

Annex 20

Glossary

2007 EC Recommendation: European Commission Recommendation (2007/879/EC) of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

2009 EC Recommendation: European Commission Recommendation (2009/396/EC) of 7 May 2009 on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU.

2012 CC Determination: Determination of the Competition Commission *References under section 193 of the Communications Act 2003: British Telecommunications Plc v Office of Communications, Case 1180/3/3/11, Everything Everywhere Limited v Office of Communications Case 1182/3/3/11, Vodafone Limited v Office of Communications, Case 1183/3/3/11 and Telefónica UK Limited*, 9 February 2012.

21CN: Twenty-first Century Network. BT's next generation network upgrade.

2G: Second generation of mobile telephony systems, including the GSM technology standard.

3G: Third generation of mobile telephony systems, including the UMTS technology standard.

4G: Fourth generation of mobile telephony systems, including the LTE technology standard.

Access Directive: The European Commission's Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities.

Active customers: Customers with an active mobile telephony connection. A mobile connection can be considered active on a given day if it has not been cancelled by the user/subscriber or the network operator and has been used to send or receive a voice call or a text message within the preceding three months.

App: A self-contained computer program or software, commonly called an application or an app, which is usually intended for use on a smartphone or a tablet computer and designed to fulfil a particular purpose or provide a distinct service. Apps can be downloaded by a user to a mobile device.

Asda: Asda Mobile which is as part of Asda Stores Limited, a subsidiary of Wal-Mart Stores Inc.

Asset-light MCP: MCP which provides MCT without operating the full technological infrastructure used by traditional MCPs, such as the four largest MCPs. Asset-light MCPs would not operate, or directly incur the costs of operating, a radio access network.

Assumed Handover Point (AHP): The location where a call is handed over from the OCP to the TCP for the purposes of connecting the call to the end-user.

Bill and Keep (B&K): An approach to MCT pricing where communications providers make no payments to each other for mobile call termination (that is, MTRs are zero). Unless

otherwise specified, references to B&K are references to B&K set by regulation, although B&K arrangements may be agreed commercially.

BT: British Telecommunications plc.

BTS: Base Transceiver Station – the equipment at the edge of the mobile network that communicates wirelessly with mobile devices. The term ‘BTS’ is typically used in relation to 2G technologies.

Cable & Wireless (C&W): Cable & Wireless plc – acquired by Vodafone plc in July 2012.

Calling Network Provider Pays (CNPP): The billing principle where wholesale charges for terminating calls are set in such a way that the originating call provider pays the terminating call provider a charge to terminate the call. CNPP often occurs in markets where retail charges are set on a CPP basis.

Calling Party Pays (CPP): The billing principle where retail charges for telephone calls are set in such a way that only the calling party (and not the called party) pays a charge when a call is made.

Capacity Based Charging (CBC): An approach to MCT pricing whereby MTRs are set on the basis of the network capacity required for terminating traffic.

CAT: the Competition Appeal Tribunal.

CAT Judgment: Judgment of the Competition Appeal Tribunal of 3 May 2012 in Case Nos: 1180/3/3/11, 1181/3/3/11, 1182/3/3/11, 1183/3/3/11 *British Telecommunications Plc, Everything Everywhere Limited, Hutchison 3G UK Limited and Vodafone Limited v Competition Commission and Office of Communications* [2012] CAT 11 .

CBP: Countervailing Buyer Power.

CC: the Competition Commission, which in 2014 was replaced by the Competition and Markets Authority (CMA).

CFI: Call for Inputs.

Charge control: A control which sets the maximum price that a communication provider can charge for a particular product or service. Most charge controls are imposed for a defined period.

Circuit-switched technology: Network technology where the end-to-end communication takes place over a dedicated physical circuit (which may include a dedicated radio channel).

Common costs: Costs which are shared by all the services supplied by a firm.

Common Regulatory Framework (CRF): The package of EC Directives which harmonise the framework for the regulation of electronic communications across the EU.

Communications Act or “the Act”: the Communications Act 2003.

Cost orientation: The principle that the price charged for the provision of a service should reflect the underlying costs incurred in providing that service.

CoA: The Court of Appeal.

CP: Communications Provider.

Current cost accounting (CCA): An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

DECT: Digital Enhanced Cordless Telecommunications.

DECT guard band: Spectrum consisting of 1781.7-1785 MHz paired with 1876.7-1880 MHz awarded to several mobile providers by auction in 2006. These spectrum bands were originally set up to protect DECT phones from interference by mobile telecommunication transmission.

Digital Local Exchange (DLE): The telephone exchange to which customers are connected, usually via a concentrator.

EBITDA: Earnings Before Interest, Taxation, Depreciation and Amortisation.

EC: The European Commission.

EE: Everything Everywhere Ltd.

ED: Economic depreciation.

End-to-end (E2E) connectivity: Connection across a group of networks which enables users on those networks to make calls and send data to each other across those networks.

End-user: The final consumer of a product or service.

eNodeB: Evolved Node B - The LTE equivalent of a BTS.

ERG: European Regulators Group.

EU: the European Union.

F2M: Fixed-to-mobile, used to refer to a call or traffic originated from a fixed geographic number and seeking to call a mobile number.

FCP: Fixed Communications Provider.

Femtocell: A low-power wireless access point that operates in licensed spectrum to connect standard mobile devices to a mobile operator's network, typically using a residential DSL or cable broadband connection.

Fixed Call Termination (FCT): The service provided by an FCP to allow an OCP to connect a caller with the intended call recipient on that FCP's network.

Fixed Mobile Convergence (FMC): Refers to capabilities that provide seamless connectivity between fixed and mobile networks by supporting services and applications to the end-user irrespective of the underlying access technology.

Fixed Termination Rate (FTR): The wholesale charge levied by FCPs for Fixed Call Termination services provided by them.

Fixed Narrowband Market Review (FNMR): The Ofcom Market Review relating to narrowband services.

Four largest MCPs: The four largest MCPs are EE, H3G, O2 and Vodafone. These MCPs operate a fully-deployed national mobile network, including both a radio access network and elements of core network; they have independent control of spectrum, and operate in both the wholesale and retail markets.

Framework Directive: Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services.

Fully Allocated Cost (FAC): An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

Global System for Mobile Communications (GSM™): An established 2G mobile technology standard.

H3G: Hutchison 3G UK Ltd – trading as Three.

Herfindahl–Hirschman Index (HHI): an indicator of the amount of concentration/competition in a market. It can range from close to zero (market very competitive) to 10000 (monopoly). The HHI is calculated by squaring the market share of each MCP and then summing the resulting numbers.

Home Location Register (HLR): The main database of permanent subscribers for a mobile network, which is maintained by a network services provider.

IM: Instant message or instant messaging service.

Internet Protocol (IP): A packet data protocol used for the routing and carriage of data packets across the internet and similar data networks.

ISDN2: A digital telephone line service that supports telephony and switched data services. ISDN2 provides the calling or data capacity equivalent to two analogue telephone lines.

ISDN30: A digital telephone service that provides up to the equivalent of 30 analogue lines over a common digital bearer circuit. These lines provide digital voice telephony, data services and a wide range of ancillary services.

ISP: Internet Service Provider.

ITU-T: International Telecommunications Union - Telecommunications Standardisation sector.

Local Loop: The access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): A process by which a dominant provider's local loops are physically disconnected, or partially disconnected, from its network and connected to competing provider's networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

Long Run Incremental Costs (LRIC): LRIC is defined as the long run avoidable cost of an operator carrying a particular increment of traffic. The increment in question is treated as the final traffic increment on the network.

Long Run Incremental Costs Plus (LRIC+): The long run (average) incremental costs plus an equi-proportionate mark-up for the recovery of shared and common costs. LRIC+ should be taken to mean the same as LRAIC+ (a term used by some other NRAs).

Long Term Evolution (LTE™): A 4G mobile technology standardised by 3GPP. LTE is the predominant 4G technology used in the UK.

M2M: Mobile-to-mobile, used to refer to a call or traffic originated from a mobile number and terminating on another mobile number.

MCP: Mobile Communications Provider, a provider of mobile communication services.

Mobile Call Termination (MCT): The wholesale service provided by an MCP to allow an OCP (Originating Communications Provider) to connect a caller with the intended mobile call recipient on that MCP's network.

Modern Equivalent Asset (MEA): An approach to setting charges that bases costs on what is believed to be the most efficient available technology that performs the same function as the old technology.

Multiple Service Access Node (MSAN): A device typically installed in a telephone exchange (although sometimes in a roadside cabinet), which connects customers telephone lines to the core network, to provide telephony, ISDN, and broadband all from a single platform.

Mobile Termination Rate (MTR): The wholesale charge levied by MCPs for MCT.

Mobile Virtual Network Operator (MVNO): A provider of mobile communications services which does not own a national network themselves, but instead provides all or part of their mobile phone services over network infrastructure owned by an MNO. For example: Tesco Mobile or Asda.

National MCP: MCP that operates a fully-deployed national mobile network, including both a radio access network and elements of core network. A National MCP has independent control of spectrum, and operates in both the wholesale and retail markets.

Next Generation Network (NGN): A network that uses IP technology in the core and backhaul to provide multiple services over a single platform.

National Regulatory Authority (NRA): The relevant communications regulatory body for each country in the EU. Ofcom is the NRA for the United Kingdom.

NodeB: The UMTS equivalent of a BTS.

NTNP: National Telephone Numbering Plan.

NTS: Number Translation Services.

O2: Telefónica O2 UK Limited.

Originating Communications Provider (OCP): The CP of the end-user making a call, i.e. the CP from which the call originates.

OECD: Organisation for Economic Co-operation and Development.

Off-net call: A call originated by customers of a network different from the one on which the call is being terminated.

On-net call: A call originated and received by customers of the same network.

Over-the-top (OTT) service: A type of service provided “over the top” of an existing data network connection such as a fixed or wireless broadband connection. Examples of OTT services include mobile VoIP calls over a 3G data network.

Packet-switched technology: A digital networking communications method that groups all transmitted data – regardless of content, type, or structure – into suitably-sized blocks, called *packets*.

PAYG: Pay as you go. Also referred to as pre-pay.

Picocell: Small base station which provides infill network coverage and additional network capacity.

Ported-in numbers: A mobile number that is not allocated to a particular MCP, used by an end-user who has since become a subscriber of that MCP (and where the subscriber has elected to use mobile number portability to retain their number).

Ported-out numbers: A mobile number that is allocated to a particular MCP, used by an end-user who has since become a subscriber of another MCP (and where the subscriber has elected to use mobile number portability to retain their number).

Post-pay: A payment arrangement whereby subscribers pay for the use of a service after its use. Billing and payment typically occur monthly.

Ppm: Pence per minute.

Pre-pay: A payment arrangement whereby subscribers purchase credit in advance of service use. The purchased credit is then used to pay for service use at the time of use.

Public Switched Telephony Network (PSTN): The telephony network used to provide telephone calls using (or emulating) circuit-switching and using telephone numbers to identify subscribers or called locations, allowing all customers connected to the network to call all other customers. A PSTN can be either a fixed or a mobile network.

Radio Access Network (RAN): The part of a mobile network which transfers signals between the core network and the user equipment (e.g. handsets) over the air-interface.

Shared Metallic Path Facility (SMPF): a shared unbundled local loop allowing a CP to offer data via its own switch, plus voice via BT equipment.

Short Message Service (SMS): A globally accepted wireless service that enables the transmission of alphanumeric messages between mobile subscribers and external systems such as electronic mail, paging, and voice mail systems. ‘Messaging services’ is used in the text to refer collectively to SMS and MMS (multimedia messaging services). MMS can include pictures or other media content.

Single RAN (‘S-RAN’): Combined base station equipment in the RAN providing 2G, 3G and 4G functionality.

SIP: Session Initiation Protocol is a signalling protocol that is commonly used for calls over IP networks.

Smaller MCP: In this document, this refers to MCPs other than the four national MCPs.

SMP: Significant market power.

SMP Guidelines: European Commission guidelines on market analysis and the assessment of SMP under the Community regulatory framework for electronic communications networks and services (2002/C165/03).

SSNIP: Small but Significant Non-transitory Increase in Price.

Target Average Charge (TAC): A charge measure used in previous charge controls, whereby MCPs were able to vary their MTR provided that the MTR levied on average did not exceed the charge specified in the charge control.

Telefónica: Telefónica O2 UK Limited.

Terminating Communications Provider (TCP): The CP of the end-user receiving a call, i.e. the CP from which the call terminates.

TEU: Treaty on European Union.

Tesco: Tesco Mobile Limited.

TFEU: Treaty on the Functioning of the European Union.

Time Division Multiplex (TDM): A method of putting multiple data streams in a single signal by separating the signal into many segments, each having a very short duration. Each individual data stream is reassembled at the receiving end based on the timing.

Time of day: The variation in call charge rates across daytime, evening and weekend calls.

Unlicensed Mobile Access (UMA): Technology which allows access to mobile services over networks deployed on unlicensed spectrum, such as W-LAN based networks. UMA is a commercial name for Generic Access Network (GAN)

Universal Mobile Telecommunications System (UMTS™): A 3G mobile technology standardised by 3GPP.

Virgin Media: Virgin Media Limited.

Vodafone: Vodafone Limited.

Voice over Internet Protocol (VoIP): A method of carrying voice calls on fixed and mobile networks by converting speech into data packets (and back) and carrying it using IP.

Voice over LTE ('VoLTE'): A technology that allows voice calls to be provided over an LTE network.

Weighted Average Cost of Capital (WACC): An estimated cost of capital for a hypothetical United Kingdom CP. For the purpose of this exercise, we use the Capital Asset Pricing Model (CAPM) to determine the WACC.

WFAEL: Wholesale fixed analogue exchanges lines.

WLA: Wholesale Local Access.

Wholesale Line Rental (WLR): The service offered by BT to other United Kingdom communications providers to enable them to offer retail line rental services in competition with BT's own retail services. Line rental is offered along with calls (and other service elements, such as broadband) to retail customers.

Wireless LAN (W-LAN): A wireless local area network links two or more devices using a wireless distribution method, providing a connection through an access point to the wider internet.

Wireless Fidelity (WiFi): Short-range wireless technology using any type of 802.11 standards such as 802.11b or 802.11a. These technologies allow an over-the-air connection between a wireless client and an access point, or between two wireless clients.

Worldwide Interoperability for Microwave Access (WiMAX): A type of wireless technology based on the IEEE 802.16 standard.