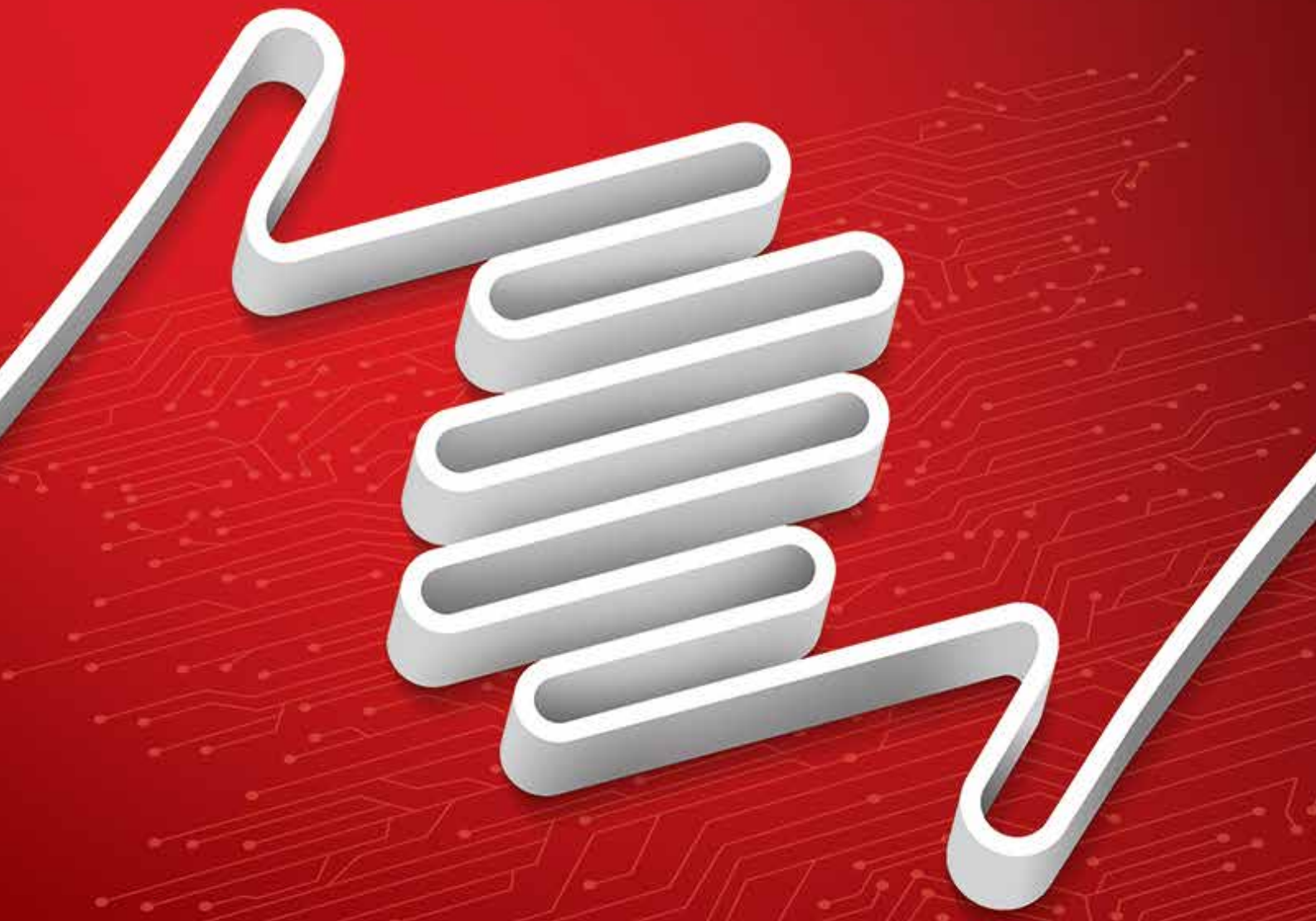
PARITÀ DI ACCESSO
Organo di Vigilanza

2015 Annual Report

2014 ACTIVITIES AND RESULTS



TELECOM ITALIA

Contents

This Report has been prepared in accordance with the provisions of Undertakings Group No. 7, proposed by Telecom Italia S.p.A. and approved with AGCom Resolution no. 718/08/CONS of the National Regulatory Authority for Communications (AGCom). The assessments made in this Report take into account information and data received by the Supervisory Board by 31 January 2015, in accordance with the above Resolution.

01
Executive Summary

This Report describes the Supervisory Board's activities carried out during 2014. It also presents an initial overview of results achieved by the Board, whose three-year term of office will end on 1 December 2015.

The report also documents and provides information on issues addressed and solutions adopted by the Supervisory Board to ensure that Telecom Italia fully implements the Undertakings and complies in full with the underlying principle of equality of treatment. In fact, operators on the market need to be guaranteed the chance to access Telecom Italia's network without any obstacles or prejudice, in order for them to sell their services, with complete equality of access in relation to Telecom Italia's internal sales divisions. This is why the Supervisory Board closely monitors process dynamics and, in general, relations between operators as regards these sensitive issues.

In carrying out this challenging task, the Supervisory Board has issued numerous provisions and also specific recommendations to the Incumbent. The main aim of the many actions adopted during the year has been to further guarantee non-discrimination on the access market, also through a greater synergy with the Regulatory Authority and with market operators, who are the players the Supervisory Board has successfully engaged with, albeit on an non-continual basis.

In 2014, many regulatory and legal changes took place, resulting in government bodies adopting new policies on the digitisation of Italy, broadband and ultra broadband, as well as the entire system of technological infrastructure.

Similarly, Telecom Italia's corporate organisation changed, with the appointment of its new Chairman and the redistribution of relative powers, which have added new aspects to the context in which the Supervisory Board operates.

During all these changes, the Supervisory Board has always ensured oversight and control, which have been both necessary and required by the market, focussed on monitoring Telecom Italia's compliance with the principle of non-discrimination and equality of treatment; to achieve this it has adopted numerous actions described in brief below and in more detail further on in this Report.

By way of example, the Supervisory Board was involved in the survey commissioned by the National Regulatory Authority for Communications /AGCom) and by the Italian Competition Authority (AGCM) on 9 January 2014, on issues concerning the telecommunications market and investment prospects of broadband and ultra broadband networks. During this survey, the Supervisory Board was requested to contribute as regards the issues addressed, and a hearing was held in July when the Supervisory Board presented the studies it had conducted on equivalence of access and developments of Undertakings, with a view to consolidating the principle, as provided for by Resolution no. 718/08/CONS five years after the date of its approval. Proposals took into consideration suggestions and indications made during ongoing dialogue with market players.

Another important meeting took place on 28 January 2014, during the first study seminar organised by the Supervisory Board. Specific issues were discussed during this meeting concerning oversight and control actions promoted by the Supervisory Board, with the involvement of international experts on equality of access and equivalence. The seminar "Equivalence of Input - Equivalence of Access. The British case and the Italian perspective" was hosted by AGCom, with speakers from Ofcom, British Telecom and the Equality of Access Board of BT. The meeting was a useful opportunity to further investigate knowledge of how the equivalence model in the United Kingdom and its underlying dynamics work.

On the basis of studies and analyses undertaken, the Supervisory Board has contributed not only in academic but also in operational terms to the debate on equivalence, designing, with the intent of developing in the future, a "proxy" model for Telecom Italia's access networks, with the aim of monitoring the quality of information provided by OLOs more effectively and ultimately of ensuring oversight of Undertakings that is more mindful and specific.

All analyses and studies conducted during the year, which are also the result of consolidated practices adopted by this Board, have led to a greater awareness of the need to start a process to revise some parts of Undertakings, while also working closely with the Authority and Telecom Italia if this approach is to be continued.

In this framework, the Supervisory Board sent its observations to the Authority on several occasions during the year, and in particular stated it had serious doubts about the validity and effectiveness of current Key Performance Indicators (KPIs), also indicating the ongoing absence of relative Key Performance Objectives (KPOs), which are useful for "measuring" the achievement or otherwise of equality objectives, originally provided for in the Resolution no. 718/08/CONS.

In the opinion of the Supervisory Board, the set of indicators currently available is not able meet the requirement initially established in the Resolution, which is why all actions must try to consolidate relations between the Authority and Operators in order to improve the future equivalence model and include, among others an "equality of information" system that can make the same information available on equal terms, as well as an "equality of performance", by defining clear, transparent rules on the composition and monitoring of KPIs (and relative KPOs), as well as management requirements of computer systems, software and databases, that can make process governance unambiguous and transparent.

The Supervisory Board informed the Authority about the need to act promptly to update the current performance indicators for services provided by Telecom Italia, indicating numerous critical aspects which also concern new criteria approved by the Undertakings Monitoring Group and the advisability of updating the set of indicators relative to the availability percentages of services and wholesale systems (CRM).

Lastly, in October, the Board informed AGCom that as the indicators could not meet the requirements initially established by Resolution no. 718/08/CONS, for the reasons stated above, it was finding it increasingly difficult to effectively perform the supervisory activities assigned to it by the Authority.

In this regard, the Supervisory Board hopes that the 2014-2017 market analysis, recently the subject of a public consultation, takes on board the critical aspects reported and provides more adequate regulatory tools for the development of an equivalence that is robust and suitable for dealing with new emerging network architectures and relative business models.

To encourage the participation of Operators in activities carried out by the Supervisory Board, in order to forge a stronger involvement of parties concerned and ensure the utmost transparency of investigatory activities conducted, in March 2014, the Supervisory Board issued new regulations for the management of complaints and claims in its remit.

The measure, which is the final outcome of a public consultation, has created a useful precedent in terms of safeguarding guarantees of third parties being involved in the proceeding. The decision to disclose in advance an action that is still being finalised, before reaching a final decision, reflects a new approach and the specific wishes of members of the current Supervisory Board to obtain the broadest consensus and greatest visibility for their actions, trying to encourage the opinions and activities of Operators.

On this basis, aspects the complete implementation of Undertakings, as summarised below, continued to be monitored during the year.

As regards the proper operation of the New Delivery Process, the Supervisory Board continued its activities, and implemented control measures necessary to check the dynamics of regulatory requirements.

As in previous years, the Supervisory Board checked the proper operation of the so-called "Single Queue" mechanism, in the context of the New Delivery Process (NDP), in 2014. The process in question, which was established in 2009 and is used when network resources are not available when activating a system for a Retail Customer or OLO, is functional to the management of work orders that cannot be immediately activated according to the priority assigned based on the time when the work order was received.

In particular, thanks to direct on-site monitoring by the Supervisory Office, the entire mechanism for generating and managing order queuing could be checked, and was found to function properly.

In this regard, in-depth investigations of processes concerning access and interconnection to electronic communication networks which began in 2013, continued, analysing in particular Delivery processes relative to Local Loop Unbundling (LLU), Bitstream and Wholesale Line Rental (WLR) services.

Sector analysis to assess and prevent "KO" events, i.e. refusal to activate new lines, issued by Telecom Italia to other market Operators, which began in 2013, continued in 2014. The analysis mainly focussed on a comparison of the processes and dynamics behind "KO" events, with a specific comparison of numerical results and specific process aspects adopted by internal Retail divisions compared to Wholesale divisions.

The purpose of this in-depth survey was to evaluate compliance with the principle of internal-external equality of treatment within the delivery process. In addition, the causes of refusal to activate lines for OLO customers, due to the presence of multiplexers along the access network, which is a technical reason preventing the activation of new LLU supplies, were also examined.

At the same time, investigations continued in order to fully map the delivery and assurance processes of Telecom Italia, and identify any procedural criticalities that are not compatible with the objectives of equality

of treatment and non-discrimination underlying Undertakings.

As part of the assessment of how Telecom Italia's management incentive system relates to the content of the Undertakings, the Supervisory Board continued to focus on requirements applicable to the Incumbent. Consequently, it examined the logics of attributing 2014 MBOs to Telecom Italia's executives, guaranteeing the supervision of balancing relative to commercial results to assign to Open Access and National Wholesale Services management in relation to principles of equality of treatment and non-discrimination. The Code of Conduct was also updated, as regards Telecom Italia observing the confidentiality of data relative to OLO customers.

As regards performance indicators (KPIs and KPOs), besides activities already referred to, an investigation was started to identify specific Key Performance Objectives concerning the system monitoring internal/external equality of treatment, objective-indicators that are still absent, as stated previously, despite the express provision in the Resolution of the Authority no. 718/08/CONS.

The aim of the investigation, which will have effects throughout 2015, is to identify (and materially construct) specific indicators in order to tangibly check the principle of internal/external equality, by formulating a merit rating of performance, based on KPIs periodically sent by Telecom Italia to the Supervisory Board.

As regards guarantees of the transparency of the system monitoring the performance of Telecom Italia Open Access and National Wholesale Services functions, in 2013, the Supervisory Board had already considered it appropriate to specifically control some indicators which, in the year, had identified tendentially better results for Telecom Italia Retail customers compared to the customers of other Operators. Following the approval of a specific provision on this matter, the Supervisory Board engaged with Telecom Italia and the Regulatory Authority. AGCom made a useful contribution, following the Supervisory Board's request for information about the criteria and the methodology it will use to develop the new group of indicators (KPIs and KPOs), and this has enabled the Supervisory Board to make proposals and observations that may be considered during activities to update the equivalence model.

Aware of the strategic nature of this issue, the Supervisory Board, as in the past, focussed on technical long-term and quarterly plans for the development of the next generation fixed access network, holding frequent meetings with Open Access managing directors. The main aim of analysing the technical plans is to check that the quarterly programmes correspond with the information stated by Telecom Italia in annual plans. On this basis, the Supervisory Board periodically compares the progress of final plans against forecasts in annual programmes, also checking that published documents include the type of information required as of Undertakings Groups 5 and 6.

As regards activities to check complaints from OLOs, and questioning to identify alleged infringements of Undertakings by Telecom Italia, investigations of compliance with the Recommendations issued by the Supervisory Board to Telecom Italia continued, as regards the complaint "*S01/13 Fastweb/Access discrimination in the installation of LLU and Bitstream systems*", the investigation of which did not identify any infringement of Undertakings by Telecom Italia.

The investigation into compliance, which was finalised in October 2014, established that the activities of the Operator to offset the issue of refusals of work orders opposed by Telecom Italia due to "the presence of multiplexers" corresponded with requirements indicated on completion of the proceedings.

As regards the second complaint made in March 2013, prompted by the Operator Fastweb, *"S02/13 - Fastweb/ Malfunctions of the Wholesale CRM system",* lengthy and complex investigations were completed in September, with the outcome that no failure to comply with the Undertakings approved by Resolution no. 718/08/CONS of AGCom was identified.

In the case in question, as specifically indicated in the relative chapter, the Undertakings referred to do not indicate any qualitative or evaluation-based procedures that Telecom Italia should follow in providing its Customer Relationship Management service to OLOs, and only establishes a new unitary CRM system for the technical and commercial management of relations between Operators and Telecom Italia's Wholesale Department. Based on the above, the Supervisory Board was not able to asses the evident and continuing malfunctions of the CRM Wholesale system in terms of the infringement of Undertakings, as the qualitative oversights identified during checks are not included in the conduct required as of obligations of Resolution no. 718/08/CONS.

The Supervisory Body, with the above Resolution, decided, in any case, to issue a serious charge against Telecom Italia concerning the management of this issue, hoping that in the future it will pay more attention and will be more aware of managing the quality of services provided to Other Licensed Operators. The Supervisory Board also issued Recommendations to Telecom Italia, hoping in particular that a specific procedure is established to check the correct operation of the application during software releases, with the formal involvement of Operators.

As regards the third complaint made in 2013 by the Operator Welcome Italia S.p.A. (*"S03/13 - Welcome Italia/Increase in the physical deterioration of lines, handling of fruitless service interventions, SLA compliance and related bitstream service assurance penalties"*), and controls, which continued throughout 2014, mention should be made of the role of the Supervisory Board in this proceeding, which is described in more detail below. More specifically, in order to settle the complaint made by the Operator, a technical working party was set up to analyse and solve the difficulties of the claimant, and became operative at the end of June. This bilateral working party, set up by mutual agreement of Telecom Italia and Welcome Italia, included representatives from the Supervisory Office, acting as facilitators.

During 2014, the Supervisory Board reported to the Regulatory Authority on its activities and results achieved, sending records and documents and holding periodic meetings with the Authority and competent departments. More specifically, the report acknowledges these meetings, when the Supervisory Board outlined its control and supervisory activities concerning equality of treatment and problems regarding network access.

Similarly, engagement with main industry Operators continued; meetings were held enabling the Supervisory Board to obtain useful information to continue its controls, consider areas for discussion and receive contributions on the consolidation of safeguards for the principles of transparency and equality of treatment, which were all taken into the utmost consideration by the Supervisory Board in its studies and analyses on the matter.

02

International comparison of access network unbundling models.

INTERNATIONAL MODELS OF EQUIVALENCE OF ACCESS AND ACCESS NETWORK SEPARATION

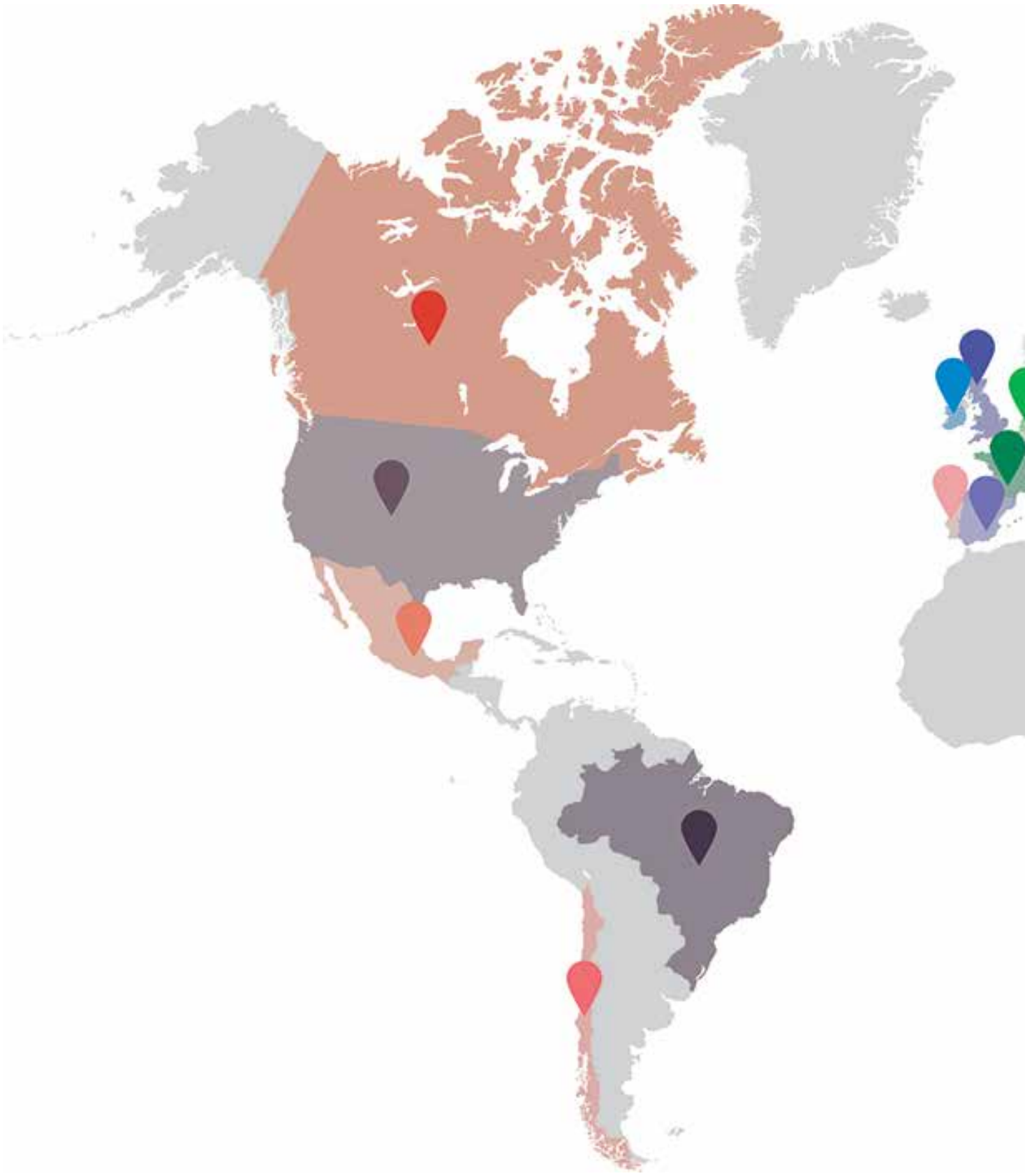
Compliance with the principle of internal-external equality of treatment between the retail division of the Incumbent and the sales divisions of Other Licensed Operators is an important issue in many countries, particularly where the Incumbent retains significant market power. The most important international experience relative to equivalence of access and separation of the fixed access network of Incumbents is outlined below. In particular, experience of countries which have not actually accomplished separation, but have nevertheless tackled and, where appropriate, solved the problem of access to the last mile in conditions of effective equality for all Operators, by using different regulatory measures, is reported.

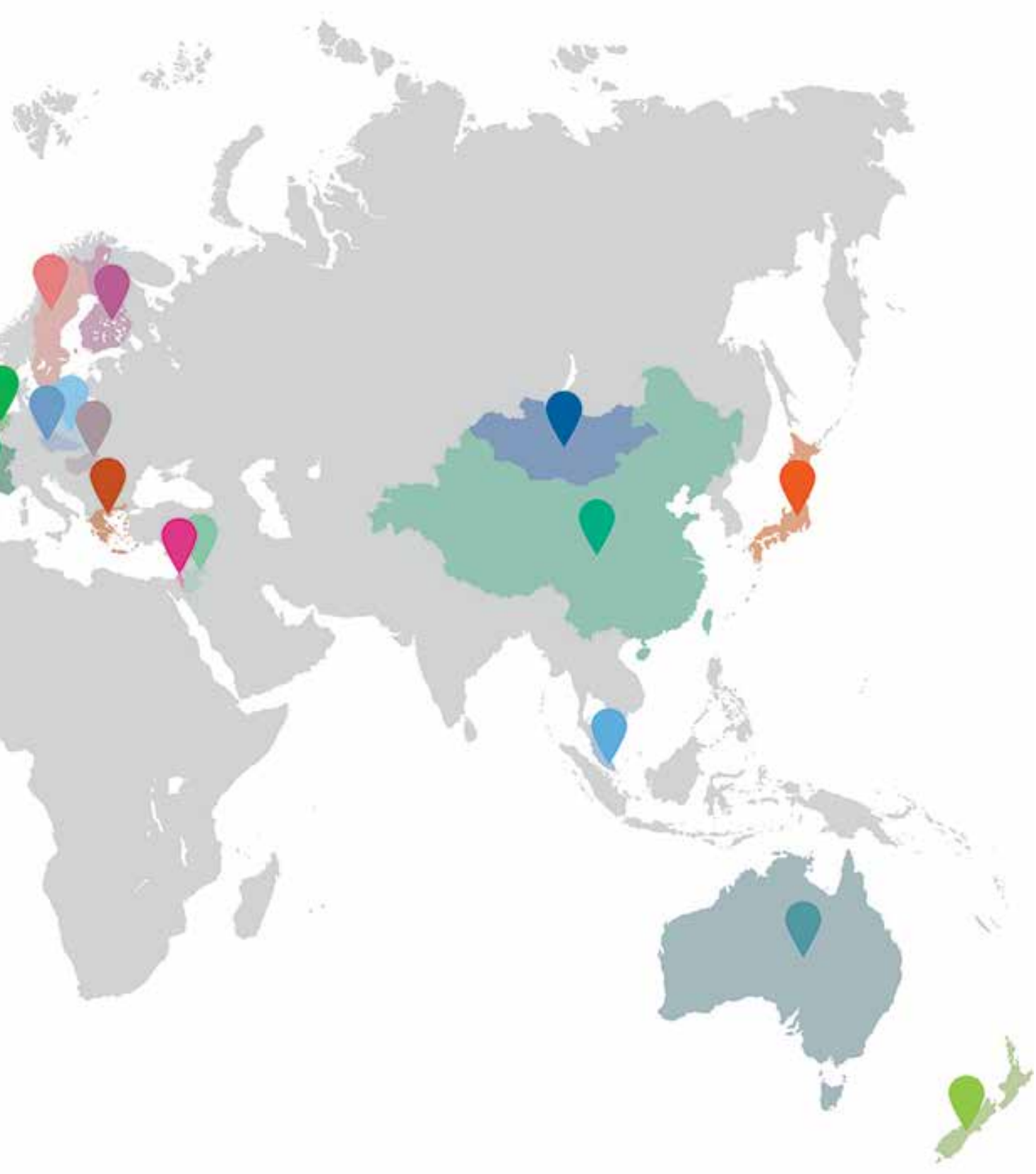
As regards network separation, the European legal and regulatory framework envisages two distinct methods of intervention by the National Regulatory Authorities:

- the possibility for National Regulatory Authorities to impose an obligation for functional separation on vertically integrated companies, when certain precise circumstances occur[1];
- the voluntary proposal of access network separation by the SMP Operator; the Regulatory Authority has to give an opinion on this proposal, following ad hoc market analysis[2].

The experience of Italy (with the "Open Access model") and Great Britain (with the "Openreach model"), as well as Sweden and Poland, is prior to the approval of the so-called "Telecom Package". In fact this experience refers to a specific national context and to different legal frameworks[3] and therefore represents models that in some way anticipated the applicable legal and regulatory framework subsequently approved.

[1] Article 13bis of the "Access" Directive 2002/19/EC, as amended by Directive 2009/140/EC.
[2] Article 13ter of the "Access" Directive 2002/19/EC, as amended by Directive 2009/140/EC.
[3] On this subject see the BEREC public consultation document on functional separation, page 22, second paragraph: http://berec.europa.eu/eng/document_register/subject_matter/berec/public_consultations/192-draft-berec-guidance-on-functional-separation-under-articles-13a-and-13b-of-the-revised-access-directive-and-national-experiences-public-consultation-11-october19-november-2010





AUSTRALIA

In Australia, following complaints made by Other Licensed Operators relative to alleged discrimination in network access, wholesale services, retail services and network services of the Incumbent Telstra were separated in 2006, with the creation of separate divisions.

In 2010, the Australian government approved the project to set up a new publicly-owned FTTH optic fibre network, with the work carried out by NBN Co., a purposely created company partially owned by the Communications and Finance Ministries. In 2012, after lengthy and complex negotiations between Telstra, the Australian Competition and Consumer Commission (ACCC) and the government, an agreement was reached for the development of a new network, the structural separation of Telstra's access network and the gradual migration of the incumbent's customer base from the copper network to the new network (see the Telstra Structural Separation Undertaking and Migration Plan, http://www.accc.gov.au/system/files/ACCAN%20 -%20 Public%20Submission.pdf).

For the period from 2012 to 2018, the year when migration of the incumbent's customer base to the NGN is expected to have been completed, Telstra has undertaken to guarantee equality of treatment through a form of transitory operational separation. A special body, the Independent Telecommunications Adjudicator (ITA) has been set up with the main function of guaranteeing a rapid resolution of any disputes that may arise between the Operators. Based on the programme, as from 2018 Telstra will operate only at Retail level.

The agreement does not provide for transfer of the ownership of Telstra's infrastructure assets, but only their lease to NBN Co. for 20 years, for the purpose of roll-out of the NGN by NBN Co.

The agreement also establishes that Telstra will shut down the copper network as NBN Co. lays the new network, and will receive state funding of around 11 billion Australian dollars in payment for opening up its access network, use of its ducts, channels and switchboards, and the gradual disconnection of its lines active on the copper and cable networks - regardless of whether or not customers actually decide to migrate to the new network.

The agreement does not provide for transfer of the ownership of Telstra's infrastructure assets, but only their lease to NBN Co. for 20 years, for the purpose of roll-out of the NGN by NBN Co. At the end of this twenty year period, however, the Operator will be free to install new networks, or to reactivate its copper and cable networks.

NBN Co., besides setting up the network, will sell the wholesale services that transit on this network. Telestra may then be able to offer its services to the market, leasing the capacity of the new network at the same conditions as competitors.
NBN Co. has also given certain undertakings (Special Access Undertakings), with the aim of regulating various technical aspects connected with the setting up and gradual commissioning of the new network and with the services offered to Operators.

As the universal service obligations previously imposed on Telstra no longer apply, relative regulations have been changed, and a special agency - the Telecommunications Universal Service Management Agency (TUSMA) - has been set up. In 2013, the ACCC requested a partial revision of undertakings, as development of the entire project was in difficulty. The network roll-out was behind schedule, the plan was judged to be too ambitious, and the idea that it would be better to change the programme, switching from the creation of a FTTH network, as initially envisaged, to a FTTC network, not as fast but more rapid and economical to set up, was suggested.

In May 2014, the government expressly stated that the previous Labour government had not upheld its pledges concerning the NBN Project, and public funding for the project would decrease, making it necessary to review technological strategies.
Consequently, the relative weight of the FTTH was reduced, to the benefit of the FTTN and a different mix of technologies, resulting in lower costs and a quicker roll-out. Contracts stipulated with Operators to use their infrastructure were also revised: with the new scenario, Telestra's secondary copper network became an essential part of the FTTN network.

BRAZIL

In 2008 Anatel, the Brazilian Regulatory Authority, decided to launch regulatory and market impact studies related to the advantages and disadvantages of adopting functional, business and structural separation mechanisms as part of the actions envisaged by the *Plano Geral de Atualização da Regulamentações no Brasil* (PGR), thus following a process similar to that which many European Authorities had already embarked upon.

In its 2009 Annual Report, Anatel stressed the need to identify relevant markets and Operators with a significant market power, in order to possibly introduce asymmetrical regulatory measures. The 2010 PGR envisaged, as part of actions to be undertaken during the year, plans to develop an Open Network by means of local loop unbundling and structural or functional separation. In 2011, the Authority, as part of the public consultation concerning the new General Competition Plan (*Plano Geral de Metas de Competição, PGMC*), expressly referred to the Open Access experience and Telecom Italia Undertakings, considering the possibility of adopting similar models.

In November 2012, with the approval of the PGMC, many important new developments were introduced in the country's regulatory framework (http://legislacao.anatel.gov.br/resolucoes/2012/425-resolucao-600). This document, in fact, not only defines the relevant markets and criteria to be applied for identifying Operators which have a significant market power, but also refers (in article 12) to the asymmetric regulatory measures that the Authority may impose on SMP Operators. These also include "*separação contábil, funcional ou estrutural*" (accounting, functional and structural separation). The Resolution does not provide further details about specific non-discrimination/internal-external quality of treatment measures to adopt (such as, for example, restrictions on communication between retail and wholesale divisions).

The new measures were adopted in May 2013, when the Authority requested Telefonica ("*Cabe destacar que o grupo TELEFONICA está submetido ao regramento de separação funcional nos termos já prescritos no PGMC*", http://www. anatel.gov.br/Portal/verificaDocumentos/documento.asp?numeroPublicacao=299782), as part of a more general process of Operator consolidation, to adopt separate accounting measures and also to develop a form of structural separation, by creating a specific wholesale division (http://www.vivo.com. br/portalweb/appmanager/env/web?_nfpb=true&_nfls=false&_pageLabel=vcOfertaAtacadoPage&cliente=1&cltype=c291Y2xp ZW50ZQ&regional=AC#).

CANADA

There are three main Operators in Canada with a proprietary FTTX network: Bell Canada, Bell Aliant and Telus. In 2010, the Regulatory Authority CRTC (Canadian Radio-television and Telecommunications Commission), adopted the Telecom Regulatory Policy CRTC 2010-632 *"Wholesale high-speed access services proceeding"*, which requires local carriers to grant competitors access to their network infrastructure, guaranteeing connection speeds that are comparable with those offered to their own customers. Alternative service providers shall pay a 10% surcharge on premium services, including services that use direct fibre connections (Fiber to the Home and Fiber to the Business), and services based on VDSL/VDSL2 Fiber to the Node (FTTN) connections. Pre-existing wholesale service prices have not been changed.

Most vertically integrated operators have spoken of the risk that investments in next generation networks could be downsized, as a result of the new regulatory obligations, also mentioning that a less regulated scenario would not lead to the risk of a decrease in market competition levels.

Although network separation models have not yet been adopted in Canada, debate on possible types of functional or structural separation of electronic communication networks is still a very current topic.

Links: http://www.crtc.gc.ca/

CHILE

In Chile, the main fixed network Operators, and in particular Telefonica CTC, have a significant market power.

In 2010, the government proposed changes to the regulatory framework that would be able to create conditions favourable for establishing so-called infrastructure-only Operators, thus paving the way for separation between:

- players which supply network services and, renting their own infrastructure;
- players that provide wholesale services.

At present, however, progress has not been made in this direction and the adoption of regulatory models that call for the separation of fixed access networks does not seem likely in the near future.

CHINA

Although Operators are public in China, a process of structural separation has been underway in the country since 1999: in fact China Telecom comprises the separate companies: China Mobile, Chine Satellite, China Unicom (which provided the paging service) and China Telecom for fixed telephony.

In 2001, China Telecom was further split into two: China Netcom, for the northern provinces, and China Telecom, for the southern ones. with this strategy, it was hoped that the quality of customer services would be improved, however these expectations were not met. Subsequently, changes were made to the regulatory framework, with the definition of a list of services/products offered by electronic communication Operators, the identification of rules for main Operators in each sector and the adoption of *remedies ex ante*. Asymmetric obligations were also imposed on the Incumbent, required to supply interconnect services to Operators that requested them.

When China joined the WTO (in 2001) the market was gradually opened up to foreign Operators, who from 2005 may operate by setting up special joint ventures.
In 2014, in particular, the government decided to adopt measures to boost private investments in key sectors of the economy, including electronic communications, starting forms of public/private cooperation for the construction and maintenance of civil networks and infrastructure.

CZECH REPUBLIC

In 2014, the Operator O2 completed a feasibility study to assess the impact arising from network separation and to assess its advisability: under the project, the fixed and mobile network will be assigned to a legally separate entity that provides wholesale services to all applicants. The Operator is also preparing a programme with all formal steps necessary for the operation.

In November 2014, the Regulatory Authority, CTU, had designated O2 as an Operator with significant market power (SMP) on Markets 4 and 5, imposing accounting separation and remedies for Carrier Selection and Carrier Preselection services.

FINLAND

On the electronic communications market in Finland, the mobile telephony sector clearly dominates over the fixed telephony sector, with the latter affected by a steady downturn.

In particular, there is no national Operator with significant market power and national coverage, but instead several small, regional companies that have a monopoly: for example Telia Sonera has developed almost exclusively in the region around the capital Helsinki. However, the Authority has the power to impose accounting separation on Operators with Significant Market Power, and this power has been widely adopted for different Operators and different services.

Forms of separation are achieved by separating access and interconnection services from all other services.

FRANCE

In 2007, the French Regulatory Authority, ARCEP, had started a study to identify possible problems arising from the separation of the fixed access network of the incumbent France Telecom. In particular, the Authority had focussed on the possible negative impact that could arise, such as high development costs, considered greater than the related benefits, the potential effects of discouraging Operators from making investments, and the non-reversibility of such an operation. The study had also considered that a separation of the access network, even if proprietary, would not have eliminated the monopolistic management of the network, as it would have been entrusted to a single company, with all ensuing anticompetitive consequences.
In 2011, the anti-trust Authority requested ARCEP to provide an opinion on functional separation, in order to avoid possible monopolies regarding access to the new NGAN. ARCEP stated that the adoption of this measure should be considered "premature", and as a last resort.

To date, no measures for separation have been adopted, either of a functional or structural kind, and the only imposition for the incumbent is accounting separation.

GREECE

In 2007, the Greek Regulatory Authority EETT asked the Incumbent OTE for guarantees regarding compliance with the principle of internal-external equality of treatment, specifying that services would have to be supplied to the OLOs in such a way as to guarantee equal conditions from both the technical and economical points of view.

OTE was asked to create a "Chinese wall" division between its wholesale and retail departments, prohibiting its retail segment from having preferential access to its wholesale services compared to OLOs.

The Authority's 2008-2011 policy document provided, among others, for the possibility of adopting access network unbundling models. Furthermore, it was deemed advisable to hold a public consultation that might also have led to the establishment of forms of separation of the network from the sales divisions. In particular, it defined the specific procedures to be followed not only in the event of a separation imposed by the Authority, but also in the event of voluntary separation decided by the incumbent. These measures had been agreed by EETT with the European Commission, Parliament and Council; however, at present, no decision regarding this matter has been taken.

HUNGARY

In Hungary, OLOs frequently complain about discriminatory behaviour adopted by the Incumbent, Magyar Telekom, and the need to separate the fixed access network. However, no network separation measures have been adopted, as the Regulatory Authority, NMHH, has so far referred to high costs, possible criticalities (also of a technical nature) and the non-reversibility that these measures would entail.
However, regulatory measures have been imposed on Magyar Telekom, such as the adoption of a basket of performance indicators to monitor the supply of wholesale unbundling and bitstream access services, and limitations of the flow of data among different internal divisions.

IRELAND

In 2007, the Australian company Babcock & Brown, owner of the Incumbent Eircom, proposed the separation of its network to the Ministry of Communications and to the Regulatory Authority, the Commission for Communications Regulation (ComReg), with the aim of monetising its investment on the Irish market. The decision however was deferred due to turbulence on financial markets and broader debate within the Irish government on the future of the telecommunications industry. In 2010, Other Licensed Operators formally requested the structural separation of the Eircom network, and the creation of a wholesale division, stating that the remedies adopted by the government and the Authority to guarantee compliance with the principle of equality of treatment had not achieved the effects hoped for.
The Authority noted that the new EU regulatory framework provided for the possibility of adopting functional network separation models for SMP Operators for whom adopted measures had not resulted in the elimination of discriminatory behaviour. However, at the same time, ComReg indicated the costs relative to functional separation, and the possibility that these could be greater than the related benefits, pointing out that the experience of other countries showed that the most effective results had been achieved in cases where functional separation had been voluntarily proposed by the Incumbent and only subsequently approved and made compulsory by the Authority.

In 2012, ComReg held a public consultation to identify the remedies to be imposed on the Incumbent with regard to services offered on the next generation access network. In 2013, the Authority published the results of the consultation and decisions taken[4]: with reference to the NGAN, it was decided that the Incumbent should adopt Equivalence of Input for the bitstream and VUA (virtual unbundled access) and Equivalence of Output for other services.
As of 2014, no network separation measure has been put in place. However, Eircom has to periodically report KPIs to the authority, demonstrating the absence of discriminatory practices.

ISRAEL

In Israel, the fixed network Incumbent is Bezeq, while the cable operator is HOT.
In 2008, the Gronau report, commissioned by the Ministry of Communications, underlined the importance of developing a wholesale market for fixed network access services through local loop unbundling.

According to this report, structural separation between Bezeq's network and services would be desirable, but not strictly necessary. It was thought that the situation could be reviewed once the effects of introduction of LLU have been observed.
A number of restrictions to the services offered by the incumbent were adopted to increase competition on the market. Nevertheless, development of an effective liberalisation of the market has been slow and in 2013 the Antitrust Authority accused Bezeq of abuse of its dominant position. To date, however, no decision on separation of the network has been reached.

[4] http://www.comreg.ie/fileupload/publications/ComReg1311.pdf

JAPAN

In Japan, measures for the accounting separation of the Incumbent NTT have been adopted for several years now.

In 2009 the "*Hikarino Michi*" plan was launched, with the aim of creating an optic fibre network with speeds higher than 100 Mb and of promoting the development of broadband "in every household by sometime around 2015". In order to achieve these aims, the possibility of a separation (structural or functional) of NTT was explicitly considered.

In fact, NTT held a 52% market share on broadband in 2011, and a 35% share on ADSL, but covered 73% of the FTTH market. The problem of a more appropriate regulation therefore concerned the next generation network, and the separation of NTT's fibre access network was one of the options considered.

However, the government stated on the one hand that it had no intention of pressing in the direction of a separation of NTT, but on the other hand it also obliged the Operator to open up its networks to competitors and to create a 'firewall' between the NTT division in charge of setting up the NGN and the other divisions. If the level of competitiveness achieved by the market by 2015 is considered to be unsatisfactory, the model may be reviewed. The most realistic option is that of functional separation of the Operator, separation that must also include restrictions to access to information systems and the creation of an effective monitoring system. More radical forms of separation, such as structural separation or company separation, are considered less appropriate and less likely.

However, it is important to note that in Japan, the main approach seems to focus on facility-based competition, i.e. competition between various infrastructures (in particular NTT's fibre network and cable and wireless networks) rather than service-based competition.

JORDAN

In 2010, following market analysis showing that the Operator Orange held more than 90% of the wholesale broadband market, the Telecommunications Regulatory Commission declared Orange as the Incumbent, imposing obligations for the supply of unbundled, shared access services at a local loop and sub-loop level, including access to resources and services, thus enabling other Operators to access the SMP Operator's fixed network.

In addition, Orange will be required to offer a full range of wholesale broadband access services, including a naked DSL. The Incumbent will be required to submit a reference offer to the Commission and to comply with obligations concerning transparency, non-discrimination, accounting separation and cost-based prices.

Links: www.trc.gov.jo

MEXICO

Reform of the electronic communications industry, accused of inadequate competition, is an issue that has been tackled by the government in recent years. In 2011, US companies accused the regulatory authority Cofetel of lacking in authority and efficiency; inquiries were started by the Antitrust Federal Competition Commission (CFC), to identify any monopolistic practices on the market; in addition, Cofetel proposed the accounting separation of the Operator Telmex. The matter reached a climax with the OECD's unyielding opinion that pressed for a marked reform of the whole regulatory framework. In 2013, the government prosed a complex reform of the electronics communication industry, which was subsequently approved, with some amendments, by the Congress and Senate. This reform, which aims to boost competition on the market and restrict the power of Operators such as America Movil and Televisa, was intended to encourage foreign investment and give the Authority power to act against the possibility of Operators holding a market share greater than 50%. On this subject, the law provides that the Instituto Federal de Telecomunicaciones has the power to *"ordenar la desincorporación de activos, derechos, partes sociales o acciones de los agentes económicos, en las proporciones necesarias para eliminar efectos anticompetitivos"*. This new regulatory authority has unified exclusive oversight duties concerning telecommunications and broadcasting, which were previously managed by the antitrust Authority.

The first effects of the reform came about in December 2013, when the Regulatory Authority notified the two Operators America Moil and Televisa that it had started proceedings to identify any Incumbents on the market.
America Movil was identified as the Incumbent, with a market share of 80% in the fixed telephony sector, which is more than 50% the maximum limit above which the Authority can impose functional separation of the network.
In July 2014, the Operator stated that it[5] wanted to proceed with voluntary separation - which must be approved by the Authority - so as to anticipate possible measures imposed by the Authority and thus reduce the number of its regulatory obligations. However, America Movil did not provide details of the relative times and procedures.

In November 2013, the Mexican President had announced the National Digital Strategy, based on five pillars (connectivity, digital participation, interoperability, legal framework and open data), and with the main goals of digitalisation of the public administration and health service, a more effective war against crime, improvement in the quality of state education. With reference to the mobile telephony sector, it is interesting to note that, as far as use of the 700 Mhz band is concerned, Cofetel is considering the possibility of adopting a model that provides for the creation of a government body, or alternatively a body created by a joint public-private venture, to develop the network and sell the wholesale traffic to retail mobile operators, which would then operate in competition with each other.

MONGOLIA

Up to the 1990s, electronic communications were totally controlled by the government. In 1995, the Mongolian Government decided to partially privatise the assets held by the State in the telecommunications industry. In order to guarantee access to the fixed network for all Operators without discrimination, the Mongolian Telecommunications Company (MTC) was set up, separating ownership of the backbone, which remained state property, from the structures responsible for running and maintaining it.
This move, moreover, aimed at avoiding the costs related to possible duplications of the network, and reduces the costs for entry into the market of new competitors. The network subsequently underwent structural separation, splitting it from services.

In 2007, MTC was split into Information Communication Networking Company (ICNC), publicly owned, which owns the national backbone and the access network, international and long-distance connections, local and rural area transmission, and into Telecom Mongolia (partially privatised) providing retail services. ICNC provides network access complying with the principle of equality of treatment for all stakeholders concerned (communication providers, ISP...).

Although this process made it possible to introduce a competitive model into Mongolia, making the access network and the backbone accessible in non-discriminatory conditions, some problems were also identified: in fact the regulated tariffs did not allow ICNC to cover its costs, and in 2008 the Government had to intervene granting ad hoc subsidies.

[5] http://www.americamovil.com/amx/en/cm/news/2014/08072014.pdf

NEW ZEALAND

In order to guarantee compliance with the principle of equality of treatment for all the Operators accessing the fixed network, in 2008 the incumbent Operator in New Zealand Telecom New Zealand (TNZ) announced a number of Undertakings, inspired by British Telecom's Undertakings, introducing significant changes to the organisation of the company. These Undertakings, accepted and ratified by the Government, established the separation of the TNZ into three divisions: Network, Retail and Wholesale, and also envisaged the establishment of a supervisory board, the Independent Oversight Group (IOG), tasked with responsibilities similar to those of the Equality of Access Board in the UK and the Supervisory Board in Italy.

In 2010, the project for the new national optic fibre network (Ultra Fast Broadband project, UFB) was launched, to be achieved by forms of public-private co-investment between the public body Crown Fibre Holdings, which controls the funds for the NGAN, and Operators to be selected by special tenders. The new network should have led to forms of public/private co-investment between Crown Fibre Holdings, the public organisation managing funds for NGAN, and electronic communications Operators, that had to be identified in specific tenders.

The government gave TNZ two possibilities:

- taking part in the tenders, provided the company was separated from the access network - a step that would have gone beyond the functional separation already adopted; or
- not taking part in the tenders, thus becoming a competitor of the government.

TNZ decided to take part in the project; thus two new companies were created, each listed on the stock exchange and with its own Board of Directors, its own Chief Executive Officer, as well as independent management and human resources:

- Chorus, owner of the copper network, appointed to provide network access to Operators; Chorus is prohibited from operating on the retail market;
- Telecom New Zealand, a retail Company, that would purchase services from Chorus at the same terms and conditions as other Operators.

The new network should have led to forms of public/private co-investment between Crown Fibre Holdings, the public organisation managing funds for NGAN, and electronic communications Operators, that had to be identified in specific tenders.

In 2011, the structural separation plan submitted by TNZ was approved by the Government and then by the shareholders of the Company; since November 2011, Chorus shares have been listed and traded on the stock exchange. This is the first example in the world of a company separation voluntarily adopted by an Incumbent.

Chorus started constructing the NGAN, having won the Crown Fibre Holdings government contracts together with other Operators; In 2013, however, it became increasingly more clear that there were problems for TNZ: the reorganisation costs resulting from the operation described above proved higher than expected, the profits diminished considerably, and the company is considering the advisability of job cuts.

As regards NGN roll-out, works are on schedule, although in 2014, some amendments were made to the original Plan, regarding times and coverage percentages to achieve, based on agreements made between Chorus and Crown Fibre Holdings.

THE NETHERLANDS

In 2007 the Regulatory Authority OPTA conducted a study to establish the advisability of introducing an access network separation model; however this hypothesis was rejected, as the level of competition already present on the market was deemed satisfactory, also taking into account the availability of a cable network and local municipal networks: so the functional separation of the network owned by the incumbent Operator KPN appeared to be an excessive step, that might have had undesirable effects on the market. Furthermore, functional separation was not one of the remedies considered in 2007 by the regulatory framework; the Authority declared that it was ready to reconsider its position if there were evolutions in the European regulatory framework that might expressly prescribe the adoption of measures for the functional separation of the network. Following approval in 2009 of the "Telecom Package" by the European Parliament and Council, expressly providing the power of National Regulatory Authorities to impose functional separation on incumbent operators, the Netherlands amended its Telecommunications Law in 2012, including a regulation introducing the possibility for OPTA to introduce forms of functional separation.
To date, however, no effective separation of the network has been carried out.

For some time now, the regulatory framework in Holland has implemented accounting separation, transparency and non-discrimination obligations.

The model opted for by the city of Amsterdam at local level, which in some ways is reminiscent of the one used in Singapore, envisages:

- a partnership between several subjects that own control of the passive network infrastructure, with Reggefiber, a company under the control of KPN, as majority shareholder in the partnership;
- an Operator with a concession to manage the active section;
- several competing operators offering retail services.

Reggefiber subsequently extended its coverage to nearly a quarter of the national territory.

POLAND

In 2006, Telekomunikacja Polska S.A. (TP SA) was designated as the Operator with significant market power by the Regulatory Authority UKE: this led to the Operator being required to comply with non-discrimination, transparency, accounting separation and price control obligations.
In 2008, the Authority also analysed the possibility of the mandatory splitting of TP SA into separate retail and wholesale divisions, and in order to avoid such an option, TP proposed to UKE a series of voluntary undertakings in 2009 (the so-called Charter of Equivalence) aiming to eliminate cases of discrimination against OLOs when accessing its network. These undertakings included:

- lthe creation of a separate wholesale division;
- the separation of the IT systems of the Operator's wholesale division from those of its other divisions;
- the adoption of a code of conduct for employees;
- the preparation of a list of Key Performance Indicators to monitor compliance with the undertakings on an ongoing basis.

The measures in the "Charter of Equivalence" are similar to Telecom Italia undertakings: TP, for example, is obliged to ensure equivalence of outputs (wholesale products and prices offered to the OLOs must be sufficiently comparable to those offered to its own sales departments, and not necessarily the same).

Following presentation of these undertakings, UKE suspended the separation process that was in progress. However, the European Commission made numerous complaints concerning the Operator; in 2011 the Commission fined TP for abuse of a dominant position and in 2012, recommended that the Polish Authority should not relieve TP of its cost orientation obligation for NGN services, *"unless functional separation or other forms of separation have proved effectively to guarantee equivalence of access"*.
In 2014, the European Commission approved the Polish Authority's proposal to introduce a partial de-regulation of the market on a regional basis, in order to encourage investments in optic fibre networks.

PORTUGAL

In Portugal, there has been lively debate about the possible separation of the fixed access network of the Incumbent Portugal Telecom since 2009, when the Portuguese Regulatory Authority, ANACOM, following a specific public consultation, evaluated whether functional separation of the fixed access network of the Incumbent Portugal Telecom should be included in the remedies envisaged by the national regulatory framework.

At the same time, it was considered appropriate to further investigate the issue, and a study was commissioned from Oxera regarding the advisability and the consequent risks of a functional separation of the Portuguese electronic communications market.

In 2011, following approval of the European "Telecom Package" in 2009, which explicitly provides the possibility for National Authorities to impose a functional separation model, and with the growing debate on the procedures for creation and governance of next generation networks, the operators Optimus and Vodafone requested the adoption of regulatory measures able to guarantee compliance with the principle of equality of treatment in access to Portugal Telecom's optic fibre network.

However, no steps have yet been taken for separation of the access network.

The European Commission has recently turned its attention to the Portuguese market; the Commission fined Telefonica and Portugal Telecom for the reciprocal non-competition agreement signed between the two companies in their respective countries. The agreement was part of a broader operation which included the acquisition by Telefonica of Vivo, the Brazilian joint venture operating in mobile telephony, owned by Portugal Telecom.

SINGAPORE

Singapore is at the forefront worldwide as regards electronic telecommunications and relative regulatory procedures; several years ago, it developed a model for a new optic fibre network - the Next Generation Nationwide Broadband Network - which provides for a corporate separation of the passive and active infrastructure, in order to minimise entry barriers; in particular, it established:

- a company (NetCo) owning the passive infrastructure: a public tender was awarded to the company OpenNet, a joint venture set up in 2008 with the aim of constructing the NGN; it supplies cable ducting and dark fibre at a pre-set price;
- a wholesale operator (OpCo) to manage the active infrastructure, comprising exchanges and transmission equipment; in 2009, the Authority appointed StarHub, operating through the Nucleus Connect company;

Various rival Operators and ISPs have requested wholesale network access services and offer retail business services.

All types of Operator offering electronic communications services may request passive fibre services; so mobile Operators may also employ OpenNet and Nucleus when using fixed backhauling for LTE. A series of rules regulating relations between various players were also established: for example, no later than seven days after installation of fibres in a building by OpenNet, Nucleus must makes its wholesale offers available.

SPAIN

The Spanish incumbent Telefonica has been subjected since 2007 to a series of regulatory remedies, such as the obligation to notify a series of performance indicators on the quality levels of the wholesale services it supplies to the Regulatory Authority CMT and to the Other Licensed Operators, to permit comparison of the performances supplied internally to its Retail division with those supplied to the OLOs;

CMT reviewed the possibility of adopting forms of functional separation of the incumbent's access network; the latter, however, after a public consultation on NGA which started in 2008, concluded that before adopting a similar approach, considered to be "extreme and exceptional", the consequences, particularly on competition and investments, would have to be carefully analysed.

The government must consider separation of the access network as necessary, following the specific analysis conducted by the Authority CMT which also shows that existing remedies are not sufficient to overcome the lack of competitiveness on the market.

In 2012, with the 2009 "Telecom Package" regulations being implemented in Spanish national law, the Authority was able to impose functional separation. The process moreover provides that the initiative must be taken officially by the government: it must deem separation of the access network to be necessary, based on a special analysis by the Authority CMT from which it can be deduced that the existing remedies are not sufficient to obviate the lack of competitiveness that remain on the market.

In 2013, a new body was set up; this is the Comisiòn Nacional de los Mercados y la Competencia (CNMC), which took over the Antitrust Authority CNC and the Electronic Communications Authority CMT.
The system's level of conflict is high and in fact in January 2015, Telefonica decided to cut back investments in the NGAN in response to the latest decisions taken by the Authority that promote a greater opening up of the Incumbent's network to competitors.

The European Commission has fined Telefonica and Portugal Telecom for the reciprocal non-competition agreement signed between the two companies in their respective Countries. The agreement was part of a broader operation which included the acquisition by Telefonica of Vivo, the Brazilian joint venture operating in mobile telephony, owned by Portugal Telecom.

SWEDEN

In 2008, the incumbent Telia Sonera, in order to prevent possible requirements to separate its network or avoid fines from PTS, the Swedish post and Telecom Agency, voluntarily established its new access network division, Skanova Access, to separately and independently manage network access and thus guarantee compliance with the principle of equality of treatment among all Operators. Thus a functional separation of the network was put in place.

Skanova is a legally separated division of Telia Sonera, with separate IT systems and has financial auditing obligations, even though it is owned 100% by the Incumbent.

It manages copper and fibre network access services supplied to both OLOs and the commercial divisions of Telia Sonera. Skanova Access personnel must abide by a specific Code of Conduct containing measures intended to ensure compliance with the principles of equal treatment and non-discrimination.

The Equality of Access Board, which is required to report periodically to the CEO of Telia Sonera has been appointed to control the actions of Skanova Access. The duty of the Board is to check compliance with the principle of equality of treatment by Skanova, above all by analysing a basket of performance indicators.

However, there has been no separation of the access network of the Incumbent, and a public consultation on this matter in 2009 did not lead to any outcome.

In 2013, PTS and Telia discussed the possibility of introducing an Equivalence of Input (EOI) model in Sweden. In June, the Authority launched the third market analysis, with the first public consultation concerning identification of SMP Operators and definition of the cardinal principles for imposition of remedies in Market 4. In particular, PTS examined two possible options:

- an Equivalence of Input (EOI) model on the passive elements of the fibre access network eliminating price control on LLU and on dark fibre;
- withdrawal of obligations on prices in areas where there is market competition, in the absence of an EOI model.

The national OLOs expressed strong doubts about the actual benefits that could derive from the introduction of an EOI model, holding that the creation of Skanova had not effectively brought benefits in terms of compliance with the principle of equality of treatment. More positive reactions on the contrary came from the other regional and municipal Licensed Operators, which are developing access networks for the laying of dark optic fibre at local level, without competing with Telia Sonera on the retail market.

The Authority continued to work on this issue in 2014, also holding meetings with Telia Sonera. The Operator declared it wanted to evaluate the adoption of an EOI model in exchange for regulatory changes that can boost investments in the NGAN. In October 2014, a new public consultation was held (http://www.pts.se/sv/Dokument/Remisser/2014/Samrad-angaende-marknaderna-for-lokalt-och-centralt-tilltrade/), on completion of which the Authority formulated a proposal (http://www.pts.se/sv/Dokument/Remisser/2015/EU-samrad-angaende-marknaderna-for-lokalt-och-centralt-tilltrade/) which was sent to the European Commission in January 2015: the project will introduce EOK for fibre (by December 2016), while the current model is considered more appropriate for copper. In this case, Telia Sonera would be relieved of price and cost orientation obligations for NGAN products.

UNITED KINGDOM

In 2005, after the Strategic Review of Telecommunications, the British regulatory Authority Ofcom concluded that action was required to deal with the so-called bottleneck that the British Telecom (BT) access network represented, a barrier to entry that was able to produce a de facto restriction on full freedom of access to the market for other licensed Operators, and a considerable limitation to the development of local loop unbundling. Following lengthy negotiations between the Operator and the Authority, BT proposed a number of Undertakings, ratified by the Authority, which established new rules for the supply of goods and services to OLOs and their commercial departments, in order to guarantee equality of access at conditions that did not discriminate against the competitors of the Incumbent.

In particular, a separate division was created, Openreach, to manage the access network and provide main wholesale services on an Equivalence of Input (EOI) basis: the offer to its own sales network and to the OLOs was equal in terms of price, sales terms and conditions, SLA, and timescales, and was supplied based on the same systems and processes ("same timescales, terms and conditions and using the same systems and processes"); a specific Code of Practice detailed the behaviour expected of the Operator's employees.

Openreach, a functionally separate British Telecom Group, has its own offices, its own commercial brand and independent management systems; its CEO reports directly to the CEO of British Telecom Group PLC. Both BT Retail and the OLOs have a direct relationship with Openreach.

Following lengthy negotiations between the Operator and the Authority, BT proposed a number of Undertakings, ratified by the Authority, which established new rules for the supply of goods and services to OLOs and their commercial departments, in order to guarantee equality of access at conditions that did not discriminate against the competitors of the Incumbent.

A special body (the Equality of Access Board, EAB) was set up to monitor effective compliance with the Undertakings. Set up in 2005, it was an absolute first within the international regulatory scenario. The EAB is assisted by a department which ascertains compliance with the Undertakings and with the Code of Practice, and receives complaints from the OLOs.

Over recent years some changes have been made to the Undertakings: the deadlines for the separation of Openreach IT systems have been rescheduled, and the Equality of Access Board has been given some additional responsibilities. In 2014, Ofcom requested Openreach to comply with minimum quality levels for services offered. According to some other licensed operators, Openreach's performance had declined in the year.

USA

In the United States, the dominant view is of infrastructure-based rather than service-based competition: the national regulatory Authority, instead of restricting the incumbent in a given technology, should favour development and competition in different, mutually competing technologies (e.g. fibre, mobile, cable, satellite, ...) since it is thought that this may bring greater benefits to the market.

The U.S. regulatory approach is therefore fundamentally different from the European one, and is inspired by the conviction that an excessive load of rules is damaging to the industry and to effective free competition.
The recent dispute between the FCC and Comcast, the largest US cable company, has also been significant: the Authority sought to impose rules on the running of the network owned by the Operator, but a ruling in 2010 of the District of Columbia Court of Appeals upheld the case put forward by Comcast asserting that for years it has had the right to manage its network without regulatory constraints, in consideration of the substantial investments made.
The Federal Communications Commission (FCC), moreover, has also recently confirmed that if, on the one hand, they will seek to avoid imposition of excessively invasive obligations, such as the sharing of networks, at the same time definition of a new regulatory framework has become necessary.

Numerous studies conducted on the subject have concluded that the costs associated with structural separation of the access network would be higher that the related benefits, not to mention that an obligation for unbundling on the new fibre access network would be more difficult, due to technical issues, than it would be on a conventional copper access network.
The effectiveness of the US approach would seem to be confirmed by the rate of development of the new networks, considerably higher than in Countries, like those in the European Union, characterised by more invasive regulatory approaches.

In the United States, however, there have been cases of forced imposition of separation by the Authorities against companies considered to be dominant on the market. The most famous case occurred in 1984 and concerned the splitting of AT&T into a long-distance carrier and seven Regional Bell Operating Companies (RBOCs).

Crandall, Eisenach and Litan noted that *"neither experiment was successful. The breakup of AT&T into separate local and long-distance companies which were prohibited from entering each other's markets slowed the development of competition while imposing significant efficiency costs. Ultimately, vertical integration was reintroduced, as the RBOCs were permitted to offer long-distance services and the two major long-distance firms, AT&T and MCI, were purchased by AT&T's divested local carriers, SBC and Verizon."*[6]

The Telecommunications Act of 1996 envisaged, in Section 251, an unbundling obligation for all the network elements needed by OLOs to compete. This obligation was accompanied by a series of measures designed to guarantee compliance with the principles of non-discrimination. The sales success, with a growth of unbundled lines, was accompanied, however, by the economic crisis of many Operators that had entered the market without sufficient financial means; subsequent requests put forward to the Authority for vertical separation of the network were not granted.

In 2014, a fierce debate on Net Neutrality dominated in the United States: the FCC's proposal to adopt "commercial rules for web traffic would enable telcos to regulate web traffic based on commercial agreements with content providers, thus creating a two-speed Internet; this received strong criticism from several parties, with consumer associations denouncing the creation of a system that would only favour those who could pay for it.

President Obama requested that broadband be classified as a telecommunications service, rather than as its current status as an information service; in this way, broadband would be regulated as an essential service, such as water, preventing rules that try to undermine free access to Internet, and ultimately guaranteeing Net Neutrality.
Obama's proposal was met with a fierce reaction by electronic communications Operators, while major US OTTs have kept a lower profile. Developments are expected in 2015, with the FCC's ruling on the matter.

[6] Robert W. Crandall, Jeffrey A. Eisenach, Robert E. Litan: "Vertical Separation of Telecommunications Networks: Evidence from Five Countries", FEDERAL COMMUNICATIONS LAW JOURNAL, Vol 62, 2010.
http://www.fclj.org/volumes/volume-62-2009-2010/issue-3/

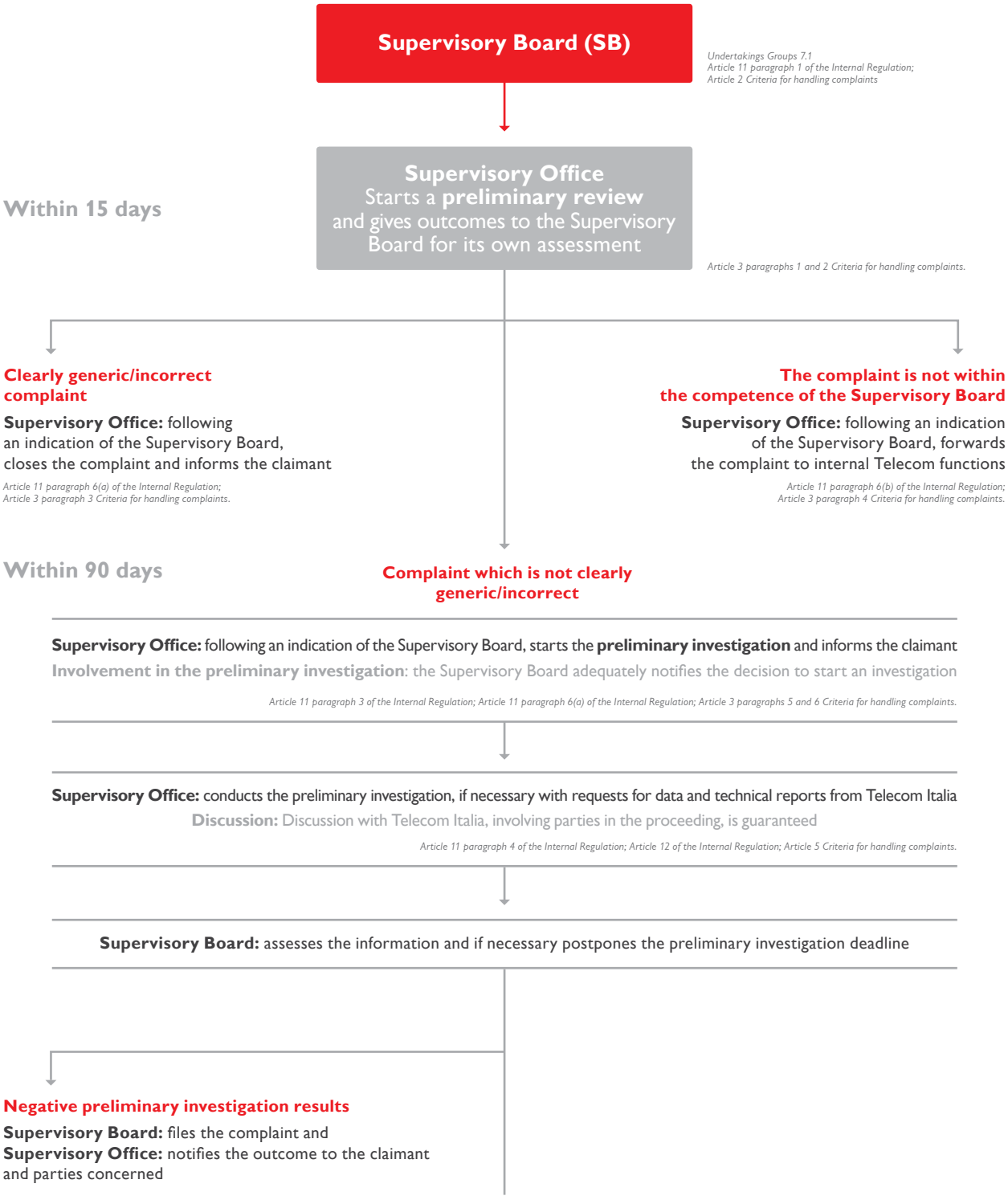
03
Complaints and claims.

Other Licensed Operators can send the Supervisory Board reports and complaints relating to alleged breaches of the Undertakings by Telecom Italia using the form provided for this purpose. If an alleged breach by Telecom Italia is confirmed and the company fails to remedy it in accordance with the established deadlines and procedures, the Supervisory Board must report this to AGCom and the Board of Directors of Telecom Italia.

Complaints sent to the Supervisory Board are managed according to a procedure described in the Board's Internal Regulation and detailed in Supervisory Board Resolution No. 10/2014 (which replaced the former procedure regulated by Resolution no. 2/2009), that provides for an initial assessment of the admissibility of the complaint and the subsequent opening of an investigation. After the investigation has been concluded, the Supervisory Board takes a decision based on the facts of the matter.

Outline details of the envisaged phases of the procedure are given below.

MANAGEMENT FLOW OF REPORTS AND COMPLAINTS



Positive preliminary investigation results

Supervisory Board: Sends Telecom Italia and parties to the proceeding **Preliminary notification** with the results of the investigation, establishing the deadline for completing investigation activities. Telecom Italia may submit written observations and request a hearing with the Supervisory Board.

Suspension/interruption of the proceeding: if an equivalent investigation is pending with AGCom, the Supervisory Board, on request of AGCom, will suspend or stop the proceeding.

Article 14 of the Internal Regulation; Articles 6 and 7 Criteria for handling complaints.

Within 15 days from the end of the investigation

Article 15 paragraph 1 of the Internal Regulation; Article 7 Criteria for handling complaints.

Negative investigation outcome

Supervisory Board: files the complaint and
Supervisory Office: notifies the outcome to the claimant and parties concerned

Positive outcome

Supervisory Board: notifies irregularities or **inadequacies** in complying with Undertakings, and establishes a deadline by which Telecom Italia shall remedy said irregularities/inadequacies, notifying parties concerned.

Article 15 paragraph 2 of the Internal Regulation

Telecom Italia meets the deadline established by the Supervisory Board

Supervisory Board: files the complaint and
Supervisory Office: notifies the outcome to the claimant and parties concerned

Telecom Italia DOES NOT meet the deadline established by the Supervisory Board

Supervisory Board: informs AGCom and the Board of Directors of Telecom Italia
Supervisory Office: notifies the outcome to the claimant and parties concerned

Undertakings Groups 7.15 and 7.16 Article 15 paragraph 3 of the Internal Regulation

As regards relative regulations and following the approval of new complaint management criteria, the Supervisory Board submitted a proposal in May to Telecom Italia, that had promoted the amendment pursuant to Article 19, paragraph 1 of the Regulation on Supervisory Boards, to change the Regulation, in line with the principles of transparency and involvement, set out, in part, in Resolution no. 10/2014.

3.1 OLO COMPLAINTS

Complaints received in 2014

During 2014, the Supervisory Board continued to review two of the three complaints made by OLOs in 2013, also checking that the Recommendations made to Telecom Italia, at the end of the "S01/13" proceeding, had been taken on board.

Specifically, the following proceedings were started in 2013 and checked in 2014:

- **Complaint S02/13** - Fastweb/Malfunctions of the CRM system for Wholesale customers;
- **Complaint S03/13** - Welcome Italia/Physical deterioration of lines and fruitless service interventions, SLA compliance and definition of penalties.

More detailed information regarding these Complaints is given below.

Complaint from the Operator Fastweb "S02/13 - Fastweb/Malfunctions of the CRM system for Wholesale customers - Implementation of Undertakings Group no. 1 related to the setting up of a new delivery process for SMP Services".

> *In February 2013, the Operator Fastweb complained of numerous malfunctions of Telecom Italia's Wholesale CRM system, reporting them to the Supervisory Board.*
>
> *Fastweb, when reporting the occurrence, held that these problems represented a breach of Undertakings Group no. 1, partly in consideration of the persistence of the anomalies found, which were alleged to have caused serious criticalities in the execution of numerous work orders, with a negative impact on its customers.*

During the hearing on 21 February 2013, Fastweb S.p.A. reported a series of malfunctions that it claimed had deteriorated the performances of the CRM (Customer Relationship Management) system in the various versions of the software released over time. In particular, the company complained that the CRM 2.0 version had been affected by anomalies causing serious criticalities in provisioning processes such as:

- high percentages of KOs which subsequently proved to be unjustified;
- mass and repeated remodulations;
- a backlog in processing orders (with disruptions to customers).

Furthermore, it was found that the subsequent 3.0 version of CRM also contained anomalies that might cause no less important malfunctions such as the blocking of thousands of activation and migration orders and the incorrect execution of many orders with a negative impact on customers.

Based on a statement made by Fastweb, the Supervisory Board, in Resolution no. 6/2013 of 13 March 2013, ordered the start of activities to investigate the complaint *"S02/13 - Fastweb/Malfunctions of the CRM system for Wholesale customers-Implementation of Undertakings Group no. 1 relative to a new SMP Services delivery process"*.

Having received confirmation that the problems already reported in February are still continuing with the latest releases of Wholesale CRM too, and considering the complexity of the issues concerned, the Supervisory Board recognised the need to define an indicator that would be suitable for objectively measuring the level of operation of the Wholesale CRM system.

In December 2013, Telecom Italia and the Supervisory Board agreed to consider the percentage of wholesale orders (received by N or several days) which, at the date of measurement, were "being processed" in Wholesale CRM, but without a formal order sent to Open Access, as a performance indicator for Wholesale CRM operation. This percentage must be calculated compared to the total orders being processed at the time of the measurement. The reference time threshold N, i.e. the time that has elapsed from the Date of Receipt of the Order (DRO), which will determine whether or not an order will be considered in the indicator value, depends on the type of service, as indicated in the following table:

SERVICE	Reference time threshold N
ULL-LA	3 working days
ULL-LNA	3 working days
WLR-LA	4 working days
WLR-LNA	11 working days
Bitstream-LA	8 calendar days
Bitstream-LNA	12 calendar days

The Supervisory Board, acknowledging that the new indicator would only be available at the end of April 2014, arranged for the terms of the proceeding to be deferred until 29 August 2014 with Resolution no. 29/2013 of 9 December 2013, in order to check whether the suggested procedure was actually suitable for identifying the start of criticalities of a type concerning the complaint.

As from 30 April 2014, Telecom Italia provided figures for the CRM performance indicator for Wholesale customers, twice weekly, enabling the Supervisory Board to specifically monitor system performance.

During the observation period from the end of April to 31 December, the index was more or less constant at values close to zero for Bitstream services, indicating optimal operating conditions, whereas it varied considerable over time, for LLU and WLR services, as shown in the following graphs:

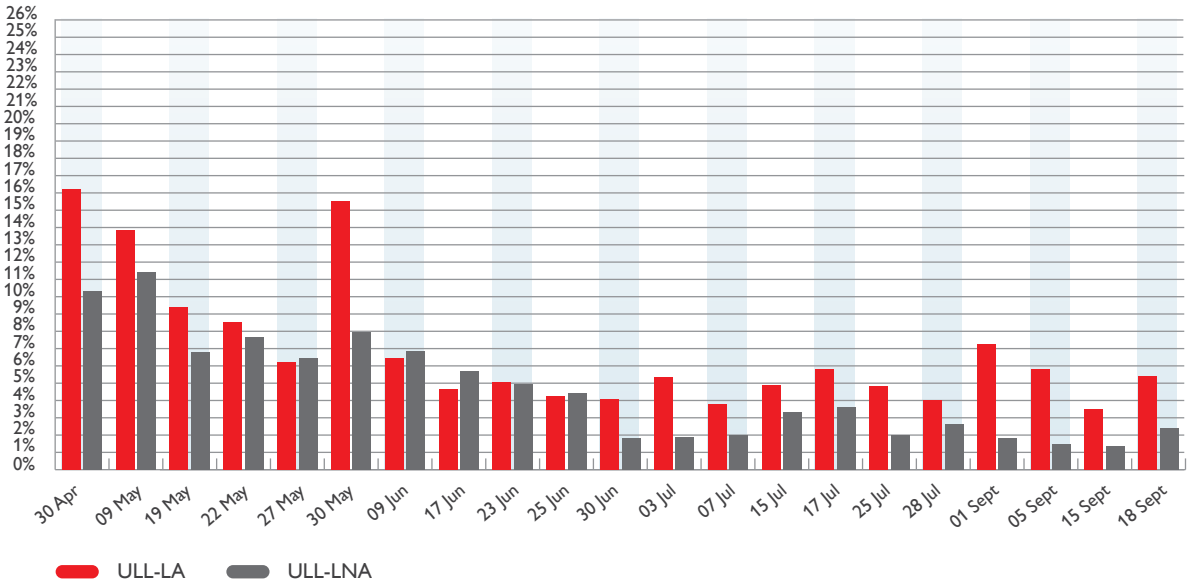


Figure 1 - Trend of the CRM Wholesale performance index for LLU services in the observation period from 30 April - 18 September 2014.

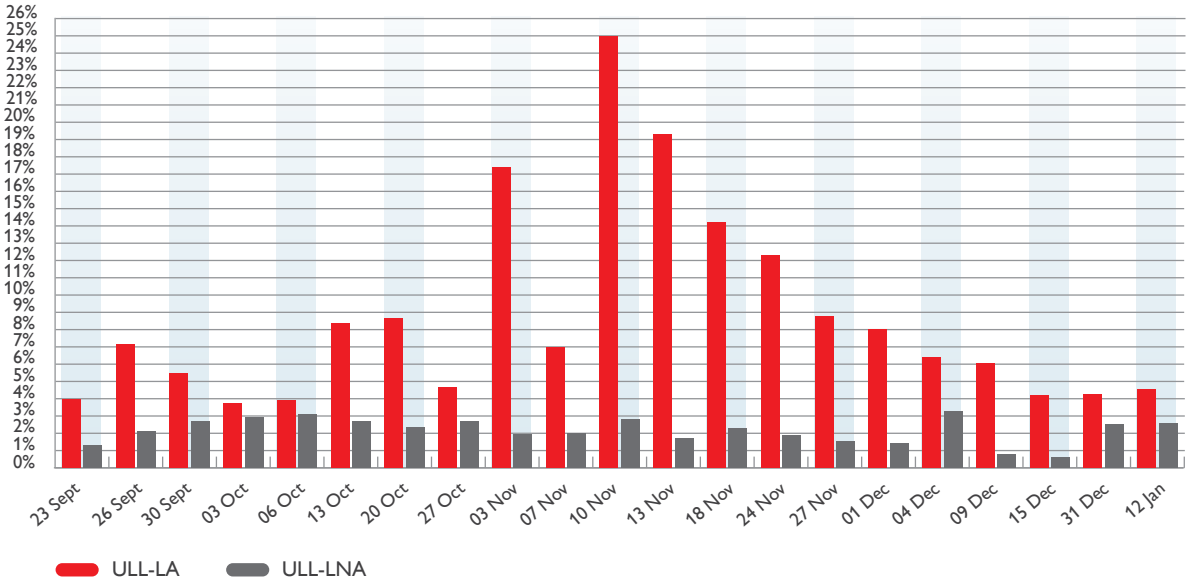


Figure 2 - Trend of the CRM Wholesale performance index for LLU services in the observation period from 23 September 2014 - 12 January 2015.

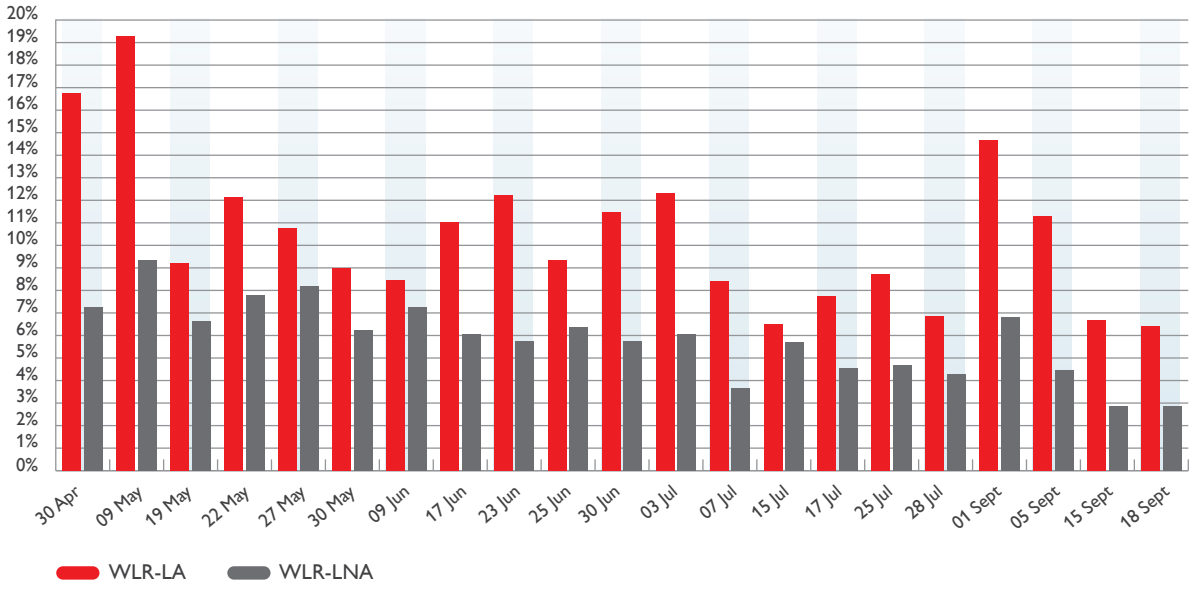


Figure 3 - Trend of the CRM Wholesale performance index for WLR services in the observation period from 30 April - 18 September 2014.

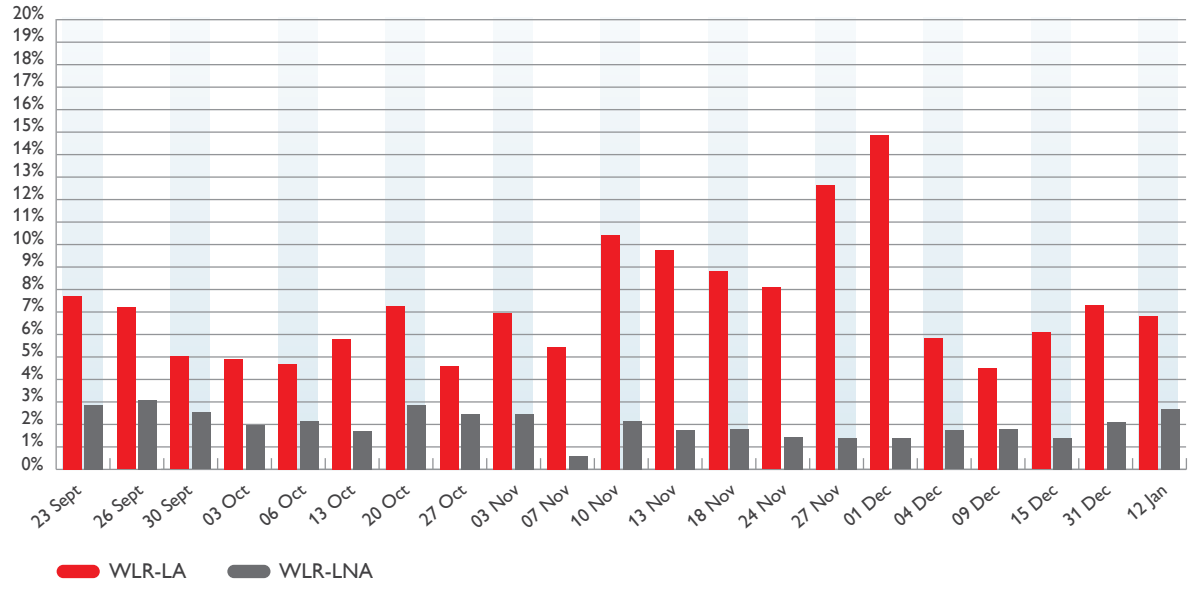


Figure 4 - Trend of the CRM Wholesale performance index for WLR services in the observation period from 23 September 2014 - 12 January 2015.

On 11 June 2014, Telecom Italia provided further details on the times for solving criticalities and procedures for recording data, during a hearing specifically convened for this purpose. Based on the initial results of the new indicator, the Supervisory Board, establishing that reported criticalities were still ongoing, sent a letter to Telecom Italia on 16 June requesting information about action plans and times for the implementation of actions, with periodic updates on KPI findings and indications of related unresolved and backlog volumes by individual service.

With Resolution no. 15/2014 adopted by the Supervisory Board on 24 September 2014, it was acknowledged that the reported facts, as indicated, despite evident disruptions, did not constitute a failure to meet the Undertakings approved by AGCom Resolution no. 718/08/CONS and, in particular, Undertakings Group no. 1, that does not regulate the quality of Wholesale CRM services.

Investigations conducted concerning the complaint made by Fastweb S.p.A. and specifically alleged malfunctions that would have deteriorated CRM (Customer Relationship Management) system performance, at the same time as releases of various software versions, prepared over time, did not compromise the relative Undertakings Group which, in this regard, does not establish any requirements concerning quality or evaluation procedures that Telecom Italia should observe in supplying its Customer Relationship Management service to OLOs.

The Undertakings system, in its current configuration, only concerns the establishment of a new unitary CRM system for the technical and commercial management of relations between Operators and the Wholesale Department of Telecom Italia and does not regulate or establish a specific obligation to achieve results or a given quality of services provided by CRM. On this basis, the Supervisory Board found it was not possible to evaluate the quality issues of the service provided, and consequently, compliance as provided for by Resolution no. 718/08/CONS.

The Supervisory Body, with the above Resolution, decided, in any case, to issue a serious charge against Telecom Italia concerning the management of this issue, hoping that in the future it will pay more attention and will be more aware of managing the quality of services provided to Other Licensed Operators.

The Supervisory Board also issued Recommendations to Telecom Italia. Firstly, it indicated the need to establish a specific procedure to verify correct operation of the application during software releases, formally involving Operators as well, in order to guarantee an optimal quality of results, also by setting up specific local areas to trial releases.

As a result, the Supervisory Board requested Telecom Italia to send weekly reports on the Wholesale CRM performance indicator, along with a table indicating the total number of orders being processed divided by service, as well as orders off pre-delivery target, and the reasons why, in order to verify the progress and effectiveness of actions taken by the Company to improve CRM system performance.

As outcomes of these resolutions, the Supervisory Board ordered the closing of the proceeding, as provided for by Article 15 of its Internal Regulation.

Thanks to the CRM system performance indicator for Telecom Italia's Wholesale customers, the Supervisory Board continually monitored system performance so that it could promptly and effectively identify any operating issues that, if not quickly identified and solved, could become critical aspects affecting the principle of equality of treatment.

As regards weekly monitoring of the Wholesale CRM system performance indicator, the Supervisory Board identified two episodes of an anomalous increase in unresolved Work Orders for LLU AL services, on 3 and 10 November 2014 (see figure 2), which was promptly notified to AGCom in a notice of 25 November 2014. In order to obtain more evidence on various issues arising as regards the increase in unresolved Work Orders, the Supervisory Board held a hearing with Telecom Italia S.p.a. on 2 December 2014. During this meeting, the Incumbent confirmed that on the above days, the number of backlog orders during the pre-delivery stage for LLU AL services had increased in an irregular manner.

In particular, the first anomalous episode of 3 November 2014 is due to a Wholesale CRM system anomaly occurring on 2 November, due to the erroneous entry of values in a field in the interface to other systems in the chain. The problem was promptly identified and, after action taken by competent functions of Telecom Italia, the criticality was solved, with a considerable improvement in the situation, identified by the Supervisory Board during analyses showing that the value of the indicator had fallen from 17.39% on 3 November to 6.99% on 7 November.

The Supervisory Board continued to monitor system performance so that it could promptly and effectively identify any operating issues.

The second episode of a sudden increase in unresolved orders was identified on 10 November 2014 and is due to an anomaly of systems external to the Wholesale CRM system. The identification of this anomaly (which was not systematic) and its solution, were particularly complex. Two separate actions were necessary; the first on 21 November and the second on 28 November.

In view of a permanent solution to the problem, Telecom Italia arranged work arounds to mitigate the negative effects of the issue, as shown by the decrease in the indicator (see figure 2).

Based on the hearing with Telecom Italia, the total number of backlogs (of all OLOs) as of 24 November 2014 amounted to 4,702 Work orders, equal to 3.1% of unresolved orders and the backlog of orders with an expired EDD totalled 3,902, equal to 2.9% of all unresolved orders. As regards the latter type of orders, only requests for migration or the activation of access services on an active line can result in disruptions for end customers. In fact, on 24 November, these orders amounted to 1,529, equal to approximately 1% of total unresolved orders.

The Supervisory Board therefore started an investigation to obtain further information about the excessive rescheduling of the EDD.

In this regard, the Supervisory Board, in the meeting of 2 December 2014, requested the Operator to take specific action to reduce multiple rescheduling of the EDD and failure to send the OLO (according to the times indicated in the process) notices relative to various order statuses.

Following this request by the Supervisory Board and its recommendations, Telecom Italia reported, in its notice of 12 December 2014, that it had started the following activities:

- **Rescheduling the EDD**
  A periodic review was started, with the aim of changing the status of any orders with an expired EDD, and with an unresolved EDD-2 status. By December 2014, another two actions will be taken (one to reduce the latency times of the process for NP and other to optimise the acquisition of WO files), which will help reduce any downtimes of orders and increase the probability of orders being processed according to their original EDD.

- **Sending notices**
  Telecom Italia has set up a procedure to check that notices expected and those actually generated correspond. If an expected notice has not been generated, ad hoc monitoring will correctly produce it. This procedure includes reporting options, which are being optimised, that indicate the number of expected notices, the number of notices generated and the number of erroneous notices. By the end of next December, the procedure will be further consolidated as regards the correspondence between notices generated and notices actually contained in files sent to OLOs.

Monitoring of the Wholesale CRM performance index by the Supervisory Office from 15 December 2014 to 12 January 2015 showed that after the last considerable increase recorded on 10 November 2014, the index for LLU AL services had gradually dropped to a figure of around 4.5%, while for LLU NAL services it stood at 2.5% (see figure 2).

Complaint by the Operator Welcome Italia "S03/13- Welcome Italia/increase in the physical deterioration of lines, handling of fruitless service interventions, SLA compliance and related bitstream service assurance penalties - Implementation of Undertakings Group no. 5 related to guarantees of transparency of the technical plans for the quality of the fixed access network".

During a hearing held in February 2013, and subsequently in a specific letter addressed to the Supervisory Board, the Operator Welcome Italia complained about critical aspects concerning the fulfilment of Undertakings, with reference to:

- *an increase in the physical deterioration of the lines on the access and transport sections;*
- *service problems, and in particular the provisioning of bitstream services on the Ethernet network;*
- *Telecom Italia charging for alleged fruitless service interventions;*
- *inadequacy of penalties paid by Telecom Italia for non-observance of SLAs, considered as not sufficiently high and not proportional to the difficulties encountered by the Operator.*

With reference, in particular, to critical aspects related to frequent deterioration and repeated access and transport failures, the Operator alleged that Telecom Italia had infringed the principle of equality of treatment.

The Supervisory Office, investigating the above complaint, notified in its Technical Report written pursuant to Article 3, paragraph 2 of Resolution no. 2/2009, that an apparent inequality in treatment between Telecom Italia and OLOs could be possible.

Consequently, with Resolution no. 9/2013[1] approved during its Meeting of 23 April 2013, the Supervisory Board started proceeding no. S03/13, pursuant to Article 11, paragraph 3 of its Internal Regulation, appointing the Supervisory Office to take all necessary measures.

The Supervisory Board also requested Welcome Italia to provide detailed information and specific data concerning the alleged disruptions.

Some of the issues reported in the complaint, such as faults in the transport section and not in the access section, are not in the scope of the Undertakings; however, the Complaint included some points that were relevant to issues regulated by the Undertakings, as regards in particular recurring faults, already examined by the Supervisory Board in the On-Going Project (Undertakings Group no. 5).

Between May and July 2013, Welcome gave the Supervisory Board information, including complete lists of the cases involved in the complaint. In particular, the Supervisory Board was informed that the issues were also the subject of a complaint made to the Authority.

[1] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_9_2013_Avvio_S03_13.pdf

The Supervisory Board therefore began to analyse data, also considering it advisable to request Telecom Italia to supply its own lists of complaints concerning customers of the Operator Welcome, in order to be able to conduct cross and comparative analyses between the various groups of elements.

The Supervisory Board, considering the impact these disruptions could have on the claimant, considered it appropriate to extend the terms for completing the analysis in order to further investigate the causes of the criticalities identified. The date for completing the investigation, which was initially set for 29 August 2013, was extended under Resolution no. 17/20132, and subsequently under Resolution no. 23/20133.

In January 2014, Telecom Italia attended a hearing. On this occasion, Telecom Italia recognised the reported disruptions, although it underlined the improvements in the fault rate during the period 2011 - 2013.

Subsequently, in February 2014, Welcome Italia attended a hearing, in order to better understand the Company's position concerning the quality level of the service provided by Open Access in supplying access connections.

After hearing the counterclaims of the claimant, the Supervisory Board ordered an extension of the proceeding times, with Resolution no. 7/20144, to further investigate the criticalities reported concerning, among others, procedures to manage symmetric connection faults.

The two Operators were requested to attend another hearing, on 15 May for Telecom Italia and on 11 June 2014 for Welcome Italia.

During these hearings, the Supervisory Board considered it appropriate to set up a specific joint technical working party between the Operators, in order to analyse and solve difficulties encountered, also involving the Supervisory Office and with the Supervisory Board acting as facilitator for solutions. The proposal was accepted by both Telecom Italia and Welcome Italia.

A first meeting was held in June 2014 at Welcome's headquarters in Massarosa, and a progress meeting was held on 23 September at the headquarters of the Supervisory Board. A subsequent meeting was held in October at Ancona, at a Telecom Italia work centre, with another progress meeting took place on 21 November 2014.

The Supervisory Office informed Operators about the importance of agreeing on the definition of "deterioration" and "disruption" in order to facilitate the operating procedures of both Telecom and Welcome. The two Operators agreed on this point, and decided to start analysis to find a technical definition of deterioration that they both agreed on, as well as joint solutions and technical answers that were as prompt, complete and adequate as possible in relation to single aspects claimed by Welcome Italia, and based on specific analysis of reported events.

At the end of 2014, the works of the technical working party were still ongoing, and the deadline for completion has been extended to 30 June 2015, by Resolutions no. 12/2014 and 20/2014[5].

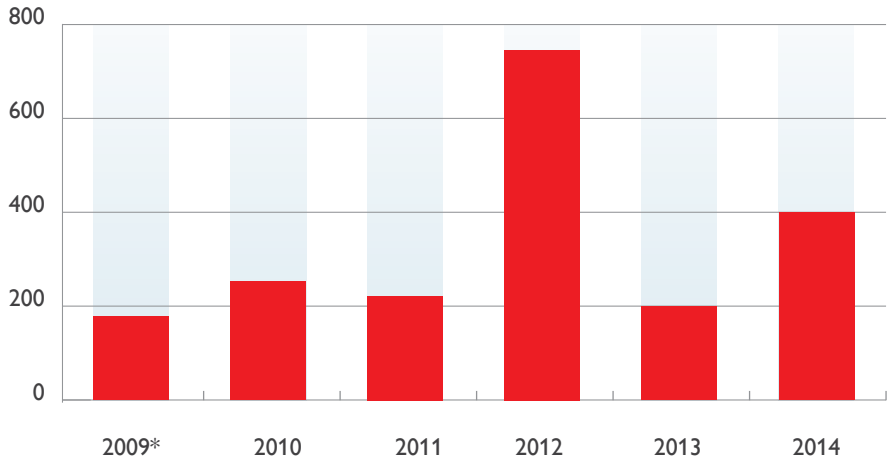
[2] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_17_2013.pdf
[3] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_23_2013.pdf
[4] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_17_2013.pdf
[5] http://organodivigilanza.telecomitalia.it/pdf/Determinazione-n-12-2014-S03.pdf
http://organodivigilanza.telecomitalia.it/pdf/Determinazione-n-20-2014.pdf

3.2 COMPLAINTS AND CLAIMS NOT WITHIN THE COMPETENCE OF THE SUPERVISORY BOARD

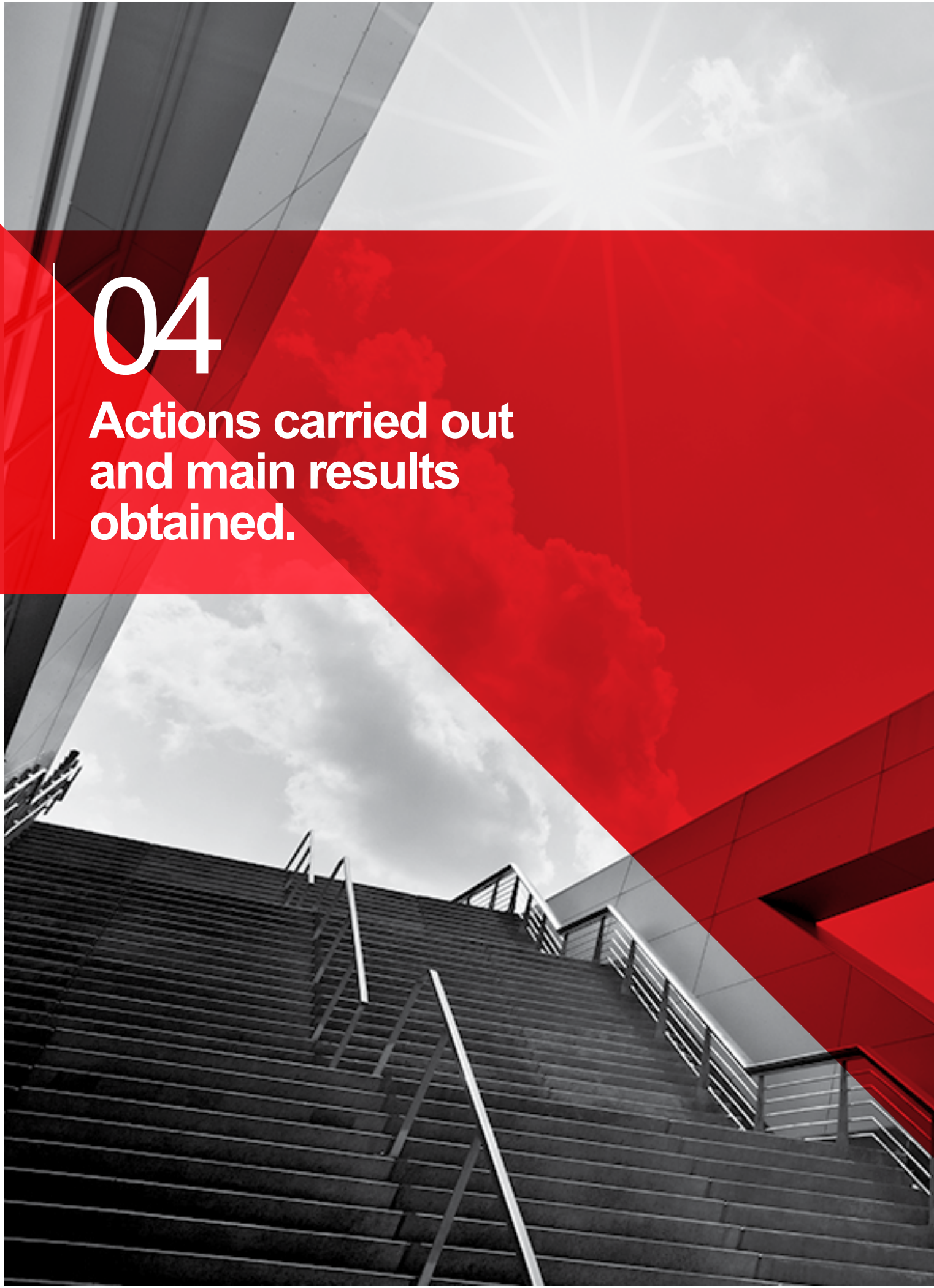
In 2014, the Supervisory Office received 406 complaints regarding disruptions and problems that do not fall within the mandate assigned to the Supervisory Board and, on the contrary, concern the management of commercial dealings with Telecom Italia and OLO customers.

In accordance with the Internal Regulation of the Supervisory Board, all the above mentioned complaints were sent by the Supervisory Office to the competent internal departments of Telecom Italia, and a timely response was sent to customers concerned.

The following graph shows the number of complaints received by the Supervisory Office in the period from 1 April 2009 to 31 December 2014.



(*) In the 2009 the data relates to the April-December period only



04

Actions carried out and main results obtained.

4.A ORGANISATION OF A SYSTEM TO MONITOR THE PERFORMANCE OF SMP SERVICE PROVISION

4.a.1 - The current basket of performance indicators

As provided for by Undertakings Group no. 3, Telecom Italia introduced a periodic monitoring system of Open Access performance relative to SMP service provision. This monitoring system comprises a number of Key Performance Indicators (KPI) that compare values identified from the Retail and Wholesale segments for a number of Delivery and Assurance parameters, such as the activation time of a new line, or the time necessary to repair a fault. The aim is to verify actual compliance with the principle of internal.external equality, by comparing the performance of the two segments.

The basket of indicators includes the two KPIs that record the performance of systems used by Telecom Italia for its own processes (service availability times, system unavailability times).

Other indicators, agreed on with OLOs, following technical working parties in 2009 and 2010 were added to the basket initially proposed by Telecom Italia.

The following table shows the complete set of KPIs:

KPI		Retail	Wholesale
KPI 1	POTS Delivery	Retail percentage of on-time appointment	% of EDD compliance
		Percentage of work orders completed within 20 calendar days	Percentage of work orders completed within 20 calendar days
		Average SPM OA working time in calendar days	Average SPM OA working time in calendar days
	Asymmetric Broadband Delivery	Percentage of work orders completed within 10 calendar days without technical assistance	Percentage of work orders completed within 10 calendar days without technical assistance
		Percentage of work orders completed within 20 calendar days with technical assistance	Percentage of work orders completed within 20 calendar days with technical assistance
		Percentage of work orders completed within 30 calendar days with technical assistance	Percentage of work orders completed within 30 calendar days with technical assistance
		Average SPM OA working time in calendar days	Average SPM OA working time in calendar days
	Asymmetric Broadband Delivery	Average SPM OA working time in calendar days	Average SMP OA working time in calendar days
	New Delivery Process Indicators: Network KO/Single Queue	Percentage of work orders in single queue solved	Percentage of work orders in single queue solved
		Ageing in Single Queue	*Ageing* in Single Queue
		Percentage of work orders closed on time	Percentage of work orders closed at EDD
		Percentage of network KO work orders	Percentage of network KO work orders

KPI		Retail	Wholesale
KPI 2	POTS Lines Assurance	Average repair times expressed in working hours	Average repair times expressed in working hours
		Percentage TTs resolved within two working days from the complaint	Percentage TTs resolved within two working days from the complaint
		Percentage of TTs recurring within 30 days	Percentage of TTs recurring within 30 days
		Percentage of claimants circuits	Percentage of claimants circuits
	Asymmetric Broadband Assurance	Average repair times expressed in working hours	Average repair times expressed in working hours
		Percentage of TTs resolved within two working days from the complaint	Percentage of TTs resolved within two working days from the complaint
		Percentage of TTs recurring within 30 days	Percentage of TTs recurring within 30 days
		Percentage of TTs opened within 14 days of activation	Percentage of TTs opened within 14 days of activation
	Symmetric Broadband Assurance	Average repair times expressed in working hours	Average repair times expressed in working hours
		Percentage of TTs resolved within two working days from the complaint	Percentage of TTs resolved within two working days from the complaint
		Percentage of TTs recurring within 30 days	Percentage of TTs recurring within 30 days
		Percentage of TTs opened within 14 days of activation	Percentage of TTs opened within 14 days of activation
KPI 3	Services availability	• POTS services ADSL services Symmetric bitstream services	
KPI 4	Wholesale systems unavailability	• POTS and broadband delivery POTS and broadband assurance	
		• Interface systems	

4.a.2 - Provision of a new basket of indicators

In the last few years, a need to revise the basket of indicators has been pinpointed, in order to summarise some KPIs to the benefit of others considered more significant and worthy of further investigation. In 2011, meetings were therefore held between Telecom Italia, the OLOs and AGCom's Undertakings Monitoring Group (GMI) with a view to simplifying and streamlining the basket of indicators. In 2013, Telecom Italia sent the Authority a detailed technical document on individual KPIs agreed on, at the time, by the working party.

Once the new KPIs are approved by AGCom, the Supervisory Board will also verify them in accordance with the Undertakings. The Supervisory Board has always focussed proactively on its duty to control Open Access Performance as indicated by KPI values. From as early on as 2013, in a letter sent to the Authority, reminding it of Resolutions adopted for the monitoring of KPI[1], the Chairman of the Supervisory Board, Professor Sassano, pointed out that some indicators did not appear to be effective for the task initially established by Resolution no. 718/08/CONS, while it seemed appropriate to specifically monitor some special aspects of the Delivery and Assurance processes.

The Supervisory Board concluded hoping that a new set of KPIs would be approved, and saying that it was available to continue its role of controlling Open Access performance in relation to the new basket.

In February 2014, AGCom responded to the Supervisory Board Chairman's request, reporting on the progress of the working party that the Authority is involved in with Operators to share the new basket of KPIs. Working party activities had stopped when Telecom Italia suggested separate network infrastructure (June 2013), and were then resumed. The Authority also provided information about activities performed by the working party.

On 7 April 2014, during a hearing at the Supervisory Board's headquarters, Telecom Italia explained details (calculation formulas and technical specifications) about the KPIs identified by the joint AGCom-Telecom-OLO technical working party, which are being approved.

After this hearing, the Chairman Mr Sassano wrote to the Authority on 16 April 2014, stating that in the opinion of the Supervisory Board, the new basket of indicators included some aspects to focus on and further investigate. In particular, the Chairman pointed out the need to include new KPIs in the new basket, to measure Telecom Italia's performance on NGANs, and the advisability of renewing the set of indicators relative to the availability percentages of services and wholesale systems (KPIs no. 3 and no. 4 of the Undertakings Groups 3 and 4).

During a hearing of the Supervisory Board held at AGCom on 1 July 2014, the Supervisory Board highlighted the need to rework performance indicators based on in-depth process analysis, hoping that a set of flexible KPIs would be created, that can adapt to changes arising from variations in the business activities developed by Operators.

The need to revise the basket of performance indicators was confirmed by the Supervisory Board in another letter sent to the Authority on 13 October 2014. In this letter, it pointed out that the measurement mechanisms used were not suitable in some cases for checking actual compliance with the principle of non-discrimination in relation to processes for the supply of SMP services: in a context that has evolved since the adoption of Resolution no. 718/08/CONS and the Undertakings, the Supervisory Board has encountered increasing difficulty in effectively monitoring Open Access performance, and in the absence of a new set of KPIs indicated by the Authority - it has had to add *motu proprio* new indicators to the existing basket.

In fact, the letter refers to the new CRM indicator identified by Telecom Italia, as prompted by the Supervisory Board, in order to measure wholesale CRM performance. This indicator had been made known to

[1] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n.5.2012_Chiusura_vigilanza_KPI_Relazione_conclusiva-Light.pdf

the Authority in a letter of 16 June which the Supervisory Board had sent to Telecom Italia and as a copy to AGCom; this letter describes the context that led to the definition of the new indicator, and the relative calculation formula.

In this regard, AGCom issued Telecom, in Resolution no. 309/14/CONS of 19 June 2014, with a notice concerning, inter alia, the malfunctioning of wholesale CRM, requesting the Operator to formulate new KPIs that could provide useful indications for preventing problems with processes and systems.

The importance given by the Supervisory Board to the monitoring of performance indicators, and in particular, the indicator formulated during the year to verify wholesale CRM performance - considered by the Supervisory Board as an actual KPI - is further outlined in a note sent to AGCom in which the Authority was informed of activities for verifying this KPI, and the relative performance levels identified *(for more details, see the section on Complaint S02/13 in chapter 5)*. In the note, the Supervisory Board referred to the ineffectiveness of KPI no. 4 in the Undertakings basket in monitoring CRM.

In a context that has evolved since the adoption of Resolution no. 718/08/CONS and Undertakings, the Supervisory Board has encountered increasing difficulty in effectively monitoring Open Access performance, and in the absence of a new set of KPIs indicated by the Authority - it has had to add *motu proprio* new indicators to the existing basket.

4.a.3 - Identification of Key Performance Objectives (KPOs)

The Undertakings required the identification of specific Key Performance Objectives (KPOs)[2], which, when compared with the performance identified by the KPIs, had to provide information on the quality levels of Open Access activities in service provision. These KPOs had to be identified annually by the Authority, but to date this has not happened.

The Supervisory Board considered it appropriate to indicate this gap, referring to it in the above letter sent by the Chairman Mr Sassano to AGCom on 10 December 2013. On this occasion, the Supervisory Board stated that it had defined suitable evaluation criteria to remedy this shortcoming and to have tools available for formulating a merit rating of performance identified by data sent by Telecom Italia. The Supervisory Board also hoped it would receive annual objectives (KPOs) from the Authority, possibly identified in terms of the quality and quantity of services provided.

In the reply given by the Authority to the Supervisory Board on 21 February 2014, AGCom stated that the issue of KPOs had been dealt with by the joint working party with Operators coordinated by the Undertakings Monitoring Group (GMI), but had been considered as marginal by the participants, even in view of the key objective of identifying an updated basket of KPIs.

However, the Supervisory Board considers that the issue of KPOs is essential for correctly evaluating the performance of Telecom Italia and above all for correctly formulating a rating of actual compliance with the principle of internal-external equality of treatment.

Resolution no. 18/2014[3] is relative in this context, and was adopted during the Meeting of 28 October, in which the Supervisory Board started the proceeding *"P01/14 - Identification of specific KPOs (Key Performance Objectives) concerning the system to monitor the internal/external equality of treatment - Implementation of Undertakings Group no. 3 relative to the establishment of a system to monitor the performance of SMP services"*.

The proceeding concerned the definition of internal KPOs that can consolidate the monitoring conducted by the Supervisory Board, increasing, in quality terms, the effectiveness of the rating of the performance identified by relative KPIs periodically sent by Telecom Italia to the Supervisory Board. The Supervisory Board stated that this activity would be stopped if the Authority had to proceed with a similar activity.

On 6 November, a first meeting was held on the issue with Telecom Italia, to start works, and subsequently a work programme was defined.

4.a.4 - Certification of basic data used for calculating the KPIs and for investigations conducted by the Supervisory Office

Telecom Italia had started, as instructed and supervised by the Supervisory Board, a project to validate the basic data used for calculating the Key Performance Indicators. The aim was to provide an element of certainty about the accuracy of data which Telecom uses to calculate performance indicators. In particular, the purpose of the project was to validate the calculation methodologies used for the KPIs, and the mechanism to extract basic data from Telecom Italia's database. This project was assigned to Catania University which, on the outcome of the analyses performed, certified the data's validity.

In order to provide an element of certainty about the accuracy and "purity" of data - i.e. not changed by anyone during processes - an "armoured" database was set up guaranteeing the non-modifiability of data used to calculate the performance indicators based on am access control system.

[2] In particular, see point 3.3. of the Undertakings, which requires the KPOs to be defined annually in conjunction with the Authority.
[3] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_18_14.pdf

In addition, a data sampling model was created that enables checks to be made, as required, on whether the data supplied by Telecom Italia matches the data extracted from the systems.

Between 2011 and 2012, work was carried out to certify the indicators initially proposed by Telecom and subsequently the indicators identified by Telecom Italia and OLO joint technical working parties in 2010.

The Supervisory Office has conducted regular random checks, each year, on the accuracy of the functioning of the certification system and basic data. This check took place for 2014, in compliance with requirements in Resolution no. 6/2014[4].

On 19 December 2014, a first meeting was held between members of the Supervisory Office and Open Access, during which Assurance data for the first half of the year were verified; subsequently, on 21 January 2015, delivery data for the first six months of 2014 were verified and on 6 February 2015 data for the July-December period for both processes were checked.

The sampling plan was oversized for the sake of operational simplicity, and in order to have a greater certainty that minimum values were always complied with. The data was sampled from the databases in the presence of Open Access and Supervisory Office staff, following the procedure agreed with Catania University.

No criticalities were identified that could give rise to doubts about the accuracy of data used by Telecom Italia: in fact no differences were found between the data extracted from the systems and the corresponding data of the operating databases used to calculate the KPIs as of Undertakings Group No. 4. As already happened with extracted 2013 data, small differences relative to the failure to enter a field concerning SLA compliance were noted. This aspect did not affect analysis objectives, as it was not included in the elements used to calculate the KPIs, and its numerical weight was however insignificant.

In its meeting on 19 February 2015, the Supervisory Board approved Resolution No. 5/2015 containing the Supervisory Office's final report on the analysis it conducted. With this report, the Supervisory Office confirmed that the data used to calculate the KPIs are reliable as they had not been changed.

4.a.5 - Start-up of a project for certifying the new Telecom Italia NGOM database and for KPOs

In 2014, Telecom Italia introduced a new database for delivery processes, with the introduction and gradual implementation of the NGOM system. This led to a change in the data sources used and the need to review the certification process for data entered in the Datawarehouse, considering the changed data sources, in order to qualify the data in the system and flows to other systems downstream.

The Supervisory Board therefore informed Open Access of the advisability of adopting this approach; Open Access agreed on this point with the Supervisory Board and it was decided to use a specific consultancy service for this purpose.

The Supervisory Board selected Catania University - which had already developed a methodology to certify data of processes and systems prior to the introduction of the NGOM system - as the certification body.

The methodology adopted by Catania University can also be used for the indicators in the new basket currently being defined by the Authority/Operators working party, in order to ensure the same level of confidence achieved with the current KPIs.

[4] http://organodivigilanza.telecomitalia.it/pdf/Determinazione-n-6-2014.pdf

As regards the process to identify KPOs, referred to previously, a specialist certification body had to be selected, that could identify, for each KPI, a range of change in differences between performance recorded for the Retail segment and for Wholesale segment, within which process performance could be considered as equivalent. In this case as well, the Supervisory Board considered it appropriate to appoint Catania University, to ensure continuity, considering works already started.

On 2 October 2014, a first meeting was held with the certification body to start works to validate data resulting from the introduction of the NGOM system, and the KPOs.

4.B - ANALYSIS OF EQUALITY OF TREATMENT KPIs

As provided for by Undertakings Group no. 4, Telecom Italia has established a system to monitor the performance of SMP services, in order to make the services provided by Open Access transparent. The results of this diverse basket of Key Performance Indicators (KPIs) are periodically communicated by Telecom Italia to the Authority, to OLOs and to the Supervisory Board.

This has enabled the Supervisory Board, since it was established in 2009, to verify any unequal treatment in services provided to Telecom Italia's Retail Division for the Incumbent's customers and in services provided to the Wholesale division for customers of OLOs. It should be noted that the aim of the system is not to assess compliance with SLAs or to identify the quality of Open Access performance in absolute terms.

The basket of KPIs initially proposed by Telecom Italia was subsequently supplemented with additional indicators suggested by OLOs, which were therefore added to initial KPIs.

In 2014, Telecom Italia submitted regular monthly KPI progress reports to the Supervisory Board. The results of analyses conducted by the Supervisory Board are reported below.

For a certain period during the year, Telecom Italia delayed sending the reports containing the KPIs, in particular with reference to Delivery indicators; Mr Sassano, Chairman of the Supervisory Board, sent a letter in August requesting Telecom Italia to send the reports, and also asking for an explanation.

Telecom Italia replied with the following reason for not sending some of the data: the matter depends on problems which came to light during the migration process from old computer data processing systems to the new NGOM system. Telecom then sent the missing data, to complete performance overview month by month for all of 2014.

Overall KPI trend in 2014

KPI 1 - Voice and Broadband Delivery

Fig.	POTS services	
1	% appointment compliance / EDD [1]	
2	% connections activated within 20 days[1]	
3	average connection time (calendar days)[1]	
	Broadband	
4	% of connections made within 10 days without technical assistance required	
5	connections made within 20 days with technical assistance required	Information requested with Resolution no. 21/2013
6	connections made within 30 days with technical assistance required	Information requested with Resolution no. 21/2013
7	average connection time (days)	Information requested with Resolution no. 21/2013
8	average business connection working time (calendar days)[2]	Information requested with Resolution no. 21/2013

Service levels in the OLO segment proved to be higher than or equal to the Retail segment.

Service levels proved to be higher for the *Retail* segment than the OLO segment, but the situation is not critical since the gap is extremely small or can be justified by technical reasons.

Service levels proved to be higher for the *Retail* segment compared to the OLO segment, with possible serious issues to be investigated.

[1] Performance differential between the segments is contained and/or justified by the different process structure.

[2] Indicator for which further information was requested under Resolution no. 16/2011.

POTS Delivery

All indicators show a better performance for the Retail segment; in any case, performance was not deemed critical, since the performance differential was limited, or attributable to technical reasons.

This is the case, for example, for the indicator measuring the level of compliance with voice delivery appointments. For customers of OLOs, the Open Access department receives an "expected delivery date" (the so called DAC, Data di Attesa Consegna), which is the date by which the system must be activated, whereas for Telecom Italia customers it is an actual appointment date.

The situation is more distinct for the third KPI, the average processing time (which is longer than 2 calendar days for Wholesale services). The weight of technical structural elements, attributable to the difference in the process between the Retail segment (Telecom Italia customers agree on a specific date for an appointment) and the Wholesale segment (OLO customers receive an EDD (Expected Delivery Date) from Open Access, should also be noted.

Broadband Delivery

All the indicators show better performance for the Retail segment. However, for some indicators (**KPI no. 4** - *percentage of systems activated within 10 calendar days without technical assistance required;* **KPI no. 6** - *percentage of systems activated within 30 days with technical assistance required*) the difference is not so marked, while for other indicators it is more significant. In January 2014, the Supervisory Board requested Telecom Italia to explain these deviations (Resolution no. 21/2013); Telecom Italia provided evidence of the technical reasons for the deviations.

As regards the Retail percentage of *Work orders completed within 20 calendar days* (**KPI no. 5**), the gap in December was 6.1%, down compared to 11.7% at the start of the year.

The *average processing time in calendar days* (**KPI no. 7**) is 3 days shorter for operations conducted for Telecom Italia customers (Retail: 6.4 calendar days: Wholesale: 9.4 calendar days).

As regards **indicator no. 8**, *average business connection working time*, figures for the last four months of the year are not available. The figure for August indicated times that were 13 days longer for the Wholesale segment. The Supervisory Board had conducted investigations in 2011, which identified that the difference in performance benefiting Telecom Italia Retail was due to a process change (see Resolutions no. 16/2011 and 5/2012[1] of the Supervisory Board). The Supervisory Board had also requested further information about this indicator, in Resolution No. 21/2013[2].

KPI 1 - New Delivery Process

Given the low volumes involved, NDP performance indicators (% Single Queue WOs resolved; % WOs completed by appointment date/EDD; % WOs in the KO Network; Single Queue waiting times) are still not entirely significant.

Moreover, for the first few months of the year, Telecom had difficulties in identifying data due to computer system anomalies. In this regard, the Supervisory Board had requested information about the causes of this failure to identify and send KPIs, as well as a provisional estimate of unpublished figures, initially in 2013, with Resolution no. 21/2013, and subsequently in a letter sent by the Chairman Mr Sassano to Telecom Italia in August 2014. Telecom Italia had replied to this letter, explaining the technical reasons preventing it from identifying data, which were then recorded and duly sent to the Supervisory Board.

The figures provided show a more favourable treatment for OLOs, with 97.6% of single queue WOs completed within 60 days, against 70.5% for the Retail segment.

[1] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n.5.2012_Chiusura_vigilanza_KPI_Relazione_conclusiva-Light.pdf
[2] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_21-2013-Avvio_vigilanza_su_KPI.pdf

KPI 2 - Voice and Broadband Assurance

Fig.	POTS services	
9	average time for repair of voice connections in working hours[1]	
10	faults resolved within 2 days of being reported	
11	POTS services faults recurring within 30 days	
12	Percentage of claimants circuits	
	Asymmetric broadband	
13	average time for repair of broadband ADSL in working hours	
14	faults resolved within 2 days of being reported	
15	% of ADSL faults recurring within 30 days[2]	Information requested with Resolution no. 21/2013
16	% of ADSL faults reported within 14 days of activation[3]	Information requested with Resolution no. 21/2013
	Symmetric broadband	
17	average symmetric bitstream broadband repair times in working hours	
18	% of symmetric bitstream broadband faults repaired within 2 working days	
19	symmetric broadband faults recurring within 30 days	Information requested with Resolution no. 21/2013
20	% of open faults reported within 14 days of activation[4]	Information requested with Resolution no. 21/2013

Service levels in the OLO segment proved to be higher than or equal to the Retail segment.

Service levels proved to be higher for the *Retail* segment than the OLO segment, but the situation is not critical since the gap is extremely small or can be justified by technical reasons.

Service levels proved to be higher for the *Retail* segment compared to the OLO segment, with possible serious issues to be investigated.

1 Performance differential between the segments is contained and/or justified by the different process structure.

2 Indicator for which further information was requested under Resolution no. 16/2011.

3 Performance differential justified by the construction of the indicator's formula.

4 KPI which cannot be compared due to the low volumes in the retail component.

Voice Assurance

All the indicators showed better performances for the customers of Other Licensed Operators.

Broadband Assurance

Asymmetric broadband

Regarding the **asymmetric** service, the two KPIs showing better performances for the Retail segment (**KPI no. 15**: *percentage of ADSL faults recurring within 30 days*; **KPI no. 16**: *percentage of faults opened within 14 days of activation*) were already analysed by the Supervisory Board. Telecom Italia provided technical reasons for this performance, in 2011.

With regard to the first of these two indicators, in fact, the Supervisory Board, through its Resolution No. 16/2011, requested information on the matter. It was found that the Open Access performance indicators were heavily affected by differences in the percentage of naked lines in the two segments, which was mini-

mal for Retail, while it had a significant impact on the Wholesale segment. Naked lines are used exclusively for data services only, whereas shared lines are used for both data and voice services. Faults occurring on a shared line can be attributed by the end user to either the voice or ADSL service, whereas on naked lines, faults are always attributed to ADSL services, even where they are connected to voice services. This results in a markedly higher rate of recurring faults on naked lines. It must also be considered that SLAs for remedying faults are far stricter in the case of OLO faults (for Retail SLAs, the standard resolution time for faults is within two working days from the complaint, while for Wholesale SLAs, trouble tickets (TTs) must be resolved within 24 hours from the complaint, resulting in shorter processing times, work performed at inconvenient hours, when customers cannot always be contacted, logistic and environmental conditions that are not optimal, and, ultimately, a greater likelihood of faults recurring. Said investigation was closed by the Supervisory Board by Resolution No. 5/2012. In 2013, the Supervisory Board, in Resolution no. 21/2013 asked Telecom Italia to provide information on the underlying causes of the measured data, and the total numbers of faults and connections for the Retail and OLO segments.

The Open Access performance indicators were heavily affected by differences in the percentage of naked lines in the two segments, which was minimal for the Retail segment, while it had a significant impact on the Wholesale segment.

The performances shown by the KPI concerning the *percentage of faults within 14 days of activation* (**KPI No. 16**) on the contrary can be accounted for by the way the calculation formula is constructed. The indicator is defined as the number of TTs opened within 14 days of activation as a proportion of total TTs for the reference period. Since the total number of TTs in the Retail segment is much higher than the total number of TTs for other licensed Operators, the resulting rate is necessarily higher for OLOs. The Supervisory Board asked Telecom Italia to reformulate this indicator, using the number of lines activated in the period as the denominator: the 2011 values recalculated using this formula showed a difference of 0.8 percentage points to the advantage of the Wholesale segment (7.6% for Retail versus 6.8% for Wholesale), which overturns the 12.9 percentage points in favour of the Retail segment (2.8% for Retail against 15.7% for Whole sale) calculated from the figures initially reported. The Supervisory Board in Resolution no. 21/2013 also asked Telecom Italia to provide the figures for 2013 resulting from the same reformulation, that is using the number of activations for the period as the denominator.

Average ADSL broadband repair times (**KPI no. 13**), which had been quicker for the Wholesale segment in 2013, were instead quicker for the Retail segment.

Symmetric broadband

The **KPI no. 17** (*average SHDSL broadband / symmetric bitstream repair times*) indicates slightly quicker operation and repair times (approximately 1 hour) for the Retail segment.

As regards **KPI no. 19** (*percentage of symmetric bitstream faults recurring within 30 days*) shows differences in performance in favour of the Retail segment. In 2012, this figure was better for the Wholesale segment, while in 2013 the trend reversed and is still ongoing. It should also be noted that the volumes analysed are extremely limited.

Lastly, **KPI no. 20** is not significant given the very low volumes analysed.

In this case too, however, the Supervisory Board deemed that it was advisable to investigate the underlying reasons for the performances that were measured; Resolution no. 21/2013, in fact, also includes some requests regarding these two indicators. In particular, Telecom Italia was asked:

- with regard to KPI 19, to provide information on the underlying causes of the differences in the reported values; a description of the processes applied to OLO customers and to Retail customers; the total numbers of lines activated during the year broken down between the two segments and the monthly volumes of activated lines;
- for KPI 20, to provide the data resulting for 2013 according to the above reformulation, that is using the number of activations in the period (see KPI 16).

KPI 3 - Service Availability

The indicator is calculated using the following formula:

$$\text{Availability time} = \frac{\text{Actual time}}{\text{Theoretical time}} * 100$$

where:
The *Actual Time* is the theoretical time less average downtime for the user base experiencing downtime; the *Theoretical Time* is the observation period multiplied by the average active user base for the same period.

This therefore indicates the service availability time percentage calculated by comparing the actual operating time of a service to the technical time when the service should have worked.

During 2014, no criticalities concerning KPI 3 were identified; performance relative to service availability stayed at very high levels.

KPI 4 - Unavailability of Wholesale Systems

The indicator, which shows the percentage of time during which computer systems supporting Delivery and Assurance processes are not available, is calculated according to the following formula:

$$\text{Availability time} = \frac{\text{Actual time}}{\text{Theoretical time}} * 100$$

where:
the *Actual Time* is the theoretical time less average downtime for the user base experiencing downtime;
the *Theoretical Time* is the observation period multiplied by the average active user base for the same period.

The percentage unavailability and percentage availability are complements equalling 100. Data are aggregated for each service in order to highlight any effects on the related process indicators.

KPI 4 analyses three groups of data:

- percentages of Delivery system unavailability;
- percentages of Assurance system unavailability;
- availability of delivery interface management applications.

The performance levels for KPI 4, which were the same as those of KPI 3, were more than satisfactory, since the percentages of system unavailability remained at very low levels, and in many cases were equal to 0%.

ANALYSIS OF INDIVIDUAL KPI TRENDS IN 2014

KPI 1 - Voice Delivery

Compliance with RETAIL Appointments vs. WHOLESALE EDDs

In 2014, the Retail segment performed better than the Wholesale segment. However, the differential gradually eased off during the year: the 3.3% gap recorded in January gradually fell, to reach 0.6% in December. The progressive figure for the end of the year was 97.4% for the Retail segment, against 96.8% for the Wholesale segment.

The performance results were also influenced by process differences between the two segments. For the customers of OLOs, Open Access receives an "Expected Delivery Date", which is the date by which the system must be activated, whereas for Telecom Italia customers, the department receives an actual appointment date.

N.B. the graphs below show:

- values for the **TELECOM ITALIA RETAIL** segment in **RED**
- values for the **WHOLESALE** segment in **GREY**

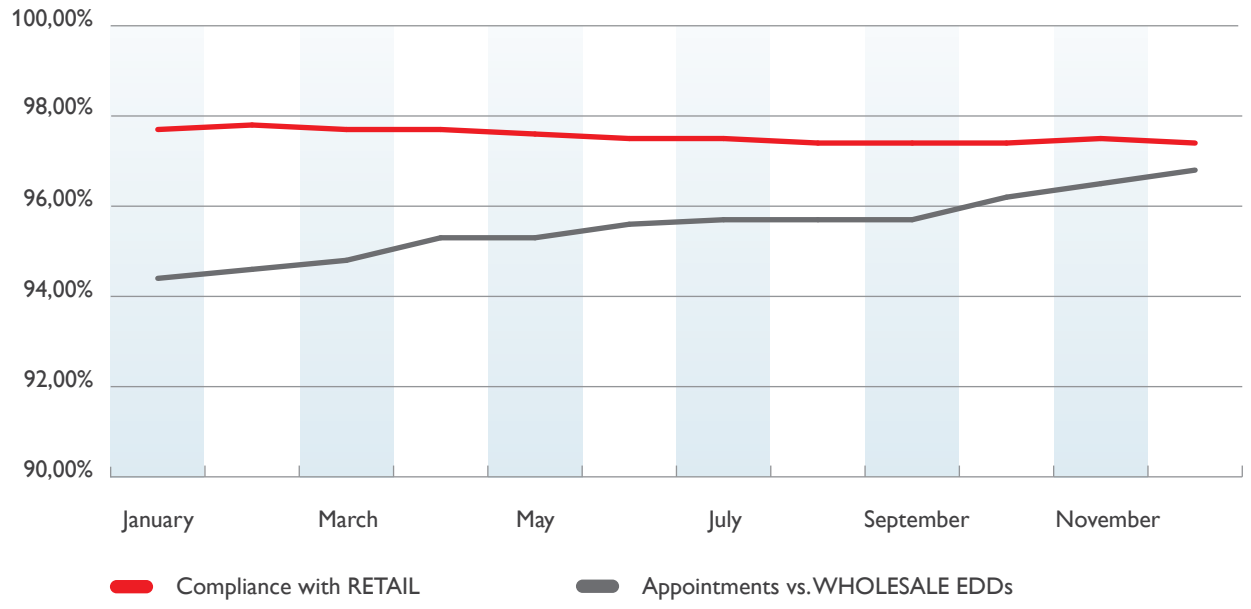


Figure 1 - Percentage of compliance with appointments.

Percentage of lines activated within 20 calendar days

The percentage of lines activated by Open Access within 20 calendar days in December was higher for the Retail segment (95.8% versus 92.7% for Wholesale); however, as with the previous indicator, the gap in this case gradually declined, from 6% in January to 3.1% in December.

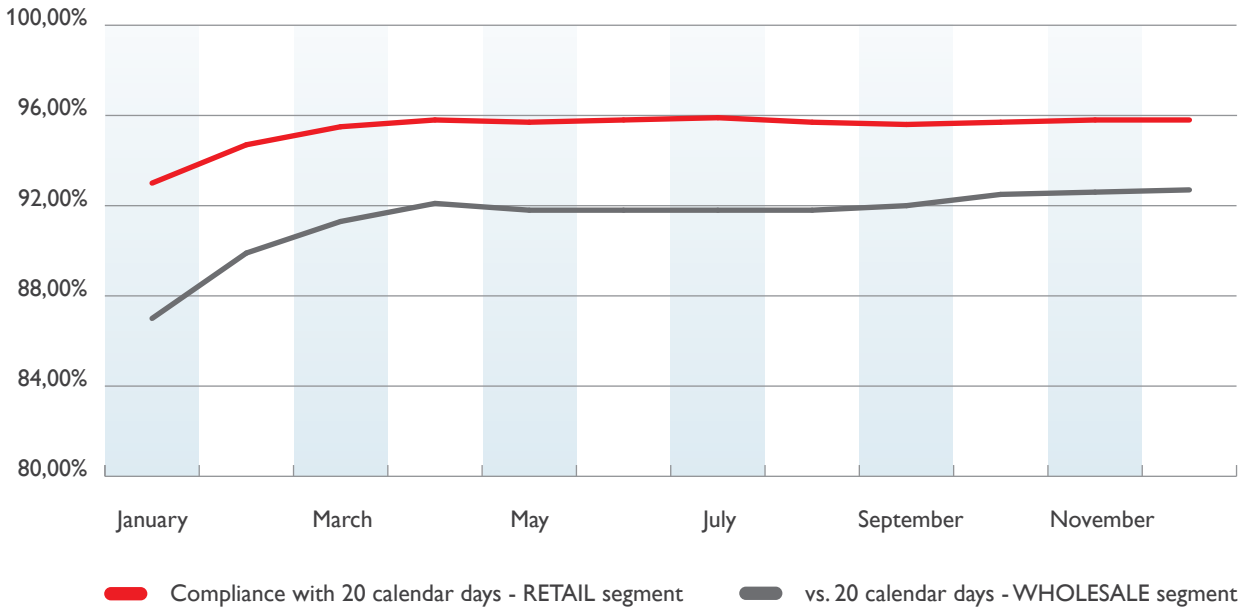


Figure 2 - Percentage of lines activated within 20 calendar days.

Average voice delivery processing time (calendar days)

The average voice delivery processing times gradually fell for both segments during the first few months of the year, and were then constant.

Shorter times were recorded for the Retail segment; the average time difference over the year was approximately 2 days, with a year end value of 9.2 days for the Wholesale segment against 7.2 days necessary to connect the lines of Telecom Italia Retail customers.

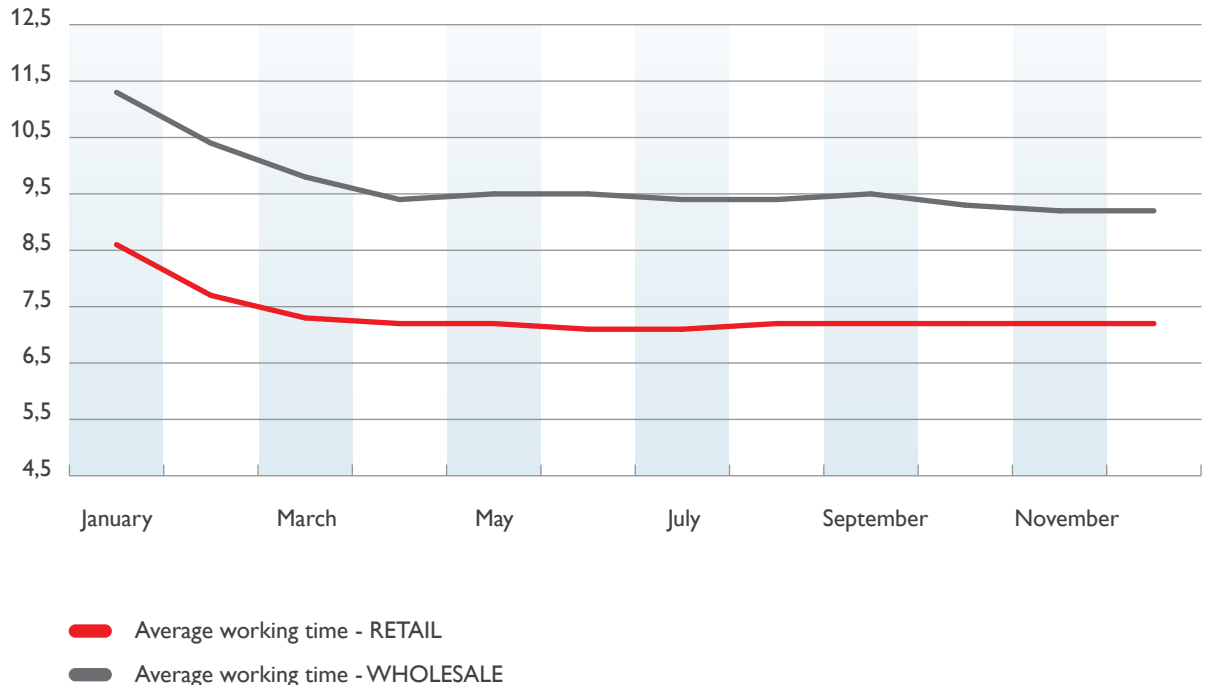


Figure 3 - Average processing time in calendar days.

KPI 1 - Broadband Delivery

Lines activated within 10 calendar days - without technical assistance

The percentage of broadband lines activated within 10 calendar days without on-site technical assistance was basically the same in 2014 for both segments considered.

Performance improved slightly during the year, and the figure for December stood at 95.7% for the Retail segment and 95.1% for the Wholesale segment.

The indicator in question concerns Alice packages for Telecom Italia customers and asymmetric bitstream packages for OLO customers.

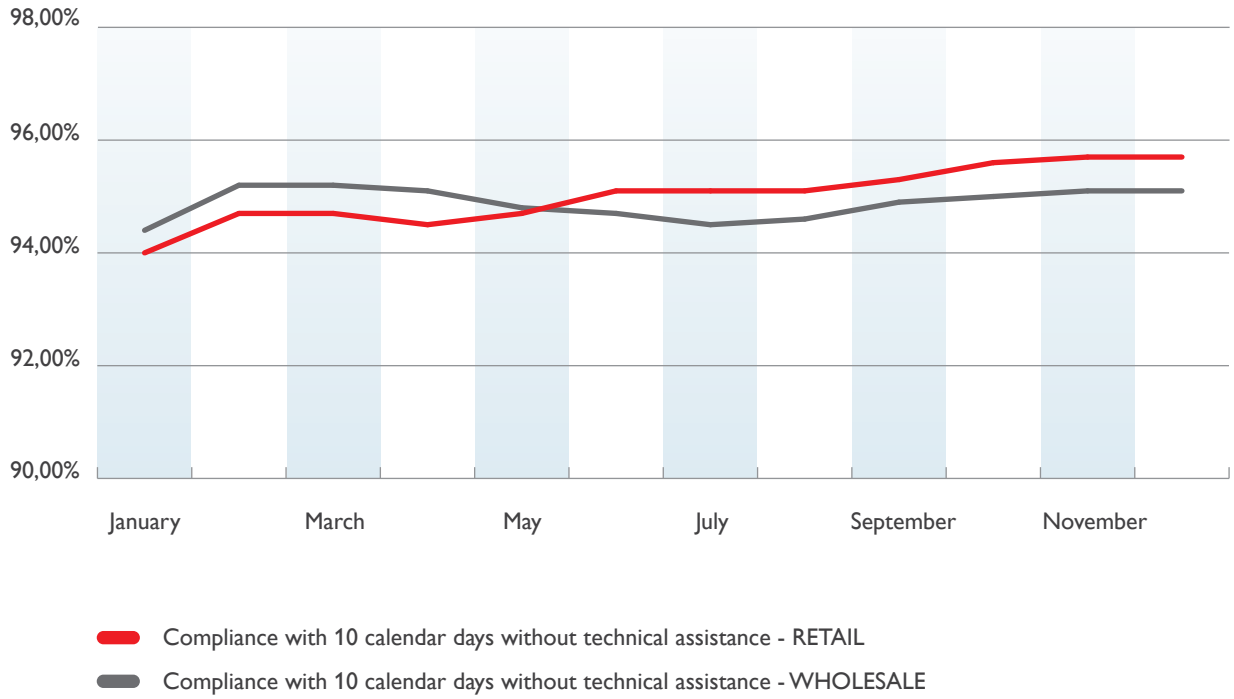


Figure 4 - Percentage of lines activated within 10 calendar days without technical assistance required.

Lines activated within 20 calendar days - with technical assistance required

The percentage of lines activated within 20 days with on-site technical assistance provided was 94.4% for the Retail segment against 88.3% for the Wholesale segment.

The level of performance for the Retail segment was therefore very high, with a delta of approximately 6%. The differential between the two segments therefore fell compared to the figure of nearly 12% in January and 8% in February.

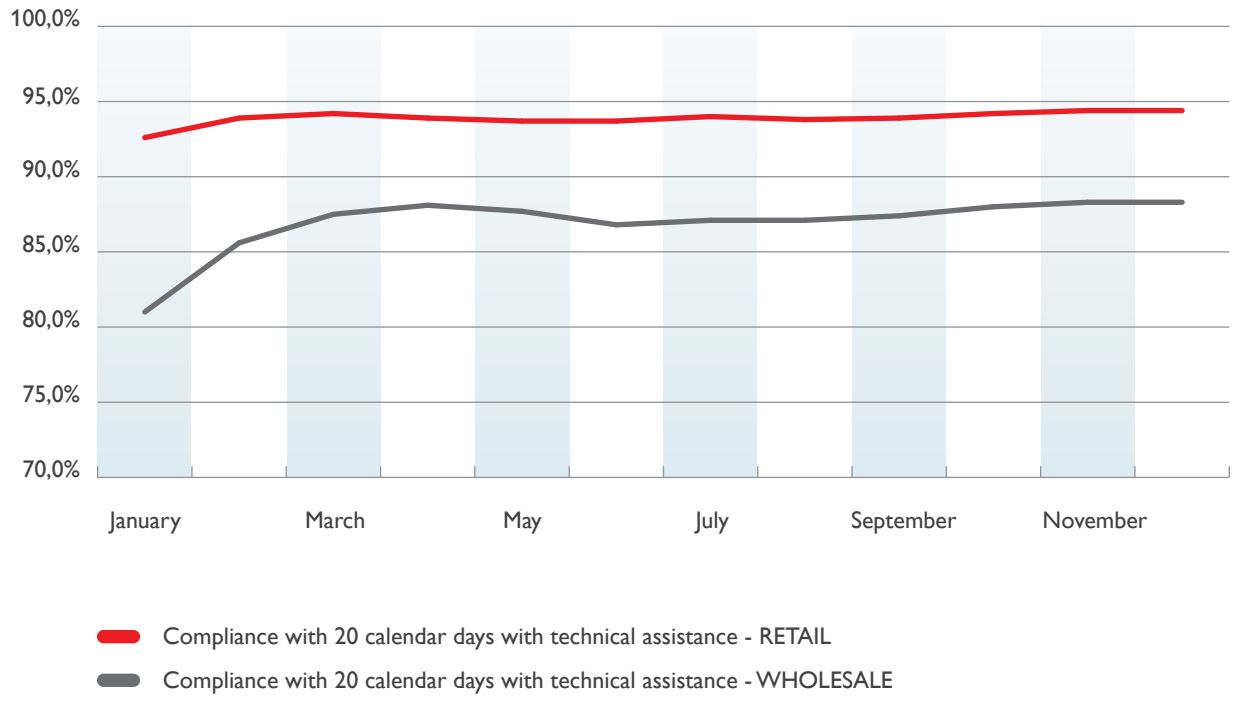


Figure 5 - Percentage of lines activated within 20 calendar days with technical assistance required.

Lines activated within 30 calendar days - with technical assistance

As regards the percentage of lines activated within 30 days with technical assistance required, performance was better in the Retail segment.

In December, the progressive value stood at 97.3% for the Retail segment and 94.3% for the Wholesale segment, with a gap of 3 percentage points. This indicator is one of the indicators for which the Supervisory Board asked Telecom Italia to provide further information in Resolution no. 21/2013.

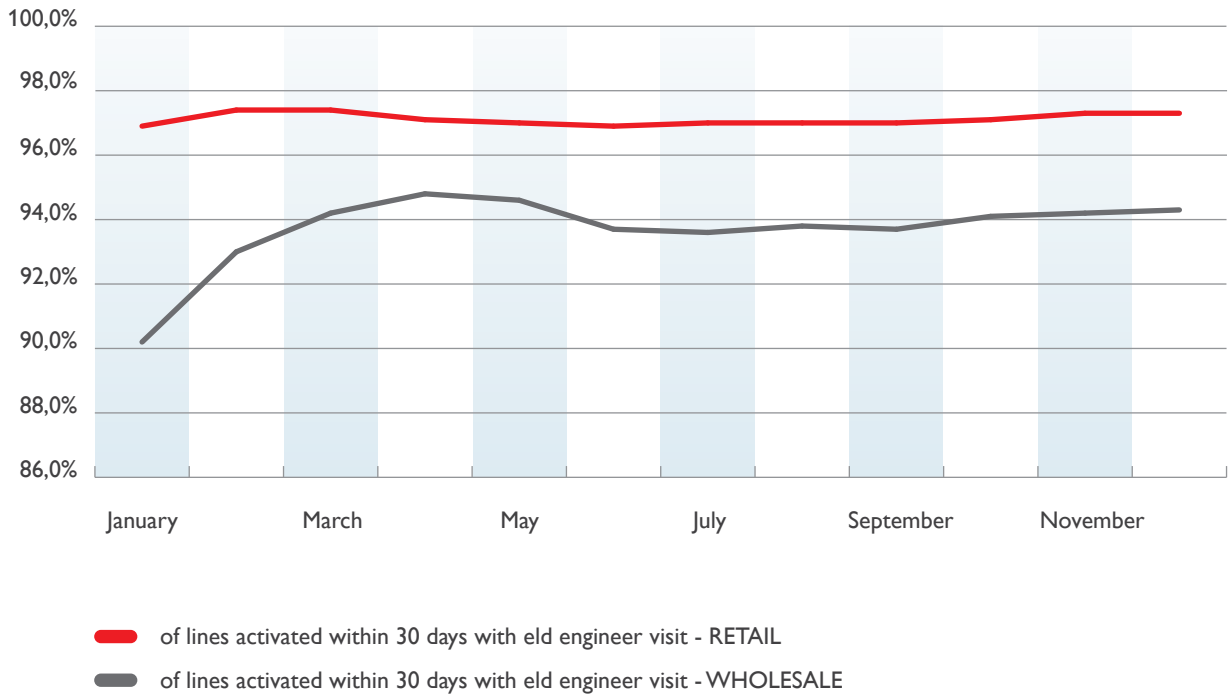


Figure 6 - Percentage of lines activated within 30 days with technical assistance required.

Average Open Access processing time

The average processing time necessary to activate the broadband service is 6.4 calendar days for the Retail segment and 9.4 calendar days for the Wholesale segment (with a delay of 3 calendar days for OLOs). These percentages were mainly stable during the year.

However, the evident prevalence of assistance at customers' homes for work orders of OLOs, which increases average times of this segment, should be noted.

This indicator is also included in those for which the Supervisory Board asked Telecom Italia to provide further information in Resolution no. 21/2013.

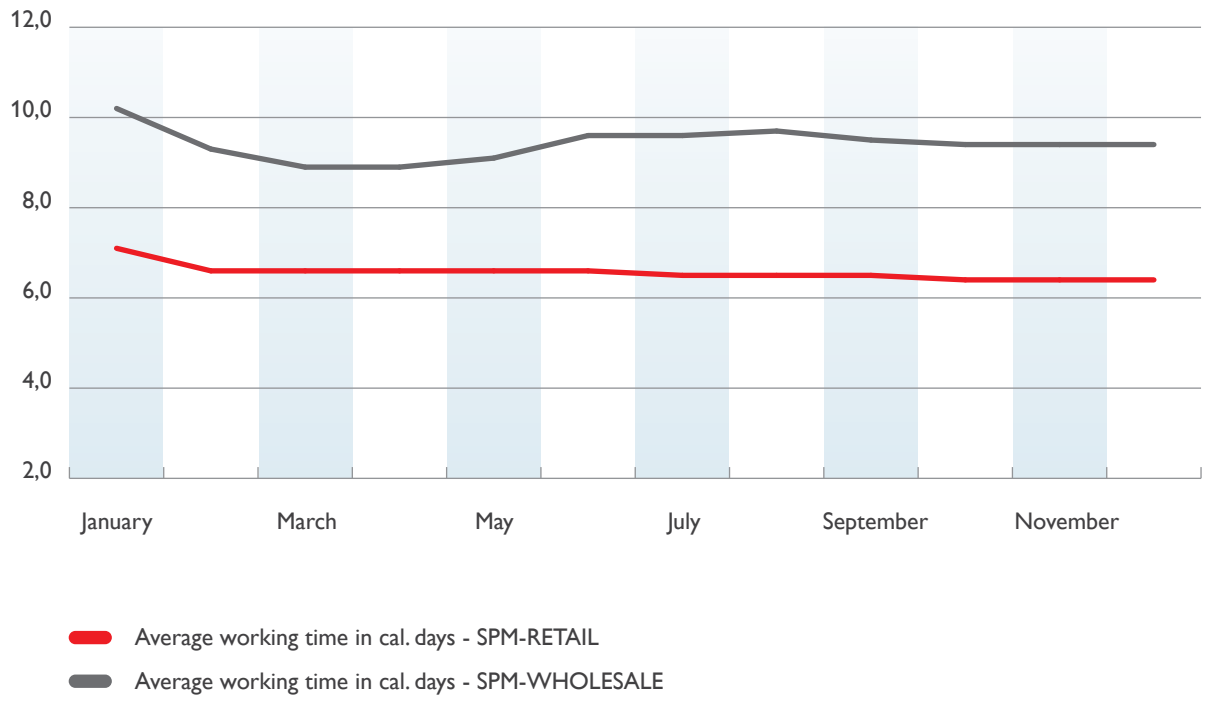


Figure 7 - Average Open Access processing time.

Average Open Access processing time

As regards this KPI, data for the last few months of the year are not available. The progressive figure for August indicated an average business connection working time of 38.5 calendar days for the Wholesale segment, compared to 25.3 days for the Retail segment.

In 2011, the Supervisory Board had conducted an investigation into the matter with Resolution No. 16/2011; the investigation was closed with Resolution No. 5/2012, finding that the values measured by the KPIs analysed complied with the principles of equality of treatment, once adjusted for the effect of a process change introduced in 2011.

With Resolution no. 21/2013, the Supervisory Board had asked Telecom Italia to provide data on the monthly volumes of lines activated, as well as any useful information justifying the deviations found between the two segments.

Telecom Italia provided all data requested. Moreover, In 2014, the Supervisory Board verified that the indicator had not been selected by the Authority and Operators to be included in the new basket.

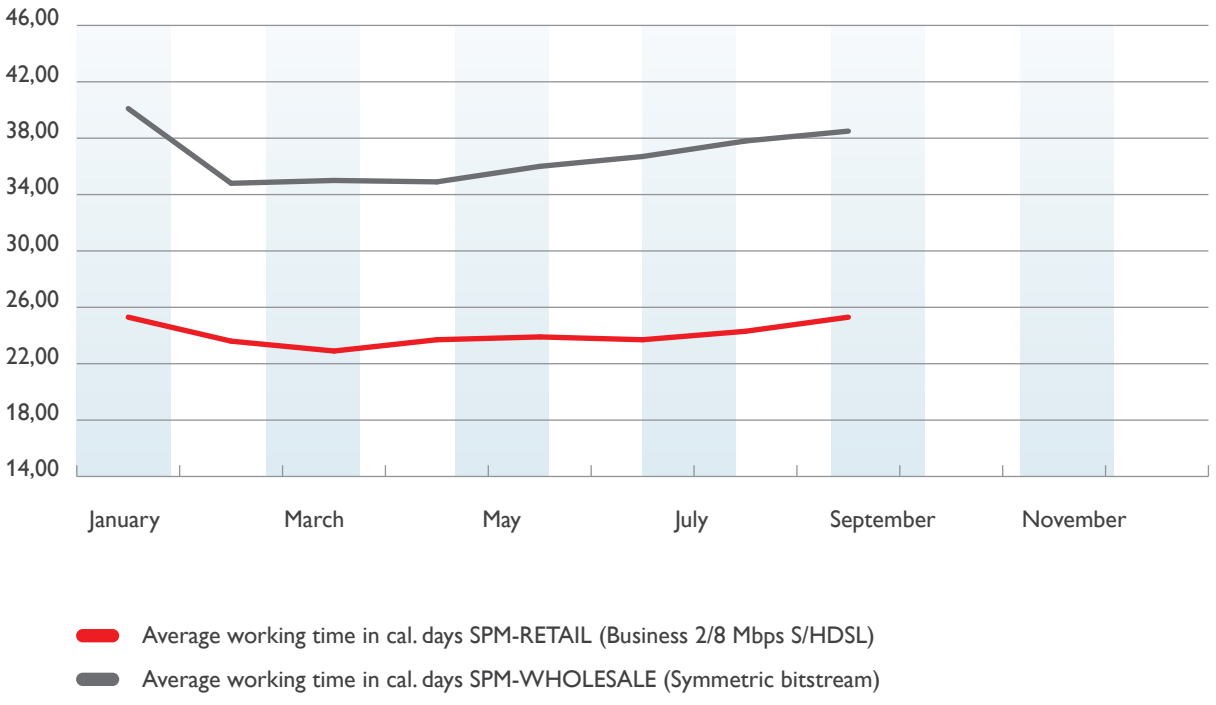


Figure 8 - Average business connection working time.

KPI 1 - New Delivery Process

Data collected during the year do not indicate any favourable treatment for OLOs: the figures for December show that nearly 98% of Wholesale Work Orders were activated within 60 days, with the figure for the Retail segment standing at 70.5%.

However, data relative to NDP performance indicators (% Single Queue WOs resolved; % WOs completed by appointment date/EDD; % WOs in the KO Network; Single Queue waiting times) are still not fully significant, given the low volumes.

For several months, starting from 2013, figures for some indicators were not available due to system anomalies. With Resolution no. 21/2013, the Supervisory Board had asked Telecom Italia to send the missing data, and also asked for a provisional estimate of figures not published in previous months.

KPI 2 - Voice Assurance

In order to enable comparison on a uniform basis, all faults resolved directly upon reporting to a call centre (187 and 191 for Telecom Italia or other customer service numbers for the OLOs) have been excluded from measurements.

Average voice line repair time (working hours)

The average time necessary to repair voice line faults in 2014 was practically the same for both segments considered. The progressive figure for the end of the year shows that repairs for OLO customers were undertaken on average after 15.4 hours, against 15.5 hours for Telecom Italia customers.

The average time gradually decreased over the year for both the Retail and Wholesale segments.

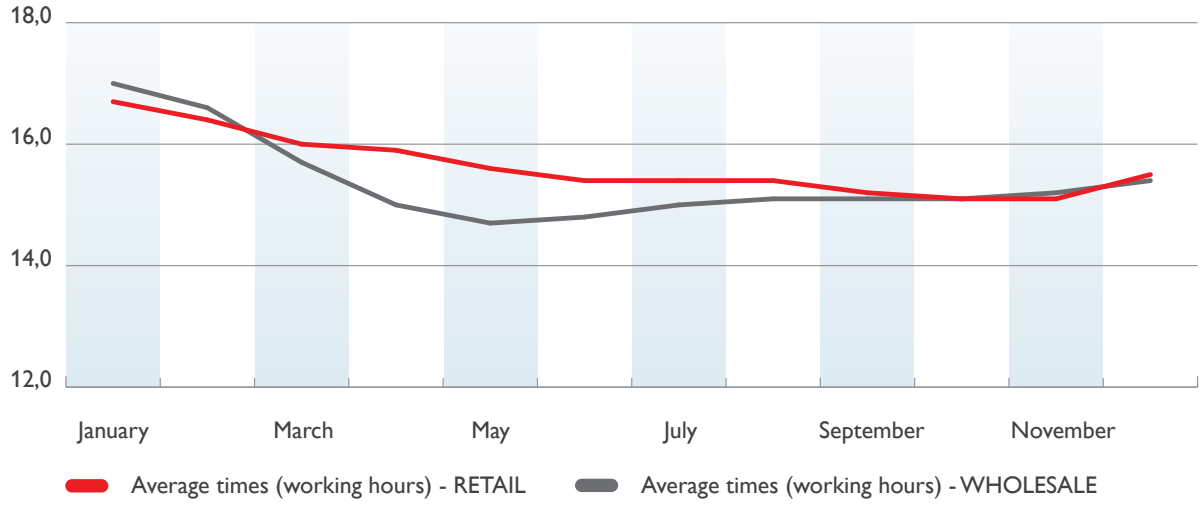


Figure 9 - Average voice line repair time in working hours.

Percentage of faults resolved within two working days from the complaint

Due to contractual differences in agreements regulating business relations with OLOs on the one hand, and with the Retail segment, on the other hand, a difference exists benefiting OLOs, which is basically constant throughout the years; in December the value was 94.0% for the Wholesale segment and 89.0% for the Retail segment.

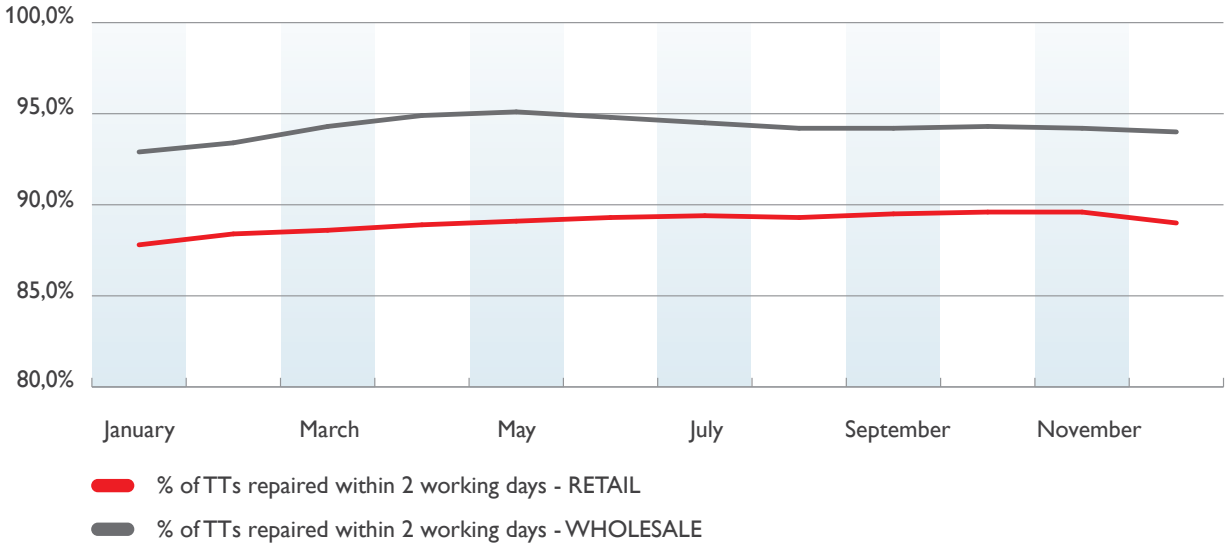


Figure 10 - Percentage of faults resolved within two working days from the complaint.

Percentage of POTS line faults recurring within 30 days

The percentage of POTS line faults recurring within 30 days is slightly higher for Telecom Italia customers: the figure for the end of the year was 10.1% for the Retail segment, against 9.8% for the Wholesale segment. The difference in performance between the two segments decreased during the year.

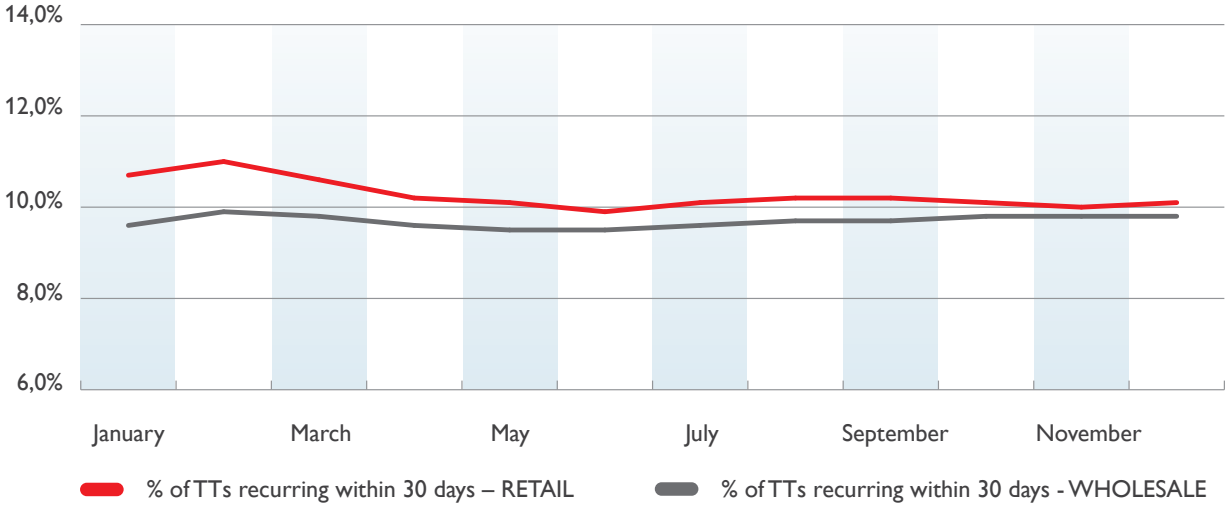


Figure 11 - Percentage of voice line faults recurring within 30 days.

Percentage of claimant circuits

The percentage of claimant circuits is higher for the Retail segment (16.9% against 11.1% for OLOs), with a difference that remained steady during the year, at between 5 and 6%.

This indicator is calculated as the ratio between the total number of TTs closed in a month compared to the total of existing active lines, including faults dealt with and closed by Open Access back offices.

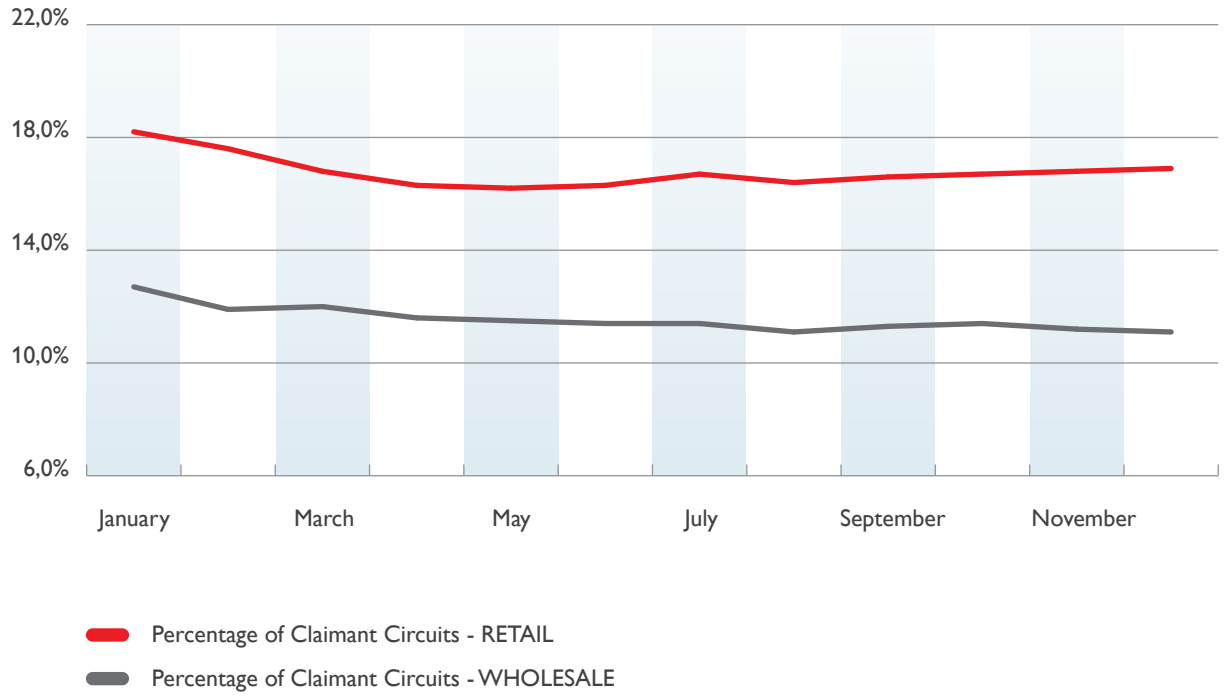


Figure 12 - Percentage of claimant circuits.

KPI 2 - Broadband Assurance

Average ADSL broadband repair time (working hours)

ADSL broadband faults require on average repair times of between 8 and 10 working hours. The KPI indicates that the times are slightly quicker for OLO customers, although the difference between the two segments considered decreased during the year; the figures at the end of 2014 recorded 9.0 hours for the Retail segment against 9.6 hours for the Wholesale segment, with a difference of 0.6 hours.

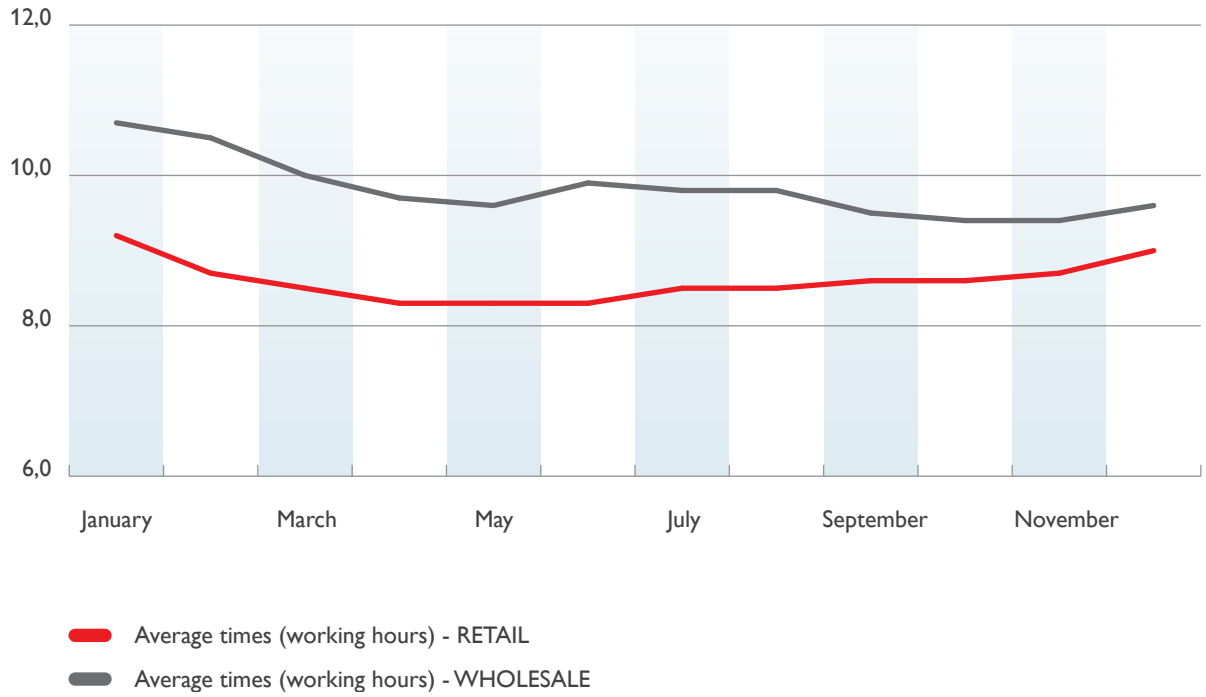


Figure 13 - Average ADSL broadband repair time (working hours).

Percentage of ADSL faults repaired within two working days

The percentage of faults repaired within two working days indicates a better treatment for the OLO segment, confirming the trend of previous years.

The gap in December was 3.2%, basically in line with figures of the previous months; a figure of 95.1% was recorded for the OLO segment, and of 91.9% for the Retail segment.

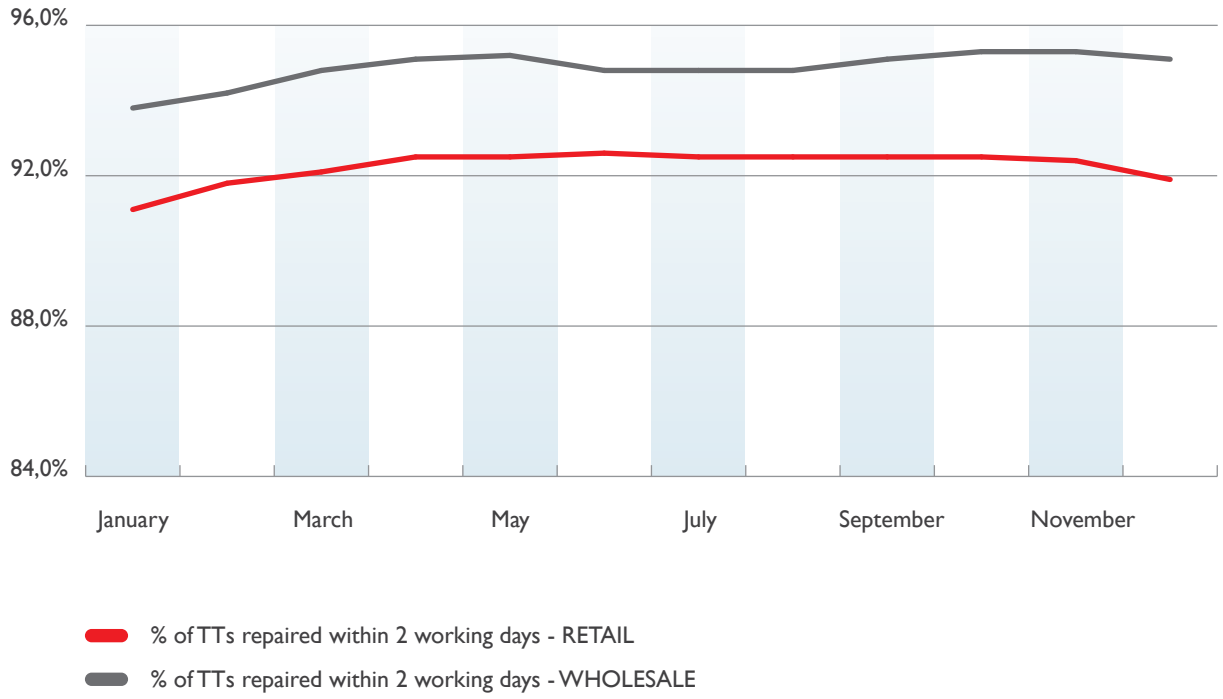


Figure 14 - Percentage of ADSL faults repaired within two working days.

Percentage of ADSL faults recurring within 30 days

In December, the figure stood at 19.6% for the Wholesale segment, against 14.3% for the Retail segment, with a difference of 5.3%. The percentage was higher for the Wholesale segment throughout 2014, with a difference that gradually increased, going up from 2.2% in January to 5.3% at the end of the year.

This indicator, like the KPI for the average business connection working time, was analysed by the Supervisory Board: with Resolution No. 16/2011, Telecom Italia was requested to provide information on the underlying causes of the performance gap. With Resolution No. 5/2012, the Supervisory Board found that the KPI results complied with the principles of equality of treatment. In particular, the gap in the results was attributed to the different percentages of naked lines in the two segments; in the Retail segment, the percentage of naked lines is minimal, while in the Wholesale segment 60% of the lines are naked and 40% are "shared" used both for voice and data services. This had an impact on recurring faults: In fact, while the faults recorded on shared lines can be attributed by the customer to either voice or ADSL, the faults on naked lines are always ADSL faults, even if linked to the voice service, and this has also an impact on repetition rates.

This indicator is one of those for which the Supervisory Board asked Telecom Italia to provide further information with Resolution no. 21/2013.

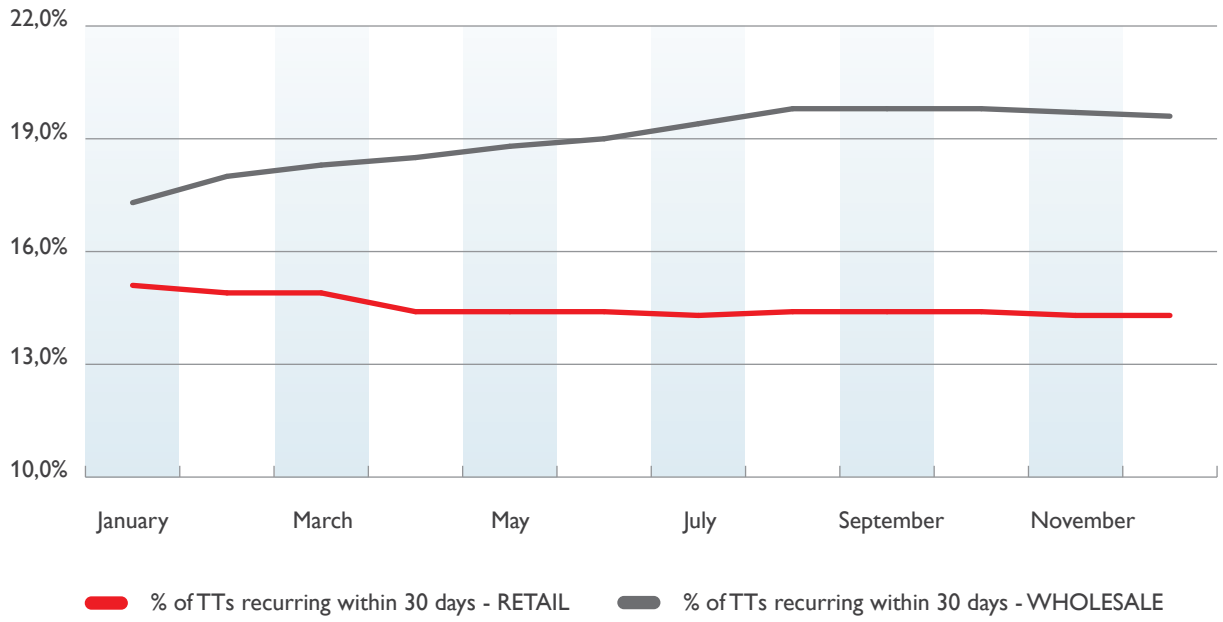


Figure 15 - Percentage of ADSL faults recurring within 30 days.

Percentage of ADSL faults opened within 14 days of activation

The percentage of trouble tickets (TTs) opened within 14 days of service activation was extremely different for the Retail segment compared to the Wholesale segment. In fact, the percentage for the latter segment was equal to 12.79% in December, while it was 2.0% for the Retail segment. This indicator is defined as the number of TTs opened within 14 days of activation as a proportion of total TTs for the reference period. Since the total number of TTs in the Retail segment is much higher than the total number of TTs for OLOs, the resulting percentage is necessarily higher for OLOs, distorting the comparison. A new indicator that takes as its denominator the number of activations for the period, broken down by segment, would be more appropriate.

The Supervisory Board had investigated this aspect and with Resolution no. 5/20123, concluded that 2011 values recalculated using the method considered to be correct (taking into account the number of activations during the period, by segment, as the denominator, instead of the total number of trouble tickets in the period), indicated a difference of 0.8% to the benefit of the Wholesale segment (7.6% for Retail compared to 6.8% for Wholesale), which overturns the initially reported figures, which were better for the Retail segment.

With Resolution no. 21/20134, the Supervisory Board had asked Telecom Italia to provide data for each month in 2013, using the number of activations for the period as the denominator of the formula instead of the total number of Trouble Tickets for the reference period (as envisaged by the basket of indicators for Undertakings Group no. 4 agreed with the OLOs and the Authority).

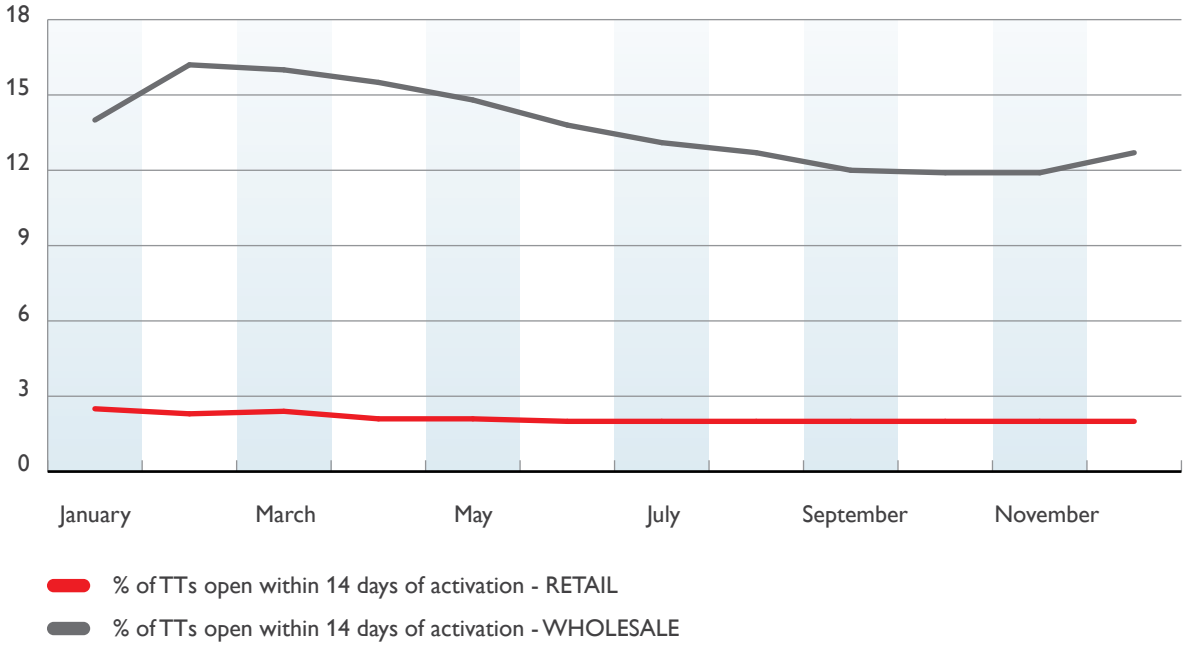


Figure 16 - Percentage of ADSL faults opened within 14 days of activation.

[3] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n.5.2012_Chiusura_vigilanza_KPI_Relazione_conclusiva-Light.pdf
[4] http://organodivigilanza.telecomitalia.it/pdf/Determinazione_n_21-2013-Avvio_vigilanza_su_KPI.pdf

Average SHDSL/symmetric bitstream broadband repair times (working hours)

Average repair times for S/HDSL broadband and symmetric bitstream services were slightly quicker in 2014 for the Retail segment compared to the Wholesale segment (a difference of 1 working hour). The figure for the Retail segment at the end of the year was 5.8 working hours, versus 6.6 working hours for the Wholesale segment.

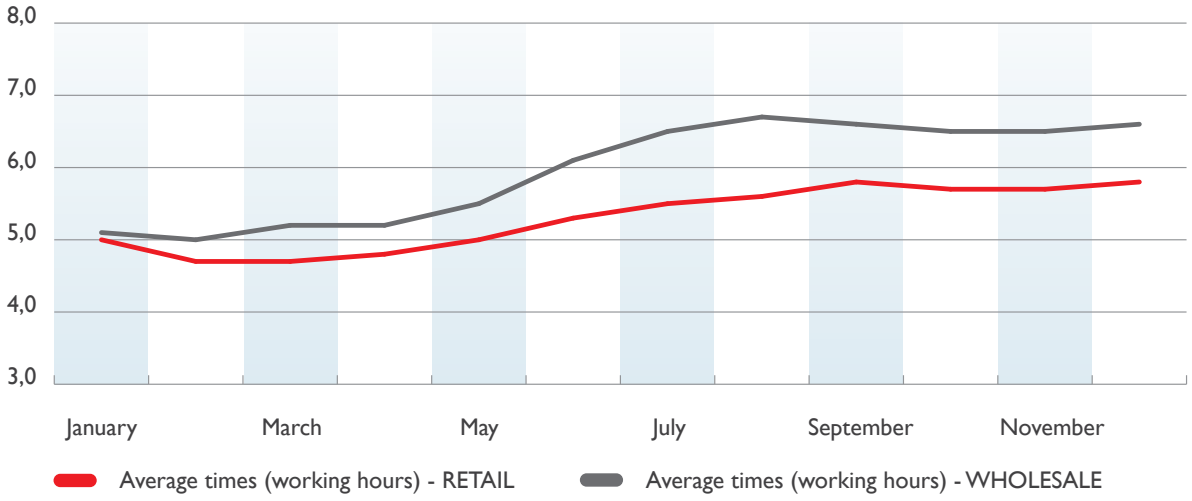


Figure 17 - Average SHDSL broadband/symmetric bitstream repair times in hours.

Percentage of SHDSL broadband/symmetric bitstream faults repaired within two working days

The percentage of faults repaired within two working days gradually decreased during the year: in the first quarter, the figure was above 98% for both segments, while it went down to 96% in the last few months of the year. The difference between the two segments was considerably reduced (around half a percentage point); the Wholesale segment benefited from a comparatively better performance.

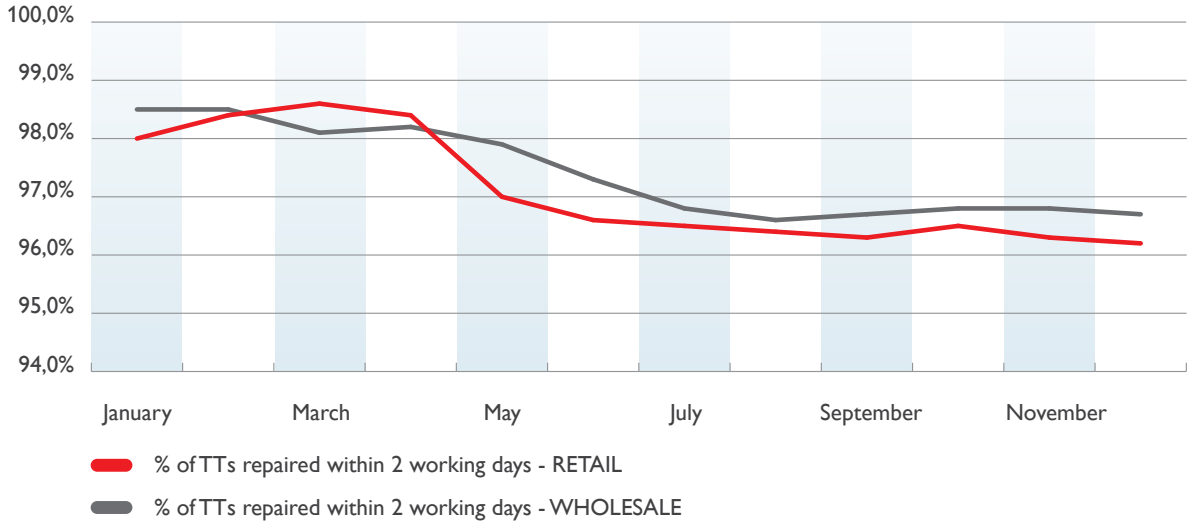


Figure 18 - Percentage of S/HDSL symmetric bitstream faults repaired within two working days.

Percentage of SHDSL broadband/symmetric bitstream faults recurring within 30 days

This indicator constantly shows significantly better performances in the Retail segment, although the difference is more marked in the last few months.

The progressive figure for December was 23.8% for the Retail segment against 27.9% for the Wholesale segment (gap: 4.1%.). The deterioration during the year in the Retail segment should be noted, with the figure going up from 17% in January to nearly 24%.

This indicator is one of those for which the Supervisory Board asked Telecom Italia to provide further information with Resolution no. 21/2013.

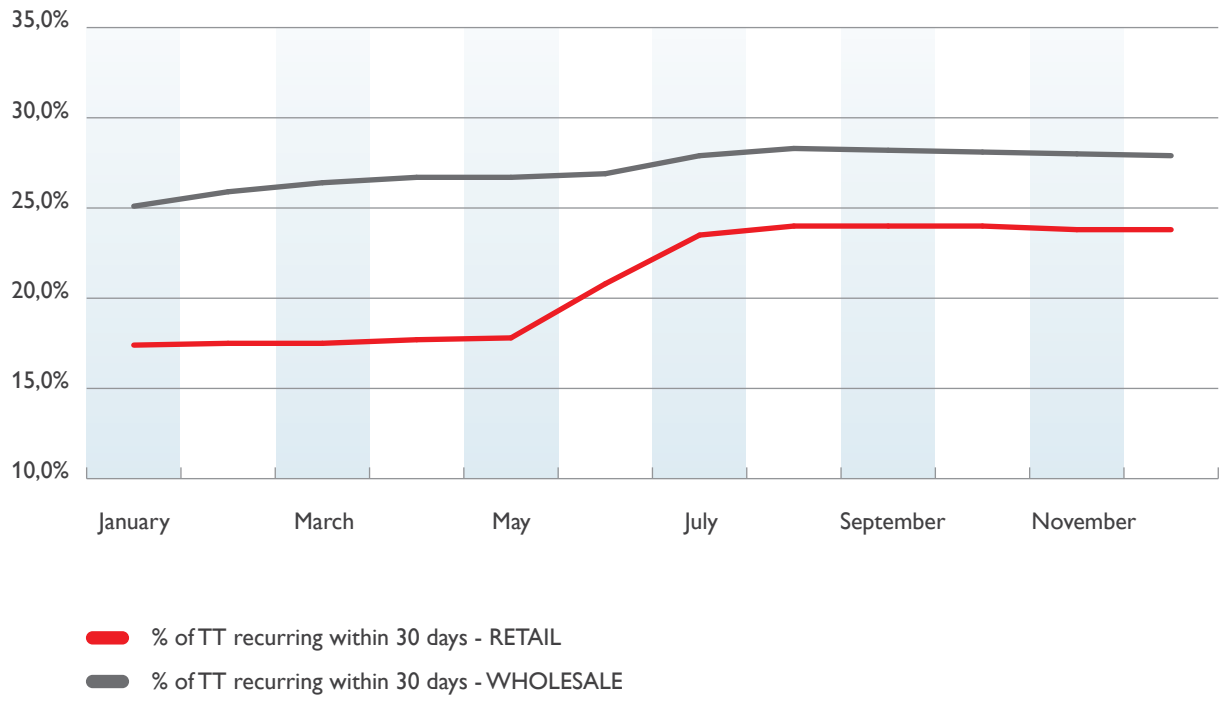


Figure 19 - Percentage of S/HDSL symmetric bitstream faults recurring within 30 days.

Percentage of SHDSL/symmetric bitstream faults opened within 14 days of activation

Faults occurring within 14 days of activation are not reported for the Retail segment because the absolute values are negligible and so it is not possible to compare the Retail and Wholesale segments.

As regards OLO customers, the figure for December is 3.5%.

With Resolution no. 21/2013, the Supervisory Board had asked Telecom Italia to provide data for each month in 2013, using the number of activations for the period as the denominator of the formula instead of the total number of Trouble Tickets for the reference period (as envisaged by the basket of indicators for Undertakings Group no. 4 agreed with the OLOs and the Authority). However, this formula is not very significant.

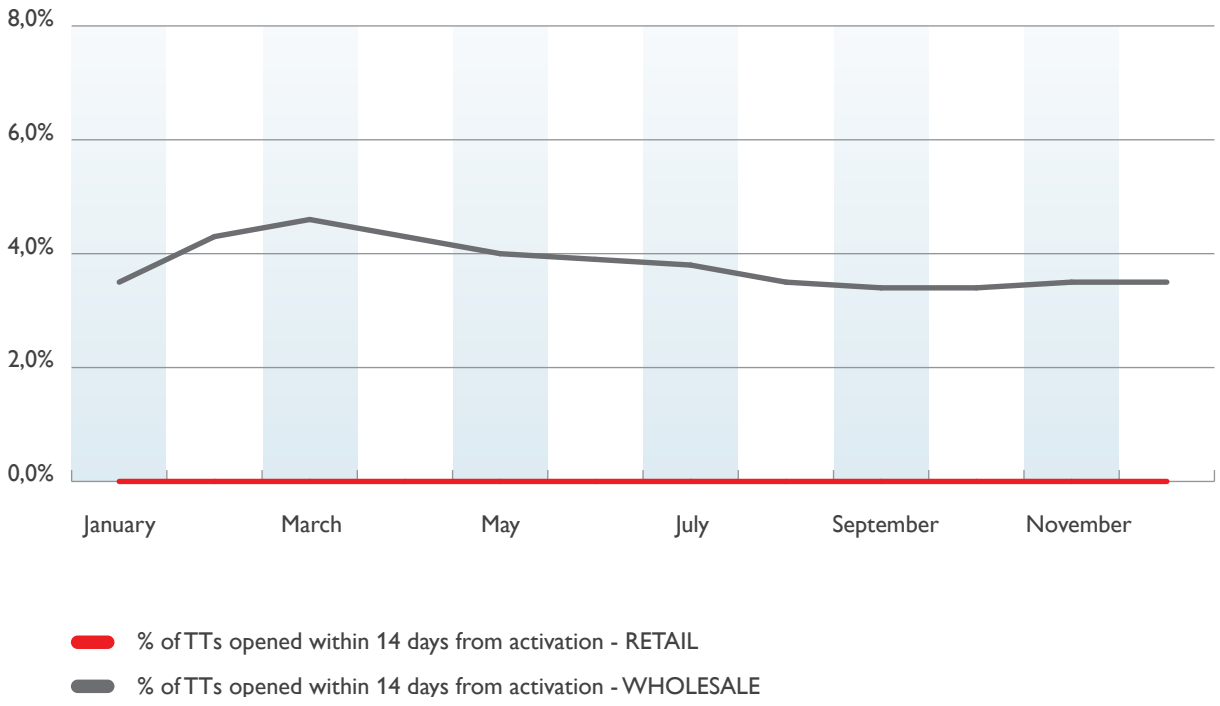


Figure 20 - Percentage of faults opened within 14 days of activation.

KPI 3 - Service Availability

This set of KPIs measures service availability over time, calculated as a ratio of the actual time services are operating to the theoretical time services should ideally be operating.

The indicators are constructed on the following basis:

$$\text{Availability time} = \frac{\text{Actual time}}{\text{Theoretical time}} * 100$$

where:

the *Actual Time* is the theoretical time less average downtime for the user base experiencing downtime; the *Theoretical Time* is the observation period multiplied by the average active user base for the same period.

System availability percentages remained at high levels for all services considered; the best performance was recorded for Shared Access OLO voice services and, more in general, for systems providing OLO segment services.

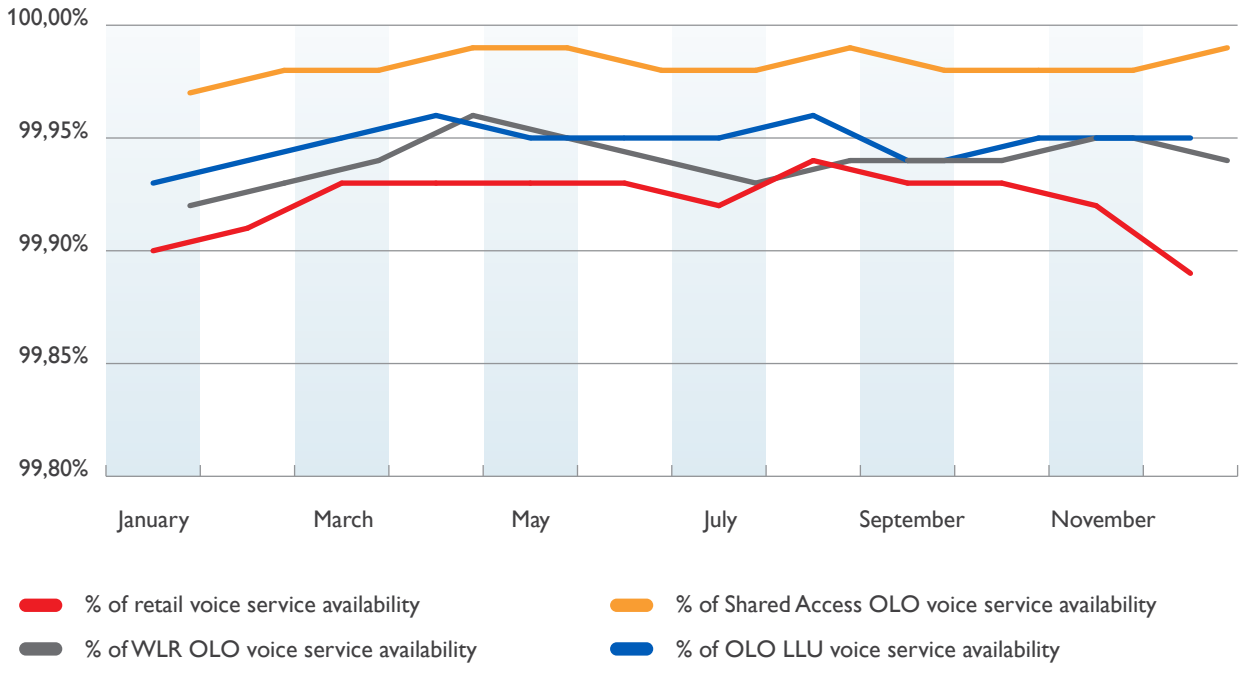


Figure 21 - Monthly voice service availability levels.

For ADSL connections, Alice ADSL performed at 99.89% in December, compared to 99.96% availability for Wholesale services.

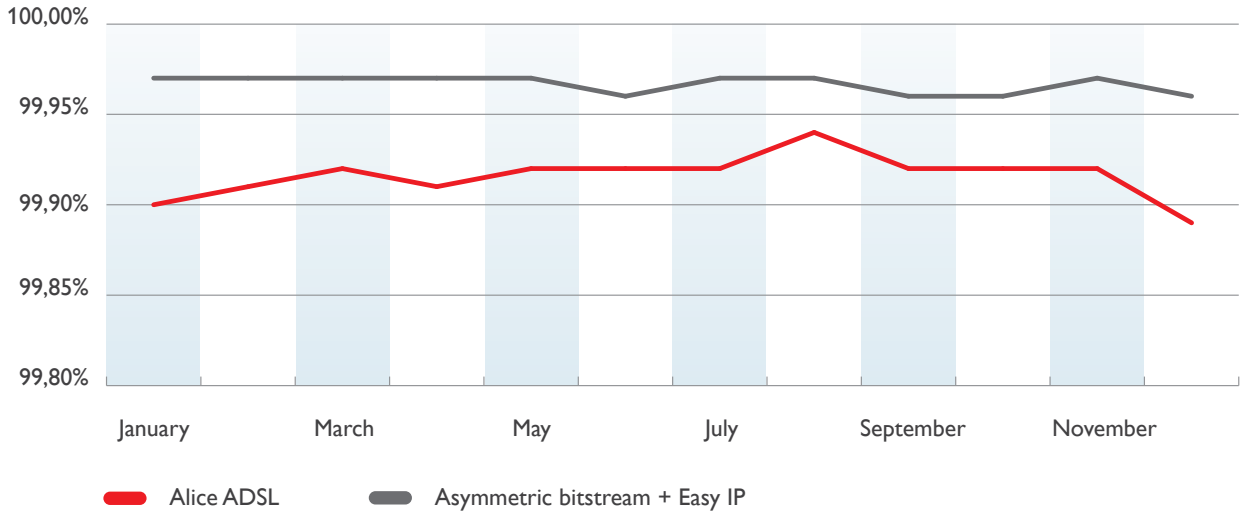


Figure 22 - ADSL Service Availability.

The availability of symmetric bitstream services was also consistently high throughout the year, measured at 99.99% at year end for the Business Mbps S/HDSL service, and at 99.93% for the Business symmetrical bitstream service.

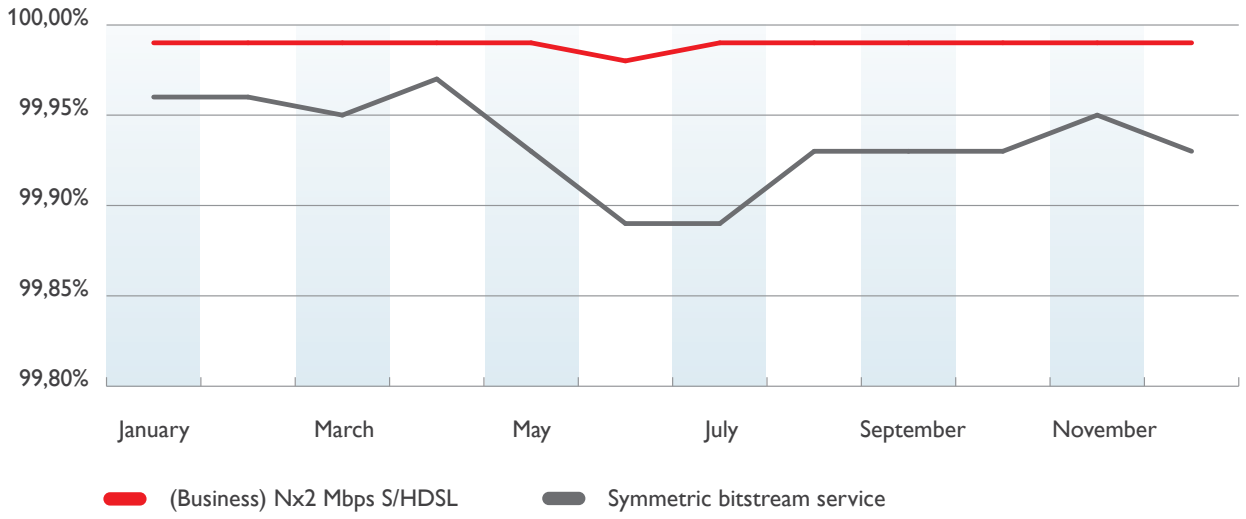


Figure 23 - Symmetric bitstream services availability.

KPI 4 - Unavailability of Wholesale Systems

This indicator measures the percentage unavailability of IT systems supporting assurance and delivery processes. Data are aggregated for each service in order to highlight any effects on the related process indicators.

The indicators are constructed on the following basis:

$$\text{Availability time} = \frac{\text{Actual time}}{\text{Theoretical time}} * 100$$

where:

the *Actual Time* is the theoretical time less average downtime for the user base experiencing downtime; the *Theoretical Time* is the observation period multiplied by the average active user base for the same period.

The percentage unavailability and percentage availability are complements equalling 100.

The results take into account the optimised architecture of the systems, and so a system breakdown will not necessarily result in an interruption of assurance or delivery activities.

The graphs below show the 2014 performance with regard to availability of interface systems and Delivery and Assurance Process support systems.

Delivery systems

Throughout 2014, percentages of unavailability of systems controlling Delivery operations remained at minimum levels. In particular, the year end figure for all systems was 0%.

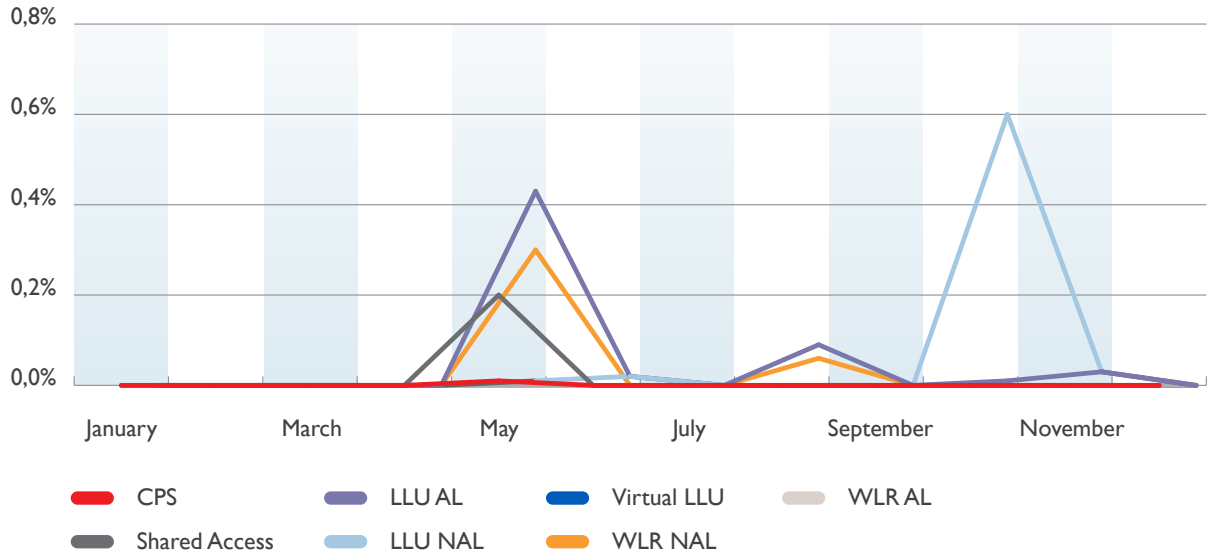


Figure 24 - Percentage of unavailability of IT systems controlling Voice Service Delivery operations.

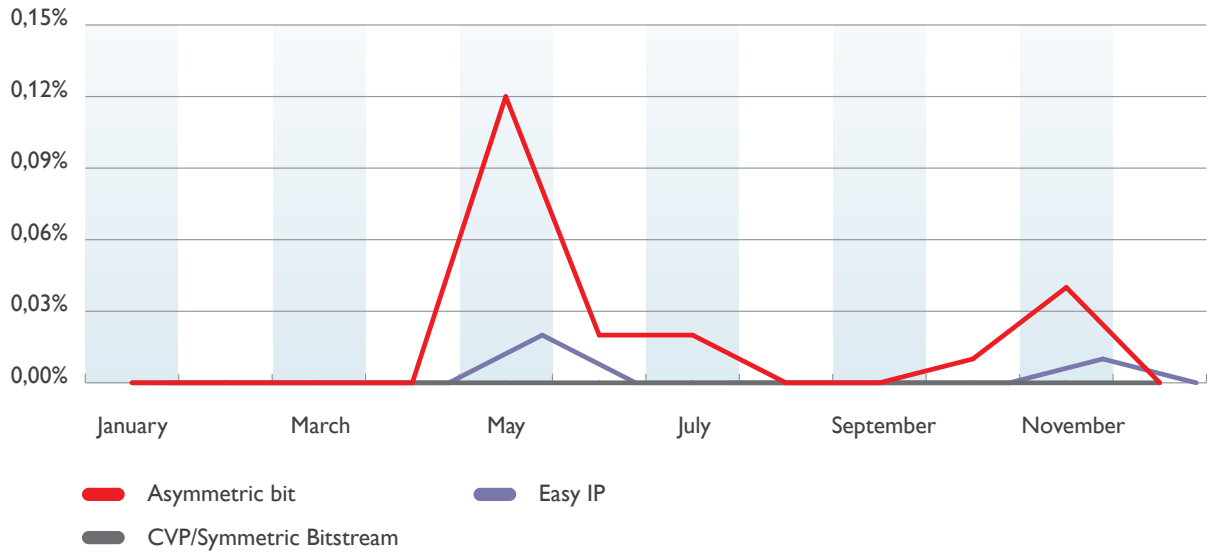


Figure 25 - Percentage of unavailability of IT systems controlling Broadband Service Delivery operations.

Assurance systems

The percentages of unavailability of IT systems for Assurance recorded a peak in June for both voice services and broadband, which promptly decreased in subsequent periods. The year end figure indicates that systems were always available.

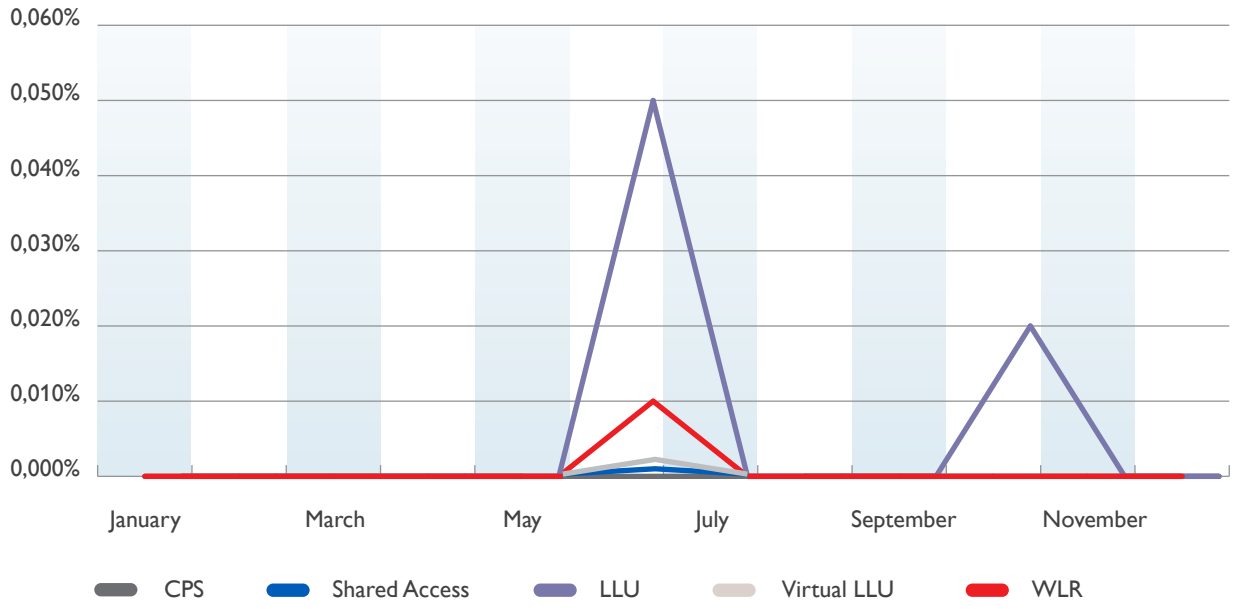


Figure 26 - Percentage of unavailability of IT systems controlling Voice Service Assurance operations.

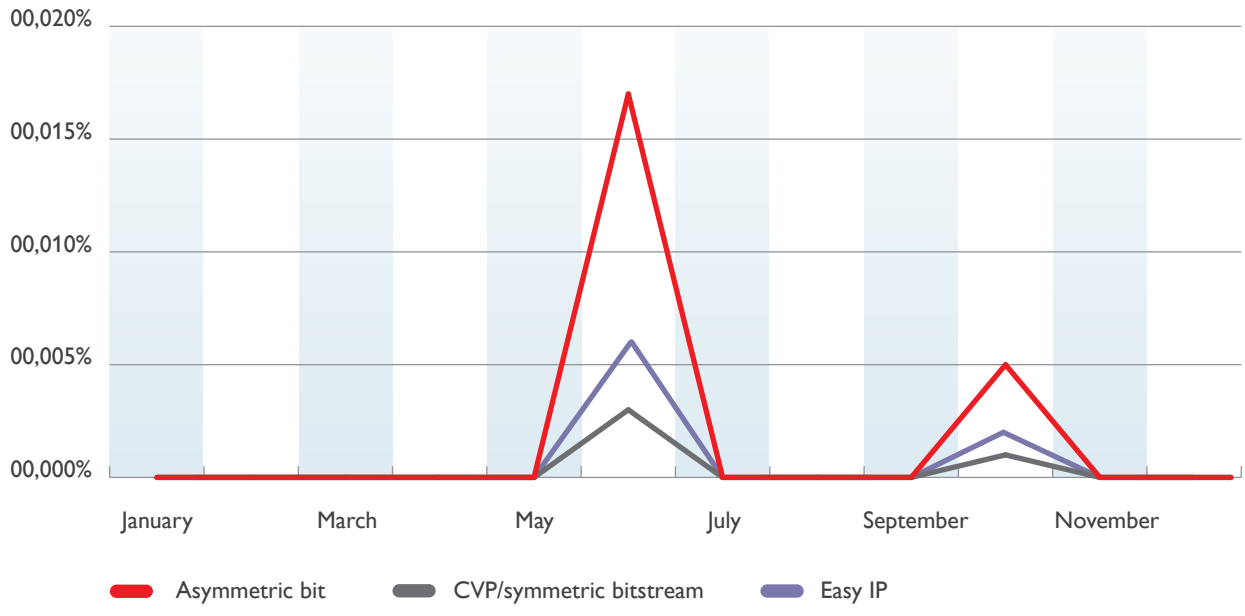


Figure 27 - Percentage of unavailability of IT systems controlling Broadband Service Assurance operations.

Delivery interface management applications

> Starting from the measurement of performances for November 2013, Telecom Italia included Wholesale CRM in the list of Delivery systems for which availability levels are analysed. This took place after finishing the porting of services associated with releases 1.0, 2.0 and 3.0 to this platform.

Availability remained consistently high throughout the year at around 100% for all systems examined, except in August when performance levels dropped for the CRM WS system.

In December, the figure was 100% for NEXT, CRM WS, NWS PORTAL, and 99.99% for TTM OLO.

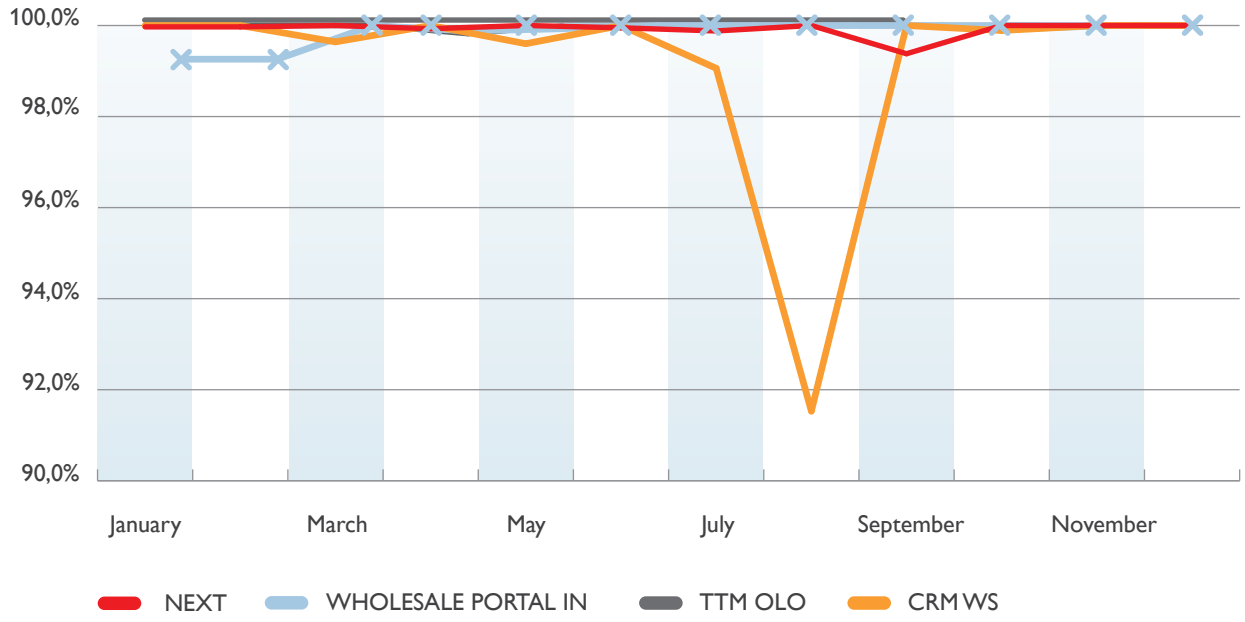


Figure 28 - Percentage of availability of IT systems controlling Delivery Interface Services.

4.C - PROGRESS IN THE DEVELOPMENT OF THE FIXED ACCESS NETWORK

4.c.1 - General considerations

Undertakings Group No. 6 (*Guarantees of Transparency of Technical Plans for the Development of the Fixed Access Network*) requires Telecom Italia to disseminate its "Technical Plans for the Development of the Fixed Access Network" by regularly publishing a series of long-term planning documents (known as "Long-Term Plans") and medium-term planning documents relating to each quarter of the current year.

The Long-Term Technical Plan for development of the NGAN, as issued by Telecom Italia in February 2014, planned an increase for the year of 2,064,000 Property Units connected in primary and 63,000 Property Units connected in secondary, in order to reach 2014 with a total of 6,134,494 Property Units connected in primary, of which 632,222 would also be "connected" in secondary, across 676 exchange areas in 118 municipalities. In particular, the Technical Plan defined by Telecom Italia for 2014 was based on the development of an additional 338 areas, involving 50 new municipalities.

As from October 2014, development plans for the NGAN were supplemented, following the award to Telecom Italia of contracts issued on 24/05/2013 by the Italian Ministry of Economic Development for the development of ultra broadband (BUL) infrastructure in the regions of Campania, Molise and Calabria. The new plans predicted an increase of 493,259 property units connected in primary for 2014, in 66 new exchange areas in 44 new municipalities of the three regions concerned. In 29 of these 44 municipalities, Telecom Italia also plans to install ONU VDSL2 modules in a certain number of FTTCab cabinets.

The 2014 broadband network development plan designed to reduce the digital divide planned for 114 new municipalities to be covered by 138 new open exchanges.

Lastly, the purpose of the copper network development plan for new allotments was to connect 40,900 new housing units in Italy during the year.

4.c.2 - Development of the copper network

In order to define the planning criteria for the development of the traditional copper access network, it is necessary to distinguish between two types of installation:

- areas with an existing and functioning – but saturated – access network; depending on demand trends, this could result in infrastructural crises which, if not resolved in time, risk preventing the provision of services in line with existing SLAs. Accordingly, developing this part of the access network is seen as a way to ensure service quality and is handled under a specific project for this purpose (Undertakings Group no. 5, "Progress of Technical Plans for the Quality of the Fixed Access Network");
- areas with no access network; this covers new buildings in previously uninhabited areas, mainly made up of new allotments. In view of the not insignificant number of individual works projects linked to this problem, the decision was taken to monitor development plans through a specific "Allotments Project".

The network planning process for new allotments is, in some ways, similar to the development of saturated networks, but also requires various adjustments to ensure proper network coverage when the new housing units are inhabited. We therefore have to deal with volume planning mechanisms that will change significantly over time depending on various external factors, including the speed of construction of the housing units and how long it takes for the units to be inhabited, etc.

Development plans are usually laid out over a number of years, despite the obvious uncertainties due to external factors such as real estate market fluctuations and macroeconomic factors.

Telecom Italia's Long-Term Plan for 2014-2016 calls for 116,900 new property units (PUs) to be cabled-in according to the following schedule:

	Increase 2014	Increase 2015	Increase 2016	Total increase 2013-2015
No. of planned PUs	40,900	38,000	38,000	116,900

Figure 1 shows the progress of the development plan for 2014, both in terms of Property Units scheduled for connection and in terms of Property Units actually connected at year-end, from the start of the year to the end of each quarter. The graph shows that the progress of allotments in 2014 was lower than provided for in technical plans (25%).

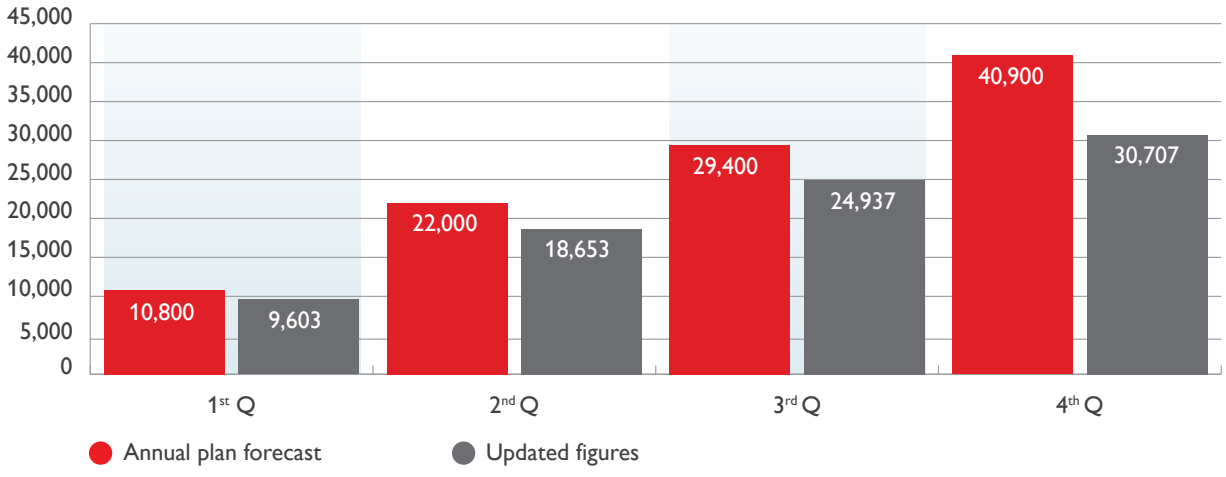


Figure 1 - Allotments: Progress made in connected PUs during 2014.

4.c.3 - Development of the broadband access network coverage

The 2014 development plan for the broadband network called for 138 new active exchanges and for 114 new municipalities to be covered for ADSL services up to 20 Mbit/s. Figure 2 shows the progress of the 2014 development plan, both in terms of exchange areas to be served according to the plan and in terms of new exchange areas actually covered at the end of each quarter; Figure 3 shows the progress of the 2014 development plan in terms of new municipalities covered.

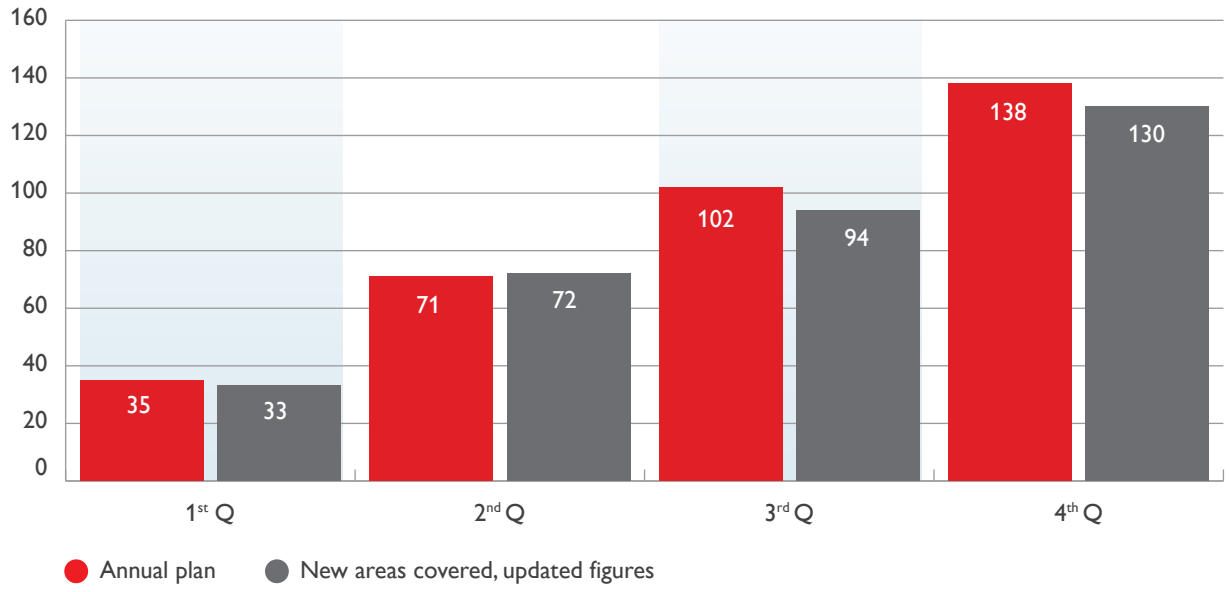


Figure 2 - Progress on the coverage plan for services of up to 20 Mbit/s: exchange areas.

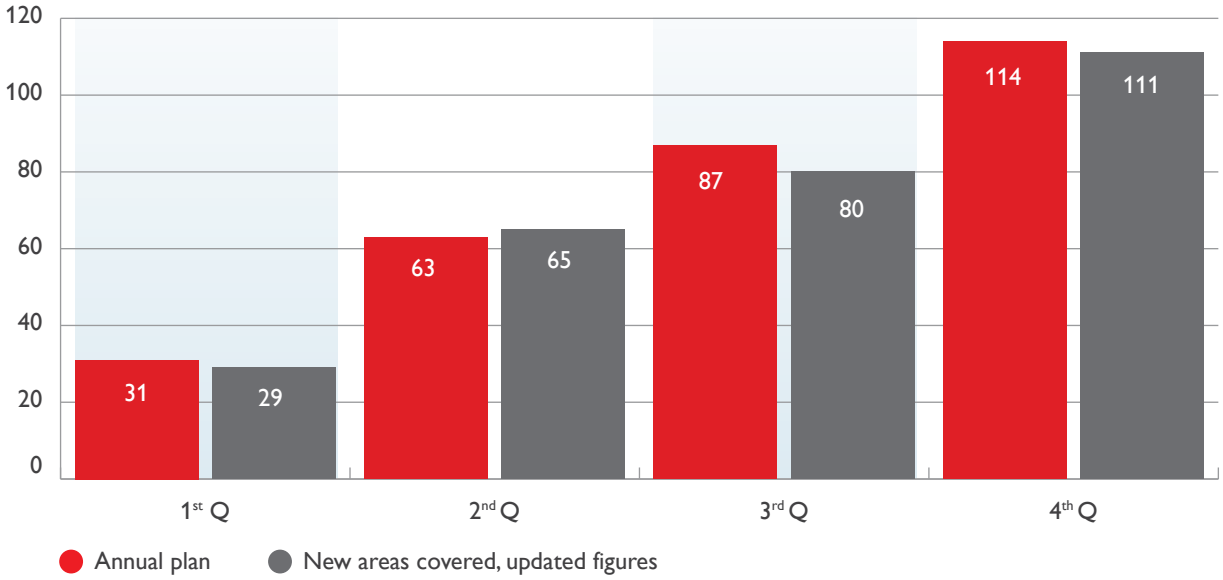


Figure 3 - Progress on the coverage plan for services of up to 20 Mbit/s: new municipalities.

The final results for Italy are below target in terms of the number of new exchange areas served and the number of new municipalities covered.

4.c.4 - Development of the next generation broadband network (NGAN)

The Next Generation Access Network (NGAN) requires the deployment of optic fibre cabling in the access network, in order to ensure significant bandwidth availability for data transmission, which provides an infrastructure capable of supporting new and next-generation IP services. Based on the technical and economic assessments made during the first phase of NGAN development - which was limited to major metropolitan areas - Telecom Italia decided to use the following architectures:

- Fibre To The Home (FTTH): optic fibres extend to the end user's premises;
- Fibre To The Cabinet (FTTCab): based on the use of miniDSLAM VDSL2s, placed near to current switching cabinets for the copper access network;
- Fibre To The Premises (FTTP): a network configuration with dedicated optic fibres extending to the customer's premises and used to connect mid-to-high level "business" customers and for HSPA mobile radio base stations.

Given the type of customer served, FTTP architecture uses a "point-to-point" configuration with dedicated fibres and Gigabit Ethernet transmission technology. FTTH network architecture (currently being installed in the Municipality of Milan) uses Gigabit PON (GPON) technology with shared fibres in a "point-to-multipoint"

configuration, in order to cut costs. Figure 4 shows the architectural layout for the FTTH network configuration used by Telecom Italia. In general, GPON systems use a centrally-placed Optical Line Termination (OLT) which is connected to the customer-side network terminations, known as Optical Network Terminations (ONT), through an Optical Distribution Network (ODN). The DN is completely passive (i.e. it does not require any electrical input) and is made up of optic fibres and passive optic splitters which allow the incoming signal to be divided into a number of outgoing signals and vice versa. Under the current configuration, the splitting factor allows 64 ONTs to be connected to one OLT. Theoretically, every optic fibre served by the local exchange and corresponding to a PON branch can serve 64 property units, but in practice the modular nature of the splitters and the distribution of property units within buildings mean that the splitters cannot always be used to their full capacity. Consequently, a splitting factor of 1:64 serves an average of 50 customers (approx. 80% fulfilment). Each optic fibre, relative to each PON, is linked in the exchange to a passive Optical Distribution Frame (ODF) and connected from this to the OLT transmission system.

The FTTH architecture chosen by Telecom Italia uses two kinds of optical splitting: an initial optical splitter (splitting factor: 1:16; 1:8; 1:4), located in a box inside a manhole, and a second splitter (splitting factor: 1:4; 1:8; 1:16), at the base of the building, inside a cabinet known as an Optical Termination Box (OTB). From the OTB, all the optic fibres lead, point-to-point, to the Property Units and the ONTs installed in the customer's premises, thus completing the customer's connection.

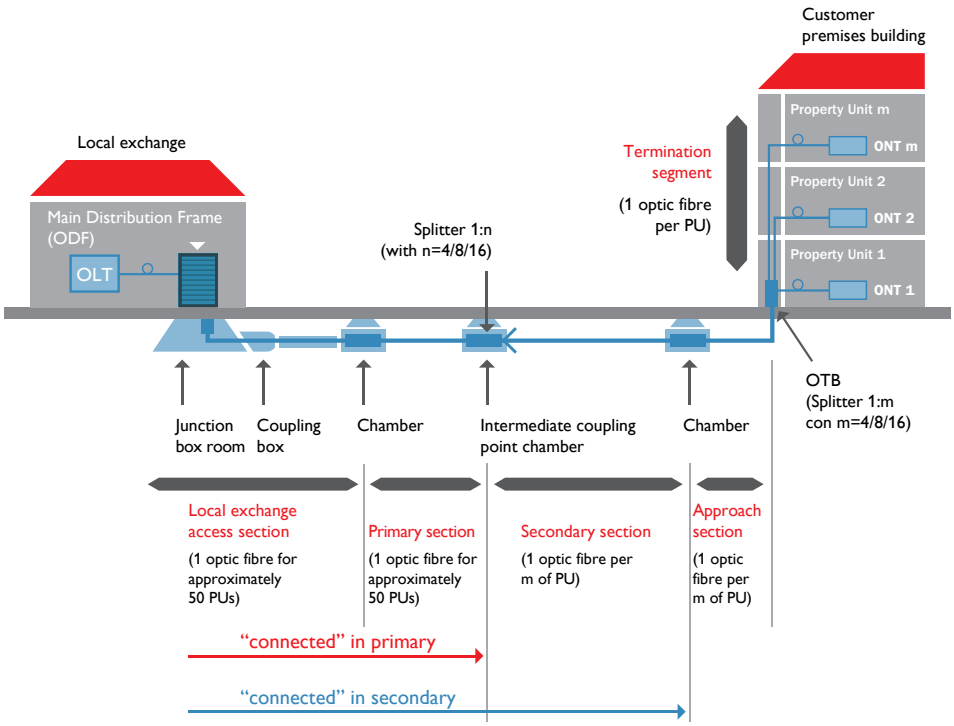


Figure 4 - NGAN: Architectural layout of Telecom Italia's FTTH configuration.

The VDSL2 technology used in the FTTCab architecture (see figure 5) makes it possible to send digital signals asymmetrically over symmetric copper pairs at high speeds, at the same time as GTN analogue POTS services. In order to avoid disruption to the traditional telephone service, VDSL low-pass filters must be used in the customer home in every phone socket that a telephone is connected to.

The equipment series in the FTTCab network access architecture is:

- a customer-side VDSL2 modem and cabinet-side VDSL2 modem (Optical Network Unit - ONU); this makes it possible to carry two channels: one for data and one for traditional telephone services;
- a customer-side splitter in case of switchboards, radio-alarms, burglar alarms, etc.;
- the copper wire line;
- the copper wire line collection cabinet. The phone pair is terminated with a filter which separates the data channel from the voice channel; the first terminates at the ONU, which is connected by optic fibres to the served OLT using a GbE interface and the second is channelled towards to the SL telephone exchange using the primary copper network.

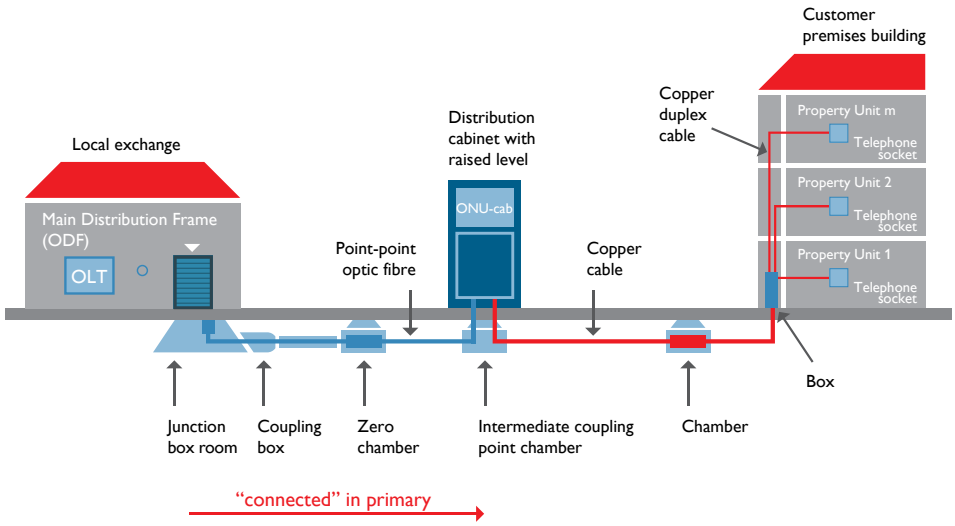


Figure 5 - NGAN: Architectural layout of Telecom Italia's FTTCab configuration.

At present two commercial VDSL2 line profiles are envisaged with the following net speeds:

1 - 30 Mbit/s Upstream: 300 Kbit/s - 3 Mbit/s;
2nd profile Downstream: 15 - 30 Mbit/s Upstream: 1 - 3 Mbit/s;

The activation of these profiles depends on the characteristics of the line and the number and type of interfering systems connected to the cable. In future these profiles may also be developed with configurations that can provide higher operating speeds.

The development plan for the NGAN distinguishes between Property Units (PUs) connected in primary and those connected in secondary, depending on the progress made in completing the fibre-optic network (see figure 4). More specifically, a Property Unit is considered to be "connected in primary" when the development of the optical network only covers the initial distribution section, i.e. the part of the network between the ODF in the exchange and the primary optical splitter (in FTTH architecture) and the part of the network between the ODF and the distribution cabinet (in FTTCab architecture). A P.U. is considered to be "connected in secondary" when the development of the optical network also covers the secondary distribution section, i.e. the whole of the network between the ODF in the exchange and the manhole near the building for the FTTCab architecture. Thus, saying that a Property Unit is "connected in primary" with FTTCab architecture means that the development of the network has reached a stage where the optic fibre between the exchange and the distribution cabinet for that building has been laid, but that the cabinet does not yet have the ONU. The Long-Term Technical Plan for the development of the NGAN, approved by Telecom Italia in July 2014, called for 10,513,494 Property Units to be connected in primary by 2016, of which 758,222 would also be connected in secondary, across 1,180 exchange areas in 470 municipalities.

The table below shows the work progress plan for 2014-2016, according to the latest version of the Long-Term Technical Plan (July 2014).

	Total 2013	Increase 2014	Increase 2015	Increase 2016	Total 2016
No. of municipalities	68	52	123	227	470
No. of exchange areas	338	345	243	254	1,180
No. of P.U. connected in primary	4,070,494	2,043,000	2,270,000	2,130,000	10,513,494
of which also connected in secondary	569,222	41,000	140,000	8,000	758,222

Table 3 - Planned totals and increases in PUs to be achieved in the period 2014-2016.

The Technical Plan for 2014 envisages, in particular, development of the network to include a further 345 exchange areas, also involving 52 new municipalities. Use of FTTH is envisaged only in the Milan area, while in all other areas it has been decided to use only FTTCab architecture. As from the second half of 2013, the Italian Ministry of Economic Development started to issue some calls for tender on a regional basis as part of the "Ultra Broadband Digital Plan", through INFRATEL, acting as the implementing and fund allocation organisation. To date, calls for tender have been issued and relative contracts awarded for 3 regions: Campania, Molise and Calabria; Telecom Italia was awarded the contract for all three tenders. Details of plans to develop the ultra broadband network in the three regions are outlined below.

Figure 6 shows the progress made in developing the NGAN, both in terms of Property Units connected in primary according to the plan and actually connected at the end of the period from the start of the year to the end of each quarter in 2014. Figure 7 shows the same information for Property Units connected in secondary.

The graphs also indicate the trends expected based on the new revision of the plan, published on 7 July 2014.

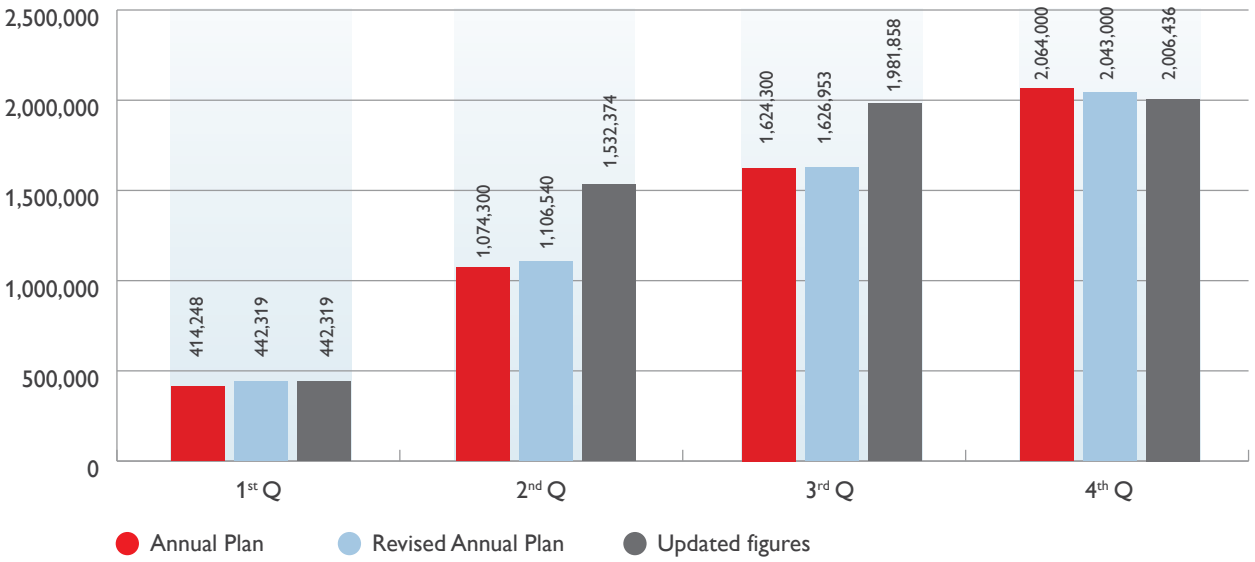


Figure 6 - Progress in the development of the NGAN (PUs connected in primary).

Figure 7 - Progress in the development of the NGAN (PUs connected in secondary).

Analysis of the graphs shows at the end of the year considerable compliance with the targets in the annual plan, as regards PUs connected in primary, while figures for PUs connected in secondary were lower than the values in the revised annual plan published in October.

As regards the development of the FTTCab NGAN, reference can be made to Figure 8 showing the progress of the 2014 plan both in terms of new cabinets to be equipped according to quarterly programmes, and in terms of new cabinets actually served at the end of each quarter. The number of cabinets in which ONU was installed at the end of 2014 is in line with the forecast in the technical plans.

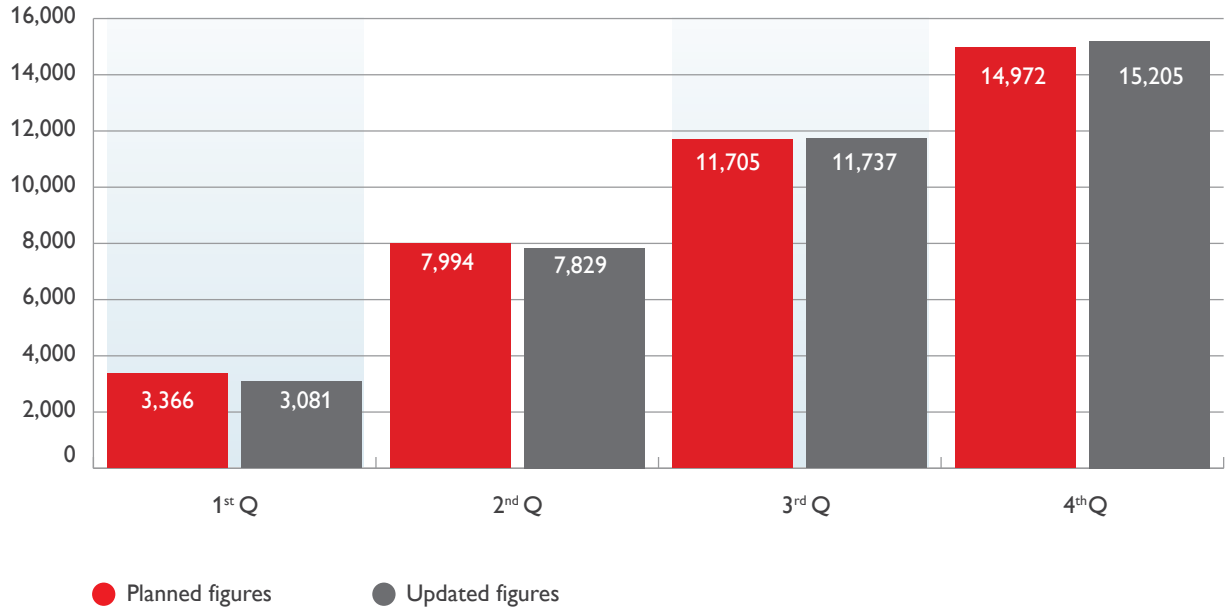


Figure 8 - Progress in the development of the FTTCab NGAN (number of new cabinets equipped).

The tables show the progress of works in the 118 municipalities identified by the 2014 FTTCab NGAN plan. The graph in figure 9 summarises the progress at year end of FTTCab NGAN development in the 118 municipalities.

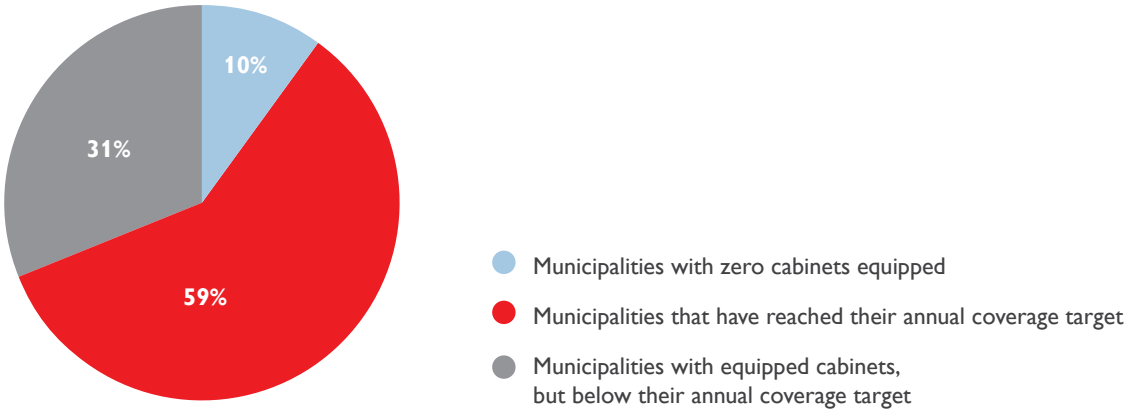


Figure 9 - Progress of the FTTCab NGAN in relation to established targets.

In particular:

- 12 municipalities (equal to 10%) still do not have equipped cabinets;
- 69 municipalities (equal to 59%) had reached or exceeded their annual coverage target;
- 37 municipalities (equal to 31%) did not reach their annual coverage target for the end of 2014.

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Agrigento	67	Over 50%	37	55,2%
Albignasego	27	20-50%	26	96,3%
Alessandria	198	Over 50%	115	58,1%
Ancona	83	Over 50%	21	25,3%
Andria	186	Up to 20%	0	0,0%
Aprilia	110	Over 50%	26	23,6%
Arezzo	215	Up to 20%	123	57,2%
Asti	148	Over 50%	83	56,1%
Bari	663	Over 50%	196	29,6%
Barletta	153	Up to 20%	0	0,0%
Benevento	32	Up to 20%	3	9,4%
Bergamo	271	Over 50%	32	11,8%
Bologna	1072	Over 50%	449	41,9%
Bolzano/Bozen	121	20-50%	101	83,5%
Brescia	493	Over 50%	43	8,7%
Brindisi	143	Over 50%	67	46,9%
Busto Arsizio	158	Over 50%	138	87,3%
Cagliari	438	Up to 20%	119	27,2%
Carpi	167	Over 50%	54	32,3%
Carrara	42	Up to 20%	30	71,4%
Casalecchio di Reno	60	Over 50%	33	55,0%
Caserta	173	Up to 20%	0	0,0%

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Casoria	90	Over 50%	36	40,0%
Castel Maggiore	29	Over 50%	26	89,7%
Castenaso	16	Over 50%	16	100,0%
Catania	787	Over 50%	295	37,5%
Catanzaro	128	Over 50%	42	32,8%
Cesena	174	20-50%	54	31,0%
Cinisello Balsamo	158	Over 50%	142	89,9%
Como	179	Over 50%	64	35,8%
Cosenza	167	20-50%	70	41,9%
Creazzo	30	20-50%	26	86,7%
Cremona	182	Over 50%	147	80,8%
Cuneo	89	Over 50%	50	56,2%
Dolo	65	20-50%	53	81,5%
Faenza	84	Over 50%	52	61,9%
Fano	84	20-50%	25	29,8%
Ferrara	258	20-50%	60	23,3%
Firenze	927	Over 50%	384	41,4%
Fiumicino	84	Up to 20%	0	0,0%
Foggia	325	20-50%	80	24,6%
Forlì	237	Over 50%	147	62,0%
Formigine	47	20-50%	15	31,9%
Gela	134	Over 50%	88	65,7%
Genova	1390	Over 50%	894	64,3%
Giugliano in Campania	148	Over 50%	85	57,4%
Grosseto	134	Up to 20%	73	54,5%
Guidonia Montecelio	75	Up to 20%	0	0,0%
Imola	169	Over 50%	107	63,3%

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
L'Aquila	148	Up to 20%	0	0,0%
La Spezia	222	Up to 20%	60	27,0%
Lamezia Terme	110	Up to 20%	0	0,0%
Latina	184	Up to 20%	102	55,4%
Lecce	81	Up to 20%	2	2,5%
Legnano	85	Over 50%	70	82,4%
Livorno	291	Over 50%	42	14,4%
Lucca	155	Over 50%	83	53,5%
Mantova	82	Over 50%	3	3,7%
Marsala	112	Up to 20%	0	0,0%
Massa	143	Up to 20%	39	27,3%
Matera	69	Up to 20%	5	7,2%
Messina	395	Over 50%	244	61,8%
Milano	1.080	Over 50%	512	47,4%
Minturno	31	Up to 20%	26	83,9%
Modena	415	20-50%	178	42,9%
Moncalieri	73	Over 50%	0	0,0%
Monza	41	Over 50%	7	17,1%
Napoli	2027	Over 50%	857	42,3%
Novara	169	Over 50%	79	46,7%
Padova	378	Over 50%	48	12,7%
Palermo	1350	Over 50%	518	38,4%
Parma	403	Over 50%	258	64,0%
Pavia	170	20-50%	116	68,2%
Perugia	330	Over 50%	173	52,4%
Pesaro	195	20-50%	106	54,4%
Pescara	366	Over 50%	230	62,8%

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Peschiera del Garda	35	20-50%	28	80,0%
Piacenza	237	Over 50%	202	85,2%
Pisa	200	Over 50%	27	13,5%
Pistoia	135	Up to 20%	48	35,6%
Potenza	63	Up to 20%	3	4,8%
Pozzuoli	127	Up to 20%	0	0,0%
Prato	398	Over 50%	124	31,2%
Quartu Sant'Elena	73	Up to 20%	4	5,5%
Ragusa	156	Over 50%	93	59,6%
Ravenna	252	Up to 20%	71	28,2%
Reggio di Calabria	403	Over 50%	231	57,3%
Reggio nell'Emilia	240	Over 50%	11	4,6%
Rimini	329	20-50%	79	24,0%
Roma	6538	Over 50%	2086	31,9%
Rubiera	29	20-50%	26	89,7%
Salerno	333	Over 50%	206	61,9%
San Martino Buon Albergo	41	20-50%	37	90,2%
Sassari	58	Up to 20%	2	3,4%
Savona	137	Over 50%	113	82,5%
Sesto San Giovanni	233	Over 50%	183	78,5%
Siena	84	Over 50%	65	77,4%
Siracusa	267	Over 50%	192	71,9%
Taranto	161	Over 50%	56	34,8%
Terni	216	20-50%	76	35,2%
Torino	1949	Over 50%	923	47,4%
Collegno	58	Over 50%	40	69,0%
Torre del Greco	160	Over 50%	120	75,0%

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Torri di Quartesolo	31	20-50%	0	0,0%
Treviso	231	Over 50%	155	67,1%
Trieste	555	Over 50%	296	53,3%
Trento	81	20-50%	32	39,5%
Udine	281	Over 50%	153	54,4%
Varese	68	Over 50%	9	13,2%
Venezia	713	Over 50%	247	34,6%
Verona	612	Over 50%	88	14,4%
Viareggio	182	Up to 20%	0	0,0%
Vicenza	275	Over 50%	184	66,9%
Vigevano	120	20-50%	60	50,0%
Viterbo	119	Up to 20%	28	23,5%
San Giovanni in Persiceto	47	Over 50%	19	40,4%
Zola Predosa	45	Over 50%	24	53,3%
San Lazzaro di Savena	58	Over 50%	50	86,2%

4.c.5 - Actions planned by Telecom Italia following award of the BUL contracts for Campania, Molise and Calabria

4.c.5a - BUL project Campania

The aim of the BUL project for Campania is to develop a new passive optical infrastructure enabling NGANs to deliver services to the public administration sector, to businesses and citizens resident in the 80 "client" municipalities. The project will help achieve objectives set by the European Digital Agenda, enabling, in technical terms, different groups of the population to use connection speeds of 30 and 100 Mbit/s, with an open, neutral network structure that can be used for developing different-technology NGANs.

In particular, the coverage planned by Telecom Italia in its project proposal presented, refers to 119 municipalities (that include 80 municipalities considered as "clients" by MISE//Infratel) and 173 exchange areas; the developed infrastructure will make it possible to achieve the following coverage levels:

- 986,000 property units enabled for 30 Mbit/s, i.e. with optic fibre up to the switching cabinets and concentration points of elementary rigid network departments of the current copper access network;
- 166,000 property units enabled for 100 Mbit/s, i.e. with fibre terminated inside the buildings in an Optical Termination Box (OTB).

The project will be developed in 2014 - 2015. The coverage planned by Telecom Italia for 2014 refers to 36 municipalities and 52 exchange areas, with the development of an optic infrastructure to enable 30 Mbit/s services for 469,727 property units (only primary network infrastructure). As at 30 December 2014, 501,952 property units were connected in primary, which is higher than targets for the year.

By the end of 2014, Telecom plans to equip some cabinets with ONU VDSL2 modules in 27 of the 36 municipalities, in order to supply ultra broadband services via an FTTCab network infrastructure. The table below shows VDSL2 coverage targets in terms of the percentage of equipped cabinets and progress as at 31 December 2014 in all 27 municipalities of Telecom Italia's 2014 FTTCab plan which is part of the BUL project for Campania.

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Arzano	93	20-50%	11	11,8%
Aversa	113	20-50%	7	6,2%
Baronissi	46	20-50%	10	21,7%
Battipaglia	107	20-50%	24	22,4%
Brusciano	30	20-50%	0	0,0%
Calvizzano	25	20-50%	0	0,0%
Casagiove	72	20-50%	18	25,0%
Casavatore	106	20-50%	8	7,5%
Castellammare di Stabia	184	20-50%	20	10,9%
Cercola	30	Over 50%	2	6,7%
Cicciano	37	Over 50%	20	54,1%
Crispano	159	20-50%	8	5,0%
Eboli	72	20-50%	20	27,8%
Fisciano	20	20-50%	0	0,0%
Giffoni Valle Piana	30	Over 50%	0	0,0%
Grumo Nevano	96	20-50%	9	9,4%
Maddaloni	71	20-50%	5	7,0%
Marano di Napoli	94	20-50%	0	0,0%
Mugnano di Napoli	42	20-50%	1	2,4%
Nola	106	20-50%	27	25,5%
Pomigliano d'Arco	90	20-50%	9	10,0%
Portici	61	20-50%	5	8,2%
Quarto	60	20-50%	10	16,7%
San Giorgio a Cremano	102	20-50%	5	4,9%
San Sebastiano al Vesuvio	77	20-50%	4	5,2%
Santa M. Capua Vetere	124	20-50%	4	3,2%
Sant'Arpino	32	Over 50%	13	40,6%

4.c.5b - Progetto BUL Molise

The aim of the BUL project for Molise is to develop, in at least 3 municipalities considered as "clients", a new passive optical infrastructure enabling NGANs to deliver services to the public administration sector, to businesses and citizens resident in the areas identified by the Tender. The project will help achieve objectives set by the European Digital Agenda, enabling, in technical terms, different groups of the population to use connection speeds of 30 and 100 Mbit/s, with an open, neutral network structure that can be used for developing different-technology NGANs.

In particular, the coverage planned by Telecom Italia in its project proposal presented, refers to 4 municipalities (that include 3 municipalities considered as "clients" by MISE//Infratel) and 8 exchange areas; the developed infrastructure will make it possible to achieve the following coverage levels:

- 31,000 property units enabled for 30 Mbit/s, i.e. with optic fibre up to the switching cabinets and concentration points of elementary rigid network departments of the current copper access network;
- 3,200 property units enabled for 100 Mbit/s, i.e. with fibre terminated inside the buildings in an Optical Termination Box (OTB).

The project will be developed in 2014 - 2015. The coverage planned by Telecom Italia for 2014 refers to 4 municipalities and 8 exchange areas, with the development of an optic infrastructure to enable 30 Mbit/s services for 9,000 property units (only primary network infrastructure).

Telecom Italia did not plan to equip cabinets with ONU VDSL2 modules in these areas, in 2014.

4.c.5c - BUL project Calabria

The aim of the BUL project for Calabria is to develop new passive optical infrastructure in at least 155 municipalities considered as "clients", enabling NGANs to deliver services to the public administration sector, to businesses and citizens resident in the areas identified by the Tender. The project will help achieve objectives set by the European Digital Agenda, enabling, in technical terms, different groups of the population to use connection speeds of 30 and 100 Mbit/s, with an open, neutral network structure that can be used for developing different-technology NGANs.

In particular, the coverage planned by Telecom Italia in its project proposal presented, refers to 223 municipalities (that include 155 municipalities considered as "clients" by MISE//Infratel) and 359 exchange areas; the developed infrastructure will make it possible to achieve the following coverage levels:

- 796,100 property units enabled for 30 Mbit/s, i.e. with optic fibre up to the switching cabinets and concentration points of elementary rigid network departments of the current copper access network;

The project will be developed in 2014 - 2015. The coverage planned by Telecom Italia for 2014 refers to 4 municipalities and 6 exchange areas, with the development of an optic infrastructure to enable 30 Mbit/s services for 14,532 property units (only primary network infrastructure).

By the end of 2014, Telecom plans to equip some cabinets with ONU VDSL2 modules in 2 of the 4 municipalities, in order to supply ultra broadband services via an FTTCab network infrastructure. The table below shows VDSL2 coverage targets in terms of the percentage of equipped cabinets and progress as at 31 December 2014 in all municipalities of Telecom Italia's 2014 FTTCab plan which is part of the BUL project for Calabria.

Site	Total potential cabinets	% of VDSL2 cabinets to set up at the end of 2014 compared to the number of total cabinets	Cabinets set up in 2014	Percentage of the total
Rende	83	20-50%	29	34,9%
Squillace	10	Over 50%	1	10,0%

4.c.6 - Regulatory obligations of Telecom Italia concerning the LLU subloop

AGCom resolution no. 747/13/ CONS requires the following co-location mechanisms to access the LLU subloop.

a. **Cabinet non ancora adattati per NGAN**. This refers to the situation where Telecom Italia has not yet put a raised level on the original cabinet, and intending to install one, it has received an expression of interest from another Operator. In this case, Telecom Italia requires, subject to the binding obligation of the applicant Operator to remunerate said for costs incurred for the entire process, the cabinets to be configured in such a way that they can also host the mini DSLAM of the Operator concerned (including Telecom Italia). If several expressions of interest are received and one raised level cannot be used for all OLOs concerned, Telecom Italia will develop, subject to the binding obligation of applicant Operators to remunerate said for costs incurred for the entire process, an additional cabinet to host the mini DSLAMs of applicant OLOs.

b. **Cabinets already configured with a raised level.** If Telecom Italia has already developed the raised level for the original cabinet, current co-location procedures remain in force. However, where technically feasible, if only one OLO makes a request, Telecom Italia shall allow for the current raised level to be configured to host another applicant OLO, subject to its obligation to remunerate Telecom Italia for any costs incurred. Where interest is shown by several OLOs, these may agree on developing a cabinet together next to Telecom Italia's cabinet (development to be undertaken by the OLOs).

AGCom resolution no. 747/13/ CONS also outlines a notification and booking procedure in the case that Telecom Italia intends developing new infrastructures (to access cabinets), or develops configurations for NGANs of existing cabinets. AGCom resolution no. 155/14/CONS describes this notification procedure in detail. In particular, it defines a "notification" procedure approved with two versions: the first version ("fully operational") refers to cabinets for which configuration works have not yet been started by Telecom Italia (installations for years >= 2015), while the second version ("temporary) refers to cabinets for which Telecom Italia, at the date of the first notification, has already started works (meant also as a request for permits or works to connect energy supplies, the dispatch of orders to manufacturers).

Both procedures are described below.

"Fully operational" notification procedure for the year X (X>=2015):

1. By June X-1, Telecom Italia publishes the Annual Plan for the year X (by Town(City and Exchange Area - ADC - by Town/City) on its portal www.wholesale.telecomitalia.com
2. By June X-1, Telecom Italia publishes the Quarterly Plan for January-March for year X (by ADC, for cabinets by AdC, indicating the geographic coordinates and coverage). By September X-1, Telecom Italia publishes the Quarterly Plan for April-June for year X (by ADC, for cabinets by AdC, indicating the geographic coordinates and coverage). By December X-1, Telecom Italia publishes the Quarterly Plan for July-September for year X (by ADC, for cabinets by AdC, indicating the geographic coordinates and coverage). By March X, TI publishes the Quarterly Plan for October-December for year X (by ADC, for cabinets by AdC, indicating the geographic coordinates and coverage).

The above Quarterly Programme is binding save for justified reasons, including, for example, third parties failing to issue or delaying the issue of authorisation, costs for work relating to the location of cabinets (particular ground surface, excessive distances, lack of suitable infrastructure), external events relating to the unavailability of planned infrastructure or force majeure.

3. Every 3 months, within 15 days from notification of the Quarterly Programme as of point 2, each OLO that wishes to house its own ONU in an adjacent cabinet or raised level above the Telecom Italia one shall "express an interest" on the portal/sent via Telecom Italia's mailbox, indicating the number of cabinets or raised levels it intends requesting for each Town/City and AdC of the above mentioned Quarterly Programme. In the case of an AdC where the OLO has not expressed an interest, the OLO shall put "0" in the AdC field. In the case of an AdC where the OLO has expressed an interest, but is not interested in all cabinets, the OLO shall put "YES" for each cabinet it is interested in.
4. OLOs that do not "express an interest" to Telecom Italia before the deadline as of point 3 may participate in the procedure for the subsequent Quarterly Programme.
5. TI gives the OLOs that expressed an interest a preliminary cost estimate, including the costs of the cabinet (per capita) and additional costs, within 15 days from the deadline as of point 3. The cost estimate is based on standard elements and takes into account the distance of the OLOs' cabinet from

Telecom Italia's cabinet, the type of cabinet (adjacent external, below ground level, raised), and the number of OLOs expressing an interest per cabinet.

6. Within 15 days from the deadline as of point 5 (notification of the estimate), OLOs that initially "expressed an interest", shall declare on Telecom Italia's portal/in its mailbox their "acceptance of the estimate" or "waiver of the estimate". Within 24:00 hours on the day following the previous deadline, if the OLO that initially expressed an interest is the only OLO of a given cabinet, it may waive its interest.
7. Telecom Italia, within the 7 days following the deadline as of point 6, sends the OLOs that accepted the estimate within the deadline as of point 6, price proposals which are binding for the OLOs, save for the final settlement of sums on completion of the works, which will also take into account any cabinets not yet set up by Telecom Italia as regards the deadline as of point 2. The OLOs, in the 3 working days following the deadline as above, send Telecom Italia the price proposals signed for acceptance. In the case of a request to settle final amounts, Telecom Italia will give the OLO evidence, with sufficient information, of costs incurred and referring to the request.
8. After Telecom Italia has received the price proposals accepted by the OLOs, it will purchase the necessary cabinets (or raised levels) and start relative preparation works (applications for permits, installation activities, etc.).

Temporary notification procedure for 2014:

1. On its portal *www.wholesale.telecomitalia.com*, Telecom Italia notifies the list of cabinets for NGA configuration during 2014, and for which it has started preparation works (by Town/City and Exchange Area - AdC by Town/City, indicating the geographic coordinates and coverage), within 30 calendar days from notification of this ruling. The above list is binding save for justified reasons, including, for example, third parties failing to issue or delaying the issue of authorisation, costs for work relating to the location of cabinets (particular ground surface, excessive distances, lack of suitable infrastructure), external events related to the unavailability of planned infrastructure or force majeure.
2. Within 15 days from notification as of point 1, each OLO that wishes to house its own ONU in an adjacent cabinet or level above the Telecom Italia one shall "express an interest" on the portal/sent via Telecom Italia's mailbox, indicating the number of cabinets or raised levels it intends requesting for each Town/City and AdC. In the case of an AdC where the OLO has not expressed an interest, the OLO shall put "0" in the AdC field. In the case of an AdC where the OLO has expressed an interest, but is not interested in all cabinets, the OLO shall put "YES" for each cabinet it is interested in.
3. OLOs that do not "express an interest" to Telecom Italia before the deadline as of point 2 may request access to any infrastructure developed (raised level on the multi-operator cabinet next to the Telecom Italia one) at a later date.
4. Telecom Italia gives the OLOs that expressed an interest a preliminary cost estimate, including the costs of the cabinet (per capita) and additional costs, within 15 days from the deadline as of point 2. The cost estimate is based on standard elements and takes into account the distance of the OLOs' cabinet from the Telecom Italia cabinet, the type of cabinet (adjacent external, below ground level, raised), and the number of OLOs expressing an interest per cabinet.

5. Within 15 **days** from the deadline as of point 4 (notification of the estimate), OLOs that initially "expressed an interest", shall declare on Telecom Italia's portal/in its mailbox their "acceptance of the estimate" or "waiver of the estimate". Within 24:00 hours on the day following the previous deadline, if the OLO that initially expressed an interest is the only OLO of a given cabinet, it may waive its interest. If the Operator does not wish to waive its application, it may request a cost evaluation from Telecom Italia, including additional costs, to install an adjacent cabinet or raised level to install next to the Telecom Italia one.
6. Telecom Italia, within the 7 days following the deadline as of point 5, sends the OLOs that accepted the estimate within the deadline as of point 5, price proposals which are binding for the OLOs, save for final settlement sums on completion of the works, which will also take into account any cabinets not yet set up by Telecom Italia as regards the deadline as of point 1. The OLOs, in the 3 working days following the deadline as above, send Telecom Italia the price proposals signed for acceptance. In the case of a request to settle final amounts, Telecom Italia will give the OLO evidence, with sufficient information, of costs incurred and referring to the request.
7. After Telecom Italia has received the price proposals accepted by the OLOs, it will purchase the necessary cabinets (or raised levels) and start relative preparation works (applications for permits, installation activities, etc.).

The temporary procedure may also be adopted in cases where cabinets have already been configured for the NGAN, subject to a feasibility study being carried out on development of the raised level.

Notification procedure for cabinets already configured for the NGAN.

If Telecom Italia has already developed the raised level for the original cabinet, current co-location procedures remain in force. However, where technically feasible, if only one OLO makes a request, Telecom Italia shall allow for the current raised level to be configured to host another applicant OLO, subject to its obligation to remunerate Telecom Italia for any costs incurred. Where interest is shown by several OLOs, these may agree on developing a cabinet together next to Telecom Italia's cabinet (development to be undertaken by the OLOs), adopting the same notification procedures. The resolution also defines the technical specifications that Telecom Italia shall adopt to develop the cabinets and relative raised levels and requires it to prepare a price list based on products available on the market. AGCom has confirmed that Telecom Italia shall apply for authorisations required by law for works necessary to develop and install the adjacent cabinet and relative raised levels, and may also arrange for power supply connections on behalf of the OLO, if agreed between the parties, subject to the OLO remaining the party to the agreement with the energy provider. It should also be noted that in said case, OLOs remain the owners of and are responsible for the maintenance of the cabinets, raised levels and accessories.

4.D - OTHER UNDERTAKINGS GROUP

Undertakings Group no. 9: Measures relative to the next generation access networks

Undertakings Group no. 9 (*Measures related to next generation access networks*) contains obligations that Telecom Italia adopted concerning next generation optic fibre access networks.

In particular, this Undertaking required Telecom to inform AGCom of proposals to access and share cabling infrastructure, and a proposal to share investments with other Operators concerned for the development of new infrastructure. Moreover, the Operator had to extend the Undertakings to include intermediate access services provided through next generation networks, for which AGCom had appointed the Incumbent as the SMP Operator.

During the year, the Supervisory Board checked compliance with these obligations.

In 2011, the Authority published Resolution no. 1/11/CONS, "Public consultation on the regulation of services for accessing next generation networks", subsequently incorporated by Resolution no. 301/11/CONS, that completed requirements already included in the previous Resolution no. 731/09/ CONS and in the European Commission Recommendation on the NGAN.

Subsequently, Resolution no. 1/12/CONS, appointing Telecom Italia as the SMP Operator, completed the legal framework relative to regulations applicable to next generation services and networks.

In this respect, with Resolution no. 3/2012, the Supervisory Board started analysis and evaluation of the existing relationship between the content of the Undertakings and the scope of the provisions of the Resolutions, in order to identify new areas of intervention and start required control activities. In particular, reference was made to the overlap between the provisions of point 9.4 of the Undertakings (which also apply to access services provided on NGNs) and the scope of Resolution No. 1/12/CONS.

Following said analyses, in Resolution no. 11/2012 dated 3 May 2012, the Supervisory Board had approved a number of Recommendations to Telecom Italia, regarding Undertakings Group no. 6 "*Guarantees of Transparency of Technical Plans for the Development of the Fixed Access Network*", in particular requesting Telecom Italia to supplement:

- the information contained in the NGAN/FTTCab Technical Plans providing further details with regard to making the cabinet areas saleable;
- the database made available to other Operators and to Telecom Italia Retail with information regarding the saleability of the FTTCab service on active numbers.

Telecom Italia accepted these Recommendations and explained the additions made to its Technical Plans for Development of the Fixed Access Network and databases to the Supervisory Board: the additions relative

to the Annual Plans and quarterly programmes indicate the number of cabinets in exchange areas being developed, and the number of cabinets of the aforesaid exchange areas by Municipality that will be lit and made available for the sale of VDSL services with an FTTCab architecture.

The integrations to the database regard:

- exchange areas where an OLT will be available, at least 60 days in advance;
- planned coverage of the ONUs, at least 30 days prior to availability for sale and, for each ONU, indication of the OLT to which it belongs;
- an association of cabinets-street addresses for the "planned" cabinets, those "ready for sale" and those already "available for sale".

Finally, in July 2012, Telecom Italia submitted a proposal to AGCom outlining a new equivalence model for the next generation access network (NGAN), which considers Undertakings Groups 1, 2, 3, 4, 5, 6, 7 and 8 to be fully applicable.

Resolution no. 155/14/CONS of 9 April 2014 "*Implementing conditions for co-location obligations and cabinet access as of Resolution 747/13/CONS*", for the purposes of supplying the "Multi-operator Cabinet" service, introduce a notification procedure applicable to cabinets to configure for an NGAN.

In particular, the fully operational notification procedure requires Telecom Italia, as from 2015, to publish on its portal (www.wholesale.telecomitalia.com) the following information by June of each year referred to the following year:

- the Annual Plan (by Town/City and Exchange Area) of cabinets to configure for an NGAN, for the purposes of supplying the Multi-operator Cabinet service;
- the relative January-March quarterly programme.

Following the new provisions and before publication of the above information, Telecom Italia shall, if necessary, update and supplement the information contained in the Long-Term Technical Plans for Development of the NGAN published pursuant to the Undertakings Group no. 6 as defined in the Resolution of the Supervisory Board no. 15/2012.

The above Long-Term Technical Plans for the NGAN will also be supplemented with additional information whenever Telecom Italia is awarded regional contracts based on tenders called by the Italian Ministry of Economic Development for the development of ultra broadband infrastructure[1].

[1] These tenders refer to public funding pursuant to aid regulations no. SA.34199 (2012/N), for the implementation of the "Ultra broadband digital plan", approved by the European Commission with Decision C(2012) 9833 of 18 December 2012.

05
Glossary

Glossary			
ADSL	Asymmetric Digital Subscriber Line	KPI	Key Performance Indicator
AGCM	Autorità Garante della Concorrenza e del Mercato (Italian Competition Authority)	KPO	Key Performance Objective
		LLU	Local Loop Unbundling
AGCom	Autorità per le Garanzie nelle Comunicazioni (Italian National Regulatory Authority for Communications)	MBO	Management By Objectives
		MTT	Master Trouble Ticket
		NAL	Non Active Line
AL	Active Line	NDP	New Delivery Process
AOA	Access Operations Area	NGAN	Next Generation Access Network
BRAS	Broadband Remote Access Server	NGN	Next Generation Network
BT	British Telecom	NWS	National Wholesale Services
BTP	Building Termination Point	OA	Open Access
Co.Re.Com.	Comitati Regionali per le Comunicazioni (Regional Committees for Communications)	ODF	Optical Distribution Frame
		ODN	Optical Distribution Network
CNCU	Consiglio Nazionale dei Consumatori e degli Utenti (National Council of Consumers and Users)	Ofcom	Office of Communications
		OLO	Other Licensed Operators
CPS	Carrier Pre-Selection	OLT	Optical Line Termination
CRM	Customer Relationship Management	ONT	Optical Network Termination
CS	Carrier Selection	OTA	Office of the Telecommunications Adjudicator
DU	Dwelling Unit	OTB	Optical Termination Box
DVD	Desired Visit Date	PON	Passive Optical Network
DSLAM	Digital Subscriber Line Access Multiplexer	POTS	Plain Old Telephone Service
EAB	Equality of Access Board	PSTN	Public Switched Telephone Network
EAO	Equality of Access Office	PVC	Permanent Virtual Channel
EDD	Expected Delivery Date	RO	Reference Offer
EoI	Equivalence of Input	SA	Shared Access
EoO	Equivalence of Output	SB	Supervisory Board
FRAR	Frame Relay Access Remotizer	S/HDSL	Single-Pair High-Speed Digital Subscriber Line
FTTB	Fibre To The Building		
FTTCab	Fibre To The Cabinet	SLA	Service Level Agreement
FTTH	Fibre To The Home	SLU	Sub-Loop Unbundling
FTTN	Fibre To The Node	SMP	Significant Market Power
FTTP	Fibre To The Premises	SO	Supervisory Office
GPON	Gigabit PON	PU	Property Unit
GTN	General Telephone Network	VDSL	Very High Digital Subscriber Line
IOG	Independent Oversight Group	VULA	Virtual Unbundled Local Access
IPTV	Internet Protocol Television	WDM	Wavelength Division Multiplexer
ISDN	Integrated Services Digital Network	WLR	Wholesale Line Rental

Index of figures

CH. 3

CH. 4

Chap. 4.a.1

Chap. 4.b.