Benchmark of regulatory activities 2013

Report for the Euro-Mediterranean Regulators' Group (EMERG)

Robert Hall

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Regulaid BV
PO Box 422,
2600 AK Delft
Netherlands
E-mail: hbakker@regulaid.com

Table of contents

1. Introduction

1.1 Objectives

Since 2009 the Euro-Mediterranean Regulators' Group (EMERG) has undertaken an annual benchmark of its member national regulatory authorities (NRAs), and the results formed the basis for its annual meetings to plan the Group's activities. The benchmark and the meetings identify a number of topics of common interest, and a programme of workshops is implemented during the following year. During 2013 the European Commission decided not to extend its funding of the NATP-3 programme, and so this benchmark may be the last in its current format.

EMERG members were consulted on the questions to be asked, and as a result some additional questions on key performance indicators were included. In addition a number of special themes that may be of common interest to EMERG members were suggested. These are the separation of the incumbent fixed network operator's activities, and updates on net neutrality, spectrum management and the NRA's budget. The 2013 benchmark also collects information about the extent to which countries in the MENA region followed the model of regulation that has developed in the European Union and certain key performance indicators.

1.2 Process

As in previous years, a short-term expert assisted EMERG. He developed the questionnaire, and sent it to the individual NRAs for completion in November. This report contains an analysis and summary of the answers to the questionnaire. The tables in Annexes 2 and 3 give more information about the answers to individual questions from each country.

At the time of writing this report, we had not received a completed questionnaire from Algeria, and so it is not included in the analyses of Sections 3 and 4. Because of the civil war, Syria is no longer participating in the activities of EMERG, and so is not included in this analysis either.

We would like to thank the EMERG members and their colleagues for answering the questionnaire, sometimes giving very detailed and informative responses, which have greatly assisted the short term expert in drawing up this report.

2. Key performance indicators

2.1 Introduction

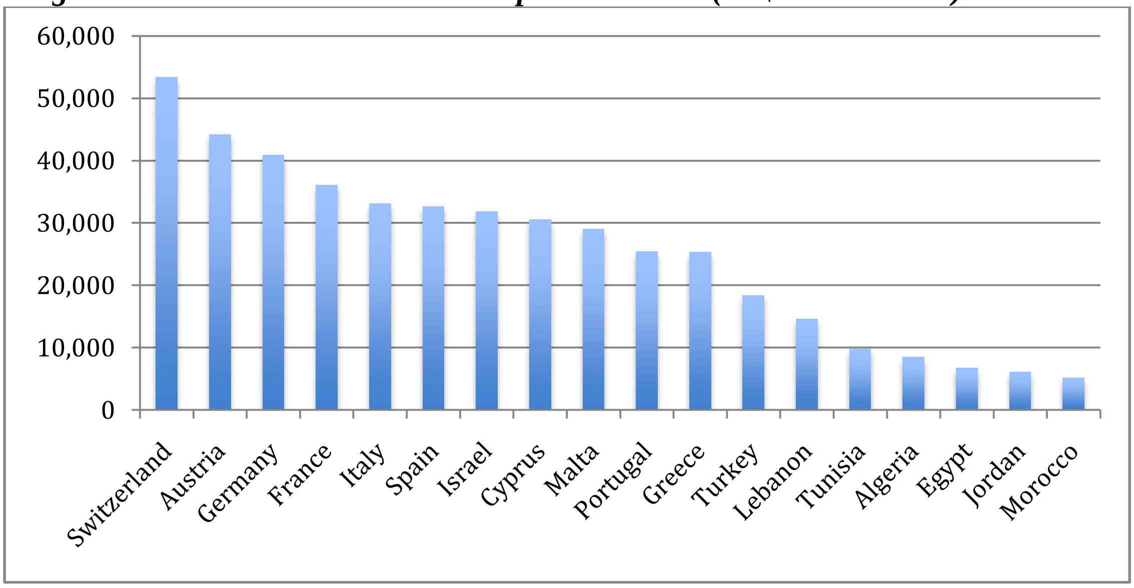
As in previous years, the EMERG countries were asked for data on the performance of their telecommunications industries, which is summarised in this section. The differences in the structure and performance of the industry help explain the different approaches taken to regulation.

The data has been provided by the EMERG members, or where this is lacking, by the International Telecommunications Union database[1]. For gross domestic product per head we have used the World Bank data[2] in order to provide a consistent definition.

2.2 Gross Domestic Product

The graph below shows the Gross Domestic Product (GDP) per head of population for the EMERG countries in purchasing power parities.

Diagram 2.1: Gross Domestic Product per head 2012 (US$ current PPP)



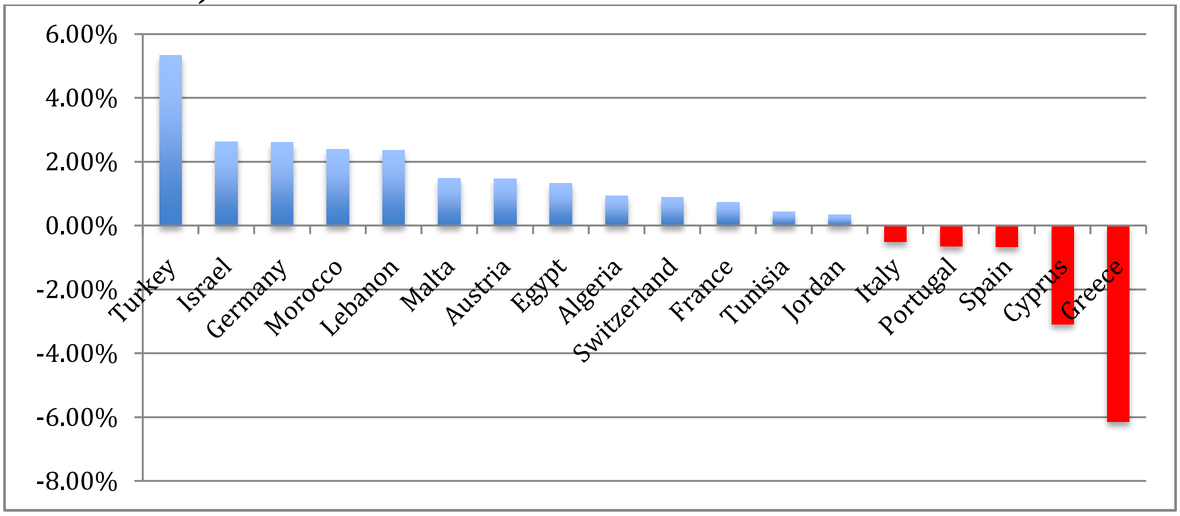
Source: World Bank Quick Query database
NB: No data for Palestine

The GDP per person is substantially higher in the European countries (plus Israel) than in the Middle East and North Africa (MENA) countries. At the extremes, GDP per person in Switzerland is ten times greater than in Morocco.

The next graph shows the annual compound percentage change in GDP per head between 2009 and 2012. The impact of the financial crisis in the euro zone is shown by the decreases in Italy, Spain, Portugal, Cyprus and Greece. Turkey stands out with the fastest growth rate, of over 5% per year. Changes in the average wealth affects the commercial prospects of the telecommunications operators in these countries.

[1] http://www.itu.int/net4/itu-d/icteye/About.aspx
[2] http://databank.worldbank.org/data/databases.aspx

Diagram 2.2: Annual compound changes in GDP per head 2009 – 12 (PPP constant 2005 international $)

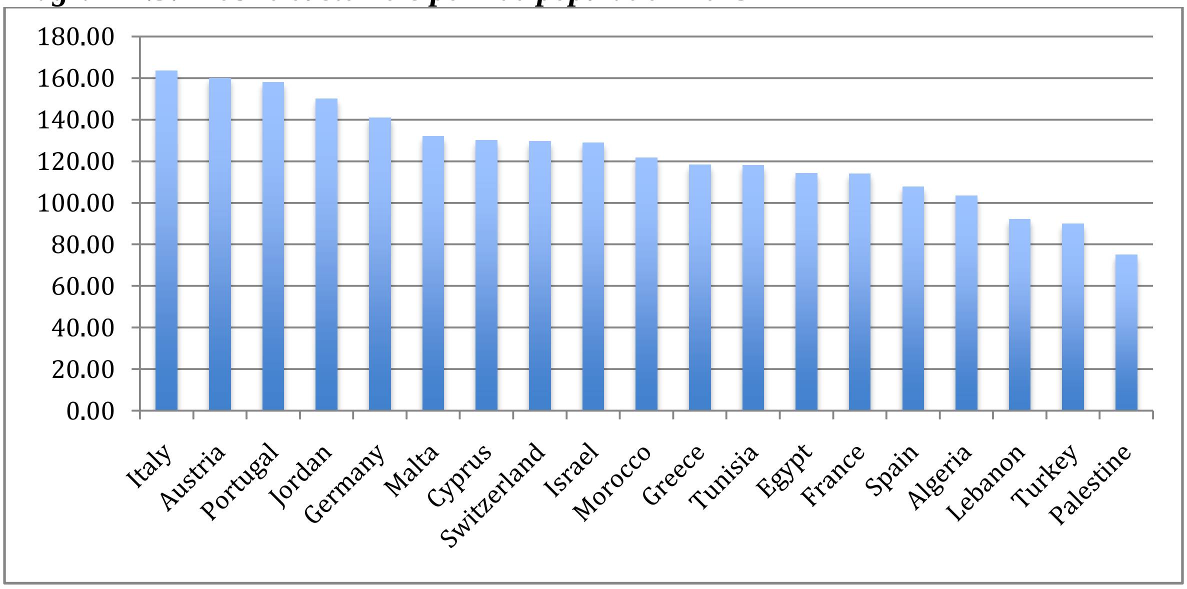


Source: World Bank Quick Query database
NB: No data for Palestine

2.3 Mobile penetration

The next graph shows the mobile penetration in each of the EMERG countries.

Diagram 2.3: Mobile customers per 100 population 2013

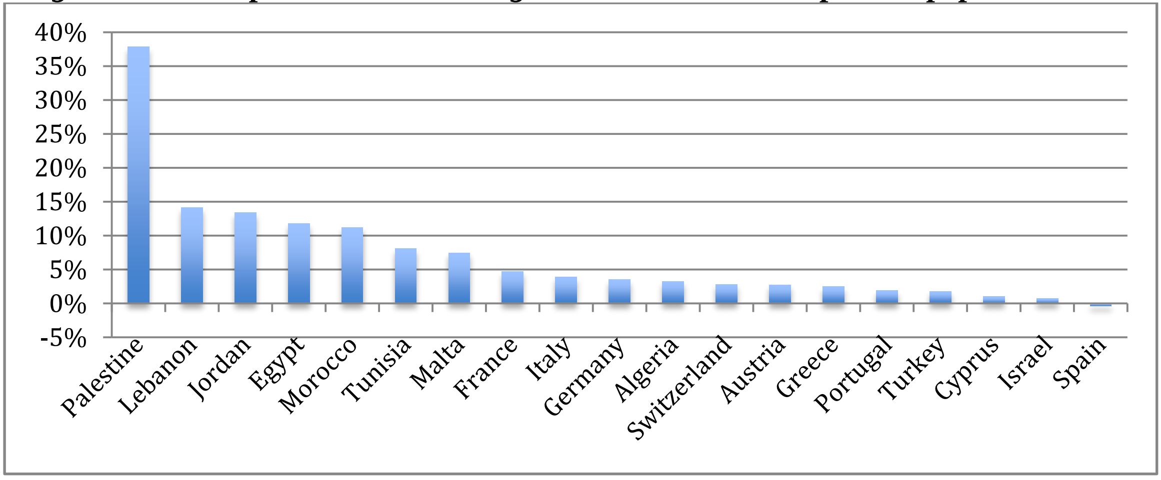


Sources: EMERG questionnaire 2013 except ITU database for 2012 for Algeria

The average penetration in EMERG countries is 123.5 mobile subscriptions per hundred population, but this hides a wide variation. In Italy, Austria and Portugal penetration is 160, while in Lebanon, Turkey and Palestine it is under 100.

As the graph below shows, the most rapid change in mobile penetration since 2010 has been in the countries with lower penetration rates.

Diagram 2.4: Compound annual change in mobile customers per 100 population 2010 – 13 (%)



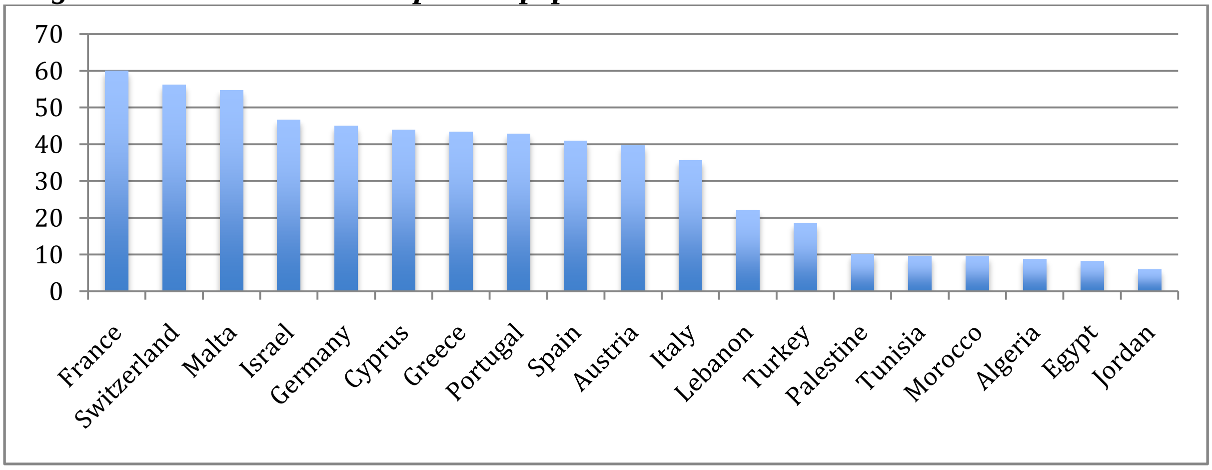
Source: ITU database for 2010 and EMERG questionnaire 2013

The EMERG countries have seen an average increase of 5.5% per year over the three years. Penetration rates in Palestine have more than doubled[3]. Substantial increases have also taken place in Lebanon, Egypt, Morocco and Jordan, while rates have hardly changed over the three years in Cyprus and Israel. Spain has seen a slight decrease over the period.

2.4 Fixed penetration

The penetration of fixed networks is shown in the following graph:

Diagram 2.5: Fixed customers per 100 population 2012/13



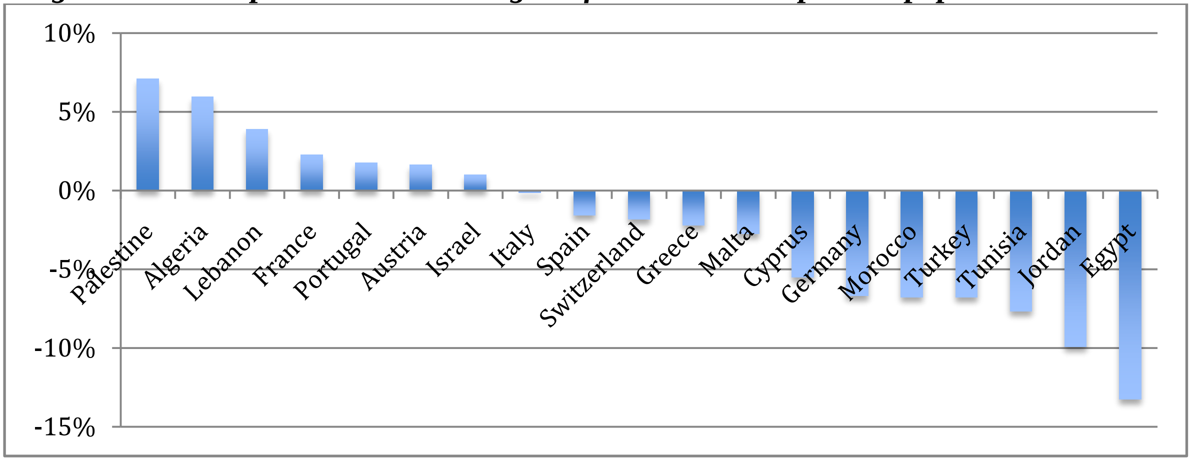
Sources: EMERG questionnaire 2013 except ITU database for 2012 for Algeria

There is a clear division between the European countries plus Israel, where fixed network penetration is greater than 30%, and the MENA countries, where it is below 25%. The overall average is 32%.

Palestine, Algeria and Lebanon have seen significant increases in fixed network penetration, while several European and MENA countries have seen decreases, notably in Egypt and Tunisia. The penetration of fixed lines has fallen by 1.7% per year in the EMERG countries as a whole.

[3] It is likely that some Palestinian mobile customers are registered with Israeli operators.

Diagram 2.6: Compound annual change in fixed customers per 100 population 2010 – 13 (%)

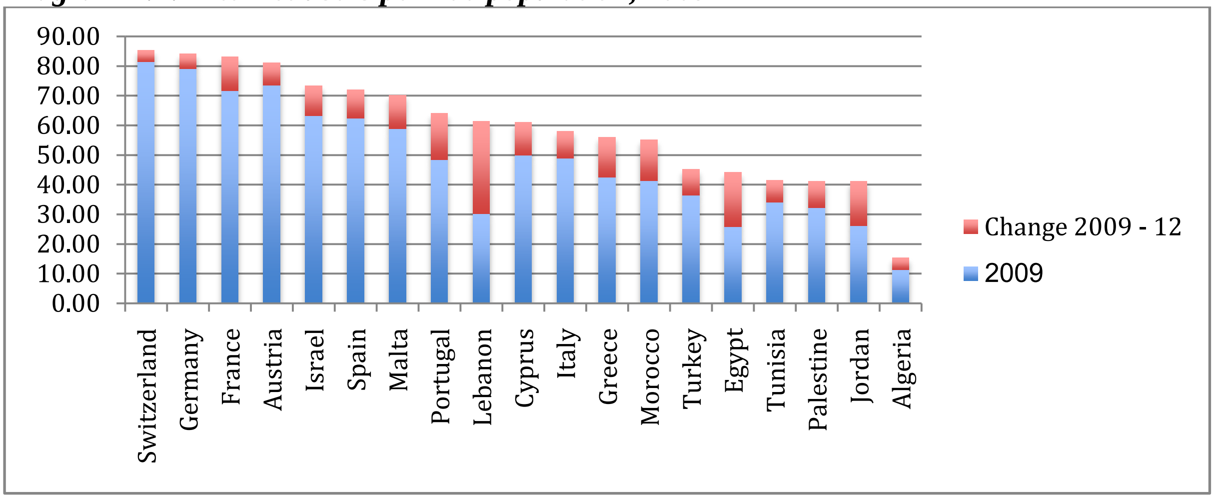


Source: ITU database for 2010 and EMERG questionnaire 2013

2.5 Internet penetration

The following table shows the number of internet users per 100 population, which is different from the subscriber-based information shown in the tables above. User-based information includes facilities such as internet cafes. This information is produced by the ITU based on user survey data, and so may be less reliable than subscriber based data. An internet user is defined as a person using the internet from any device (including mobile phones) in the previous 12 months.

Diagram 2.7: Internet users per 100 population, 2009 – 12



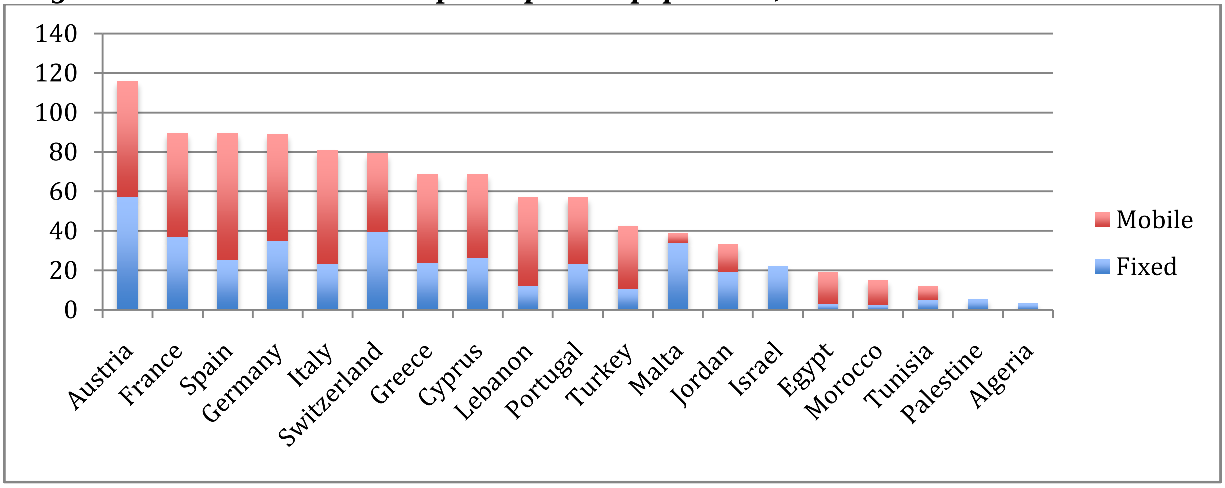
Source: ITU World Telecommunications Database

Internet penetration is over 40% in all the EMERG countries, except Algeria where it is 15%. Growth over the three years has been fastest in Lebanon, Egypt and Jordan, where compound annual growth rates have been over 15%.

2.5 Broadband penetration

In the next diagram we show broadband penetration (defined as speeds over 256 Kb/sec) over fixed and wireless devices.

Diagram 2.8: Broadband subscriptions per 100 population, 2012/13



Sources: EMERG questionnaire 2013 except ITU database for 2012 for Algeria. There are no mobile broadband estimates for Israel and Palestine

Broadband penetration is highest in Austria, followed by several of the European countries, and lower in the MENA countries (with the exception of Lebanon and Turkey). In all countries for which we have data, mobile broadband penetration exceeds fixed penetration, except in Jordan and Malta.

2.7 Television services

For the first time in this benchmark, we asked about the penetration of subscription television services, and the answers are shown below.

Diagram 2.9: Subscription television services per hundred population 2013

	Subscriptions per hundred population
Algeria	
Austria	NA
Cyprus	11.0
Egypt	NA
France	NA
Germany	95.1
Greece	NA
Israel	NA
Italy	NA
Jordan	0.1
Lebanon	NA
Malta	35.5
Morocco	0.2
Palestine	NA
Portugal	29.8
Spain	8.0
Switzerland	45.4
Tunisia	1.2
Turkey	0.6

Source: EMERG questionnaire 2013
NA = Not available

This data is not available in a number of countries. In Germany these services appear to be almost universal, while in countries such as Morocco and Turkey (where the data is for cable television services) only a very small proportion of people subscribe to them.

2.8 Public payphones

We also introduced a question on the availability of public payphones, which have been reduced in number in several countries as a result of the spread of mobile telephony. The table below shows the number of public payphones per thousand population.

Diagram 2.10: Public payphones per thousand population 2013

	Payphones per thousand population
Algeria	
Austria	1.77
Cyprus	1.80
Egypt	0.02
France	1.42
Germany	0.60
Greece	NA
Israel	NA
Italy	1.44
Jordan	0.06
Lebanon	NA
Malta	0.22
Morocco	2.10
Palestine	0.60
Portugal	2.20
Spain	
Switzerland	1.80
Tunisia	1.20
Turkey	1.18

Source: EMERG questionnaire 2013

For those countries where we have data, the overall average penetration is 1.2 payphones per thousand population. The highest rate is in Morocco, and the lowest in Malta.

2.9 Number of operators

The next table shows the number of mobile, fixed, internet and voice over IP operators.

Diagram 2.11: Number of licensed or authorised operators 2013

	Mobile	Fixed	Internet	VoIP
Algeria				
Austria	3	320	403	249
Cyprus	5	7	7	5
Egypt	3	1	0	0
France	4 MNO and 40 MVNO	1400	47	NA
Germany	4	61	NA	NA
Greece	341	568	284	210
Israel	5 MNO and 11 MVNO	3	Many	4
Italy	25 MNO and MVNO	70	NA	NA
Jordan	3	9	18	26
Lebanon	2	1	18+	None
Malta	5	5	7	5
Morocco	3	3	3	3
Palestine	2	1	17	4
Portugal	7	57	39	14
Spain	4	1414	2078	899
Switzerland	127	189	278	140
Tunisia	3	5	0	0
Turkey	3	245	230	36

Source: EMERG questionnaire 2013

The table highlights the large number of operators in the larger European countries (Austria, France, Italy, Portugal, Spain and Switzerland) and in Turkey.

2.10 Broadband speeds and prices

The next set of questions asked about the fastest download speed available on mobile and fixed networks to residential customers, and the speed that was available to the majority of residential customers.

Diagram 2.12: Speeds on mobile and fixed broadband networks (Mbit/sec)

	Mobile		**Fixed**	
	Fastest	**Available**	**Fastest**	**Available**
Algeria				
Austria	150	30	150	39
Cyprus	NA	NA	NA	NA
Egypt	42	NA	48	0.512
France	25	7	1000	22
Germany	150	LTE	200	50
Greece	NA	NA	50	50
Israel	100	100	100	100
Italy	NA	NA	NA	NA
Jordan	NA	NA	24	NA
Lebanon	4G	150	8	1
Malta	NA	NA	100	30
Morocco	14.4	7.2	20	4
Palestine	0.256	0.128	12	2
Portugal	NA	NA	NA	NA
Spain	NA	7.2	NA	10 - 20
Switzerland	150	7.2	1000	10
Tunisia	42	21	20	2
Turkey	NA	NA	NA	NA

Source: EMERG questionnaire 2013

The table shows the impact of the new 4G/LTE mobile networks, where speeds of 100 – 150 Mbit/sec are available, and of fibre to the curb (FTTC) roll outs in the fixed network, where speeds of over 100 Mbit/sec are available. In France and Switzerland fibre to the premises (FTTP) networks can provide 1 Gbit/sec. In Lebanon, Morocco and Tunisia mobile networks provide faster speeds than fixed networks.

The next table shows the prices charged for these services.

Diagram 2.13: Subscription prices on mobile and fixed broadband networks (Euros per month)

	Mobile		Fixed	
	Fastest	Available	Fastest	Available
Algeria				
Austria	6.49	6.49	49	10.2
Cyprus	NA	NA	NA	NA
Egypt	NA	NA	NA	NA
France	NA	NA	35	Between 16 and 39
Germany	99.95	NA	54.95	NA
Greece	NA	NA	NA	NA
Israel	31.02	31.02	31.02	31.02
Italy	NA	NA	NA	NA
Jordan	NA	NA	NA	NA
Lebanon	NA	Between 7 and 110	NA	NA
Malta	21	NA	80	32
Morocco	18	9	45	9
Palestine	55	55	46	21
Portugal	NA	NA	NA	NA
Spain	NA	9	NA	Between 30.9 and 36.8
Switzerland	NA	NA	NA	NA
Tunisia	7	7	33	11
Turkey	NA	NA	NA	NA

Source: EMERG questionnaire 2013

While it is difficult to compare prices fairly - the packages may include different services (eg email addresses and hardware), upload speeds, download limits, and terms (eg contract periods) - mobile broadband packages appear to be cheaper than fixed packages in Austria, Morocco, Spain and Tunisia.

2.11 Market share of main operator

The next indicator used in the benchmark is the market share of the largest mobile or fixed operator. This is a simple measure of market concentration, and an indicator of the extent of competition in each market.

Diagram 2.14: Market share of largest mobile, fixed and television operator

	Fixed access lines	Fixed call minutes	Mobile subscriptions	Subscription television
Algeria				
Austria	60	NA	45	NA
Cyprus	86	76	68	68
Egypt	100	NA	43	100
France	NA	NA	NA	NA
Germany	82	52	33	45
Greece	62	52	49	NA
Israel	NA	NA	30	66
Italy	64	54	34	NA
Jordan	100	NA	39	100
Lebanon	70	100	54	NA
Malta	70	68	49	55
Morocco	100	78	45	100
Palestine	100	100	84	None
Portugal	94	53	46	49
Spain	54	51	34	42
Switzerland	64	NA	60	41
Tunisia	94	94	53	None
Turkey	93	76	51	100

Source: EMERG questionnaire 2013

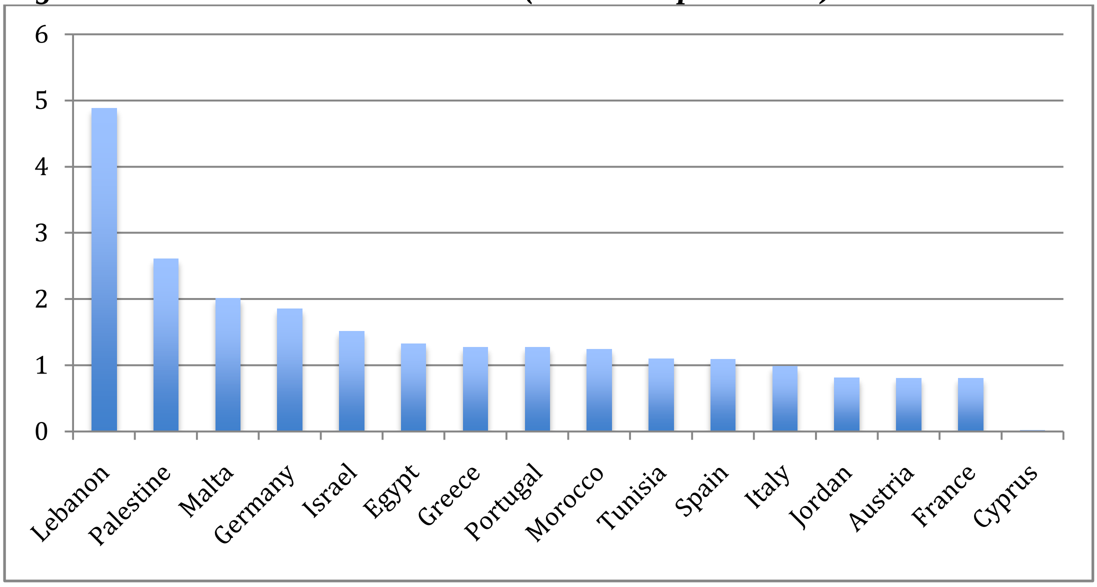
In many countries the incumbent fixed network operator holds a near monopoly in access lines, but in Austria, Lebanon, Malta and Switzerland new entrants have taken 30% or more of this market. The incumbent operator still has over 50% of the calls market in every country for which we have data. The largest mobile operator has 60% or less of the market in all countries except Cyprus and Palestine, and the largest operator of subscription services has less than 50% of the market in only Germany, Portugal, Spain and Switzerland.

2.13 Termination rates

For the first time, the EMERG benchmark includes mobile and fixed termination rates, and the results are shown in the graphs below. In most cases, termination rates are a single figure irrespective of time of day or distance, but in a few they vary by peak and off peak periods, by interconnection hierarchy, or by operator. In these cases we have averaged the figures, using typical weights used in interconnection benchmarking.

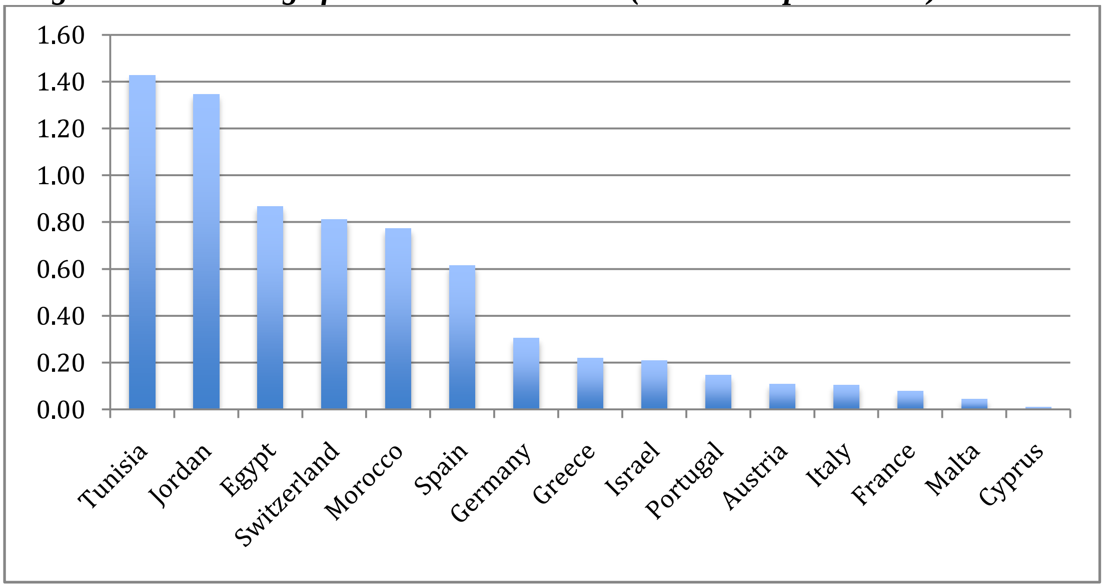
Termination rates in Egypt are set at 65% of the operator’s on net retail call tariff, and we have used typical retail prices from Telecom Egypt and Vodafone Egypt to calculate their termination rates.

Diagram 2.15: Mobile termination rates (euro cents per minute)



Source: EMERG questionnaire 2013; data not available for Algeria and Turkey

Diagram 2.16: Average fixed termination rates (euro cents per minute)



Source: EMERG questionnaire 2013; data not available for Algeria and Turkey

In most European countries "pure LRIC" is used as the basis for cost based termination rates, and as a result mobile termination rates are below 2 euro cents per minute, and fixed termination rates are below 1 euro cent per minute. In Switzerland mobile termination rates are significantly higher. In the MENA countries, mobile termination rates are generally above 1 euro cent (except in Jordan), and fixed termination rates above 0.5 euro cents.

3. EMERG regulation and the European Union model

3.1 Introduction

In the 2011 and 2012 benchmark we asked the MENA countries several questions about how far their regulatory regimes approximated to the model of regulation established by the European Union over the last fifteen years. This model is set out in the various Directives issued by the European Commission, which are usually enshrined in national legislation. This is not to hold up the European model as the only way forward; indeed a regulatory regime has to be appropriate to the particular political and market circumstances of each country, especially in such a diverse and changing region as the MENA area. We repeated the same questions in 2013 to see whether any significant changes had taken place in the approximation to the European model.

3.2 Institutional framework

In the European model, national regulatory authorities are independent bodies without any links to telecommunications operators, with powers to set their own budgets and cannot be overruled by the responsible Ministry. They also have powers to resolve disputes between operators, and normally undertake public consultations before developing policy decisions. There should be a right of appeal against the NRA's decisions to an independent body, such as a court of law, and this process should be timely and efficient.

Within the MENA region:

- All NRAs are independent of the operators, and can set their own budgets, with the exception of Israel and Palestine, where the relevant Ministry performs the regulatory functions and the budget is set by government.
- In the other countries the relevant Ministry may not overrule the NRA, although in Egypt the Minister of Communications and Information Technology is also the chairman of the NTRA.
- In all MENA countries the NRA can impose binding agreements in disputes between operators
- There is a rights of appeal against the decisions of the NRA to an independent body in all countries, and in Egypt, Israel and Tunisia this is to a court of law
- In most countries the appeal process is seen as effective in terms of timeliness and the availability of expertise in telecommunications to the appeal body, although in Egypt the timeline may be debatable and in Lebanon the process is not always effective
- The NRA is required to undertake public consultation in most countries; this is not mandatory in Egypt and Tunisia, but these NRAs normally undertake public consultations
- In Turkey ICTA was given responsibility for regulating the postal sector in May 2013; otherwise there have been no changes in the institutional framework of the MENA regulatory authorities.

3.3 Authorisations and licences

The NRAs in the European Union use an authorisation system, whereby operators are required to register with the NRA and to conform to the various conditions and decisions of the NRA in order to provide electronic communications services, but they are not required to obtain a licence to operate from the NRA. Hence the NRA cannot control which operators provide service or their number. Of course, the NRA limits the allocation of spectrum licences, but it should indicate the availability of spare spectrum in the spectrum plan, and consult on the need and design of any new spectrum licences.

In the MENA region:

- Only Turkey operates an authorisation system, and other countries operate a licensing system
- Information about spare spectrum is available in Tunisia and Turkey, and in Israel notices are published when spectrum tenders are announced
- Stakeholders are consulted in the design of new spectrum licences in all MENA countries, except Israel.

3.4 Significant Market Power (SMP) and regulatory obligations

In the European model, NRAs may impose regulatory remedies only when market failures have been identified through a process of market analysis, and only on operators that have significant market power. Hence operators that do not have SMP may not have regulatory remedies, such as price controls, imposed on them. The remedies that may be imposed are defined in EU directives and national legislation, and should be in proportion to the identified market problems (proportionality).

The current practice in the MENA region is:

- Only in Jordan and Lebanon are regulatory remedies imposed on operators with significant market power; in the other countries they may be imposed on all operators
- However the definition of SMP is set out in legislation or regulations in most countries (perhaps as part of a wider competition law), but not in Israel (where there are general provisions in the law for the promotion of competition) and not in Tunisia
- The remedies that may be imposed on operators are defined in legislation in most MENA countries, but not in Egypt, Israel and Jordan
- The requirement for proportionality is set out in the legislation of most countries, and in Israel this is a general requirement under administrative law; this is not the case in Egypt and Tunisia, and is partially the case in Turkey
- Operators that do not have SMP are free to set their own retail prices without approval from the NRA in Israel (subject to a general condition of reasonableness), Jordan, Lebanon, and Palestine, but not in Egypt, Morocco, Tunisia and Turkey (where ICTA approves the upper limit of retail prices for mobile operators under their concession agreements).

3.5 Regulatory accounting

One of the remedies that may be imposed by European NRAs on SMP operators is the production of financial accounts according to the format prescribed by the NRA. This format is usually designed to show that the operator’s retail and wholesale prices are based on cost, that the same wholesale prices are charged to its retail arm as to other operators, and that there are no cross subsidies between the regulated and unregulated retail businesses.

In the MENA region:

- SMP operators are required to produce regulatory accounts in most countries, except Lebanon; in Israel the activities of Bezeq, the incumbent fixed operator, are in structurally separate companies which produce their own accounts
- Regulatory accounts are used to demonstrate whether there are any cross subsidies between regulated and unregulated businesses in Jordan, Lebanon, Morocco and Turkey, and in Egypt for Telecom Egypt only
- Regulatory accounts demonstrate whether wholesale prices are cost oriented in Egypt, Jordan, Lebanon, Morocco and Turkey
- They are not used to demonstrate whether retail prices are cost oriented in any MENA country.

3.6 Access and interconnection

In the European Union, proper regulation of the wholesale market is seen as the key to effective competition in the retail market. Hence NRAs have put considerable effort into wholesale remedies, such as transparency of terms and conditions for the provision of wholesale services through the publication of reference offers, the mandatory provision of certain services that give access to the incumbent's network (such as carrier selection, wholesale line rental, duct sharing and local loop bundling), and the availability of number portability.

The position in the MENA countries can be summarised as:

- SMP operators are required to publish a reference offer in Jordan, Morocco, Palestine, Tunisia and Turkey; this is due to happen in Egypt in early 2014, and in Israel this requirement depends on when a separate wholesale market is developed; this has not happened yet in Lebanon
- In all those countries where a reference offer is required, this document must be approved by the NRA
- Carrier selection is mandated in Jordan, Morocco, Palestine, Tunisia and Turkey, but not in Egypt (where a fixed line monopoly is retained), Israel (where it depends on the development of a separate wholesale market)
- Local loop unbundling is mandated in most countries except Israel and Palestine, and in Egypt line sharing is provided to internet service providers
- Sub loop unbundling is a regulatory requirement in fewer countries - in Jordan (where it is still to be implemented in practice), Morocco, Tunisia and Turkey
- Wholesale line rental is available in Egypt (to ISPs), Lebanon, Morocco, Tunisia and Turkey
- Wholesale prices must be cost oriented in Jordan, Morocco, Tunisia and Turkey; in Egypt only termination rates should be cost oriented
- Incumbent operators are required to share their ducts with new entrants in Jordan, Morocco, Tunisia and Turkey; in Egypt this can be mandated in certain circumstances
- Fixed and mobile number portability is available in Israel, Morocco and Turkey; mobile number portability is available in Egypt; neither is available in Jordan, Lebanon, Palestine and Tunisia.

3.7 Universal Service

Under the Universal Service Directive, in the European Union one operator is nominated as the provider of universal service, and the costs of this may be met from levies on other operators through a Universal Service Fund.

In the MENA countries:

- All countries, with the exception of Lebanon, have designated an operator as a universal service provider; in Israel two operators have been so designated
- A universal service fund has been set up in Jordan, Morocco and Turkey; one is in the course of being set up in Egypt.

3.8 Other matters

Four miscellaneous questions were asked, as follows:

Diagram 3.1: Other questions

95	Is a national numbering plan published?
96	Are non-discriminatory procedures for granting public rights of way available?
97	Are there schemes available to facilitate the sharing of masts?
98	Does the NRA have powers to require the separation of functions in the incumbent operator?

In the European Union, national numbering plans should be publicly available, and non-discriminatory procedures should be in place for granting public rights of way to telecommunications operators. Mast sharing should be promoted through suitable schemes, and, as discussed in Section 4.1 below, NRAs have powers to require the separation of certain functions in incumbent SMP operators.

The position in the MENA countries is:

- A national numbering plan has been published in all countries, except in Lebanon (where it is in draft awaiting approval by the Council of State) and Palestine (where one is in preparation).
- Non-discriminatory procedures for access to public rights of way are available in all countries, except in Lebanon where a draft is awaiting approval from the Council of Ministers
- Mast sharing schemes are available in all countries, except Lebanon where a regulation on facility sharing has been drafted
- NRAs have the power to require the functional separation of SMP operators in Jordan and Palestine; as discussed in Section 4.1, in Israel the incumbent operator was structurally separated some years ago.

3.9 Summary

In 2011 and 2012 we drew up a summary table, which indicated how similar the model of regulation used in each of the MENA countries is to the European model. We did this by totalling the number of times that a country has implemented the same features of the European model, as shown by the answers to the approximation questions. Clearly this is a simplistic approach because:

- a close investigation of local details may show some significant differences that are not revealed by a simple “yes” or “no” answer
- by giving equal weight to each answer, we ignore the likelihood that some aspects investigated in the questionnaire have more impact on the electronic communications market than others.

We emphasise that the model of regulation adopted in each country should reflect its political and market environment, and that aspects of the European model may not be appropriate for every MENA country. However the European model is regarded as good practice in many parts of the world, and an understanding of the differences between it and the situation in individual countries may enable a consideration of whether there are good reasons for the differences, and if not, whether a change in the model of regulation is desirable.

We show the total scores for each country for 2013 and the previous years from the 35 questions in the table below:

Diagram 3.2: Approximation scores

	2011	2012	2013
Algeria			
Egypt	16	18	18
Israel	15	15	15
Jordan	25	26	26
Lebanon	13	13	13
Morocco	29	29	29
Palestine	16	17	17
Syria	12	12	
Tunisia	20	20	20
Turkey	30	30	30
Maximum score	35	35	35

Turkey, Morocco and Jordan come out as having regulatory models closest to the European model. Over the three years, Egypt, Jordan and Palestine have moved closer to this model:

- In Egypt the introduction of regulatory accounts took place in 2012
- The TRA in Jordan acquired the powers to impose separation of the incumbent in 2011
- In Palestine the process for appeals against decisions of the NRA has become more efficient.

Otherwise there is little change from the overall picture presented in 2011 and 2012.

We are aware that in Lebanon many draft decrees based on the European model are awaiting approval from the Council of Ministers, but this is not reflected in the total score because they have not been implemented. Israel has deliberately adopted a model of market structure and regulation that is significantly different to the European model, and so its scores are low in this table.

4. Special themes for 2013

4.1 Separation of the incumbent fixed operator

Perhaps the biggest challenge facing national regulatory authorities has been to ensure that the historic fixed network operator, which in most countries used to enjoy a monopoly on telecommunications services, competes fairly with new entrants when competition is introduced. In particular its ownership of the national network, over which most new entrants have to provide their services to customers, enables it to provide wholesale services to these entrants in such a way that benefits its retail operations, which are competing directly against the same new entrants. Numerous examples of such an abuse of its dominant position abound – charging higher wholesale prices to new entrants than are charged to the incumbent's retail arm, providing better and quicker service to its own retail customers than to its wholesale customers, sharing of information gained from the orders and plans of wholesale customers with its retail account managers, for example.

As a remedy for such abuses, many national regulatory authorities have required some form of separation to be implemented by dominant operators. There are three main types:

- **Accounting separation** - incumbent operators are required to prepare and submit financial accounts that demonstrate that its retail business units are paying the same price for network services as competing operators. The accounts show separate profit and loss statements for the incumbent's network business and its retail businesses, including payments, prices and volumes for network services.
- **Business separation** - separate wholesale units must be established as the sales point for competing operators. These units then sell wholesale services and organise their provision by the incumbent's network arm. The same timescales for service delivery and repairs may be imposed for the retail arm and the wholesale customers, and the wholesale arm can establish "Chinese walls" on the flow of information on wholesale customers in order to reduce the problem of information leakage.
- **Functional separation** - the assets, operation and development of the network are placed in a separate unit. The network may be limited to the access and backhaul networks (as the elements which are not likely to be replicated by competing networks) or may include the core transmission network and the operating systems. The network business then provides services to competing operators and the incumbent's retail arm on an equal basis, using the same processes and standards for both types of customers. In the extreme case (structural separation) the business units are placed in different legal entities.

Within the European Union, regulatory authorities may require accounting separation as one of the remedies for dominant operators under the Access Directive, and may impose functional separation under the amendments made to the Access Directive in 2009[4] if other remedies are not adequate.

We asked 13 questions about the powers and practice of the EMERG members in accounting separation and functional separation, as shown below

[4] European Commission. Directive 2009/140/EC dated 25 November 2009, article 13a

Diagram 4.1: Questions about separation of the incumbent operator

1	Does the NRA have the power to require operators with SMP to prepare regulatory accounts?
2	Has the NRA specified in detail how the incumbent fixed operator should prepare its regulatory accounts in a directive or decree?
3	Does the incumbent fixed operator prepare separate accounts for its wholesale and its retail businesses?
4	Does the incumbent fixed operator prepare separate accounts for its individual retail businesses?
5	Must an independent auditor certify that the regulatory accounts conform to the NRA's direct or decree?
6	Which method does the operator use for the allocation of common and joint costs in the regulatory accounts (eg fully allocated costs (FAC) or incremental costs (LRIC)?
7	Which method does the operator use for the valuation of its capital costs in the regulatory accounts (historic (HCA) or current (CCA) cost accounting)?
8	Does the NRA have powers to enforce the functional separation of the wholesale and retail businesses of a SMP operator?
9	Has the NRA set out rules for the functional or structural separation of the incumbent fixed operator's wholesale and retail businesses?
10	Are the incumbent fixed operator's wholesale and retail businesses in separate companies?
11	Are the incumbent fixed operator's wholesale and retail businesses in separate departments in the same company?
12	Do the incumbent fixed operator's wholesale and retail businesses operate in separate buildings?
13	Does the incumbent fixed operator have rules that limit communications between its wholesale and retail businesses?

The position on accounting separation is as follows:

- All NRAs have the power to impose accounting separation, except in Switzerland. In Tunisia this requirement is imposed on all operators
- Most NRAs have specified in detail how the separated accounts should be prepared, but this has not been done in Germany, Israel, Palestine, Portugal and Switzerland. In Lebanon, where the incumbent operator is still owned by the state, detailed accounting guidelines are still in draft
- In most countries the dominant operator is required to prepare separate accounts for its retail and wholesale businesses, with the exceptions being Germany, Israel, Palestine, and Switzerland. In Lebanon the guidelines have not yet been implemented
- In the countries where the incumbent operator prepares separate accounts for its retail business, it is required to provide separate accounts for its individual retail businesses (for example, access, calls etc)
- In all countries (except Switzerland, where separate accounts are not required), an independent auditor must certify that the separate accounts conform to the requirements of the NRA; in Austria and Germany this is done by the NRA itself
- In preparing the separate accounts, NRAs may specify that dominant operators use fully allocated costs (FAC) or long run incremental costs (LRIC). In Austria, France, Italy, Jordan, Malta, Portugal and Turkey FAC are used; in Morocco and Tunisia LRIC are used. In Cyprus both are used, and in Lebanon the intention is to move from FAC to LRIC in the longer term. In Israel there is structural separation of the incumbent’s operations, and so there is no need to allocate joint and common costs across different businesses.
- In most countries the assets of the dominant operator are valued by using historic costs (Austria, Malta, Palestine, Portugal, Tunisia and Turkey). Current costs are used in Cyprus and Morocco; in Italy historic costs are used for access services and current costs for

interconnection services, and both are used in Jordan. In Lebanon it is envisaged that historic costs will be used initially, with a move to current costs later.

For functional separation, the position can be summarised as:

- The members of the European Union have powers to implement functional separation, as do the NRAs in Morocco and Palestine. In Israel the incumbent operator, Bezeq, was split into five different legal entities several years ago (mobile, fixed, international, call centres and television). In Tunisia the concept of significant market power is not yet used (but a decree introducing the concept is imminent), and so the remedy of functional separation is not available.
- It is only in Italy that any rules for the functional separation of the incumbent operator have been published, In 2008 AGCOM accepted and made binding a set of commitments by Telecom Italia that enacted a form of functional separation with equivalence of output. These commitments include firewalls between the units, separation of information systems, different incentives systems among employees of the separate units, codes of conduct that ban communication between employees of the separate units, etc.
- The only country in which the incumbent's retail and wholesale businesses are in separate companies is Turkey
- In most other countries the retail and wholesale businesses are in separate departments within the same company, except in Switzerland and Israel. In Cyprus the OCECPR attempts to evaluate the existence of Chinese walls within the incumbent via key performance indicators in the Reference Offers
- Only in Turkey are the incumbent's retail and wholesale businesses in separate buildings (which reduces the likelihood of information being passed between the businesses).
- The incumbent fixed operator has rules that limit communications between its wholesale and retail businesses in Austria, Italy, Malta, and Portugal. In France such rules are implemented for the unit responsible for the next generation access network.

4.2 Update on net neutrality

The issue of net neutrality – whether traffic on the internet can be prioritised, managed or blocked by operators – has been widely debated in recent years. In 2011 the European Commission produced a communication that supported the maintenance of the internet as an open and neutral facility[5]. The position in EMERG countries was examined in the 2012 benchmark, indicating that there has been considerable debate about the issue in most countries. Some NRAs have tried to define net neutrality principles, but were finding difficulty in defining acceptable traffic management or quality of service standards.

This year we asked for an update on net neutrality, using the following questions:

[5] European Commission. The open internet and net neutrality in Europe. COM(2011) 222 final, 19 April 2011

Diagram 4.2: Questions about net neutrality

14	Has the NRA conducted any research or investigation on net neutrality over the last 12 months?
15	If yes, what has been the outcome?
16	Is net neutrality more, the same or less of an issue now for operators, consumers or legislators in your country compared with 12 months ago?
17	Is the NRA planning to undertake any initiative over the next 12 months regarding net neutrality?
18	If the answer to the question above is yes, please specify
19	Has the NRA received complaints during the last 12 months regarding traffic management practices related to blocking, traffic deterioration, destination routing prioritisation, throttling?
20	If yes, who submitted the complaints (end users, operators, content providers)?
21	How have you dealt with these situations?
22	Has the NRA received complaints regarding commercial practices that include some form of traffic management?
23	If yes, how have you dealt with it?

The results are as follows:

- In most countries the NRA has not conducted any investigation or research into net neutrality over the last 12 months. However:
  - In France ARCEP has been working on quality of service standards for internet traffic management, which resulted in the implementation of a package of measures
  - In Germany BNetzA responded to a plan announced by Deutsche Telekom to reduce the speed available to customers who had exceeded a given download capacity (“throttling”). It investigated this plan, and concluded that it was not a violation of the principles of net neutrality as long as all retail traffic is treated the same
  - In Greece the EETT has introduced a web tool for monitoring quality of service for users, and so far there has been no indications of traffic shaping or other anti-consumer behaviour
  - In Italy experts from AGCOM worked with BEREC on net neutrality issues and quality of service, and on issues associated with next generation networks, including traffic management and quality of service
  - in Malta the MCA participated in a study carried out jointly by BEREC and the Commission earlier in 2012, concluding that broadband providers (both mobile and fixed) in Malta, do not apply traffic management techniques which are adverse to net neutrality.
  - In Spain the CMT studied the feasibility of developing a tool that determines the real characteristics of the fixed/mobile broadband connection of a user in the context of network neutrality, but has not taken it further
  - In Switzerland there is an on-going investigation into net neutrality.
- Net neutrality has become more of an issue over the last 12 months in six countries (Austria, Germany, Israel, Morocco, Palestine and Portugal); it is has not changed in Italy, Lebanon and Spain. It is not regarded as an issue in France, Greece, Malta and Turkey
- Some NRAs are planning further investigations into net neutrality:
  - In Cyprus the NRA is planning to undertake an investigation into net neutrality over the coming year.
  - In France ARCEP will continue its work (see above)
  - In Greece a broadband measurement tool based on crowdsourcing will be launched

- In Israel a change in legislation to oblige all operators to operate in a neutral manner, subject to reasonable network management techniques, is pending
    - In Italy Agcom is planning some further research about net neutrality issue and next year a position paper may be produced
    - In Malta the MCA has decided not to issue a set of guidelines following the publication of the European Commission's report (see above).
- Eight NRAs have received complaints about abuses of net neutrality, while the remaining seven have not. In Portugal ANACOM received a total of 875 complaints about related to traffic deterioration, destination routing prioritisation, throttling during the last 12 months. However AGCOM in Italy only received about 20 complaints about net neutrality issues
- Complaints were submitted by individual consumers, consumers' organisations and content or internet service providers. These complaints were handled by formal investigations, meetings with operators, or, in the case of Israel, the introduction of legislation (see above)
- Only in Germany and Palestine have there been complaints about commercial practices that include some form of traffic management. The German cases are summarised in Annex 1.
- In Italy AGCOM fined a service provider for introducing network management practices. The service provider modified the contract by reserving itself the right to monitor and change bandwidth of internet access service through traffic shaping practices. AGCOM found against it because the service providers had not informed customers in advance and made them aware of their right to withdraw from the contract with no termination fees.

4.3 Spectrum management

Recent years have seen an explosion in the demand for wireless communications for voice (see Diagram 2.4) and now for broadband (see Diagram 2.8). The development of WiFi, WiMAX, and 4G/LTE networks have all required the allocation of additional spectrum, which is a finite resource. National regulatory authorities play a key role in planning, allocating and ensuring that spectrum is used efficiently. Some NRAs have been heavily involved in the reallocation of spectrum from analogue broadcasting to mobile communications, and from military use to civilian use. Some of this work requires close cooperation with other countries.

Hence the EMERG benchmark has asked about spectrum management in 2009 and 2012, and this year they have been repeated.

Diagram 4.3: Questions about spectrum management

24	Is a national spectrum plan published?
25	When will it next be reviewed (give year)?
26	What is the basis for spectrum fees (eg cost recovery, etc)?
27	Has any spectrum been issued for 3G services?
28	Has any spectrum been issued for 4G services?
29	Are there any plans to issue additional mobile spectrum?
30	Are mobile operators able to reuse their existing spectrum for services that are different from those originally licensed without having to apply for the NRA's agreement?
31	Are there any plans to issue additional fixed wireless spectrum?
32	Has any spectrum been re-allocated to wireless communications from analogue broadcasting (digital switchover)?
33	If the answer to the question above is no, are there any plans for digital switchover?
34	How is any new spectrum allocated, eg auction or beauty contest?

Cyprus and Tunisia were unable to provide answers to these questions because spectrum management is the responsibility of another body. In Austria and Greece it is the responsibility of the Ministry.

The answers we received provided the following information:

- A national spectrum plan is published in all countries except Israel and Palestine (where spectrum matters are handled by Israel); in Jordan it is partially available
- The spectrum plan is under revision in almost all the EMERG countries, with publication of a new plan imminent in Germany, Lebanon and Malta. In Greece, Italy, Israel, Jordan, Switzerland and Turkey the plan will be revised in 2014, while in Portugal and Spain the NRA is required to keep the plan up to date
- The pricing of spectrum is generally based on cost recovery and achieving efficient use of spectrum, while in Austria an auction is used and in Lebanon the draft decree proposes the use of opportunity costs, benchmarking and cost recovery principles
- Spectrum has been allocated to 3G mobile communications in all countries except Palestine
- Spectrum for 4G mobile communications has been allocated is all countries except Egypt, Israel, Jordan, Morocco, Palestine and Turkey
- There are plans to issue additional spectrum to mobile communications in most countries, but not in Austria and Lebanon; the matter is being reviewed in Italy, Morocco and Portugal
- Mobile operators are able to provide different services than those originally licensed without having to reapply for a new licence in France, Greece, Italy and Israel; this is not possible at present in Austria, Egypt, Germany, Jordan, Malta, Morocco, Portugal, Switzerland and Turkey
- There are plans to issue additional spectrum to fixed wireless communications only in Greece, Jordan and Turkey; the issue is under review in Morocco and Portugal. In Lebanon the Telecommunications Regulatory Authority issued a proposal to reallocate spectrum to fixed wireless operators, but this was overruled by the Ministry of Telecommunications
- Spectrum has been reallocated from analogue broadcasting to mobile communications (digital switchover) in Austria, Germany, Israel, Italy, Jordan, Portugal, Spain and Switzerland, and is in progress in Lebanon and Morocco
- In the countries where digital switchover has not taken place, there are plans for this to happen in Egypt, Greece and Palestine. Dates for the switchover have been decided in France (2017), Malta (mid 2014), and Turkey (2015)
- Any new spectrum is generally subject to auction; this question is decided by government in France and Malta, it is not yet decided in Jordan, and there is no clear process in Lebanon.

4.4 NRA budgets

In 2012 we asked a number of questions about the budget of the NRA and how it was changing in response to economic pressures. These questions were repeated because the pressures on commercial and government sources of finance do not seem to have lessened in 2013. The questions for 2013 are shown below.

Diagram 4.4: Questions about NRA budgets

35	What is the NRA's operating budget for the current financial year?
36	What proportion of the total budget was raised directly from operators (through licence fees, spectrum fees, etc)?
37	Was this budget more or less that the previous financial year?
38	Will next year's budget be more or less than this year's budget?
39	Is the NRA changing its workload because of changes in its budget?
40	If the answer to question above is yes, what changes are taking place?

The following points arise from the answers:

- The budgets of individual NRAs vary significantly, reflecting the differences in responsibilities and the complexity of the electronic communications market; as the table below shows, Turkey has the largest budget, and Cyprus the smallest.

Diagram 4.5: NRA budgets for 2013 (million euros)

	2012	2013
Algeria		
Austria	10	10
Cyprus	6	5
Egypt	200	241
France	7	7
Germany	166	188
Greece		14
Israel	10	11
Italy	84	82
Jordan	6	5
Lebanon	9	7
Malta		5
Morocco	19	18
Palestine		
Portugal	51	46
Spain	50	37
Switzerland		50
Tunisia	5	5
Turkey	89	90

Source: EMERG questionnaire 2012 and 2013

- As the table shows, NRA budgets have decreased in Cyprus, Italy, Lebanon, Morocco, Portugal and Spain, but increased significantly in Egypt and Germany
- For the proportion of the budget that is raised directly from operators, EMERG countries fall into three groups:
    - The countries where almost all the revenues come from operators are Cyprus, Greece, Italy, Malta, Morocco, Portugal, Tunisia and Turkey (75% comes from operators in Austria)

    - The countries where almost none of the revenues come from operators (and most direct from government) are Egypt, France and Israel (where the NRA is a government department)
    - The countries where about half the budget comes from operators are Germany, Spain and Switzerland.
    - In Jordan the TRA receives only spectrum fees direct from the operators
- The NRAs in Italy, Lebanon, Morocco, Spain and Turkey expect that the budgets for 2014 will be greater than for 2013. In Spain the budget will be increased to 57 €m because of the integration of the CMT into the CNMC, the new Spanish antitrust and regulatory authority which took place in October 2013. ICTA, the regulatory authority in Turkey, has taken on responsibility for regulating the postal sector
- In Egypt, France, Greece, Jordan and Portugal, budgets are expected to be less than 2013. Elsewhere they are expected to be the same. In Germany the future budget is not known because of the recent election, but it is likely to be higher because BNetzA has taken on responsibility for regulating the electricity grid
- In the NRAs expecting lower budgets next year, the lower budget will be reflected in reduced workloads only in Egypt and Portugal, where a cost containment policy is being implemented, with expenditure reductions on computer services, publications, studies and general supplies contracts. In Jordan the reduced budget will result in an re-prioritisation of projects undertaken by the TRA.

Annex 1: Net neutrality complaints in Germany

1. A provider of web radio services submitted an official complaint to BNetzA requesting to prohibit tariffs of 2 competitors encompassing streaming services that are not counted towards the data volume. This case is currently being investigated by BNetzA.
2. A complainant providing a podcast had contacted Deutsche Telekom in order to be treated like Spotify, i.e. data traffic caused by his podcasts shall be not be counted towards the data volume. He then complaint to BNetzA asserting that DT refused his claim and that this constitutes a case of discrimination. This complaint is currently being investigated by BNetzA.
3. There were complaints of mobile users who cannot use VoIP. BNetzA pointed out that providers are basically free to design their products as they like. There is no obligation for providers to offer only products including VoIP. German mobile providers typically offer (more expensive) tariffs which include VoIP.
4. There were a few other complaints from end-users pointing out that their Internet access service was bundled with an "obligatory" access device" (modem/router). The access codes necessary for user authentication is implemented in the hardware and not accessible for the user. Thus, the user is not able to use his own access equipment. End-user pointed out that it is not possible to implement additional VoIP services using this obligatory access device. To circumvent that problem end-user have to use an additional/separate router. End-user encountered technical problems to correctly implement this concatenation of routers. It was claimed by end-users that due to the obligatory access device that their Internet connectivity was curtailed not allowing unrestricted access to all applications. BNetzA is currently conducting a public consultation (deadline for comments: November 6, 2013).
5. Some web pages/Internet fora referred to an Internet access product by Kabel Deutschland (cable provider) who throttles Bittorrent traffic when a traffic volume of 10 GB per day is exceeded. In this case Bittorrent traffic is throttled to 100 Kbit/s for the rest day. An end-user complaint concerning this issue was not addressed to BNetzA. As pointed out by BNetzA in its report (see 1.3 above), a rule requiring strict equal treatment of traffic is presently not reflected in operational, asymmetrically-designed competition and regulatory law.

Annex 2: Approximation benchmark tables

Table A2.1: Institutional framework

	62	63	64	65	66	67	68	69
	Is the NRA independent of providers of electronic communications services (this includes the State if it owns any shares in such companies).	Does the NRA set its own budget?	Can the Ministry overrule the NRA's decisions?	Does the NRA have the power to take binding decisions to resolve disputes between operators?	Is there a right of appeal against a decision of the NRA to an independent body?	Is the appeal process effective in terms of expertise and timeliness?	Must the NRA carry out public consultation on measures that have a significant impact before they are implemented?	Have there been any changes in the institutional set-up of the NRA during the last year?
Algeria								
Egypt	Yes	Yes	NA	Yes	Yes	Yes, timeliness is debatable	Usually	No
Israel	Yes	No	NA	Yes	Yes	Yes	Yes	No
Jordan	Yes	Yes	No	Yes	Yes	NA	Yes	No
Lebanon	Yes	Yes	No	Yes	Yes	Not always	Yes	Yes
Morocco	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Palestine	Yes	No	NA	Yes	Yes	Yes	Yes	No
Tunisia	No	Yes	No	Yes	Yes	Yes	No	No
Turkey	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes

Table A2.2: Authorisations and licences

	71	72	73
	Is market entry allowed for new operators and service providers on the basis of simple registration or authorisation, without any need for approval by the authorities (except in case scarce resources are required)?	Do the authorities in charge of radio frequency spectrum periodically publish a spectrum management plan indicating the availability of new spectrum licences?	Are stakeholders consulted about the need for and design of new spectrum licences?
Algeria			
Egypt	No	No	Yes
Israel	No	Notices are published when spectrum tenders are announced.	No
Jordan	No	Yes	Yes
Lebanon	No	Not yet	Yes
Morocco	No	No	Yes
Palestine	No	No	Yes
Tunisia	No	Yes	Yes
Turkey	Yes	Yes	Yes

Table A2.3: Regulatory obligations and significant market power

	74 Is the imposition of regulatory obligations strictly limited to operators/service providers with SMP, based on market analysis?	75 Are the criteria for SMP defined in legislation or regulations?	76 Are the remedies/types of obligations that can be imposed on operators/service providers with SMP listed in legislation?	77 Is an obligation in place for the authorities to apply the least intrusive of these obligations relative to the problem that it aims to address (proportionality)?	78 Are operators/service providers that do not have SMP completely free to set retail prices at any level?
Algeria					
Egypt	No	Yes	No	No	No
Israel	No	No	Yes	Yes	Yes, subject to a general condition of reasonableness.
Jordan	Yes	Yes	No	Yes	Yes
Lebanon	Yes	Yes	Yes	Yes	Yes
Morocco	Yes	Yes	Yes	Yes	No
Palestine	No	Yes	Yes	Yes	Yes
Tunisia	No	No	Yes	No	No
Turkey	No	Yes	Yes	Partially Yes	No

Table A2.4: Regulatory accounting

	79 Are SMP operators required to produce regulatory accounts?	80 Is the regulatory accounting obligation used to secure accounting separation between regulated and unregulated services?	81 Are the regulatory accounts used to secure cost orientation in wholesale services?	82 Are the regulatory accounts used to secure cost orientation in retail services?
Algeria				
Egypt	Yes	Yes, on Telecom Egypt	Targeted	Targeted
Israel	NA. Structural separation is in place for the incumbent and subsidiaries.	NA	NA	NA
Jordan	Yes	Yes	Yes	
Lebanon	Not yet	Yes	Yes	No
Morocco	Yes	Yes	Yes	No
Palestine	Yes	in progress	NA	NA
Tunisia	Yes	No	No	No
Turkey	Yes	Yes	Yes	No

Table A2.5: Access and interconnection

	83 Is a RIO published by SMP operators?	**84** Is a RIO submitted for the approval of the NRA?	**85** Carrier Selection mandated?	**86** Local Loop Unbundling mandated?	**87** Wholesale Line Rental mandated?	**88** Are tariffs of wholesale services cost oriented	**89** Duct sharing mandatory?	**90** Sub-loop unbundling mandatory?	**91** Is fixed number portability available?	**92** Is mobile number portability available?
Algeria										
Egypt	Targeted Q1 2014	Yes	No	Yes	Yes	Only termination charges	Yes		No	Yes
Israel	Pending a wholesale market	Pending a wholesale market	No	No	No	No	No	No	Yes	Yes
Jordan	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Lebanon	No	No	No	Yes	Yes	No	No	No	No	No
Morocco	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Palestine	Yes	Yes	Yes	No	No	No	No	No	No	No
Tunisia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Turkey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A2.6: Universal service and other

	93 Does one operator have responsibility for providing fixed line communications on a request from a subscriber (universal service)?	94 Is there a system, such as a universal service fund, in operation to compensate the universal service operator for the costs of universal service?	95 Is a national numbering plan published?	96 Are non-discriminatory procedures for granting public rights of way available?	97 Are there schemes available to facilitate the sharing of masts?	98 Does the NRA have powers to require the separation of functions in the incumbent operator?
Algeria						
Egypt	Yes	Yes, in course of designation	Yes	Yes	Yes	No
Israel	Two operators	No	Yes	Yes	Yes	Yes
Jordan	Yes	Yes	Yes	Yes	Yes	Yes
Lebanon	No	No	No	No	No	No
Morocco	Yes	Yes	Yes	Yes	Yes	No
Palestine	Yes	No	In process	Yes	No	Yes
Tunisia	Yes	No	Yes	Yes	Yes	No
Turkey	Yes	Yes	Yes	Yes	Yes	No

Annex 3: Special topics tables

Table A3.1: Accounting separation

	1	2	3	4	5	6	7
	Does the NRA have the power to require operators with SMP to prepare regulatory accounts?	Has the NRA specified regulatory accounts in a directive or decree?	Does the incumbent fixed operator prepare separate accounts for its wholesale and its retail businesses?	Does the incumbent fixed operator prepare separate accounts for its individual retail businesses?	Must an independent auditor certify that the regulatory accounts?	Which method does the operator use for the allocation of common and joint costs?	Which method does the operator use for capital costs?
Algeria							
Austria	Yes	Yes	Yes	Yes	Yes	FAC	HCA
Cyprus	Yes	Yes	Yes	Yes	Yes	Both	CCA
Egypt	Yes	No	No	No	No	Probably FAC	NA
France	Yes	Yes	Yes	Yes	Yes	FAC	Both
Germany	Yes	No.	No.	No.	No	SMP operator decides	SMP operator decides
Greece	Yes	Yes	Yes	No	Yes	FAC is used in retail and LRIC in wholesale	CCA
Israel	Yes	No	No	Yes	Yes	NA	NA
Italy	Yes	Yes	Yes	No	Yes	FAC	HCA and CCA
Jordan	Yes	Yes	Yes	Yes	Yes	FAC	CCA and HCA
Lebanon	Yes	No	No	No.	Yes	FAC and then LRIC	HCA and then CCA
Malta	Yes	Yes	Yes	Yes	Yes	FAC	HCA
Morocco	Yes	Yes	Yes	Yes	Yes	LRIC	CCA
Palestine	Yes	No	No	No	Yes	NA	HCA
Portugal	Yes	No	Yes	Yes	Yes	FAC	HCA
Spain	Yes	Yes	Yes	Yes	Yes	FAC and LRIC	Neither
Switzerland	No	No	No	No	No	No	No
Tunisia	Yes		Yes	NA	Yes	LRIC	HCA
Turkey	Yes	Yes	Yes	Yes	Yes	FAC	HCA

Table A3.2: Functional separation

	8	9	10	11	12	13
	Does the NRA have powers to enforce the functional separation of the wholesale and retail businesses of a SMP operator?	Has the NRA set out rules for the functional or structural separation of the incumbent fixed operator's wholesale and retail businesses?	Are the incumbent fixed operator's wholesale and retail businesses in separate companies?	Are the incumbent fixed operator's wholesale and retail businesses in separate departments in the same company?	Do the incumbent fixed operator's wholesale and retail businesses operate in separate buildings?	Does the incumbent fixed operator have rules that limit communications between its wholesale and retail businesses?
Algeria						
Austria	Yes	No	No	Yes	No	Yes
Cyprus	Yes	No	No	NA	NA	NA
Egypt	Yes	No	No	NA	No	No
France	Yes	No	No	Yes	No	Yes
Germany	Yes	No	No	Yes	NA	Yes
Greece	Yes	No	No	Yes	Not as far as we know	Not in general
Israel	Yes	No	No	No	No	No
Italy	Yes	Yes	No	Yes	No	Yes
Jordan	No	No	No	Yes	No	No
Lebanon	No	No	No	NA	No	No
Malta	Yes	No	No	Yes	No	Yes
Morocco	Yes	No	No	Yes	No	No
Palestine	Yes	No	No	Yes	No	No
Portugal	Yes	No	No	Yes	NA	Yes
Spain	Yes	No	No	Yes	No	Yes
Switzerland	No	No	No	No	No	No
Tunisia	No	No	No	Yes	NA	NA
Turkey	No	No	Yes	No	Yes	NA

Table A3.3: Net neutrality

	14	16	17	19	22
	Has the NRA conducted any research or investigation on net neutrality over the last 12 months?	Is net neutrality more, the same or less of an issue now for operators, consumers or legislators in your country compared with 12 months ago?	Is the NRA planning to undertake any initiative over the next 12 months regarding net neutrality?	Has the NRA received complaints during the last 12 months regarding traffic management practices related to blocking, traffic deterioration, destination routing prioritisation, throttling?	Has the NRA received complaints regarding commercial practices that include some form of traffic management?
Algeria					
Austria	No	More	No	No	No
Cyprus	No		Yes	No	
Egypt	No	No	No	No	No
France	Not direct investigation but ARCEP has been working on fixed quality of service in the frame of NN traffic management issues.	Not an issue	Yes	Yes	No
Germany	Yes	More	No	Yes	Yes
Greece	Yes	Not an issue	Yes	No	No
Israel	No	More	Yes	Yes	No
Italy	Yes	Same	Yes	Yes	Yes
Jordan	No		No	No	No
Lebanon	No	Same	No	No	No
Malta	Participation in a BEREC study	Not an issue	No	No	No
Morocco	No	More	No	No	No
Palestine	No	More	No	Yes	Yes
Portugal	No	NA	No	Yes	No
Spain	No	Same	No	Yes	No
Switzerland	Yes	More	No	Yes	No
Tunisia	No				No
Turkey	No	Not an issue	No	No	

Table 3.4: Spectrum management

	24	25	26	27	28	29	30	31	32	34
	Is a national spectrum plan published?	When will it next be reviewed?	What is the basis for spectrum fees?	3G spectrum issued?	4G spectrum issued?	Additional mobile spectrum?	Existing spectrum reuse?	Additional fixed wireless spectrum?	Digital switchover?	How is any new spectrum allocated?
Algeria										
Austria	Yes	Not specified	Auction	Not recently	Yes	No	No	No	Yes	Combinatory clock auction
Cyprus										
Egypt	Yes		Administrative incentive pricing	Yes	No	Yes	No	No	No	Auction
France	Yes	mid 2014	Benefits derived from the use of spectrum and cost recovery.	Yes	Yes	Yes	Yes	No	No	Depends on Government strategy
Germany	Yes	end 2013	Cost recovery and efficient use of spectrum	Yes	Yes	Yes	No	No	Yes	
Greece	Yes	2014	Cost recovery and efficient use of spectrum	Yes	Yes	Yes	Yes	Yes	Not yet	Auction
Israel	No	2014	Cost recovery and efficient use of spectrum	Yes	No	Yes	Yes	No	Yes	Auction
Italy	Yes	2014	Cost recovery and market value	Yes	Yes	Under review	Yes	No	Yes	Auction
Jordan	Partially	2014	Cost recovery			Yes	No	Yes	Yes	Not decided
Lebanon	Yes	2013/14	Opportunity cost and benchmarking, cost recovery for management charges.	Not by the TRA	Not by the TRA	No	Yes	No	In progress	Administratively. No clear process today.
Malta	Yes	2013/14		Yes	Yes	Yes	No	No	No	National policy
Morocco	Yes	2013	Economic value	Yes	No	Under	No	Under review	In progress	Under review

						review				
Palestine	No		Bandwidth and coverage area	No	No	Yes	No	NA	No	Auction
Portugal	Yes	Must be kept up to date	Efficient use of spectrum	Yes	Yes	Under review	Yes	Under review	Yes	Auction
Spain	Yes	Must be kept up to date	Cost recovery and efficient use of spectrum	Yes.	Yes.	Yes	Yes	No	Yes	Auction and beauty contest
Switzerland	Yes	2014	Cost recovery	Yes	Yes	Yes	Not yet	No	Yes	Auction
Tunisia										
Turkey	Yes	2014	Licence and usage fee	Yes	No	Yes	No	Yes	No	Auction

Table A3.5: NRA budget

NRA budget	35	36	37	38	39	40
	What is the NRA's operating budget for the current financial year?	What proportion of the total budget was raised directly from operators (through licence fees, spectrum fees, etc)?	Was this budget more or less that the previous financial year?	Will next year's budget be more or less than this year's budget?	Is the NRA changing its workload because of changes in its budget?	If the answer to question above is yes, what changes are taking place?
Algeria						
Austria	10	75%	Same	Same	NA	NA
Cyprus	5	100%	Same	Same	NA	NA
Egypt	241	12%	More than the previous year by 17%	Less	Yes	Reduce expenses
France	7	0%	Less	Less	No	NA
Germany	188	46%	In 2012 the budget was 166.1 million €.	Not known	No	NA
Greece	14	100%	Less	Less	No	NA
Israel	11	0%	Same	Same	No	NA
Italy	82	99%	Less	More	No	NA
Jordan	5	Spectrum fees	More	Less	Yes	Reprioritisation of projects
Lebanon	7	NA	Less	More	No	NA
Malta	5	86%	Yes	Same	No	NA
Morocco	18	92%	Less	More	No	NA
Palestine		NA	NA	NA	NA	NA
Portugal	46	98%	Less	Less	Yes	Cost containment policy
Spain	37	57%	Transfers and subsidies 5,180,000	More	No	NA
Switzerland	50	46%	No	Same	No	NA
Tunisia	5	98%	Same	Same	No	NA
Turkey	90	89%	More	More	No	NA