EU countries) and where the spending power of citizens living in rural areas is particularly low. In this market climate, competitive innovation has been relatively stagnant in terms of operators developing more differentiated service propositions.

Based on the 2023 retail price benchmarking study carried out by ComCom, mobile services in Georgia range from being ranked (in terms of relative expensiveness using PPP comparisons) 1st to 19th out of the 24 countries surveyed. For a residential basic (100 calls, 0.5GBytes) mobile service Georgia is 26% cheaper than the average out of 24 European countries (ranked 8th), for 300 calls 5Gbytes Georgia is 23% more expensive (ranked 18th), for unlimited calls 20Gbytes of data Georgia tariffs are 36% higher (ranked 18th). For a residential data-only 1Gbyte subscriptions, Georgia is 35% cheaper than the average (ranked 6th), for 5GBytes, Georgia is 21% cheaper, than the average (ranked 8th), for 20Gbytes Georgia is 13% cheaper (ranked 11th), for 50Gbytes Georgia is 53% cheaper (ranked 9th).

The ComCom 2023 price benchmarking study shows that retail mobile access tariff comparisons vary across the range of data consumption packages available such that the competitive market in Georgia has not delivered good consumer prices for the higher voice and data consumption options (see also Chapter 4.6).

A forward-looking analysis of the mobile market should consider the possible impact of new (principally 5G) technologies and the potential for innovative new business models that could influence demand and supply in the market⁴³. So far, Georgian operators have not launched 5G services. There is a general uncertainty within the market regarding the investment case for 5G in Georgia⁴⁴.

The existing mobile network operators have an obligation to cover 90% of all settlements in Georgia under 5,000 population.

For the purposes of analysing the mobile market, the impact of 5G on consumers is not expected to be significant, since it is not expected that mobile services based on 5G networks will be available widely in the market within a 3-year time horizon. But the implications of 5G could have a significant influence on the levels of sector investments by mobile operators within this 3-year time period. This is because with 5G, it is expected that completely new business models with great potential for innovation are opening up in mobile communications⁴⁵.

There will be considerable further investment needs for the mobile sector, primarily for:

- Acquiring additional spectrum resources
- Technological development (5G and IoT)
- The expected (continuing) significant data growth across mobile networks

⁴³ <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-5g?stcr=F7578B22E13A49D78742F9CCF76EE58F&cid=other-eml-alt-mip-mck&hlkid=5f78145f026247978f260a1efc18240a&hctky=11834353&hdpid=04ca5118-bb79-446d-85a0-5cd807567639>

⁴⁴ <https://www.ebrd.com/sites/Satellite?c=Content&cid=1395292756036&pagename=EBRD%2FContent%2FContentLayout>

⁴⁵ <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/iot-value-set-to-accelerate-through-2030-where-and-how-to-capture-it>

- Additional network infrastructure to provide better coverage for geographical expansion in rural areas and for delivering better quality, both in urban and rural areas.

In this forward-looking analysis it will therefore have to be assessed to what extent future cooperation between mobile network operators in infrastructure investments will contribute to the expansion of an affordable range of good quality mobile services and what effect this will have on competition in the mobile market.

Product market definition

The main Georgian operators now offer a range of services to their customers, fixed and mobile, which are often sold as a bundle. In the mobile retail market voice services are sold together with a text messaging service, and if a data subscription is sold, it generally includes access to voice and text messaging services. In most cases the individual services in the bundle are not good demand-side substitutes for each other yet may be considered to be part of the same retail market if there is no more independent demand for individual parts of the bundle. In the mobile access market, bundling these voice, text messaging and data services together is possible because the existing networks can handle all such types of traffic. Furthermore, an operator's production, distribution and transaction costs are likely to be reduced if the services are sold together. These demand and supply side factors are further considered below in the substitutability analysis.

Analysis leading to the retail market definition for mobile services

End-users obtain access to the mobile network in order to make calls, receive calls, send text messages and for Internet access. From the end-users' perspective there is no substitutability between connection to the mobile network and access to these individual services. In other words, users must be connected to the mobile network and have access to the related services at the same time, in order to be able to use the mobile service. On this basis access to mobile networks and the possibility to make use of related services are in the same product market.

Since the introduction of text messaging and data services, end-users, communicating via text message and data traffic may, to a certain extent, replace voice calls previously made over the mobile network. However, text messaging and data are not considered to be fully substitutable for voice calls in the mobile network from a retail perspective. The fact that text messaging and data services are sold together to end-users, together with access to the mobile network, means that these services must be viewed as part of a bundled product with common pricing structures (for example, the purchase of a data subscription often allows the user a number of free voice calls and text messages).

Data traffic generated over the Georgian mobile networks has been increasing strongly in the last few years. In 2017, the volume of data traffic related to ordinary mobile subscriptions was 62,651 TeraBytes. By 2022, the volume had increased to 436,027 TeraBytes giving a compound annual increase rate of 47%. The continued strong growth in data traffic from

mobile subscriptions is expected in the coming years. Today, to a great extent the network costs incurred by mobile operators in carrying data traffic will determine the market price of a mobile subscription. Voice calls and text messages are generally offered in a data package. This means that prices for voice, text messaging and data must be viewed together. On this basis, it is concluded that access to the mobile network, voice, text messaging and data to be part of the same relevant product market at retail level.

The retail mobile market consists of user access to data via the internet, the origination and reception of voice calls and text messages plus international roaming. Access to these services is enabled by a SIM card obtainable from a mobile service provider. In Georgia there are currently four providers of SIM cards – Magticom, Silknet, Cellfie and new entrant MVNO Eclectic (Hallo). SIM cards could also be sold by retailers under reselling agreements with these operators, but each SIM card available from an operator will only allow the user access to the network of that same operator. The consumer will only be choosing between the mobile retail services offered by the MVNOs and MNOs. They will not be taking into account that there is a difference in the way MVNO operator supplies its service compared to an MNO operator. Because the MVNO will to a greater or lesser extent will be dependent on wholesale mobile access of MNO the market definition will be analysed at the wholesale level in chapter 5.

Many users in Georgia purchase more than one SIM card from more than one operator in order to access two or more networks.

A SIM card has to be fitted to a mobile device (user equipment) in order for it to be used to access mobile services. Mobile devices are manufactured by a whole range of global equipment manufacturers and are available from the mobile operators or from other vendors in a competitive retail market. Where a user wishes to access more than one mobile operator's services using the same device, that device has to be capable of holding more than one SIM card, or it has to possess the ability to remove one SIM card and replace it with another. In Georgia, the recent introduction of "e-SIM" could make it possible for customers to use a mobile subscription without having to collect physical SIM card.

Once a SIM card has been purchased, mobile phone services can be paid for on a pre-paid or post-paid basis. 95% of users in Georgia currently use pre-payment, whereby the user pays an amount defined by a pre-paid tariff plan or chooses to "top-up" their SIM card using this balance until it runs out before topping-up again, normally on a monthly basis. The remaining 5% of users have a post-paid subscription, normally using a monthly contract with their mobile operator, whereby the operator sends a bill to the user at the end of each month, for an amount depending on their usage during the month. If, under the pre-paid or post-paid options there is a limit on monthly usage (for example on data volumes, voice minutes or number of text messages), then the user can either top up their payment if they overrun their limit or, under a post-paid contract, wait until the SIM is topped up at the start of the next month.

Under all types of mobile network services in Georgia, only calls, messages and data usage originated by the user are subject to charging. Incoming voice calls and incoming text messages are not charged to the receiver of the calls and messages. For data services, any downloaded data is charged, normally based on the volume (in GBs) of data downloaded.

The mobile service providers offer their basic mobile services (data, voice and messaging) generally as stand-alone services and also together in various packages. End-users in the mobile market in Georgia can therefore select a service offering based on their individual needs from a menu ranging from voice calls, text messaging, access to the internet and international roaming. In making their selection, users can compare the different retail prices offered as well as the operators' geographical coverage and perceived quality of service performance. The mobile operators in the market can differentiate their services (within the geographical area that they cover) on the price of the individual parts (voice calls, text messages, data access) and on the limits of usage of individual services (typically the number of calls, number of text messages, download data speeds and the volume of data downloaded). In most cases, a number of free calls and free text messages are allowed. In the case of data usage, the various limits (in GBs) are generally defined within time limits (for example one day usage, one month usage) and some higher priced packages allow unlimited data usage.

The purchasers of retail mobile market services are either individual users or companies who use mobile services as part of their business activities. A further category is machine-to-machine use (M2M) which is expected to increase in the coming years, driven by 5G and IoT business sector-specific applications. Currently 72.2 % of mobile subscriptions are for personal users, 22.2 % for business use and 5.5 % M2M use.

Figure 1: Total number of mobile subscriptions (2022)

Type of user	Number of mobile subscriptions	Percentage of total subscriptions
Individual	4,467,454	72.2%
Business	1,377,028	22.2%
Machine-to-machine	341,375	5.5%

Source: ComCom

The retail market for mobile services in Georgia can therefore be generally defined as the retail mobile access market for users (including individuals and businesses) to originate and receive voice calls and text messages, to access data services (including the uploading and downloading of data) plus the possibility for international roaming.

Before continuing with the market assessment, it is necessary to carry out demand and supply-side substitution analyses in order to determine a full definition of the retail access market.

4.1. Demand side substitution

Access to the publicly available mobile services offered over mobile networks has the ability, subject to the geographical coverage of the network service operator, to provide the user with the following:

- Making calls to geographic and non-geographic numbers of all service providers in Georgia
- Making calls to the numbers of emergency and special services via short codes
- Making calls to international numbers
- Receiving incoming calls from any source in Georgia or internationally
- International roaming services
- Sending and receiving text messages
- Access to the internet involving the uploading and downloading of data and the use of over-the-top services for example making and receiving voice calls via, for example Skype or WhatsApp and also using applications that give access to TV channels.

It should be noted that other specialist services can be enabled using mobile access services in conjunction with specialist equipment including specialist machine-to-machine (M2M) services. The use of these applications is currently at a relatively low level in Georgia, with 5.5% of total mobile subscriptions. The number of M2M SIM cards issued in the EU had reached 195m by 2019⁴⁶ (equivalent to around 23% of all mobile subscriptions) so this should be seen as a growing market in Georgia. Typical M2M growth sectors in Europe are intelligent buildings, smart cities, the automotive sector, consumer electronics, utilities, healthcare, manufacturing, retail and leisure, construction, agriculture, environment, emergency services and national security.

The total penetration of mobile access services in Georgia is 156 per 100 population. This includes all mobile subscriptions (business and individual). The penetration of data services (mobile broadband services) is 111 per 100 population. This includes all mobile subscriptions that allow data access in their usage. All such mobile data offerings also include mobile voice call services as part of the subscription, except in the case where specific internet-only subscriptions are offered as a USB device (a 'dongle') that can be used to connect a computer device to the internet.

In this section, the boundaries of the mobile services retail market will be defined by determining all substitute services that form part of the market.

The most used service is mobile access that includes data in the subscription. With this type of subscription, the user will get access to the internet plus basic voice and text messaging services. The penetration of mobile data service (including internet access) has grown fast from 69 per 100 population in 2017 to 111 per 100 population in 2022.

⁴⁶ <https://www.statista.com/statistics/862274/number-connections-machine-to-machine-cell-europe/>

The service that is most represented on the market should be the one that will be taken as starting point of the demand-side substitution analysis. This is the service of mobile access to voice calls of all kinds, access to text messaging, data access and access to international roaming (whether these components are sold separately or integrated into the same tariff plan).

It is important to note that although the mobile access market can use several types of network technologies (2G, 3G and LTE), it is not necessary for every market player offering mobile services to own and operate a network. Mobile services can be offered to retail customers by 'virtual operators' (MVNOs) using the host network (on a wholesale basis) of a mobile network operator (MNO). In the case of mobile access offered by an MVNO, the service is still carried over mobile networks, but it is sold to the customer by a different market participant. In the EU by 2020, there were estimated to be over 110m customers served by MVNOs, with an average across the whole EU of 10% total mobile subscriptions served by MVNOs⁴⁷. In most EU cases, the MVNOs are able to differentiate their retail offerings (in terms of the service features and price) from the equivalent service offered by the host MNO.

Mobile access services can also be offered by satellite-based networks either directly by the satellite operators or by service providers utilising satellite capacity on a wholesale basis.

Users of mobile devices can also access data and voice services using fixed wireless technologies, notably local Wi-Fi services, mostly offered on a free-to-connect basis in public places and business premises. These services are extensively used by individuals with mobile service subscriptions in order to avoid being charged at mobile operator rates for voice calls or to avoid using data consumption limitations set by mobile service operators.

The following aspects will be considered in carrying out a demand-side substitution analysis for the retail mobile access service in Georgia:

- Individual user and business user services
- International roaming service
- Access to mobile services using different generations of mobile technologies
- Fixed broadband access lines
- Publicly available satellite services
- Voice and data services accessed by mobile devices using local Wi-Fi networks
- New services and additional services potentially deliverable over 5G and further generations of mobile networks

Individual user and business subscriptions

In terms of the market for mobile access service, individual users and small/ medium enterprises (SMEs) appear generally to use the same menu of service (access to the internet, voice calls and text messages) without any tariff differences quoted by the mobile operators.

⁴⁷ <https://telecoms.com/opinion/what-defines-the-european-mvno-market/>

The same offerings are made to both personal and SME users, regardless of whether their subscription is registered to a person or a business and regardless of whether it is a pre-paid or post-paid subscription. By contrast, for the larger businesses, the operators generally prepare individual packages and service contracts for individual business customers.

To consider if there are different competitive conditions in the business user and individual user segments of the retail market, it should be taken into account that in some parts of the business segment, mainly in the small to medium enterprise (SME) size range, the needs of the businesses are more closely aligned with the needs of individual subscribers.

The larger organisations, multi-site enterprises and government entities, generally require more complex and compound services than individual customers or SMEs. The menu of kind of business services can include unified communications with enterprise management facilities (for example internal company billing, cost control, quality and usage monitoring, internal network management and switchboard networking solutions. Some business customers will often also prefer to bundle mobile services together with fixed telephony services as a part of their relationship with a telecommunications provider. In some cases, for example when businesses offer eCommerce services or government organisations have eGovernment services, their overall telecommunications solutions will require monitoring of their own service levels extended to their customer base, in terms of call volumes, quality of service and traffic distribution patterns.

The relationship between telecommunications operators and medium and large businesses is more commonly negotiated on a customised basis often with competitive tendering involved. The mobile service buying organisation (commercial or governmental) will issue a request for proposals from telecommunications operators and their purchase decision is made on a competitive basis, taking account of their own criteria for quality and price. This means that discounts on normal retail prices are often applied to reflect the economy of scale involved in a sale involving a higher volume of supply. Typically, in the case of businesses with larger and more complex needs, the final outcome will be a negotiated and highly customised solution using service-level agreements governing the required performance standards to be met by the winning telecommunications operator. In Georgia a set of public procurement rules require public competitive tendering to be used by all governmental bodies. Large firms (and particularly ones with significant foreign ownership) now commonly use a public competitive tendering process when purchasing telecommunications services.

Mobile services offered to individuals are on the other hand are more standardised regarding their characteristics and price. The prices and services therefore have the characteristics of mass-market services, with little or no customisation to individual user needs. Consumers can make a choice of mobile service packages in terms of data, voice and text messaging subscriptions to suit their own usage needs (typically call and messaging volumes, required data speeds and volumes of data usage).

The business customers who benefit from customisation and tariff discounts will not generally be interested in switching to a residential subscription after any small but significant price increase in the business tariff. Single-person businesses, small and some medium enterprises would be more inclined to choose a residential subscription rather than a business subscription.

In Georgia, 22% of mobile businesses subscriptions are post-paid and therefore have agreements which generally have defined penalties for early termination of contracts. Longer contract terms are often applied in the business market than in the individual user market, making it less attractive for business users to switch from one mobile operator to another. For residential customers there will not be an option to switch to a business subscription since this requires that you have a legally registered business.

A business user will generally have an important reason to use a number portability service because the consequences of having to change their mobile number include the need to change their advertising and other business-related materials.

In the Georgian market, there is a relatively low level of mobile service differentiation between offers to individual users and business users, except in the case of larger and more complex business settings where customisation is required. In the advertised offerings of the mobile operators, there appear to be no specific mention made of special business features, for example integrated mail, calendar, cloud store, or facilities such as status (for example 'I am at a meeting' indicator), voicemail, or boss-secretary functions. The average revenue per user trend (ARPU-shown on Figure 6) appears to be uniform across the business and individual subscriptions⁴⁸. This result is not surprising, given that a large proportion of the business users are small to medium enterprises that use the same basic mobile offerings from the same 3 mobile operators as individual users.

Given that most business subscribers use the same basic offerings as individual users and only the largest and more complex businesses demand and are supplied with more complex and customised offerings, then it is considered that the business and individual mobile user segments are substitutes at the retail level, with the exception of large complex businesses that demand customised mobile services.

It is therefore concluded that at the retail level there are separate markets for customised business services on the one hand and mass market mobile services for individual and the remaining business users.

⁴⁸ ComCom annual report 2021

International mobile roaming service

Retail mobile access offerings generally include the ability for the user to access mobile services whilst visiting other countries. Consumers in Georgia expect also to be able to use their ordinary subscriptions during foreign travel.

In summary, international roaming is included as part of typical mobile subscription including access to national and international calls, text messaging and data services.

Further consideration will be given to the wholesale access implications of the international roaming service in chapter 5.

Access to mobile services via different technologies

In the definition of the mobile access market at retail level, it needs to be considered whether there is reason to differentiate in terms of the technology over which the mobile retail services are delivered.

In the case where the user is making mobile voice calls or text messages via mobile networks rather than using VoIP, it is not important to the end-user whether the calls or the text messages sent are carried over a 2G, 3G or LTE network. These three technologies are present in the Georgian network and mobile phones that support all three technologies are common in the Georgian market. At various times during the call, a single call can switch between the different technologies. This takes place without the end-user noticing the switch (apart from the usual variations in the quality of reception that are normally associated with mobile service usage). Access to the three types of networks must therefore to a high degree be seen as substitutes, from the end-user's viewpoint.

Access to networks of different technology generations is also provided together and not as separate services. Although the evolution of network technologies from 2G to LTE significantly influenced data consumption by end-users, this evolution does not affect the market definition consisting in the provision of access to all possible services by the mobile operators. It is therefore concluded that voice and text messaging via the 2G, 3G and LTE networks are part of the same market for mobile access at the retail level.

All three Georgian operators now offer access to data services via their mobile networks. Access to data services in all three types of networks is sold together in ordinary mobile subscriptions. Mobile subscriptions are differentiated according to data usage but there are no separate subscriptions solely for 2G, 3G or LTE. For the end-users to be able to use all three for data services, this requires the end-user to have a handset which supports LTE in the frequency bands used for LTE in Georgia (see Figure 36). The prevalence of handsets which work with all three technologies is expected to increase.

Due to variations in the capacity for data transfer between 2G, 3G and LTE networks, the quality of the services via the various mobile networks can be experienced differently.

However, other factors besides technology may also affect the experienced speed and quality. For example, the number of users connected to the relevant base station and the topographical conditions where the user is located will affect performance. In fact, the consumer does not generally choose between a basic 2G offering and a more advanced 3G or LTE offering. It is the mobile operators which prepare their retail service offerings based on their own coverage, technology mix, capacity and quality standards.

As the mobile networks are progressively updated with new technologies, network capacity and performance will generally improve so that more users will stay connected to the most recent technology during their access periods without the network downgrading their service when the user is situated in an area where the latest technology is not yet available. In a forward-looking analysis, in the same way as the current and previous technology transitions, it is assumed that 5G will be backward-compatible with the older technologies, so that if the end-user moves out of a coverage area for 5G, the ongoing service will be continued within the framework of the current mix of technology, with coverage at any time.

It is therefore assumed that access to mobile services using further generations of mobile technology such as 5G (once introduced in Georgia for end users) will be substitutable, as it is likely that today's mobile services will be sold in the same bundle as services to be offered to mobile users via a future 5G-enabled network.

It is therefore concluded that different existing network technologies (2G, 3G and LTE) are part of the same relevant retail market for mobile access services.

Fixed broadband access services

Consideration has already been given in the market review of the fixed broadband market regarding the substitutability of different options for the end-user to access fixed broadband services and also to the potential for mobile broadband services to substitute for fixed broadband services. In these cases, it was concluded that mobile broadband access service is only a demand-side substitute for basic fixed broadband access services (below 10Mbps). Mobile broadband access services are not demand-side substitutes at the retail level for fixed broadband access services 10Mbps and above.

Fixed broadband access can give some limited mobility via Nomadic use, whereby a user will access broadband services via different physical fixed connection points. Users of these services may potentially obtain access to all services from any internet access point throughout the world. During an access session however, the user is bound to the location, and thus does not achieve the same mobility as with access via a mobile network. From a user perspective, the use of fixed lines, either at the user's own location, or used nomadically by the user from other fixed locations are not considered as substitutes for voice or data access via mobile networks.

Fixed broadband access services cannot be a demand-side substitute for mobile service because a fixed service is functionally different from a mobile service. Whereas a mobile

service could be used at a fixed place, a fixed service cannot provide mobility (one-side substitution). The very nature of mobile access gives it a fundamentally different user value. A small but significant price rise in mobile service would not result in customers replacing the mobile service with a fixed service because the fixed service does not provide mobility.

The decline in voice and text message volumes from mobile users has been more than compensated by a significant growth in mobile data volumes (see Figure 10). There has also been significant growth in fixed broadband connections, driven by the data access demands of end-users. This strong growth in data usage indicates that users have a range of choices of services providing data access that can meet their needs. When looking at customer need in more detail, users who seek data services above 10Mbps have a more limited choice, mainly restricted to fixed broadband access offers. Below 10Mbps, the users have a full choice between offers from both fixed and mobile broadband access operators.

On this basis, it can be concluded that fixed broadband access services are not included in the relevant mobile access market at a retail level.

Publicly available satellite services

VSAT⁴⁹ services have already been offered in Georgia by GlobalTT, an international satellite service. This is available to give internet connectivity in geographical locations where fixed or mobile broadband services are not available or are unreliable. In 2022, the Ministry of Economy and Sustainable development announced that Starlink, a USA based company would launch its satellite-based broadband services in Georgia during 2023⁵⁰. GNCC gave the necessary authorisation in July 2022.⁵¹

The volume of usage of these services is expected to remain very low within the forward-looking time horizon of this market analysis, mainly due to the high cost (to the user) of the receiving equipment compared to terrestrial network mobile devices. A satellite broadband access service can be used at a fixed location (using a satellite receiving dish installed at a fixed location) or by a mobile device. Both cases involve the user in additional set-up costs compared with using a mobile network access service. A small but insignificant price rise in mobile access services would not be sufficient to attract consumers to change to a satellite-based service. For this reason, these services are not considered as demand-side substitutes for mobile access services in Georgia.

It is therefore concluded that publicly available satellite services are not in the same market as retail mobile access services.

Voice and data services accessed by mobile devices using local Wi-Fi networks.

⁴⁹ <https://www.globaltt.com/en/internet-connection/Georgia.html>

⁵⁰ <https://agenda.ge/en/news/2022/2811>

⁵¹ <https://agenda.ge/en/news/2022/2699>

Individuals with mobile smartphone devices can readily access local Wi-Fi networks in public spaces, business premises and at home. These local Wi-Fi access networks are connected mainly to fixed broadband access networks. Connection of a mobile device to a Wi-Fi network is normally made by a simple log-in process with or without a password being required. Smartphones can remember local Wi-Fi networks and connect automatically to them and, provided the log-in security settings and password have not changed, will connect to the re-visited local Wi-Fi network without any further user log-in process. Once connected to a local Wi-Fi network, the mobile device user can by-pass their mobile operator network and not have to pay the full charges raised by their mobile operator or use up any of their data volume allowances. Voice calls can be made using over-the-top (OTT) applications at very low charges (normally the only charge is a termination fee raised by the receiving network operator if the person called is not logged-on to the same OTT application). Similarly with internet access, the data usage charges normally set by the Georgian mobile service provider are not incurred by the user in the usual way.

The quality of the local Wi-Fi network connection is generally lower than that experienced when using a mobile LTE network and the quality further deteriorates as the number of users logged-on to the same local Wi-Fi network increases. A local Wi-Fi connection does not give the mobile device user full mobility – once the user leaves the space covered by the Wi-Fi network (normally only around 10-50m from the network transmitter box) then service is lost, and the user will have to re-enter the space and log in again to restart their service. Some Wi-Fi network spaces (such as airports or busy public spaces) have larger geographical reach. Some local Wi-Fi service providers apply time limits on each user's session or give only a limited time of free access before asking the user to pay for further time.

It is considered that a small but significant increase in the price of mobile access via mobile networks would induce mobile phone users into greater usage of local Wi-Fi networks because local Wi-Fi networks are widely available and can free-to-use (or at a very low cost), although their quality is variable. However, because these networks do not give the same full mobile functionality of mobile access service via LTE networks, then it is considered that voice and data services accessed by mobile devices using local Wi-Fi networks are not substitutes for mobile access via mobile networks.

It is therefore concluded that access to voice and data services by mobile phone devices via local Wi-Fi networks is not in the same market as mobile access service via mobile networks.

Services potentially delivered over 5G and further generations of mobile networks

At present, 5G networks have not been launched in Georgia. The required investments in new network infrastructures to support 5G services are likely to be significant. It is therefore considered that, within the forward-looking time horizon of this market analysis, it is unlikely that 5G-based services will be widely available in Georgia, either as capacity enhancement to the current mobile networks or as an enabling technology for an extended range of services.

New services such as IoT applications that are potentially to be delivered over 5G and other further generations of mobile networks are not yet considered to be demand-side substitutes for retail mobile access services.

It is therefore concluded that services potentially delivered over 5G and other further generations of mobile networks will only become part of the same market for mobile retail access when 5G services are widely available at a retail level in Georgia. As already noted, it is considered unlikely that 5G retail mobile access services will be available in Georgia within the forward-looking time horizon of this market analysis.

4.2. Supply side substitution

In the case of market entry by a virtual operator (MVNO), this is possible without the need to acquire spectrum resources or needing to invest in a mobile network infrastructure. It should be possible for the MVNO to offer mobile access retail services (of the same functionality) to the market by using another mobile operator's network on a commercial wholesale basis. In this case, because the total costs of starting to offer retail mobile access services are relatively low, then the MVNO substitute service would be included in the mobile access market definition.

In the case of other potential supply side substitutes, if the need to invest in network infrastructure is involved, the costs and timescale in establishing a mobile access network are significant and the substitute cannot be part of the same market.

The supply-side substitutes to be considered are:

- Switching supply focus between the business and the individual segments of the market
- Supply by publicly available satellite service
- Voice and data services accessed by mobile devices using local Wi-Fi networks
- Mobile network operator using 5G or further generations of mobile technologies

4.2.1. Switching focus between supplying customised business and mass-market segments of the market

If a mobile service provider wants to shift its production from the individual (mass-market) to the customised business market, it would require a higher level of knowledge about the technological and market conditions to meet the business customer requirements, which are generally more complex and with a greater degree of customisation than the requirements of individual consumers. Targeting the customised business market implies a far more comprehensive level of managing public tenders, contract negotiations, service level agreements and the consequent management support towards customer service. Such a change in market focus would involve increased investments and increased costs. At the same

time, it must be noted that many business customers are in a contractually binding period with their operator, and thus it can be costly for a new operator to acquire these customers.

In the opposite direction, providers who want to shift their mobile market focus from customised business customers to mass-market customers, generally have to increase their marketing expenses considerably for example through mass-market television and on-line advertising to reach a much greater number of users. Mobile network owners offer services to both mass-market and customised business customers. However, MVNO providers and service providers generally prefer to concentrate on one segment. Figure 4 shows the market shares for mobile subscriptions.

Figure 4 shows that Magticom is the largest provider of mobile subscriptions, followed by Silknet and Cellfie. The MVNO presence has only just started in Georgia, but it is expected that the single entrant Eclectic will focus initially on the individual consumer market. The three mobile network operators are prepared to negotiate prices and service levels with businesses and they generally respond to invitations to tender issued by larger businesses and government entities. It is therefore considered that there is little supply-side substitution between the business and individual user segments of the retail market.

It is therefore concluded that the customised business and mass-market segments of the mobile market are separate services at the retail level.

4.2.2. Supply by publicly available satellite services

At least one international satellite operator has applied to launch services in Georgia and in 2022 ComCom has granted the required permission to establish the service. The announcement stated that the services would be launched in mid-2023. This 'Starlink' project is funded by satellite company SpaceX, owned by the American entrepreneur Elon Musk. Starlink's stated aim is for Georgia to become their first country of operation within the Caucasus region. The launch appears to be aimed initially at technology parks located in Georgia with later expansion to '*ordinary subscribers*'⁵².

There have been no details announced regarding the retail offering or tariff structures for Starlink's proposed satellite service in Georgia. Earlier general announcements by SpaceX in March 2022⁵³ specify a '*premium B2B-focussed internet service*', branded 'Starlink Business', and costing \$2,500 for hardware and \$500 per month for internet access. At these rates, which are very significantly higher than normal mobile access services in Georgia, only niche markets for a satellite-delivered mobile access service are likely to be addressed. For example, the target market could be limited to specialised customers who, for security or other purposes,

⁵² <https://bigasia.ru/en/content/news/society/v-gruzii-zarabotaet-sputnikovyy-internet-starlink-/#:~:text=Starlink%20satellite%20Internet%20will%20work%20in%20Georgia%20since%202023.&text=%22Sinc e%202023%20in%20Georgia%20will,Internet%20via%20a%20satellite%20system.>

⁵³ <https://payloadspace.com/spacex-increases-launch-and-starlink-prices/#:~:text=The%20new%20rates%20are%20%241.1,for%20a%20Falcon%20Heavy%20launch.>

wish to by-pass Georgia's terrestrial networks, or who wish to have essential communications services in very remote regions where neither mobile access networks nor fixed broadband access are available with sufficient capacity, security or quality.

A small but significant rise in retail mobile access prices in Georgia is not likely to result in any existing mobile operator or new entrant establishing a competing satellite-based mobile access service. The presence of a satellite based mobile access service is therefore unlikely to have an influence on the pricing behaviour of the existing mobile operators. The cost of introducing a satellite-based service as a satellite owning entity is clearly prohibitive. For a non-satellite operator to use (on a wholesale basis) an existing satellite network to launch a new retail mobile access service would also require the customer to incur significantly higher costs to rent or purchase the necessary transmission and receiving equipment.

An operator in Georgia could decide to utilise or establish a satellite earth station that can collect and distribute satellite signals via a terrestrial Georgian mobile network. In whichever way a mobile satellite-based service is configured, the resulting cost to customers would be very significantly higher than the current mobile access services in Georgia. Satellite-based mobile access services are therefore not considered to be a supply-side substitute for mobile access service.

It is therefore concluded that a publicly available satellite-based mobile access service is not in the same product market as the mobile access service in Georgia.

4.2.3. Voice and data services accessed by mobile devices using local Wi-Fi networks

It has already been noted in the demand-side substitution analysis for local Wi-Fi access that a small but significant increase in mobile access services is likely to induce end-customers towards greater usage of local Wi-Fi networks via their mobile phone devices. On the supply side, it should be considered whether existing or potentially new providers would be inclined to invest in Wi-Fi networks and provide the same mobile functionality. Although this 'Wi-Fi roaming' ability could be technologically possible and become feasible at some point in the future, it is not expected to be introduced in Georgia during the forward-looking time horizon of this market analysis. This is mainly because the necessary investments in a yet-to-be proven solution (that is viable technically and commercially) will take at least 3 years.

It is therefore considered that existing mobile operators, or new entrants, would not become substitute suppliers using local Wi-Fi technology for the retail mobile access market.

It is therefore concluded that the use of mobile devices to access voice and data services via local Wi-Fi networks is not in the same market as mobile access service.

4.2.4. Mobile network operator using 5G or further generations of mobile technologies

In 2020, ComCom announced its intention to offer additional spectrum for commercial 5G mobile services in Georgia. The auction was finally concluded in September 2023. However, only Cellfie applied for spectrum, while Magticom and Silknet chose not to participate. The majority of available spectrum, which can be used for providing 5G, has remained unassigned.

No date has been set to begin the next round of auction process. In the future, significant investments will have to be made by the 5G spectrum holders to establish their network capability and exploit 5G technology. This will be the case whatever type of demand for 5G based services arises. Growth is likely to arise from users' needs for greater mobile data speeds and quality, for greater geographical coverage and higher quality access, plus new demands from a whole range of potential and emerging mobile-based services embracing IoT and M2M applications (for example sector-specific B2B and B2C facilities).

It is fully expected that that 5G technology will be introduced into Georgian mobile networks. Retail services will become available on a geographical roll-out basis, to business and individual customers. The existing Georgian mobile operators are expected, at some point during the next 3 years, to make decisions on their required 5G investments, informed by the experience from many other countries that have already introduced 5G technology into their networks⁵⁴.

It is not yet known whether end-user tariffs for 5G-based mobile access services will be higher than the prevailing mobile access service tariffs. Experience from other countries suggests that, at initial launch, 5G service is often priced above existing service but as competition and geographical coverage increases, the tariffs become largely in line with current tariffs. With increased data usage by customers, the amounts paid by consumers often rises with 5G service because mobile data is generally priced in relation to the volumes of data consumed by the user. Under fully competitive conditions, in countries where 5G is generally available, operators have tended to increase their tariffs for unlimited data packages, while keeping the variable download tariff options broadly at the same tariff as existing services⁵⁵.

Once any of the operator invests in 5G infrastructure, the other mobile network operators are likely to accelerate their 5G roll-out investments and increase network capacity to ensure full national coverage. New suppliers could also be induced into the market, either attracted by the high demand from customers for higher data speeds and increased quality, or in order to focus on sector-specific IoT and M2M B2B or B2C applications that are expected to emerge with 5G.

⁵⁴ <https://www.statista.com/statistics/521598/5g-mobile-subscriptions-worldwide/>

⁵⁵ <https://www.moneysavingexpert.com/mobiles/guide-to-5g/>

The time period expected for the anticipated adoption of 5G technology within the mobile market in Georgia is expected to take at least 3 years. Firstly, there has to be a spectrum auction, followed by the necessary 5G network investments and service trials leading eventually to 5G-based service launches. Retail offerings are expected initially to be on a limited geographical basis before full a national roll-out, as required by ComCom's published 5G spectrum licensing conditions⁵⁶.

Once national 5G network coverage has been achieved, it is likely that mobile operators will fully embrace 5G for all the requirements of their mobile access networks in Georgia. At that point, the market for 5G-based services will be integrated fully into the same product market as mobile access services. But as this point is not expected to be reached for at least 3 years.

It is therefore concluded that mobile access services using 5G and further generations of mobile technologies are not yet part of the same product market as mobile access services via mobile networks.

4.3. Geographical market definition

The legal and regulatory conditions on retail mobile access market are the same in the whole territory of Georgia. In Georgia, the right to use allocated frequencies includes an obligation on operators to provide national coverage. So far, Georgian mobile operators have not differentiated their offered services or tariffs on the basis of geography and there is no indication that the operators intend to introduce such differences. All three mobile network operators are obliged (in their licences) to provide national coverage and there are no diverging competitive conditions in parts of the country which indicate that a geographical division of the market is necessary. It is therefore considered that there are no material geographical differences with respect to either product quality or pricing in the Georgian market.

For this reason, it is concluded that no further analysis is necessary regarding the question of whether the mobile access market should be divided geographically, and that a national approach to market definition and analysis continues to be well-founded.

4.4. Conclusion on market definition of relevant market

In the market definition process using demand-side and supply-side analyses, it has been concluded that the retail mobile access market in Georgia consists of mass market access by consumers and businesses to mobile networks, offering the users the ability to make and receive voice calls, text messages and access data services plus international roaming, regardless of the current technologies (2G, 3G and LTE) being used to supply the mobile access services and irrespective of whether the component parts of the service are offered separately or part of a bundled service package.

⁵⁶ <https://comcom.ge/uploads/other/5/5484.pdf>

It has also been concluded that the relevant geographical market is the entire territory of Georgia.

4.5. Prospective assessment of competitive conditions on the retail mobile access market

Firstly, it should be noted that there are no legal, administrative or regulatory barriers to entry into the mobile access market in Georgia.

There are three established mobile network operators in Georgia and one very new MVNO entrant. Competition between the established operators has followed the historical path very similar to most other countries, with geographical expansion by each operator driving initial investments in order to maximise market shares. Voice calls and text messaging services were the only products available in the initial stages of the mobile market and the 2G network investments progressed quickly to achieve near full geographical coverage. This early period of competition was characterised by high expenditures on mass advertising aimed at differentiating offerings in terms of the best price deals for call minutes and text messages.

Additional spectrum has been made available such that all three operators possess sufficient spectrum capacity to continue to expand and to update their network technologies using 3G and LTE. Competitive advantage then centred on the user-driven focus on data services, with the operators aiming to construct packages that best served the mass market trends for internet usage. Typically, mobile services were offered with different data volume limits (for example 3GB, 20GB, unlimited) plus various free allowances for voice calls and text messages. Different rates applied to international roaming, and specialist services like money transfer and credit. End-users could choose from these packages depending on how they intended to use their mobile access service in terms of data speeds, downloaded data volumes within a given period, voice calls and text messaging volumes.

Almost all mobile consumers use a pre-paid subscription. Post-paid contract subscriptions are available but are mainly used by business customers. The same types of mobile access packages are available from all three operators, with little differences in the basic structure of the deals, the methods of payment and the conditions of usage. In a recent market development, the operators have started to offer special deals at significantly discounted tariffs for limited periods of time, in order to attract customers to switch from other suppliers. These basic mobile access mass-market packages are used extensively by both individual and small to medium sized business users. Only in the case of the larger businesses with more complex needs, do the operators customise their offerings, often in response to the business using their position of relative buyer strength to negotiate better service level and lower prices. This situation does not apply to the smaller and medium business in Georgia, who generally use the same mass-market offerings, choosing between the mobile operators. Many of these mass-market customers exploit their choice of competitive offerings by multiple purchases, that is by taking out subscriptions from more than one operator. In this way, they

can take advantage of the best deals available from day-to-day and by switching to another subscription when they reach the limit of usage from their most-used operator. The impact of this multi-SIM purchasing behaviour in Georgia is to reduce the overall average revenue per SIM subscription and make international comparisons with countries where users usually have no more than one SIM card difficult and even not relevant. Lower ARPUs in Georgia in international comparisons based on purchasing power parity do not therefore necessarily evidence of better tariffs for end-users.

From the perspective of the end-users, the mobile access market in Georgia provides some choices:

- There are four mobile operators
- For each operator there are a range of usage packages for data, voice and text messaging that cover the main mass-market needs
- For the more complex needs of larger organisations, the larger operators are prepared to customise their offerings to meet the needs of individual customers

With a market penetration of 156 mobile subscriptions per 100 population, within which 111 mobile subscriptions include mobile data access per 100 population), it is clear that a significant number of users have more than one mobile subscription. These users can exercise their choice of different packages simply by switching between best current deals from the different operators. Using this method of competitive choice, customers do not appear to make much use of the independent number portability service. A free number portability service is available in Georgia. The quantity of numbers ported **has remained pretty much the same between 2017 (57,000 numbers) and 2022, when it amounted to 52,000. The static dynamic nature of portability, when analysing next to growing overall subscription numbers hints, that** Georgian users favour multiple purchases from more than one operator, rather than switching a single subscription from one operator to another.

In Georgia, very few mobile subscriptions (5.1% in 2022) use post-paid contracts, whereas the percentage in Europe is around 40%. Georgian mobile operators do not appear to have sought generally to attract and transfer subscribers onto post-paid contracts where average revenues per user are higher and the rate of churn of customers switching to other operators is lower.

There appear to be differences in the perceived quality of the delivered mobile services between the three mobile operators. For example, the complaints received by ComCom against Cellfie in 2022 were 1.1 times higher than for Magticom and 2.8 times higher than for Silknet.

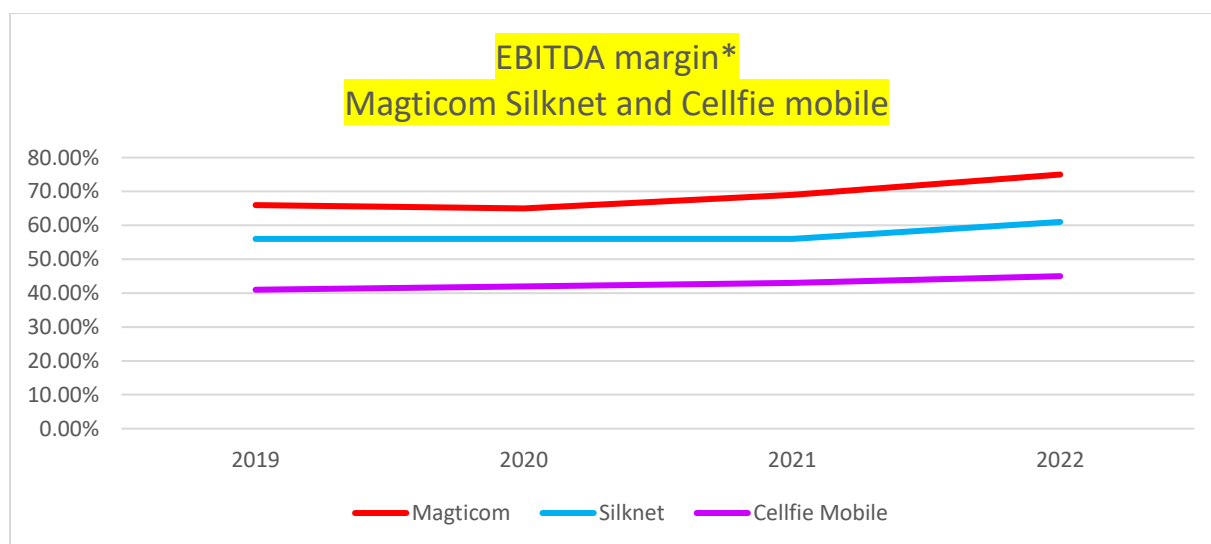
Very few mass-market users (including individual and small to medium sized businesses) have post-paid contracts (where there would be penalties for switching operators before their typically one or two-year duration periods). Almost all therefore prefer the flexibility of a pre-paid subscription where they can top-up their accounts in accordance with their short-term usage needs.

The high share of subscribers using SIM cards from different operators, should incentivise the MNOs to focus on attractive, promotional offers and dedicate substantial resources in brand and other marketing.

At the same time, this pressure from the customers in favour of short term focus by the MNOs appears to reduce the propensity of MNOs to invest in new technologies – for example, Georgian operators were relatively late (compared with EU countries) in launching 3G and LTE services and have still not made significant moves towards 5G investments – or to explore outsourcing of infrastructure (for example to third-party transmission tower companies), and other cost-reduction opportunities such as joint ownership and joint investment, infrastructure sharing, exploiting wholesale opportunities rather than owning transmission infrastructure.

The overall mobile related investments made by Georgian mobile operators during the last four years amount to around 23% of their total mobile revenues. This is broadly in line with international rates, for example the GSMA study⁵⁷ in 2022 stated that, in three mobile-player markets, investments represent 20%-23% of revenues between 2013 and 2021. However, the GSMA also records the general levels of cash margin generation by mobile companies (as measured by earnings before interest, tax, depreciation and amortisation in mobile markets divided by mobile revenues) was only around 28% - 35% (2021) compared with between 45% to 75% (2022) for the Georgian mobile market operators. These results are shown in Figures 2 and 3.

Figure 2 EBITDA margins – Georgian mobile operators 2019-2022

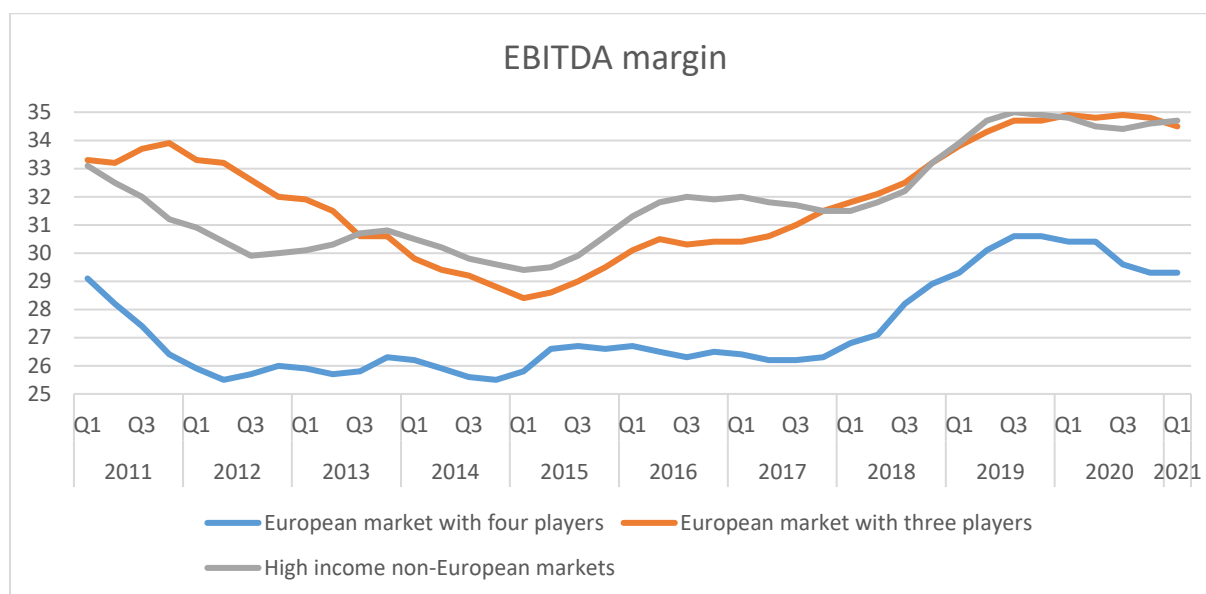


Source: Operator reported accounts

*Earnings before interest, tax, depreciation and amortisation divided by total revenues

⁵⁷ <https://www.gsma.com/publicpolicy/wp-content/uploads/2022/11/Competition-Dynamics-in-Mobile-Markets.pdf>

Figure 3 EBITDA margins –World mobile operators 2013 – 2021



Source: GSMA 2022

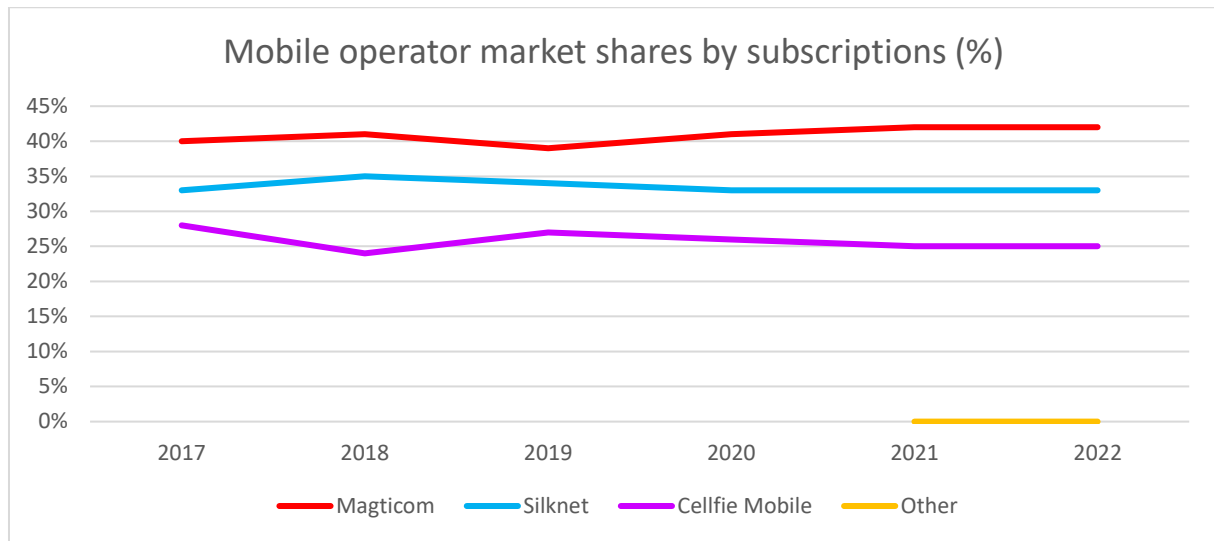
Figures 2 and 3 show that Georgian mobile operators are earning higher cash margins than the prevailing world averages, especially Magticom, where the EBITDA margin is more than double the world rate. The additional cash generation by Magticom is not being re-invested in its mobile infrastructure – the percentage of its mobile revenues reinvested has averaged only 21% over the last four years, broadly in line with world averages over the same period despite Magticom’s significantly higher cash margins than the world averages.

In terms of retail tariffs, price changes over recent years have occurred in parallel steps, with a price change made by one operator closely followed by the other operators at around the same percentage change (see Figure 13).

In this context, the relative market shares of the MNOs have not evolved significantly over the last years, Magticom remaining as the unchallenged market leader, with 42% retail market share in mobile subscriptions.

Mobile revenues and the number of subscriptions has been steadily increasing (see Figures 15 and 21). In order to find out whether the market exhibits effective competition, it is necessary to understand the dynamics and developments of market shares of operators over a period of time and to predict whether any trend will continue for the forward-looking time horizon of this market analysis. Fluctuations in the relative market shares of the operators could be the sign of effective competition if there is evidence that the market shares will continue to be based on real choices made by consumers. However, it can be seen from Figure 4 that the market shares of all the operators have become stable over the last 3 to 5 years. Although the total number of mobile subscriptions increased by 10% since 2018 and overall mobile revenues by 45%, the relative market shares between the operators has remained largely similar (see Figure 4).

Figure 4 Development of market shares of MNOs

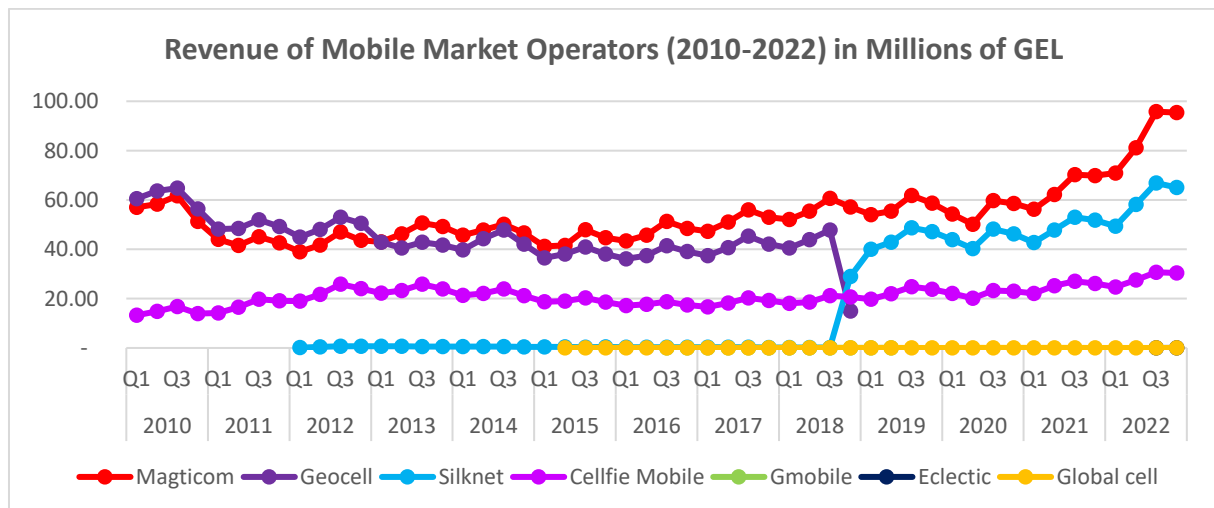


Source: ComCom

Cellfie has not been able to impact the market shares of its larger rivals despite generally offering lower retail market tariffs.

The revenue pattern between the three operators follows a similar trend to their respective market shares.

Figure 5 Revenues of MNOs



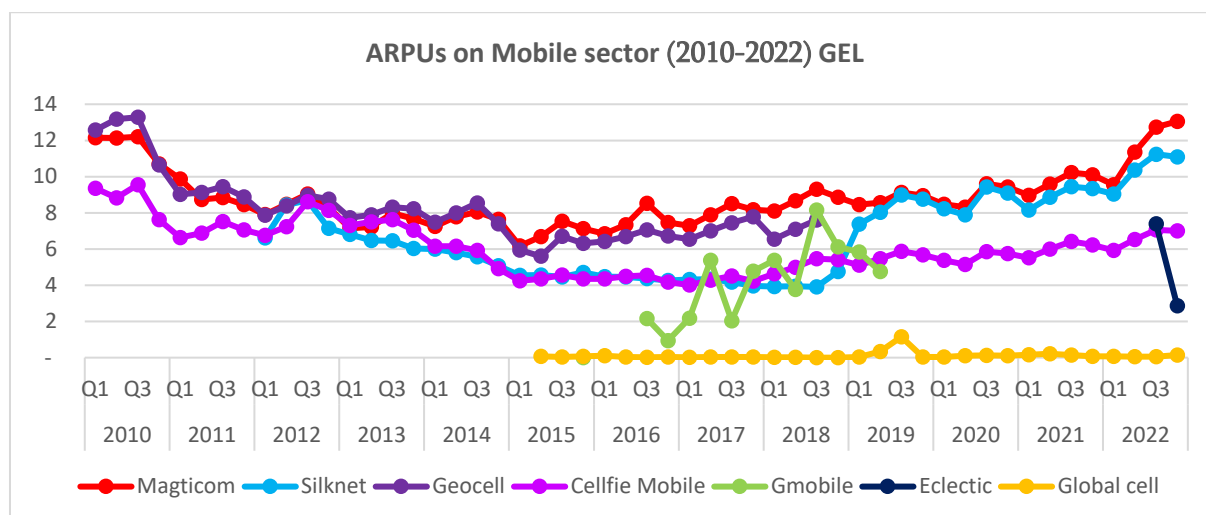
Source: ComCom

This position of market leader is illustrated by the higher ARPU achieved by Magticom in comparison to both other MNOs.

Taking account of the market shares of operators on retail mobile access market, showing in particular that Cellfie has failed to make an impact on the market shares of its larger rivals and that no significant new market entry has occurred (illustrating high market entry barriers), it is concluded that, considering market share dynamics alone there is currently no effective competition on the retail market and without ex-ante regulation, effective competition will

not develop fully in the future. This conclusion is supported by the evident lack of investment and innovation using the latest mobile technologies (5G) despite the relatively high (in world terms) cash margins available to the Georgian operators (in particular Magticom which has a cash margin at twice the world average).

Figure 6 ARPUs of MNOs



Source: ComCom

To attempt to address this lack of competitive dynamism, ComCom required by Decision N G-20-9/156 of 31/12/2019, the three MNOs to publish a reference offer and negotiate within specific deadlines agreements with candidate MVNOs. The rationale is that the threat of increased competition from new operators will be able to force MNOs to innovate.

However, in this framework, we need to make a prospective assessment based on the “modified greenfield approach”, this means that the assessment should disregard *ex-ante* regulation but should take other forms of sector-specific regulation into account.

In practice, the question is whether in the absence of ComCom’s requirement to provide MVNO access, MNOs would continue to do so, and user choice and innovation will be restricted contrary to the intention of ComCom decision. In view of the protracted discussions between candidate MVNO’s and MNO’s and the limited number of MVNO agreements concluded to date, one can assume that this would not be the case. Concluded agreements could even be ended.

In general terms and taking a forward-looking perspective, a more active mobile service market would be expected to include:

- A greater propensity to invest in new technologies (Georgian operators were relatively late (compared with EU countries) in launching 3G and LTE services and have still not made significant moves towards 5G investments.
- Significantly greater customisation of consumer offerings. Although customisation is normal in the large business/ governmental segment, this has not been extended to

the medium sized business sector and onwards to small business and the consumer mass markets. The kinds of innovation in customised packages for businesses include the sharing of data volumes and call limits amongst employees, 24-hour support, single contact point and account management, on-line ordering, billing and payment.

- An established MNO would be expected to explore opportunities to utilise its network capacity for wholesale services by concluding deals with MVNOs. Such wholesale deals provide the MNO with added opportunities to increase its overall efficiency for example by carrying additional traffic to its existing network at low marginal cost and with zero cost of sale.
- A greater motivation by mobile operators to reduce their unit cost of supply. In many EU countries, operators have explored outsourcing of infrastructure (for example to third-party transmission tower companies), and other cost-reduction opportunities such as joint ownership and joint investment, infrastructure sharing, exploiting wholesale opportunities rather than owning transmission infrastructure.
- Greater creativity and innovation in marketing and selling – using account managers to bring together all customer contact (throughout selling, support and billing activities) so that customers have one point of contact for all their dealings with the operator. Other effective marketing strategies, so far underused in Georgia, involve targeting of communications and offers (for example using text messaging) based on the customer's usage patterns.
- Rebuilding customer contact to allow full on-line customer relationships. Generally, in Georgia it is possible to pay mobile service bills on-line and customer can call the operator to discuss offers and service problems. But it is difficult to understand why Georgian consumers still have to visit a physical operator building to set up mobile subscription. In most EU countries the trend for some time has been to offer all customer contact interactions to be available on-line. This means that if any physical equipment (including a SIM cards) that has to be received using a delivery service, normally by next day.
- Forward-looking mobile operator competitive strategies should be preparing the way for the next wave of innovation in the market that is expected to be leveraged by 5G mobile technology. Vertical industry segments (such as healthcare, agriculture, supply-chain distribution, manufacturing) could significantly benefit from partnering with mobile operators to look forward to sharing the investments, risks and benefits of a 5G and IoT enabled world.

Overall, the relative stagnation of market shares with the lack progress that the third largest mobile operator Cellfie has in making market share gains, the lack of investment and service innovation from the existing players and the absence of any significant new market entrants, leads to the conclusion that the retail mobile market is not sufficiently competitive. For this reason, it is necessary to examine the upstream market on which regulatory intervention would allow to address the competition problem identified in the retail market.

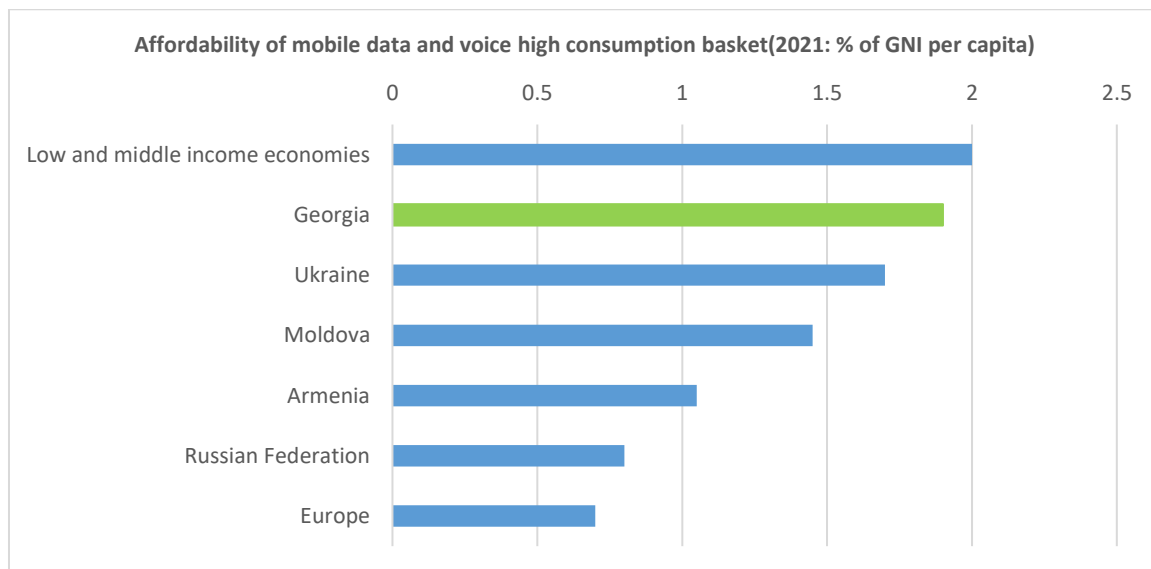
4.6. Effects on consumers

The lack of competition in the retail mobile access market is likely to give rise to consumer harm. For example, ComCom's 2023 benchmarking study showed that the lowest-price available in Georgia for the mobile service bundle of unlimited voice calls plus 20 GBs of data was one of the most expensive in all the countries benchmarked (18th). In the more limited offerings for 100 voice calls and 2 GBs of data, the cheapest Georgian offering was mid-range in comparison with the other countries in the study.

The existence of relatively high mobile tariffs in Georgia is corroborated by comparison of financial performance (see also Chapter 6.2.11). In Georgia, all three mobile network operators have total business EBITDA margins above 35% with Magticom's EBITDA margin (at 75% in 2022) being significantly higher than Silknet or Cellfie's (at 61% and 45% respectively). This contrasts with other (three operator) national mobile markets where the average EBITDAs have ranged between 28.5% and 35% over the period 2011 to 2021⁵⁸.

Another aspect related to the ability of Magticom to raise prices above levels that would prevail in fully competitive markets (where Magticom could not therefore act independently of competitors and consumers) is the current relative affordability of mobile services in Georgia compared to other countries. The affordability of mobile services in Georgia and selected countries is shown in Figure 7.

Figure 7 Affordability of mobile services in Georgia and selected countries



Source: ITU Data Hub

⁵⁸ see <https://www.gsma.com/publicpolicy/wp-content/uploads/2022/11/Competition-Dynamics-in-Mobile-Markets.pdf>

Specific examples taken from mobile operator financial statements (2022) are BT: 32%, Deutsche Telekom: 36%, Hrvatska Telekom: 38%, Proximus (Belgium): 30%, Telekom Slovenia: 35%.

This comparison shows that, on a like-for-like affordability basis (% of Gross National Income per capita), Georgia has less affordable mobile services than its neighbouring (Eastern Partnership plus Russian Federation) countries and significantly less affordable than in European economies generally. This means that at present, consumers are paying more in Georgia for mobile services (in this case a basket representing high consumption of data and voice⁵⁹) than many other countries. In the countries shown, particularly the European economies, competition is generally more developed leading to lower mobile retail prices. This is further evidence of consumer harm in Georgia arising from a relatively uncompetitive mobile market.

The relative difference between the EBITDA margins and the relative less affordable mobile services in Georgia suggests that consumer harm is mostly resulting from the behaviour of an operator with SMP that can act independently of its competitors or consumers. This potential for consumer harm was illustrated in late 2021 when Magticom's mobile voice tariffs were significantly increased. This was against a market background where its competitor Silknet has the lowest mobile voice tariffs. Subsequently, during 2022, Magticom's mobile voice revenues increased by 10.1% even though its mobile voice-only subscriptions reduced by 2.1% compared to 2021 and voice traffic declined by 10.2%. This reduction in voice subscribers and traffic will have lowered Magticom's overall cost of sale in 2022 alongside its increase in voice revenues. The result therefore contributed to an even higher EBITDA margin and even less affordability of mobile services in Georgia.

⁵⁹ The mobile data and voice high-consumption basket is based on a monthly usage of a minimum of 140 voice minutes, 70 SMSs and 1.5 GB of data using at least 3G technology. From 2021, the basket is based on a monthly usage of a minimum of 140 voice minutes, 70 SMSs and 2 GB of data using at least 3G technology.

5. Analysis of the upstream market of mobile wholesale access

Wholesale access to mobile networks is fundamental to the provision of retail mobile access services, which have been defined in Chapter 4.4 as the “...*mass market access by consumers and businesses to mobile networks, offering the users the ability to make and receive voice calls, text messages and access data services plus international roaming, regardless of the current technologies (2G, 3G and LTE) being used to supply the mobile access services and irrespective of whether the component parts of the service are offered separately or part of a bundled service package.*”

While mobile network operators (MNOs) control all of the infrastructure necessary to offer retail mobile network services, other operators must depend on being able to buy access to mobile networks at a wholesale level, in order to be able to offer retail services. There are various means of accessing mobile networks that have been used in telecommunications markets at a wholesale level. The different types of wholesale access that an access buyer wishes to use will generally depend on the extent to which the access buyer controls its own infrastructure. The following different types of access can generally be identified:

1. **National roaming:** This type of access is relevant for operators with their own frequency resources that have rolled out coverage in individual areas but need to be able to buy access to mobile networks in areas where they do not themselves have radio coverage or sufficient capacity.
2. **MVNO access:** The extent of the MVNO's own infrastructure can vary between none at all ('Light MVNO') to full infrastructure, including its own core network and control of interconnection with other providers of telephony services, but without spectrum resources ('Full MVNO'). In Georgia there has been a recent market entrant using MVNO access. This new market entrant currently has no core network infrastructure of its own.
3. **Co-location:** This form of access implies that a provider of mobile services can place their switching, transmission equipment and mobile base-station transmission equipment at sites owned by another operator. In Georgia there is not currently widespread use of co-location in the mobile sector.
4. **International roaming:** International roaming is included as part of a Georgian mobile retail subscription. At the wholesale level, foreign network operators may require international roaming. EU experience has shown that it is not possible to address any competition problems in the international roaming market by action at national level.

In considering the definition of the mobile market at wholesale level it is necessary to assess which types of access (from the above list) are part of the relevant market. These various types of access reflect different needs, and entail different technical solutions, indicating that the various access types are not full substitutes for each other. For example, MVNO access assumes that the access buyer has (to some extent) its own systems. Access to national mobile roaming requires that the access buyer has frequency resources available. Typically a national

roaming access buyer will have its own spectrum, but uses it only in a limited geographical coverage area. In the case where an operator has no spectrum, MVNO wholesale access would be sought.

The offering of mobile services at the retail level requires the same input factors at the wholesale level, but differences occur at the wholesale level in how the access buyer controls the input factors⁶⁰. The service offered to end-users are also the same (mobile voice, text messaging, data access and international roaming) irrespective of the type of wholesale access. This suggests that the different types of wholesale access are part of the same relevant wholesale market.

New operators wishing to enter the market and offer mobile access services at retail level often wish to invest on a step-by-step basis ("the ladder of investment"). For example, a 'Second brand MVNO' (as defined in Figure 8) has no core infrastructure at the beginning, but may wish to build up its own network of switching, transmission and interconnection in stages. Any regulation of the market should allow this possibility because the level of effective market competition can be increased as the players possess more control over the input factors that determine the attractiveness of their retail mobile service offerings. On this basis it is considered that, to provide mobile operators to exercise a real opportunity to control the development of their own retail services, that all types of wholesale access (national and international roaming, MVNO and co-location) are included in the same relevant market.

The relevant mobile retail market includes access via the full range of mobile technologies (2G, 3G and LTE) that are currently present in the Georgian networks. In terms of data speeds, the retail market definition does not set any limits, so the corresponding upstream wholesale market must also include higher speeds that could be achieved within the forward-looking time horizon of this market analysis. As concluded in the definition of the retail mobile access market, it is unlikely that retail services will be available using 5G technologies in the Georgian market within the next 3 years. The definition of the relevant mobile wholesale access market should also include access to 5G technology networks when it becomes available. This will be the case whether the access buyer requires the 5G technology in the network to support any additional traffic requirements or for any new 5G-enabled services to end users (for example IoT).

With regard to the case where a wholesale product is used from the wholesale arm to the retail arm of a vertically integrated operator it should be noted that, according to the relevant recommendations and explanatory notes from the EU⁶¹, European regulators take such self-supply into consideration in both market definitions and the assessment of significant market power.

⁶⁰ <https://blog.3g4g.co.uk/2014/04/mno-mvno-mvna-mvne-different-types-of.html>

⁶¹ Chapter 3.3 of the Commission's Explanatory Note²³, the Recommendation of 9 October 2014 and BEREC's report from March 2010. BEREC's report primarily discusses the regulators' treatment of self-supply in the wholesale market for broadband access (market 5), but also the treatment of self-supply in other markets.

In Georgia, the wholesale mobile access market is at a very low level. The recent MVNO retail market entrant is still at a very early stage of development, with no core infrastructure of its own so it relies extensively on the network facilities of its host network. It is yet to be seen if this MVNO form of wholesale market access will further develop in Georgia, as it has in many other countries.

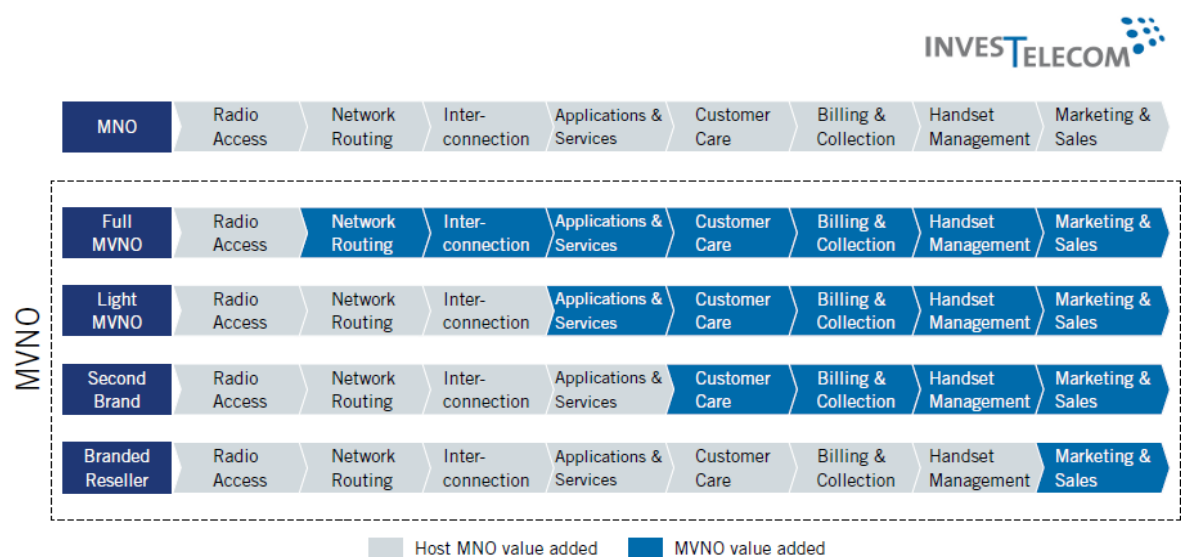
5.1. Demand-side substitution analysis

MVNO access

For the purposes of this substitution analysis, it can be considered that the reference offer is MVNO access (that service being the only one currently being used in Georgia, albeit on a very limited basis). In this wholesale case, the access buyer is a separate entity from the wholesale access provider.

This form of wholesale mobile access is used to enable a new market entrant to establish a national retail mobile network service without facing the high-cost of establishing a national network infrastructure. The opportunity should be available to the new MVNO to decide on its own forward development path and business model by investing in its own network infrastructure. The types of MNVO that are generally categorised (see Figure 8) to reflect the extent to which the MVNO has control over its own operations and therefore the extent to which it can differentiate its retail services in a competitive mobile access market.

Figure 8 MVNO types



Variants of the MVNO business model

Via: The 3G4G Blog - blog.3g4g.co.uk

Source: <https://blog.3g4g.co.uk/2014/04/mno-mvno-mvna-mvne-different-types-of.html>

In the diagram, all types of MVNO business models have their own marketing and sales functions to interface with customers using the same brand as their host MNO. Progressing from this simple “Branded Reseller” model to a “Second Brand” MVNO (where an own brand is used to provide a distinct choice from existing mobile brands in the market) will require investment in customer care, billing and account management functions. The “Light MVNO” will have in addition, its own applications and services in order to differentiate itself further in its retail mobile access services.

As a final option for development, the MVNO could invest in some elements of its own network infrastructure, for example interconnection links with other (fixed and mobile) operators and network switches. In the above diagram a mobile operator with a radio access network is categorised as an MNO, but there is also an interim step between “Full MVNO” and “MNO” whereby the MVNO has acquired spectrum resources for part of its network coverage and remains with its host MNO (or uses national roaming) for its other coverage requirements.

The presence of MVNOs in the mobile access market represents an increase in retail competition. A small but significant rise in mobile access services prices by mobile network operators is likely to result in customers switching to MVNO services.

The first MVNO (Eclectic, branded “Hallo”) entered the Georgian market during 2022. The retail service it offers is functionally the same as the existing retail services offered by the existing mobile operators (mobile voice, text messaging and data). This is possible because Eclectic’s mobile access service is hosted on the existing network of Silknet, the second largest mobile Georgian operator. The cost of Eclectic’s market entry was limited only to the establishment of a sales, billing and customer support structure and although not negligible, this cost was relatively very low in comparison with the cost of establishing a mobile network infrastructure with national geographical coverage. Eclectic can be classed as a “Second brand MVNO”.

Substitution of national roaming service for wholesale MVNO access

The use of wholesale mobile access for national roaming allows an access buyer to serve its own mobile subscribers in geographical areas outside its own network’s geographical coverage. This national roaming service could be particularly important to any new market entrant that starts its infrastructure investment roll-out in limited locations before building out into the desired national coverage over a period of time.

National roaming has not been used in Georgia. The assignment of spectrum resources in Georgia for use by mobile operators has placed national coverage obligations on all operators within defined time limits. The three operators with spectrum resources have invested to provide national coverage and would argue that there is no need for national roaming to be implemented. In a forward-looking analysis, there should always be the possibility that new market entrants, with or without their own spectrum resources, should be able to enter markets.

An MVNO could seek to replace some or all of its wholesale inputs obtained from a wholesale supplier of MVNO access with a national roaming solution. A small but significant rise in the supplier's wholesale MVNO access charge could encourage the MVNO access buyer to switch to national roaming in order to offer an equivalent retail service. An MVNO, before switching to national roaming, should generally obtain spectrum rights and have at least some portion of its radio access network. In this way where both forms of wholesale access are being used gives the MVNO a forward development path to gain more control of its own service inputs.

It is considered that national roaming is a demand-side substitute for MVNO wholesale access and it is therefore concluded that national roaming is in the same relevant market as wholesale mobile access.

Substitution of co-location service for MVNO access.

It is considered that co-location is a form of access that naturally belongs in the market for wholesale mobile network access. Access to co-location at existing sites is especially important for newcomers building a mobile network. The close relation between access for national roaming and co-location also indicates that co-location is a part of the relevant wholesale market.

There is also very little-known use of co-location as part of the wholesale mobile access market in Georgia. In a forward-looking analysis, the exploitation of 5G technology for a new range of mobile services (for example IoT within vertical sector networks like healthcare, agriculture, manufacturing, transportation). Although it is not expected that 5G retail use will become available in Georgia within the next 3 years, the necessary investment planning for the possibilities in these vertical sectors (with or without partnerships involving existing mobile operators) is likely to start within the forward-looking time horizon of this market analysis.

An MVNO could seek to replace part of its wholesale inputs obtained from a wholesale supplier of MVNO access with a co-location solution. For example, in order to gain more control over more of its own infrastructure, the MVNO could seek access to locate new equipment at premises owned by an existing operator. The MVNO could then invest in some mobile infrastructure equipment (for example switching, transmission and supporting equipment) and locating that equipment at the same premises as an MNO switching centre, or an external chamber or street cabinet. In the case where an MVNO gained access to its own spectrum resources, co-location access would be sought at an MNO's base station to install the MVNO's radio transmission equipment on the same masts.

In this way the access buyer can own and operate some important elements that are used in providing its retail offering. A small but significant rise in the supplier's wholesale MVNO access charge could encourage the MVNO access buyer to switch at least part of its required inputs by using a co-location service in order to offer an equivalent retail service. It is therefore considered that co-location is a demand-side substitute for MVNO wholesale access.

It is therefore concluded that co-location is in the same relevant market as wholesale mobile access.

Substitution of wholesale MVNO access by self-supply

MVNO access can be substituted by self-supply either directly or indirectly. First, MVNOs may consider self-supplying one or more of the building blocks of MVNO access, where the former is more cost-efficient. The SSNIP test considers the possible impact of a small but significant rise in the wholesale charges applied by the MNO access provided, on the inclination of MVNOs to use alternative means of supply, including self-supply. Second, self-supply by competing vertically integrated MNOs will constitute a substitute to an MVNO service, where due to a small but significant rise in wholesale access charges applied by the MNO access provider to this MVNO, the latter must increase its retail prices and that some of its end users switch to another MNO.

Even if, direct self-supply will generally not occur in the short term, indirect self-supply should be considered as a substitute for wholesale supply and should be considered as in the same market as wholesale mobile access. It is therefore considered that self-supply is a demand-side substitute for MVNO wholesale supply.

5.2. Supply-side substitution analysis

A supply-side analysis should consider whether an owner of other types of the networks would be able in short to medium period to provide to wholesale access buyer another means of supplying the same functional service (defined as substitutes on demand side).

It is considered that the provision of an MVNO wholesale access service could not be done on a national basis using any other means than by using the MNO supplier's network. The full facilities required by the retail users include voice, text messaging, data access, international roaming, access via 2G, 3G and LTE (but not yet 5G) technologies. This set of facilities could not be supplied nationally by an upstream wholesale access supplier arrangement using any other means, for example a fixed network or a satellite-based network.

5.3. Definition of the geographical market

The legal and regulatory conditions applying to the wholesale mobile access market are the same in the whole territory of Georgia.

As already concluded in Chapter 4.3., the geographical market for retail mobile access services is a national one. In the same way, different pricing or different product quality for wholesale services are not considered justifiable and does not suggest any case for geographical differences with respect to either product quality or pricing in the Georgian wholesale mobile access market. This case is the same whether the access is for national roaming, MVNO access or co-location services. The required functionality and costs involved to establish and operate these wholesale services are considered to be the same at all locations within Georgia.

5.4. Conclusion on relevant wholesale market definition

In summary, the relevant wholesale mobile access market includes MVNO access, national roaming and collocation services, together with self-supply of all operators present in the relevant retail market analysed in previous chapters. The geographical market is defined as the national territory of Georgia.

5.5. Three-criteria test

5.5.1. First criterion: The presence of high and non-transitory entry barriers

Generally, the first criterion to be investigated is whether there are high and non-transitory structural or regulatory entry barriers in the wholesale mobile access market. Entry barriers limit competition by reducing new providers' opportunities to become established in the market and may take different forms and occur for various reasons, so there is a distinction between structural and regulatory entry barriers.

Structural entry barriers

In assessing entry barriers, the starting point is a recognition that the three existing mobile network operators have national coverage obligations. On this basis, the assessment under the first criterion should be to consider the entry barriers which a new mobile provider would encounter in rolling its own infrastructure. Structural barriers to entry are barriers preventing or impeding entry resulting from original cost or demand conditions that create asymmetric conditions between incumbents and new entrants. In the case of mobile networks, high structural barriers may be found to exist if the market is characterised by absolute cost advantages, substantial economies of scale and/or scope, capacity constraints and high sunk cost.

The following types of structural barriers are considered relevant:

- **Control over infrastructure that is not easily duplicated, including sunk costs**

In the case of mobile networks in Georgia, the three existing operators control their own infrastructure that has taken time to establish and is therefore not easily duplicated. As such this presents a substantial entry barrier for potential competitors. Only by a new entrant making use of these networks via wholesale mobile access agreements can a new entrant enter the market, for example by co-location at another operator station or by outsourcing to another party. Access to existing locations will be of great importance to reducing the time and the costs of expanding a new network. However, an established operator or building owner can influence any new operator's rate of establishment because permission needs to be granted and this permission is determined to a great extent by the existing operator or property owner. The establishment of base stations in itself still constitutes a significant entry barrier in the wholesale market.

Sunk costs (i.e. those costs that have been incurred and cannot be reversed) are one of the most central entry barriers and are particularly relevant in the electronic communications sector. In the creation of national mobile networks, these very significant costs typically involve developing, building infrastructures and installing networks, plus the costs related to the establishment of a brand and marketing costs. Access to existing infrastructure can contribute to reducing entry barriers to some degree. It is relevant here to refer to the EU Directive on measures to reduce the cost of deploying high-speed electronic communications networks⁶². The Directive gives among other things instructions on access to physical infrastructure, coordination of civil works and in-building physical infrastructure. In Georgia, the proposed regulation (that is expected to become law during 2023) incorporates these cost-reduction measures. This might contribute to reducing the costs of duplication of infrastructure and could reduce entry barriers for operators that intend to build infrastructure, by giving them expanded rights concerning access to existing infrastructure.

Mobile customers' expectations of quality and coverage will probably still have a great influence on how a new operator must dimension its mobile network. To be competitive, new providers of mobile communication are expected by end-users to be able to offer nationwide service very quickly after their initial service launch. New operators that might become established on the basis of gradual investment will depend on access to existing infrastructure, in order to become established as network owners.

By use of MVNO access, a new operator can achieve full national coverage by using, under a wholesale agreement, the full capacity of the network under the control of an existing operator. In this case, the MVNO has no control over its service performance and little opportunity to customise its retail offerings in a competitive market. Until the MVNO can develop from a 'Light MVNO' to a 'Full MVNO' it cannot have sufficient control over its service offerings and become a full competitor in the market. It is too soon to tell how the first MVNO, launched during 2022, will develop. The time taken to negotiate a wholesale agreement with its host operator was unduly long, with the negotiating power resting largely in the hands of the established host player.

In summary, it is considered that there is little doubt that the roll-out of a mobile network of sufficient size requires extensive resources and therefore represents a significant entry barrier.

- **Economies of scale and economies of scope**

Economies of scale exist in mobile networks when an increase in network size and capacity leads to falling unit costs. Economies of scale tend to strengthen the market power of established operators and can thus function as an entry barrier for new network operators. The established network operators have dimensioned their networks to achieve their optimum utilisation. A new network operator will need time to build up a customer base and

⁶² Directive 2014/61/EU, see e.g. http://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=uriserv:OJ.L_.2014.155.01.0001.01.ENG

traffic and cannot in the initial phase expect to derive economies of scale to the same degree as the established network owners. In this way, economies of scale contribute to creating an asymmetrical relationship between new and established providers, which in turn will weaken the competitiveness of a new operator.

This existence of economy of scale in mobile networks has been recognised generally by regulators in their application of asymmetric mobile termination fees. In recognising economies of scale, regulators have typically allowed smaller mobile operators (for example in their start-up and initial growth phases) to charge higher termination rates that reflect their higher unit costs. At the point when they achieve comparable economies of scale, then the regulators will withdraw the asymmetry such that all the mobile operators charge the same mobile termination fee.⁶³

The economies of scale of a network operator are primarily found in the access network, which consists of cost-intensive investments such as base stations, masts and radio equipment. Since Georgia has a relatively small population, and in some areas there may be low traffic volumes, it is difficult to achieve full economies of scale.

Economies of scope in mobile networks occur when the average unit cost reduces as more than one mobile service is carried over the same network. Examples include a shared infrastructure or a shared administrative system. The modern digital technology of mobile networks ensures that voice, text messaging and data traffic is carried as if these were the same service. Economies of scope within mobile networks can only occur if the traffic of several operators use the same network to carry their traffic, making the situation largely analogous with economy of scale. The impact of these economies can be reduced if new providers choose to start rolling out only in densely populated areas with the greatest traffic demand. Two of the three mobile network operators in Georgia are also providers of fixed services in the retail market and are therefore already able to benefit from economies of scope. Other operators with existing fixed only or mobile only services should be able to seek and achieve economies of scale and scope by becoming integrated fixed and mobile retail service providers.

The extent to which a new provider with a national roaming agreement would be able to benefit from economies of scale depends on how quickly the mobile traffic is transferred to its own network and how much is produced via national roaming. The host mobile operator will be able to influence the opportunity for an access buyer to utilise economies of scale. Volume commitments or price levels dictated by the host operator would be an effective way influencing how quickly new network owners can achieve falling unit costs. Both volume commitments and price structure can therefore have a negative influence on the opportunity for an access buyer to utilise economies of scale.

⁶³ https://www.berec.europa.eu/sites/default/files/files/documents/erg_07_83_mtr_ftr_cp_12_03_08.pdf

The opportunities for a new MVNO operator to achieve economies of scope and scale are very limited until the MVNO can develop its own network infrastructures. In Georgia, the first MVNO has entered a long-term agreement with its host operator, and it is considered to be likely that this agreement provides more opportunities for the host operator to benefit from economies of scale and scope than the MVNO.

Even though the significance of economies of scale could be reduced if new providers start their roll-out only in densely populated areas, using national roaming in less populated areas, economies of scale constitute a significant barrier to new entry to the mobile market. In Georgia there are no national roaming agreements. Outside the urban areas, the construction and operation of mobile networks in Georgia entails significant fixed costs. In combination with a relatively low population density, this means that unit costs can be disproportionately high unless a customer base of a certain size can be rapidly achieved.

The best opportunities to achieve economies of scope are considered to be by fixed network operators seeking to add mobile services to their retail service offerings. An existing fixed operator could seek to achieve national mobile coverage by using MVNO access, national roaming and co-location. A new integrated fixed and mobile services provider in Georgia would still face significant entry barriers because it would either have to build its own mobile network infrastructure or have to negotiate wholesale agreements with an existing mobile network operator (that already has achieved more economy of scale and in two cases- Silknet and Magticom- economy of scope).

In summary, it is considered that achieving the necessary economies and scale and scope from the introduction of new mobile operators would be difficult to achieve in Georgia and that this represents a significant barrier in entry.

- **Access to financial resources**

Access to financial resources will be of great importance to an operator's opportunity to enter markets requiring large initial investments. As described above, it will be very capital-intensive to establish adequate alternatives to the existing mobile networks with national coverage in Georgia including establishment of sales network.

Local financial lending markets in Georgia have typically higher commercial lending rates than in the EU, so it is considered that access to financial resources is a significant entry barrier for new investments in Georgia. According to a 2018 bank lending survey⁶⁴ covering all business sectors, there is a noticeable level of loan rejections and credit-constrained firms in Georgia. The lack of availability of loan financing is particularly evident for smaller firms, with the lack of eligible collateral typically part of a firm's inability to comply with banking sector requirements. Financing through alternative capital markets is not yet developed in Georgia. Any local funding would in any case have typically higher commercial lending rates than in the

⁶⁴ https://www.eib.org/attachments/efs/smes_and_private_sector_financing_in_georgia_en.pdf

EU, so it is considered that access to financial resources is a significant entry barrier for new investments in Georgia.

Over the past 10 years, acquisitions and changes of ownership has altered the debt and financing structure of the Georgian operators. Investments in the telecommunications sector, principally for establishing national fibre and LTE mobile networks has been led by Magticom, putting it in the leading market position. Silknet has also invested in a national LTE network and is establishing its own fibre network. Cellfie remains a mobile-only player and is yet to complete its investments in LTE.

It is considered that access to financial resources is a significant entry barrier for new investments in Georgia.

- **Access to sales channels**

Access to the distribution and sales networks has already been in the consideration of the retail market, where it was concluded that the size of an operator's distribution network of retail shops has great significance to winning customers.

In summary, the presence of extensive physical sales channels run by the established mobile operators will continue to represent a significant market entry barrier.

In Georgia, many end-users subscribe to more than one mobile operator, in order for them to have a day-to-day flexibility to use the different operators' retail packages, price offers and special deals. It would therefore benefit many mobile users in Georgia to be able to use several sales channels in a single buying process, in order to obtain sufficient selection and price information, whether that be network-based or physical sales channels, or a combination of the two. The same advantage to users (from using several operators' sales channels together) can be considered for in-service customer contacts, including direct marketing, user support, billing and payment, problem reporting and resolution.

It is considered that it would be time consuming and expensive for a new entrant to negotiate commercial deals to obtain access to existing physical sales channels, especially if these channels are owned or dominated by the existing mobile operators. The cost and time that would be needed to negotiate and install a presence in the retail sales and distribution channels of the existing operators presents a significant barrier to entry for any new market entrant.

Each of the three Georgian mobile network service providers has an extensive sales and distribution network consisting of retail shops giving convenient national access to their services for Georgian consumers and businesses. Sales channels may be either physical or on-line based. A relatively low investment will be required to establish an on-line based sales channel. Physical (retail shops) sales channels for the mobile market are significantly more costly to establish. If the existing mobile service providers already have well-established channels at attractive locations, this might lead to considerable inequality between the established providers and any new providers.

On-line sales and distribution channels are now ubiquitous in most European countries and many consumers now naturally chose the internet as their primary channel for interacting with telecommunications operators including researching what is available, purchasing, solving their problems and paying their bills. In Georgia, it is considered likely that the established operators will retain their extensive physical sales channels at least for the forward-looking time horizon of this market analysis. Many end-users in Georgia will still prefer to use physical channels, although the adoption of on-line channels is expected to increase in the future, following the trends in other countries.

Regulatory entry barriers

Regulatory entry barriers exist in the mobile access market if market access is limited by regulatory conditions, for example official licences and authorisations, resource restrictions, e.g. concerning frequency resources, or restrictions with regard to health, environment or safety (direct regulatory restrictions). Furthermore, various forms of price regulation may also have entry barrier effects.

- **Authorisations and access to spectrum**

In Georgia there are no requirements for a new player to obtain permission to enter the electronic communications market. It is necessary as in most other countries to have a licence to control and use frequencies for a publicly available mobile services in an operator's own network. Where frequency licences are considered to be a finite resource, then lack of access to frequencies can be a regulatory entry barrier. In Georgia there are only three operators (Magticom, Silknet and Cellfie) that are granted rights of use of spectrum in their mobile networks.

An assessment of regulatory entry barriers should consider not only whether there are frequencies available, but whether the available frequencies offer the same potential to enter the market and compete with the existing operators. An operator considering establishment in the relevant market must also take into consideration that frequency licences are generally given for limited durations. In Georgia, for the purposes of achieving national competitive coverage, mobile spectrum licences have been issued that have specific and time bound obligations to cover all population settlements of a given size by a certain date. The deadline set for full coverage using the most recent spectrum release has already passed.

It is concluded that access to spectrum resources still represents an entry barrier to the mobile market in Georgia.

- **Price regulation**

With respect to mobile sector price regulation, only wholesale call termination prices are currently regulated⁶⁵. Although retail mobile tariffs have been subject to regulation in the past, this has been removed. Mobile access charges are not regulated. It has to be considered

⁶⁵ ComCom Decision 240/9 of 21st May 2010 and most recently updated on 19th October 2017

if the absence of tariff regulation, or the introduction of new tariff regulation would raise or lower mobile market entry barriers. A new market entrant faces higher unit costs of supply than established market players, who already benefit from economies of scale. Higher wholesale charges for new entrants are justifiable in order to reflect their initially higher unit costs and therefore to reduce their barriers to market entry and expansion.

In many countries, regulators have set higher mobile termination charges for use by new entrants than the termination rates applied to established mobile operators. This was used in Georgia for the most recent market entrant (Cellfie in 2007) but their termination fee has now been reduced to the same symmetric rate applied to all three operators.

Conclusion – first criterion

It has been considered that in terms of structural barriers, that the following are significant and non-transitory barriers to entry into the wholesale mobile access market in Georgia:

- Control over existing infrastructure including sunk costs
- Economies of scope and scale
- Access to financial resources
- Access to sales channels

In August 2023, ComCom has auctioned spectrum for developing 5G services in Georgia⁶⁶, but most of the available lots of spectrum have not been awarded. Actual spectrum assignments are described in Chapter 6.2.4. Details of the further award process have not yet been finalised, but it is currently expected that same procedures as previous releases will be followed. Those previous releases did not result in spectrum being awarded to new mobile market entrants. It is considered that regulatory decisions could lead to more advantageous conditions for greater competition in the mobile access market within the forward-looking period of this market analysis.

Therefore, it is concluded that in terms of regulatory barriers, the following potential types of barriers to entry remain in the mobile market in Georgia, but are not considered to be non-transitory:

- Access to spectrum resources
- Price regulation

Price regulation aimed at reducing mobile market entry barriers have been applied to the most recent mobile market entrant and are available as a regulatory tool to help reduce the economy of scale entry barrier for future market entrants.

The extent to which potential regulatory barriers will be met will depend on how spectrum and any future price regulation is applied.

⁶⁶ <https://comcom.ge/en/yvela-siaxle/5g-auction-concludes-the-new-technology-will-be-implemented-by-cellfie-mobile.page>

It is concluded that the first criterion, the existence of high and non-transitory barriers to entry is fulfilled.

5.5.2. Second criterion: The market is not tending towards effective competition

Consideration should be given to any structural factors that may lead the market to move towards sustainable competition, even though the market is affected by high, non-transitory entry barriers (see Chapter 5.5.1). The second criterion in the three-criteria test considers whether the wholesale mobile access market in Georgia, behind the entry barriers, has characteristics which mean that it is not moving towards sustainable competition.

The assessment under the second criterion, by definition, is forward-looking. In the EU markets, the second criterion is not fulfilled if there is sufficiently clear evidence of dynamics in the market which can indicate that the market will tend towards sustainable competition without *ex-ante* regulation⁶⁷. This requires a fairly broad assessment of the existing and expected market conditions. The market under analysis in this context is the wholesale market for mobile access.

The time taken for the new MVNO to negotiate and conclude the necessary commercial agreement with the MNO was unduly long. This was largely because it was the first agreement of its kind in Georgia and that for a period of many years, the established mobile operators have resisted the entry of MVNOs in order to protect their established market shares. Only with the supporting actions of ComCom has it been possible for potential MVNO entrants to be able to initiate discussions with the existing mobile operators. Eclectic has been successful in entering the market, but it is too soon to tell if its business model, largely dictated by its commercial contract with Silknet, will be successful. In a best-case scenario, the advantages from introducing MVNOs are clear:

- The consumers in the market have greater choice in a more competitive market, often characterised by greater innovation and better constructed mobile packages towards different user needs
- The MNO host can reduce their overall unit costs by having part of their network traffic carried at near zero cost-of-sale. Any additional traffic carried over the MNO host network from the MVNO users will be carried at near zero marginal cost.

It should now therefore be possible, within the forward-looking time horizon of this market analysis, for other potential MVNOs to conclude commercial agreements with existing mobile operators and to enter the retail mobile access market. Given the established position of the three existing MNO operators and their known reluctance over a number of years to cooperate with MVNO-based market developments, it is considered unlikely that any new MVNO, at least at the time of its market entry, will be anything other than a reseller of the basic retail mobile service functionality of the existing mobile operators (“own brand” or “second brand” MVNOs). This means that the MVNO would be likely to follow similar tariff

⁶⁷ ERG's Report on Guidance on the application of the three-criteria test

structures and to have only a limited scope to differentiate their services in terms of component features (for example offering different data speeds, different service quality levels and significantly lower prices). These service factors are likely, without regulatory intervention, to be tightly defined in the commercial agreements agreed by MNOs, with little scope for flexibility or scope for amendments during a relatively a long contract period.

In the longer term, in the interests of consumers, it should be possible for MVNOs to have a wider scope for mobile service differentiation. This could be achieved firstly by a more transparent commercial negotiation process (with for example a clear basis for two-sided cost and risk sharing). Further progress could be made by new market entrants by investing in their own network infrastructures (for example for international connectivity) or by obtaining their own spectrum resources. This would increase an MVNO's overall control of the services it can offer to the retail market and to reduce their dependencies on their hosting MNO operator.

However, it should not be generally assumed that all MVNOs wish to progress through all these development stages and become "Light" or "Full" MVNOs. Some MVNO founders never intend their enterprises become network operators. Many entrepreneurs or management groups that are attracted to MVNO business models are largely marketers or retailers from other industries. For example, among the most successful MVNOs are those operated by large supermarket chains, who already have significant consumer contact through their existing retail shops and can attract MVNO business by allowing their users to pay their mobile usage bill together with their grocery bill. Using this business model, the largest UK MVNO (Tesco mobile with 17% of the total UK mobile market⁶⁸) could be classed merely as a "Light" MVNO.

Consideration should be given to the possibility that an existing MNO could decide to establish an MVNO to offer a complementary service to its own mobile access retail offerings. This could be the case if the MNO wanted to focus on new market niches and to achieve this, they consider that the best strategy is to have a distinct internal cost centre or separate marketing and sales organisation, realised by establishing an MVNO. Some MNOs in the EU own and operate MVNOs as part of their multi-brand strategies, frequently allowing these entities to operate largely independently with their separate management and employees.

There is also the possibility that an existing fixed-only operator could decide to establish an MVNO to add the service to its own retail fixed services, for example in a triple-play or quad-play bundle. The resulting service-integrated operator has the advantage of its own network infrastructure for fixed services that could be exploited, at least in part, to enable more control over the features of its own mobile retail services.

Another separate theoretically possible case (albeit at this time a largely hypothetical case in practice) would be that an existing MNO decided to change its mobile access supply model to become an MVNO and cease to be an MNO. This could happen for example if an existing MNO

⁶⁸ <https://www.statista.com/statistics/375986/market-share-held-by-mobile-phone-operators-united-kingdom-uk/>

reached a point where it did not have access to the required funding to sustain its presence in the capital-intensive mobile network infrastructure business, or in a case where an existing MNO failed to obtain further spectrum resources at a future auction, or for some reason could not renew its existing spectrum licences. If an MNO decided then to cease its spectrum-based business and become an MVNO, then this would be likely to give rise to a reduction in the level of overall competition in the retail market. This is because the removal of a network infrastructure would lessen the scope in the market for technological advancement, would reduce scope for overall cost-of-supply efficiencies and also would reduce the scope for further new MVNO-type operators to enter the retail market. The required regulatory actions that would need to be applied in this instance (in order to prevent potential loss of competition and harmful impact on consumers) is considered to be outside the scope of this market analysis.

It is therefore concluded that in forward-looking time horizon of this market analysis, a significant number of wholesale mobile access agreements will be made that will have a real impact on the competitive situation in the mobile retail market.

For this reason, competition at the retail level will to a certain degree reflect the competition at wholesale level, so elements of the analysis under the second criterion should be related to the competition situation in the retail markets (downstream markets) for mobile services, as set out in Chapter 4.5. This is because in the Georgian mobile wholesale access market, the extent of MVNO access is still very small. Therefore, the wholesale mobile access market is almost exclusively made up of self-supply by the MNOs from their network operations to their own retail organisations. In this case, the market shares of each operator in the wholesale mobile access market will be substantially the same as their respective retail market shares.

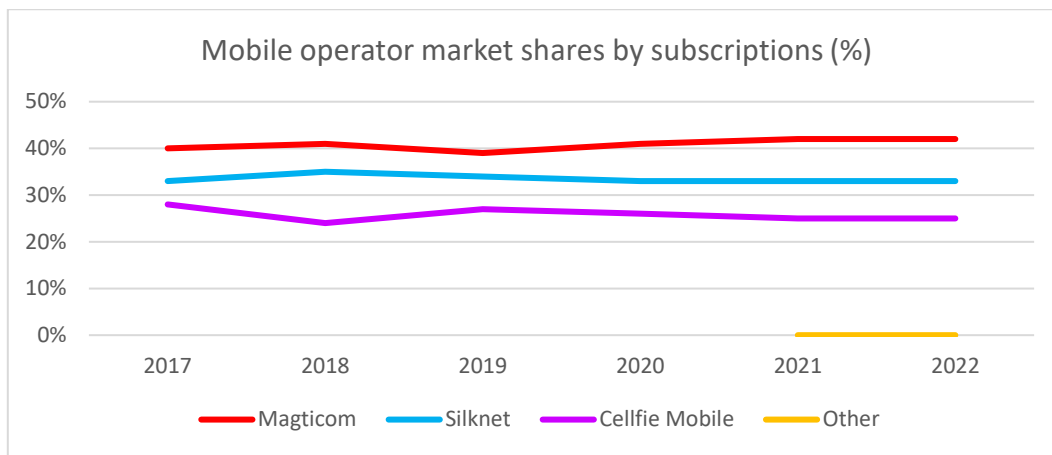
This analysis of the second criterion will take a forward-looking perspective towards the following aspects:

- Development in market shares
- Market concentration
- Access to information, switching costs and lock-in mechanisms
- Market dynamics
- Price development
- Agreement terms at wholesale level
- Market behaviour
- Significance of a third mobile network
- Potential competition

Development of market shares

Over the last 6 years, the retail market shares of the three mobile operators have not changed significantly, in terms of numbers of subscribers.

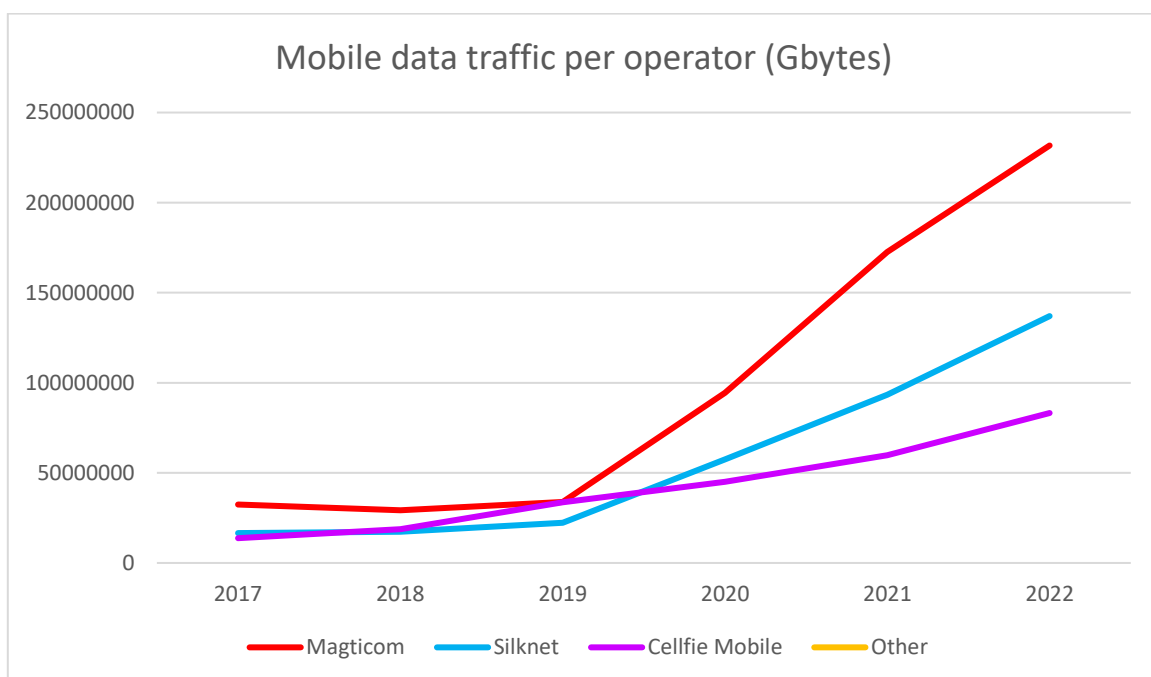
Figure 9 Development of mobile market shares



Source: ComCom

The development of potentially available wholesale mobile broadband access capacity must be considered as having followed the same trend as the market shares calculated at the retail level. This is because during the last 6 years, the only substantive means of wholesale mobile access has been self-supply within each mobile network operator's business. The network operations of each of the three MNOs has been used only to supply their own respective retail operations. This has been the case until late in 2022 when the first MVNO entered the market. In the case for other forms of wholesale mobile access, national roaming between MNOs does not exist in Georgia and co-location (the sharing of facilities at mobile transmission sites) is at a very low level.

Figure 10 Mobile data traffic growth



Source: ComCom

The most important indicator of competition will be based on the data volumes carried by the mobile operators. The growth in data traffic in each of the three mobile operator's networks is shown in Figure 10. Since 2019, Magticom's data traffic has grown more rapidly than Silknet's and Cellfie's. Data traffic is growing strongly as a result of the growth in data subscriptions and in the increasing amount of data each subscription uses on average. During 2022, the number of data subscriptions increased by 9.4% and the data traffic per user increased by 26%. Figure 10 shows the trend of data traffic growth for each mobile network operator.

The new MVNO entrant (Eclectic) will gain some market share, but this is likely to be from new mobile subscriptions, rather than subscriptions ported from the existing operators. Any existing mobile subscribers that do switch to the new MVNO are equally likely to come from one existing MNO as from another, therefore leaving the overall market shares largely unchanged.

In order to consider whether the mobile access market would tend towards effective competition, it is necessary to take a forward-looking perspective to consider the potential factors that could have an impact on the development of market shares in the future. In considering the possible development of market shares, we could speculate that the share of the mobile market served by MVNOs could increase over the next three years up to a possible level of around 1% to 5% of total subscribers, along a similar market development path as in other countries. Any market share loss from the 3 established mobile operators (resulting from end-users switching from these to MVNOs) is likely to be small and equally distributed amongst the 3 operators.

Many Georgian mobile subscribers are likely to purchase an additional subscription from Eclectic, rather than cease an existing subscription. In any case, it is considered that the introduction of MVNOs into the market, although having a positive impact on competition when viewed by the end-users, will not have a significant effect on the overall market dynamics when considering the relative market shares of the established players, at least in the short to medium term.

It is concluded that the retail mobile access and wholesale mobile access market shares are stable over time and there is no reason to predict that market shares will significantly change over the forward-looking time horizon of this market analysis.

The main potential influencing factors towards any significant changes in mobile services market shares are considered to be:

- The award of spectrum for use by new mobile operators
- A significant development in the number of MVNOs
- The business plans of the mobile operators for investing in 5G

Regarding new spectrum awards, this has already been considered in the analysis for the first criterion with respect to barriers to entry. It was considered that although the need for a new

market entrant to acquire spectrum resources does represent a barrier to market entry, this is a transitory barrier because the award of spectrum is influenced by the policies of the ComCom, which could therefore make spectrum award to any new players easier, for example by reducing geographical coverage obligations. The present mobile coverage obligation requires that all three mobile operators must serve at least 90% of settlements above a certain population size in Georgia. Any coverage requirements for a future spectrum licence applicant will largely determine their investment requirements for reaching a fully competitive position in the mobile market. As with previous statements in the analysis of the first criterion, achieving national coverage is greatly facilitated by a wholesale market for mobile access, giving new entrants MVNO access, national roaming and/or co-location opportunities.

The structural market entry barriers inherent in the previous section still remain, even if the spectrum barriers (considered not to be non-transitory) remain. These structural barriers will still therefore contribute significantly to the development of market shares in the future because they will often determine any new entrant's investment levels and infrastructure roll-out rates.

In Georgia, the most recent mobile spectrum licences have been issued by open competitive tendering, with reserved prices at auction. Although reserve prices have fallen significantly. A new entrant is therefore expected to compete against other operators with sufficient financial strength to meet at least the reserve price. The financial risk being faced by the potential market entrant is still largely unknown because there is no certainty about the willingness of the other bidders to pay high prices to obtain spectrum. In this respect, the larger the amount of spectrum made available at the auction (for example to make available more than enough to satisfy all expected needs) and the lower obligations specified for the winners, the lower will be the risk and financial outlay faced by a new market entrant.

In a forward-looking perspective, the opportunities presented by 5G technology and its potential for new services (including IOT possibilities and a range sector-specific value propositions) make it important that the widest range of new entrants (from the telecom sector and beyond) should have access to new spectrum resources. Although it has already been concluded that 5G technology-based services are unlikely to be available in Georgia for at least the next 3 years, the investment decisions required to enable its potential to be exploited will start to be made during this period. This points to making further spectrum releases as generous as possible (in the release of capacity) and at the lowest possible reserve prices together with less onerous coverage obligations, in order to reduce entry barriers to the market and to maximise the potential for widespread exploitation of 5G technology.

It is a regulatory requirement in Georgia, as in many other countries, for the issuing body for spectrum resources (in Georgia's case ComCom) to hold public consultations before any final decisions on the proposed auction process, the amount of spectrum to be released, the reserve prices paid and the obligations to be met by the winners⁶⁹. In this respect, the

⁶⁹ <https://comcom.ge/uploads/other/5/5484.pdf>

strategies of the established market players during these public consultations are generally expected to be in favour of the status-quo. Their views favour conditions that favour awards only to the existing, rather than new operators. At auction, the established players would therefore also be expected to pay higher prices in order to reduce the possibility of new players winning spectrum. Equally, the established players would be expected to support unduly stringent obligations that only they could be realistically expected to meet.

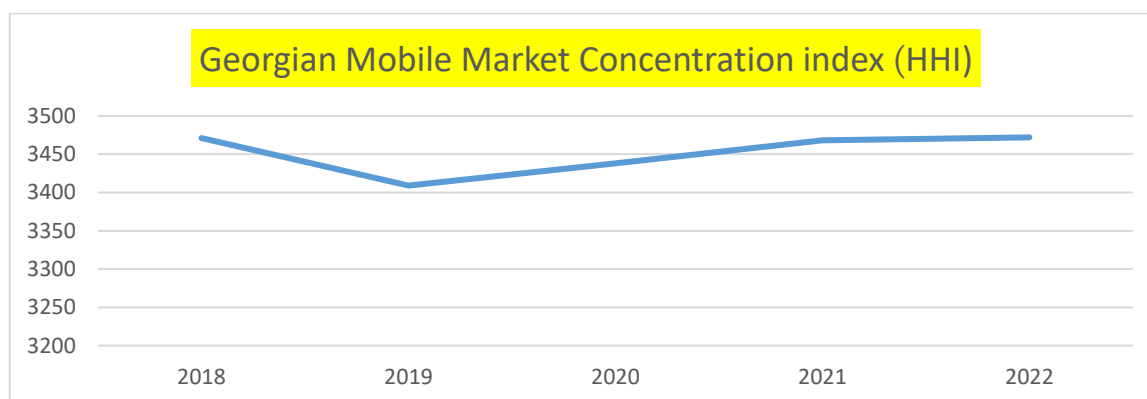
Over the forward-looking time horizon of this market analysis and taking account of the three critical issues (award of new spectrum, development of MVNOs, investments in 5G), it is concluded that there is unlikely to be any significant development of market shares. In summary, this is because:

- The award of new spectrum resources is considered likely still to favour the “status-quo”, in other words most, if not all, spectrum will be awarded to the existing mobile network operators
- The existing MNOs are unlikely to change their position towards the development of full MVNOs. Any new MVNOs are likely to remain only “branded resellers”, “2nd brand” or “Light” MVNOs, none of which will gain any significant market share
- The existing MNOs will continue to decide that there is no convincing business case for investing in 5G. Any potential new 5G operator faces significant market entry barriers.

Market concentration

The purpose of a concentration index is to indicate the intensity of competition in the market. With only 4 market players (one of which has only recently been launched and still has insignificant size), the most appropriate index is considered to be the Herfindahl-Hirschman index (HHI). This is calculated by adding the squares of the market share results for each market player. This index tends to give more weight to players with the higher market shares. The theoretical range of possible values is from 2,500 (with 4 operators in the market) to 10,000, with a lower value indicating less market concentration and therefore better market competition. A decline in the HHI index will generally indicate increased competition intensity and reduced market power.

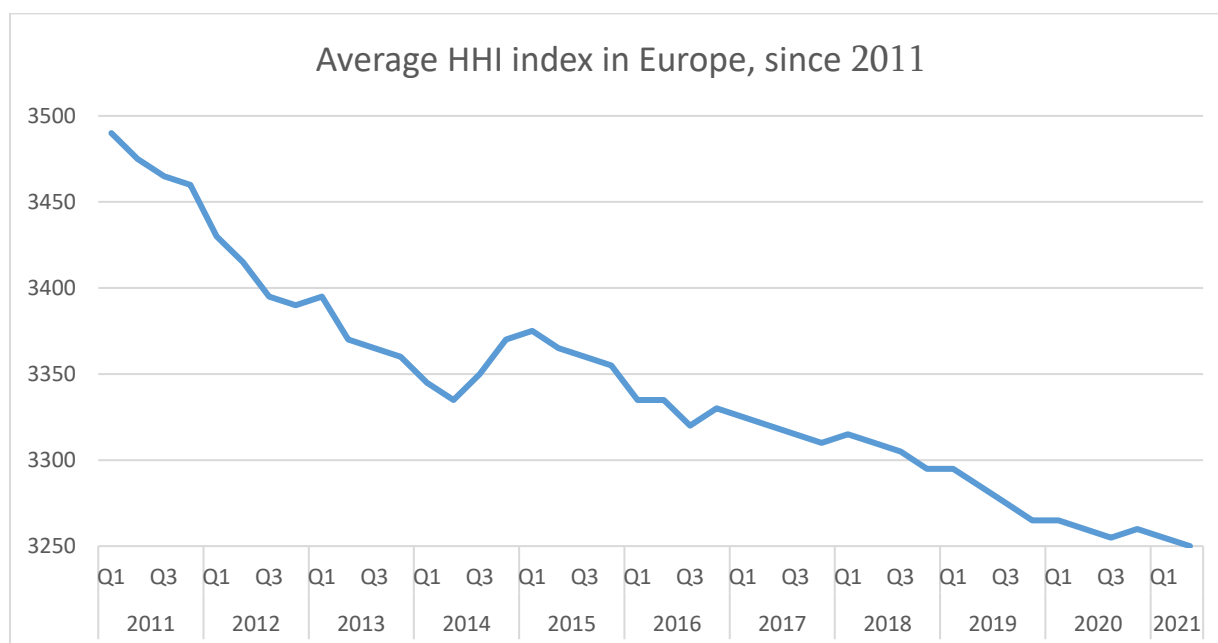
Figure 11 Mobile market concentration (HHI)



Source: Derived from ComCom data

The theoretical lower limit of the HHI index is 0 (corresponding to an infinite number of operators in market). The maximum value of HHI is 10,000 corresponding to a single provider. ~~In general terms, a value of HHI less than 1,000 indicates a highly competitive market.~~ A reduction in the calculated result for a market indicates an increase in competition. The lack of change in the HHI index calculated for the Georgian mobile market over the last 5 years is an indication of a lack of market dynamics and a trend that does not suggest a market that is tending towards more effective competition. The finding a of lack of decline in market concentration **in Georgia** is in contrast to the average situation in the mobile markets of Europe. This is shown in Figure 12.

Figure 12 Mobile market concentration in Europe (HHI)



Source: GSMA⁷⁰

European mobile market concentration was recorded at around 3,500 in 2011. Since then, Europe's market competitiveness has increased such that the HHI has declined to 3,250 by 2021. The result for Georgia remains at 3,500 in 2022 (see Figure 11) indicating a continuing lack of competitive dynamics in the Georgian mobile market.

Access to information, switching costs and lock-in mechanisms

Information regarding the offers available from mobile suppliers can be obtained from each operator's websites (except in the case of specialist business subscriber services, where users are asked to contact the company for information). Potential customers can get information and advice by calling sales desks run by the operators, or by calling into a physical store location. The network of shops run by each of the established 3 operators is extensive, giving

⁷⁰ <https://www.gsma.com/publicpolicy/wp-content/uploads/2022/11/Competition-Dynamics-in-Mobile-Markets.pdf>

effective national coverage. The information given by each operator is relatively clear, but it this does not necessarily allow easy comparison between the offers of the different operators.

Business users with more complex needs can access more specific advice from specialist teams in the larger operators that have experience in a range of fixed and mobile services.

The fourth mobile operator has just entered the market and has only limited information about service offerings on its website. The only source of customer contact is by phone-call, e-mail or using Facebook or by visiting a single office location in Tbilisi.

In Georgia, unlike many other countries, there are no independent service comparison websites dedicated to the choice of mobile services.⁷¹ These types of on-line comparison sites keep track of the up-to-date mobile service offerings from every operator and will find the best current deal for any user (the user has to enter their expected usage of calls, text messaging and data). If introduced in Georgia, these price comparison guides could improve competition by informing consumers and also by encouraging operators to improve their deals better to match market needs.

The vast majority of individual mobile users and around 60% of business users use pre-paid mobile subscriptions. Unlike post-paid subscriptions, which are mainly used by business users, a pre-paid subscription has no lock-in potential. Post-paid deals are designed to lock the customer in for 12 months, with penalty clauses (normally an exit payment) for early closure by the subscriber.

For any user to switch subscriptions from one operator to another (with no change in the subscriber's mobile number) the independent number portability service is free to use and takes generally up to 2 days without undue restrictions or bureaucratic process. This service has a relatively low level of interest, with a declining rate of use in Georgia. Instead, as has already been noted, many Georgian mobile users subscribe to more than one mobile operator and switch services easily by changing SIM cards, in some cases using multi-SIM mobile devices.

In regard to access to information, switching costs and lock-in mechanisms, the potential to increase effective competition is considered to be limited.

Market dynamics

In the demand and supply-side substitution analyses (see Chapters 4.1. and 4.2), the market shares (over the last 10 years) in term of subscribers, it was concluded that the market has developed in a fairly static way, with only the entrance of the most recent MNO (in 2016) impacting overall market dynamics. As noted in the analysis of market share development

⁷¹ For example

<https://mobilephones.comparethemarket.com/?ref1=mobilelandingpage&AFFCLIE=CM01&apuid=undefined>

carried out for the first criterion, it is considered that the dynamics of the mobile market are unlikely to change significantly over the forward-looking time horizon of this market analysis.

The changed conditions that would have to take place in order to impact market dynamics significantly in Georgia are:

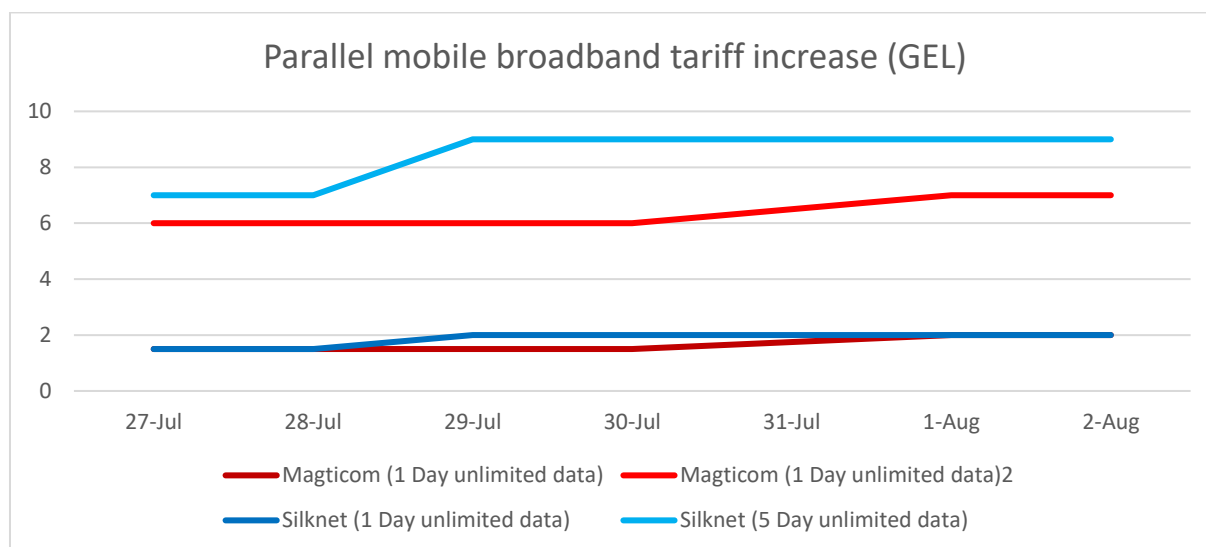
- A change in the way spectrum is awarded to ensure that spectrum can be more easily acquired by new entrants
- Obligations in spectrum licences to provide access
- MVNOs with more control over their own operations (“light” and “full” MVNOs -see Figure 8) can develop
- The existing MNOs (and any new market entrants) fully exploit the emerging potential of 5G.

Price development

The main retail price offers of mobile network operators show similarities in structure, for example each offers 30-day mobile data packages of limited and unlimited download volumes, 1 day and 5- or 7-day data deals plus bundles of data and TV.

In the summer of 2022, Silknet and Magticom increased their short-term data tariffs as shown in Figure 13.

Figure 13 Mobile prices development



Source: ComCom

Silknet increased its 1 day and 5-day unlimited data deal tariffs on 27th July 2022, followed quickly on 3rd August by a parallel increase by Magticom. Although this parallelism alone does not prove the absence of effective competition in this market, it could illustrate at least the absence of price competition. Magticom, instead of seeking to take advantage of a price advantage in the market (caused by Silknet's price increase), chose to increase its own tariffs by the same percentages in the case of the 1 day deal (both Silknet and Magticom increased

the tariff by 33%) and by a larger percentage increase for the 7 day deal (Silknet raised the tariff by 17% followed by a 29% increase by Magticom). Magticom, as the operator with the largest market share nationally in the mobile retail broadband access market therefore took the opportunity to increase its revenues following the second largest operator's lead. In a case with higher price elasticity, a challenger would be more likely to maintain its price position relative to its competitor, in order to take the opportunity to increase its market share at the expense of its higher-priced rival. Weak price elasticity could be conducive to tacit price coordination.

In the analysis of the price dynamics of the mobile access retail market it was considered that, although users face a relatively large array of price deals and offers, many end-users respond by purchasing more than one deal. This does not suggest a dynamic market where consumers make choices between operators, rather that they maximise the value from the market by spreading their choice over more than one operator.

It is considered that this relatively undynamic feature of the market is likely to persist over the forward-looking time horizon of this market analysis. It is therefore concluded that price development in the retail mobile access market will not lead to more effective competition at retail level.

In the mobile wholesale access market, there are no transparent wholesale price offers and any price development has yet to emerge.

Agreement terms at wholesale level

For the two types of wholesale facilities currently used in Georgia (MVNO access and co-location) commercial deals have been concluded privately between the parties involved. It is known that the only existing MVNO deal (between Eclectic and Silknet) took an unduly long time to negotiate and that the deal locks the MVNO into restrictive terms over a relatively long contract period. Georgia currently has a very limited market for mobile wholesale access and it is considered that, because the agreement of significantly more (and better) commercial deals appears unlikely, then wholesale level deal making will not contribute towards effective competition.

Market behaviour

As noted in the analysis of the first criterion, there are a number of factors that would have to be present in the Georgian mobile market in order to improve market innovation, market dynamics and the development of competition. These factors are:

- More motivation to invest in 5G
- Greater customisation of services towards the needs of different user groups
- Better motivation towards wholesale mobile access opportunities and terms
- Better exploitation of cost-reduction opportunities
- The creation of efficient on-line customer contact channels

- Greater service development, creativity and innovation
- A forward-looking strategic approach towards a digital society that will exploit the new opportunities and services expected to be created by 5G.

In the comparatively low presence of these market behaviours in Georgia (viewed against current global trends) there is insufficient evidence of market behaviours that will lead to more effective competition, at the retail and especially at the wholesale level.

Significance of additional mobile operators

The third mobile network operator (Cellfie) took over the role of a third mobile operator in 2007, using the BeeLine brand. The short-term impact of Cellfie's arrival was to reduce the largest mobile operator's market share from 72% to 41% (by subscribers) in the space of one year. Following that significant change, the market shares of the three mobile operators have remained relatively stable, with the last 5 years showing very little change (Figure 4).

The arrival of a new mobile operator (Eclectic) in 2022 is too recent to make any firm predictions regarding its effect on overall market dynamics. However, it is considered unlikely that the arrival of a single MVNO into the market will be sufficient to increase effective competition.

In the EU, market dynamics and effective competition has been significantly improved within markets containing 3 or 4 mobile network operators plus a number of MVNOs now serving around 10% of all subscribers⁷².

Unless a significant new entrant develops in Georgia over the forward-looking time horizon of this market analysis, it is therefore considered unlikely that the market well tends towards effective competition.

Potential competition

So far in the three criteria test it has been concluded that the Georgian market for mobile access at the retail and wholesale levels suffers from a relative (compared to the EU) lack of overall market dynamics, little innovation and market development and slow investment progress towards 5G enable services. There will remain significant and non-transitory structural and regulatory barriers to market entry.

There is currently very limited usage of MVNO access, no usage of national roaming and, compared to many other countries, a low level of co-location. The established market players continue to protect their position of control over their own infrastructure without significant sharing, they continue to resist the approaches of requests for MVNO agreements, and they do not make any use of national roaming. There is little to suggest that, in the absence of *ex-ante* regulation, that the wholesale mobile market will tend towards more effective competition.

⁷² <http://mvnoeurope.eu/>

The forward-looking analysis of whether the mobile access market is tending towards effective competition has considered that there will continue to be a the lack of movement in market shares and therefore stable market concentration, a lack of significant potential to improve market information, poor market dynamics, a lack of price development, a lack of progress with wholesale agreements, a strong tendency for operators to be over-protective in their market behaviour, with little sign any significant new market entrants and potential competition.

In the absence of ex-ante regulation (for example to oblige established operators to publish MVNO offers) there is no indication that the wholesale mobile access market will tend towards effective competition in the forward-looking time horizon of this market analysis.

In this situation, it is considered that, without *ex-ante* regulation, it is unlikely that there will be further potential for competition in the retail and wholesale markets for mobile access.

Conclusion – second criterion

It is therefore concluded that the second criterion (the market is not tending towards effective competition) is fulfilled.

5.5.3. Third criterion - Competition law alone is insufficient to adequately address the identified market failure(s).

In the prospective assessment of competitive conditions in the retail mobile markets (see Chapter 4.5) it was considered that the failures in competition at the retail level, for example the lack of investment and innovation, could be dealt with intervening in the upstream wholesale market.

The wholesale market for mobile access consists of national roaming, co-location, and MVNO access. There is no current regulation of the national roaming, co-location and international roaming parts of the market in Georgia. For there is no expectation that this can be regulated at a national level.

Regarding MVNO wholesale access, ComCom's Decision No G-20-9/156 of 31 December 2019, as amended, designates the three MNOs (Magticom" LLC, JSC "Silknet" and Cellfie Georgia LLC) as having joint SMP in the market.

The Decision seeks to impose the following ex-ante measures:

- a) Publication of a reference offer for access to their network elements (at the level of subsystems) relevant for the mobile virtual network operator (MVNO);
- b) Deadlines to agree and sign an access agreement, i.e. within 9 months from the date of receiving a written application from the first authorised person seeking access, and within 60 calendar days from the date of receiving the written application from all subsequent authorised persons.
Provision of the requested mobile network services (voice, Internet and short text message) to the person seeking access, under non-discriminatory terms of service;
- c) Accounting separation

d) Price controls: If the parties fail to reach an agreement on pricing, ComCom will settle the dispute making use of the "Retail Minus" approach developed together with the consulting company "PriceWaterhouseCoopers Advisory, s.r.o" ("PwC") and published on ComCom's website.

For the assessment of the third criterion, it is necessary to consider whether in the absence of ex ante regulation ComCom could, under its Competition Law powers, achieve effective wholesale access in the mobile services market. With other words, whether Georgian Law on Competition can provide a response to potentially anti-competitive actions in the wholesale market for mobile access.

A first aspect to consider is the timeliness of the enforcement of the Competition law powers in comparison with ex ante regulation. In this regard, it is noted that ComCom can, under its Competition law powers, request the Court to impose provisional measures. In practice, ComCom could thus require the dominant operator(s) to negotiate and conclude mobile access agreements, even before making a final decision on the substance of the case. A Competition law procedure would thus not necessarily last longer than the adoption of ex-ante regulation.

A second aspect to consider is whether ComCom could set wholesale tariff caps under its Competition Law powers. In this regard, Competition law can tackle 'excessive pricing' by requiring the dominant operator(s) to apply 'fair and reasonable' access tariffs. ComCom could, for the interpretation of what 'fair and reasonable' means in the specific case, refer to the "Retail-Minus" approach already developed by ComCom and published on ComCom's website. The burden of proof that this benchmark is not 'fair and reasonable' would then rest upon the dominant undertaking. A Competition Law procedure would thus also allow price controls, as those imposed under the current ex-ante regulation of MVNO market.

The third aspect to consider is whether ComCom could under its Competition Law powers tackle possible technical obstacles set by the dominant operator(s) as effectively as ex ante regulation. Under its Competition law powers ComCom could require the publication of reference offers. However, ComCom would have no legal basis to require the dominant operator(s) to apply specific technical parameters or to determine specific access points and interfaces. Given the need to deal with such technical issues when reviewing reference offers, only ex-ante regulation can address the competition problem in the case of wholesale mobile access.

On the basis of this analysis, it can therefore be concluded that the third criterion – that Competition Law alone is not sufficient to deal with failures in the Georgian mobile market - is fulfilled.

5.5.4. Conclusion on whether the market is susceptible to *ex-ante* regulation

It is concluded that that the three criteria, as defined by EU law⁷³, are met. That means that the market of wholesale mobile access is considered to be susceptible to *ex-ante* regulation.

⁷³ Article 67(1) EECC

6. SMP assessment

6.1. Background and goal of the SMP assessment phase

Based on a prospective assessment of competition in the retail mobile access market, it has been concluded that relevant market is not sufficiently competitive (see Chapter 4.5). For this reason, it was necessary to examine the upstream wholesale mobile access market on which regulatory intervention would allow the competition problem identified in the retail market to be addressed.

The three criteria test of the wholesale mobile access market concluded that, subject to the further analysis and finding of significant market power, regulatory intervention at the wholesale level will be required to address the competition failures at the retail level.

The objective of this market analysis is therefore to determine whether, in the wholesale mobile access market, an operator (or several operators jointly) possess significant market power (SMP).

An operator has SMP when their market position enables them to “...unilaterally make a significant influence restricting competition in this segment of the market”⁷⁴. In the case of the wholesale mobile access market, an SMP operator could in particular restrict competition on the downstream retail mobile access market.

6.2. Assessment of SMP using the relevant criteria

6.2.1. Market share

It is first necessary in the analysis of SMP in the wholesale mobile access market to determine how to measure market share.

The higher the market share and the longer the period of time over which it is held, the more likely it is that it constitutes an important preliminary indication of SMP.

The analysis of SMP is restricted to the relevant market as defined in Chapter 5.4. The relevant wholesale mobile access market includes MVNO access, national roaming and co-location services, together with self-supply by all operators present in the relevant retail market analysed in previous chapters. The geographical market is defined as the national territory of Georgia.

In the EU, in the case of markets with vertically integrated operators, it is recommended to assess the market power (in a notional wholesale market) based on the retail market shares in the downstream retail market.⁷⁵

⁷⁴ Art. 2, z¹³ of the Law of Georgia on Electronic Communications
<https://www.comcom.ge/uploads/other/1/1222.pdf>

⁷⁵ A majority of NRAs have applied a similar approach at an overall level to deal with self-supply, addressing self-supply at both the market definition and SMP analysis stage. [See IRG Report on self-supply \(europa.eu\)](#)

Such an approach is also recommended in **Article 7 of ComCom's** revised Methodological Rules.

According to the Georgian Law and ComCom's Methodological Rules, this SMP assessment will thus, on the one hand, calculate market shares on the wholesale market using the self-supply of the vertically integrated mobile operators to their respective downstream retail arms and, on the other hand, assess limitations related to the available network capacity from an operator (and if also vertically integrated, within their own respective mobile networks). The relevant capacity relates to the mobile networks which are potentially available to offer wholesale access (via national roaming, co-location or MVNO access).

Taking account of the requirements of the Georgian Law and ComCom's Methodological Rules, market share information can be analysed from two main aspects, including:

1. Revenues and numbers of subscriptions of each provider of mobile voice and data services in the downstream retail market for mobile access services taking into account also the different types of customer groups (business and individual users of mobile services)
2. The different capacities of each operator in terms of investments in network infrastructure and hardware, actual traffic carried, the number of mobile base locations and the level of geographical coverage.

The first type of (retail) market share information can provide some indication of the relative market strength that a mobile operator will possess in the upstream market for wholesale mobile access. This is because the capacity of each mobile operator is derived from the demand in terms of numbers of subscribers and their usage and payment for mobile services. Within this category the use of subscription figures carries the risk of distorting the relative market power conclusions because the subscribers of one network may have lower usage characteristics than the subscribers of another network. When examining market revenues, the focus should be on the revenues for services that are growing (in this case mobile data services revenues) rather than on the revenues for services that are declining (in this case mobile voice revenues).

The second type of market share information (based on traffic, investments and locations) is more likely to give a better indication of a mobile operator's potential wholesale access capacity. This is because the level of current traffic, coupled with ongoing investment volumes and the number of mobile network base station locations, have a direct relationship with the relative ability of a mobile company to operate in the wholesale mobile access market.

For the assessment of market power in the wholesale mobile access market it is therefore necessary to examine:

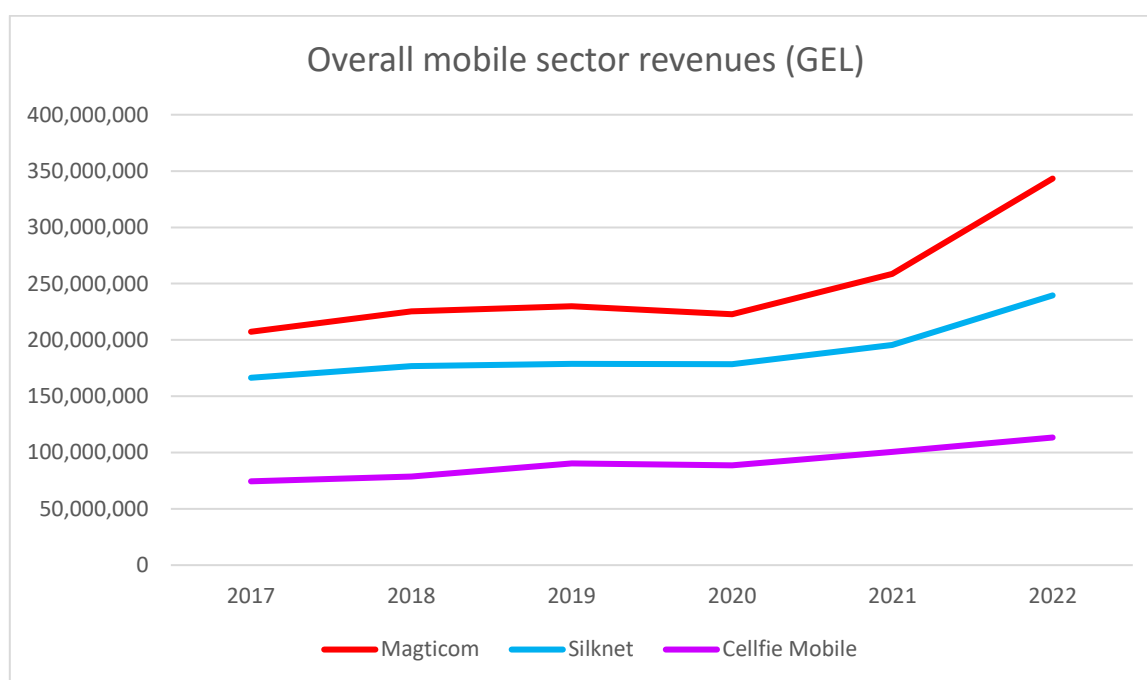
- (i) The relative market shares of mobile operators in the retail markets that they operate, mainly in terms of market revenues, with more focus on the growing data markets than on the declining voice market

- (ii) The relative network capacity and coverage of mobile operators in terms of investments, traffic carried, geographical coverage and number of base locations, with more focus on indicators of the data carrying capacity of mobile networks.

6.2.1.1. Market share based on the retail market⁷⁶

The retail market revenues for the Georgian mobile operators are shown in Figure 14.

Figure 14: Mobile sector total revenues (2017-2022)

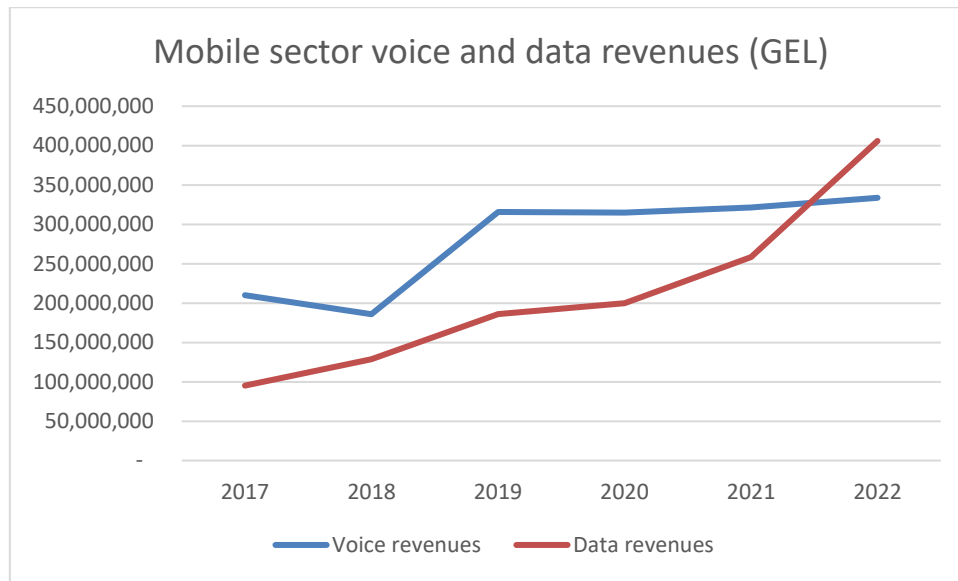


Source: ComCom data

The trend in revenues shows a growing market for all operators, with the main driver of growth being mobile broadband services, with traditional voice services remaining relatively static, as shown in Figure 15.

⁷⁶ Note: The analysis of market shares in this Chapter uses, in all instances, ComCom data collected from mobile operators up to December 2022. Market data collected by ComCom since December 2022 has also been examined and where it has been considered necessary to review any trends indicated by that new data, a footnote has been added to the relevant analysis in this Chapter. In all other cases, it is considered that the new data does not have any implications within the context of the overall market share analysis.

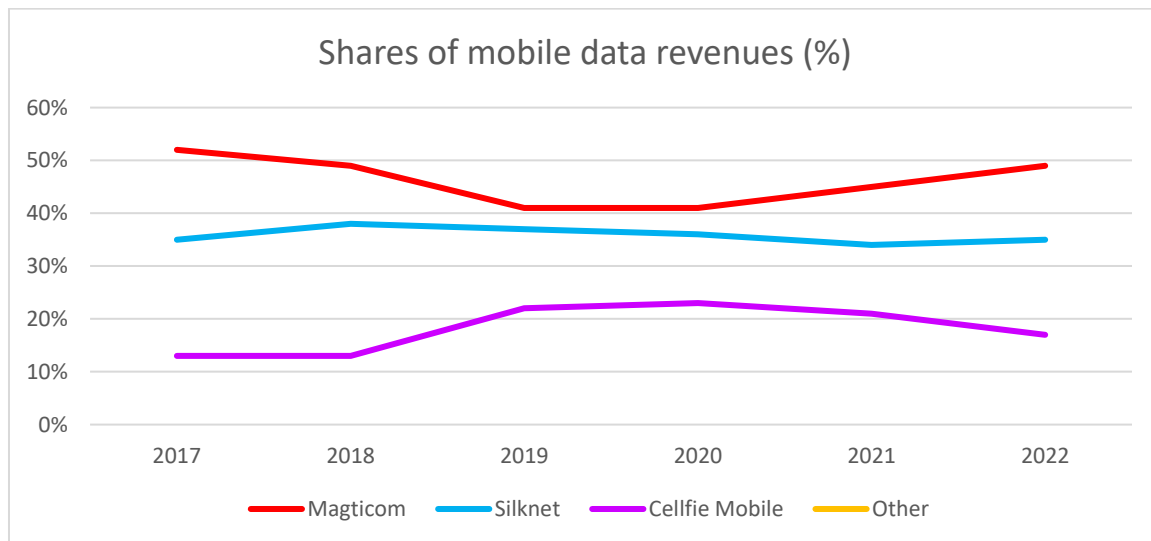
Figure 15: Mobile voice and data revenues (2017-2022)



Source: ComCom data

In a forward-looking SMP assessment, the market share trend for the mobile data services will have the most importance. This is shown in Figure 16 below.

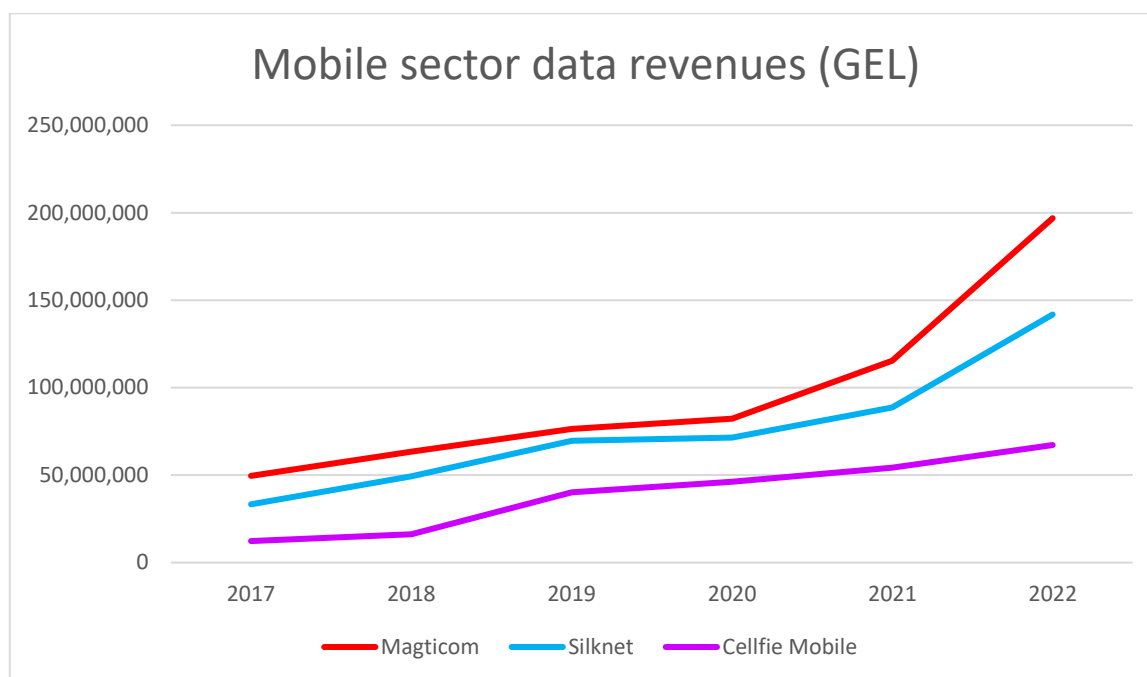
Figure 16: Mobile broadband market shares by revenues (2017-2022)



Source: ComCom data

Note: "Other" at present only refers to the fourth mobile operator (Eclectic) only entered the market in late 2022.

Figure 17: Mobile broadband data revenues (2017-2022)



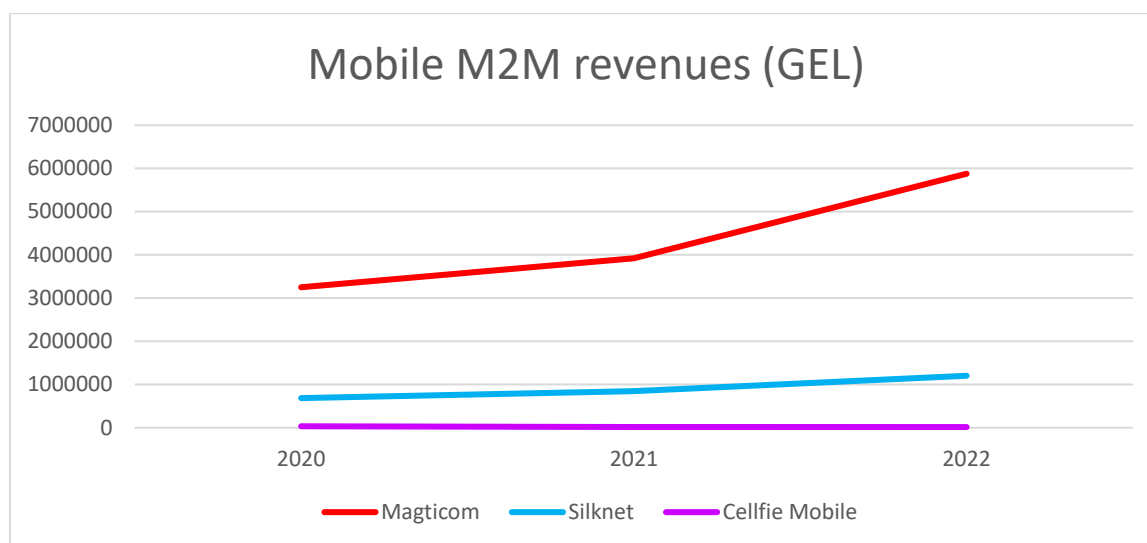
Source: ComCom data

The significant growth in mobile data traffic is reflected in the growth of each operator's revenues from data services. Generally, the increase in the overall growth of data traffic is the result of an increase in average data consumption per user due to significant impact of unlimited data offers and other offers with increasing data limits (which is the case in Georgia). Other factors also impact on revenue growth in different ways for each operator including differences in subscriber growth and churn rates and different mixes of pre-paid and post-paid subscriptions and the propensity of each operator's subscribers to migrate to subscriptions with higher data allowances.

Magticom's share of mobile broadband revenues is 49% in 2022 compared with Silknet at 35% and Cellfie at 17%. The fourth mobile operator (Eclectic) only entered the market in late 2022 and its impact on forward-looking market shares is uncertain. On current revenue trends, Magticom is likely to increase its market share, or at the very least maintain a share above 40% for the forward-looking time horizon of this market analysis.

Another indication of the forward-looking position of the mobile operators is the growing market for mobile machine-to-machine (M2M) subscriptions. The total market revenue for this relatively new service is shown in Figure 18.

Figure 18: Mobile M2M market revenues (2020- 2022)



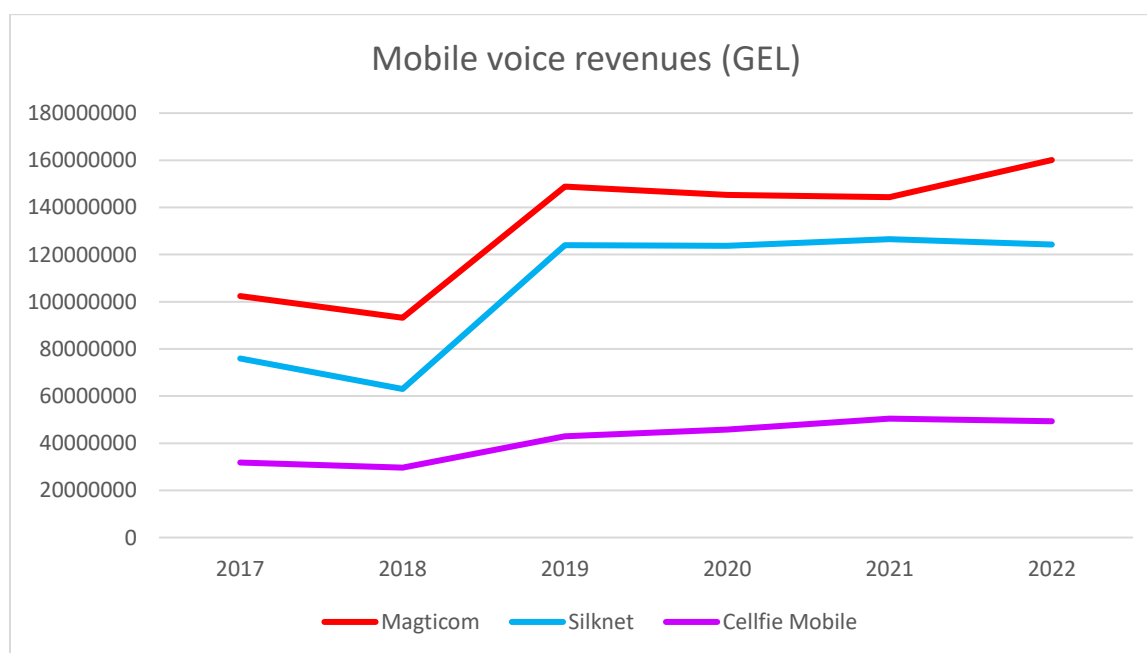
Source: ComCom data

Note: Neither Cellfie nor fourth mobile operator (Eclectic) have entered the mobile M2M market at present

The mobile M2M market, although currently small in relation to the total market revenues, is an important indicator for the likely demand for future mobile services based on 5G technology. Although this 5G capability is not yet available in Georgia, investment decisions by the mobile sector will be likely during the next 3 years. At present, Magticom has an 82.8% share of M2M revenues, with Silknet trailing at 16.9% and Cellfie at 0.2%.

Mobile voice revenues are still significant, although their relative growth over the last 6 years has been slower than for mobile data revenues (see Figure 15). The trend in mobile voice revenues is shown in figure 19.

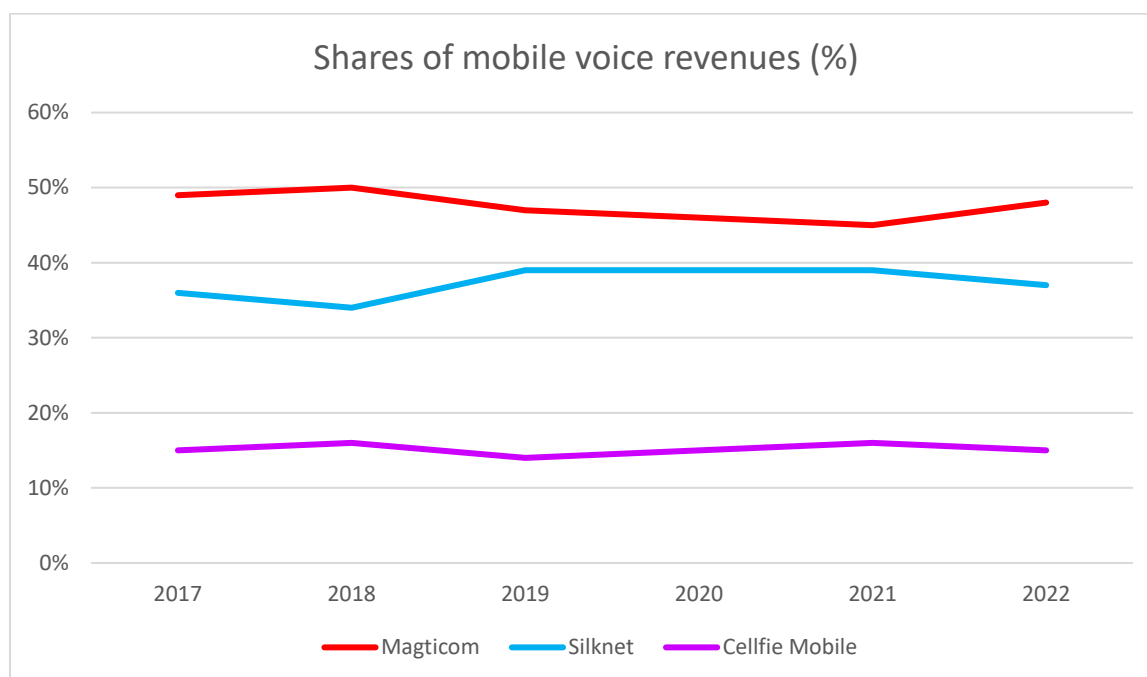
Figure 19: Mobile voice revenues (2017- 2022)



Source: ComCom data

Mobile revenues increased during 2022 as a result of retail tariff rises by Magticom and Silknet. The relative market shares of the mobile operators for voice revenues are shown in Figure 20.

Figure 20: Mobile voice revenues market shares (2017- 2022)



Source: ComCom data

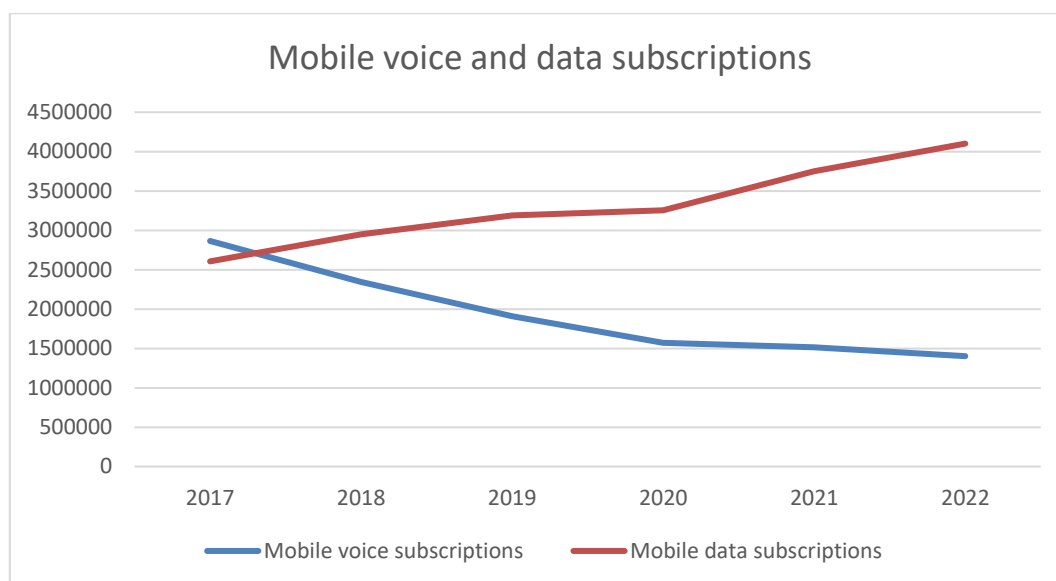
In 2022 Magticom had a 48% market share based on voice revenues, compared with 37% for Silknet and 15% for Cellfie. It appears that Magticom's market share is increasing marginally and so it is considered that Magticom will continue to hold at least 40% of mobile voice revenues during the forward-looking time horizon of this market analysis.

An indication of market share based on market revenues (particularly mobile data and M2M revenues) is considered to be the most useful in indicating SMP (on the basis of retail market position).

Market shares based on the relative number of subscribers for each mobile operator are less useful because this measure is generally less related to the usage of the network. The number of mobile data subscribers (particularly business mobile data subscribers) could have some relevance to assessing the relative market power of mobile operators because business subscribers will generally be more sensitive to quality and less to price than residential customers. Therefore, the operator with the highest market share in the business mobile data market is likely to be perceived as an operator with a more reliable and a higher quality network. This factor is considered to be important in the wholesale mobile access market because an access-seeker will want to use a network operator with a service that is more attractive to mobile data users, particularly business users.

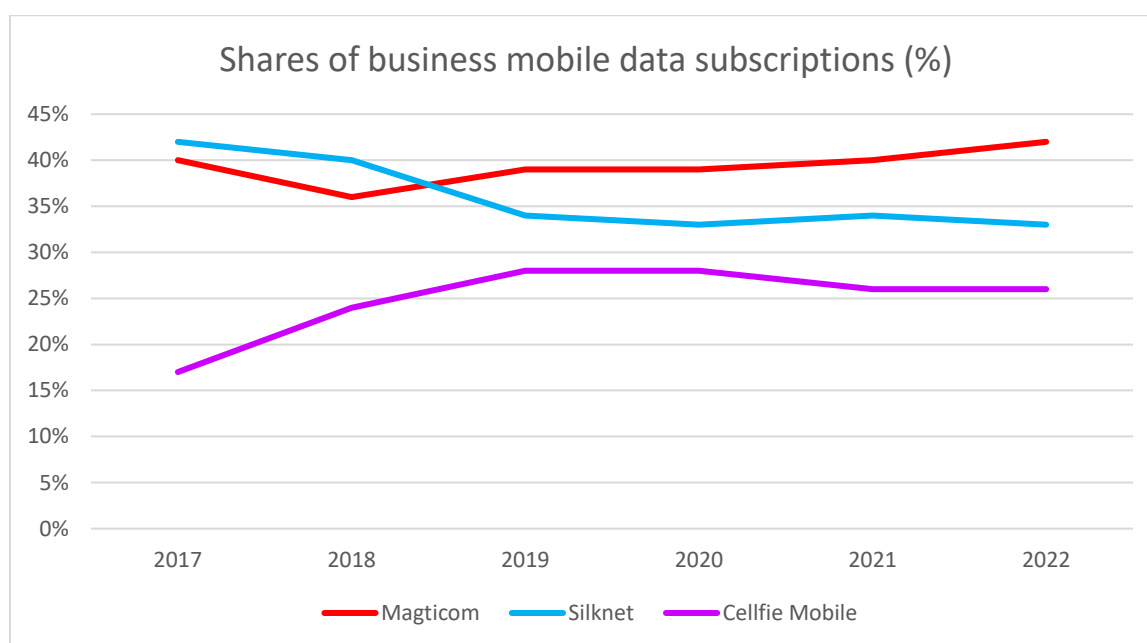
The relative number of mobile voice and data subscriptions and the relative shares of the business mobile data subscribers are shown in Figure 21 and Figure 22.

Figure 21: Mobile voice and data subscriptions (2017- 2022)



Source: ComCom data

Figure 22: Business customer mobile data subscriptions market shares (2017- 2022)

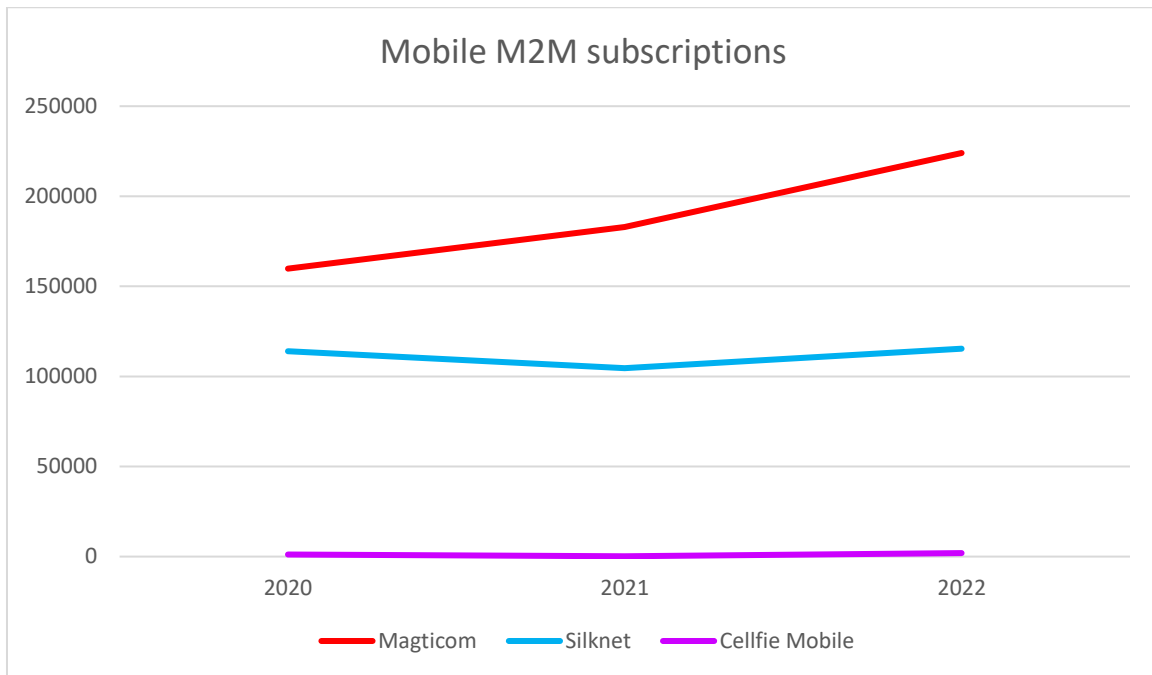


Source: ComCom data

For business customer mobile data subscriptions, Magticom has 42% market share in 2022, compared with Silknet at 33% and Cellfie at 26%. Magticom's market share appears to be increasing slightly for the business mobile data market, mainly at the expense of Silknet.

For the relatively new mobile M2M market, the number of subscriptions is increasing rapidly, as shown in Figure 23.

Figure 23: Mobile M2M subscriptions (2020- 2022)

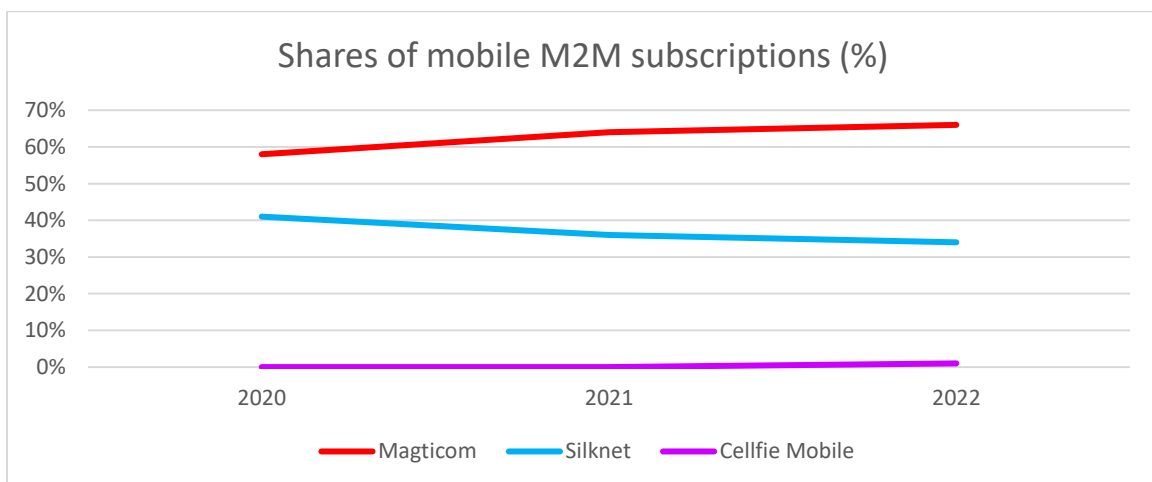


Source: ComCom data

Although currently small in numbers of subscriptions and revenues (see also Figure 18), the market for mobile M2M is important because it is an indicator of the future expected significant impact of the introduction of 5G technology into mobile networks and services. Magticom's current market advantage can be expected to limit Silknet's and Cellfie's expansion in this growing market.

This suggests that Magticom possesses a network that can better respond to the business demand for M2M services. The relative market share evolution is shown in Figure 24.

Figure 24: Mobile M2M market shares (2020- 2022)



Source: ComCom data

Magticom has a market share of 66% of mobile M2M subscriptions in 2022 compared with Silknet at 34% and Cellfie with 1%.

6.2.1.2. Summary of market shares based on the retail market

Magticom has retail market shares of at least 40% based on mobile revenues, including in the main fast-growing sub-markets of business mobile data and M2M revenues, where Magticom’s shares are currently 49% and 83% respectively. This strong market position, where Magticom appears to be better placed to exploit its network capacity to serve new markets is unlikely to change during the forward-looking time horizon of this market analysis.

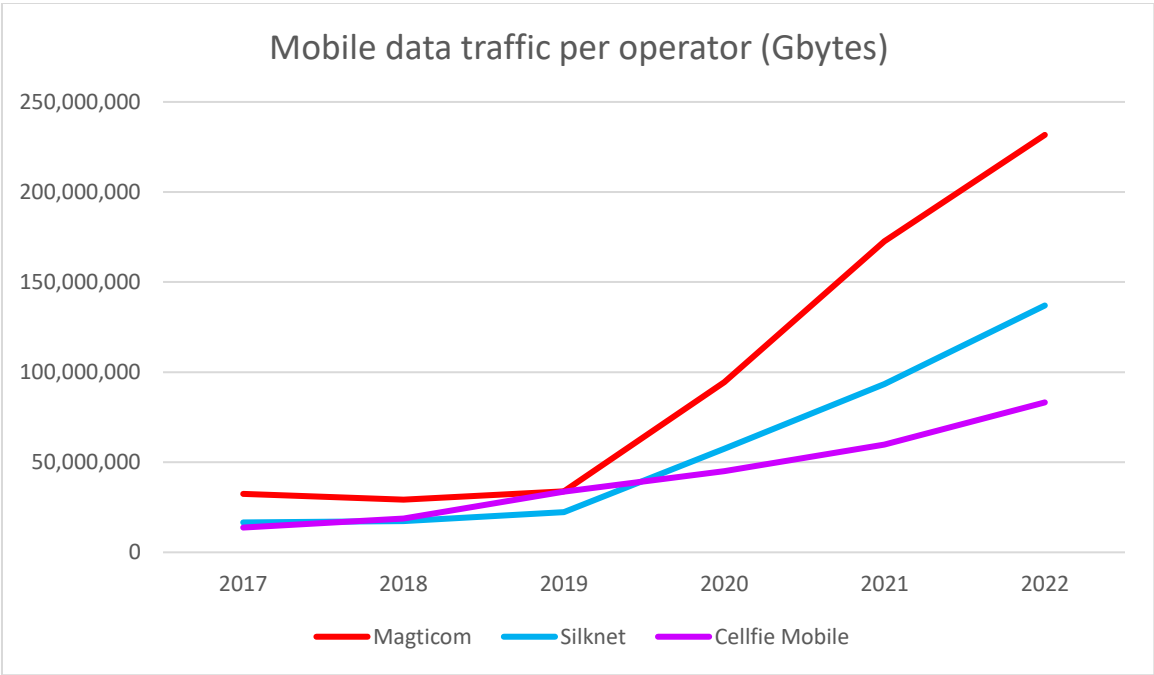
Based on the trend for the last 6 years, neither Silknet nor Cellfie are expected to reach retail market shares of 40% for revenues, subscriptions or traffic

6.2.1.3. Limitations related to available network capacity and network coverage from competitors from the integrated operators

Although the market share information for the retail market (in Chapter 6.2.1.1) is indicative of the relative capacity of each mobile network operator to offer wholesale mobile access services, an analysis comparing mobile network capacity, investments and coverage is considered to be a more direct indicator of available network capacity for the purposes of providing services on the relevant wholesale market.

The traffic carried by each operator will provide the most direct comparison of the existing capacity within each network. Given that voice communications are no longer a cost driver for network investments, the focus of the capacity-based analysis will be on important features that are influenced mainly by the growth of mobile data.

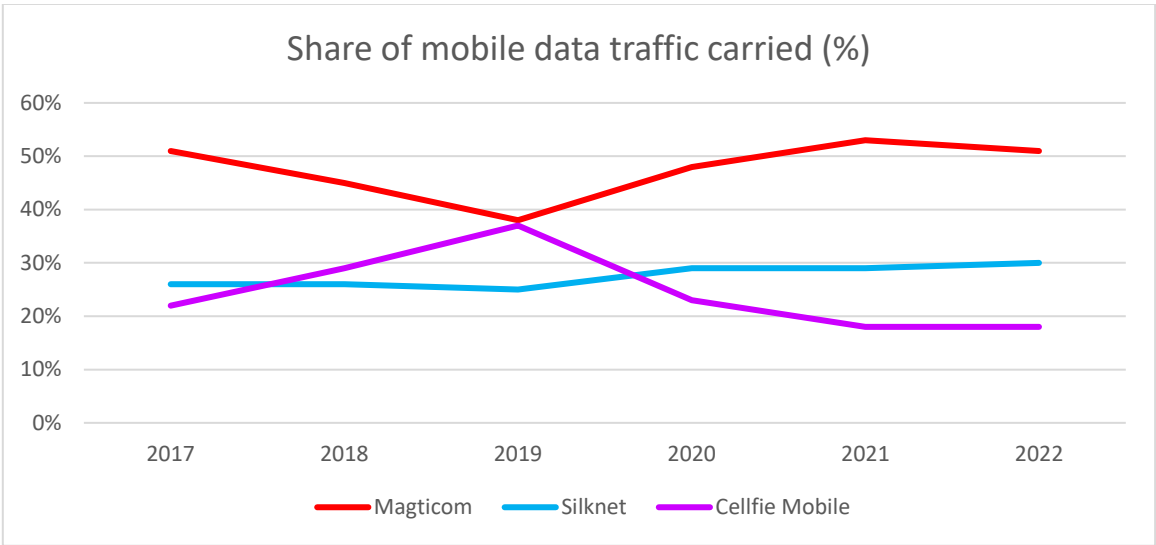
Figure 25: Mobile data traffic (2017- 2022)



Source: ComCom data

The relative shares of the mobile operators in data traffic are shown in Figure 26.

Figure 26: Shares of Mobile data traffic (2017- 2022)



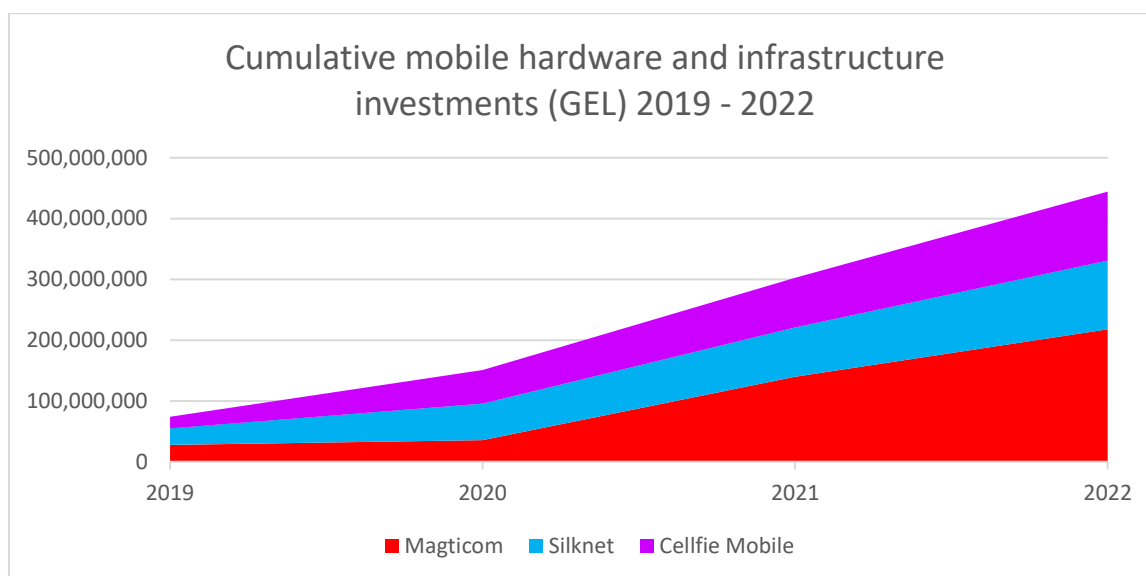
Source: ComCom data

The slight decline in Magticom’s share of data carried in 2022 (from 53.0% in 2021 to 51.3% in 2022)⁷⁷ does not indicate that Magticom’s network has a reduced capacity to carry traffic than its competitors. The relative shares indicate that Magticom’s data traffic handling remains at least 60% greater than of that of Silknet’s network and over 2.5 times that of Cellfie’s.

Figure 27 shows that Magticom has invested more in mobile infrastructure and hardware during the period 2019-2022. This greater investment indicates a greater potential to attract wholesale mobile access traffic.

⁷⁷ Note: Based on ComCom data for June 2023, Magticom’s share of data traffic carried has further decreased from 51.3% to 48.8%, with Silknet rising from 30.3% to 32.2% and Cellfie from 18.4% to 18.9%. The decline in Magticom’s share of mobile data carried has not been reflected in any loss of Magticom’s market share of data revenues or data subscriptions over the same period. The growth in the overall data carried by Magticom remains very high (at over 20% per annum). It follows that there is no indication that Magticom’s relative share decline in data traffic arises from any network capacity problems. For this reason, it is considered that there is no basis to change the results of the overall analysis of SMP based on market shares.

Figure 27: Mobile infrastructure and hardware expenditures (2019-2022)

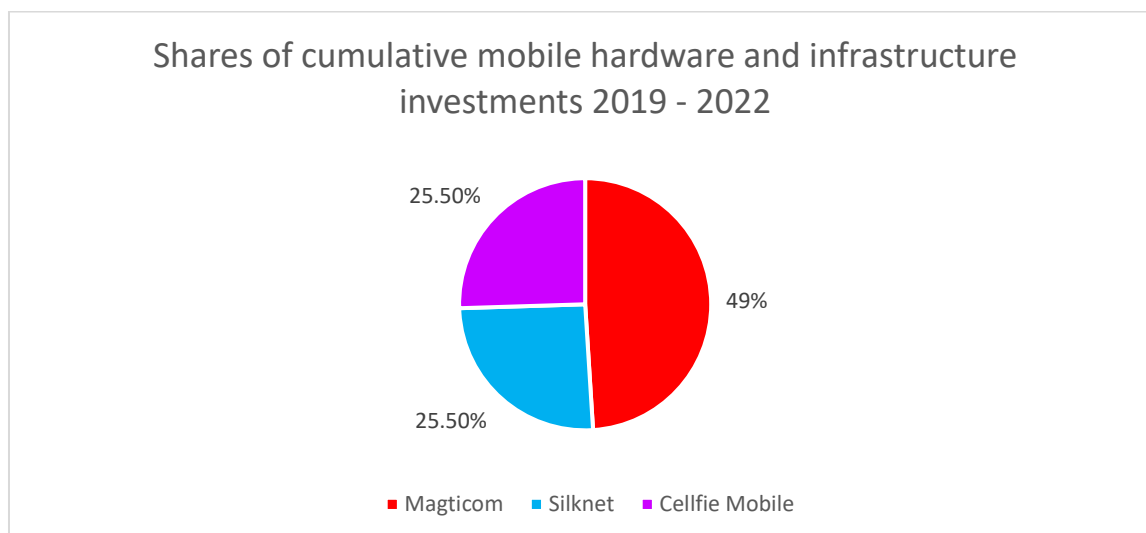


Source: ComCom data

Note: The investments of the different operators for some types of network elements are not strictly comparable (for example Cellfie leases some backhaul capacity while Magticom and Silknet have invested in their own)

The relative shares of total investments over the period 2019 to 2022 is shown in Figure 28.

Figure 28: Mobile infrastructure and hardware expenditures shares by operator (2019-2022)

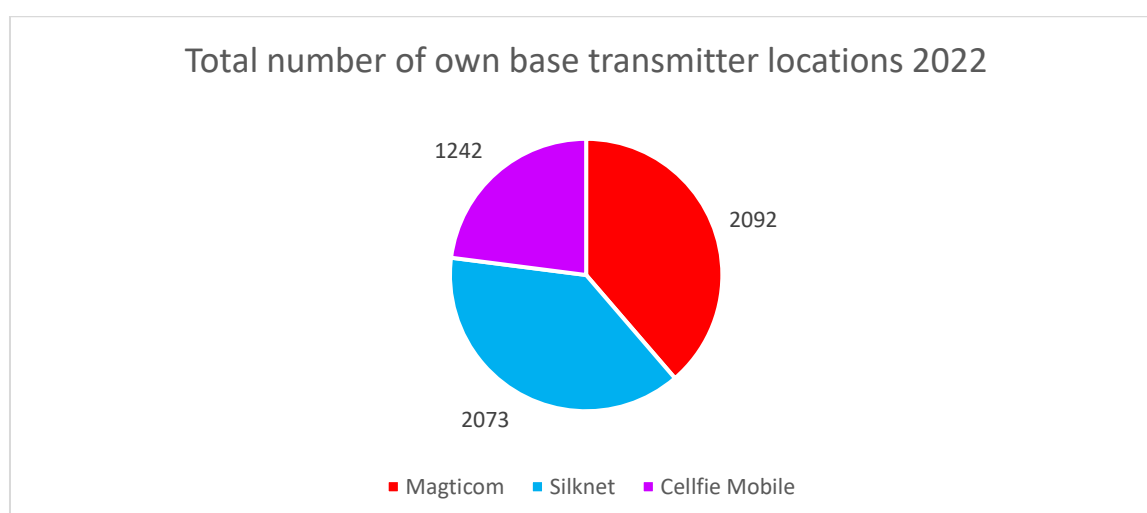


Source: ComCom data

Of the total expenditures on mobile physical infrastructure and hardware over the period 2019 to 2022, Magticom spent nearly twice as much as each of its competitors (49.0% of the expenditures were made by Magticom compared with 25.5% by each of its competitors).

Considering network coverage and mobile base locations, the number of cell site locations in Georgia is currently 5,407, of which 2,092 sites are operated by Magticom (38.7% of the total), 2,073 are operated by Silknet (38.3%) and 1,242 by Cellfie (21.0%).

Figure 29: Mobile cell-site locations (2022)

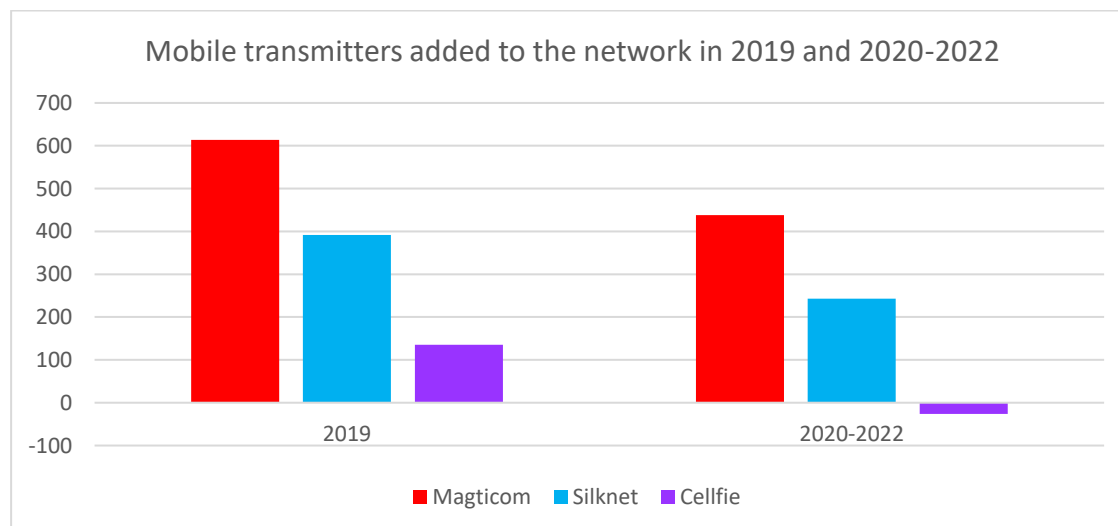


Source: ComCom data

Note: The number of site locations of by each operator have not been adjusted for the (relatively small) number of sites which are owned and jointly used by more than one operator.

The number of base stations added by each mobile operator during the last 4 years is shown in Figure 30.

Figure 30: Mobile cell-site locations added (2019-2022)



Source: ComCom data

Note 1: ComCom did not receive separate returns for 2020 and 2021, so the right-hand comparison represents the total added mobile base stations for the years 2020 to 2022 inclusive. The left-hand comparison is for the single year 2019

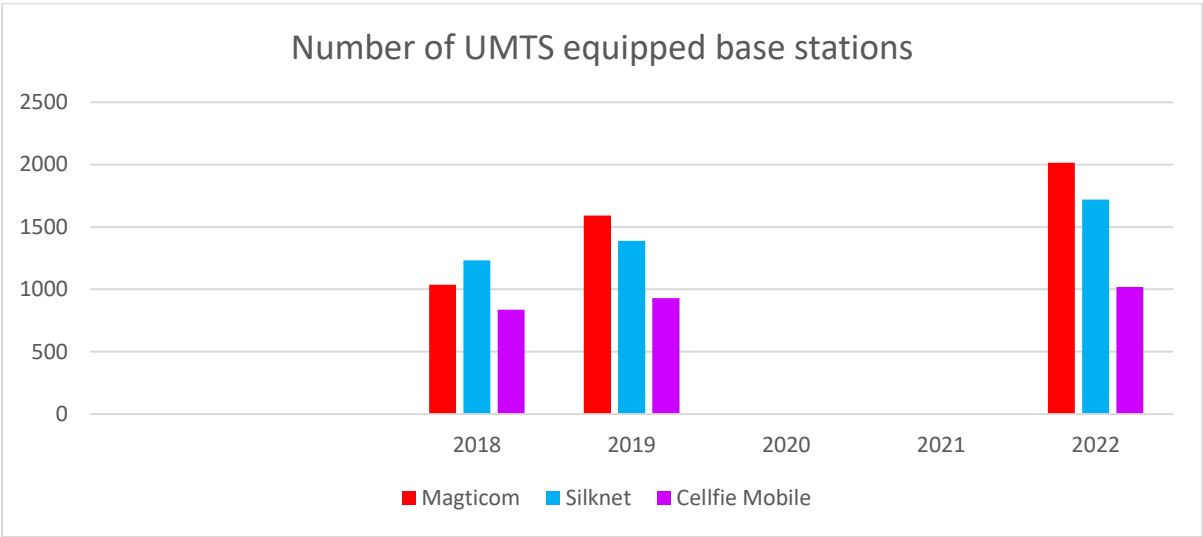
Note 2: The small reduction in sites by Cellfie during 2020-2022 arose from their switching off some 2G technology sites

Magticom added 58.6% of new mobile base transmitter locations since 2018 with Silknet adding 35.4% and Cellfie adding 6.1%.

During the forward-looking timescale of this market analysis, it is likely that the mobile network operators will make further investments, primarily to meet mobile data services demand. For this reason, the number of cell site locations currently with data-handling

capacity (as opposed to capacity to serve the lower voice traffic component of demand) is considered to be an important indicator of the relative of network capacity for the wholesale mobile access market. The number of transmitter site locations with data-handling capacity (UMTS and LTE) for each mobile operator is shown in Figures 31 and 32.

Figure 31: Mobile UMTS cell-site locations (2018-2022)

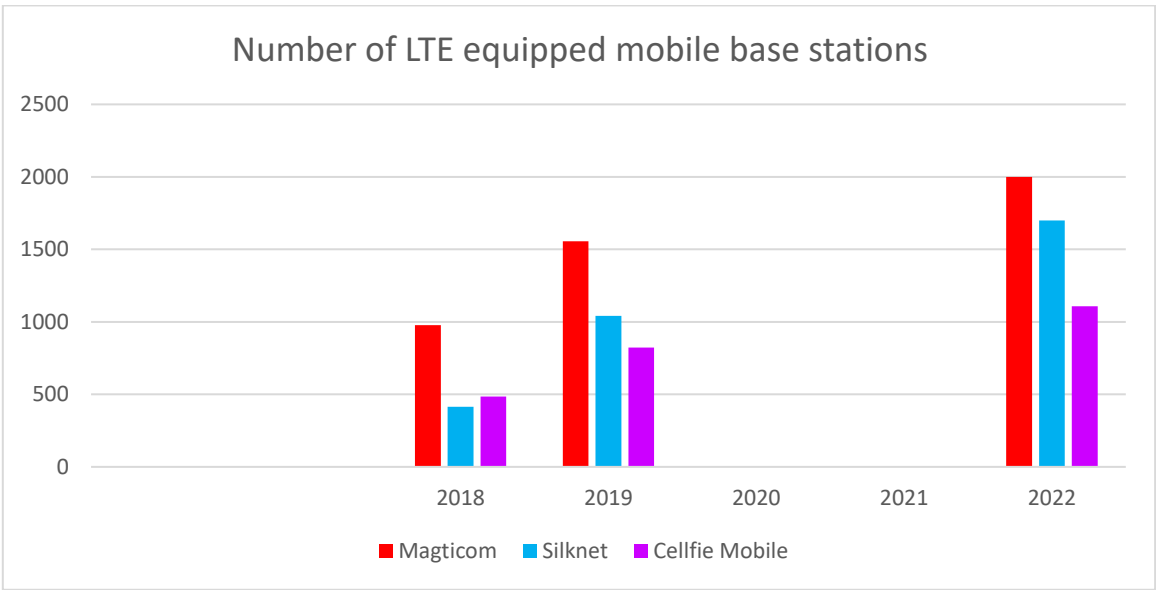


Source: ComCom data

Note: ComCom did not receive separate returns for 2020 and 2021. The numbers of base stations shown are cumulative, so the 2022 figures include the stations added during 2020 and 2021

Magticom has 42.4% of the number of UMTS mobile base stations in 2022 against Silknet’s 36.2% and Cellfie’s 21.4%.

Figure 32: Mobile LTE cell-site locations (2018-2022)



Source: ComCom data

Note: ComCom did not receive separate returns for 2020 and 2021. The numbers of base stations shown are cumulative, so the 2022 figures include the stations added during 2020 and 2021

Magticom has 41.6% of the number of LTE mobile base stations in 2022 against Silknet's 35.3% and Cellfie's 23.0%

6.2.1.4. Summary of the assessment on available capacity

Magticom carries significantly more data traffic than either Silknet or Cellfie (232 PBs in 2022 compared with Silknet's 137 PBs and Cellfie's 83 PBs).

In terms of adding capacity in network infrastructure over the last 4 years, Magticom has made 49.0% of the total capital investment value, nearly twice as much as both by Silknet and Cellfie (at 25.5% each). These investments further increase the network capacity advantage of Magticom. In terms of cell site coverage, Magticom has added 59% of new sites since 2018 against Silknet's 35% and Cellfie's 6%.

In 2022, Magticom and Silknet controlled 78.6% of cell site locations in Georgia. The total number of cell site locations controlled by those two mobile operators is important for the part of the wholesale mobile access market which relates to co-location access. For cell sites that have 3G and LTE transmission for data services, Magticom has 42% of the total number of sites with Silknet at 36%. On this basis, in the wholesale market there is likely to be potentially greater demand for co-location access to Magticom's sites than to Silknet's.

The data on traffic shows that Magticom currently carries significantly more data traffic in its network than other two network operators (see Figures 10, 25 and 26). It is expected that there will be a continuing trend of significant increases in data traffic. Magticom's network, with larger investments over recent years (see Figure 27) will remain capable of carrying a significantly higher portion of the traffic than other two networks. This will put Magticom in the position of the most favoured operator amongst access-seekers for national roaming and MVNO access, because Magticom has demonstrated that it can carry more traffic compared to other operators.

It is therefore concluded that Magticom is better positioned for serving the wholesale mobile access market including MVNO access, national roaming and co-location. This superiority results from the significantly greater data traffic carried in the network, their investment record in recent years and number of locations where they control the physical infrastructure.

6.2.1.5. Overall summary of the analysis

Figure 33 summarises all the highlighted shares of Magticom based on relevant retail and capacity data. The figures highlighted in green show where Magticom has a share of at least 40%. In the last column, the direction of Magticom's share (increasing, stable or decreasing) is highlighted in green.

An important aspect of the analysis is growing importance of the market for mobile data services. Mobile network investment and capacity will be influenced by the significant growth in data services markets. The relative importance of each market feature in relation to its expected growth is illustrated in the first column (based on the trend of the last 5 years).

Market features at the top of the chart (starting with traffic carried) are considered to be the most important indicators of share in the wholesale mobile access market, starting with data traffic carried. The factors further down the table, although important and supportive in market share analysis, do not have the same impact on our consideration of wholesale capacity available from Magticom.

Figure 33: Summary of Magticom mobile market shares based on various retail and capacity data

Mobile network features	Is the market growing?	Magticom's share (2022)	Is Magticom's share growing?
Data traffic carried	↑↑↑	51%	→
Business data traffic	↑↑	40%	→
Individual data traffic	↑↑↑	54%	→
Network investments	→	49%	↑
Number of base station locations (note)	↑	39%	↑
Number of UMTS/LTE base stations locations	↑	42%	→
Added base transmitter stations		67%	↑
Market revenues	↑↑↑	49%	↑
Data revenues	↑↑↑	49%	↑
Voice revenues	↑↑	48%	↑
M2M revenues	↑↑↑	83%	→
Business data subscriptions	↑↑	42%	↑
M2M subscriptions	↑↑	66%	↑

Note: Based on the current trend of added based stations Magticom will exceed 40% within the forward-looking time horizon of this analysis

Legend:

↑↑↑=Very high growth (>20%p.a.) ↑↑=High growth (10% to 20% p.a.)

↑ =Moderate growth (5% to 10% p.a.) → =Little or no growth (-5% to +5% p.a.)

Green highlighting means that Magticom figures meet the primary criterion for SMP set in the Law (today and forward-looking)

In all the relevant important indicators of mobile network capacity (data traffic capacity, investments and base locations), as well as retail revenues and business and M2M data subscriptions, Magticom has a share of at least 40% (and in some cases well above 40%). Magticom's shares are unlikely to fall below 40% and neither Silknet's nor Cellfie's shares are likely to reach 40% during the forward-looking time horizon of this market analysis.

6.2.2. Absolute and relative size of the operators

Article 22(12) of the law of Georgia on Electronic Communications states that: *“In designating an authorised person as having significant market power in a relevant segment of the service market and in imposing specific obligations on such person, in addition to the primary criteria, use shall be made of secondary criteria which, in accordance with primary criteria, objectively determines the possibilities of persons with significant market power to restrict competition and carry out noncompetitive actions in the relevant segment of the service market”*.

The absolute and relative size of the main mobile operators are compared in order to give the view of the scale of the different businesses. Magticom, with 49% market share in terms of overall mobile revenues, is around 1.4 times the size (in revenue terms) of its closest competitor (Silknet) while in terms of subscriptions Magticom is 1.2 times the size its closest competitor (see Figure 34).

Figure 34: Mobile revenues and subscribers and size differences (2022)

Operator	Overall mobile revenues (mil. GEL)	Overall mobile subscriptions (millions)
Magticom	343.3	2.44
Silknet	239.5	1.96
Cellfie	113.3	1.45

Source: Derived from ComCom data

If overall revenues (including all telecommunications services) and overall subscriber base (including all types of subscriptions (fixed and mobile)) are compared, Magticom is 1.24 times the size (in terms of revenues) and 1.2 times the size (in terms of subscribers) of its closest competitor Silknet (see Figure 35).

Figure 35: Overall revenues and subscribers and size differences (2022)

Operator	Overall telecom revenues (mil. GEL)	Overall telecom subscriptions (mil. subs)
Magticom	624	2.95
Silknet	473	2.46

Source: Derived from ComCom data and Financial Reports from Operators

It is considered that there is a significant difference in absolute and relative size of Magticom (based on revenues and subscriber base) compared with the other mobile operators (including its closest competitor Silknet). Magticom and Silknet are both vertically integrated operators, but because Magticom has greater size (24% more revenues and 20% more subscribers) it can take more advantage of its economies of scope and scale than Silknet (see chapters 6.2.7 and 6.2.8). It is considered that Magticom's relative advantage is likely to continue over the forward-looking time horizon of this market analysis.

6.2.3. Control of infrastructure not easily duplicated

According to Article 15 (3) a) of ComCom's revised Methodological Rules, ComCom must consider whether " ... the availability of a limited frequency spectrum for them, or the spread of their own electronic communication infrastructure and network on a geographical scale that allows the largest part of the population to receive services, gives a specific authorised person an advantage compared to other authorised persons, since it is possible to create such an infrastructure for another alternative authorised person only over a long-term period, or in a limited geographical area, therefore, in the analysis of the market, the Commission must identify such infrastructure and must assess the significance of its existence for market power."

This criterion is mostly related to the costs which must be incurred in order to enter a market, which now exist as sunk costs (they cannot be recovered on market exit). The existing mobile network operators have already incurred high sunk costs by entering the market. Potential new entrants have to decide whether to invest before market entry against operators that have already invested. The need for investment in infrastructure that is not easily duplicated is a significant barrier to market entry.

According to ComCom data, all three operators each have a population coverage of around 99%. Control of the current network capacity is of great importance because it would take a new entrant time to establish full population coverage. Part of the time taken to enter the mobile market is related to the need for available spectrum to be assigned. As radio frequency spectrum is a scarce resource, the existing holders of spectrum (the 3 current mobile operators) have a large competitive advantage in using the most relevant spectrum previously made available for achieving national coverage and with sufficient network capacity.

Based on ComCom data, although all operators have similar coverage, Magticom's and Silknet's mobile networks have other characteristics that make them harder to be duplicated (comparing with the network of Cellfie). Network coverage (in terms of the number and density of cell site locations) is considered to be a good indicator of relative market power between the different operators in the wholesale mobile access market. Magticom and Silknet network have a similar number of cell site locations, both significantly greater than Cellfie (see Figures 29, 30, 31 and 32). This superiority will be a significant advantage to Magticom and Silknet for the future deployment and launch of 5G services. In the context of a possible new entrant to the mobile market, the networks of Magticom and Silknet are most difficult to be duplicated because they have a superior size in terms of number of cell site locations.

Magticom claims to operate the best quality mobile network according to an analysis carried out by consultants Umlaut analysis⁷⁸ in 2021. According to the independent quality measurements carried out by ComCom on a regular basis, most of the network quality indicators assessed show that Silknet has a better performance. These different studies are not based on the same indicators. Umlaut's 2021 study is significantly more detailed and

⁷⁸ Umlaut - the global consultancy company and world leader in mobile network testing and benchmarking recognises Magticom network as the "Best in Test" in Georgia, available on: <https://www.magticom.ge/en/umlaut> This finding was confirmed by a tourist website: 'Staying Connected in Georgia: How to Buy & Activate a Georgian SIM Card in 2023', Emily Lush, 6 May 2023, available on: <https://wander-lush.org/georgian-sim-card-beeline-magti/>

extensive, while ComCom's tests are carried out regularly so that the trends can be assessed. As the methodologies used in the different studies, it is not possible to make any firm conclusions on the differences in quality between Magticom's and Silknet's network quality. What is very clear from the two studies is that Magticom and Silknet both exhibit a better quality of service than Cellfie.

Magticom's network currently carries a significantly higher level of data traffic than Silknet or Cellfie (see Figure 25). Together with the evidence that Magticom has made higher investments in its network and added more base transmitter stations over the last 4 years (see Figures 28 and 30), it is considered that Magticom's network will be better positioned to meet the expected increase in data traffic (increase in demand) in the future.

It is concluded that Magticom and Silknet have significant control of infrastructure and that no other mobile network operator or potential new entrant is expected to be able to duplicate it during the forward-looking time horizon of this market analysis.

6.2.4. Access to spectrum

Access to spectrum should also be considered when assessing market conditions, relative competitive positions of MNOs (including potential dominance). Sufficient spectrum should be available to run mobile networks and it is very important in the light of the current and expected significant growth of mobile data traffic. This growth requires additional spectrum, even though to some extent the growth of data traffic can be enabled by adding more density to mobile network coverage, for example by adding more site locations, and adding more cells. There are technical and economic limitations to the adding of mobile network density and so there will normally be a need for MNOs to obtain more spectrum as data traffic continues to increase. Generally, an MNO with more spectrum is in an advanced competitive position compared to MNOs with less spectrum.

Not every frequency band is of equal value for MNOs. Frequency bands in spectrum below 1 GHz have better propagation characteristics and are generally considered more valuable for mobile communications since less base station locations are needed to cover a larger territory. In addition this spectrum is less vulnerable to propagation obstacles (such as large buildings and forests) and is less influenced by weather conditions such as heavy rain. However, spectrum below 1GHz is optimised for voice traffic, not data traffic.

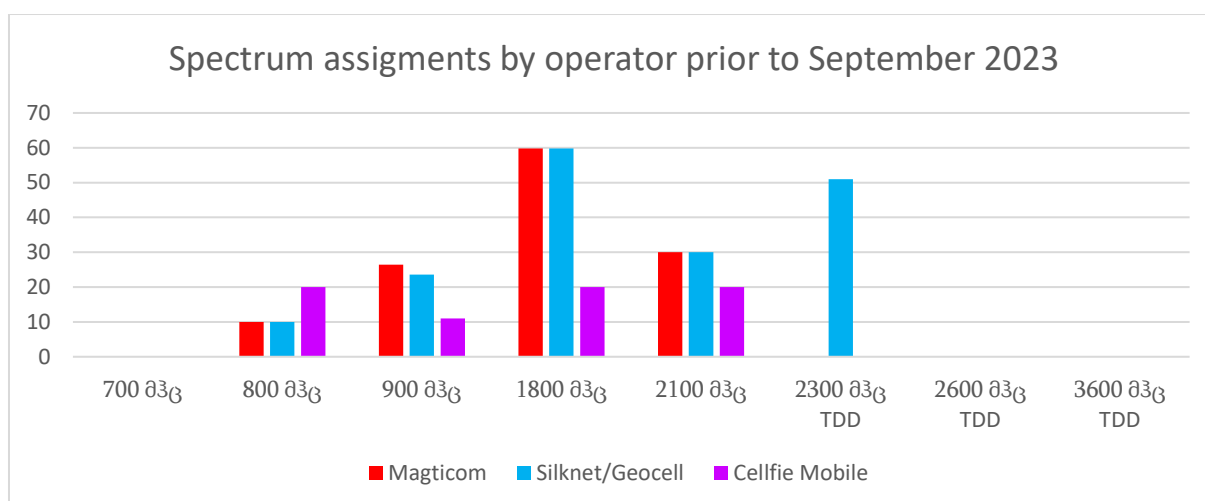
The spectrum assignments for mobile services (before ComCom's auction concluded in September 2023) are shown in Figure 36. At present, mobile services spectrum in Georgia is assigned only to the existing three mobile network operators.

Figure 36 Mobile spectrum allocation before September 2023

Operator	Assigned Bands									
	800 MHz		900 MHz		1800 MHz		2100 MHz		2300 MHz TDD	Total MHz
Magticom	2x5	10	2x13.2	26.4	2x29.9	59.8	2x15	30	0	126.2
Silknet/Geocell	2x5	10	2x11.8	23.6	2x29.9	59.8	2x15	30	51	174.4
Cellfie	2x10	20	2x5.49	10.98	2x10	20	2x10	20	0	70.98
Total Assigned	-	40	-	60.98	-	139.6	-	80	51	371.58
Available but Unassigned	2x10	20	2x4.5	9	2x5	10	2x5; 2x15	40	49	128
% of Assigned		67%		87%		93%		67%	51%	74%

Source: ComCom data

Figure 37 Spectrum assignments by operator prior to September 2023



Source: ComCom data

Operators were generally on equal terms in frequency bands below 1 GHz (Cellfie had the smallest share of spectrum, but the difference is relatively small), while in frequency bands above 1 GHz, Cellfie held significantly less spectrum, which was a great disadvantage especially in densely populated (and more lucrative) areas of Georgia, compared to Magticom and Silknet.

The spectrum in frequency band of 2,300 MHz assigned to Silknet cannot be used to its full extent, as many user terminals (handsets) in the Georgian market are unable to use that band. It can be therefore concluded, that Magticom and Silknet were on equal conditions regarding spectrum above 1 GHz, while Cellfie's position was weaker.

In the spectrum auction concluded in September 2023, all existing MNOs (Magticom, Silknet and Cellfie) were invited to participate as well as any potential new entrant. Only Cellfie

participated in the auction and was awarded additional spectrum. Magticom and Silknet did not participate (they did not apply for any spectrum).

The spectrum position after the September 2023 auction is shown in Figure 38.

Figure 38 Spectrum assignment after the auction concluded in September 2023

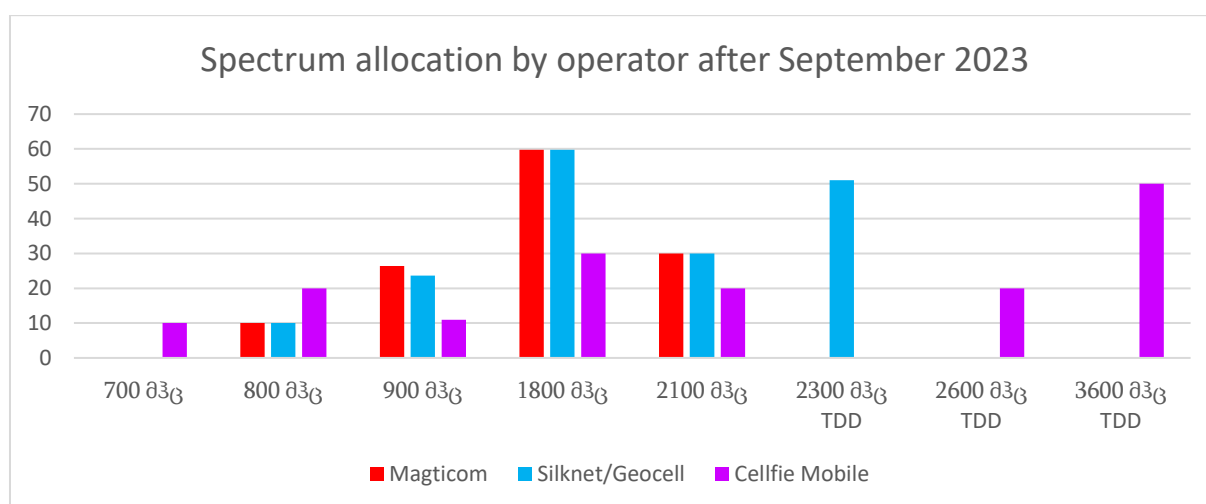
	Silknet	Magticom	Cellfie before Sept 2023	Cellfie after Sept 2023
Frequencies below 1 GHz bands (800 and 900 MHz)	2 x 16.8	2 x 18.2	2 x 15.49	2 x 15.49
Frequencies in the 1800 and 2100 MHz band	2 x 44.9	2 x 44.9	2 x 10	2 x 15
Frequencies in the 2300 MHz band	1 x 51			
Frequencies for 5G below 1 GHz (700 MHz)				2 x 5
Frequencies for 5G 2.600 MHz				1 x 20
Frequencies for 5G 3.600 MHz				1 x 50

Source: ComCom data

Spectrum in the 1,800 MHz band can be used for LTE, while the other new spectrum is assigned for use for 5G services (the assignment is not technology neutral).

The current frequency assignments are shown in figure 39.

Figure 39 Spectrum assignments after the auction concluded in September 2023



Source: ComCom data

After the auction, the overall relative positions of the three MNOs remains the same despite Cellfie's gains. Cellfie's gains in spectrum above 1 GHz are much more significant, overtaking Magticom into second position. However, 51 MHz of Silknet's spectrum is in the 2,300 MHz band (which is less useful) and the majority of newly assigned spectrum to Cellfie is dedicated for 5G use.

It can therefore be concluded that Cellfie is now (since September 2023) nominally in the best position in both parts of the spectrum, below and above 1 GHz. This is the case because currently, a significant amount of Cellfie's spectrum can be used for 5G. If only LTE spectrum is compared, Cellfie is still in a much weaker position compared to Magticom and Silknet.

It should be emphasised, that there is a total of 500 MHz of spectrum that has not been assigned to mobile operators in Georgia (compared to 411 MHz already assigned). The unassigned spectrum includes 2x25 MHz spectrum in the valuable 700 MHz band. This spectrum is from the bands pre-allocated for use in mobile communications, so it is available for auction. Since there is a lot of available free spectrum and when new auctions are planned by ComCom in the future, then it is very likely that the relative spectrum situation of the MNOs will change significantly.

Figure 40 Unassigned mobile spectrum

	Allocated but not assigned								
	700 MHz		2600 MHz		3400 - 3600 MHz		3600- 3800 MHz		All bands MHz
	FDD*	Total	FDD+TDD*	Total	TDD*	Total	TDD*	Total	Total
Available prior auction, MHz	2x30	60	2x70 +40+2x5**	190	200	200	130	130	580***
Available after auction, MHz	2x25	50	2x70 +20+2x5**	170	150	150	130	130	500

* See footnote⁷⁹

** 2x5 MHz TDD in 2600 MHz may be issued to the owner of TDD and FDD bands having 5 MHz between them

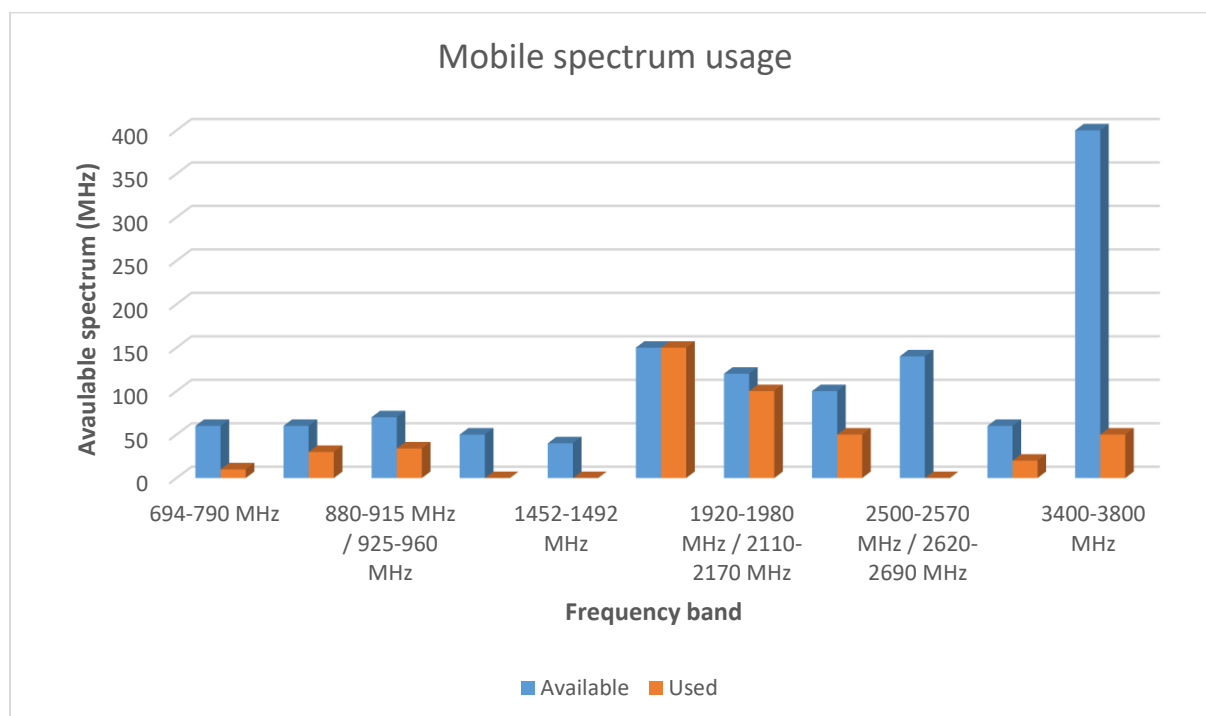
*** additional 2x5 MHz of spectrum in 1800 MHz band, which was allocated to Cellfie in September auction is not mentioned in this table.

Source: ComCom

Spectrum allocation in Georgia is currently lagging behind the EU. Some frequency bands, which are allocated for International Mobile Telecommunications (IMT) in the EU, are still not yet allocated in Georgia. It can therefore be assumed that even more spectrum will become available in Georgia for mobile communication in the future.

⁷⁹ FDD uses different frequency bands for uplink and downlink (optimised for voice traffic) and TDD uses the same band for uplink and downlink (optimised for data traffic).

Figure 41 Available mobile spectrum and its usage



Source: ComCom and CEPT

It is also expected that during the 2023 World Radio Congress⁸⁰, further spectrum allocations for mobile usage will be made.

It can be therefore concluded, that in Georgia there is enough spectrum for further assignments and that the current situation will be changed within the forward-looking time perspective of this market analysis. The current leading position of Cellfie in 5G spectrum is most probably only temporary. In the expected next ComCom auctions the relatively stronger financial positions of Magticom (and also Silknet relative to Cellfie) will most probably lead to significant changes in the relative frequency holdings of the MNOs, with Magticom and Silknet likely to regain ground.

6.2.5. Absence of potential competition

The assessment of market power under Article 15 (1) k) of ComCom's revised Methodological Rules must also consider the ease of market entry of new operators not active on this market.

In assessing the market for wholesale mobile access, it is necessary to examine the possibility of a new entrant that could become established in the wholesale market and provide effective competition to an existing operator.

The impact from the entry into the wholesale mobile access market from another established operator in a closely associated market should also be considered. Market entry is more likely

⁸⁰ The World Radio Conference will take place in November and December of 2023 see <https://www.itu.int/wrc-23/>

if a potential new entrant is already present in neighbouring markets or have the network capacity to supply or contest a relevant wholesale access service. For example, an existing Georgian FTTX network operator (such as Skytel) could choose to become a converged (mobile and fixed) broadband business to rival its main competitors Magticom and Silknet. By entering the mobile market, Skytel could be in position to offer wholesale mobile services. To achieve this, the new entrant would need to duplicate the capacity of an existing mobile network. This mobile network would require its own spectrum resources and a high initial investment, which would take some time before a competitive wholesale mobile access service could be offered on a national basis. This presents a significant barrier to entry in the wholesale mobile access market and severely restricts any potential competition because it is considered that there are no players in the same or neighbouring markets (for example Skytel) that could use their already existing infrastructure and make a fast market entry.

It is therefore concluded that there will remain a lack of potential competition in the wholesale mobile access market during the forward-looking time horizon of this market analysis.

6.2.6. Vertical integration

Article 15 (3) i) of ComCom's revised Methodological Rules state that operating at both wholesale and retail levels of the vertical value chain *"...gives them a competitive advantage over other authorised persons, as they can independently provide services to subscribers, can control the process of providing services and respond immediately to potential market changes"*.

The benefits of vertical integration in telecommunications arise mainly from the control of an operator's own resources being used to ensure a better quality of service to end-users (and therefore improve its competitiveness). For example, by having control of its own infrastructure, an operator can determine its own priorities for connecting new customers and responding to service problems. Relying on wholesale access to another operator's network changes the situation because the access-seeker's priorities could clash with the network provider's priorities.

An access-seeker for wholesale mobile access will therefore have to balance the relative merits of the lower funding requirements (arising from a wholesale rather than self-supply) against the loss of control over the factors that contribute to the quality of its end-user services and the potentially higher operating costs (in wholesale access fees) that could influence its profitability.

Magticom and Silknet are operators providing network infrastructure and retail services for both fixed and mobile markets in Georgia. This puts Magticom and Silknet in a different position from Cellfie, which only provides mobile services. Magticom, in particular is better positioned to use its vertical integration as an advantage because it holds a leading market position in all the main retail telecommunications markets. Magticom has a clear network infrastructure advantage in terms of coverage, capacity and density in fixed broadband markets and a mobile network infrastructure which currently carries significantly more data traffic than both Silknet and Cellfie.

According to ComCom's decision 671/9 of 6 December 2018, Magticom and Silknet (together with other operators) have significant market power in different local markets in the provision of leased lines as dedicated capacity services (trunk and backhaul segments) which are of great importance for the mobile operations. Magticom and Silknet could have an incentive to discriminate between their own mobile activities and the requirements of access-seeking operators on the sale of leased lines (and dark fibre capacity) in the wholesale market. Such discrimination could be a clear example of using vertical integration as anti-competitive tool deriving directly from a dominant position in the wholesale market.

It is considered that both Magticom and Silknet could use their vertical integration as an advantage, but the benefits derived by Silknet from vertical integration are not sufficient to challenge the leading position of Magticom. This is mainly because Magticom carries significantly greater data traffic (see Figure 25) and has made significantly greater network investments over the last four years (see Figure 28).

6.2.7. Economies of scale

Article 15 (3) f) of ComCom's revised Methodological Rules state that: *"Authorised persons providing large-scale services have the opportunity to achieve economies of scale due to the distribution of the authorised person's total costs among units of services provided in large volumes."*

Economies of scale occur in markets where high investments are needed to create a market presence leading to a lower subsequent unit cost of supply. In mobile telecommunications markets, significant investments are needed in acquiring spectrum rights and building a national infrastructure.

All three Georgian mobile network operators have already deployed networks with a national footprint. Magticom's has a market share of 42% of mobile subscribers compared with Silknet at 33% and Cellfie at 25% (see Figure 4). In the fastest growing market segment (mobile data traffic – see Figure 26), Magticom's relative share is 51% compared with Silknet's 30% and Cellfie's 18%. This market superiority gives the possibility for Magticom to use greater economies of scale. Magticom is also better positioned to use its economies of scope, (see Chapter 6.2.8) because it holds a leading market share in the fixed broadband market.

The existence of greater unit costs of supply in Silknet and Cellfie's networks puts them at a disadvantage in sustaining retail tariffs that can effectively compete with Magticom. The overall profitability of Silknet and Cellfie is already at a lower level than Magticom (see also Figure 43).

It is therefore concluded that Magticom benefits from greater economies of scale than Silknet and significantly greater economies of scale than Cellfie.

6.2.8. Economies of scope

Article 15 (3) g) of ComCom's revised Methodological Rules state that economies of scope have: *"...the similar effect as the economy of scale, although cost reduction is achieved as a*

result of the distribution of fixed and overhead costs between different types of services provided through the same infrastructure.”

Economies of scope are present in a market when an operator supplies more than one significant service with each service using some common resources, including networks plus marketing and distribution resources. In the telecommunications sector, it is cheaper for an operator to produce both fixed and mobile services together than to produce them separately. A market advantage can be gained from economies of scope because firms can benefit from lower unit costs and customers can purchase more than one service from the same supplier. Economies of scope can also occur when an operator provides both retail and wholesale services. An operator that is present in all retail and wholesale telecommunications markets will be able to spread its shared costs among all its products and services.

Magticom is the market leader in provision of most of electronic communications services. This is the case for all fixed and mobile retail services (see Figure 42). Magticom is not the market leader for wholesale duct infrastructure where Silknet (as the previous incumbent network operator in Georgia) is the leader. These services include, but are not limited, to mobile services, fixed broadband, pay-TV services, etc. This puts Magticom in specific position comparing with other operators in Georgia and mainly with Silknet.

Figure 42: Retail market shares based on number of subscriptions (2022)

Operator	Retail market shares of subscriptions (2022)			
	Higher-speed fixed broadband	All fixed broadband services	Mobile Services	Pay TV
Magticom	54.6%	48.3%	42.6%	56.06%
Silknet	32.0%	29.9%	32.7%	36.99%
Cellfie			24.7%	
Others	13.4%	21.8%		6.95%
TOTAL	100%	100%	100%	100%

Source: Derived from ComCom data

Magticom’s shares in all its main markets give it a significantly higher economy of scope. The remaining telephony-based services (not shown in Figure 42) are relatively less important and are declining. Silknet also benefits from some economies of scope, being the only other operator that provides both fixed and mobile services. All the other operators in Georgia (including the third largest mobile operator Cellfie and the many smaller fixed network operators) do not benefit from any significant economies of scope.

Magticom and Silknet also have the advantage of being able to offer several retail services together in bundles for customers. Their competitive advantage in bundling services arises mainly from their ability to offer combinations of fixed, mobile and pay TV services in the same package and achieving cost reduction as a consequence of fixed costs being distributed among these services and by sharing the same overhead activities. The remaining mobile operator (Cellfie) does not offer such a full range of service bundles.

It is therefore considered that Magticom, as market leader across the whole range of main services in Georgia, benefits from greater economies of scope than any of its competitors. Together with the economies of scale (see Chapter 6.2.7) Magticom enjoys lower unit costs for its services, giving it a better competitive position with higher and more sustainable profitability (see also Figure 43).

6.2.9. Absence of or low countervailing buying power, conclusion of long-term and sustainable access agreements

Article 15 (3) c) of ComCom's revised Methodological Rules state that the finding that: *"...in the absence of regulation, authorised persons using wholesale services do not have the opportunity to receive services from an authorised person with potentially single significant market power under conditions that are relevant for achieving competition. This is an important factor that the Commission should take into account when evaluating competition in the market. Purchasing power is also determined by the number of service providers in the relevant market segment";*

The overall mobile access market structure consists of three vertically integrated network operators (businesses with retail and network operations) competing with each other while one of them (Magticom) has the largest market share terms of revenues, data traffic and subscribers. In general, wholesale mobile access-seekers could have a degree of buying power if they purchase large volumes of capacity and pose a credible threat to switch supplier or to meet their own requirements through self-supply. In order for a competitive threat to be effective for an access-seeker to gain buying power, the volumes that are or can credibly be met from another source of supply need to have a material impact on the wholesale supplier's profitability, taking into account the potential loss of retail revenues that would accompany the new wholesale revenues. Practically, this requires wholesale access volumes to be significant.

Wholesale access to Magticom's base transmitter sites (co-location) or national roaming could be sought by other mobile operators (in particular Cellfie, which has a significantly lower number of base transmitter stations than Magticom). The possible foregoing of wholesale revenues by Magticom would likely be compensated by the reduced risk of losing retail revenues to Cellfie.

Similarly, wholesale MVNO access could be sought from Magticom by its competitors in the retail fixed broadband market. The possible foregoing of wholesale revenues by \Magticom likely be compensated by the reduced risk of losing retail revenues, because Magticom's has a high market share also in the retail fixed broadband market.

The absence of any wholesale MVNO agreement concluded by Magticom indicates that Magticom is not subject to effective countervailing buying power from potential access seekers wishing to enter the mobile market. The market experience over recent years, where potential players have attempted to enter the mobile market in Georgia by seeking MVNO access has been largely unsuccessful. Only one MVNO has appeared (Eclectic) based on Silknet's network. Eclectic is a very 'light' form of MVNO and it is considered unlikely that it will make a significant competitive impact on Magticom.

It is therefore considered that any potential access-seeker has insufficient countervailing buying power to impact pricing in the wholesale mobile access market. In the absence of *ex-ante* regulation it is highly unlikely, with their low bargaining power, that smaller operators in Georgia would be able to conclude long-term and sustainable wholesale mobile access agreements with larger.

6.2.10. Easy or privileged access to capital markets/financial resources

Article 15 (3) d) of ComCom's revised Methodological Rules state that: *"some authorised persons, when, based on their volume, type of ownership, or affiliation with a local and international group, it is possible for this authorised person, to have easier access to capital and financial resources (both internal and external) in order to make investments, renew the network and/or expand the network, and have easier access to capital and financial resources (both internal and external)... some authorised persons might have due to their size, type of ownership or affiliation to an international group, easier access to capital (either internal or external) required for conducting necessary investments related to network upgrades or enlargement."*

Access to loan financing is generally more difficult in Georgia than in the EU and so firms that are already generating their own cash from ongoing operations will have an advantage over firms in the same market that have to rely on external sources of funding for investment and expansion.

Figure 43: Key financial resource indicators 2019-2022 (GEL millions)

	2019	2020	2021	2022
EBITDA ⁸¹				
- Magticom	306	295	353	466
- Silknet	216	214	231	289
- Cellfie	45	45	54	63
Capex				
- Magticom	115	31	138	105
- Silknet	99	105	71	73
- Cellfie	22	46	39	25
Outstanding loans				
- Magticom		No	No	NO
- Silknet		Yes	Yes	Yes
- Cellfie		Yes	Yes	Yes

Source: Derived from ComCom data and operator published reports

Note: Exact comparison between operators' reported EBITDAs could be distorted by differences in the treatment of cash in their accounts

Magticom has generated more free cash (EBITDA – see Figure 43) than its competitors over the three most recent financial reporting years and has made significant capital expenditures

⁸¹ EBITDA: Earnings Before Interest Tax, Depreciation and Amortisation

(Capex) without the need to consider debt financing. In contrast, both Silknet and Cellfie have significantly less free cash and have used debt financing.

Operators in the market that offer mobile as well as fixed services will generally have a more resilient means of self-financing based on their higher market shares and greater economies of scale and scope.

In general, a business has easier access to financial resources if it is healthy enough to repay any loans including interest. There are both financial and non-financial aspects that determine a company's creditworthiness. While in non-financial aspects MagtiCom, Silknet and Cellfie might be comparable in terms of a record of sustained and inelastic demand (all three companies are in a growing market), the financial characteristics summarised in the following figure distinguish MagtiCom from the others.

Figure 44: Key financial resource indicators 2020-2022

Company Name	Operating CF to debt			EBITDA to Interest			EBITDA to total Loan			Debt to Equity		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
Magticom	7.25	10.30	14.80	9.57	16.30	15.33	N/A	N/A	N/A	0.04	0.04	0.03
Silknet	0.12	0.20	0.32	2.38	2.60	2.50	0.32	0.39	0.54	(14.41)	(19.25)	5.53
Cellfie mobile	0.11	0.09	0.09	0.81	0.88	1.08	0.10	0.11	0.10	(1.11)	(1.16)	(1.14)

Source: Derived from ComCom data and operator published reports (Note: Veon is now reported as Cellfie).

Typically, a debt-to-equity ratio (D/E) greater than 2.0 indicates a risky scenario for an investor/ lender. However, this yardstick can vary by industry. Silknet's D/E is well above 2.0 in 2022 and even negative in 2020 and 2021, while the trend in their operating cash flow (CF) to debt ratio is improving (from 0.20 to 0.32). Silknet's high leverage shows that the company might be close to the limit of its financing resources, with its assets already used to guarantee existing loans. As of December 2022, Silknet has property, plant & equipment amounting to GEL 363m and the borrowing principal outstanding amounts to GEL 595m, while MagtiCom has no borrowing principal outstanding and their property, plant and equipment amounts to GEL 449m. Therefore, Magticom has greater capacity to guarantee any future loans.

It is therefore considered that Magticom has easier access to capital and financial resources than its competitors.

6.2.11.Profitability

The EBITDA margin (free cash divided by revenues) is considered to be the best proxy for assessing profitability from a company's operations.⁸² Exact comparisons between operators could be distorted by differences in the treatment of cash in their accounts. The advantage of using EBITDA is that it removes the impact of factors (interest, tax, depreciation and amortisations) where business owners have some discretion in influencing their calculation such as, for example in deciding about levels of debt financing, capital structure, methods of depreciation, and taxes (to some extent). EBITDA therefore demonstrates a firm's financial performance without the impact of its capital structure.

⁸² <https://corporatefinanceinstitute.com/resources/valuation/what-is-ebitda/>

Profitability in the mobile sector is highly influenced by past investments (which are generally related to the network infrastructure constructed and the spectrum rights acquired). The best means of comparison is to take all cash inflows (operating profit before taxes, interest, depreciation and amortisation) to compare the results of different companies in order to avoid the need to take into account any differing tax, financial regulations and amortisation assumptions that have occurred as a result of past investments over a period of time. EBITDA margins of telecommunications operators are typically around 30% or above, which are generally higher than typical EBITDA in other markets and industries⁸³.

Figure 45 shows revenues, profit margins and EBITDA margins of overall operations of Magticom and Silknet compared and their development over 2020, 2021 and 2022. This was done having in mind that only Magticom and Silknet are MNOs present and operating in wide range of different telecom markets (fixed broadband, fixed voice, IPTV, wholesale markets, infrastructure, etc.).

Figure 45: Overall operations⁸⁴

	Revenues			Net Profit margin (% of revenues)			EBITDA margin (% of revenues)		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Magticom	456	514	624	41%	44%	49%	65%	69%	75%
Silknet	382	413	473	-21%	12%	30%	56%	56%	61%

Source: Derived from ComCom data

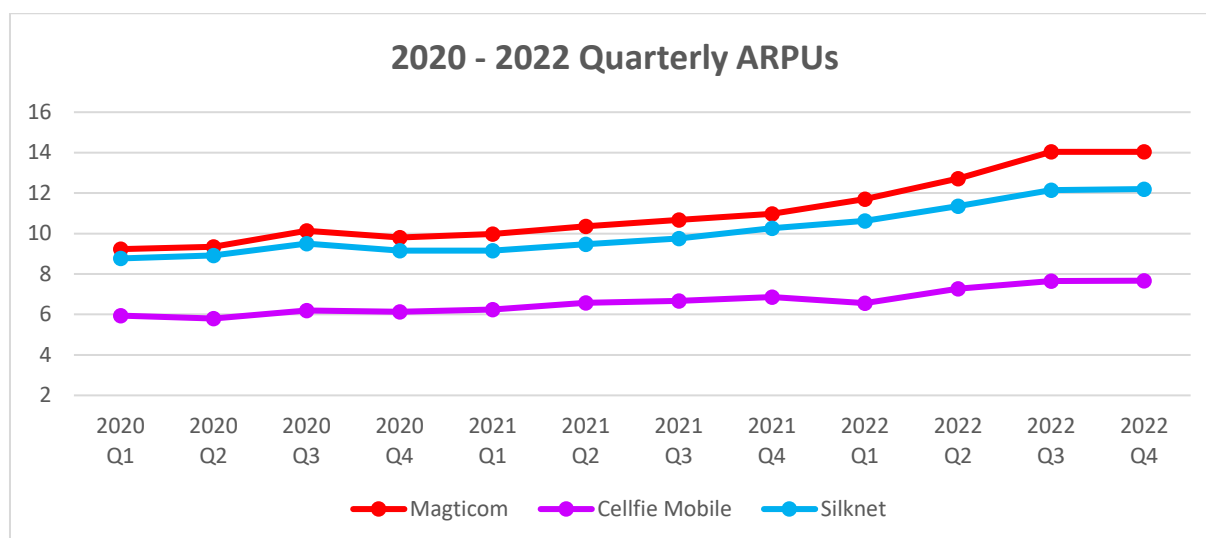
Figure 45 shows that Magticom and Silknet have high and stable EBITDA margins. These margins are generally better than the average for mobile network operators in the world (see also Chapter 4.2). Magticom's EBITDA margin is significantly higher than Silknet's and is increasing. In 2022, Magticom's EBITDA margin further increased to 75% (see also Figure 2). The net profit margin of Silknet is more influenced by interest, depreciation and amortisation payments than Magticom, with Magticom now debt free.

The increases in EBITDA margins for Magticom and Silknet have occurred in parallel with their increases in average revenue per subscriber (ARPU – see Figure 46). There have not been any decreases in Magticom's operations cost (for example by infrastructure sharing) over the last two years. Magticom's revenues increased by 12.6% in 2022 with an operational cost increase of 2.0%. Magticom's ARPU increased by 24.6% in 2022 against Silknet's 16.1% and Cellfie's 8.6%.

⁸³https://researchichtsolutions.com/home/otts_vs_telcos/#:~:text=If%20we%20look%20at%20the,sectors%20in%20the%20value%20chain

⁸⁴ Profitability is for overall operations which was the reason why the data from Cellfie was not used

Figure 46: ARPU



Source: Derived from ComCom data

Although all three mobile network operators have EBITDA margins above 35%, Magticom's EBITDA margin (at 75%) is significantly higher than Silknet or Cellfie's (at 61% and 45% respectively – see also Figure 43).

It is concluded that Magticom has a significantly better financial position in terms of its overall cash position which together with its access to financial resources and recent investment record, gives Magticom a much stronger position in the market for wholesale mobile access relative to its competitors. This position is unlikely to change significantly during the forward-looking time horizon of this market analysis.

6.3. Conclusion on the finding of SMP in the wholesale market of mobile access

It is considered unlikely that Magticom's retail market share for mobile services in 2022 (at 49% of revenues, 42% of subscribers and 51% of data traffic carried) in 2022) will fall below the Georgian Law presumption of SMP at 40%, within the forward-looking time horizon of this market analysis. In other key areas of market share, Magticom has made 59% of total infrastructure and hardware investments in the mobile sector over the last 4 years and over that period has added 59% of the new base station transmitters.

Market share, in all its methods of calculation (see Chapter 6.2.1) is just a first step of the assessment of the possible existence of SMP. Additional criteria must be considered (as required by Article 22(1)d) of the law of Georgia on Electronic Communications) in order to assess whether Magticom fulfils the status of an operator in the wholesale mobile access market with SMP. The market share proxy (on a notional market) was not taken as decisive but has been used as support to a conclusion of SMP, based on secondary criteria listed in Article 15 of ComCom's revised methodological rules. On both the market share evidence (where no other operator has achieved 40%) and using the other criteria, Magticom is significantly better positioned in the market than its competitors.

It is therefore concluded that Magticom possesses single SMP in the wholesale mobile access market, based on its high market shares (using wide range of relevant market share information) and backed-up by an analysis of a number of secondary criteria, notably:

- Magticom's absolute and relative size compared to its competitors
- Magticom's control over infrastructure not easily duplicated in terms of the required national coverage and capacity (similar for Silknet)
- The existing barriers to market entry and expansion evidenced by the lack of significant competition and potential competition within a forward-looking timescale of 3 years
- Magticom's significant economies of scale and scope gained through its national infrastructure for both fixed and mobile services (its leading position in all the key fixed and mobile markets, largest revenues, largest subscriber base, largest data traffic carried) its national distribution channels and its strong vertically integrated retail and network business
- Absence of countervailing buying power and Magticom's lack of incentive to conclude long-term and sustainable wholesale agreements
- Magticom's easier access to financial resources backed up by higher profitability indicators.

6.4. Joint dominance

In addition to the market share threshold set in the law of Georgia on Electronic Communications, Article 16(4) of ComCom's revised methodological rules⁸⁵ sets, in line with

⁸⁵ 4. In order to establish joint significant market power, along with the above-mentioned main criterion, it is necessary to meet the secondary criteria provided by Article 22, Clause 12 of the Law of Georgia "On Electronic Communications". In particular, it is necessary to meet the following three prerequisites:

a) First, each member with joint market power must be able to know how other members behave in order to observe whether they are implementing common policies. It is not enough for each member of a joint power to know that interdependent market behavior is beneficial to all of them, each member must also be able to know that another operator has the same strategy and is following it. Therefore, there must be sufficient market transparency so that each participant of the Tacit collusion can sufficiently accurately and quickly receive information on how the market behavior of other members is developing (Transparency).

b) Second - the circumstances of the tacit collusion must be sustainable, in particular there must be sufficient encouraging/incentive factors, so that there is no deviation from the common agreed policy. This is the case when maintaining the agreed behavior is beneficial for all members. Based on the above, the concept of repercussions (retaliation) for behavior deviating from the common policy is characteristic of this situation. In order for the situation of joint significant market power to be viable, there must be adequate deterrent mechanisms to ensure the existence of long-term incentive mechanisms so that the member with joint market power does not deviate from the common policy, which means that each member must know that highly competitive action on its part aimed at increasing its market share will provoke identical actions by others, thus it will not benefit from the mentioned initiative (Sustainability).

c) Third - it must be proven that existing or potential competitors or customers cannot threaten the benefits that authorised persons participating in tacit coordination expect from the common policy (absence of externalities).

5. When determining the condition of sufficient transparency in the relevant market segment, the Commission shall examine and evaluate the following circumstances:

a) Whether or not there are strong incentives in the market for operators to act in concert and refrain from relying on anticompetitive behaviour is the case where the long-term benefits of anticompetitive behaviour outweigh any short-term benefits derived from competitive behaviour.

the EU acquis, three conditions which must cumulatively be fulfilled for the finding of joint dominance. These three cumulative conditions are (i) sufficient market transparency so that each jointly dominant undertaking is able to know that the others do not deviate from the focal point of the supposed tacit coordination, (ii) a long-term incentive for each member of the dominant oligopoly not to depart from the terms of coordination. The existence of a

b) In the context of the assessment of the existence of joint significant market power, in addition to the criteria described in paragraph 4 of this article, close convergence of prices over a long period, especially if they are above the competitive level, together with other factors characteristic of joint market power, in the absence of an alternative reasonable explanation, is sufficient to demonstrate the existence of joint significant market power, even in the absence of clear direct evidence of market transparency, as such transparency can be inferred. An examination of such circumstances should be carried out based on an analysis of possible strategies for credible coordination. The detection of the coordination mechanism is not necessary in this case, although it may take place, especially if the characteristics of the market have not changed significantly and/or it is unlikely that this will happen before the next market review period;

c) When the past behavior of market participants indicates to the regulator the dynamics of the likely development of the market for the future review period, the Commission should take into account the fact that even in the presence of the regulation, the imposition of tariff regulation on wholesale access products may not be a sufficient explanation for price convergence at the retail level for a long period. Such concurrence, in the absence of an alternative reasonable explanation, may be indicative of tacitly coordinated behavior if there are other factors characteristic of joint significant market power. In addition to the specific obligations of tariff regulation, an alternative reasonable explanation can be, for example, economic in nature, if the price level is derived from the cost structure in the market;

d) In order to assess the condition of transparency in the electronic communications market, where barriers to entry for new entrants are typically high, the refusal of network owners to grant wholesale access on reasonable terms may be the focal point of a common policy adopted by oligopoly participants. Such a refusal by network operators may indicate the existence of a common policy, which is taken into account, among other factors, when carrying out a joint significant market power analysis. A focal point based on the denial of access may be established in the case of operators, regardless of whether they are subject to an obligation to provide access, taking into consideration specific conditions. Such conditions include a general incentive to maintain unreasonably high profits in retail markets, which would be considered by the regulator to be disproportionate to the investment made and the risks incurred.

6. In order to assess the condition of sustainability, the Commission shall investigate and evaluate the following circumstances:

a) For the common policy to be sustainable over time, each member of the oligopoly must have an incentive not to deviate from the terms of coordination. This follows from the fact that members of a dominant oligopoly can only benefit if each of them maintains parallel behaviour.

a.a) In order to ensure the stability of the coordination mechanism, it is necessary to have a convincing threat of the reaction (retaliatory) mechanism. For example, the presence of countervailing (retaliatory) mechanisms on the part of operators with joint significant market power, among other circumstances, may indicate the emergence of a short-term price war between two or more companies in the main or other related retail market segment;

b) The reaction of end-users, which results from price changes and is expressed by user portability or termination of service consumption, may indicate the existence of a counteraction (retaliatory) mechanism in a specific market segment;

7. In order to assess the condition of the absence of externalities, the Commission shall investigate and evaluate the following circumstances:

a) In assessing externalities, the Commission must take into account competing economic undertakings or customers operating outside the oligopoly in the relevant market who have sufficient economic or purchasing power to threaten the tacit coordination mechanism;

b) It should be assessed whether the economic agents behind tacit coordination (potential and existing competitors) have the ability to create a threat to the expected benefits of tacit coordination, taking into account the following parameters for assessing their market entry/expansion barriers: the relative share held by potential and existing competitors in the relevant market segment, economies of scale, the potential of entering the retail market segments of all products in demand for consumers, their relative strength in the main area of activity, etc..

credible threat of retaliation by the non-deviating members is inherent in this condition. and (iii) foreseeable reaction of current and future competitors, as well as consumers, cannot jeopardise the results expected from the common policy. As the following analysis suggests, only the third may possibly be fulfilled in Georgia for the time being.

- (i) Sufficient transparency to allow the jointly dominant undertaking to monitor possible deviation from the focal point of the supposed tacit coordination

The first condition for the finding of joint dominance is that there must be sufficient market transparency so that each participant of the collusion can sufficiently accurately and quickly receive information on how the market behaviour of other members is developing.

In the wholesale mobile access market reviewed, the focal point on which the mobile network operators would tacitly coordinate would be a refusal to conclude commercial agreement(s) for wholesale access. However, Silknet has concluded an MVNO wholesale access agreement with new market entrant Eclectic. It could be argued that the focal point to apply this test would be not to conclude further MVNO deals, but would have to be substantiated with examples of credible candidate MVNOs that would have been refused access. Evidence of that is not available to date.

- (ii) Sustainable incentives against departure and respective threat

In order to make the common policy sustainable over time, there must be an incentive for each member of the oligopoly not to depart from the terms of coordination. This derives from the fact that members of the dominant oligopoly can benefit only if they all maintain the parallel conduct. The existence of a credible threat of retaliation, deterring deviation, is a necessary requirement to ensure that the coordination mechanism remains credible over time.

As regards the need to resort to the exercise of a sanction, the General Court clarified that the mere existence of an effective deterrent mechanism is, in principle, sufficient since if the members of the oligopoly conform with the common policy, there is no need to resort to the exercise of a sanction. The most effective deterrent mechanism is that which has not been used.

This clarification is particularly relevant, by way of an example, in cases where an NRA considers that the focal point of tacit collusion at the wholesale level consists of a (constructive) refusal of wholesale access, and where wholesale transactions are typically scarce. In such cases, NRAs do not need to establish that the retaliation would consist of the conclusion of another access agreement by the other tacitly colluding operator(s), but may identify a different credible retaliatory mechanism on the underlying or related retail market(s) (such as short-term price wars). Considerations related to portability and churn in the specific circumstances could further substantiate the assumed responsiveness of consumers to price changes and help the NRA to predict the likelihood of retaliation at retail level being effective.

The credibility of a threat of sanction (mechanism) and/or its exercise is to be considered by the NRAs in the case-by-case analysis.

(iii) no effective external constraint

The criterion will be fulfilled in the case where there are operators currently present in the market outside the tacitly colluding dominant oligopoly or possible entrants which have the ability to challenge the anti-competitive coordinated outcome, by forcing one or more players to depart from the common policy to protect its market share.. The criterion will also be fulfilled in the presence of customers' buying power susceptible to endanger the mechanism of coordination. Consumers in mass markets are unlikely to be able to individually exercise buyer power of any significance. However, this is not necessarily the case regarding business end users.

In the framework of ex-ante regulation in the electronic communications sector, the market position and strength of the rivals, that do not form part of the collective entity operating in the market, or potential competitors, can be assessed based on various factors, related to barriers of entry for potential competitors and the competitive situation of and barriers to expansion for existing market players. The relevant parameters in this assessment will include market share in the market under assessment, related economies of scope, potential to provide input to all products requested by the customers at the retail level, its relative strength in the major area of activity, the existence of fringe or maverick competitors, etc. In this respect, NRAs should include in their draft measure an assessment as to whether or not fringe competitors can challenge the anti-competitive coordinated outcome.

Markets for the provision of electronic communications services have high barriers to entry, in particular of an economic nature, as network roll-out, in the absence of wholesale access agreement, is costly and time-consuming; but also barriers of a legal nature, as in particular spectrum policy can limit the number of mobile network operators. For this reason, a hypothetical new entrant that could disrupt a tacit collusive equilibrium is likely to have to rely, at least partly, on the infrastructure of others. In the absence of regulatory intervention or sustainable commercial agreements or disruptive technological innovation, it can typically be assumed that the likelihood of a disruptive entry is generally low in the short and medium term.

As regards customers, some business end-users who purchase business-grade or tailored products may be able to exercise countervailing buyer power and their potential reaction should be analysed, if appropriate, in the specific market.

7. Analysis of the possible competition problems on the relevant wholesale market in absence of regulation

A provider with significant market power would be able to exercise behaviour with the purpose or consequence of restricting competition, including driving competitors out of the market, preventing new operators from entering the market or exploiting consumers. This kind of anti-competitive behaviour is also referred to as ‘competition problems’.

In this chapter all possible competition problems that could happen on the relevant wholesale market⁸⁶ in the absence of regulation will be analysed and presented with clear examples. This chapter makes the link between the designation of the SMP operator (in Chapter 6) and the definition of regulatory obligations. Each regulatory obligation will need to remedy in a proportionate manner one (or more) of the competition problems identified in this chapter.

Competition problems may arise from the SMP operator's ability or incentives to use its high market share or dominant position, on the relevant wholesale market, possibly in conjunction with its dominant position in adjacent markets.

ComCom cannot predict in advance every potential competition problem that may arise in the absence of regulation. In order to capture as many potential situations as possible that can arise, each potential competition problems will be described in general terms.

The analysis in Chapter 6 concludes that Magticom owes its significant market power in the relevant market from its control of a network that is superior to that of its competitors in several aspects, including higher investment in network infrastructures and hardware. In addition, Magticom has a fixed broadband network with a coverage that is substantially larger than that of its closest competitor, enabling Magticom to reap more benefits from available economies of scope and scale, in particular from jointly offering fixed, mobile communications and pay-TV.

Magticom has combined activities in several markets that could separately be controlled by different operators. In the context of the finding of SMP in the wholesale mobile access market, the issue of vertical integration plays therefore an important role to the extent that Magticom can derive specific advantages from being vertically integrated that can strengthen its market power in the relevant wholesale market. Competition problems arise from the incentives for Magticom to use its position on one or more upstream wholesale markets to keep out any new competitors or to act anti-competitively towards existing competitors on different retail markets. This ability could consist in refusing to provide access, offering high wholesale prices or lower quality. In this way, Magticom could leave an access-seeker with no other alternative but to build its own network.

A new player with no mobile network infrastructure wishing to enter the market, or an existing operator with limited capacity and/or coverage wishing to improve its retail offerings and

⁸⁶ By gross misuse (abuse) of the market advantage by the authorised undertaking with SMP

operations without investing in additional active equipment and/or spectrum, will be affected by the decisions of a vertically integrated operator such as Magticom.

The benefits of vertical integration in telecommunications arise mainly from the control of an operator's own resources being used to ensure a better quality of service to end-users (and therefore improve its competitiveness). For example, by having control of its own infrastructure, an operator can determine its own priorities for connecting new customers and responding to service problems. Relying on wholesale access to another operator's network changes the situation because the access-seeker's priorities could clash with the network provider's priorities.

An access-seeker for the wholesale mobile access service will therefore have to balance the relative merits of the lower funding requirements (arising from a wholesale rather than self-supply) against the loss of control over the factors that contribute to the quality of its end-user services and against high usage fees (monthly wholesale cost) that could influence their profitability.

As Magticom claims to own the best mobile network,⁸⁷ it considers itself to be in a better position to use its vertical integration than the other two mobile network operators. It is therefore concluded that Magticom, as the operator that handles the largest volume of data traffic in Georgia by means of a network with the largest investments, will, in the absence of *ex-ante* regulation, have a significant advantage over an access-seeker that cannot have full control over the quality of their end-user services.

There are two main strategies of vertical leveraging⁸⁸ of a dominant position in a market:

- Refusal to deal/ denial of access, including using disadvantageous pricing
- Leveraging by means of non-price variables.

In this section, the incentives for Magticom to deploy these strategies will be assessed, as well as other means of using its dominant position. It should be stressed that there is no 'checklist' to be applied, instead a competitive analysis in a particular market review must be based on an overall assessment of the foreseeable impact of the identified SMP strategy on competition over the review period, in the light of the relevant factors and conditions. Not all the strategies

⁸⁷ umlaut, the global consultancy company and world leader in mobile network testing and benchmarking recognises Magticom network as the "Best in Test" in Georgia, available on:

<https://www.magticom.ge/en/umlaut> This finding was confirmed by a tourist website: 'Staying Connected in Georgia: How to Buy & Activate a Georgian SIM Card in 2023', Emily Lush, 6 May 2023, available on: <https://wander-lush.org/georgian-sim-card-beeline-magti/>

⁸⁸ vertical leveraging was defined by the European Regulators Group „... any dominant firm's practice that denies proper access to an essential input it produces to some users of this input, with the intent of extending monopoly power from one segment of the market (the bottleneck segment) to the other (the potentially competitive segment)“, ERG (06) 33 Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework (page 32), available at:

https://www.berec.europa.eu/sites/default/files/files/documents/erg_06_33_remedies_common_position_june_06.pdf

will always be relevant to each and every SMP finding and it may not be necessary to analyse all the possible strategies in the same detail.

It is generally recognised within the EU, that within a market, competition concerns may arise in relation to certain segments which have a particular importance for the market as a whole. It is therefore important that ComCom examines the possible effects of the SMP finding not only on the market as a whole, but also on each segment separately. An effect on important segments within the relevant market could, in the circumstances of this case, be considered to be an effect on that market as a whole.

In the following analysis, the competition concerns are considered depending on which segment of the wholesale market they relate.

A. Competition concerns relating specifically to the segment of access to sites (co-location) and national roaming

7.1. Raising rivals' costs

There are several ways in which an SMP operator can behave in order to erect entry barriers in order to either increase the costs of potential entrants or to restrict their sales. Such barriers to entry are sometimes referred to as 'endogenous' entry barriers such as economies of scale and sunk costs. (The other type of entry barriers are termed 'exogenous' and do not result from firms' behaviour.)

In the absence of access obligations, an SMP operator could have an incentive to invest in equipment and networks in amounts that cannot be matched by its competitors, causing the latter either increase its own investments (for example by increasing its debt at the expense of its marketing and customer acquisition expenses) or by reducing its costs resulting in a lower quality of service to its consumers.

However, it might be difficult for regulators to distinguish between anti-competitive investments from efficient ones. Therefore, the incentives of the SMP operator to deploy other anti-competitive behaviours should also be analysed.

7.2. Refusal of supply/ denial of co-location and national roaming

The most visible retail offers advertised by the three mobile operators show that the respective products are endogenously differentiated⁸⁹ in terms of their market positioning, Magticom offering the most 'classic' product, likely mimicked by Silknet and Cellfie on bundling with additional services as illustrated by the following sample of current retail offers (on 1ST of July 2023).

⁸⁹ Endogenously differentiated products exist in markets where service providers offer different products in terms of quality and prices to meet the needs of different consumer groups. See <https://www.jstor.org/stable/3003410>

Figure 47: The main retail offers of the mobile operators

WONDER COCKTAIL	COCKTAIL 60	COCKTAIL 30	COCKTAIL 10
 4000 MB  150 MIN	 UNLIMITED  UNLIMITED  UNLIMITED	 3000 MB  UNLIMITED  UNLIMITED	 1000 MB  UNLIMITED VOICE ONNET  UNLIMITED
9  30 DAY	60  30 DAY	30  30 DAY	10  30 DAY

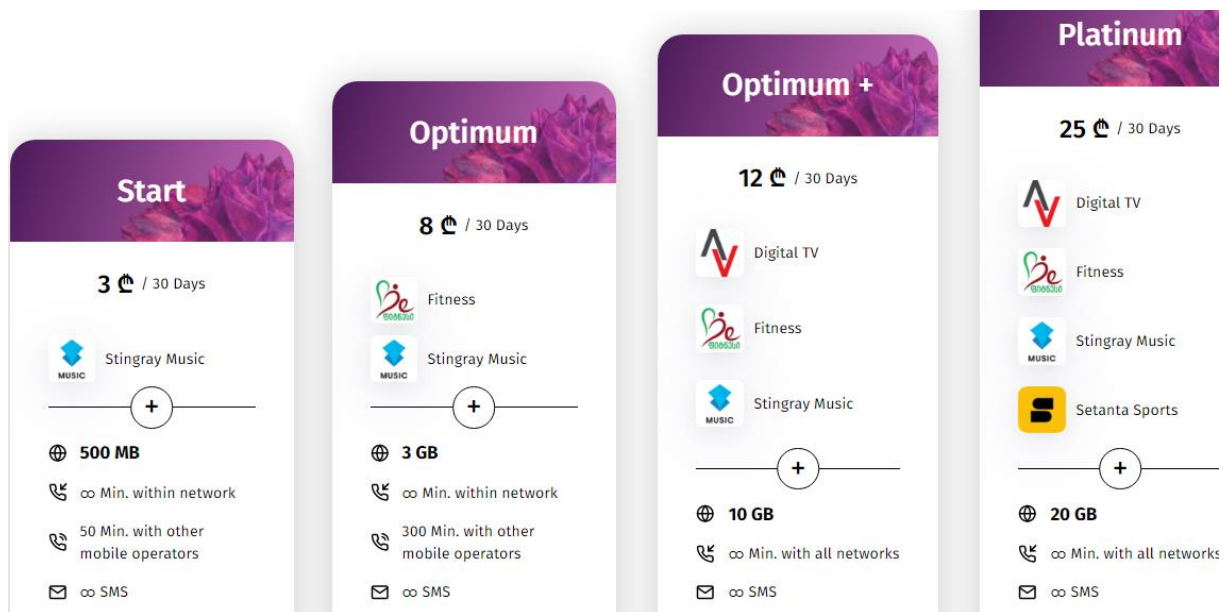
Silknet⁹⁰

METI S+	METI M	METI UNLIMITED	METI UNLIMITED +	TOTALLY UNLIMITED
150 Minutes  To the local network	Unlimited  To the internal network	Unlimited  To the local network	Unlimited  To the local network	Unlimited  To the local network
300 MB	700 MB	1 GB	7 GB  Instead of 5GB	Unlimited
1000	Unlimited	Unlimited	Unlimited	Unlimited
30 Days	30 Days	30 Days	30 Days	30 Days
8 GEL	10 GEL	25 GEL	35 Gel	55 Gel

Source: Magticom⁹¹

⁹⁰ <https://silknet.com/en/personal>, last accessed on 23 May 2023

⁹¹ <https://www.magticom.ge/en/mobile/tariffs/cocktail>, last accessed on 23 May 2023



Source: Cellfie⁹²

The retail market shares for the three mobile operators (see Figure 4) show that despite cheaper offers, Cellfie cannot entice Magticom's customers to migrate to its network. Noticeable is that Cellfie does not offer unlimited data, possibly due to capacity constraints within its network. It is considered that, on present market trends, Silknet and Cellfie will become less able (through lower economies of scale and as a result of a smaller number of subscribers and a lower average data usage per subscriber) to compete effectively with Magticom in retail mobile markets.

Today, Cellfie's network is perceived as being of a lower quality. A ComCom auction for 5G spectrum was completed in September 2023. Cellfie won spectrum in the 700 MHz, 1800 MHz, 2600 MHz and 3400-3600 MHz bands for a period of 15 years. The majority of spectrum acquired has to be used for 5G, only 2x5 MHz in the 1,800 MHz band can be used for other technologies (principally LTE). Cellfie is also obliged to provide MVNO access to its 5G network.

The awarded frequencies are important from a longer-term perspective in the sense that when 5G services are launched in Georgia with national coverage, this will become a significant attraction for new MVNO entrants. This position is not expected to be reached in the forward-looking time horizon of this market analysis. Additionally, user devices (smartphones) have to be able to use 5G. In Georgia there are still a significant number of current smartphones and other end-user devices that cannot access 5G.

The additional spectrum awarded in September 2023 which can be used for LTE is not sufficient to close the gap between Cellfie and its competitors. More frequency auctions for available spectrum are expected to be held. Cellfie controls significantly less mobile base station sites than Magticom (and Silknet). Cellfie, has also been restricted (before the frequency auction in September 2023) by its inferior spectrum capacity in the 1,800 MHz band than Magticom (and Silknet) - as described in chapter 6.2.4. In such circumstances, for Cellfie,

⁹² <https://cellfie.ge/en/taripebi>, last accessed on 23 May 2023

access to sites (co-location) will be particularly relevant as a complementary service to national roaming. Access to co-location will be important to achieving rapid improvements to its network at the lowest possible cost.

Magticom has a mobile network that has demonstrated a capability of carrying significantly higher data traffic compared with its competitors (see Figure 25). Magticom also controls at least as many mobile base transmitter locations as Silknet and significantly more than Cellfie. It is therefore considered that Magticom is in a position to use its vertical integration to obstruct co-location by a refusal to allow access to the sites it controls⁹³.

Magticom and Silknet are also leading fixed broadband network operators, so both companies will have the same incentive and opportunity to refuse co-location access (or MVNO access) to other operators that constitute a potential competitive threat in the same retail markets, both mobile and fixed. Denial of access in the form of pure refusal, or in the form of unreasonably high construction contributions, are potential competition problems in the market for wholesale mobile communications services. For example, Magticom would have an incentive to deny MVNO access to Akhali Kselebi or Skytel, since these two current fixed operators could then offer bundled fixed and mobile services, in the same way as Vectra or Virgin Media have done respectively in Poland and the UK.⁹⁴

As regards co-location access, Magticom would be more willing to grant access to an operator that provides the company with a reciprocal offer (for Magticom to use the other operator's sites).

Magticom has an incentive to refuse negotiating with Cellfie for co-location and national roaming, even in the absence of objective justifications, because Cellfie controls substantially less sites, and therefore does not have good quality coverage. If Magticom allowed Cellfie to have access, then Magticom risks the improvement of Cellfie's retail offering in terms of improving its quality. As long as Cellfie remains capacity constrained, it will have difficulty in further reducing its prices (for example by launching a low-priced unlimited data bundle, which is currently absent from its offer). Without access to Magticom's network Cellfie will be unable to improve its quality by increasing download speed, reducing latency and limiting error rates without making significant new investments.

The potential behaviour of Magticom to refuse access to co-location and national roaming would have a substantial impact on competition in the downstream retail mobile access market. Cellfie would be increasingly unable to compete effectively in the retail mobile access market. In its current market position, Cellfie, despite its lower retail prices does not appear able to gain market share at the expense of Magticom. The continuation of the current retail market situation would have an important negative impact on service level competition to the

⁹³ Magticom does not have control on some sites which it rents from landlords (rooftops)

⁹⁴ See Deloitte, Opening the telecommunications market in Georgia to MVNOs Outside-in assessment, June 2020, p.10

detriment to end-users, by maintaining the retail prices of the two leading mobile operators above competitive levels.⁹⁵

It is considered that Cellfie does not have sufficient bargaining power to negotiate and agree wholesale access to Magticom's sites and/ or national roaming services.

As a result of refusing to negotiate and denying access to co-location and national roaming services, a major impact on retail competition could occur. Magticom's refusal of access will lead to an increase in the costs faced by the other operators. This will lead to the continuation of non-effective market competition, a potential increase in Magticom's market power and further potential competition problems in the downstream retail mobile access market such as reduced innovation by suppliers and higher prices for consumers.

In the absence of *ex-ante* access obligations, it is therefore concluded that that denial of access by Magticom to co-location and national roaming will represent a potential competition problem during the forward-looking time horizon of this market analysis.

7.3. Leveraging by means of pricing

7.3.1. Excessive pricing and margin squeeze

Excessive pricing is a competition problem that happens when in the absence of regulation, an SMP operator offers prices for wholesale services which are not in relation with the economic value of the service⁹⁶. Excessive pricing can be used by an SMP operator (being also a vertically integrated entity with both retail and network operations) on the wholesale market to raise its rivals' costs in the downstream retail market. Excessive pricing at the wholesale level is exclusionary, not by necessarily by making the retail service of the competitor unprofitable, but by reducing its retail margin and thus its ability to compete both in terms of pricing and in terms of innovating, for example by altering its service features to provide competitive advantage in non-pricing ways.

It is therefore concluded that, in the absence of regulation, Magticom could have the incentive to offer co-location access or a national roaming service at wholesale prices higher (excessive prices) than the economic value of the service.

B. Competition concerns relating specifically to MVNO access

⁹⁵ The above competitive level of the prices of both leading operators is indirectly acknowledged by Grant Thornton when stating "*Benchmark does not take into consideration packages provided by the third Georgian mobile operator Cellfie. We believe that when these packages were taken into account the benchmark study would show that prices in Georgia are even lower and Georgia would achieve even better position in the benchmark than with the prices of the two biggest operators*", Reaction to GNCC's document "Response to the Policy Report and Expert Opinion Prepared by Consulting Companies for Magticom Ltd", 2020, p.10.

⁹⁶ In paragraph 250 of its United Brands judgment (Case 27/76), the European Court of Justice has defined what may constitute an excessive/unfair pricing abuse as '*charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied would be such an abuse*'

7.4. Refusal of supply/Denial of access

All three mobile network operators could, in principle, provide an MVNO access service. ComCom has already published a regulatory measure, obliging all three mobile operators to publish reference offers defining the terms and conditions of wholesale MVNO access service⁹⁷. Currently, just one MVNO (Eclectic) exists, using an (unpublished) wholesale MVNO agreement with Silknet).

The obligation in force, although imposed on all three mobile network operators, does not preclude the ability of Magticom to deny MVNO access, despite the existence of two further potential hosts for MVNOs, namely Silknet and Cellfie.

In the retail mobile market, Magticom has the highest market shares for revenues, subscribers and data traffic handled. Magticom does therefore not particularly need additional traffic on its network generated by MVNOs, which means that Magticom's competitive behaviour is not constrained on the wholesale mobile access market.

The absence of any MVNO agreement concluded by Magticom indicates that denial of access could be a core problem in the wholesale market for MVNO access. Denial of access will prevent new operators from becoming established.

In the absence of *ex-ante* regulation, Magticom will have the incentive and opportunity to (further) deny access to potential MVNOs. Magticom has incentives to exploit its significant market power in the wholesale mobile access market to achieve and exploit competitive advantages in the downstream retail market.

Magticom has achieved a significantly higher proportion of its revenues than its competitors in the retail market. Magticom has the largest share in different parts of the retail market, so that if it allowed access to its mobile networks using wholesale agreements with other operators, then in most instances, there would be an increase in direct competition to Magticom's own retail business. This is not only the case in mobile markets but also where an access-seeking fixed broadband operator requests an MVNO agreement with Magticom. The access-seeker would then potentially compete with Magticom in both fixed and mobile markets. By allowing competitors to reach agreements on wholesale MVNO access, the necessary input factor for these competitors will become available, adding a mobile offer to their existing fixed services. This will greatly increase the access-seeker's attractiveness to customers by offering competitive bundled (fixed, mobile and pay TV services). By denying or restricting MVNO access, Magticom will, to a certain extent, be able to protect both its own retail fixed and mobile businesses from competition.

There is evidence from many other countries that mobile network operators actively participate in MVNO access deals. The primary motivations for the mobile network operator are to improve profitability by off-setting its infrastructure costs, increase traffic loading on its network (at marginal cost) and to reduce its retail cost of sale activities by outsourcing these expenditures⁹⁸. However, Magticom has shown little self-interest in outsourcing downstream

⁹⁷ This deadline was postponed several times. See ComCom Decisions No G-20-19/518 from 18 June 2020 and No G-20-19/775 from 24 September 2020 and No G-20-9/156 from 29 December 2022.

⁹⁸ <https://hal.science/hal-00766676/document>

activities, and in particular MVNO access. Given its superior market shares, Magticom knows that any new market entrant would have to grow a sufficiently large subscriber base almost exclusively based on customer churn from existing operators.

It is considered that Magticom's behaviour indicates a refusal to supply and denial of MVNO access. Despite the opportunity given in ComCom's decision No. NG 20-9/156 of 31st December 2019 as amended, to all operators to negotiate commercial MVNO agreements, before the applicability of mandatory access Magticom has not entered into a single agreement, despite the continues support of ComCom towards the Georgian MVNO association⁹⁹ to encourage potential MVNO access-seekers to contact and seek commercial agreement with the MNOs in Georgia. This is supported by the views of the Georgian MVNO association.

However, even if MVNO access agreements had been concluded, Magticom might (in the case where the current regulation is withdrawn) have engaged in foreclosure of its MVNO agreements either partially (by increasing the MVNO access prices or offering worse quality of service), or fully (by no longer offering wholesale MVNO access). This would trigger subscribers of the MVNO(s) hosted on Magticom's mobile network to switch to other providers. Magticom could be expected to have an incentive to engage in such a foreclosure strategy if the increased retail profits (derived from MVNO subscribers switching to Magticom) more than compensated for the foregone Magticom wholesale profits from the MVNO agreements. This trade-off depends crucially on what percentage of the various MVNO subscribers would choose Magticom as their alternative provider and how Magticom's wholesale profit margin relates to its retail profit margin. Based on Magticom's higher retail market shares, it can be considered that the potential retail profits on recaptured subscribers would exceed the foregone profits on the corresponding foreclosed wholesale access agreements. This outcome is considered significantly less likely for Silknet.

It is therefore concluded that in the absence of *ex-ante* regulation, Magticom would be likely to refuse to supply and deny access to potential MVNOs.

7.5. Leveraging by means of pricing in the case of MVNO access

7.5.1. Cross subsidising leading to a margin squeeze

MVNOs do not have their own network and can only compete in terms of added value at the retail level if they can obtain wholesale access on competitive terms. MVNO access-seekers will have to balance the relative merits of the lower funding requirements (arising from a wholesale rather than self-supply) against not only the loss of control over the factors that contribute to the quality of service of its end-user services but also against the level of usage fees (monthly cost) that could influence their profitability. An MVNO is typically a lower margin business than a mobile network operator¹⁰⁰.

⁹⁹ Meeting held in October 2022

¹⁰⁰ https://www.mckinsey.com/~media/mckinsey/dotcom/client_service/telecoms/pdfs/february%202015%20-%20recall%20papers/virtually_mobile_2014-06.ashx

A competition problem related to cross-subsidisation is therefore likely to occur regarding the pricing of MVNO access. Such competition problems happen when there are two prices in two markets. Whereas in one market (on which the regulated operator has SMP) a price above costs is charged, in the other market (the market onto which the SMP-operator leverages its position) a low price is charged. An operator with significant market power in a particular wholesale market could, in the absence of regulation, charge above cost for wholesale services and lower in the downstream retail market. This behaviour would lead to price-squeezing problems for the retail-level counterparts that use the SMP operator's wholesale services as inputs. In this way, the operator could transfer significant market power from the wholesale market to the related retail market. Cross-subsidisation is not necessarily anti-competitive in itself. However, if one price is excessive (or if the other price is predatory), pricing can be used to leverage market power and foreclose a related, potentially competitive market. If the market where the high price is charged is a wholesale market and the market where the low price is charged is a retail market and the SMP operator is vertically integrated, cross-subsidisation will result in a margin squeeze.

It is considered that, in the absence of regulation, Magticom could have the incentive to offer wholesale MVNO access above cost, thereby increasing the input costs of operators using the Magticom's wholesale services. If at the same time, Magticom offering retail services at very competitive prices, either for their own retail services or via an MVNO in which they have full or part ownership. This would consequently lead to the squeezing of a competitor's margins at the retail level, rendering the entrant lossmaking and more likely to exit the market.

It is therefore concluded that Magticom could use pricing cross-subsidisation as a means to squeeze MVNO competitor margins and thus cause competition problems in the retail mobile access market.

C. Competition concerns relating access to sites, national roaming and MVNO access

7.6. Leveraging by means of non-price variables

7.6.1. Discriminatory use of information or withholding of information

A competition problem arises from discriminatory practices where an SMP operator on the wholesale market does not provide information to other operators (access seekers) who use or plan to collocate, or roam on its network, or obtain MVNO access for the provision of services at the retail level. This can take the form of a refusal to supply any kind of information which is necessary to take up the wholesale offer and to supply a retail service. For example, a mobile network operator could refuse to provide its retail competitor information about its sites, their capacity and future changes in the network topology which could increase the access seeker's costs and impact its plans to expanding its network.

In this way, a vertically-integrated SMP operator could transfer its market power from the wholesale access market to the downstream retail markets.

In the absence of regulation, an SMP operator could have the incentive to deny its existing and potential competitors detailed and timely information about planned changes in the

network. That information is important for the access-seeker's business operations and business decision-making in terms of expected retail sales and investments. This kind of information may refer to:

- Planned changes in the mobile network, (new sites, new access points, network capacity upgrades, changes in backhaul arrangements)
- Network reconfigurations and upgrades, for example from LTE to 5G.

In this way, an SMP operator could directly and indirectly influence the business decisions of an access seeker towards a less favourable position on its retail market. At the very least, the access-seeker would not be able to assess the impact of such changes to the SMP operator's network in a timely manner, slowing down their ability to respond competitively. The access-seeker will need to be able to consider various investment opportunities in their own network and react in a timely manner at the retail level.

It is therefore concluded that Magticom could leverage its dominant position in the wholesale mobile access market into the downstream retail markets by discriminatory withholding of information from access-seekers. Magticom could therefore limit further development of competition in the mobile market, resulting in the further strengthening of Magticom's market position within the forward-looking time horizon of this market analysis.

7.6.2. Discrimination by quality of service

This competition problem happens when the SMP operator, by discriminating in terms of the level of service provided to an access-seeker, reduces the competitor's ability to earn a reasonable return in the market.

The level of service quality could be influenced in the following ways:

- Providing services of inferior quality (self-preferencing)¹⁰¹
- Refusal of services due to unclear and unbalanced criteria
- Slower problem-solving procedures than the ones used by the SMP operator to respond to its own the retail organisation.

In the absence of regulation, the SMP operator could for example provide MVNO access services or national roaming with a significantly lower level of quality than the services that the SMP operator provides to its own retail arm (for example by managed congestions, giving lower priority, poorer delay, packet loss and other network quality parameters). The impact on MVNOs could be substantial because the access-seeker depends largely on the wholesale access services from the SMP operator to provide the access-seeker's retail services. The lower quality of service consequently delivered by the access-seeker would place it at an unfair disadvantage to the SMP operator in the market. is liable to damage their image vis-à-vis consumers.

¹⁰¹ in addition, such behavior may breach the Law of Georgia on Competition

It is therefore concluded that Magticom could use its market position to discriminate by providing a lower quality of service to access-seekers. This would lead to the inability of the access-seeker to acquire a sufficient market share to enable it to survive in the market.

7.6.3. Delay tactics

This competition problem happens when an SMP operator does not refuse a wholesale agreement (does not deny access) but instead delays the provision of the service to an access seeker. This means that all the time taken to complete all necessary services to the access-seeker is longer than the time normally taken to provide the same necessary services to the SMP operator's own retail organisation.

Delaying tactics may come in different forms:

- Prolonging negotiations
- Non resolution of technical problems (for example in the case of consumer complaints relating to registration on the network)

The incentives for such behaviour by an SMP operator would be to delay the entry of other operators into the market or to disrupt the relationship between the access-seeker and its end users by. This would be making the access-seeking operator appear less competitive in terms of the service provision. Delaying tactics by an SMP operator could occur at any stage in the provision of a wholesale access service, including the negotiation stage of the access agreement. Delaying tactics could therefore impact all types of wholesale mobile access service provision – MVNO access, national roaming access and co-location.

In this way, an SMP operator transfers its market power from the upstream wholesale mobile access market to the downstream retail mobile access market, resulting in a negative impact on competition in the retail market.

In the absence of regulation, the SMP operator would, as a vertically integrated operator, has the incentive to provide wholesale MVNO access, national roaming access or co-location using service provision times that are intentionally longer than those provided to their own retail arm.

It is considered that Magticom would have a strong incentive to use various delaying tactics both in service provisioning and in responding to service problems from MVNO, national roaming and co-locations access-seekers in order to influence the service provision of the access seekers to their end users. In this way, Magticom could gain significant market advantage by ensuring that their own retail service provision was always better than the service provided to an access -seeker's customers.

It is therefore concluded that Magticom could use delaying tactics to negatively affect the development of competition in the retail market during the forward-looking time horizon of this market analysis.

7.6.4. Unjustified claims

Unjustified claims represent a competition problem when an SMP operator attempts to impose certain contractual terms on the provision of wholesale services that are not strictly necessary for the provision of the wholesale service. Typically, unnecessary terms would raise the costs of providing the service and waste the time of access-seekers in establishing and operating their competitive services in the market. Unjustified claims are therefore any contract terms which set a particular requirement on the wholesale access-seeker such that its service provision in the downstream retail market has added costs or added complications, putting the access-seeker at a competitive disadvantage in the retail market compared to the SMP operator.

Unjustified claims are considered to be a particular risk in newly developing markets (such as the wholesale mobile access market in Georgia), for example:

- a) Requiring unrealistic commitments from the access-seeker to ensure high volumes of business
- b) Requiring various forms of unjustified payment security instruments, with regard to terms, conditions and amounts¹⁰²
- c) Imposing the use of more expensive technologies and/ or materials or imposing the use of systems and technologies which are not needed (for example to meet some unjustified security requirement)
- d) Imposing a choice of external contractors or suppliers
- e) Requesting information beyond that which is necessary to provide the wholesale service.

Imposing a high-volume commitment on a new MVNO would mean that MVNO would have to achieve a level of demand that is unrealistic at least in the short-term. If the high-volume commitment was also linked to a commitment on a certain retail price, then the SMP operator could be deliberately trying to ensure that the business case for the MVNO is unjustified such that the access-seeker will withdraw from the negotiation. Another example of unjustified claims is the requirement for an access-seeker to obtain bank guarantees, instruments of security payments, or information requirements (for example sensitive business data about the access-seeker's forward plans beyond that information which is strictly necessary to conclude a wholesale agreement).

Unjustified claims behaviour by an SMP operator therefore has the potential to weaken competition in the retail mobile access market by deliberately putting potential competitors at a disadvantage.

It is considered that in the absence of regulation, Magticom could have the incentive to impose unjustified claims in their wholesale access contract terms for MVNO access, national roaming and co-location, in order to raise the costs of an access seeker and in that way weaken

¹⁰² Magticom included the requirements under a) and b) in its draft reference offer and was informed by ComCom that such requirements were in contravention on earlier ComCom's MVNO decision

competition on downstream retail market. In this way, Magticom has the potential to transfer its market power from the wholesale mobile access market to the downstream retail mobile access market.

7.6.5. Unjustified use of information about competitors

This competition concern is closely related to the problem of unjustified claims. In this case sensitive business data about an access-seeker's customers is requested by the SMP operator that goes beyond that information which is necessary to provide the wholesale service. The data provided could be used by the retail organisation of the SMP operator to prepare a strategy that targets customers in order to pre-empt customers from switching to the alternative retail service being offered by the access-seeker.

It is considered that in the absence of regulation, Magticom could have the incentive to unjustifiably use information obtained from its access-seeking competitors. In this situation, based on the information obtained by Magticom as part of the wholesale access agreement terms, Magticom could pre-empt the actions of the access-seeker in the retail market and therefore obtain a competitive advantage over the access-seeker. For example, if the access-seeker is required by Magticom to provide information about the take-up of the access-seeker's customers in certain market niches, Magticom could then target specific niches with pre-emptive offers in order to reduce the potential success of the access-seeker. In this way, Magticom has the potential to transfer its market power from the wholesale mobile access market to the downstream retail mobile access market.

8. Regulatory remedies

As concluded in Chapters 5.4 and 6.3, the wholesale mobile access market consists of wholesale MVNO access, access to national roaming and co-location access. The geographical scope is the entire territory of Georgia and Magticom possesses significant market power (SMP) in this national market.

The objective of this market analysis is to decide the regulation measures that will minimise the possibility of Magticom taking advantage of SMP status in the wholesale mobile access market to the detriment of competition in the downstream retail mobile access market. By avoiding these potentially harmful effects on competition, the mobile sector in Georgia can benefit from increased investments in mobile infrastructure and new technologies, helping to provide new innovative services which will make positive impact on interests of all mobile users.

If infrastructure duplication is not deemed physically or economically likely, the interests of end-users are to be protected by making the best possible use of existing infrastructures. This principle is considered entirely relevant to the use of mobile network infrastructure, where the best use of existing infrastructure can be facilitated by using wholesale mobile access services, in particular from MVNO, national roaming and co-location access. The national infrastructure that could be most used in this wholesale market is owned by Magticom, which has been found to have SMP in this wholesale mobile access market.

In this chapter each specific regulatory obligation that could be considered to be applicable to an SMP operator (in the market for wholesale mobile access) will be defined and linked with the possible competition problems and the opportunity of misuse of SMP as defined in Chapter 7. All regulatory remedies will firstly be described, distinguishing where required between their relevance to the different wholesale mobile access products (MVNO access, national roaming and co-location).

With reference to the competition problems defined in the chapter 7, ComCom has the powers to impose *ex-ante* measures from the following types of remedies on an operator with SMP:

- Transparency
- Access
- Non-discrimination
- Accounting separation
- Cost accounting and price control.

8.1. The obligation of transparency

The purpose of an obligation of transparency is to ensure that all operators in the market who are users or potential users of regulated wholesale services in a relevant market have transparently available conditions for the use of the wholesale services for which the obligation of access (see Chapter 8.2) has been imposed. As stated in the Chapter 8.3, the

obligation of transparency is supplemented with the obligation of non-discrimination. This is because the regulated wholesale access services are technically very demanding, so the implementation and full control of the implementation of the obligation of non-discrimination is possible only in case of the existence of the obligation of transparency.

8.1.1. Definition of transparency obligations

According to Article 31 of the Law on Electronic Communications in Georgia, operators with SMP may be subject to a regulatory obligation of ensuring transparency in the form of publishing information relevant to the services being regulated, including:

- The accounting data
- Technical specifications relating to the services
- Network characteristics (for example network topology and coverage)
- Terms and conditions for providing the services
- Prices of the services

In addition, the SMP operator must send for approval and subsequent publication reference offers for interconnection and/ or access, on the basis of which any operator requesting interconnection and/ or access will not have to pay any additional costs which are not necessary in providing the requested service.

A reference offer has to provide transparent data to ComCom and to all potential access seekers. Reference offers must contain sufficient detail in accordance with the needs of the market and they must contain a detailed description of the services, associated terms, conditions and prices of the services.

Under ComCom's regulatory decisions, the SMP operator will have the following obligations relating to content and monitoring of its reference offers:

- To ensure that the reference offer:
 - Contains sufficient detail in accordance with the needs of the market
 - Conforms to ComCom's regulatory decisions
 - Contains a detailed description of all services, technical characteristics, associated terms, conditions and prices of services (according to the minimum level of the content of the reference offer as defined by ComCom)
- To ensure that ComCom can monitor the performance of the SMP operator in relation to the provision of the services defined in the reference offers, the SMP operator should provide data on request to ComCom that will enable ComCom to publish relevant performance results.
- To ensure full transparency, the SMP operator should make available any information (specified by ComCom) available to all access seekers using relevant interfaces to the SMP operator's operational support systems or similar software systems.

8.1.2. Minimum content of a reference offer

The reference offer has to be sufficiently detailed in order to allow any access-seeker to replicate the retail service of the SMP operator. In order to allow access-seekers to be able to prepare effectively and submit their access demands, the SMP operator's reference offer should contain at least the following elements:

- 1) General provisions (including the legal basis, subject, scope and limitations of the reference offer; the historical development of the reference offer; amendments to the reference offer; version of the reference offer; time of entry into force of the reference offer; validity of the reference offer; application of the reference offer; method of harmonising existing contracts; definitions, terms and meanings and a list of used abbreviations; contact information)
- 2) A description of services that fall within the scope of the reference offer, including any relevant ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing)
- 3) Technical conditions of access to all the regulated services included in the relevant market definition, including network architecture (descriptive and schematic) and any relevant technical standards for network access, specifying notably any technical usage restrictions and other issues including security. More details of the technical requirements for the different types of wholesale access service (MVNO access, national roaming, co-location) should be given in section 6 of the reference offer
- 4) Specifications of equipment that can be used by the access-seeker to interconnect with the SMP operator, including any exclusions
- 5) Procedures in the event of amendments being proposed to the service offerings, which may include a requirement for notification to the regulator for such amendments, for example, launch of new services, changes to existing services or changes to prices
- 6) The terms of service provision, which could include, but are not limited to:
 1. For the national roaming service:
 - The procedure for submitting a request, including the documents and data to be attached to the request
 - The technical details of the SMP operator's network that relate to national roaming together with any technical requirements that have to be met by the access-seeker to interconnect to the SMP operator's national roaming service. (Includes mobile technology available in the SMP operator's network, availability of voice over LTE, any limitations on the types of customer and other equipment, (including but not limited to mobile phones, smartphones, tablets, USB dongles, IoT and M2M devices), that can use the roaming service, details of any real-time charging restrictions.)
 - The responsibilities of the access-seeker for bearing the cost of adapting to the technical requirements of the SMP operator's network and support systems

- The reasons for the SMP operator to reject a request for access to national roaming and for any permanent or temporary suspension of the service by the SMP operator
 - Malfunction report & repair procedure, resolution times for removing the malfunction
 - Service level agreements (SLAs) for maintenance and repair, including specific time-scales for the acceptance or refusal of a request, for testing and hand-over or delivery of services and facilities, and for the provision of support services.
 - The quality standards that each party must meet when performing its contractual obligations including the specification of key performance indicators (KPIs) with respect to SLAs, where relevant
 - Procedures for the access-seeker to report service problems to the SMP operator (for example call quality, call failures, network congestion) which cannot be solved by the access-seeker without the involvement of the SMP operator
 - Service level guarantees (SLGs) for service (availability), maintenance and repair, including the amount of compensation payable by one party to another for failure to perform contractual commitments in the event of delays in the elimination of malfunctions etc., as well as the conditions for eligibility for compensation
 - Plans for the phase-out of previous generations of mobile network technologies
2. For the MVNO access service:
- The procedure for submitting a request, including the documents and data to be attached to the request.
 - The technical details of the SMP operator's network that relate to MVNO access together with any technical requirements that have to be met by the access-seeker to interconnect to the SMP operator's MVNO access service. (Includes mobile technology used in the SMP operator's network, availability of voice over LTE, any limitations on the types of customer equipment that can use the MVNO access service, details of any real-time charging restrictions, any limitations on M2M/ IoT connectivity.)
 - The responsibilities for bearing the cost of adapting to the technical requirements of the SMP operator's network and support systems
 - The reasons for the SMP operator to reject a request for MVNO access and for any permanent or temporary suspension of the service by the SMP operator
 - The procedure for withdrawal of requests
 - The process of announcing a new or redefined MVNO access services
 - Details of the necessary interoperability tests, where necessary

- Procedures for the access-seeker to report service problems to the SMP operator (for example call quality, call failures, network congestion) which cannot be solved by the MVNO without the involvement of the SMP operator
 - Service level agreements (SLAs) for maintenance and repair, including specific time-scales for the acceptance or refusal of a request, testing and hand-over or delivery of services and facilities if applicable
 - The quality standards that each party must meet when performing its contractual obligations including the specification of key performance indicators (KPIs) with respect to SLAs, where relevant
 - Service level guarantees (SLGs) for service (availability), maintenance and repair, including the amount of compensation payable by one party to another for failure to perform contractual commitments in case of delays in the elimination of malfunctions, etc. as well as the conditions for eligibility for compensation
 - Plans for phase-out of previous generations of mobile network technologies
3. For co-location access:
- The procedure for submitting a request for access to a location
 - The range of co-location facilities that are offered, including access to accommodation, towers, support equipment such as mains and standby power, other facilities at the location
 - Response time of the SMP operator to requests
 - The time of the access-seeker to accept the request
 - The time to start of use of the facilities at the co-location site
 - The technical details of the SMP operator's sites that relate to co-location access together with any technical requirements that have to be met by the access-seeker to place equipment on the SMP operator's site and to interface with the SMP operator's equipment on the site. (Includes any restrictions on the type of equipment that can be collocated and interconnected, where equipment can be located on towers and any space/loading limitations, wiring routes and limitations, power interfaces and limitations, transmission power limits.)
 - The responsibilities of the access-seeker for bearing the cost of adapting to the technical requirements of the SMP operator's on-site equipment and support systems
 - The reasons for the SMP operator to reject a request for co-location access and for any permanent or temporary suspension of the service by the SMP operator
 - The procedure for withdrawal of requests

- Definition of any personnel of the access-seeker's organisation that can be granted physical access to the location and the conditions of that access on each occasion that it is requested by the access-seeker, timescale and procedure for granting access, requirements for supervision by the SMP operator during access, resolution of issues relating to on-site access
- 7) Prices of services
 - 8) Billing, payment and payment insurance instruments
 - 9) Quality of service including the identification and removal of malfunctions and resolution of complaints
 - 10) Access to operational support systems, information systems and databases for the purposes of submitting service requests, failure reports and billing, including any technical usage restrictions and procedures to access support services
 - 11) Management, operation and maintenance of the wholesale services
 - 12) Definition and limitation of liability and indemnity for damages (Responsibility of the regulated operator and user operator and compensation for damages; liability and compensation for damages to access seeker)
 - 13) Confidentiality of information and trade secret
 - 14) Intellectual property rights, if applicable
 - 15) Procedure for troubleshooting and resolution of any issues and disputes relating to wholesale access
 - 16) Annexes:
 - List of SMP operator locations available for co-location
 - Service request
 - Confidentiality agreement
 - Text of any justified bank guarantees
 - Form for reporting malfunctions/service problems
 - Form of contract on the use of services
 - Glossary of terms used in the reference offer.

This list of minimum content of reference offer is in conformance with EU best practices.¹⁰³

8.1.3. Timetable of implementation

In the case of reasonable demand¹⁰⁴, reference offers should be sent to ComCom for approval and subsequent publication on the SMP operator's website within the following time periods for the services defined in the access obligation listed in the Chapter 8.2:

- Within 90 calendar days from the first official request, for the service of national roaming

¹⁰³ The standard offer must in particular contain the information set out in the BEREC guidelines (BoR (19) 238) on the minimum standards for the standard offer.

¹⁰⁴ The term "reasonable demand" is legal term also used in EU regulatory framework. If the regulated operator claims that a specific demand is not reasonable, the access seeker will raise the matter to ComCom, which will assess the 'reasonableness' of the demand based on the factual circumstances at hand.

- Within 90 calendar days from the first official request for the service of co-location
- Within 90 calendar days from the first official request for the services necessary for MVNO to operate.

Note: The core elements of reference offer (access points, features, pricing) must be sent to ComCom for approval and subsequent publication on its website within 90 calendar days from the entry into force of the final SMP decision. Full reference offer just in case of reasonable demand (as stated above).

- In case of alteration of network elements or services included in reference offers, the SMP operator needs to notify any change in the reference offer to ComCom for approval and subsequent publication on its website. Where such amendment concerns the launch of a new retail service or of features, the SMP operator may only start offering its new service or service with new features 30 days after the publication of the amendment of the reference offer.

Publication of the reference offer or possible amendments are without prejudice to the competence of ComCom to request at any time additional amendments to the reference offer, where required in order to ensure that the objectives of ComCom's regulatory decisions are met.

8.2. The obligation of access

In accordance with the provisions from the Article 34 of the Electronic Communications Law, ComCom can impose a regulatory obligation on the SMP operator to provide access to relevant elements of its electronic communication network.

A regulatory obligation to provide access an SMP operator's whole network or to network elements and their use is a basic regulatory measure for the purpose of removing the competition problems defined in the Chapter 7. Under the obligation of access, the SMP operators is required to respond to access requests from operators (existing or new entrants) that wish to use the wholesale access as an input for the provision of downstream services in the retail mobile market.

The identified SMP operator determined by ComCom's Decision, within the geographical boundaries determined by the same Decision, shall be obliged to:

(i) Provide other mobile network operators national roaming in areas where access seeker requests the service, for example in areas where access seeker's own network:

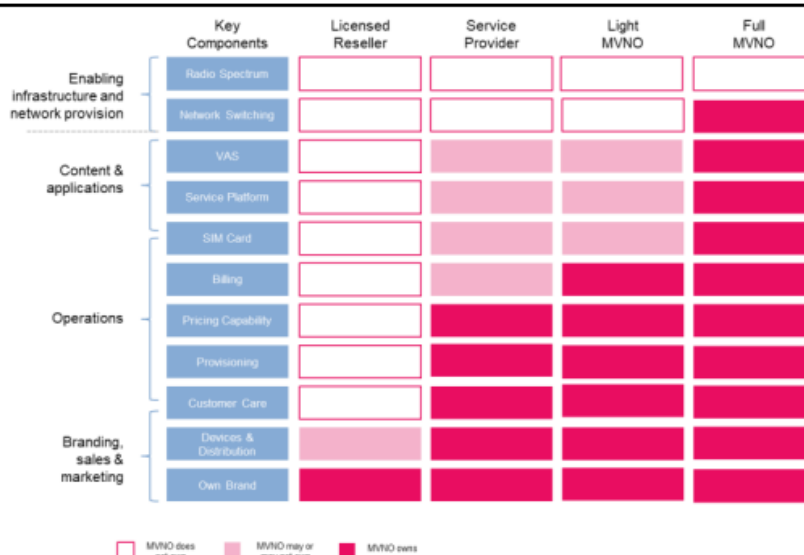
- Has no coverage
- Has coverage, but the capacity of the access seeker's own network is insufficient to provide service in the required quality to all its end-users. The change of network should be done in a way so as not to interrupt the service.

(ii) Provide wholesale access services related to the following building blocks (see Figure 48) that are necessary for the MVNO (see Figure 8) in order to operate¹⁰⁵:

- Access to the radio access network including connections to the point of handover;
- Access to network switching;
- Access to Value Added Services;
- Access to service platform; and
- Enable usage of an MVNO customer's SIM cards when appropriate, with their own IMSI/MNC, including eSIMs, and CPE (mobile phones, smartphones, M2M, IoT devices mobile and combo modems, and other equipment) which are technically compliant

Figure 48: The MVNO ladder of investment

Figure 4-6: The MVNO ladder of investment



Source: WIK based on Red Dawn Consulting (2019), Nereo (2014), Nereo (2010), PWC (2019) (with modifications).

Source: WIK – Consult (Study on wholesale mobile connectivity, trends and issues for emerging mobile technologies and deployments¹⁰⁶

(iii) Provide access to sites, structures and buildings including access to transmission towers and to provide space at the locations for placing the equipment of an access seeker, to facilitate interconnection and any other forms of joint-use of physical infrastructures, equipment and supplementary services such as primary and stand-by power supplies, ventilation and cooling (co-location).

¹⁰⁵ The WIK model differentiates between different theoretical types of MVNOs. Reference to this Figure is only made for the purpose of showing which type of model could be used by access-seekers. ComCom's approach is only to request access to different building blocks, without prejudice to different business models of access seekers.

¹⁰⁶ https://www.berec.europa.eu/system/files/2023-04/BoR%20%2823%29%2041%20Study%20on%20wholesale%20mobile%20connectivity%20trends%20and%20issues%20for%20emerging%20mobile%20technologies%20and%20deployments_final_0.pdf

In all cases, the authorised operator with SMP should:

- Provide an access seeker the use of the services and facilities which are of the same quality as used by the SMP operator to serve its own end users, including facilities capable of providing the full range of end-user telecommunications services available to the SMP operator's customers such as voice (traditional, VoLTE or other technologies), access to data, SMS, national and international roaming.
- Grant open access to technical interfaces, protocols or other key technologies that are necessary for the interoperability of networks and services
- Provide access to operational support systems or other software systems necessary to manage, charge and monitor services and facilities required by access seeker. This access should be provided in B2B format that is easy to manage, control and update.

The SMP operator has the right to ask an access-seeker to provide an estimation of the traffic volume expected to be generated by the access-seeker's users, originating from reasonably granulated geographic locations and within a reasonable time horizon for the purposes of the SMP operator's forward-planning of its network capacity.

Any information requested from the access-seeker by the SMP operator has to be reasonable and limited to the minimum necessary to provide the requested wholesale service to the access-seeker. The SMP operator must not use the requested information in any other way or for any other purpose. The unjustified use of information may lead to an unfair advantage in the market from knowing the access seeker's plans (see also Chapter 7).

8.3. The obligation of non-discrimination

An SMP operator with a regulatory obligation of non-discrimination must, in particular, ensure equal conditions in equal circumstances with other operators who provide equal services. This requires the SMP operator to provide the same services and data to other operators, under the same conditions and with the same timeliness and quality, that it provides for its own services by its own retail arm or through its affiliated companies¹⁰⁷.

The obligation of non-discrimination relates generally to the conditions occurring after the access agreement between the access-seeker and the SMP operator has been signed. The principal aim of the non-discrimination obligation is to ensure that operators using the SMP operator's network receive the same level of service conditions as the SMP operator provides to its own retail arm. These service conditions are made clear in the Reference Offer (see Chapter 8.1.2) so that access-seekers know the level of service that they can expect and plan their own services accordingly. The type of information that an SMP operator would inform its own retail arm generally will also include changes to the network that will impact service coverage and quality of service. For example, the SMP operator may add or remove base stations, or add additional spectrum bands giving better service performance. Any changes

¹⁰⁷ Subsidiaries (more than 50% shareholding and consolidated in the accounts) are part of the broader category of 'affiliated companies', together with companies on which the parent company can exercise a decisive influence, for example through a shareholder agreement with equity investors.

that could impact service quality on the SMP operator's network should be routinely reported to other operators using that network.

According to Article 32 of the Law on Electronic Communications, the following regulatory obligations are imposed on an SMP operator based on the findings from Chapter 7:

- Ensuring equal terms and conditions (including timescales, prices, information, quality) for the provision of all regulated wholesale access services (see Chapter 8.2.) in equal circumstances for other operators who provide equal services. This obligation will be monitored using KPI's as defined in Chapter 8.3.1.
- Providing services and information to other operators under the same conditions and of the same quality that they provide for their own services by the SMP operator's retail organisation or its affiliated companies. This obligation will be monitored using KPI's as defined in Chapter 8.3.1. This obligation concerns in particular:
 - Access to sufficient 'call detail records' (CDRs)¹⁰⁸ information for every relevant type of traffic that will allow an access-seeker to create different tariff structures from the SMP operator
 - The creation of an information system by the SMP operator for monitoring each access seeker's request for the co-location service on an ongoing basis;
 - Reporting the SMP operator's network coverage information and service availability at the same time as the SMP operator would normally supply the same information to its own retail arm.
- Not to discriminate against an access-seeker's traffic in any way by offering poorer quality (for example by managed congestions, giving lower priority, poorer delay, packet loss and other network quality parameters)¹⁰⁹.
- ~~Specifying the conditions under which the SMP operator cannot provide a non-discriminated level of service, for example if the level of the access-seeker's traffic exceeds certain pre-defined if it does not exceed pre-arranged quantities or if it does not exceed 1% of the of the SMP operator's own traffic.~~

¹⁰⁸ A Call Detail Record (CDR) is generated by the mobile network operator (MNO) when a subscriber initiates or receives a network event, such as a call, SMS message or mobile data.

¹⁰⁹ In principle, the incremental traffic generated by MVNOs will proportionally not be substantial enough to have any material impact on the investment planning of the SMP operator. Generally, MNO's experience average data traffic growth of approximately 20-30% per annum, an additional traffic growth of 5% would not be significant enough to compel the SMP operator to change its investment planning only to accommodate the MVNO access seekers. Assuming that there are four additional small MVNOs, their incremental traffic will be a maximum of 4% and most probably less. If there would be 10 additional small MVNOs, the traffic increase may be more substantial and the SMP operator may need to have to prioritise some traffic above other. Any claim of need to prioritise traffic should therefore be reviewed by ComCom in the light of the development of MVNO traffic in Georgia. Moreover, any prioritisation should be based on objective criteria, such as the failure of an MVNO to inform timely the SMP operator of the incremental traffic volume that the former expects to generate").

- Cooperate **in good faith** in resolving the complaints originated by the access-seeker's end users, where these complaints can only be resolved with cooperation between the SMP operator and the access-seeker, including solving problems with billing.
- Submit details to ComCom of any contracts concluded on the basis of the SMP operator's reference offers for wholesale mobile access services, within 15 calendar days from the date of conclusion of the contract. This is necessary as a main tool for verifying compliance with the obligation of non-discrimination, for example for ComCom to determine if there has been any misconduct and intentional breach of the defined regulatory obligations.
- To notify ComCom of any access-seeker's request for MVNO access, national roaming and co-location within 15 calendar days after the request was submitted.
- To notify ComCom of a rejection of an access-seeker's request for a wholesale mobile access service, together with the reasons for its rejection within 15 calendar days after rejection.
- Submit reports to ComCom with all relevant results of KPIs from section 9.3.1. by operator and compared with results of SMP operators' retail arm separately (and with its affiliated companies, if applicable), which prove the provision of equal treatment for all operators on the market.

The SMP operator has a right to require mobile traffic forecasts from the access-seekers which will allow the SMP operator to carry out proper network planning. The information requested must not exceed the minimum required to ensure proper planning.

8.3.1. Key performance indicators (KPIs)

Key performance indicators (KPIs) are a common form of quantifiable measures of performance over time for a specific objective. In the case of monitoring the performance of imposed regulatory obligations, the KPIs should be defined by ComCom in order to provide a progress measurement on the effectiveness of the implementation of the specific regulatory measures defined for the SMP operator. The following set of KPIs are proposed for the monitoring of the effective implementation of remedies for the wholesale mobile access market in Georgia. In general (unless otherwise defined) the KPI statistics should be collected monthly.

In order to ensure that a non-discrimination obligation can be monitored in practice the following KPIs are defined:

1. KPIs related to co-location access:
 - a. The number of requests for co-location made in a defined period (quarterly) to the SMP operator (includes requests to access sites for surveying, planning and placing of equipment and to utilise on-site ancillary equipment)
 - b. The number of rejected requests, giving also the reasons for rejection

- c. The number of requests implemented within and outside the deadline set in the reference offer
- 2. KPIs related to MVNO and national roaming access:
 - a. Mobile network congestion as experienced by end-users
 - i. For mobile voice services: % of time that congestion target (as defined in the reference offer) has been met – separate performance data for the SMP operator’s customer experience and for the access-seeker’s customer experience.
 - ii. For mobile internet services: % of time that congestion target (as defined in the reference offer) has been met – separate performance data for the SMP operator’s customer experience and for the access-seeker’s customer experience (for peak hour for the 10% of base stations with the heaviest data traffic load)
 - iii. For mobile VOIP services, % of time that congestion target (as defined in the reference offer) has been met – separate performance data for the SMP operator’s customer experience and for the access-seeker’s customer experience.
 - b. Customer reported and access-seeker service problems
 - i. Number of reported problems (customer or access-seeker experienced) passed from the access-seeking operator to the SMP operator for resolution
 - ii. Distribution of repair times taken by the SMP operator in response to an access-seeker’s request, compared to the average response time taken for the SMP operator to resolve its own customer’s reported service problems

8.3.2. Margin squeeze test for MVNO access

ComCom will monitor possible price-based discrimination related to MVNO access by using a ‘margin squeeze test’ in cases where an access-seeker complains that the wholesale charges for services necessary for MVNOs to operate are too high for the access-seeker which prevent it to have a reasonable profit margin in the retail market. The main elements of the test (e.g. product or group of products approach, level of efficiency, depreciation method, calculation and treatment of costs (wholesale costs, own network costs, retail costs), calculation and treatment of revenues (treatment of bundles, treatment of discounts and promotions, customer lifetime), reasonable profit margin, etc.), will be defined by ComCom in the margin squeeze test methodology within 6 months after the entry into force of the SMP decision on the wholesale mobile access market.

The margin squeeze test will make use of financial accounts established by the SMP operator in accordance with Resolution No. 5 of the Georgian National Communications Commission of

April 20, 2006, on “Approval of Rules of Separate Accounting and Cost Accounting Methodology by Authorised Entities” (on accounting separation).

The test will be based on the following formula:

$$RP_{\text{smp}} \geq WC_{\text{reg}} + WC_{\text{non-reg}} + RC.$$

Where RP_{smp} = the retail price of the SMP operator’s retail service

WC_{reg} = the wholesale cost of the SMP operator’s regulated service

$WC_{\text{non-reg}}$ = the cost of the access-seeker’s network for providing service

RC = the retail cost of the access-seeker’s retail service

This means that the retail price of the SMP operator for a given service must not be less than the sum of the wholesale cost of the SMP operator for that service plus the own-network cost of the access-seeker for that service plus the retail cost of the access-seeker for that service.

Details of the test will be defined in the margin squeeze test methodology to be issued by ComCom. This means that the retail price can consist of the sum of wholesale service costs, own network costs and retail costs.

In addition to the need for a margin squeeze test to be undertaken by ComCom in the event of a complaint from an access-seeker, ComCom should carry out a review of the cost inputs to a margin Squeeze Test at least on a yearly basis.

8.4. The obligation of accounting separation

According to Article 33 of the Law on Electronic Communications, ComCom can impose an obligation on the SMP operator to keep separate accounting for activities related to interconnection and/or access. This regulatory obligation is used to solve the competition problems defined in the Chapter 7.5.1, including unfair cross-subsidisation and other obstacles that could cause the same or similar consequences on the market. The obligation of cost accounting is a standard regulatory remedy often used in conjunction with regulatory obligations related to transparency and non-discrimination (see also Chapters 8.1 and 8.3).

The accounting separation obligation ensures that, in the case of a vertically integrated operator (with both network and retail operations) the transparency of both its wholesale prices and its internal transfer prices between its network and retail operations.

This obligation requires the SMP operator to keep separate accounts of the costs (and revenues) of its wholesale business.

According to the Article 33 of the Law on Electronic Communications (based on findings from Chapter 7) the following obligations should be placed on the SMP operator in the wholesale mobile access market:

- To keep separate accounts for the national roaming service;

- To keep separate accounts for the wholesale services necessary for MVNOs to operate. The degree of separation should be sufficient to show the cost of any form of MVNO access such that access-seekers can select their own form of access knowing what the wholesale cost will be; This is also required by ComCom to ensure that there is no unfair cross-subsidisation within the SMP operator.
- To keep separate accounts covering all types of co-location access.

The SMP operator will implement this obligation in accordance with Resolution No. 5 of the Georgian National Communications Commission of April 20, 2006, on “Approval of Rules of Separate Accounting and Cost Accounting Methodology by Authorised Entities”.

8.5. Obligations for price control and cost accounting

In accordance with Article 35 of the Law on Electronic Communications, ComCom can impose regulatory obligations for price control, including an obligation for cost-orientation of prices and the obligation to apply cost accounting, both to be applied to the different types of interconnection and/or access.

In considering this obligation, ComCom has to take into account the need to promote market competition and the interests of end-users and at the same time the need to encourage investment in mobile infrastructure for all operators as well as to promote the introduction of new services and business models.

In the context of the wholesale mobile access market the obligations for price control and cost accounting should be applied to the wholesale charges made for the services necessary for MVNOs to operate, for national roaming and for co-location.

8.5.1. Wholesale pricing

In accordance with Article 35 of the Law on Electronic Communications (based on findings from Chapter 7), the following obligations should be placed on the SMP operator:

- Charges for the services necessary for MVNOs to operate offered by the SMP operator (see Chapter 8.2) should be cost-based, based on the bottom-up cost model;
- Charges for the national roaming access offered by the SMP operator (see Chapter 8.2) should be cost-based, based on the bottom-up cost model;
- Charges for the collocation access offered by the SMP operator (see Chapter 8.2) should be cost-based, based on the bottom-up cost model;
- At the request of the access seeker, the SMP operator should allow the one-time fees for the initial set-up of the wholesale access to be paid by the access-seeker in monthly instalments over a period (for example over 3 years) using a reasonable level of interest payments.

It should be noted that the obligation of price control alone (with cost orientation as in this case), in the absence of any other regulation on the mobile retail market, cannot prevent SMP

operator from setting of excessively low retail prices. This price setting behaviour would be a form of discriminatory self-preference by the SMP operator. In the case of a complaint or other indications of such behaviour, ComCom could apply the margin squeeze test for MVNO access as described in Chapter 8.3.2.

8.5.2. Cost accounting

The wholesale charges that an access-seeker should pay to the SMP operator should be based on the LRIC costs of the wholesale service provided, including:

- For national roaming and for services necessary for MVNOs to operate:
 - The cost of access to the SMP operator's network, including interconnection if applicable
 - The cost per second of voice traffic, including additional incremental fees for international calls
 - The cost of megabyte of transmitted data
 - The cost of each type of SMS sent or received, including bulk SMS
 - The costs of carrying specific M2M and other applications
- Only for services necessary for MVNOs to operate:
 - The costs of access to radio access network
 - The costs of network switching
 - The cost of VAS
 - The cost of service platform
 - The cost of SIM cards provision
 - The costs of international roaming, where applicable
- For co-location:
 - Access to towers for the placing of equipment (one-time access fee)
 - Access to buildings for the placing of equipment (one-time access fee)
 - The cost of interconnecting the access-seeker's network or equipment to the SMP operator's equipment where applicable
 - Monthly recurring and additional costs (such as energy and contribution to site running costs)

Those resulting costs will represent a maximum wholesale charges calculated using a 'bottom-up' model using only those parts of the SMP operators input costs that are applicable to the wholesale access service being used by the access seeker, plus the relevant allowance for the cost of capital. The costs calculated by the SMP operators will initially be included in the relevant reference offer (see Chapter 8.1) without prejudice to the final calculation that should be submitted to ComCom (based on ComCom's published methodology once available).

The bottom-up cost model Methodology that should be used by SMP operator to calculate the wholesale costs will be defined by ComCom by a separate decision based on the Article 30.3 of the Law on Electronic Communications.

After having calculated the costs of regulated services based on the previous paragraphs in this chapter, the SMP operator will inform ComCom on the final results, in order to allow ComCom to check the compliance of the calculated costs with its published bottom-up cost Methodology.

8.6. How the regulatory remedies address the competition problems

Chapter 7 described the current and expected competition problems in the wholesale mobile access market. The figure 49 summarises, for each competition problem, how these are expected to be addressed by the proposed remedies described in Chapters 8.1 to 8.5.

Some competition problems cannot be addressed by a single remedy, instead the use of more than one remedy is expected to be required to address the problem. In a similar way, a single remedy can be used to address (in whole or in part) more than one competition problem. For example, in the case of the Georgian wholesale mobile access market, the access obligation itself is not sufficient, because Magticom could provide access at an excessive wholesale price such that an access-seeker would be unable to become economically sustainable in the market. Even with both the access obligation and price control together, Magticom could use delaying tactics or require unreasonable technical conditions which may also result in no agreement being reached with an access seeker.

The inter-dependencies of remedies and the complexities of the competition problems identified mean that special attention must be paid to the need for remedies to be proportionate to the level of potential harm to the Georgian competitive market. There is the possibility that by removing one remedy, insufficient overall regulation could result, and competition problems will not be addressed in an effective manner. The following table illustrated the holistic approach that has to be used by ComCom in selecting and applying regulatory remedies.

Each of the regulatory remedies can only be effective in the market if monitoring is applied using the methodologies described in Chapter 8.1. ComCom must also have effective dispute resolution procedures in place to ensure the full implementation of remedies.

Figure 49: Competition problems and remedies addressing them

	Competition problem	Remedies addressing the problem
7.1. 7.3	Overinvestment/raising rivals' costs	• Access to sites (co-location) & national roaming • price control (bottom up)
7.2. 7.4	Refusal of supply/Denial of access	• Access to sites (co-location), national roaming and MVNO access • Supporting remedies to access which prevent setting additional obstacles to bring access into practice:

		○ Non discrimination ○ Price control ○ Transparency
7.5.1	Cross subsidising leading to a margin squeeze for MVNO access	● Margin squeeze test ● Accounting separation (to obtain data needed for margin squeeze test)
7.6.1	Discriminatory use of information or withholding of information	● Non-discrimination ● Transparency, including reference offer
7.6.2	Discrimination by quality of service	● Non-discrimination (special remedy to deal with quality)
7.6.3	Delaying tactics	● Transparency: timetable to implement decision ● Reference offer – decrease number of possible things to negotiate
7.6.4	Unjustified claims	● Reference offer + supervision of ComCom
7.6.5	Unjustified use of information about competitors	● Prohibition of such behaviour as part of the access obligations

Source: Expert group

9. Annex 1

9.1. Current vs. proposed regulation

The obligations defined in this market review replace the obligations set by ComCom's decision Nr 20-9/156 of 31 December 2019, as amended, relating to Magticom but do, for the rest, not affect the obligations defined by other Decisions of the Commission for the authorised persons with significant market power in the mobile network service market. As regards the two other operators, obligation will lapse on the day the new decision repeals the above mentioned decision.

To facilitate transparency and foster regulatory predictability the MVNO access obligations in force and the proposed ones proposed in this current review are summarised in the following table. It should be noted that the order of remedies follows the order used in the decision Nr 20-9/156:

Figure 50: Comparison of the existing and proposed new regulations

obligations in force	envisaged obligations	Reasoning behind difference in approach
Transparency		
Publication of a reference offer in 90 days	In the case of reasonable demand, reference offer should be sent to ComCom for approval and subsequent publication on its website: • within 90 calendar days from the first official request for the service of for the services necessary for MVNO to operate Note: The core elements of reference offers for all services (access points, features, pricing) must be sent to ComCom for approval and subsequent publication on its website within 90 calendar days from the entry into force of the final SMP decision. Full reference offer just in case of reasonable demand (as stated above)	Publication of whole reference offer obligatory only in case if there is demand

	within 90 calendar days from the first official request for the service of national roaming	New obligation (national roaming)
	within 90 calendar days from the first official request for the service of co-location	New obligation (access to co-location)
	In case of alteration of network elements or services included in a reference offers, notify any change in the reference offer to ComCom for approval and subsequent publication on its website. Where such amendment concerns the launch of a new retail service or of features, the SMP operator may only start offering its new service or service with new features 30 calendar days after the publication of the amendment of the reference offer;	New obligation (access to co-location, national roaming and MVNO)
detailed information: the list of offered technologies, types of services, network elements (at the level of subsystems) and their access conditions, numbering resource usage conditions ¹¹⁰	Outline of structured and details reference offer Minimum information required in reference offer in line with EU best practice	More detailed, though numbering no longer covered. The numbering plan is decided by ComCom. The SMP has just obligation to grant access to every numbering assigned by ComCom to an MVNO
Access		
MVNO access		
9 months from the application contract should be signed		Content of contract is specified by the reference offer (with prices included), no minimal additional negotiations are needed
list of offered technologies, types of services and network elements	Obligation to provide access to the building blocks necessary for MVNO to operate and to enable the usage of the MVNO's own SIM cards, i.e.: (i) Radio Spectrum, (ii) Network	Technology details will be part of reference offer

¹¹⁰ detailed under the access obligations

	switching, (iii) Value Added Services and (iv) Service platform.	Numbering resources usage conditions ¹¹¹ will be part of these access obligations
In case of refusal, SMP is obliged to notify the applicant and the Commission in writing of the reasons for the justified refusal within 10 days from the date of receipt of the application.	The SMP operator must notify ComCom of any rejection of an access-seeker's request for a wholesale mobile access service, together with the reasons for its rejection within 15 calendar days after rejection	The obligation is now among the non-discrimination obligations
	Access to supporting systems	New remedy – to address problems regarding provision of necessary information
	national roaming	New remedy – to address weakness of competition constraints on the SMP operator from the third MNO
	co-location	New remedy – to address weakness of competition constraints on the SMP operator from the third MNO
Accounting separation		
account for costs and revenues separately according to the methodological rules established by the Commission	Idem –	extended to national roaming and co-location
Price control and cost accounting		
the SMP operators are obliged to offer access tariffs on commercial terms	The SMP operator must set charges for MVNO access, collocation and national roaming access according to bottom-up cost methodology defined by ComCom. At the request of the access seeker, the SMP operator should allow the one-time fees for the initial set-up of	Need to provide predictability to potential market entrants

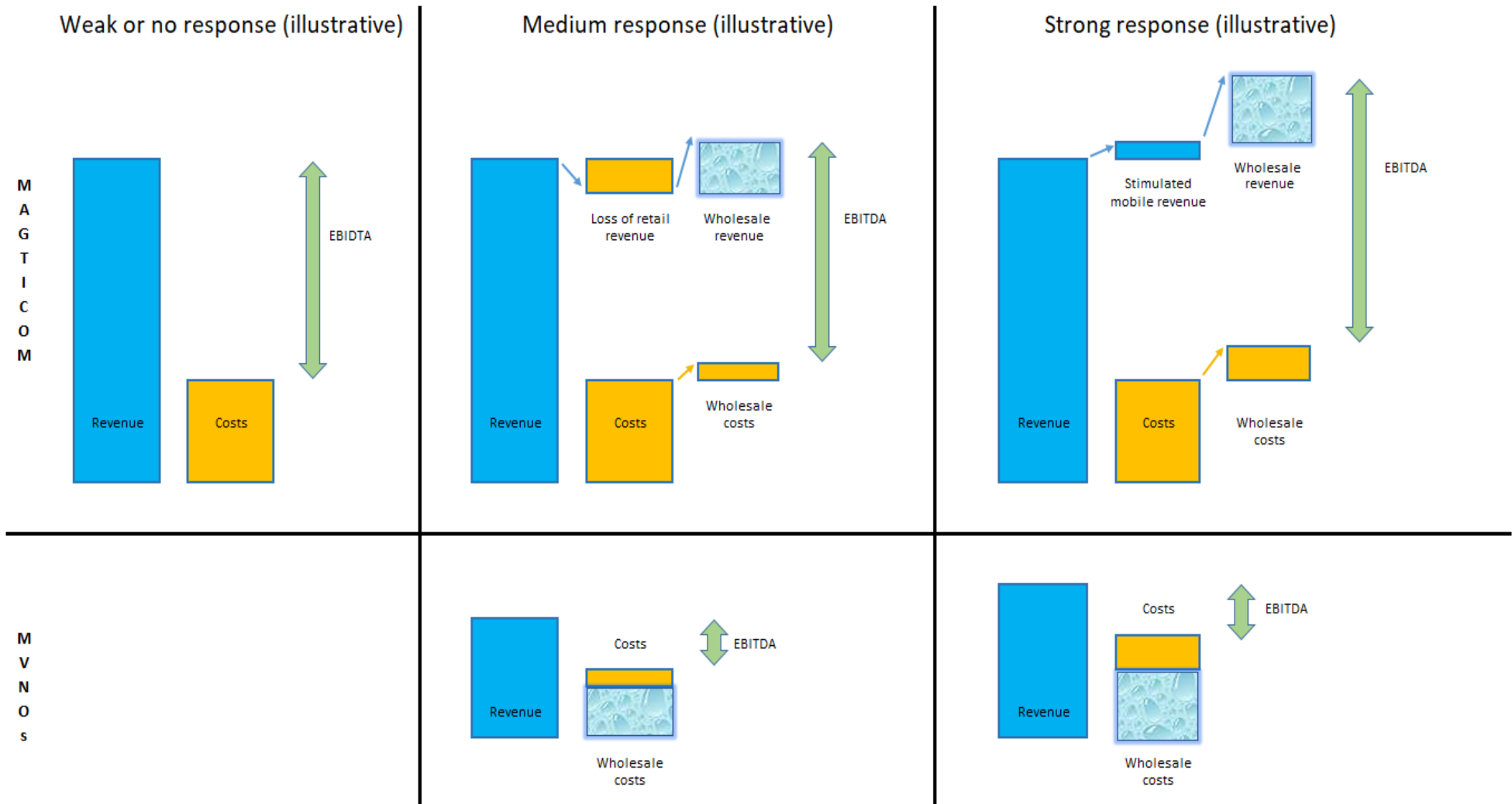
¹¹¹ In the decision in force this obligation is part of the transparency obligations

	the wholesale access to be paid by the access-seeker in monthly instalments over a period (for example over 3 years) with increases to allow for the addition of reasonable interest payments.	
If parties fail to negotiate tariffs in 9 months, ComCom will decide in 60 days after application based on retail minus		The pricing shall be included in reference offer, so there will be no need to give time to the parties to negotiate tariffs 9 months is very long time to negotiate + 2 more months to calculate cost – the deadlines allow to stretch negotiations
In case of inconsistency of the access tariff with the mentioned methodology, the SMP operator is obliged to recalculate and adjust the tariffs in accordance with the comments and requirements of the Commission.		The margin squeeze test will now be part of the non-discrimination remedy
Cost accounting	Cost accounting should be based on the costs of the wholesale provider using a “bottom-up” model. The resulting wholesale charges based on costs calculated using a ‘bottom-up’ model using only those parts of the SMP operators input costs that are applicable to the wholesale access service being used by the access seeker, is the maximum that can be charged.	
Non discrimination		
Access with the same conditions	idem	
Uniform service conditions	Not to discriminate traffic of access seeker unless it is within pre-arranged limits	More detailed and more structured non-discrimination obligation

	KPIs	KPIs added to make monitoring easier
Prohibition of exclusive agreement relating to relevant elements of networks		implicit in the general non-discrimination obligation
not cancel/replace the obligations defined by other Decisions of the Commission on mobile market	idem	
Date of validity	idem	
How to appeal decision	idem	
Monitoring of decision	The SMP operator must submits reports (KPI) to ComCom and access seekers The SMP operator must submit contracts to ComCom (among the non-discrimination obligations),	More specific obligations New obligation to make monitoring more efficient
	Margin squeeze test (foreseen as an ancillary remedy to the non-discrimination obligations)	The test will be applied in case of complaints by access seekers

Source: Expert group

Figure 51: Comparison of scenarios of market responses on regulation



Source: Expert group

9.2. List of abbreviations

Figure 52 List of abbreviations

Acronym	Explanation
5G	5 th Generation mobile network 5G is a new global wireless standard. 5G is designed to connect virtually everyone and everything together including machines, objects, and devices.
4G	4 th Generation mobile network (see also LTE)
3G	3 rd Generation mobile network
2G	2 nd Generation mobile network
AA	Association Agreement EU-Georgia Association Agreement, signed in June 2014. https://old.infocenter.gov.ge/eng-euinfo-the-association-agreement/
ARPU	Average Revenue Per User (or unit) ARPU is a measurement that helps all types of companies understand how much money, on average, they are generating from a single customer over a set period of time.
B2B	Business-to-Business B2B refers to a type of transaction that takes place between one business and another.
B2C	Business-to-Customer B2C refers to a type of transaction that takes place between one business and an individual as the end customer.
BEREC	Body of European Regulators for Electronic Communications BEREC aims at fostering the independent, consistent and high-quality regulation of digital markets for the benefit of Europe and its citizens.
CPE	Customer premises equipment CPE is telecommunications and information technology equipment kept at the customer's physical location. In case of mobile network, it can be mobile phone/smartphone, USB dongle, IoT/M2M device etc.
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortisation EBITDA measures the company's cash performance. It is often used as an alternative to other metrics, including earnings, gross and net profits. The EBITDA margin (normally expressed as a percentage) is calculated by the EBITDA result in a given year divided by the total revenues for that year.
EBRD	European Bank for Reconstruction and Development EBRD was established to help build a new, post-Cold War era in Central and Eastern Europe.

Acronym	Explanation
EECC	EU Electronic Communications Code DIRECTIVE (EU) 2018/1972 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2018 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018L1972
eSIM	eSIM is an industry-standard digital SIM that allows user to activate a mobile plan from his/her network provider without having to use a physical SIM. User can install more eSIMs on his/her mobile device.
FDD	Frequency Division Duplex FDD is a technology used in wireless communications where the uplink and the downlink use a different frequency. The uplink and downlink are separated by a certain gap. FDD can be used for simultaneous transmission and reception (full duplex). It is optimal for voice transmission (telephony).
FWA	Fixed Wireless Access A collective term used to describe some wireless technologies, which are capable of providing broadband access on fixed location (for example CDMA, MMDS). LTE is excluded. The term in Georgia is not fully in line with the usual meaning in the rest of the world. However, it is used in the document since ComCom is used it on its Analytical Portal.
FTTx	Fibre To The x A collective term used to describe a wide range of broadband network architecture options utilising optical fibre for some part or all of their last mile connectivity.
GSM	Global System for Mobile communication GSM is a digital mobile network that is widely used by mobile phone users in Europe and other parts of the world. GSM is a second generation mobile cellular system.
GNCC	Georgian National Communication Commission
GNI per capita	Gross National Income per capita is a comparative measure used to judge the average spending power of members of a country's population
IMSI	International Mobile Subscriber Identity IMSI is a number that uniquely identifies every user of a cellular network.
IoT	Internet of Things IoT describes the network of physical objects—"things"—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet
IP	Internet Protocol IP is the set of rules governing the format of data sent via the internet or local network. In essence, IP addresses are the identifier that allows

Acronym	Explanation
	information to be sent between devices on a network: they contain location information and make devices accessible for communication.
IPTV	Internet Protocol Television IPTV is the delivery of television content over Internet Protocol (IP) networks. This is in contrast to delivery through traditional terrestrial, satellite, and cable television formats. IPTV enables advanced functions, such as time shift.
LTE	Long Term Evolution LTE is a standard for wireless data transmission. It is now in its mature phase and will be succeeded by 5G networks.
M2M	Machine to Machine communications M2M communications refer to automated applications which involve machines or devices communicating through a network without human intervention
MNC	Mobile Network Code MNC is a code uniquely identifying a mobile network operator.
MNO	Mobile Network Operator MNO is a telecoms entity that provides wireless voice and data services to mobile phone subscribers over its own mobile network and owns spectrum licence(s).
MVNO	Mobile Virtual Network Operator MVNO is a company that does not own a mobile spectrum license but sells mobile services under its brand name using the network of a licensed mobile operator.
NRA	National Regulatory Authority
OTT	Over-The-Top provider OTT is where a telecommunications service provider delivers one or more services across an IP network. The IP networks is predominantly the public internet (Netflix, Viber...)
RAN	Radio Access Network RAN is component of a wireless telecommunications system that connects individual devices to other parts of a network through a radio link. The RAN connects user equipment, such as a cell phone, over a fibre or wireless backhaul connection.
SIM	Subscriber Identity Module SIM card is a microchip in a mobile phone that connects it to a particular phone network
SME	Small and Medium-sized Enterprises
SMP	Significant Market Power

Acronym	Explanation
	SMP describes the power that enables a service provider to make decisions and to act independently of its competitors and customers.
TDD	Time Division Duplex TDD refers to duplex communication links where uplink is separated from downlink by the allocation of different time slots in the same frequency band. It allows asymmetric data transfer rates for uplink and downlink. It is optimised for data transmission.
UMTS	The Universal Mobile Telecommunications System UMTS is a third generation mobile cellular system for networks based on the GSM standard.
Wi-Fi	Wi-Fi (or WiFi) is a wireless networking technology that uses radio waves to provide wireless high-speed Internet access. Wi-Fi is a trademarked phrase that refers to IEEE 802.11x standards.
VSAT	Very Small Aperture Terminal VSAT is a two-way ground station that transmits and receives data from satellites. A VSAT is less than three meters tall and is capable of both narrow and broadband data to satellites in orbit in real-time. The data can then be redirected to other remote terminals or hubs around the planet.

Source: Expert team