

Project Pink

European data gathering

26 January 2021

An independent study by Assembly Research, commissioned by Liberty Global and Telefonica
The information contained is correct as of Q4 2020

Summary

Background

1. Benefits of FMC
2. Demand, appetite and market environment for FMC
3. Improvements in network quality and build post FMC

Real consumer and network benefits from FMC

62.4%

Average share of FMC broadband subscriptions

There is significant demand for converged products in other European markets

+18.5

Difference in average NPS between 2013 and 2019

Converged products drive higher customer satisfaction

-31.3%

Reduction in fixed broadband churn in the Netherlands, 2014–2019

Convergence results in lower customer churn

1740%

Average increase in broadband speed of an FMC package (602.5Mbps today compared to 34.5Mbps before FMC)

FMC has delivered better value for customers

77.5%

Average 100Mbps+ coverage

Where there are two strong competitors, investment in infrastructure increases

1.88%

Average GDP contribution of the sector in those countries where FMC is popular















































FMC infrastructure investment benefits the national economy

Summary

Background

1. Benefits of FMC
2. Demand, appetite and market environment for FMC
3. Improvements in network quality and build post FMC

Full convergence happens when you combine networks

		FMC start date	Uptake of FMC ¹	Fixed-mobile mergers	Full FMC players and their brands
	France	2010	50% 	2014 ² : Numericable  + SFR  	 12.5m FTTH premises  2.4m FTTH premises  351k FTTH premises
	Netherlands	2013	28% 	2016 ³ : Vodafone   + Ziggo   2018 ⁴ : T-Mobile   + Tele2  	 2.47m FTTH premises  7.2m HFC premises  200k FTTH premises ¹¹
	Portugal	2013	40% 	2013 ⁵ : Zon  + Optimus   2015 ⁶ : Altice + MEO   2016 ⁷ : Vodafone + Optimus	 4.9m FTTH premises  4.7m FTTH/HFC premises  3.4m FTTH premises
	Spain	2012	62% 	2014 ⁸ : Vodafone   + ONO   2015 ⁹ : Orange   + Jazztel   2016 ¹⁰ : Masmovil + Jazztel	 23.1m FTTH premises  14.82m FTTH premises  11.2m FTTH/HFC premises  8.2m FTTH premises 

1. EU ranking, European Commission DESI Index 2019, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=60010
 2. Cleared by Autorité de la concurrence with commitments, <https://www.autoritedelaconcurrence.fr/fr/communiqués-de-presse/autorite-de-la-concurrence-autorise-sous-conditions-le-rachat-de-sfr-par>
 3. Cleared by the EC with commitments, https://ec.europa.eu/commission/presscorner/detail/en/IP_16_2711
 4. Cleared by the EC without remedies, https://ec.europa.eu/commission/presscorner/detail/en/IP_18_6588
 5. Cleared by Portuguese Competition Authority with commitments, http://www.concorrencia.pt/vPT/Noticias_Eventos/Comunicados/Paginas/Comunicado_AdC_201318.aspx

6. Cleared by the EC with commitments, https://ec.europa.eu/commission/presscorner/detail/en/IP_15_4805
 7. Remedy for the Zon/Optimus (NOS) merger, http://extranet.concorrencia.pt/PesquisAdC/CCENT_Page.aspx?Ref=Ccent_2016_59
 8. Cleared by the EC without remedies, https://ec.europa.eu/commission/presscorner/detail/en/IP_14_772
 9. Cleared by the EC with commitments, https://ec.europa.eu/commission/presscorner/detail/en/IP_15_4997
 10. FTTH assets only, https://www.grupomasmovil.com/wp-content/uploads/2017/01/150810_Agreement_with_Orange_on_Fiber_and_ADSL_Assets.pdf
 11. Target for end of 2020

Table 1: Market overview





	Fixed voice	Fixed broadband	Mobile	Pay TV
 Orange	Yes	DSL, FTTH	MNO	Yes
 SFR	Yes	Cable, DSL, FTTH	MNO	Yes
 Bouygues	Yes	DSL, FTTH	MNO	Yes
 Free	Yes	DSL, FTTH	MNO	Yes

Figure 2: Fixed broadband market shares (% subscriptions, 2015–2019)

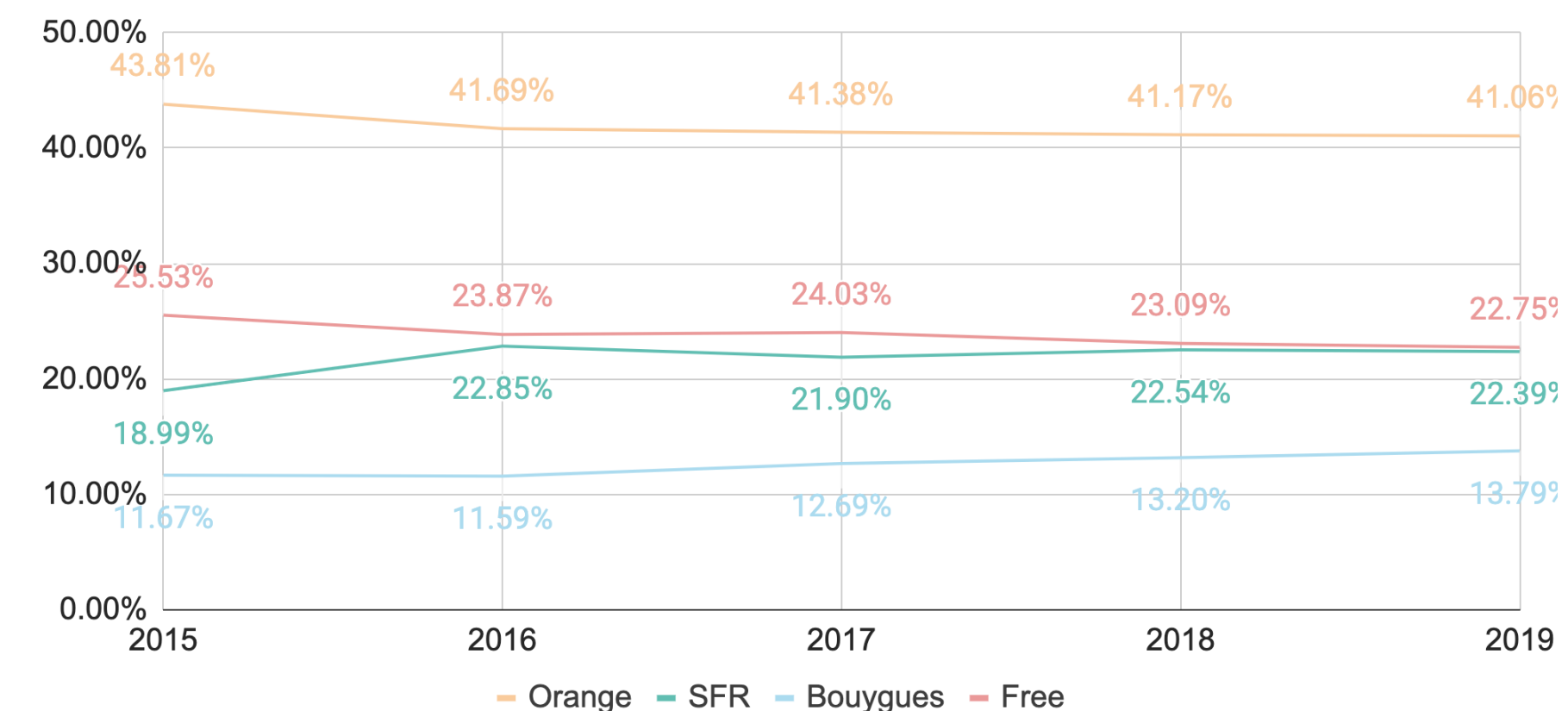


Figure 1: Orange FMC broadband subscriptions (%), 2012–2018

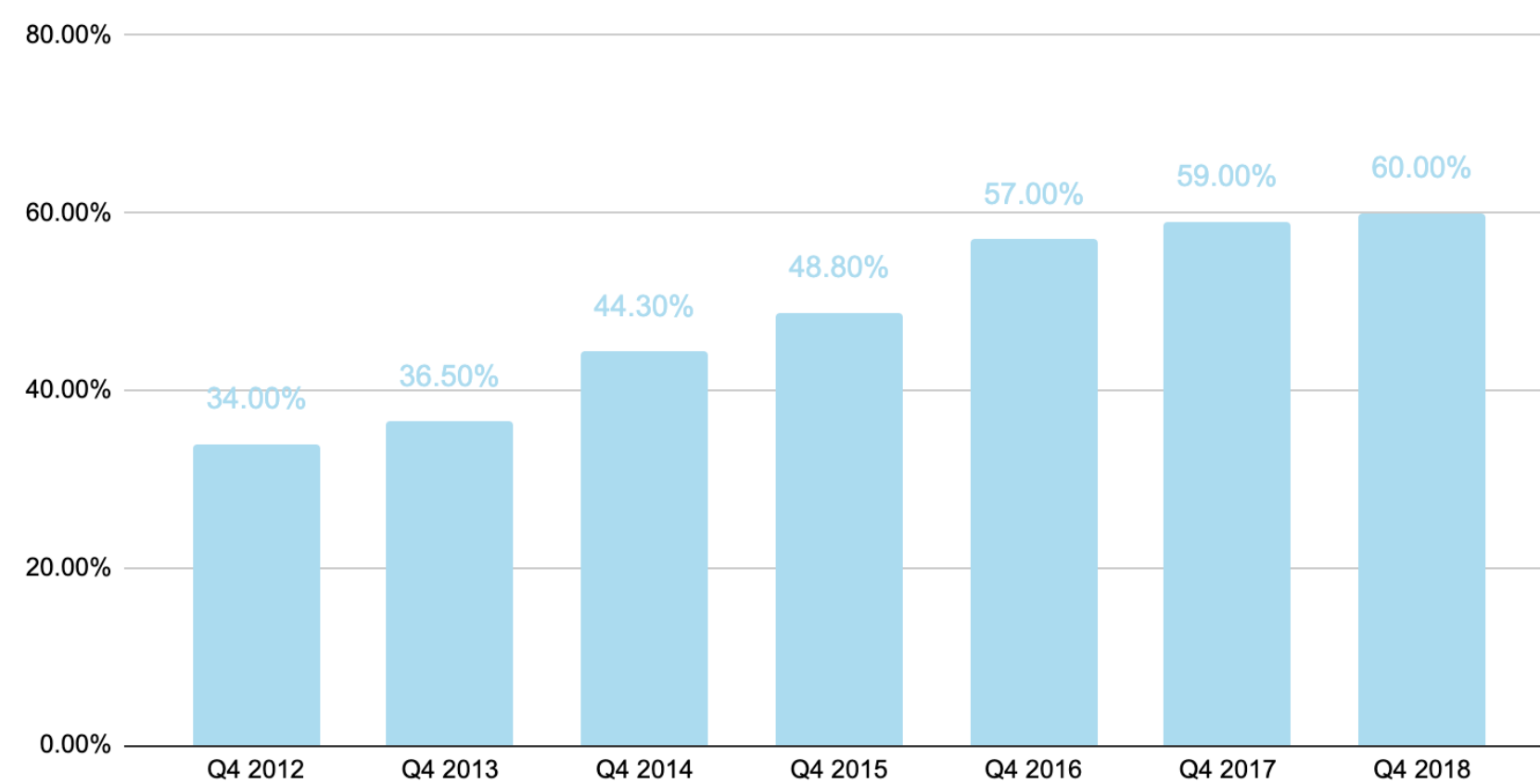
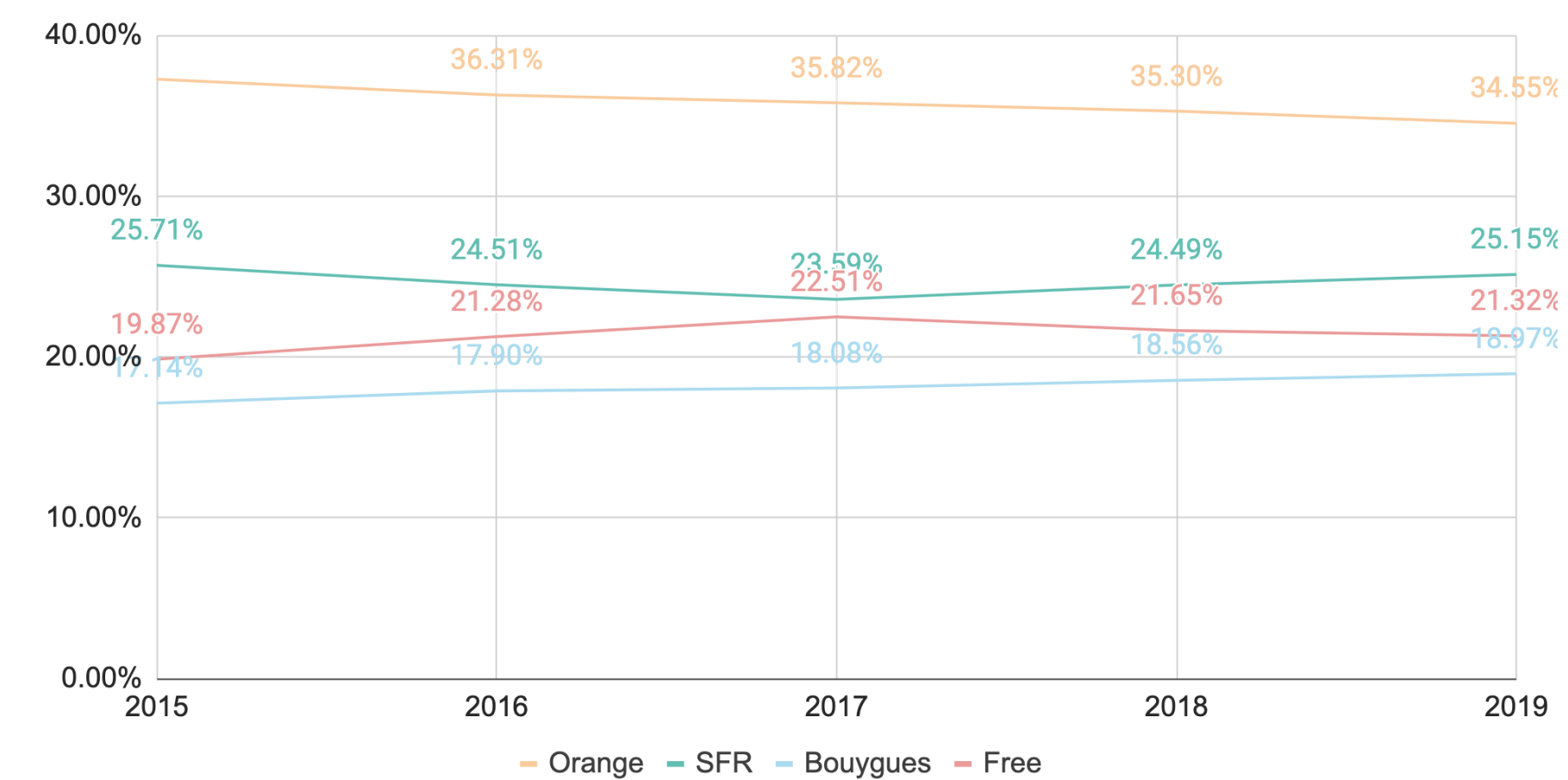


Figure 3: Mobile market shares (% subscriptions, 2015–2019)



Netherlands

Table 2: Market overview




		Fixed voice	Fixed broadband	Mobile	Pay TV
	KPN	Yes	DSL, FTTH	MNO	Yes
	Vodafone Ziggo	Yes	Cable	MNO	Yes
	T-Mobile	Yes	DSL, FTTH	MNO	Yes

Figure 5: Fixed broadband market shares (% subscriptions, 2015–2019)

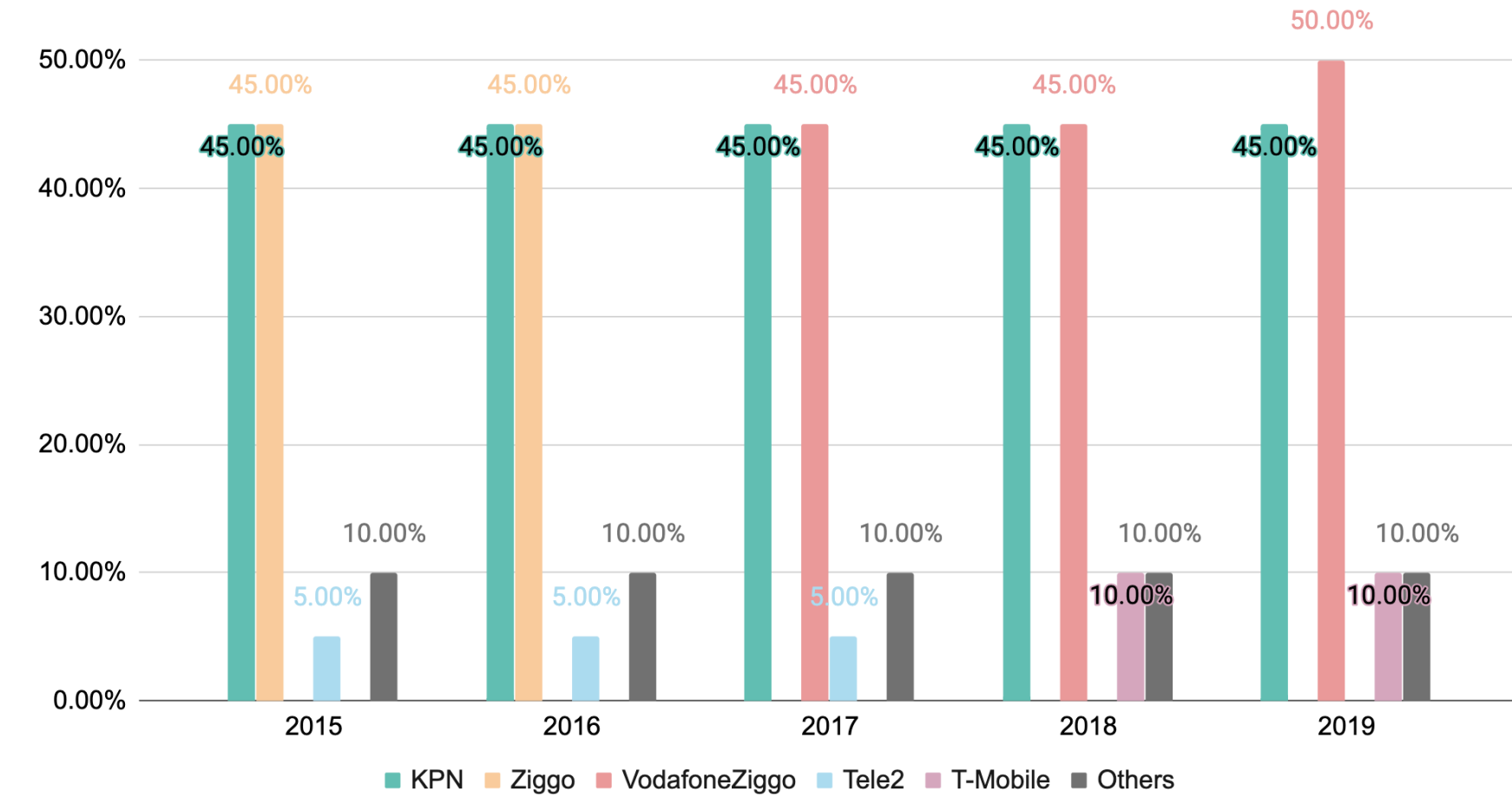


Figure 4: FMC broadband subscriptions (%), 2015–2019

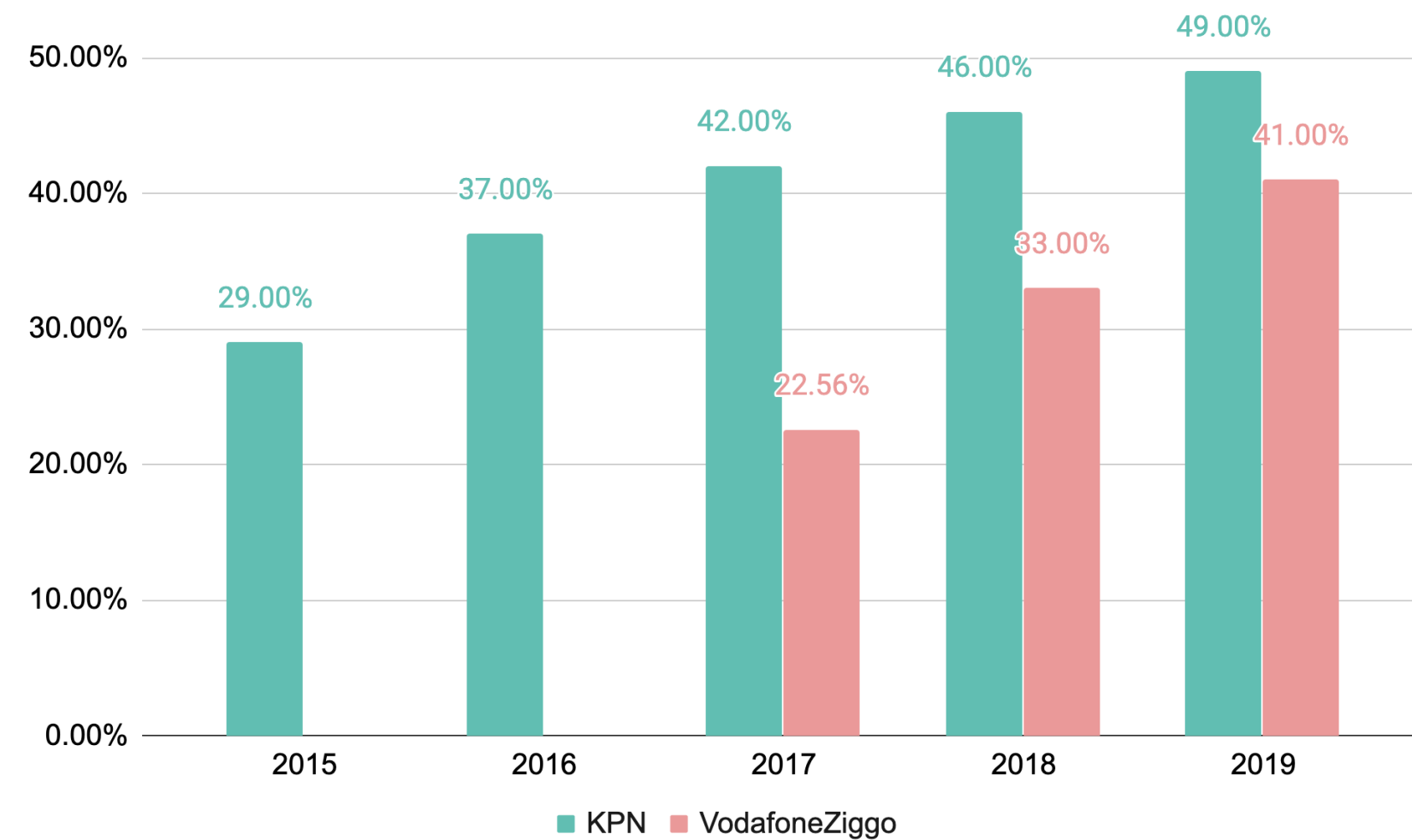
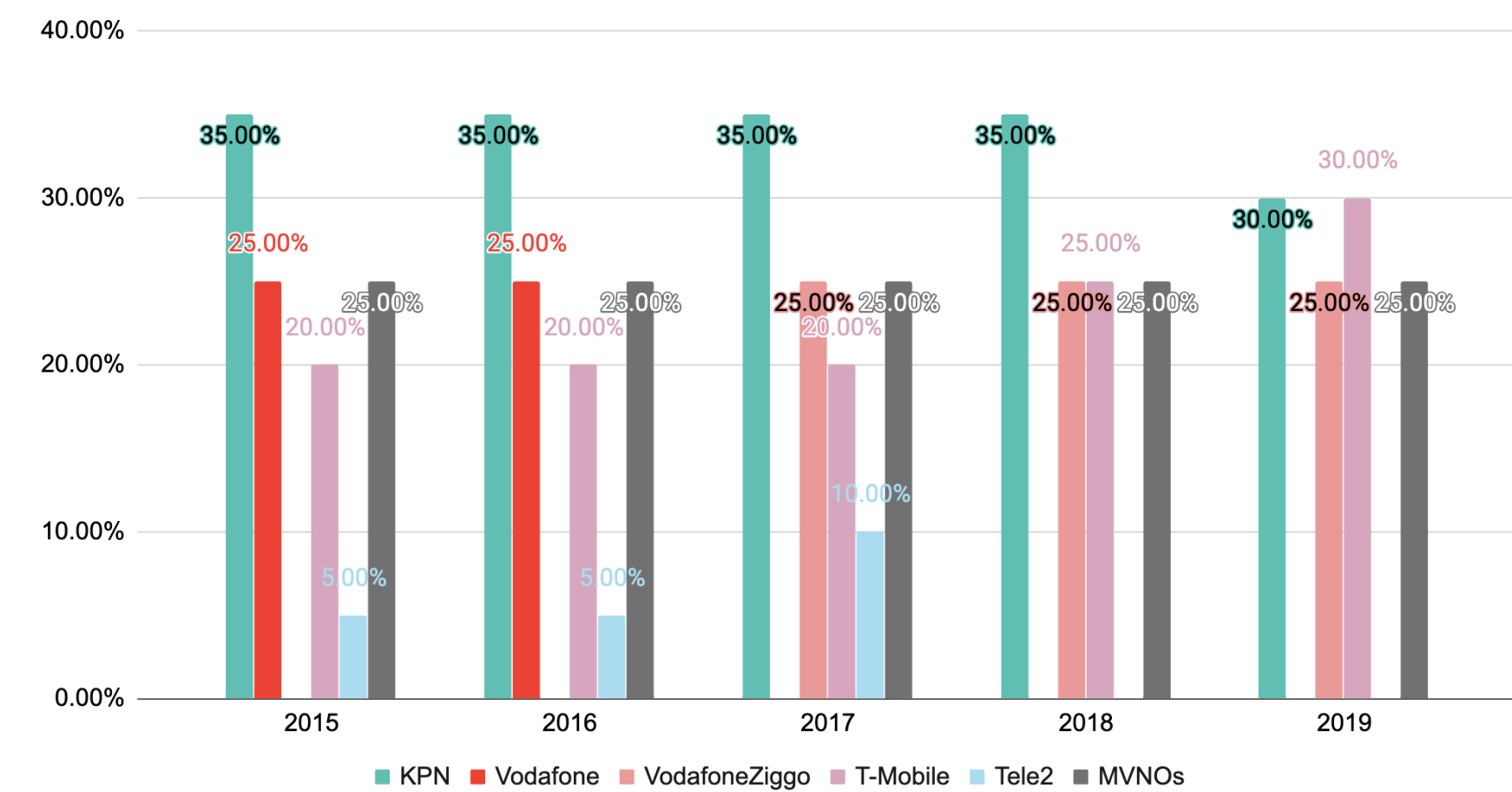


Figure 6: Mobile market shares (% subscriptions, 2015–2019)





Portugal

Table 3: Market overview





		Fixed voice	Fixed broadband	Mobile	Pay TV
	MEO	Yes	DSL, FTTH	MNO	Yes
	NOS	Yes	Cable, FTTH	MNO	Yes
	Vodafone	Yes	DSL, FTTH	MNO	Yes
	NOWO ONI	Yes	Cable	MVNO	Yes

Figure 8: Fixed broadband market shares (% subscriptions, 2015–2019)

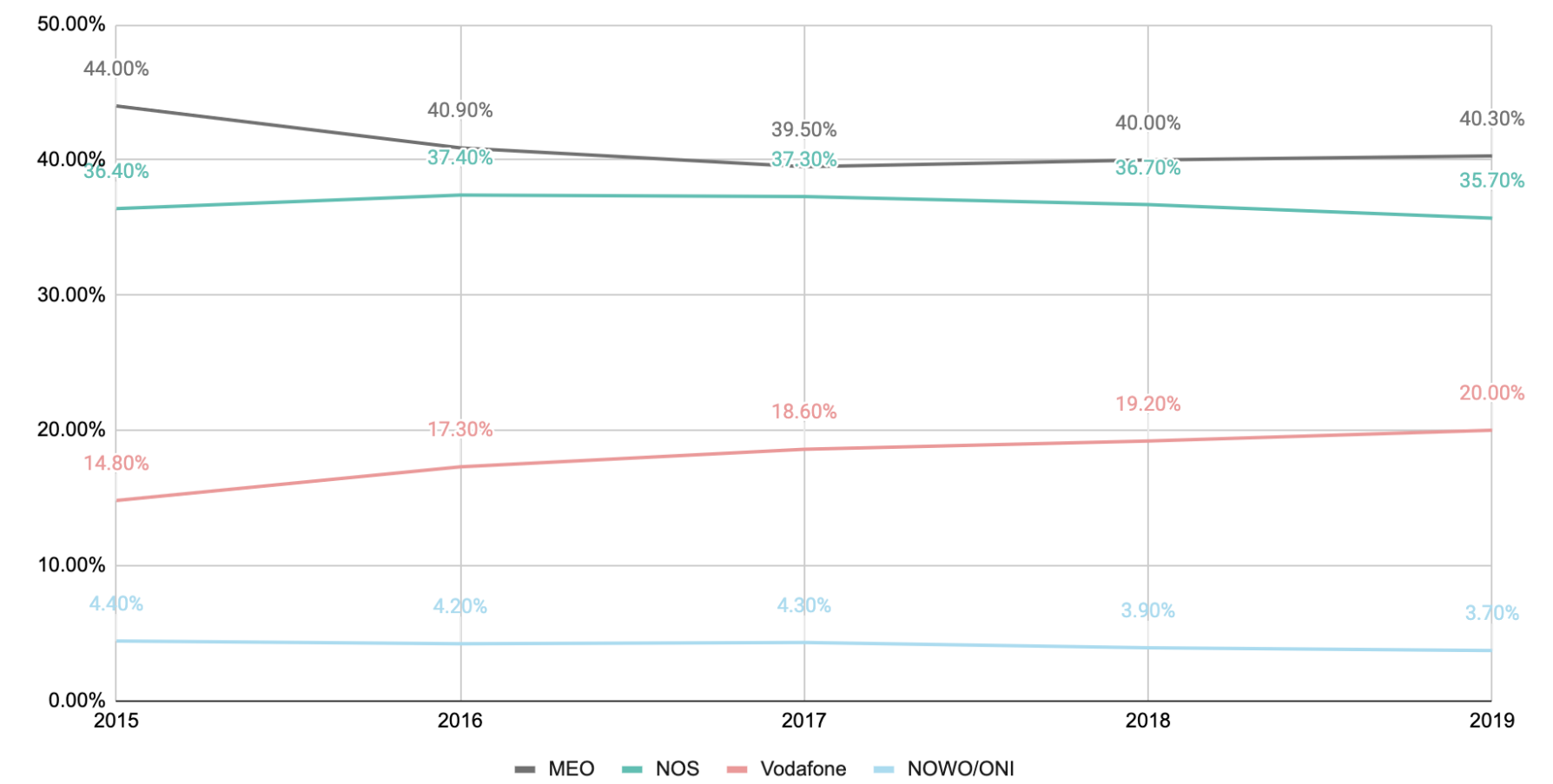


Figure 7: FMC broadband subscriptions (%), 2015–2019

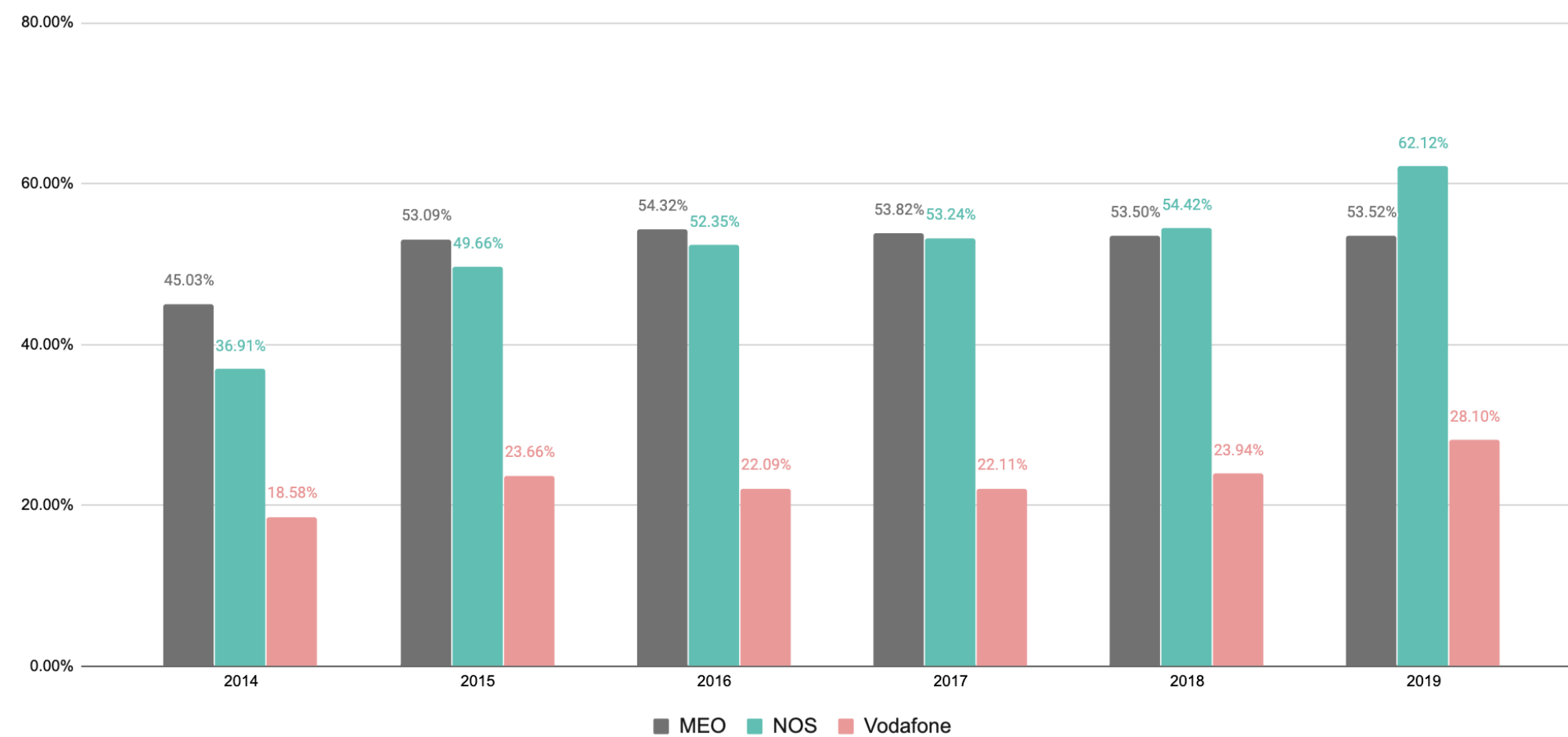
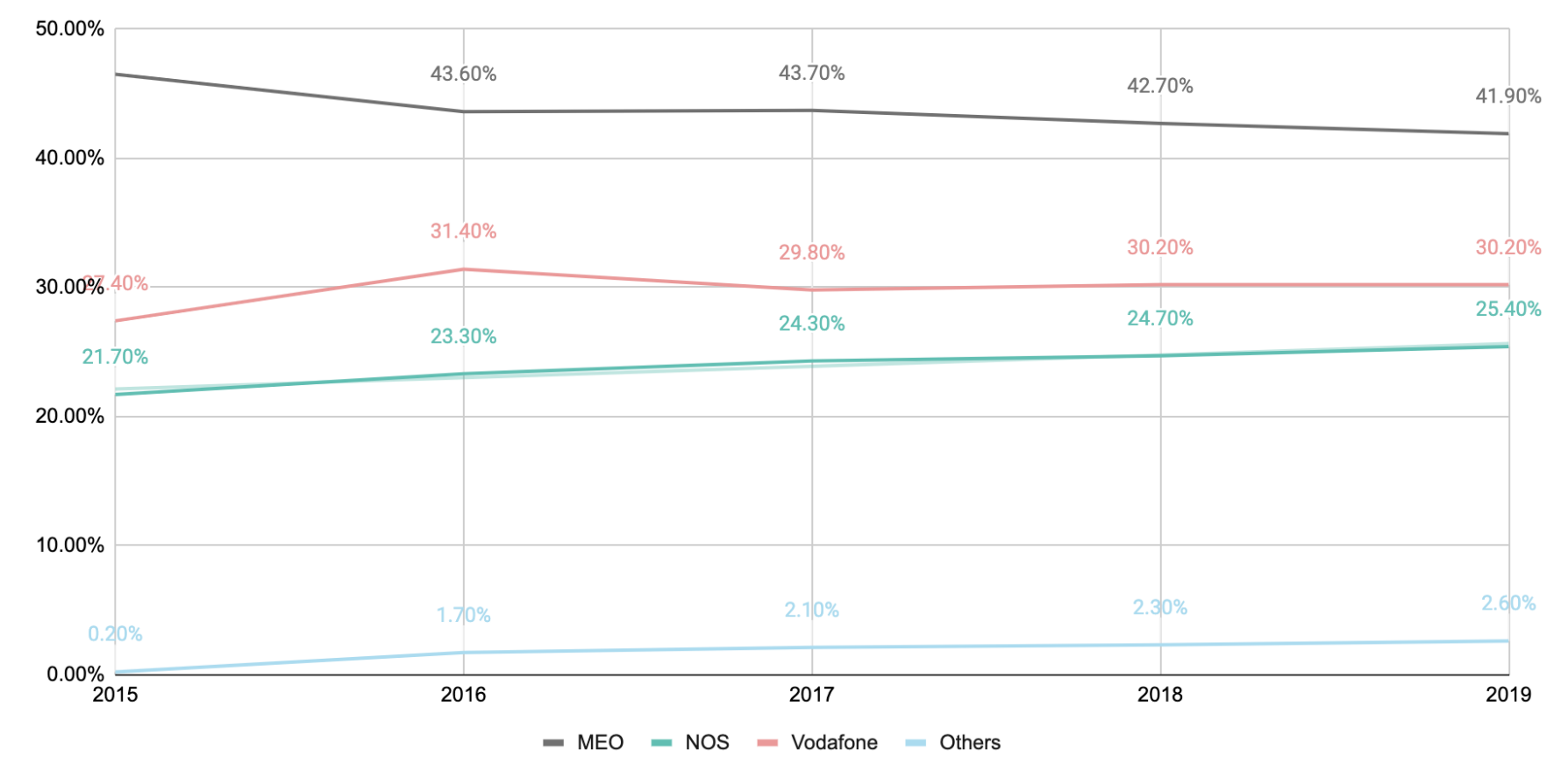


Figure 9: Mobile market shares (% subscriptions, 2015–2019)





Spain

Table 4: Market overview





	Fixed voice	Fixed broadband	Mobile	Pay TV
 Movistar	Yes	DSL, FTTH	MNO	Yes
 Vodafone	Yes	Cable, DSL, FTTH	MNO	Yes
 Orange	Yes	DSL, FTTH	MNO	Yes
 Masmovil	Yes	DSL, FTTH	MNO	Yes

Figure 11: Fixed broadband market shares (% subscriptions, 2015–2019)

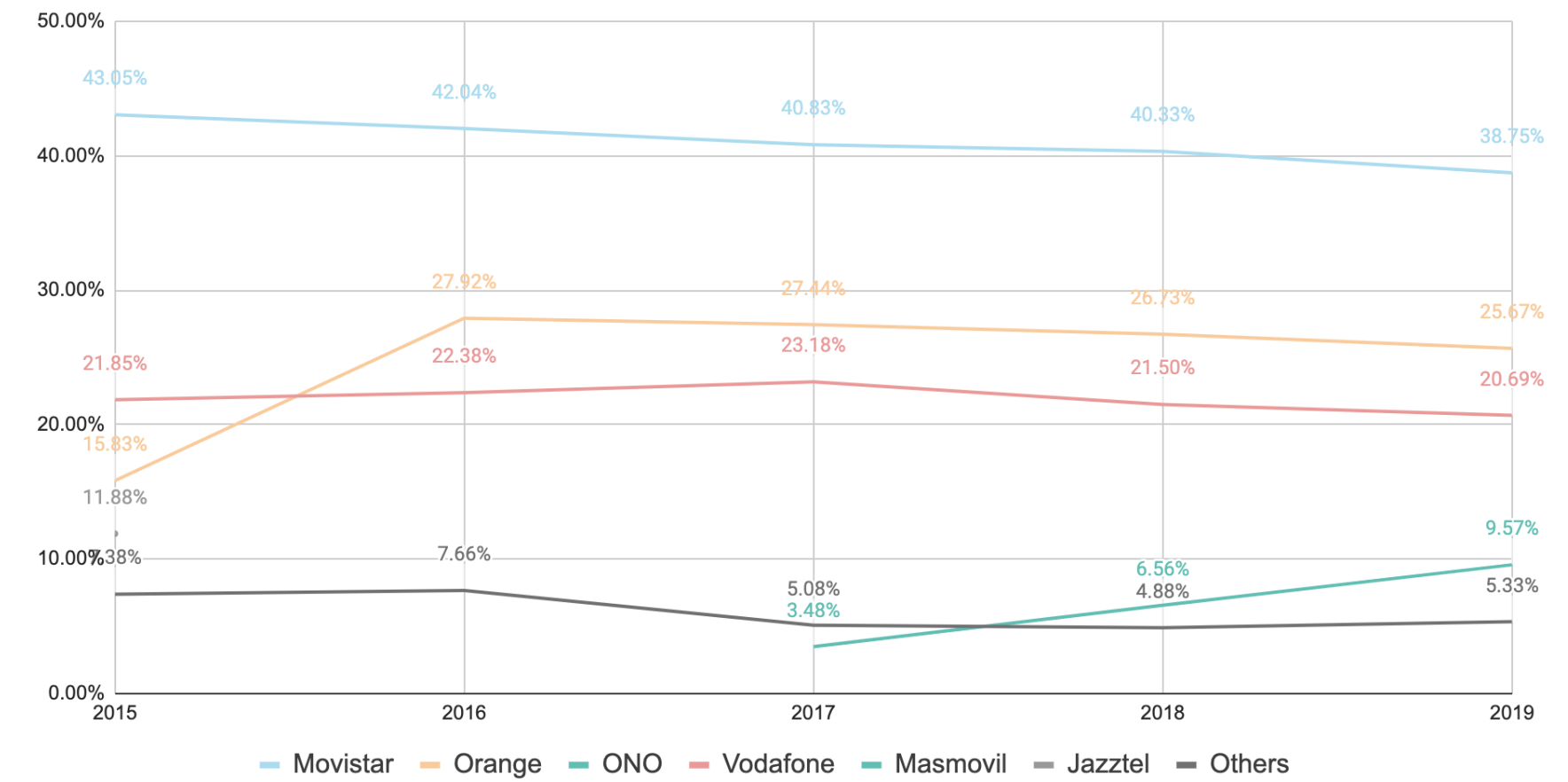


Figure 10: FMC broadband subscriptions (%), 2014–2019

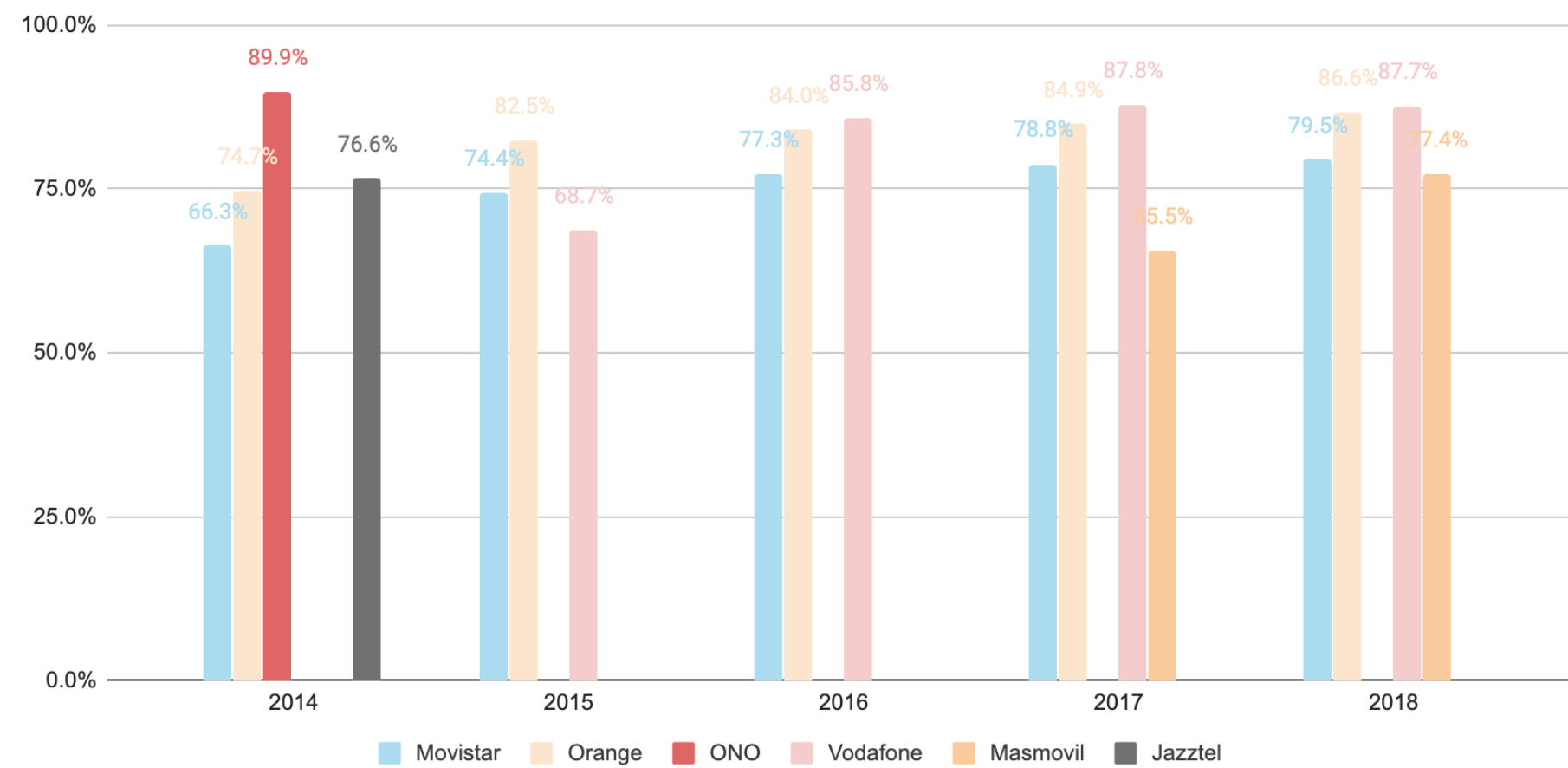
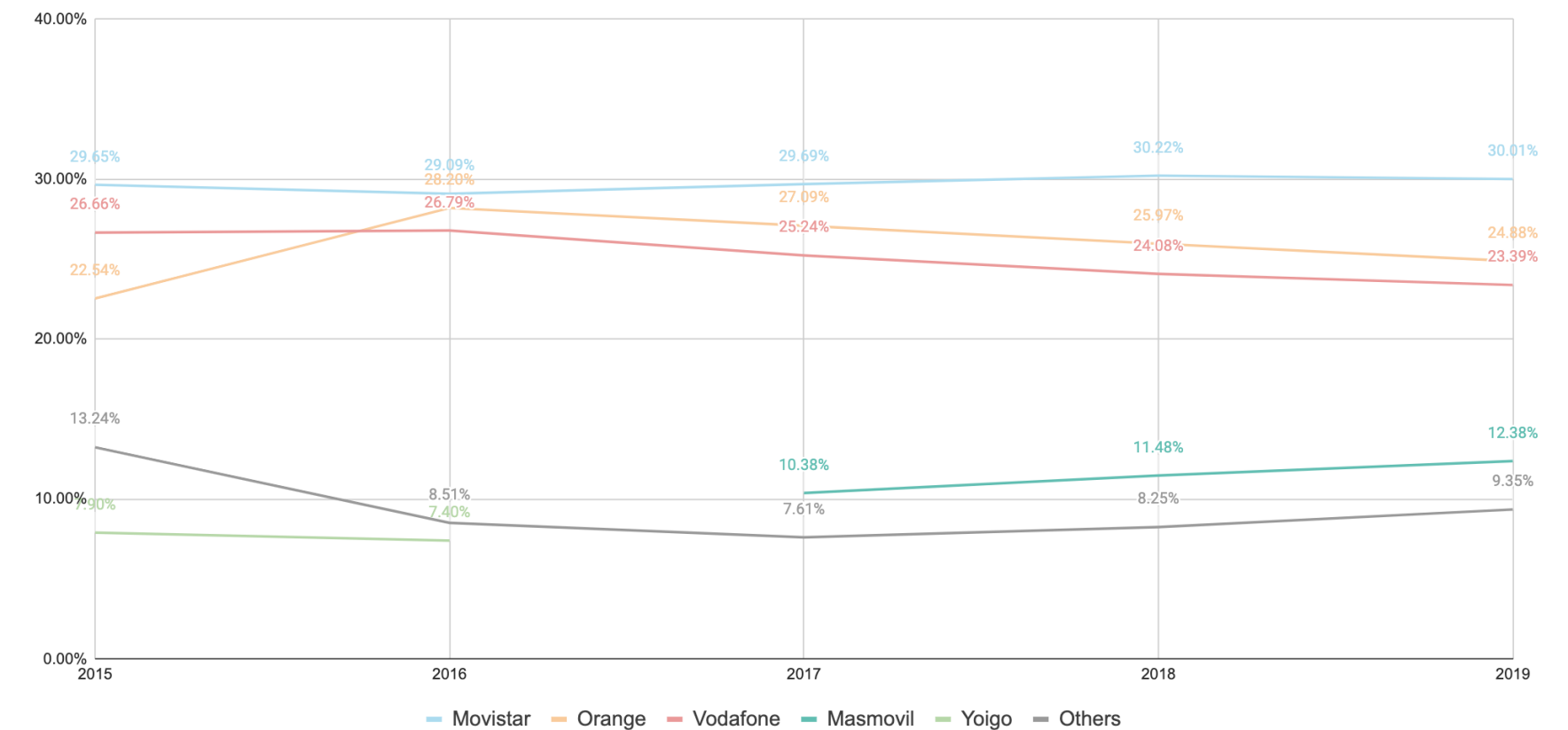







Figure 12: Mobile market shares (% subscriptions, 2015–2019)



FMC propositions at launch in France

			<i>free</i>
Launch date	August 2010	2015	2012
Brand evolution	Orange Open	SFR – “a brand known for its reliable network and quality of service”	Freebox + Mobile
Product mix at launch	A range of five plans including: <ul style="list-style-type: none"> – Triple play – A mobile package and; – Several FMC offerings 	<ul style="list-style-type: none"> – Four broadband speed tiers (100Mbps to 800Mbps) – TV Channels (+VOD on higher tiers) – Mobile data from 100MB to 40GB 	<ul style="list-style-type: none"> – Landline – Broadband from DSL to FTTH – TV – Mobile
Pricing strategy at launch	€54.90 for 20Mbps broadband + Orange TV + unlimited 3G data	Discounts for FMC subscribers of between €5 and €10	<ul style="list-style-type: none"> – Landline up to €35.98/month – Unlimited mobile data offer: €15.99/month instead of €19.99/month
Additional advertised benefits	<p>2010: One contract, one bill, one customer service, mobile or live box replaced in 48 hours in case of breakdown</p> <p>2020:</p> <ul style="list-style-type: none"> – Reimbursement of the termination fee with previous provider, Automatic ‘termination’ and fixed and mobile portability – Fibre will be installed if eligible – Discounted mobile plans and ‘mobile loan’ if a device is lost or damaged 	Double mobile data allowance as part of some offers	<p>2013: Freebox Revolution – “a personal 3G base station”</p> <p>2016: “Always giving you more for the same price” https://www.youtube.com/watch?v=AsFR3bEqc4s</p>





FMC propositions at launch in the Netherlands

			
Launch date	January 2013	50:50 JV between Vodafone and Liberty Global in 2017 https://www.youtube.com/watch?v=eOq-6n_qyWs&t=5s	2018 after the merger with Tele2
Brand evolution	January 2013: Compleet – https://www.youtube.com/watch?v=81OrI4_S744 October 2019: Hussen – https://www.youtube.com/watch?v=AEDwNuX1bHg	Separate Ziggo and Vodafone brands for fixed and mobile services	Uit & Thuis
Product mix at launch	Compleet: 4-play bundle. Initially for customers of “All-in-1”, or for mobile customers. In 2014 it was extended to allow data sharing across mobiles, and combined mobile with single and 2-play. Hussen: Flexible converged offer, can be adjusted monthly (“Put together your own”, “Everything in one place”, “With Hussen you get more”)	April 2017: Customers could subscribe to a Ziggo all-in-1 offer, and a Vodafone mobile contract, and receive monthly discounts and extras (additional mobile data, extra TV channels, etc.) https://www.youtube.com/watch?v=OkPp52INBgg	<ul style="list-style-type: none"> – SIM with unlimited data – Fixed broadband – Fixed voice calls – TV
Pricing strategy at launch	<ul style="list-style-type: none"> – Extra benefits for those who already had an all-in-one fixed bundle, or a mobile contract. – Overall pricing of between €88.5 and €105 for a 4-play bundle 	<ul style="list-style-type: none"> – Instead of a bundled offer, customers that take Ziggo broadband and Vodafone mobile can take advantage of a EUR5 per month discount and several more-for-more bonuses. – 4-play packages ranged from €75 to €133.5 	<ul style="list-style-type: none"> – €15 off the home package if you are on a mobile contract – €10 discount on mobile contract – 4-play package for €42.50 – Extra bonuses on top (e.g. TV)
Additional advertised benefits	2013: 45 extra TV channels, unlimited calls inside the family, double mobile allowance 2019: Discounts on mobile, entertainment, mutual free calling, Affordable kids SIM, unlimited data, “tech desk”	2020: Double the data allowance on Start and Red, a free TV package that can be changed monthly, a security package for up to 20 devices (worth €6.95/month)	Unlimited internet and calls, the fastest internet available at home, interactive TV, Ability to “always adjust your subscription up or down”

FMC propositions at launch in Portugal

			
Launch date	January 2013 – M4O became the first 4-play bundles in Portugal https://www.youtube.com/watch?v=qETBHUIz5xE	June 2014 https://www.youtube.com/watch?v=yRFA94w1WCg	2014
Brand evolution	M4O/M5O M4/M5	2014: Quatro 2015: Quatro Digital	2014: Red + TV Net Voz 2020: 4-play bundles are now known as Fibra 4
Product mix at launch	<ul style="list-style-type: none"> – Broadband from 24Mbps to 100Mbps – 80 to 85 TV channels – Mobile data allowance of 200MB/month 	<ul style="list-style-type: none"> – Broadband from 30Mbps (Quatro light) to 100Mbps – Mobile data allowance of 200MB/month – 117 TV channels 	<ul style="list-style-type: none"> – Broadband from 50Mbps – Mobile data between 200MB and 5GB – 100 TV channels
Pricing strategy at launch	€79.99/month. Additional SIM cards charged at €7.50/month	<ul style="list-style-type: none"> – Quatro: €49.99 to €79.99 – Quatro Digital: €51.80 to €59.99 	Triple play packages (TV Net VOZ) were discounted by €15/month for RED mobile customers (€24.99 instead of €39.99)
Additional advertised benefits	<p>2013: Free WiFi hotspots, 100Mbps guaranteed, antivirus software, €5/month discount for every ported mobile number, installation discount (€80) and €35 discount for payment by Direct Debit</p> <p>2020: Items at a discounted price or free (TV, tablet, smartphone, watch, scooter, Nintendo Switch). Mobile broadband at a discount, additional SIM cards in one bill, smartphones can be paid in instalments.</p>	<p>2014: Extra cinema tickets, IRIS TV (to watch TV across different devices), smartphones can be paid in instalments, Wi-Fi hotspots inside and outside Portugal.</p> <p>2020: Extra TV channels, €17.5 monthly discount, discounts on TV, laptops or smartphones.</p>	<p>2014: 2 mobile numbers, unlimited calls + texts, first month free, “TV Box” offer with extra functionalities (recorder, pause etc.)</p> <p>2020: Monthly discount (€2/month), PC, TV, or tablet, 1 month free, or stronger home Wi-Fi.</p>

FMC propositions at launch in Spain

				
Launch date	October 2012	April 2015	November 2016 https://www.youtube.com/watch?v=nWONyuF8Vi8	May 2016
Brand evolution	Fusión	2012: Todo En Uno 2015: Vodafone One	2010: Combina y Ahorra 2016: Orange Love – described as a new positioning of the Orange brand 2020: República Móvil (low-cost brand)	FMC offers were rolled out across the Yoigo, Masmovil, and Pepephone brands
Product mix at launch	<ul style="list-style-type: none"> – Fixed telephony and internet (10MB) – Mobile voice and 3G data 	<ul style="list-style-type: none"> – Fibre broadband 30Mbps to 200Mbps – Mobile data allowance from 1GB to 4GB – Vodafone TV (70+ channels) 	<ul style="list-style-type: none"> – Fibre broadband 50Mbps to 300Mbps – Mobile data allowance from 2GB to 10GB – Orange TV 	<ul style="list-style-type: none"> – Broadband from 20Mbps to 50Mbps – Mobile data allowance from 1GB to 8GB
Pricing strategy at launch	For €60.40/month, customers could get services worth a combined total of €100.90/month – a saving of €40.50/month	<ul style="list-style-type: none"> – From €43/month for 30Mbps/1GB, to €83/month for 200Mbps/4GB. – Vodafone TV at a premium between €6 and €18 (except 4GB packages) 	Pricing for Love at launch varied between €58.95 and €91.95	Prices at launch varied between €36.89 (20 or 50Mbps + 1GB mobile data) to €46.89 (20 or 50Mbps + 8GB mobile data)
Additional advertised benefits	<p>2012: unlimited fixed calls, up to 4 extra SIMs, discounts for new devices</p> <p>2020: No minimum length, discounts on additional mobile lines and on internet for second home</p>	<p>2012: Mobile broadband free for two months, and for three days a month. 24h assistance all year</p> <p>2020: extra HBO channels, 20% discount on additional SIMs</p>	<p>2016: Extra SIMs at discount, free calls between family, shared mobile data.</p> <p>2020: discount on extra SIMs and internet for second home. Amazon Prime or extra TV content on unlimited packages</p>	<p>2016: Broadband added to unlimited mobile plan by paying the line rental fee. Two extra SIM free with 500MB/month</p> <p>2020: TV for €6/month extra, no installation fee</p>

Summary

Background

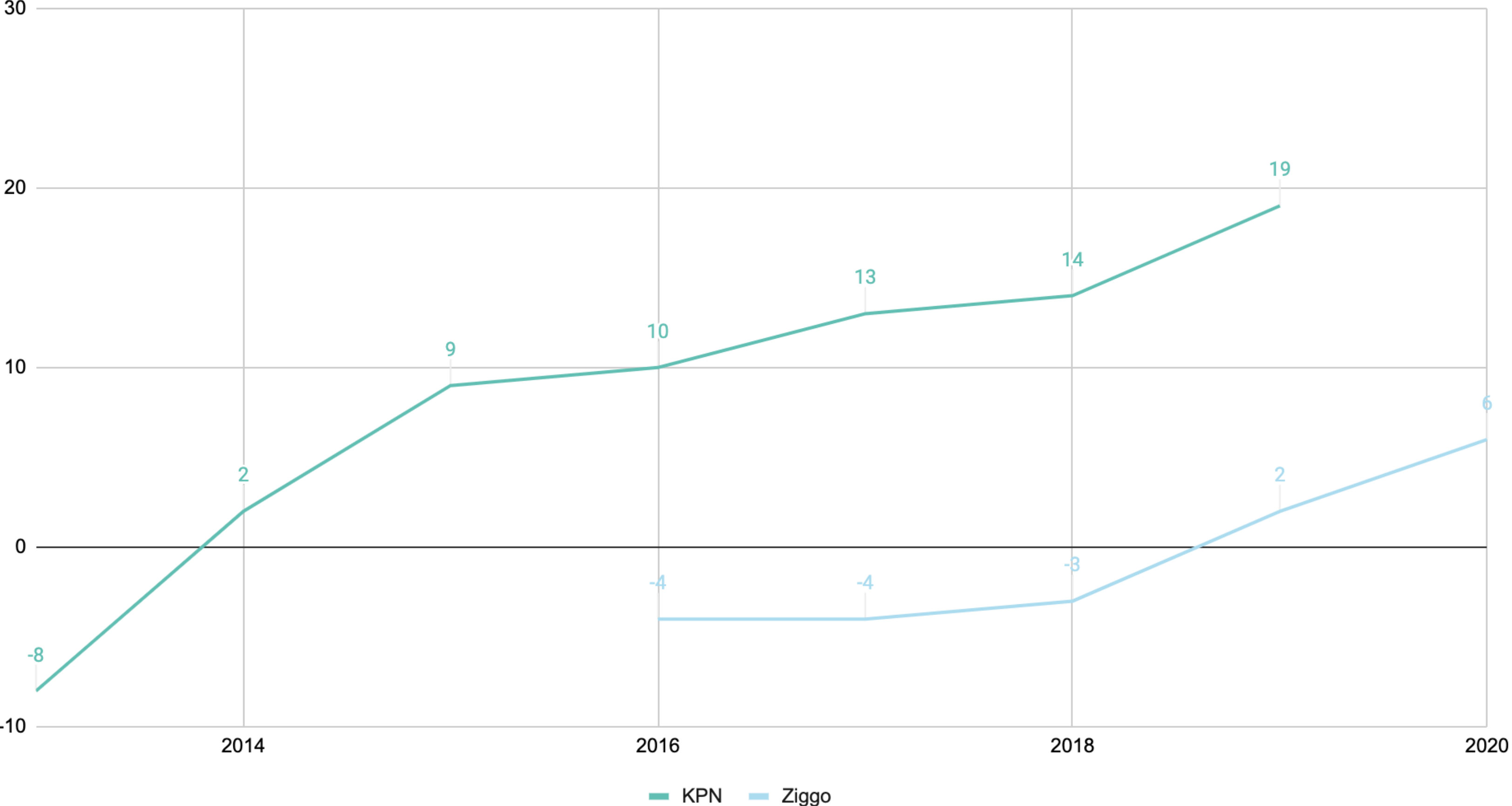
1. Benefits of FMC

2. Demand, appetite and market environment for FMC

3. Improvements in network quality and build post FMC

FMC drives significant NPS growth in the Netherlands

Figure 13: Overall Consumer NPS in the Netherlands, 2013–2019 (%)



KPN

KPN’s NPS increased from -8 to +19 –driven by FMC packages – all of which have higher NPS than KPN’s overall propositions. Since 2017, NPS of FMC customers grew 5 percentage points, from +25 to +30. In 2013, the NPS for the Compleet was +17, compared to an overall consumer NPS of -8.

Ziggo

Ziggo also reported an increase in NPS between 2016 and 2020. In particular, NPS has been consistently above 0 since Q4 2019, and reached +6 in February 2020.

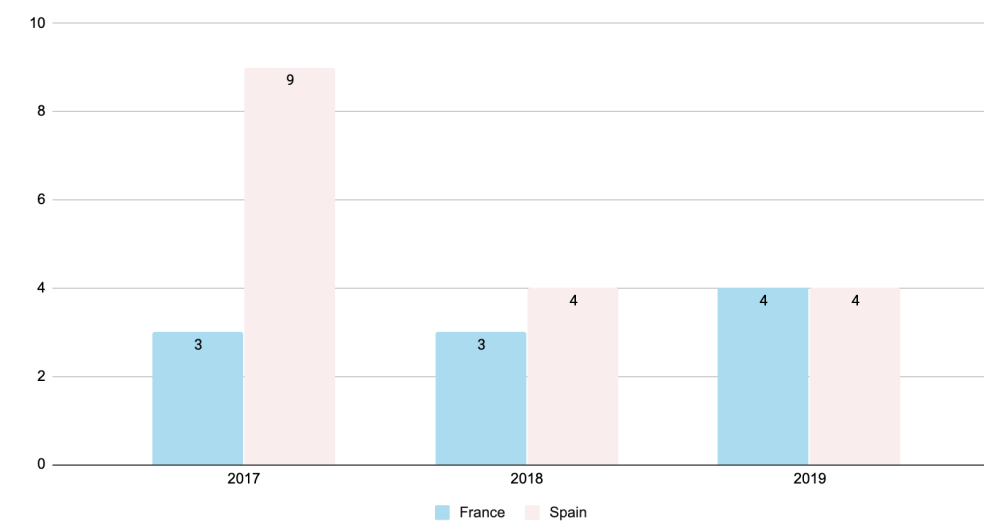
FMC reduces churn and improves retention

France

Increasing uptake of FMC resulted in falling levels of churn among broadband customer base

- Orange: Differential in churn between converged fixed broadband and total fixed broadband rose from 3 to 4 percentage points YoY¹
- SFR: 15% churn reduction in fixed broadband in 2019; 30% reduction in 2018 YoY

Figure 14: Difference in churn between FMC and non-FMC fixed broadband offers for Orange in France and Spain, 2017–2019 (%)

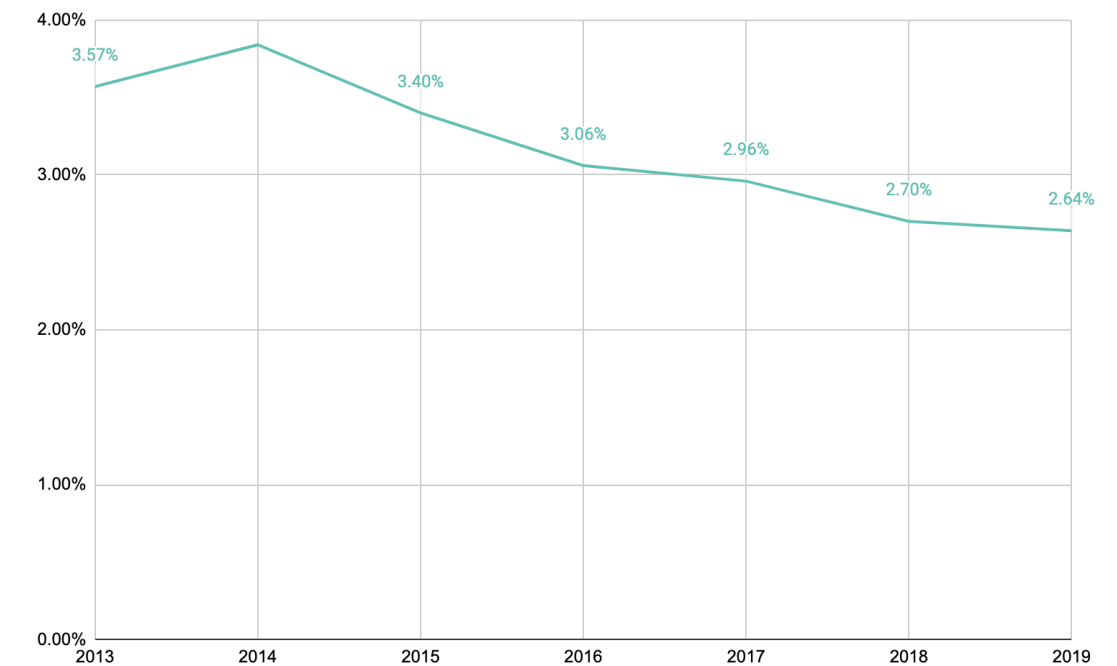


Netherlands

Fixed broadband churn fell from 3.84% in 2014 to 2.64% in 2019

- KPN: FMC household churn is 75% lower than mobile household (Q3 2019)²
- Churn rates typically halve for KPN FMC³
- VodafoneZiggo: Significant improvements due to FMC⁴

Figure 16: Residential broadband churn, Q4 2015–Q4 2019 (%)

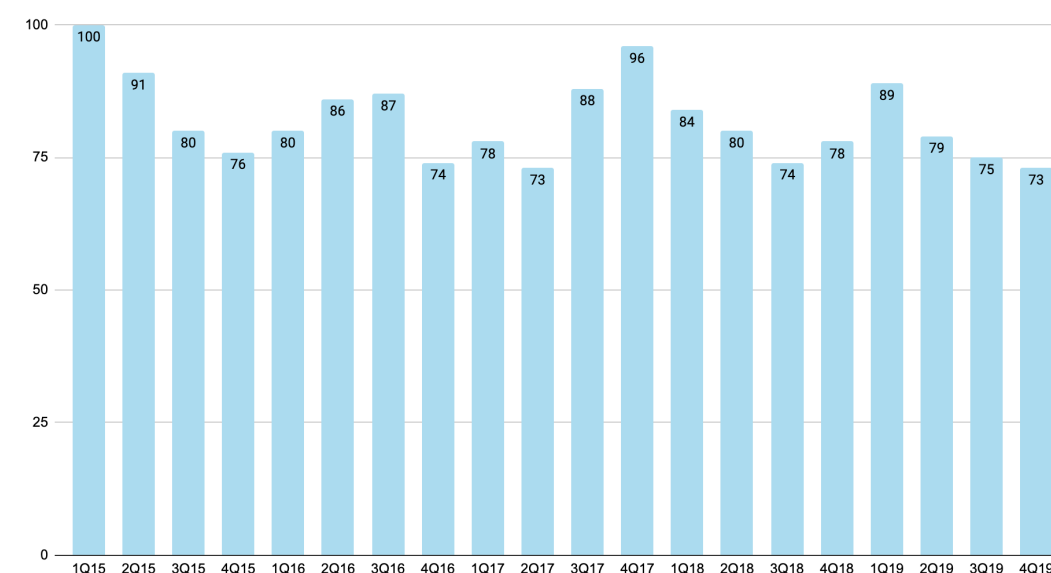


Portugal

Low and decreasing churn given strong FMC uptake

- MEO: Q4 2019 churn at sector-leading low levels. FMC customers churn at a rate less than half non-FMC customers
- NOS: Fixed residential churn has reduced by 27% since Q1 2015

Figure 15: Fixed residential churn for NOS, 2015–2019 (rebased) (%)

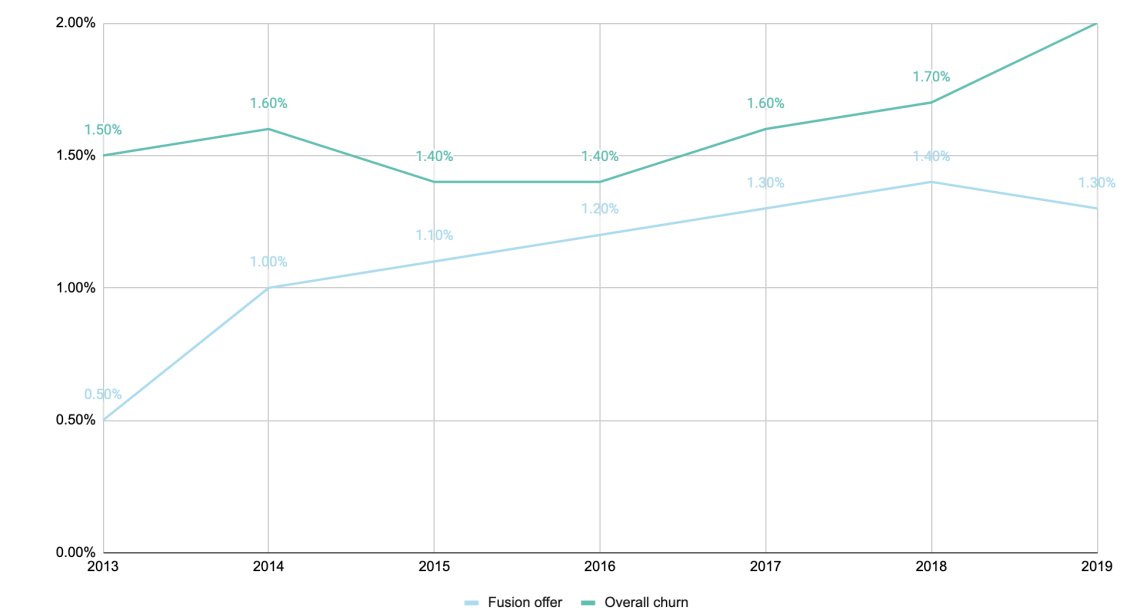


Spain

Mobile churn fell from 39.4% in 2012 to 25.5% in 2018

- Masmovil: Mobile churn fell significantly due to FMC⁵
- Movistar: Fixed broadband churn of the Fusion offers significantly lower than other fixed broadband
- Orange: Differential in churn between FMC fixed broadband and total fixed broadband is 4pt⁶

Figure 17: FMC vs non-FMC fixed broadband churn for Movistar, 2013–2019 (%)



1. <https://www.orange.com/en/content/download/53747/1478539/version/4/file/FY19%20Presentation%20-%20EN%20-%20vdef.pdf>, p.26.

2. https://ir.kpn.com/download/companies/koninkpnrv/Presentations/KPN_Q3_2019_Investor_Presentation.pdf

3. https://ir.kpn.com/download/companies/koninkpnrv/Quarterly%20Reports/8_Integrated_Annual_Report_2018.pdf, p.48.

4. <https://investors.vodafone.com/static-files/947ac784-3257-42e4-a543-ad7c5ea31d0e>, p. 33

5. <https://www.cnmec.es/sites/default/files/2750388.pdf> p.110

6. <https://www.orange.com/en/content/download/53747/1478539/version/4/file/FY19%20Presentation%20-%20EN%20-%20vdef.pdf>, p.26.

Improved satisfaction all round

France

- Complaints to ARCEP for service quality/availability went down from 62.5% to 47% in a year¹
- On average, operators had 17 complaints per 100k customers, compared to 25 per 100k customers in 2018
- Average satisfaction levels rose from 7.3/10 in 2018 to 7.45/10 in 2019 for broadband services, and from 7.25/10 to 7.78/10 for mobile services

Figure 18: Consumers' satisfaction with fixed broadband services, 2016–2019

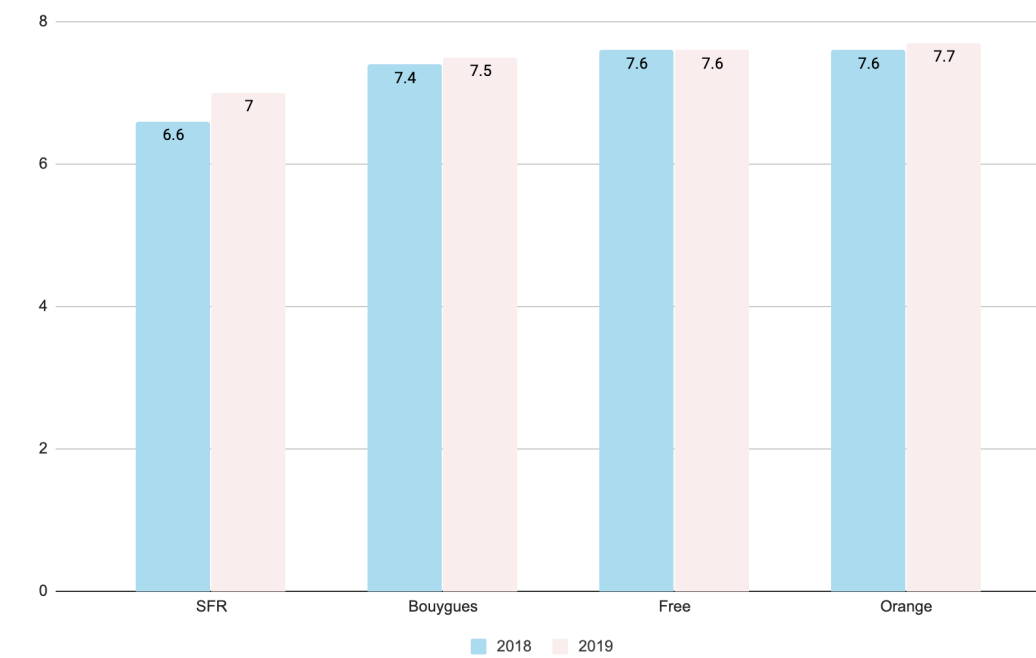
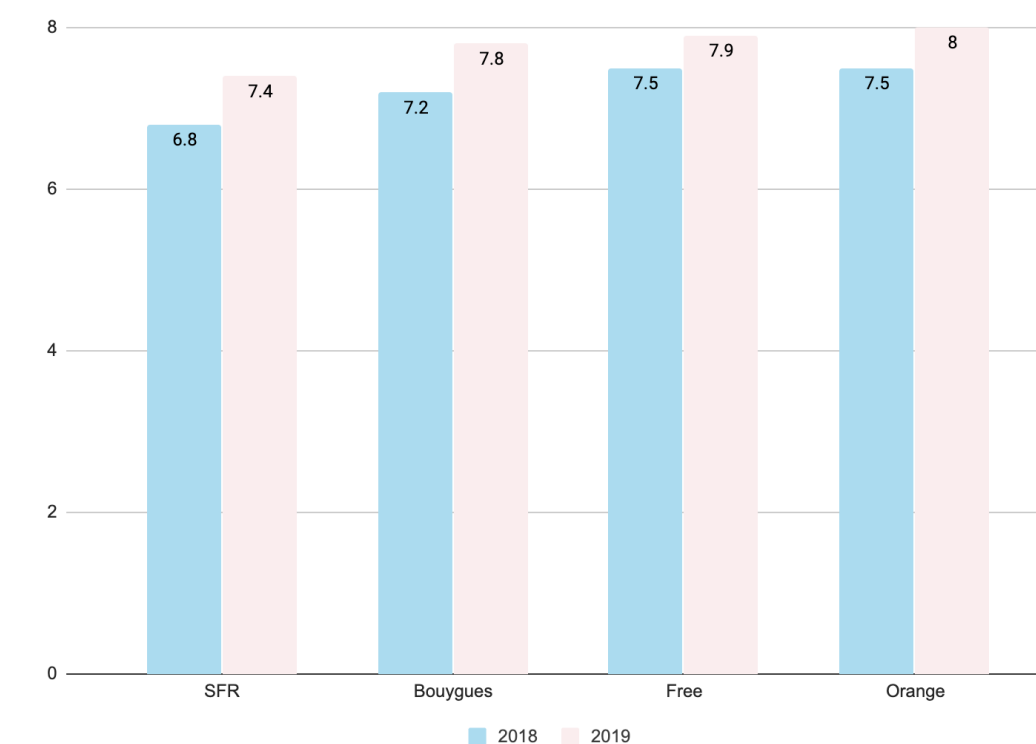


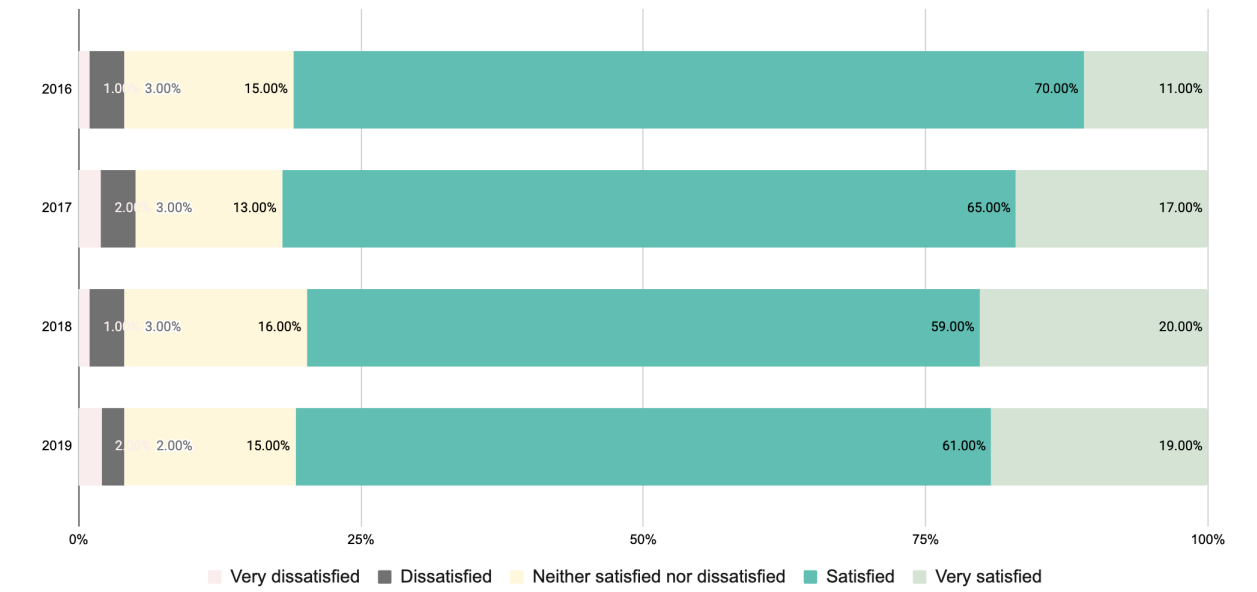
Figure 19: Consumers' satisfaction with mobile broadband services, 2015–2019



Netherlands

- Between 2016 and 2019, the share of consumers that are very satisfied with their fixed broadband provider has been consistently close to 80%².
- The share of consumers reporting to be very satisfied grew from 11% in 2016, to 19% in 2020

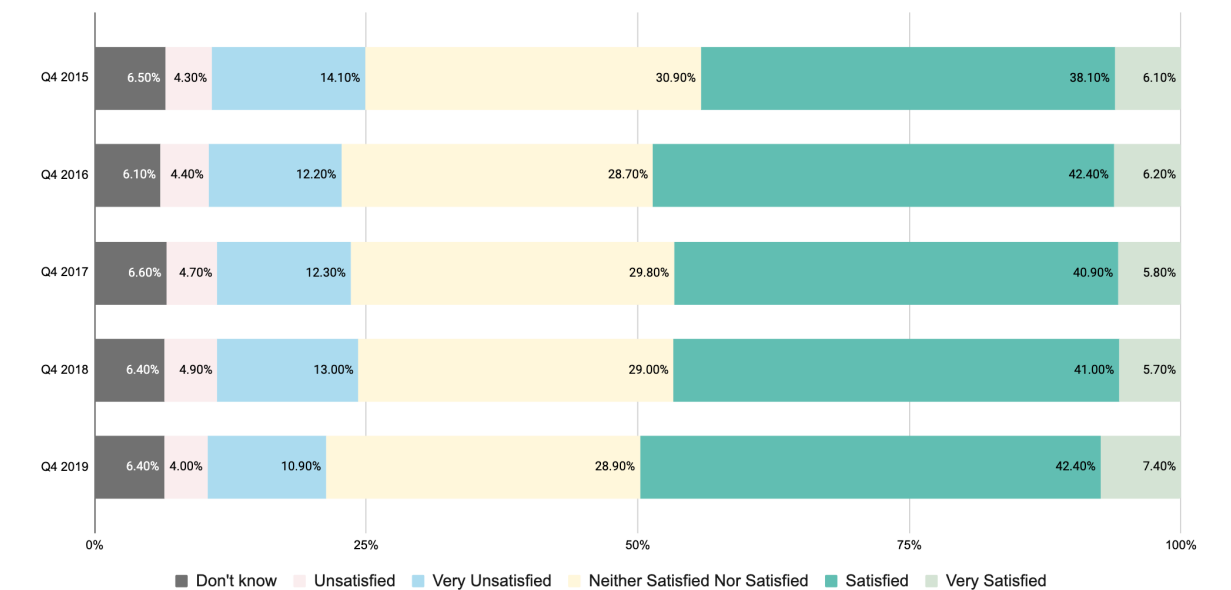
Figure 20: Consumers' satisfaction with fixed broadband services, 2016–2019 (%)



Spain

- Since 2015, Spanish consumers have been increasingly satisfied with fixed and mobile services
- The share of consumers who are satisfied or very satisfied with their fixed broadband grew from 44.2% in 2015 to 49.8% in 2019³

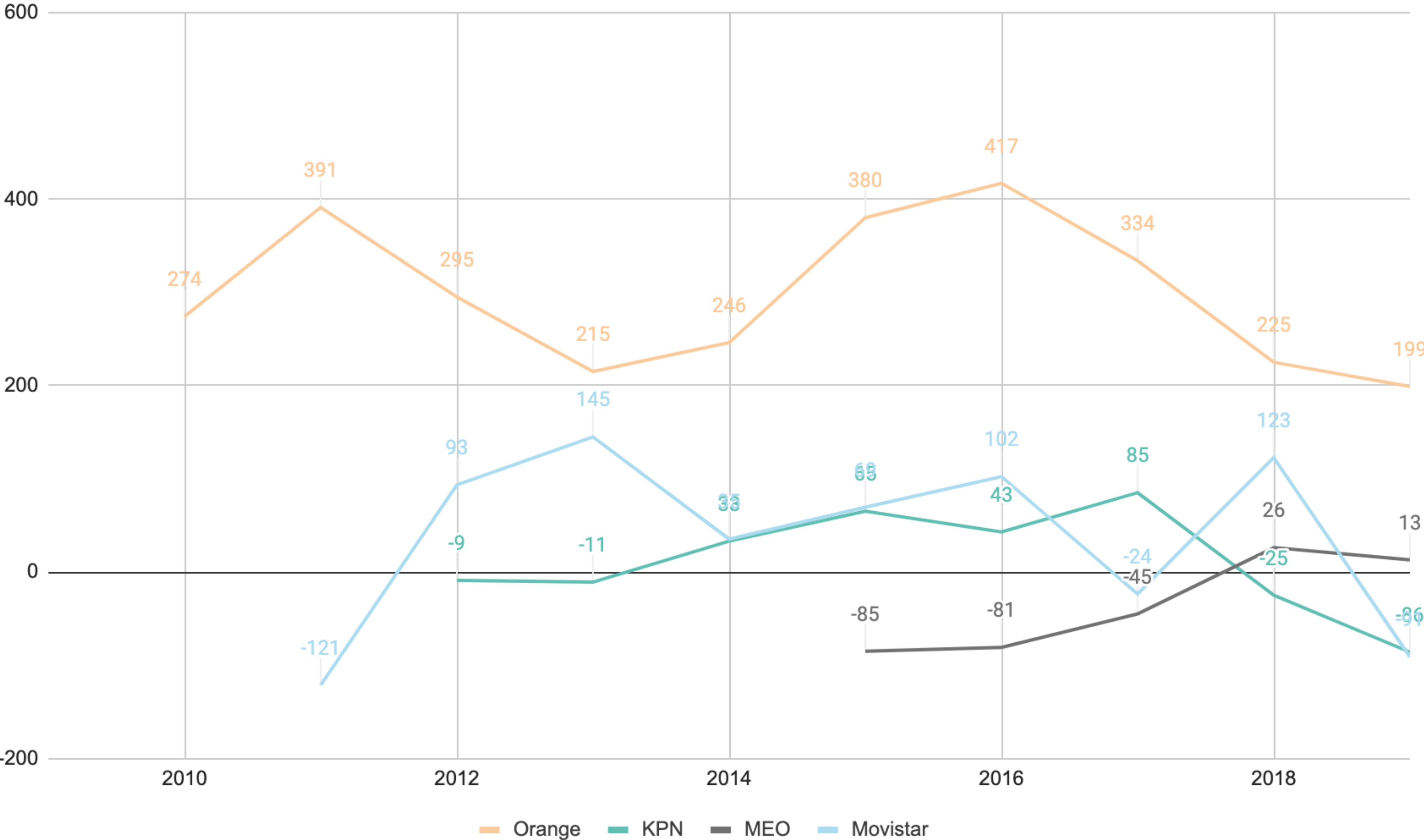
Figure 21: Consumers' satisfaction with fixed broadband services, 2015–2019 (%)



1. <https://en.arcep.fr/news/press-releases/p/n/data-driven-regulation-5.html>
 2. <https://www.acm.nl/sites/default/files/documents/2019-11/consumentenonderzoek-telecommarkt-2019.pdf>, p.60-69
 3. <http://data.cnmec.es/datagraph/>

FMC improves ongoing commercial performance

Figure 22: Broadband net adds, 2010–2019 (000s)



FMC operators commit to greener credentials

France



By 2025, CO2 emissions to be reduced by 30% compared to 2015; 50% renewable energy across the group (18% today); eco-design approach on all products. Net-zero carbon by 2040 (10 years ahead of GSMA). Zero carbon footprint by 2050



21% reduction in greenhouse gas emissions between 2018 and 2019

Netherlands



100% green energy, 2% more energy-efficient every year. Striving for CO2-neutral operations.



30% decrease in energy consumption compared to 2010, while data communication increased 16-fold. Climate-neutral since 2015.



100% green energy in the mobile network. -20% CO2 emissions by 2020 compared to 2008. 100% renewable energy from 2021

Portugal



To reduce energy consumption by 9% in buildings by 2020, and by 35% in stores, compared to 2015. 75% reduction in total energy consumption per data traffic by 2025 compared to 2015 (85% by 2030); 65% renewable electricity (80% by 2030); 50% reduction in carbon footprint (75% by 2030)



30% reduction in greenhouse gas emissions, and 21% increase in renewable energy consumption, between 2018 and 2019

Spain



50% reduction in global CO2 emissions by 2019 (fulfilling 2025 target in advance). Net zero emissions by 2030 (brought forward from 2050)



15% reduction in network energy consumption per TB between 2018–19 on 2017–18 (-45% on 2016–17). 35% decrease in energy consumption per network element compared to 2006–07. Reduce carbon footprint by 50% and 100% renewable energy by 2025.

Summary

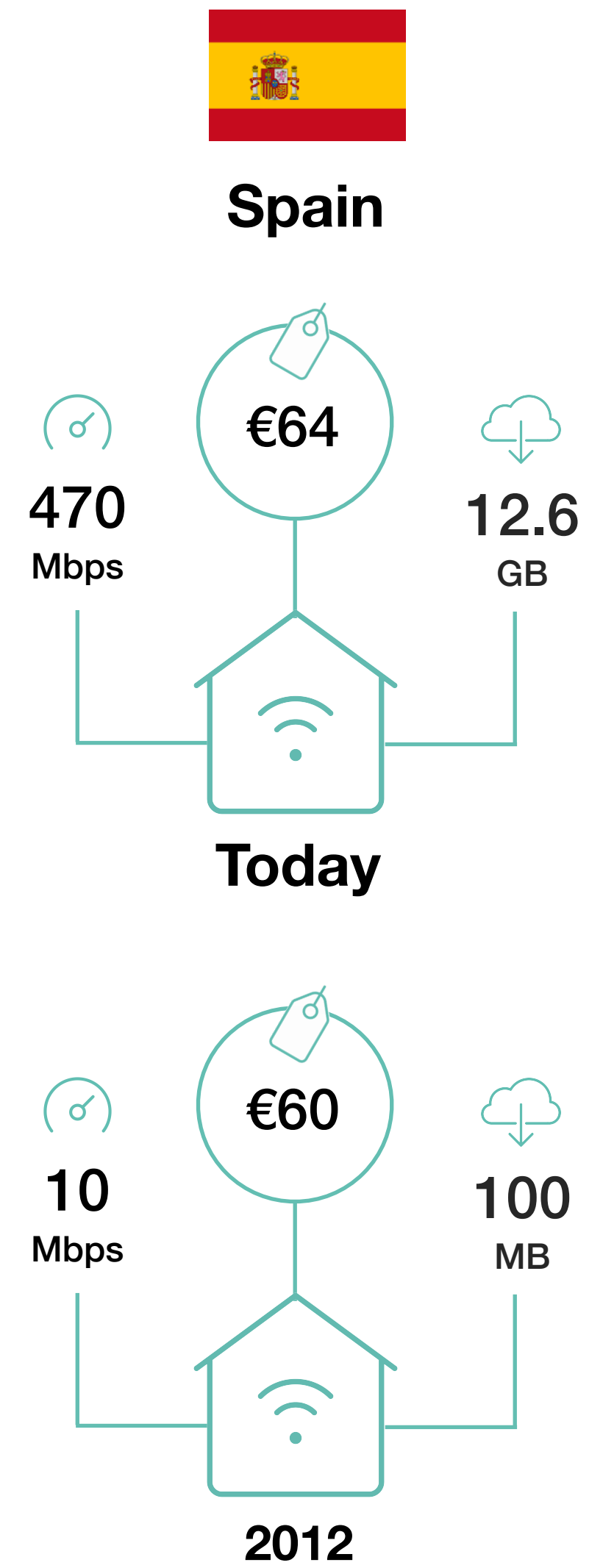
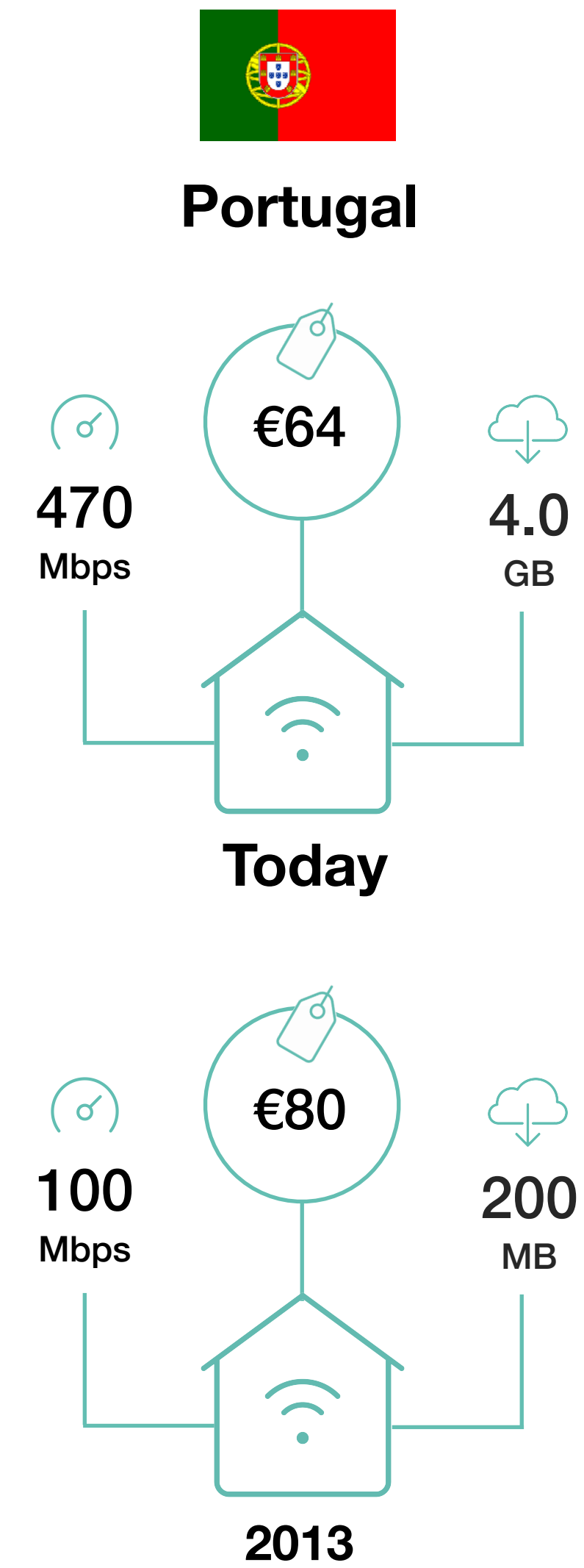
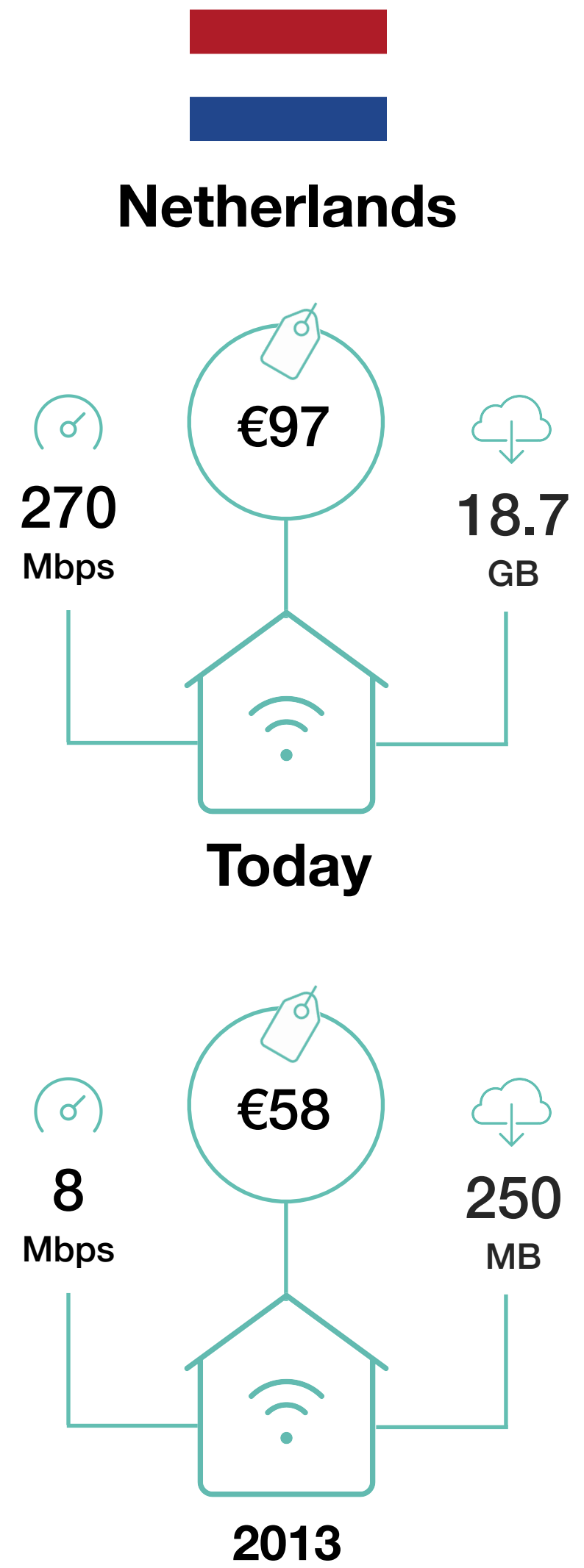
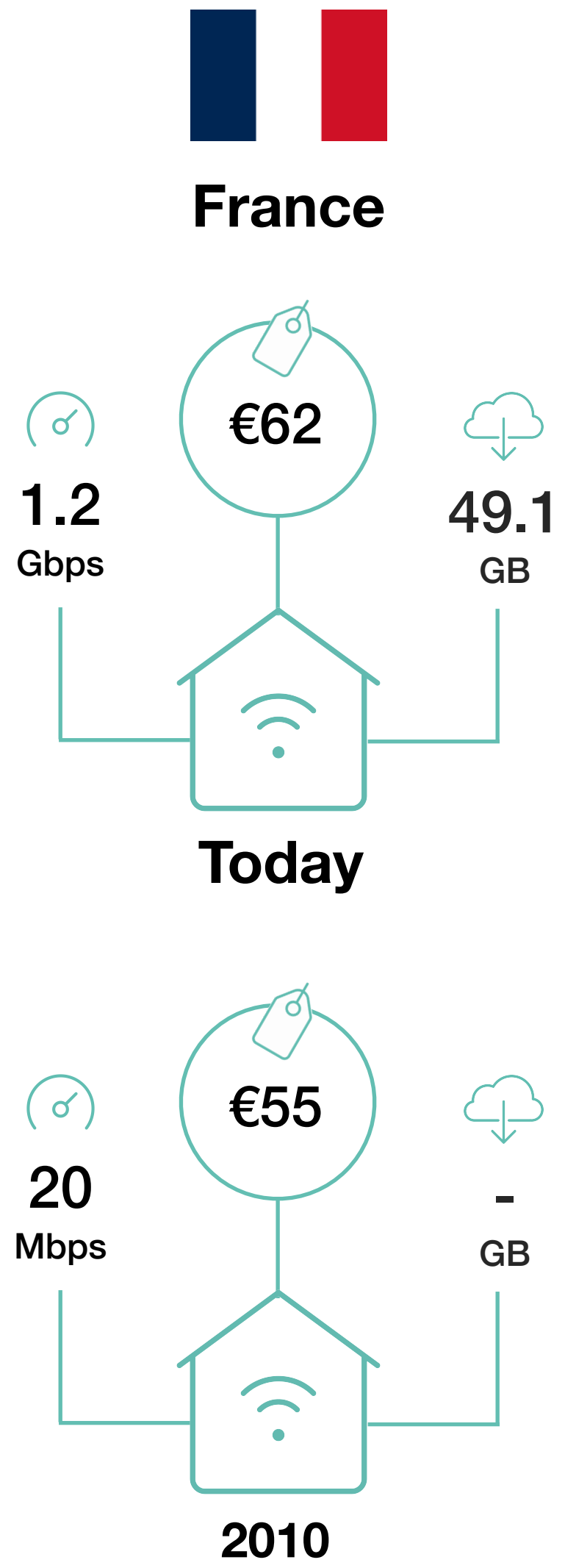
Background

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2. Demand, appetite and market environment for FMC

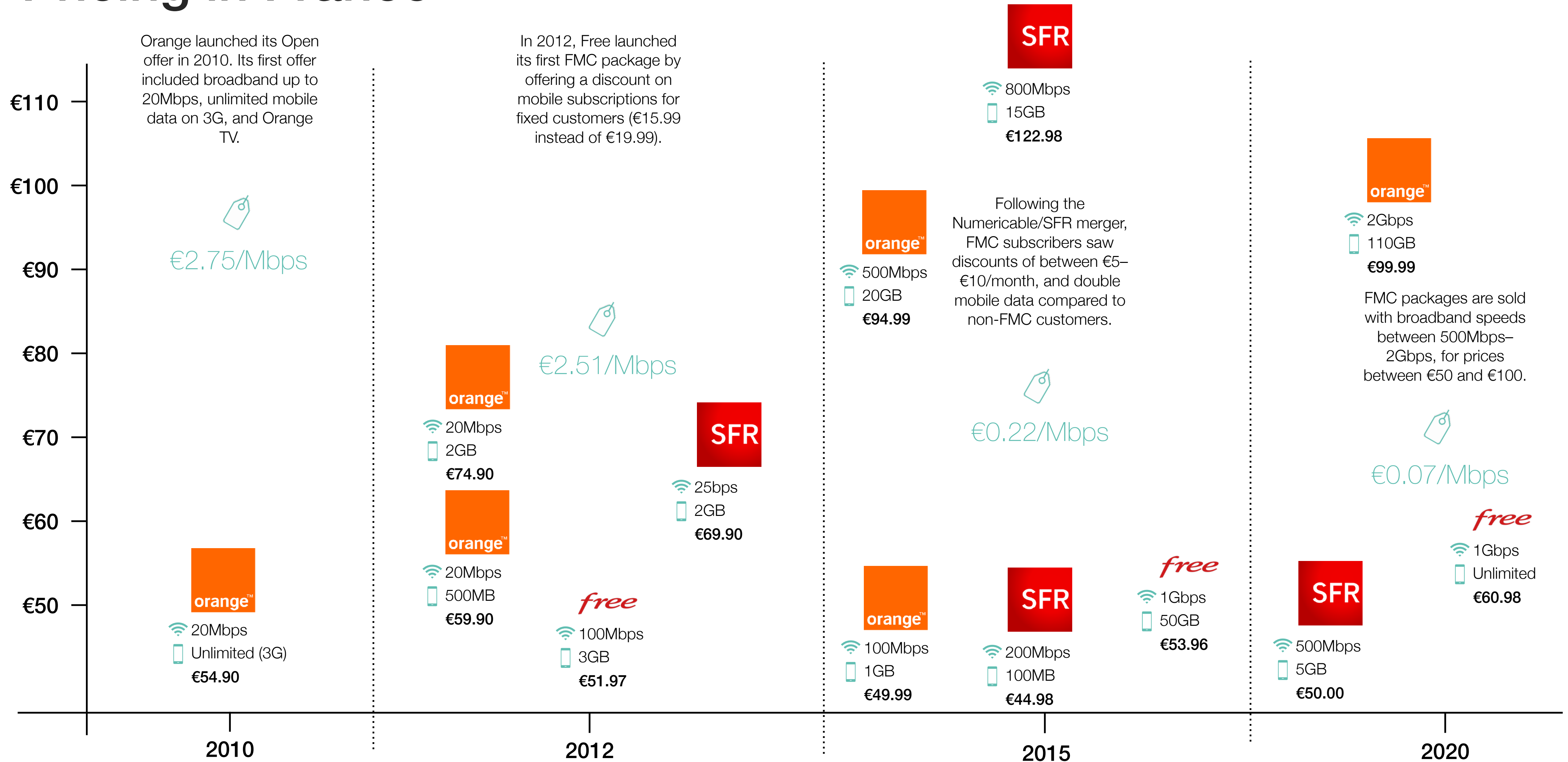
3. Improvements in network quality and build post FMC

FMC leads to better value over time

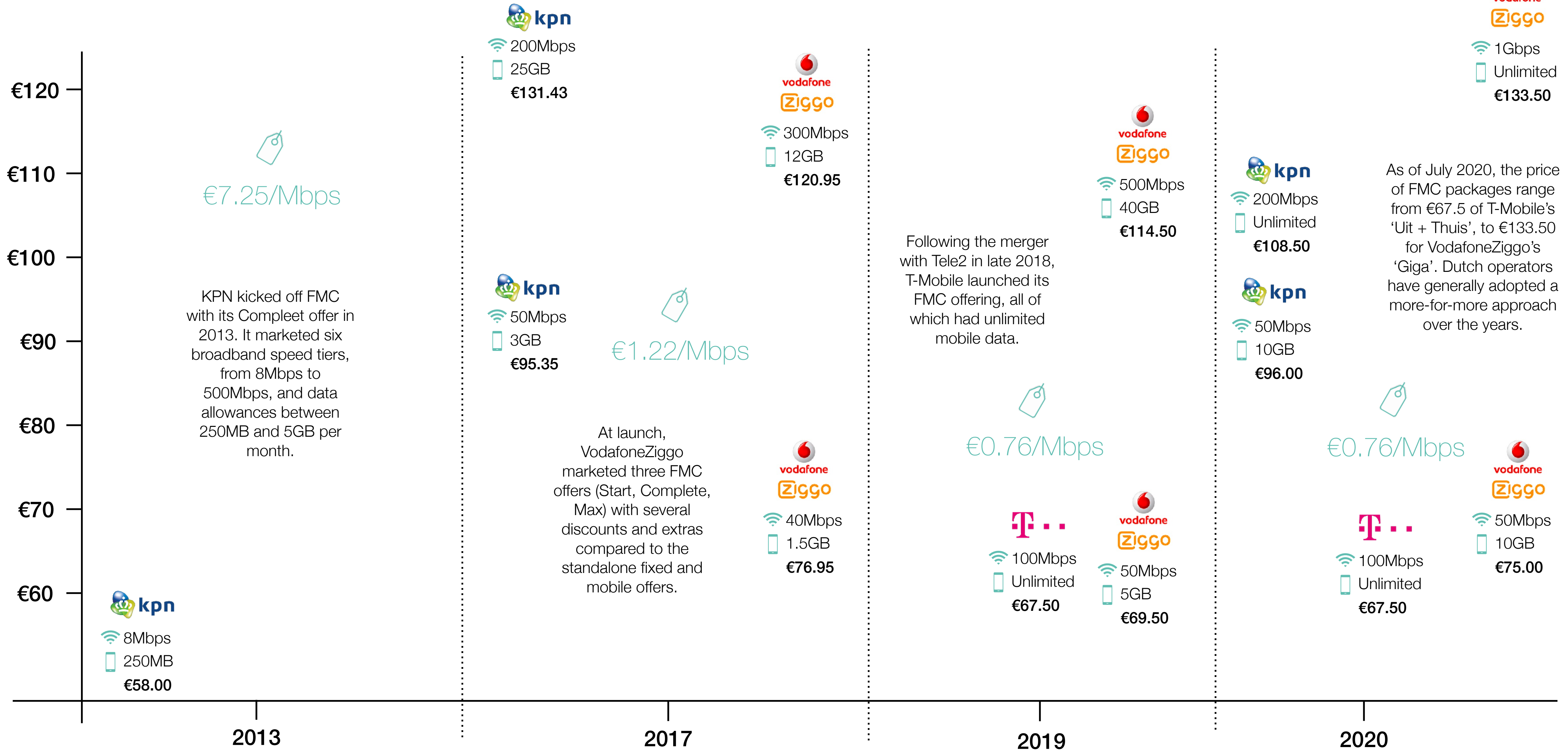


Speeds are an average of fixed broadband speeds in each country, taking into account all speed tiers offered in a given year. Prices are an average of FMC packages in each country in a given year. Data allowances are an average of mobile data allowances in each country, excluding plans with unlimited data.

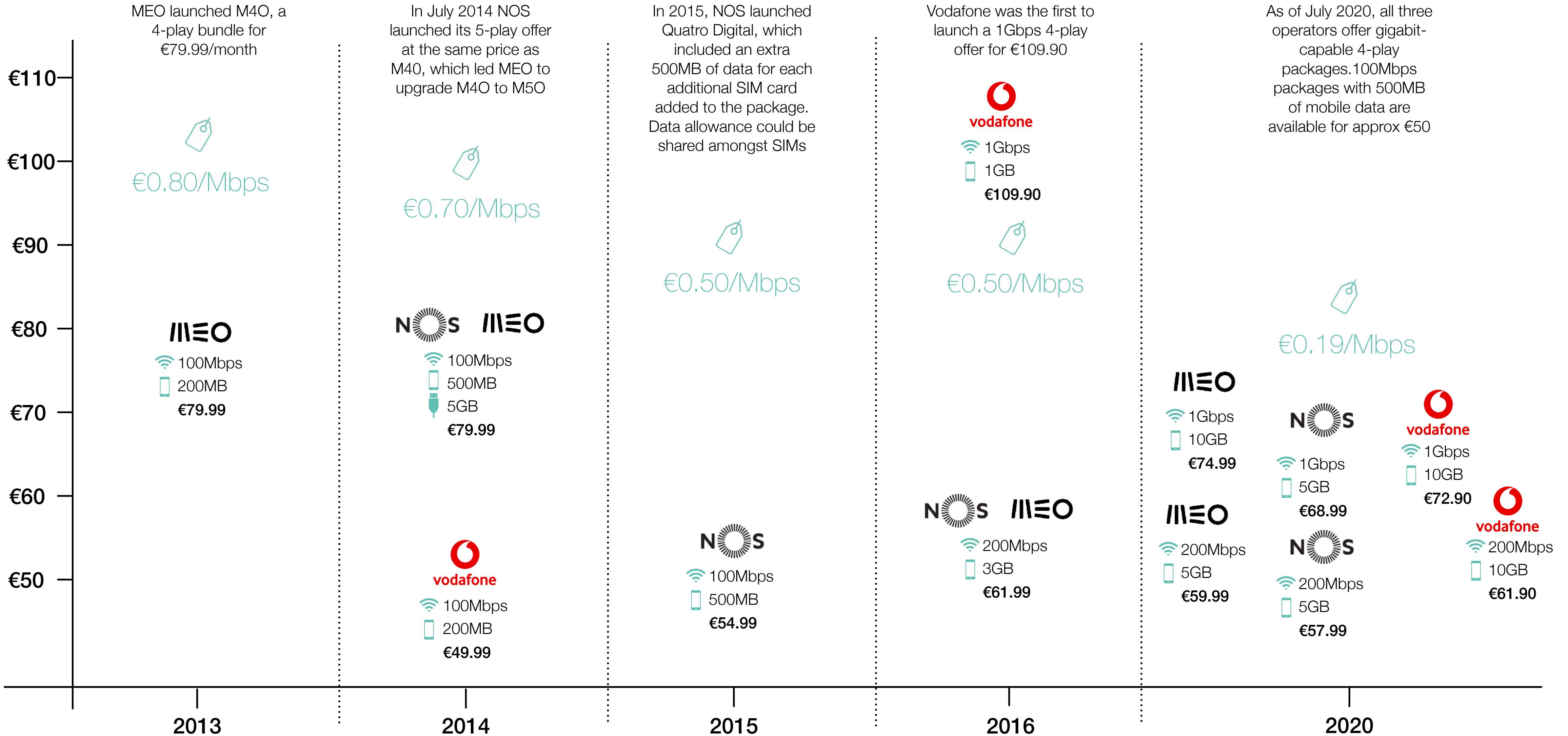
Pricing in France



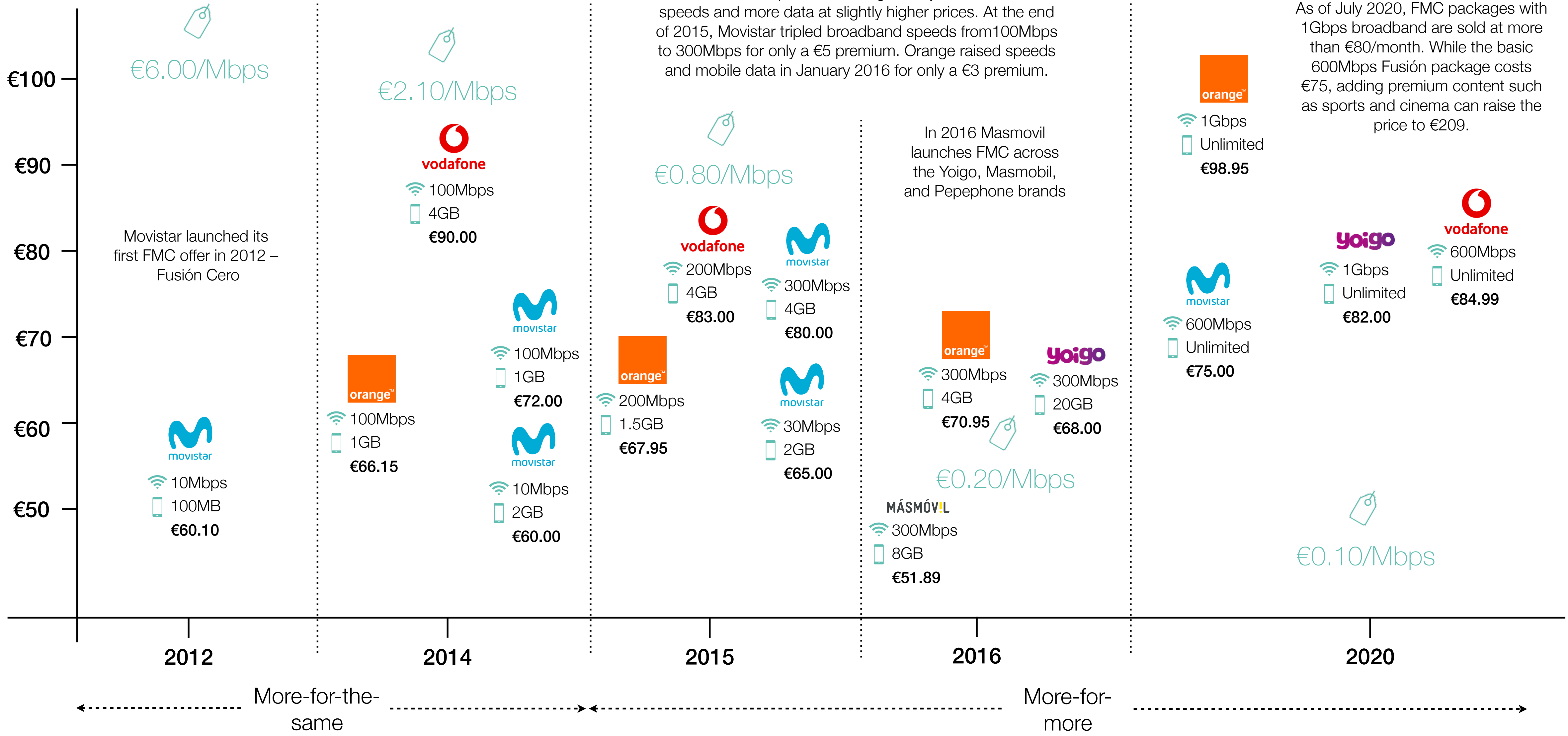
Pricing in the Netherlands



Pricing in Portugal



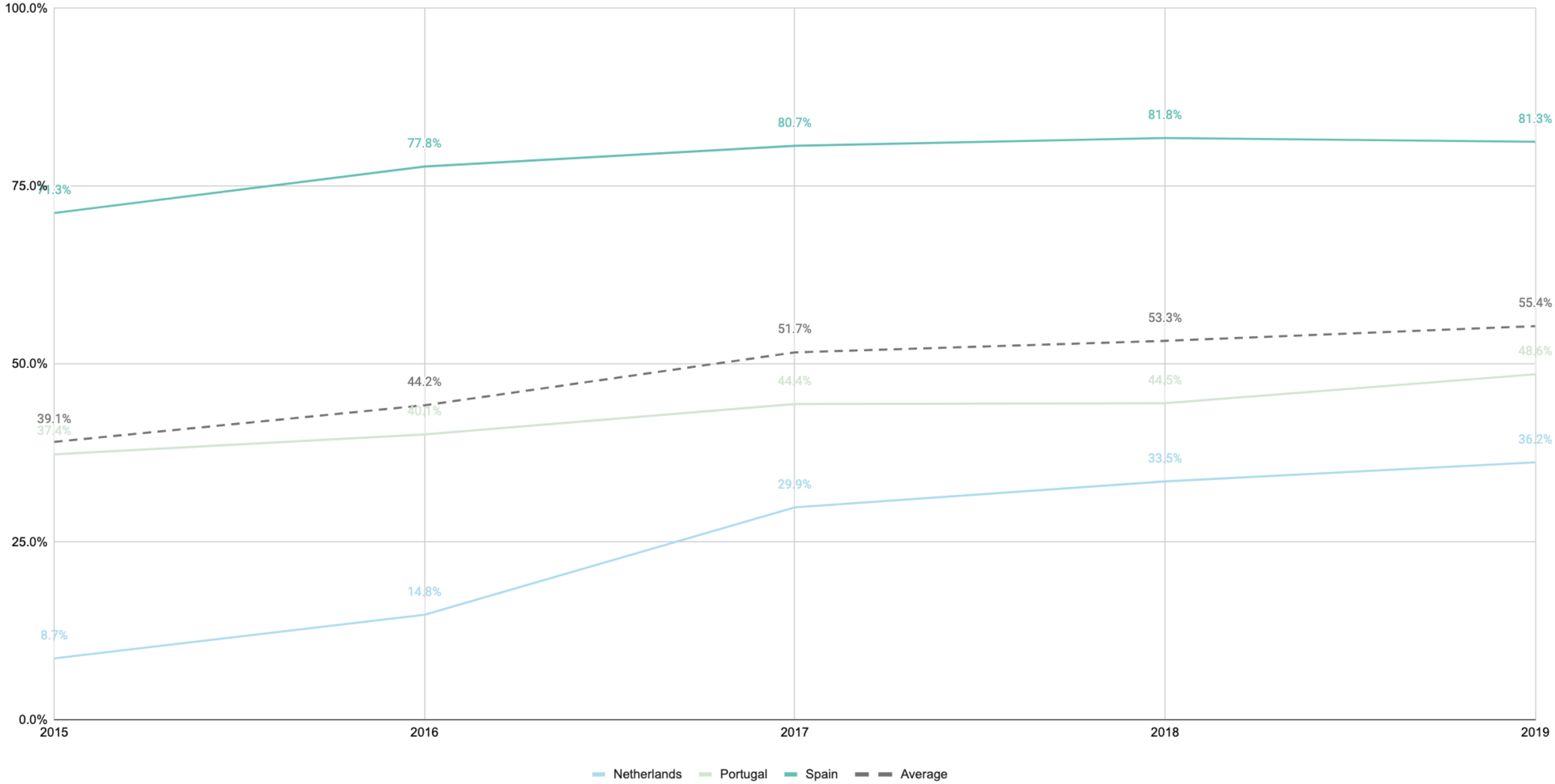
Pricing in Spain



Demand for FMC has grown stronger over time

- Between 2015 and 2019, FMC offers have become increasingly popular across France, Netherlands, Portugal and Spain
- The Netherlands has seen the strongest growth, with FMC bundles growing from 8.7% to 36.2% of the total broadband subscriptions
- On average, FMC offers in these markets have grown from 39.1% to 55.4%

Figure 23: FMC share of broadband subscriptions, 2015–2019 (%)

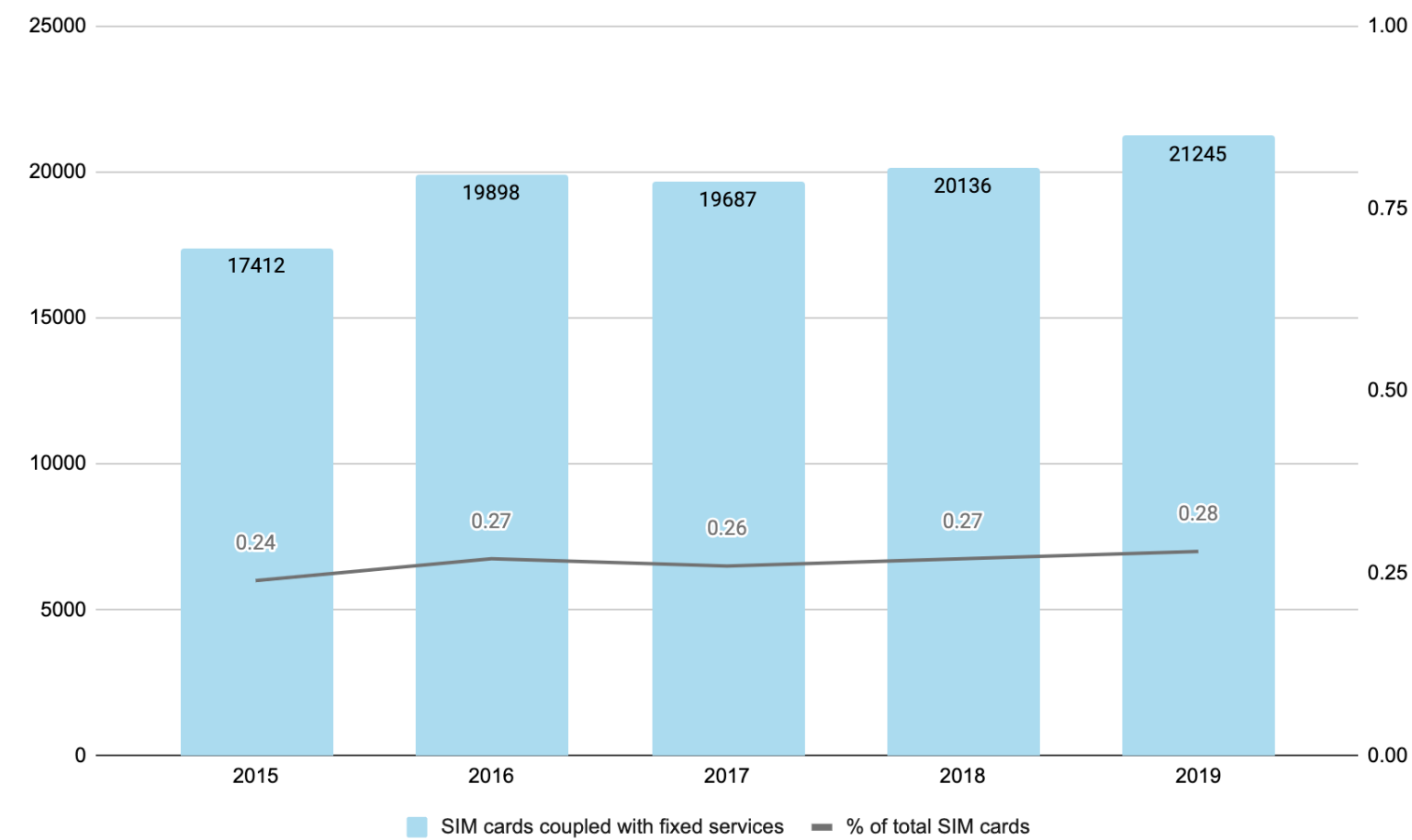


There is strong demand for converged offerings

France

Figure 24: SIM cards coupled with fixed services, 2015–2019 (000s)

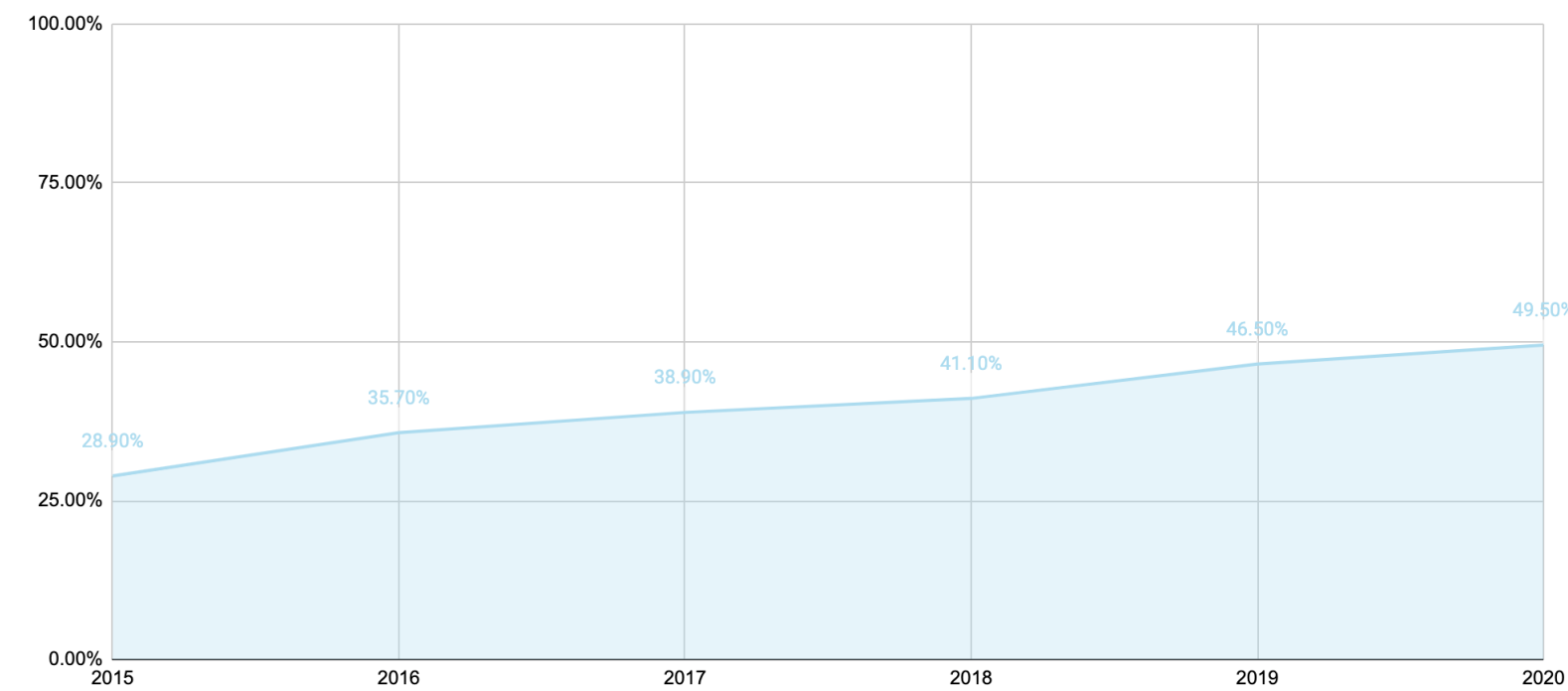
Mobile subscriptions when coupled with fixed services have risen by 22% compared to 2015



Portugal

Figure 25: Penetration of 4/5-play bundles, 2015–2020 (% households)

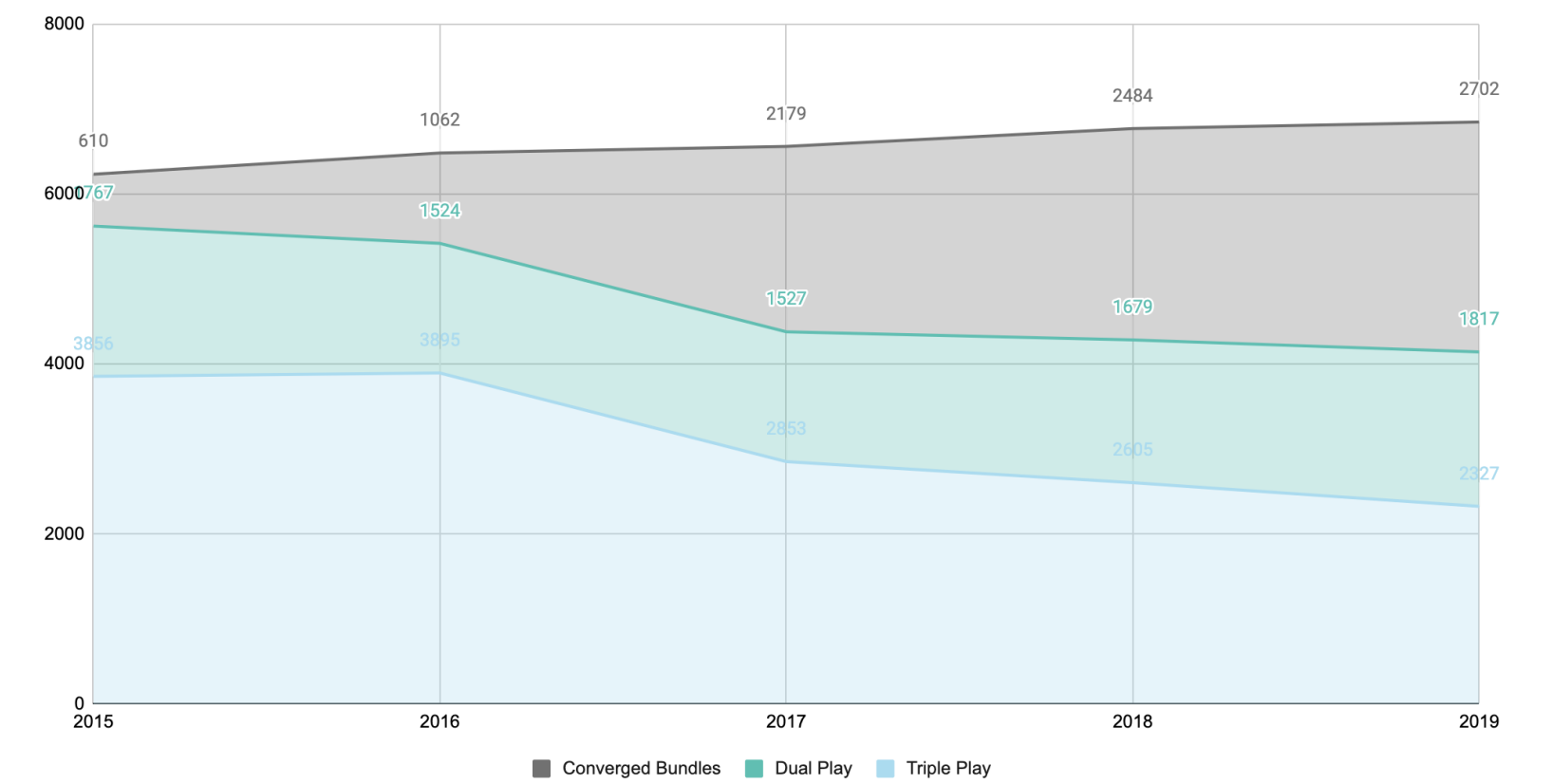
Almost one in two households now takes an FMC offer, compared to 28.9% in 2015



Netherlands

Figure 26: Bundled subscriptions, 2015–2019 (000s)

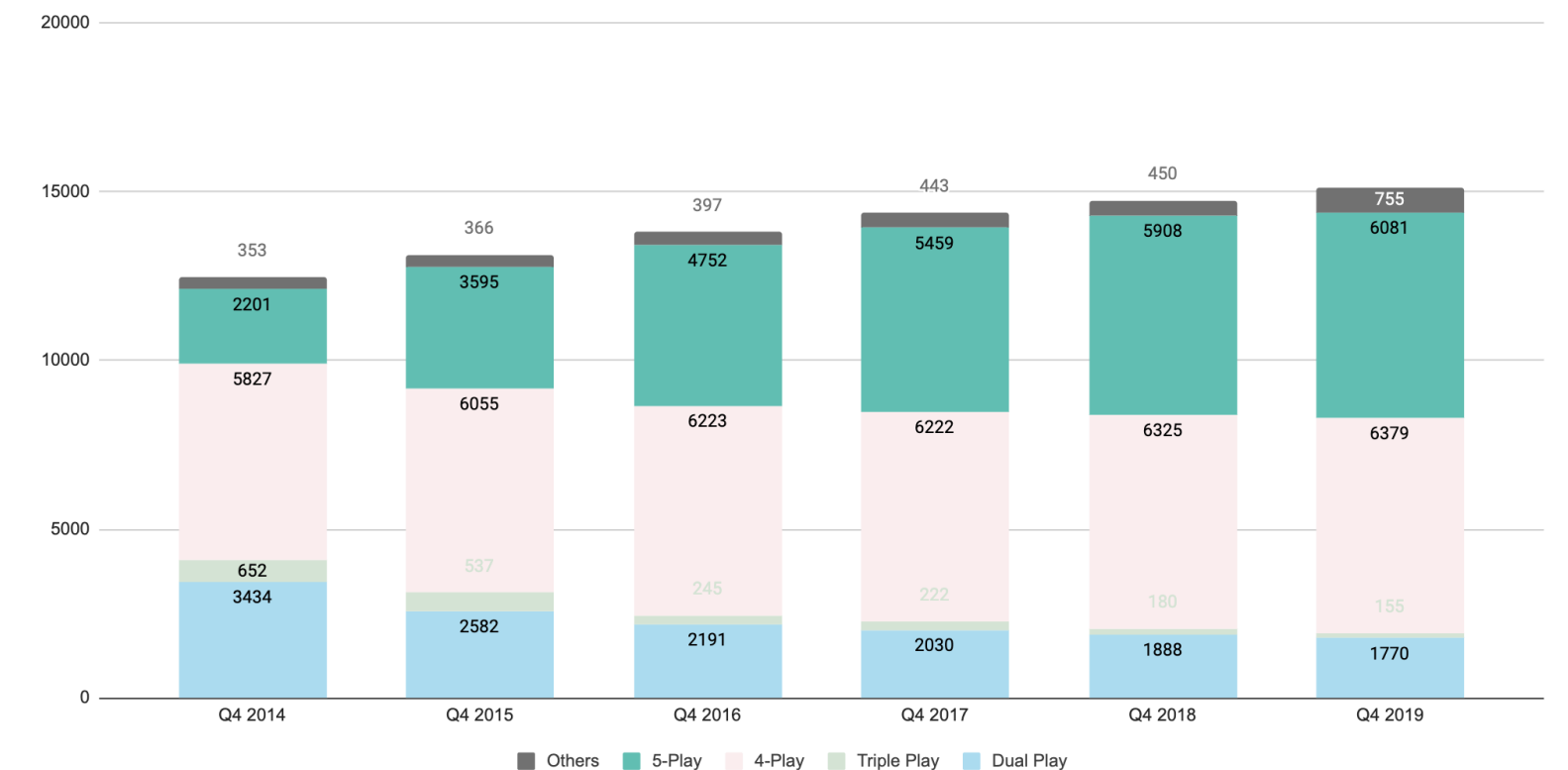
FMC bundles now account for 30.5% of bundled subscriptions, compared to 7.4% in 2015



Spain

Figure 27: Bundled subscriptions, 2014–2019 (000s)

The demand for FMC has continued to rise with FMC subscriptions growing from 64.4% of bundles in 2014, to 82.3% in 2019

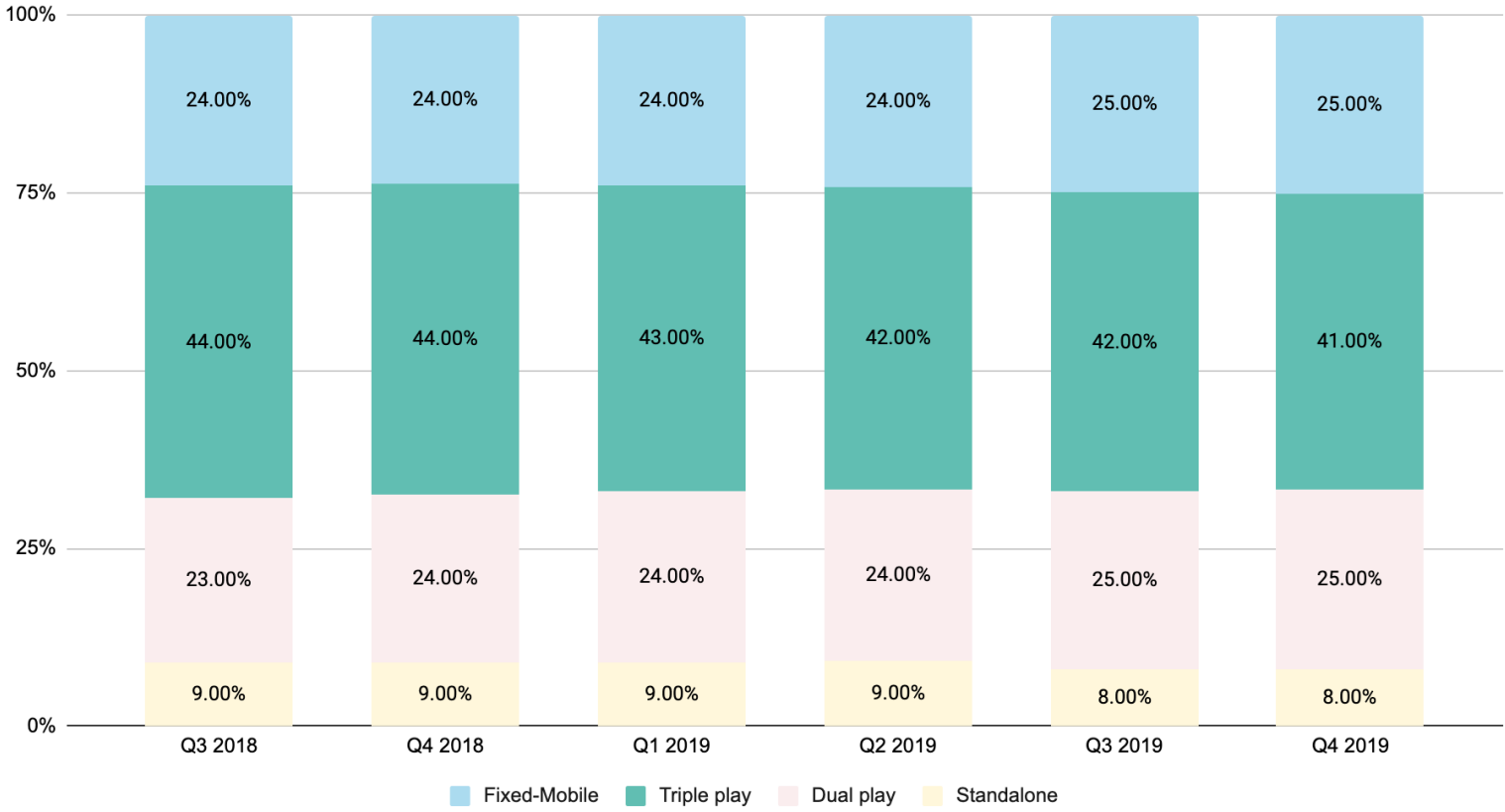


Uptake in the Netherlands

Broadband bundles

Figure 28:
Broadband bundles,
2018–2019 (%)

A quarter of broadband customers take a FMC package



Converged households and post-paid mobile customers, 2015–2019 (%)

Figure 29:
KPN

KPN saw a significant increase in FMC customers since 2015 – a 20 percentage points increase in fixed since 2015, and a 30 percentage points increase in mobile

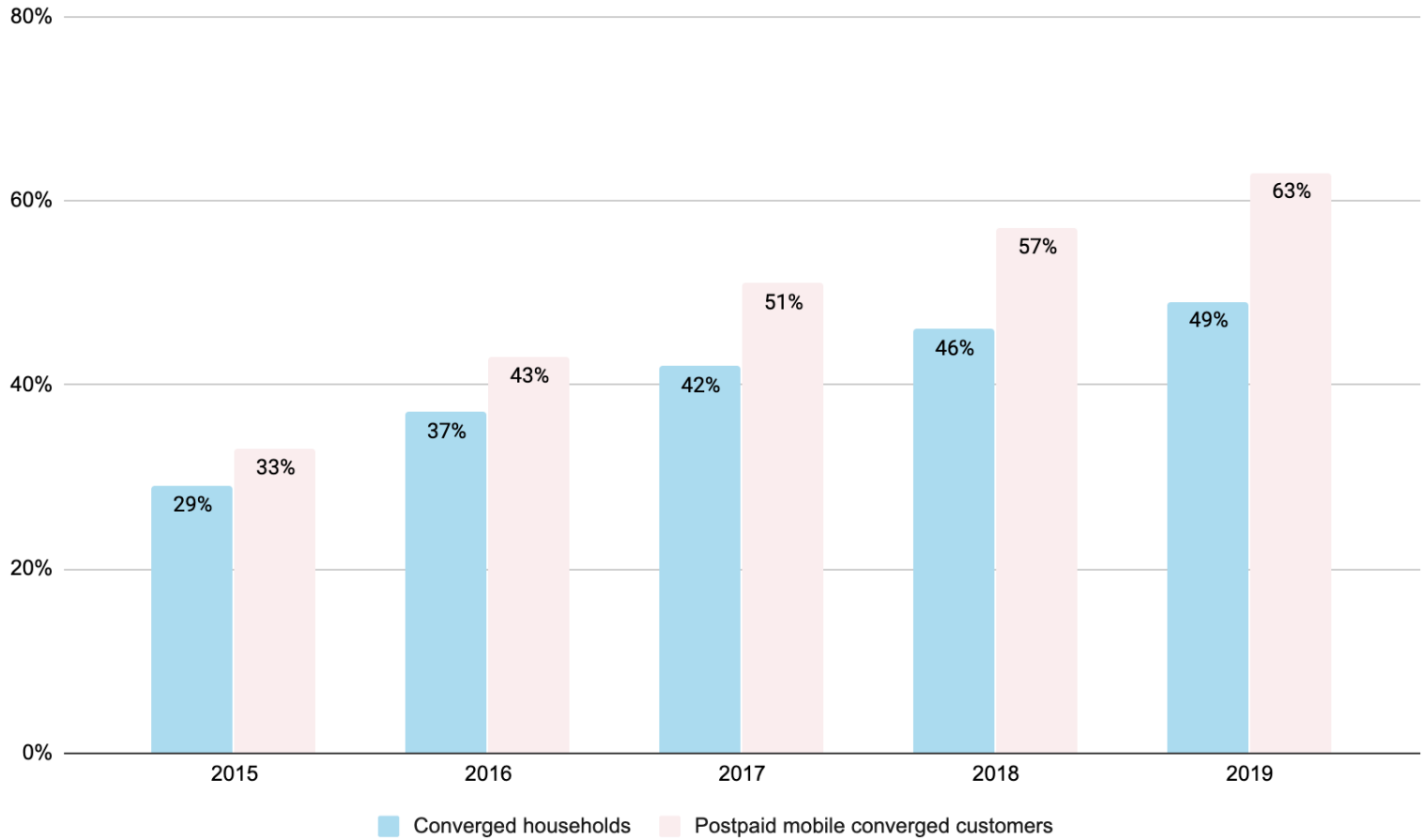
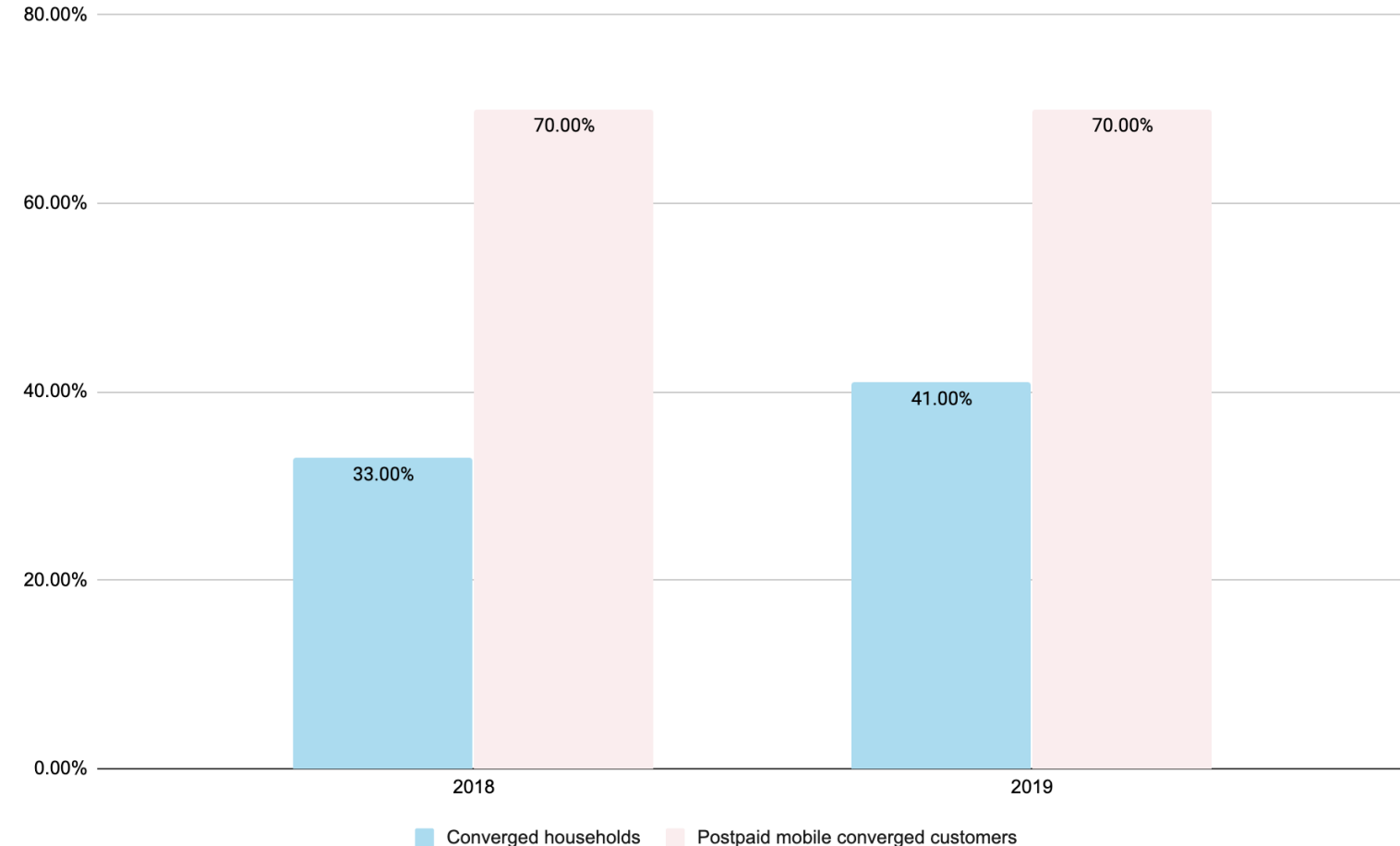


Figure 30:
VodafoneZiggo

41% of VodafoneZiggo's fixed customer base now take an FMC offering – which represents an 8 percentage points increase YoY

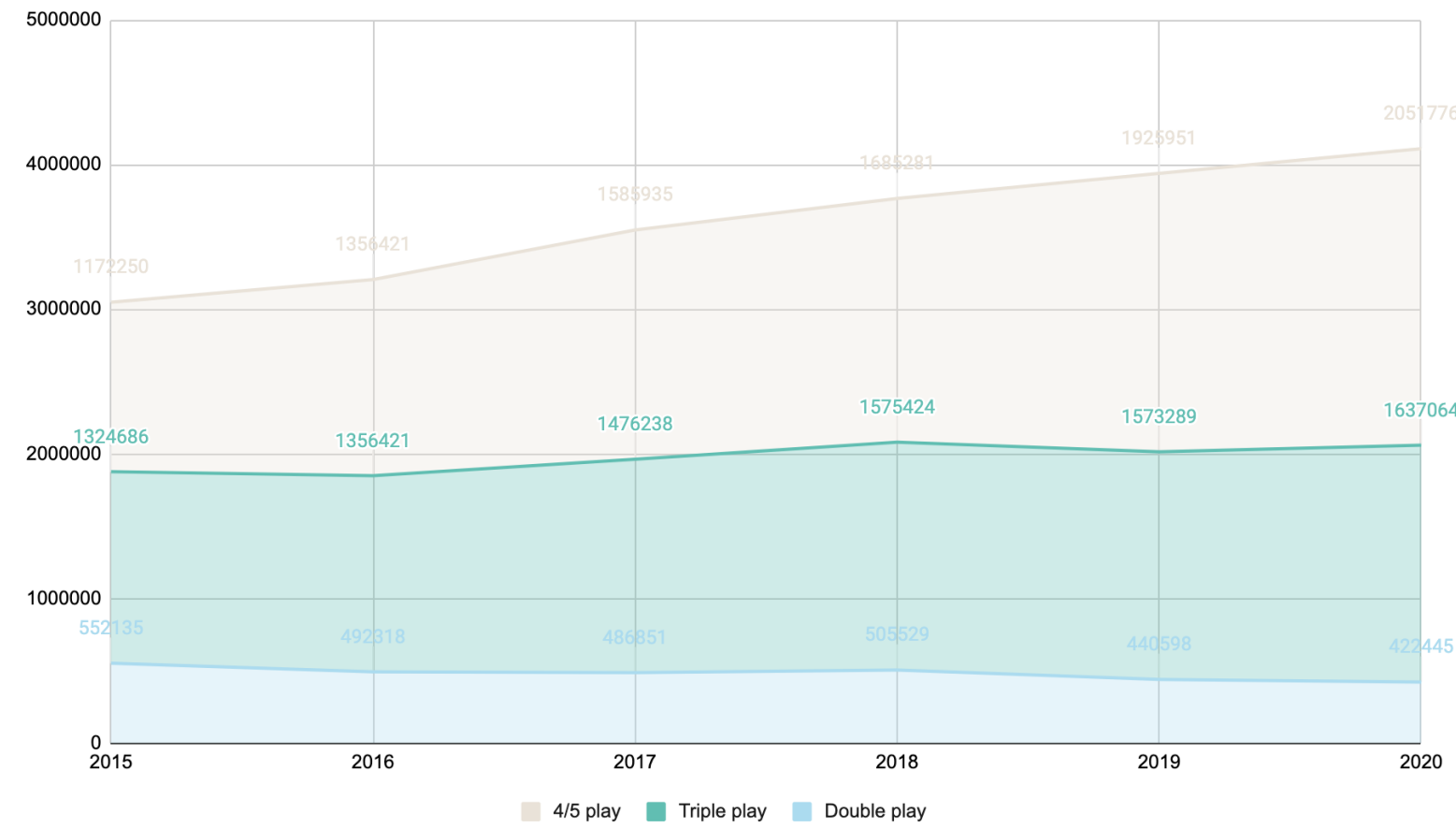


Uptake in Portugal

Bundled subscriptions

Figure 31:
Subscriptions to bundles, 2015–2019

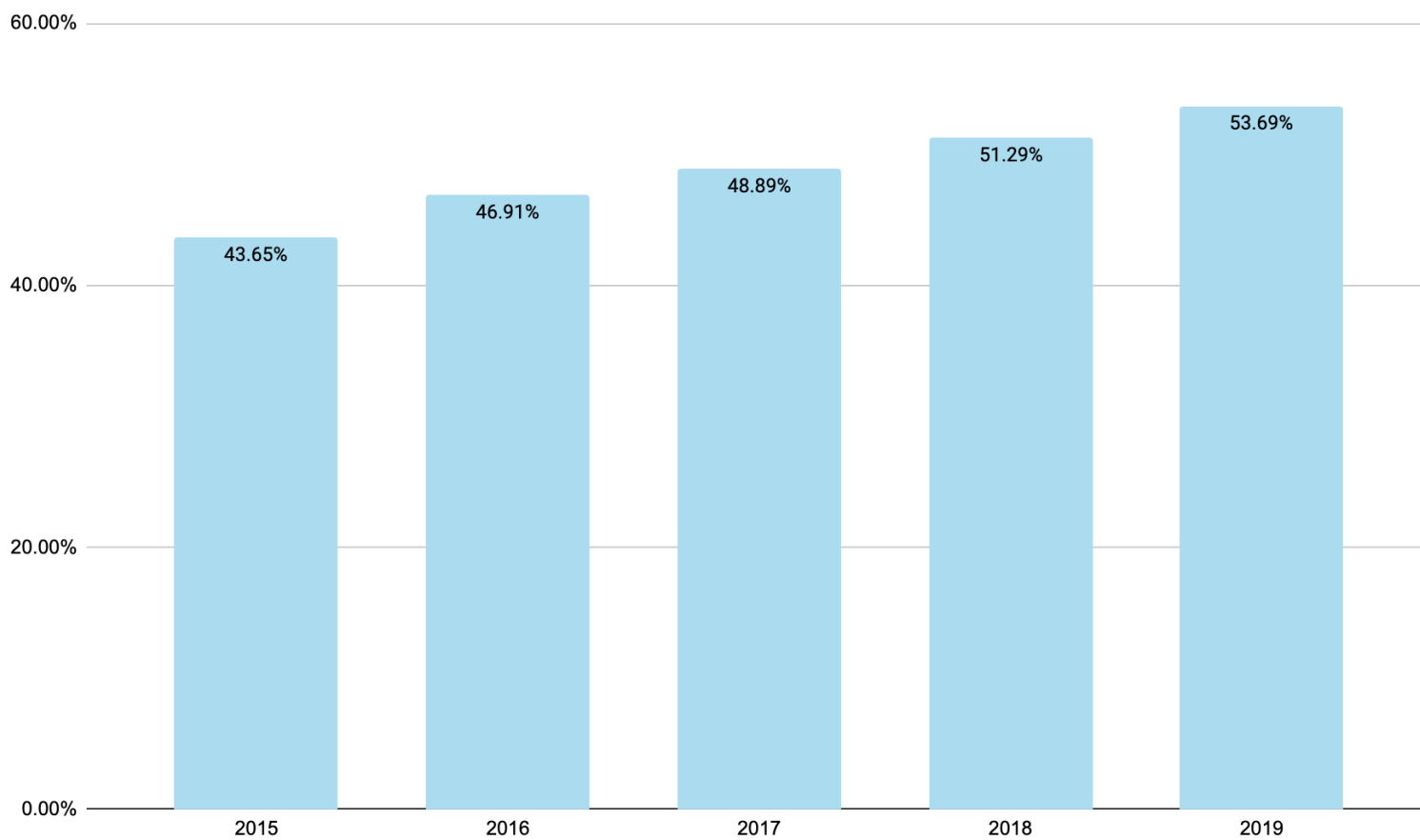
FMC packages now account for 49.9% of bundles, compared to 38.5% in 2015, and almost entirely account for the overall rise in bundled subscriptions



MEO

Figure 32:
Penetration of FMC, 2015–2019 (%)

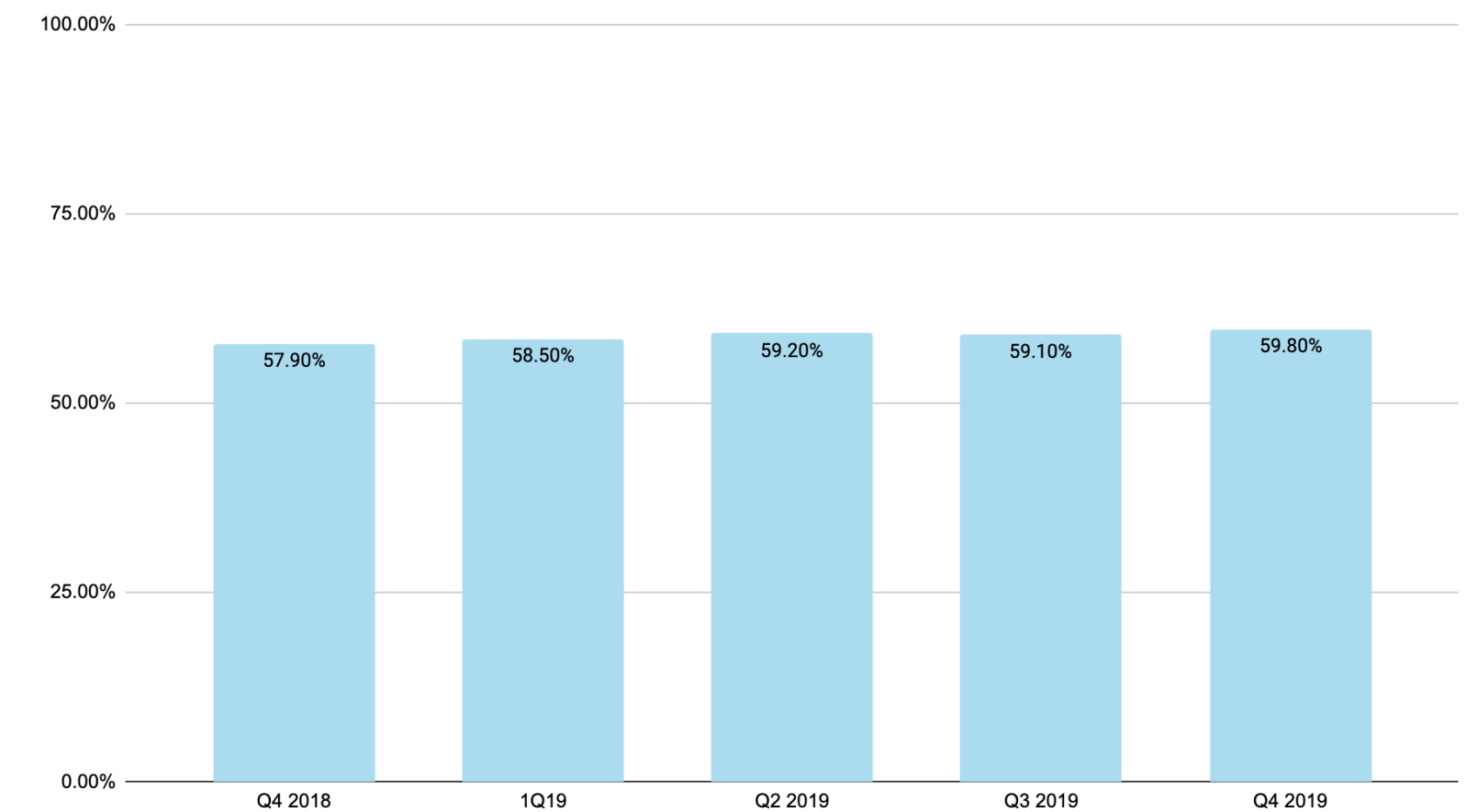
MEO's FMC subscribers base grew by 10 percentage points between 2015 and 2019



NOS

Figure 33:
FMC share of fixed access subscribers, 2018–2019 (%)

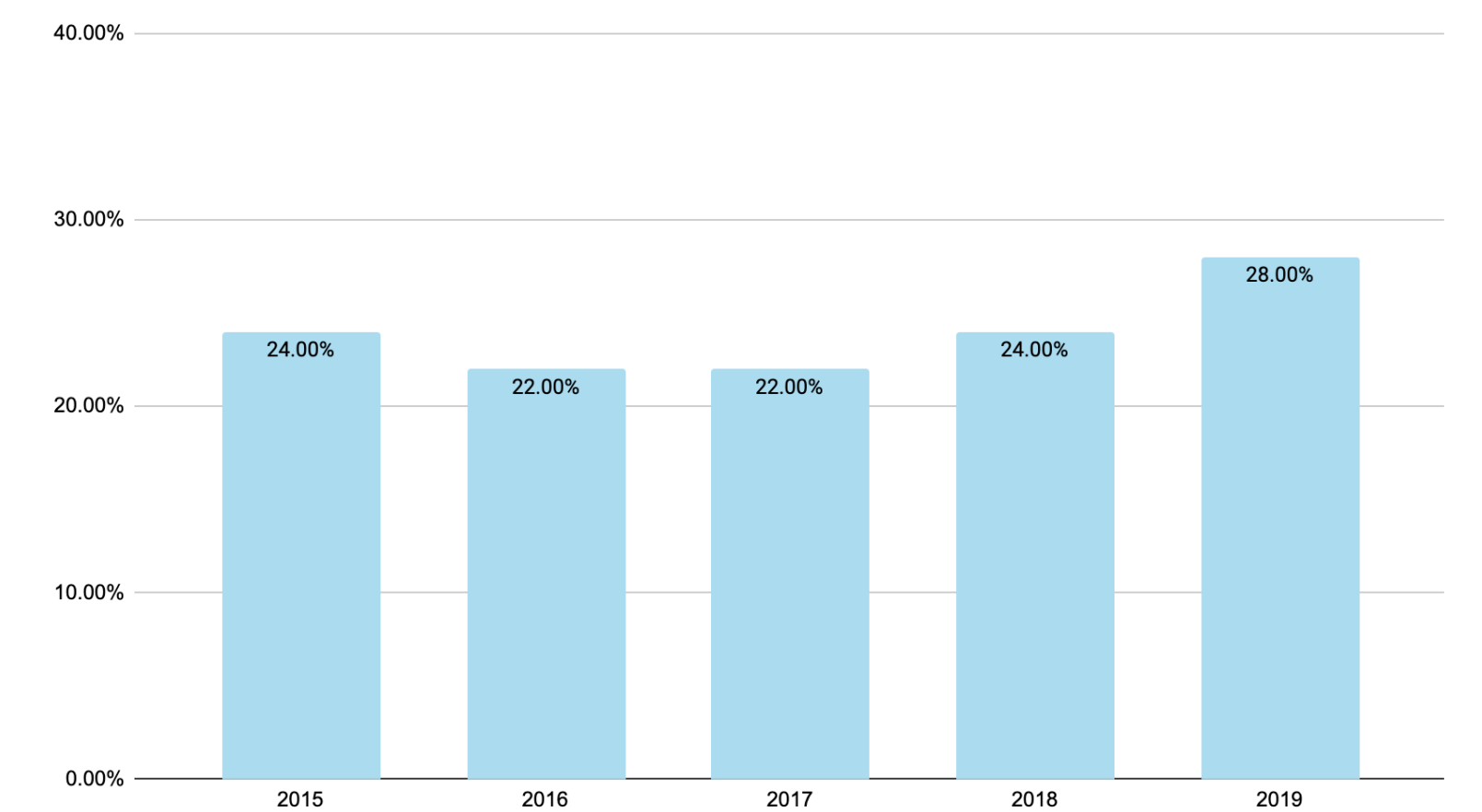
Almost 60% of NOS's subscribers take an FMC offer



Vodafone

Figure 34:
Broadband customers taking FMC offers, 2015–2019 (%)

Since 2017, Vodafone's share of broadband customers on an FMC bundle rose by 6 percentage points



Uptake in Spain

Broadband lines by bundle type, 2016–2019 (%)

Figure 35: Movistar

5-play is popular among Movistar’s customers (+14.4 percentage points between 2016 and 2019)

By 2019, 86% of Movistar’s FMC subscribers had their video service (3.8m).

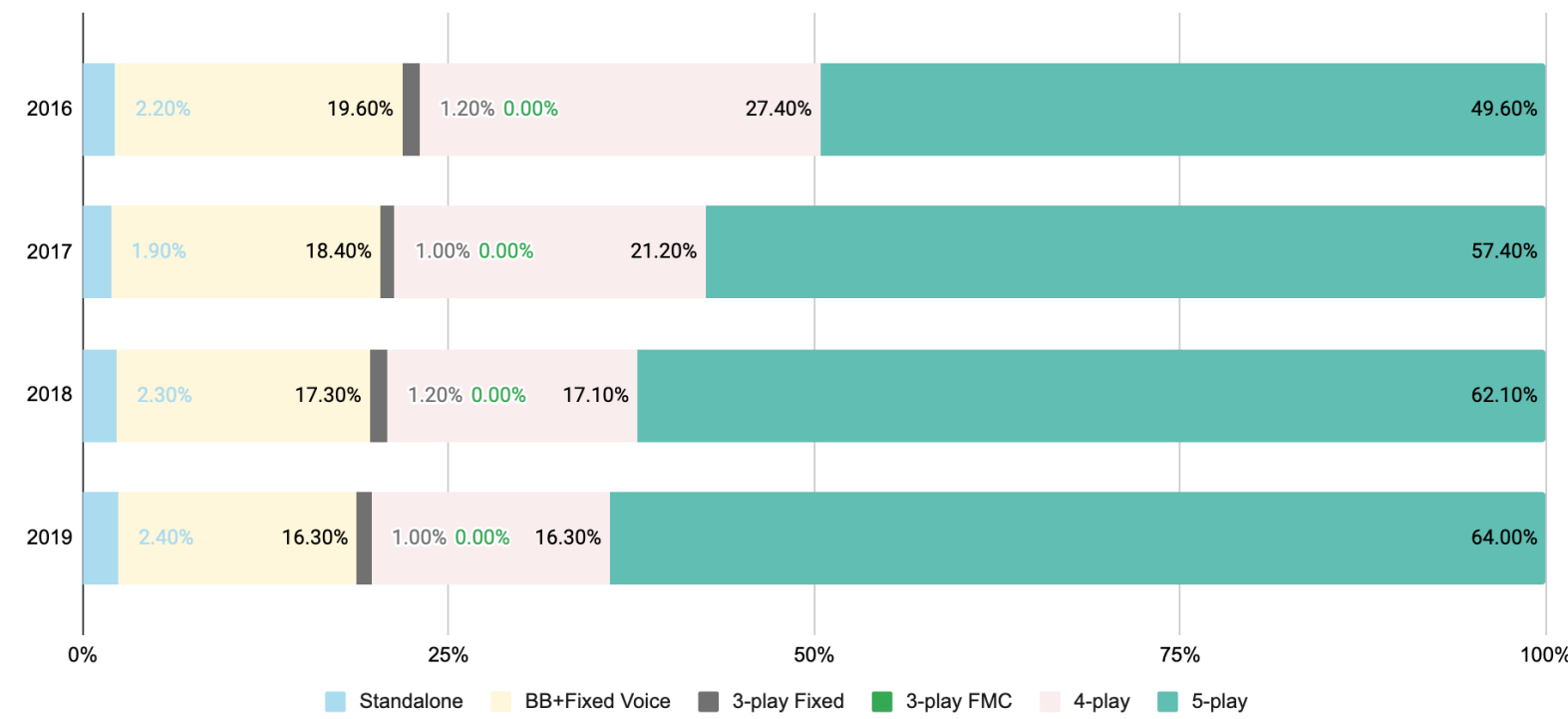
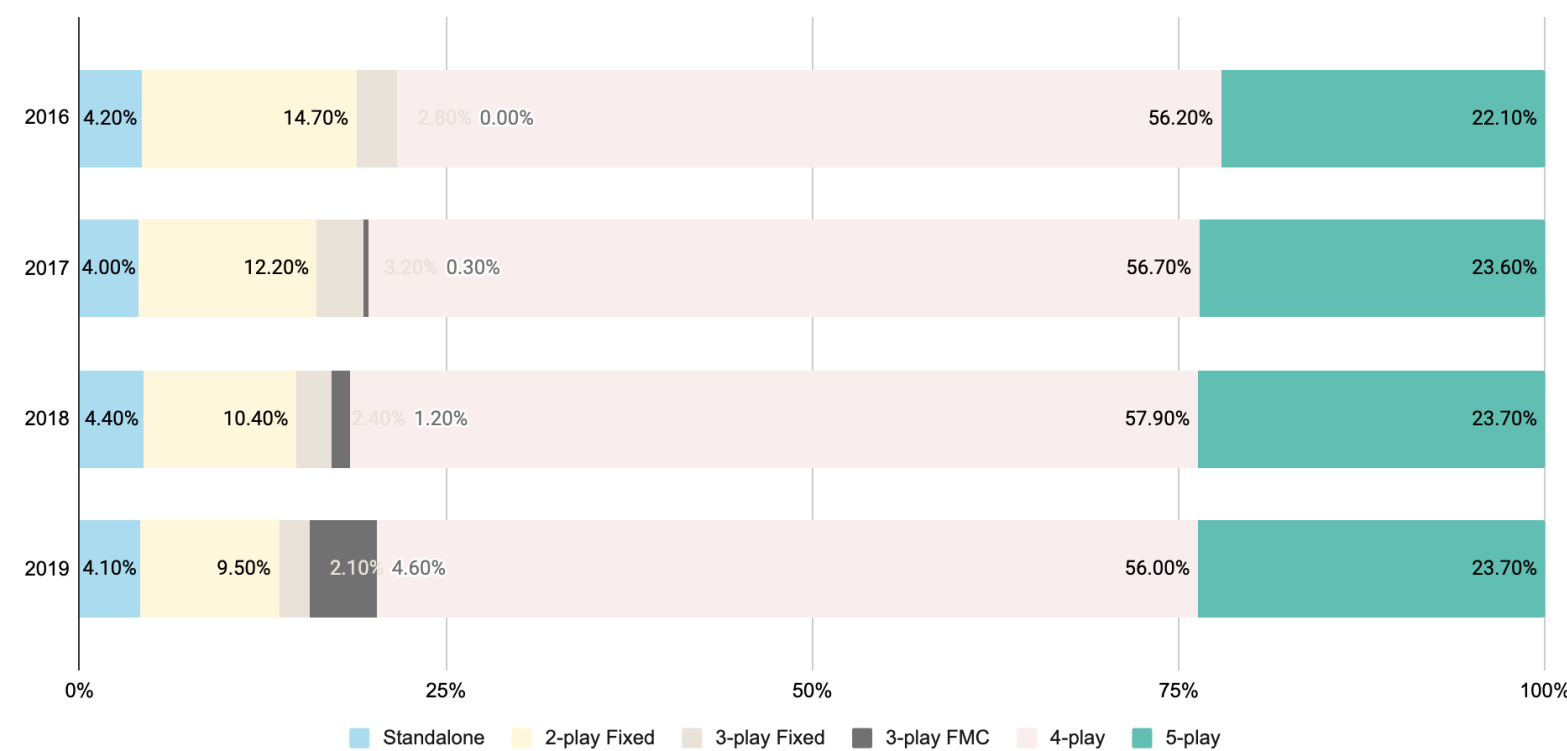


Figure 36: Other operators

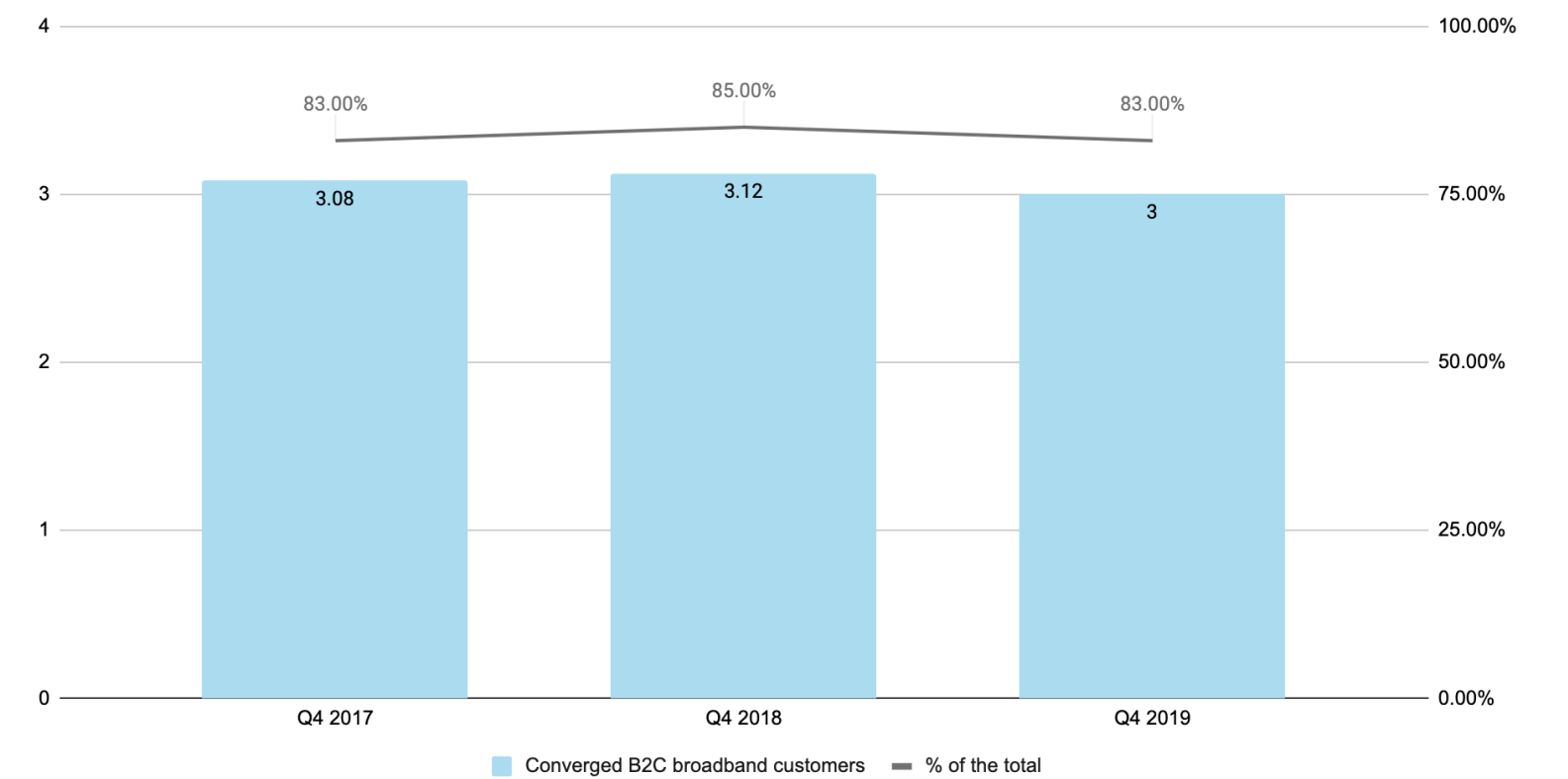
Quad play leads significantly among all other operators. 5-play is making inroads (1.6 percentage points increase between 2016 and 2019). 3-play FMC has increased almost 4-fold between 2018 and 2019.



Orange

Figure 37: FMC share of broadband customer base, 2017–2019

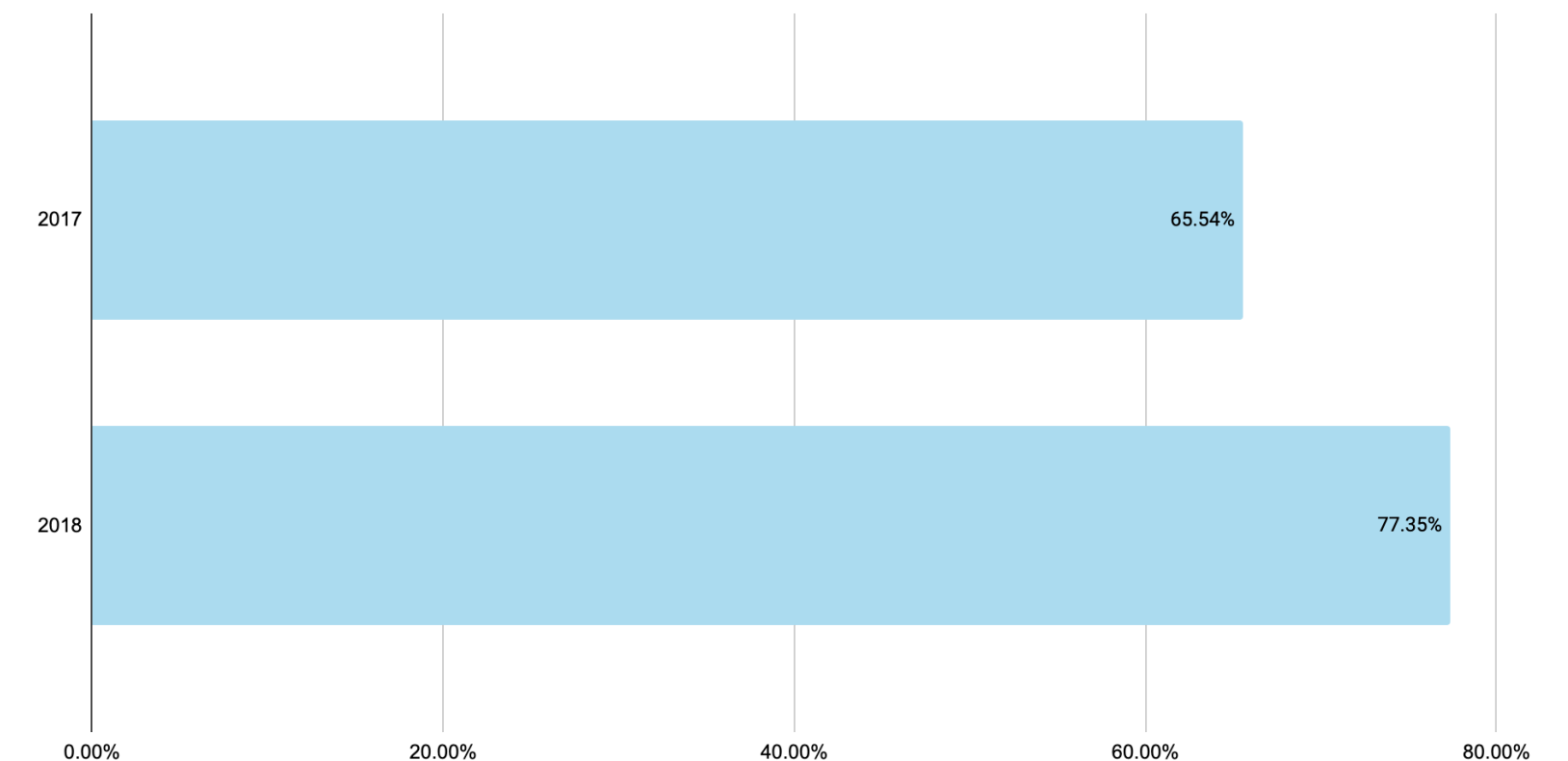
Between 2016 and 2019, at least 83% of Orange’s broadband customers have taken an FMC offering



Masmovil

Figure 38: Quad play share of broadband subscriptions, 2017–2018 (%)

Masmovil has strongly focused on FMC, which has resulted in 77.4% of broadband customers taking such offer – an 11.9 percentage points increase YoY



Summary

Background

1. Benefits of FMC
2. Demand, appetite and market environment for FMC
- 3. Improvements in network quality and build post FMC**

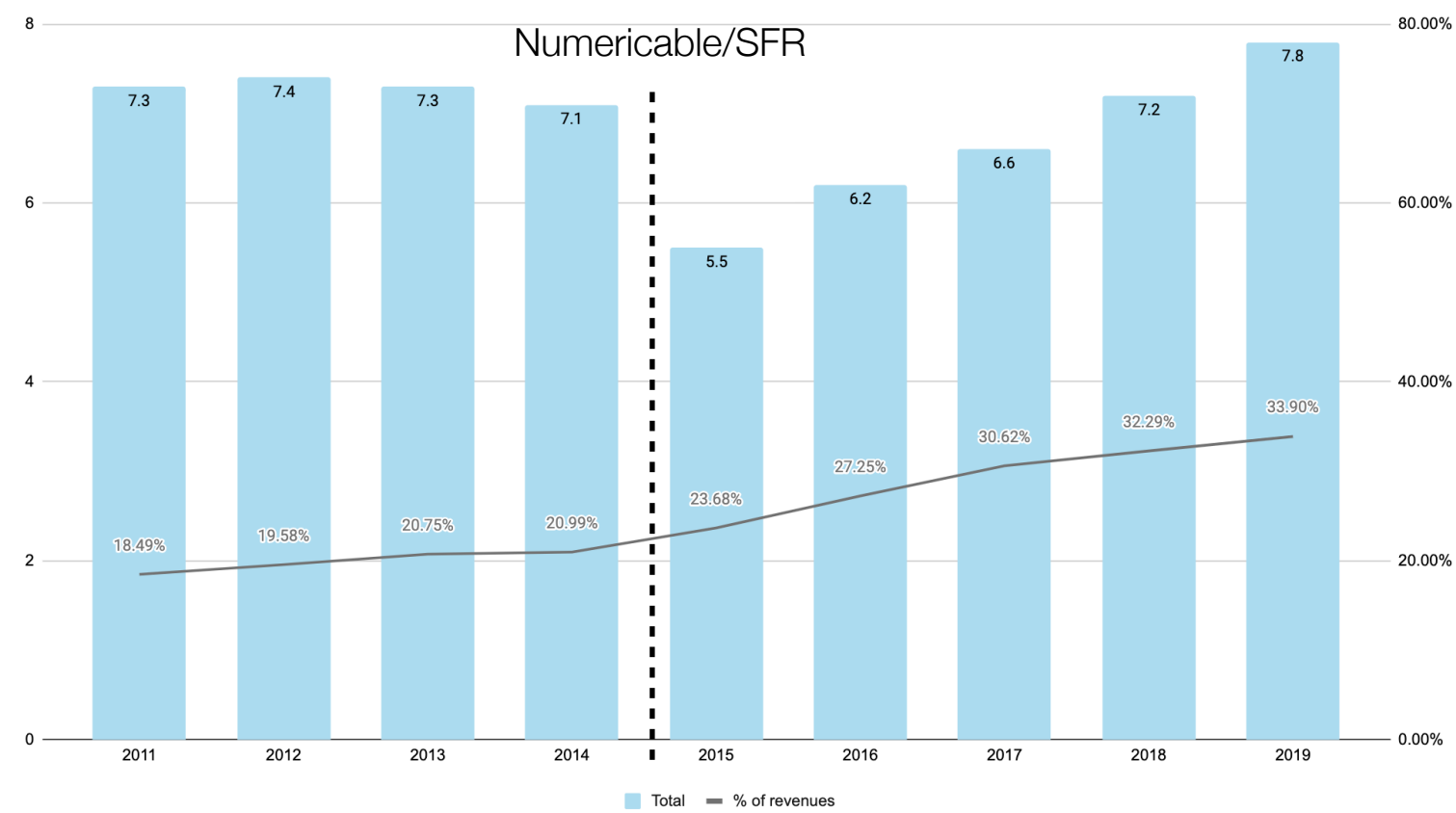
Investment in infrastructure goes up

France

Figure 39: Overall network investment, 2011–2019 (€bn)

Operators have invested a higher share of their revenues after the Numericable/SFR merger

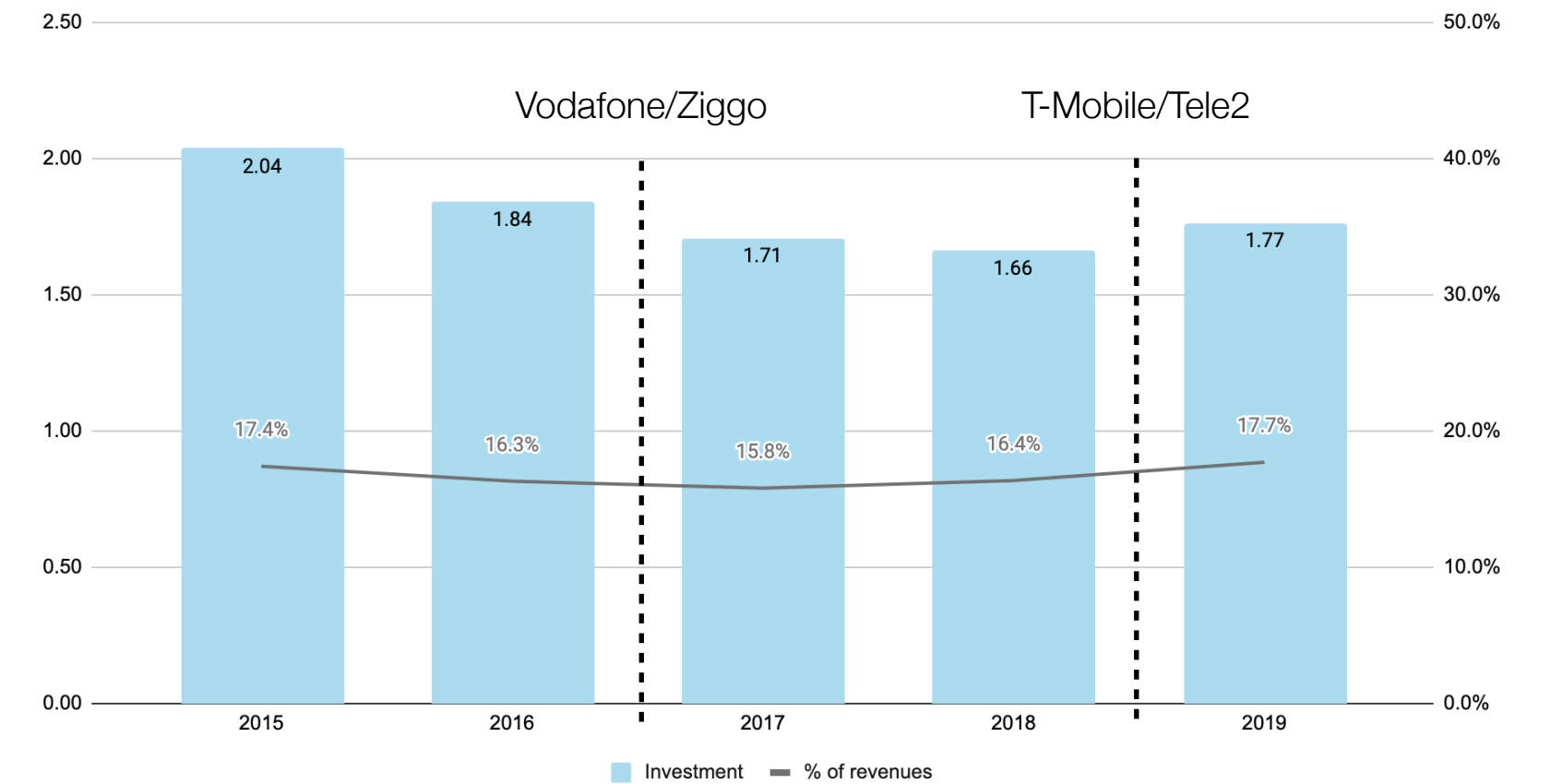
Investment in nominal terms increased by 50% over the last five years¹



Netherlands

Figure 41: Overall network investment, 2015–2019 (€bn)

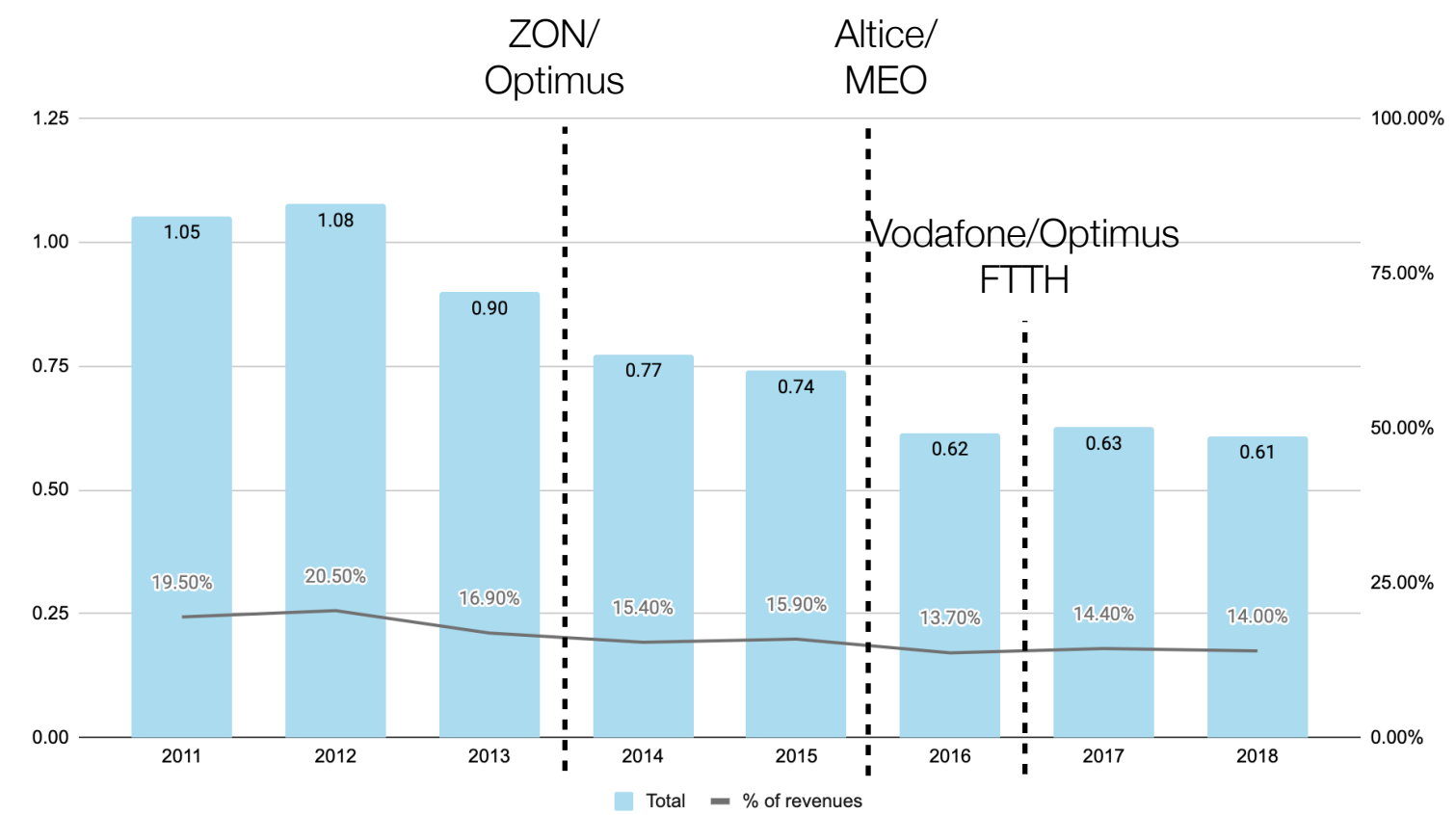
Investment as a share of revenue has increased since the VodafoneZiggo merger, and rose further after the T-Mobile/Tele2 tie-up



Portugal

Figure 40: Overall network investment, 2011–2018 (€bn)

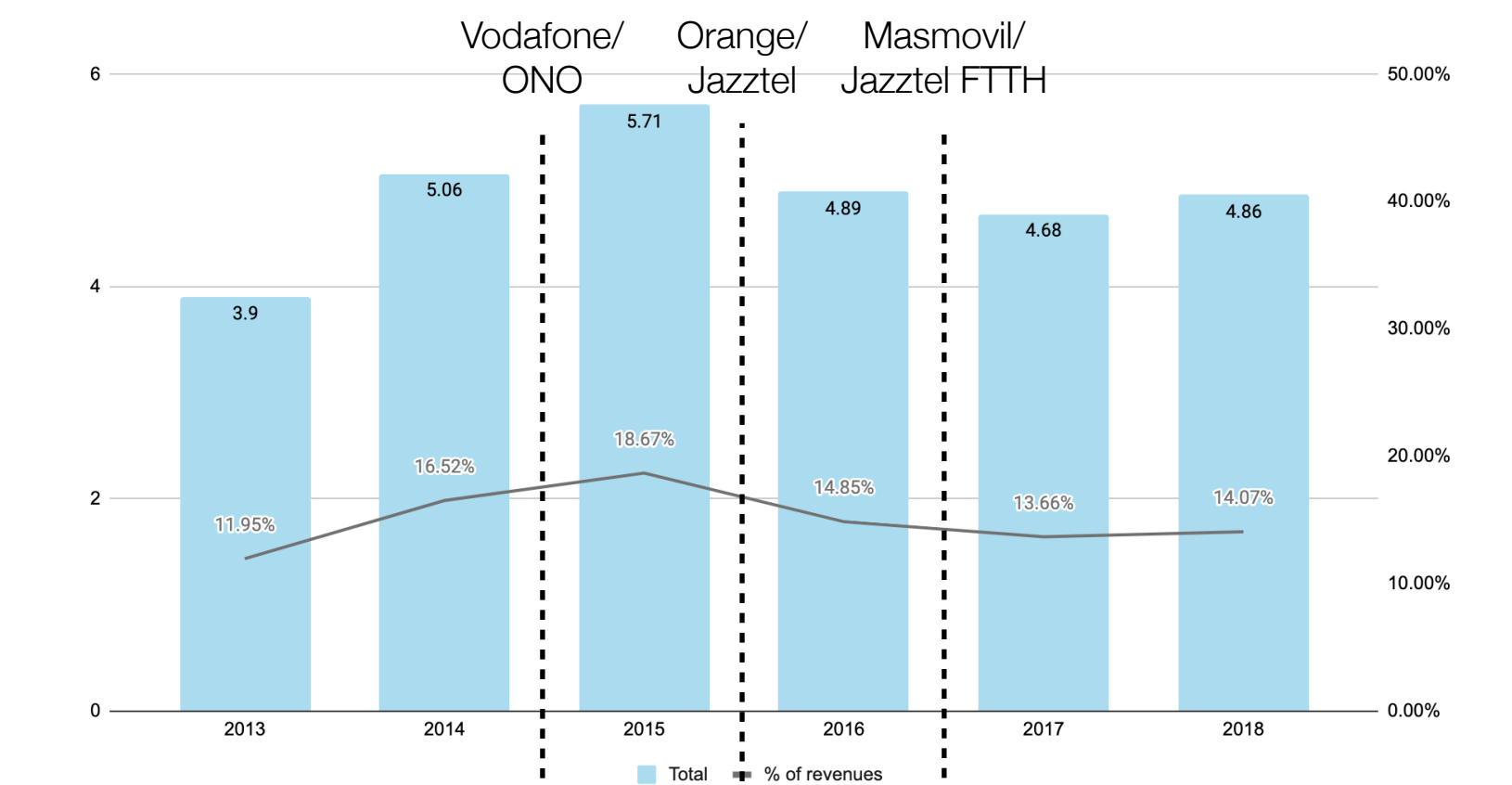
Operators have invested a consistent share of their revenues over the last five years²



Spain

Figure 42: Overall network investment, 2013–2018 (€bn)

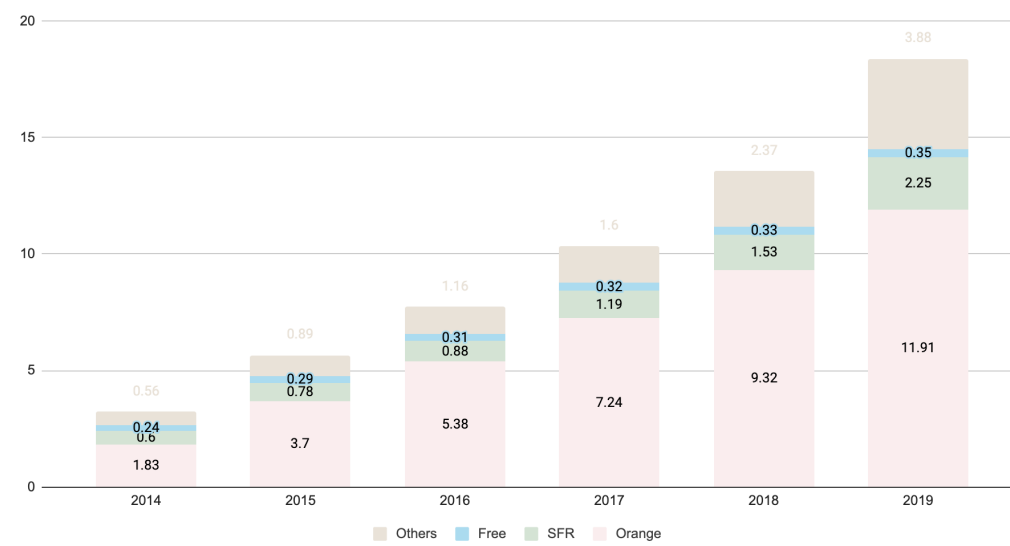
Despite falling revenues, operators have invested



FMC spurs investment in gigabit-capable broadband

France

Figure 43: FTTH rollout by operator, 2014–2019 (m/lines)

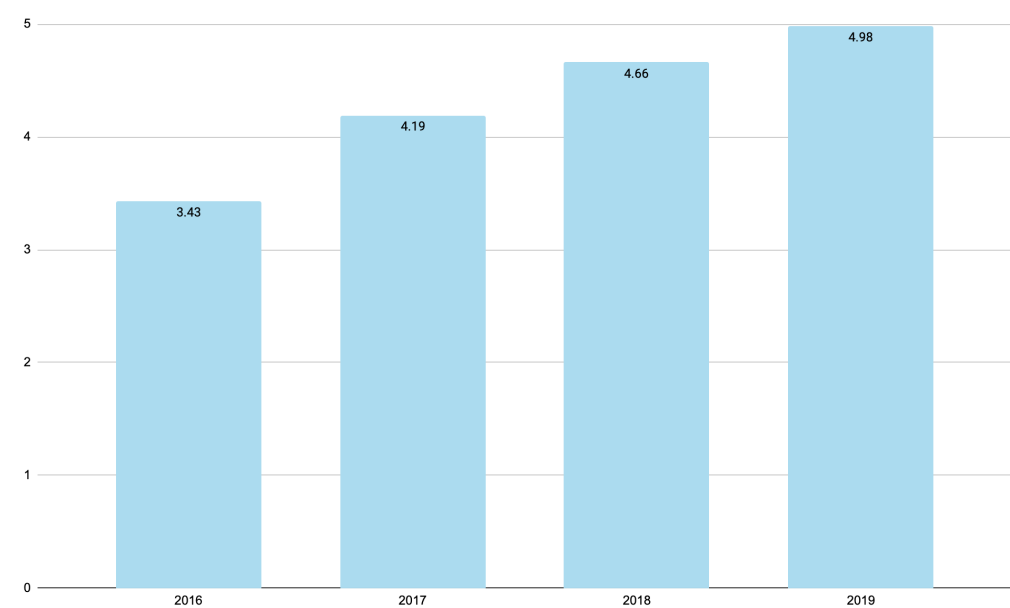


As of 2019, fibre rollout was six times higher than in 2014

- SFR continues to expand its network (€633m invested in 2019 in FTTH/B). In November 2019, it acquired wholesaler Covage to form SFR FTTH (2.7m homes passed, 8m secured).
- Free: 14m marketed premises. Targets 20m FTTH connectible sockets by 2022 (raised from a previous 20m), and 24m by 2024
- Bouygues: 12m marketed premises. 22m target for 2022

Portugal

Figure 44: FTTH rollout, 2016–2019 (m/lines)

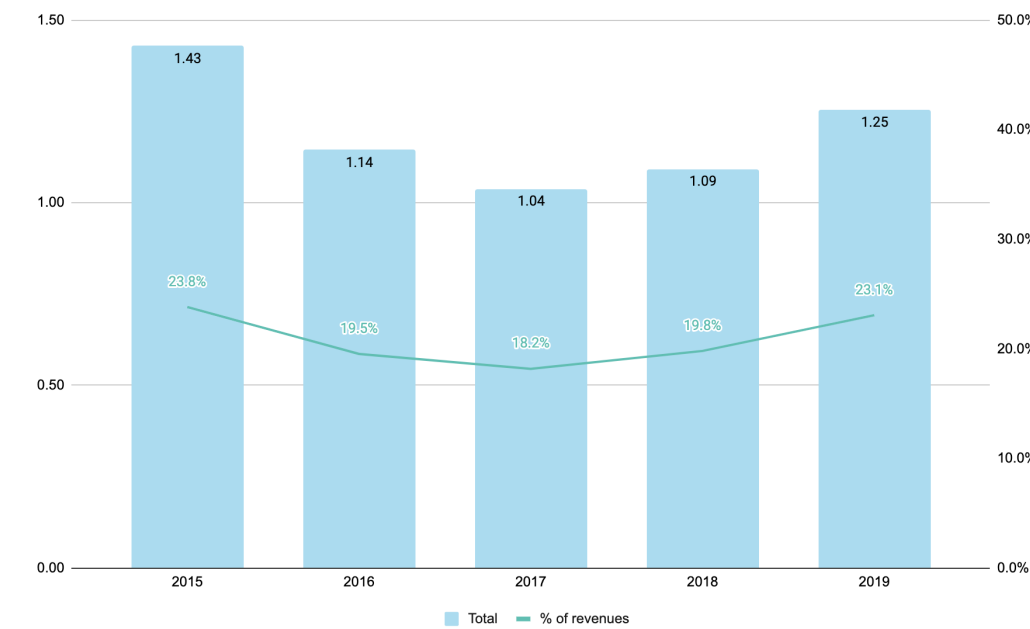


Fibre rollout increased by 45% between 2016 and 2019

- MEO: From 2.2m FTTH/HFC premises in 2015 to 4.9m in 2019
- NOS: From 3.4m FTTH/HFC premises to 4.65 in 2019
- Since September 2017, NOS and Vodafone are co-investing to cover 2.6m premises (1.2m NOS, 1.4m Vodafone) with FTTH by 2022

Netherlands

Figure 45: Investment in fixed networks, 2015–2019 (€/bn)

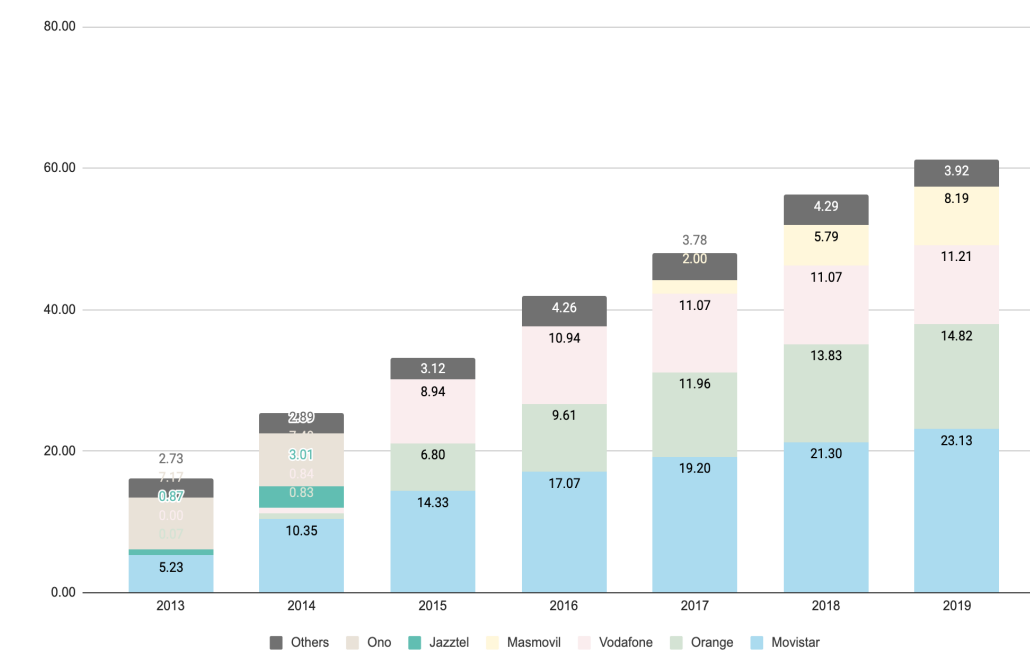


Fixed investment as a share of revenues increased by 4.9 percentage points between 2017 and 2019

- KPN and VodafoneZiggo have been upgrading their HFC networks to DOCSIS 3.1
- KPN launched Gbps FTTH to 1.2m premises, and aims to offer it to all FTTH customers by end-2021. 2m lines deployed as of Q4 2019, target of 3m by end-2021
- In January 2020, T-Mobile targeted 100k FTTH premises by end-2020

Spain

Figure 46: FTTH+HFC rollout by operator, 2013–2019 (m/lines)



Alternative operators accounted for 62% of FTTH+HFC rollout as of 2018

- In June 2019, Movistar targeted 100% fibre coverage by 2024
- Orange has continued to invest despite falling revenues
- Masmovil has deployed nearly 6m FTTH lines, and is co-investing with Orange to deploy up to 2.75m lines by 2023
- Vodafone upgraded its HFC network to DOCSIS 3.1 in Q4 2018

Since convergence, fixed and mobile coverage has improved

France

Figure 47: 100Mbps+ broadband coverage, 2014–2020 (% households)

Coverage of 100Mbps now 2.4x higher than 2014

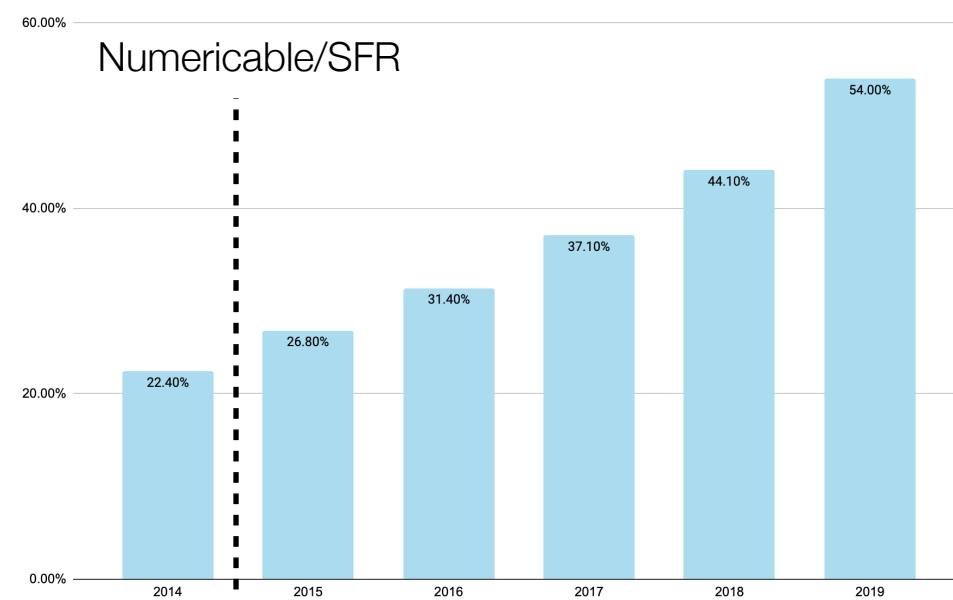
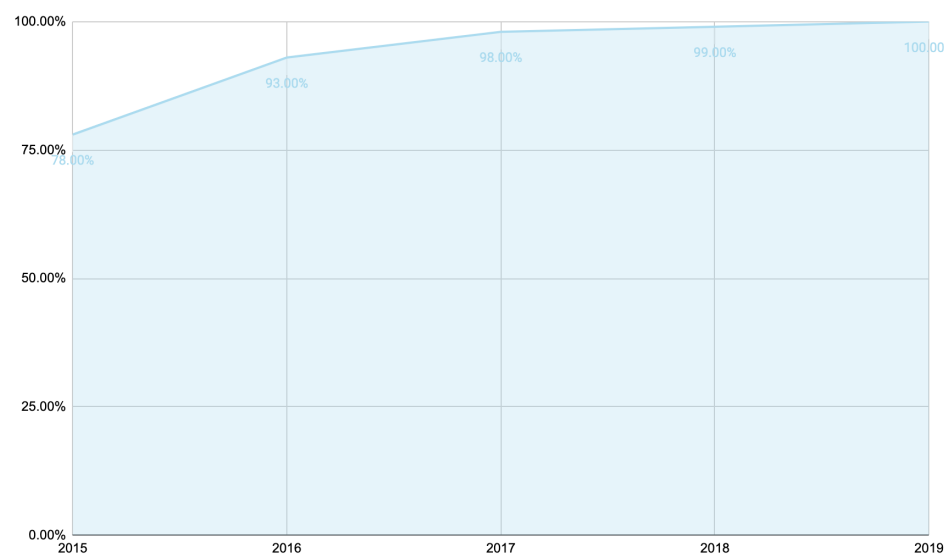


Figure 48: 4G coverage, 2015–2020 (% population)



Netherlands

Figure 49: Gigabit broadband coverage, 2015–2020 (% households)

Gigabit-capable broadband widely available from 2019 as a result of FMC operators upgrading their cable networks

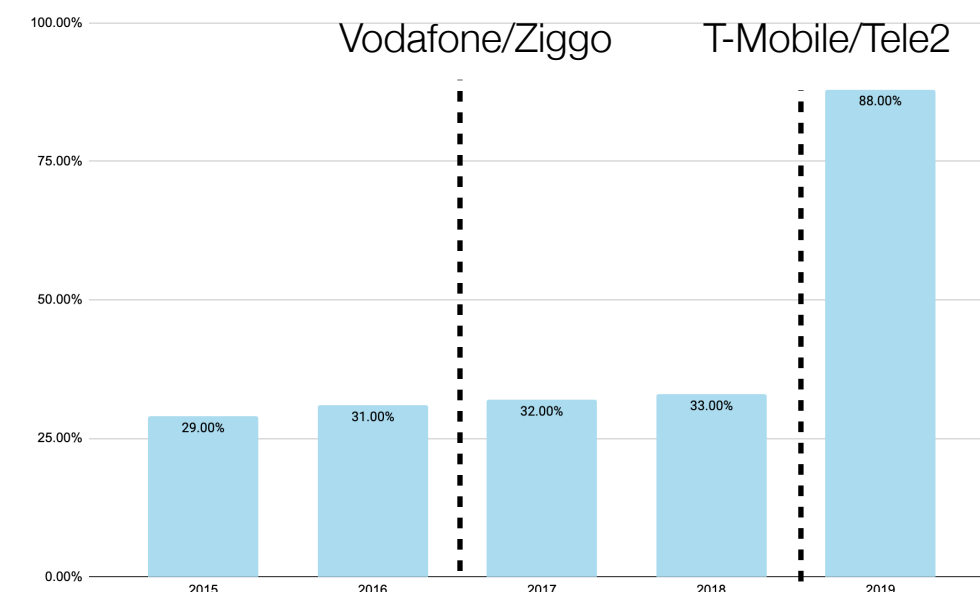
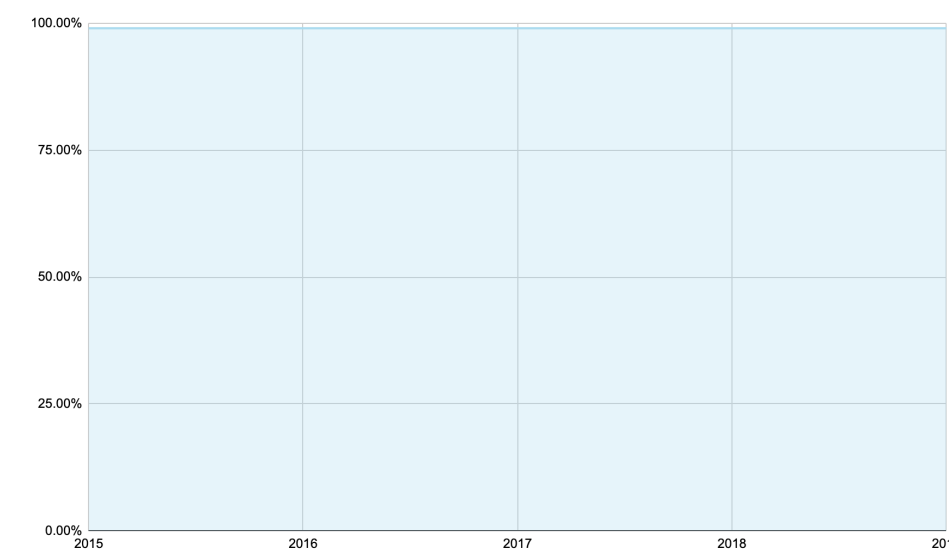


Figure 50: 4G coverage, 2015–2020 (% population)



Portugal

Figure 51: FTTH+HFC broadband coverage, 2016–2020 (% households)

85% of households now have access to FTTH or HFC – up 18 percentage points in three years

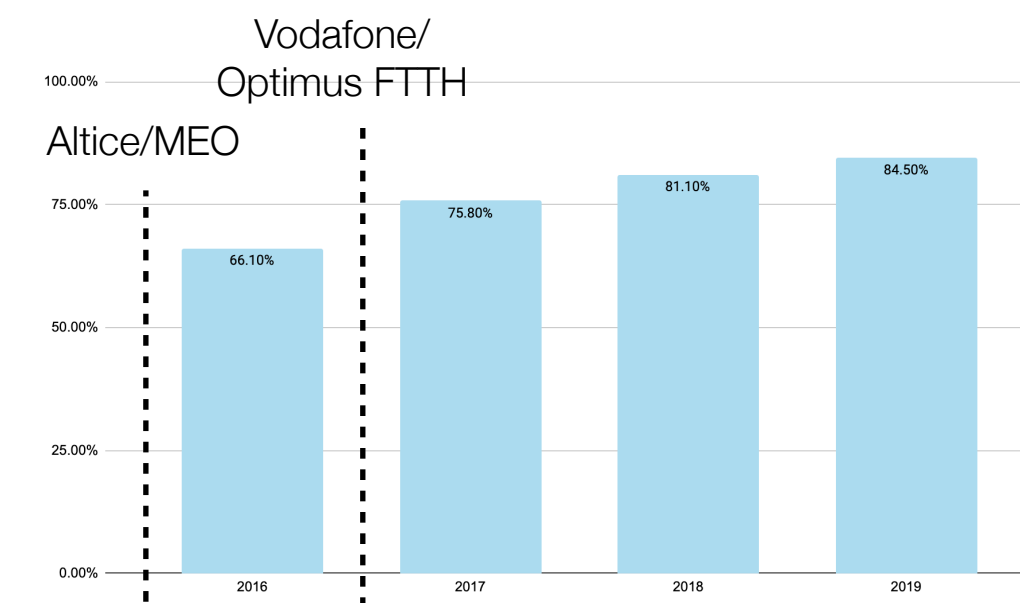
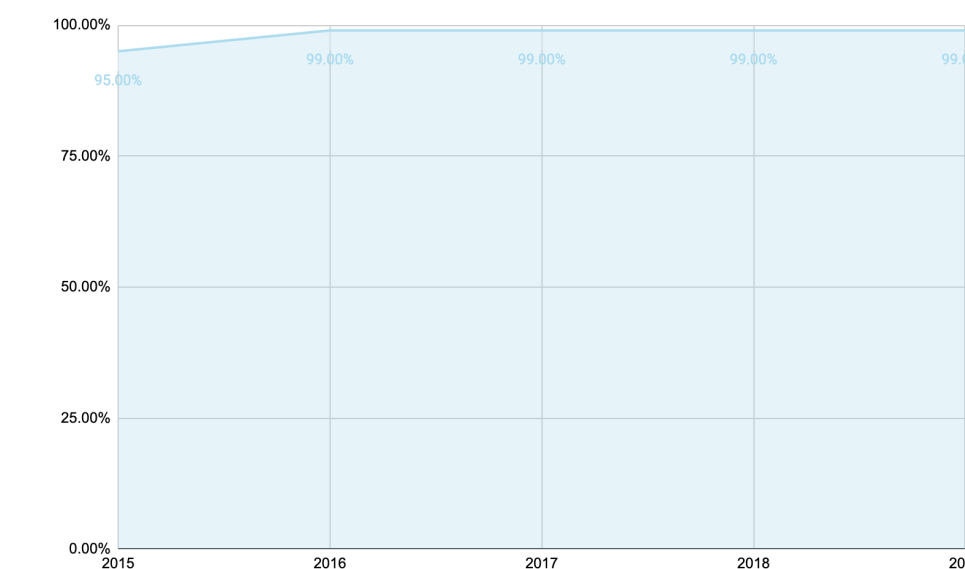


Figure 52: 4G coverage, 2015–2020 (% population)



Spain

Figure 53: 100Mbps+ fixed broadband coverage, 2014–2020 (% households)

Coverage of 100Mbps now 1.5x higher than 2014

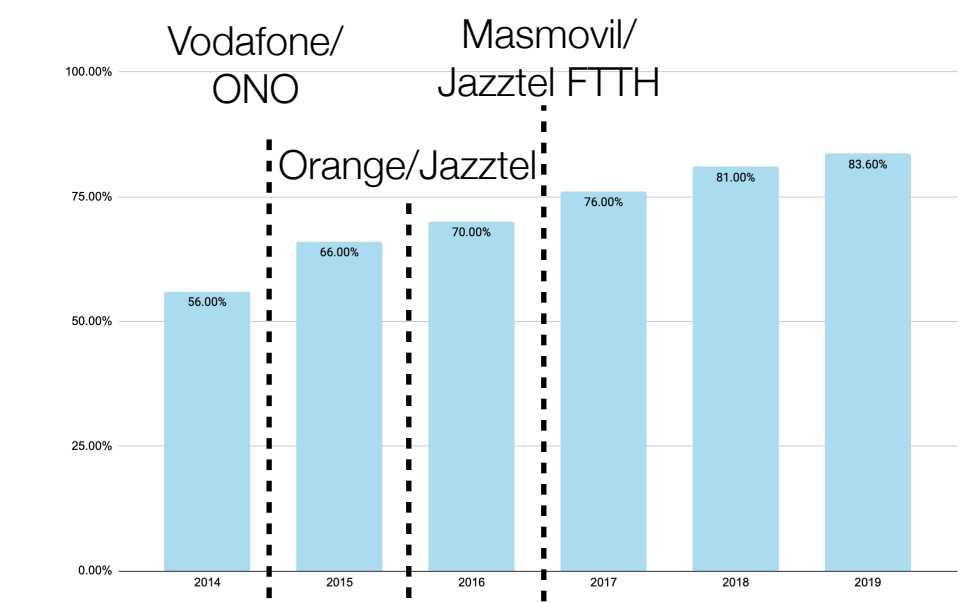
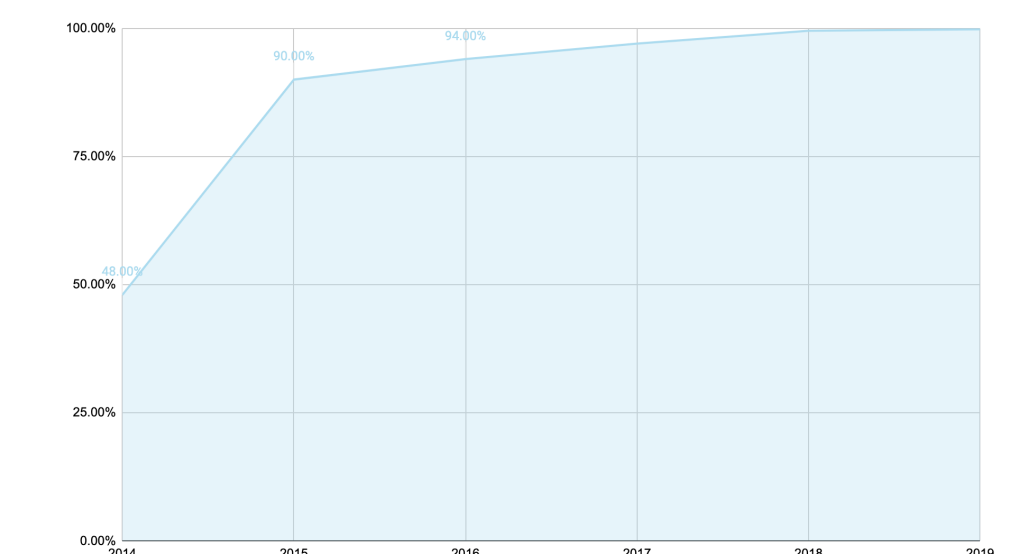


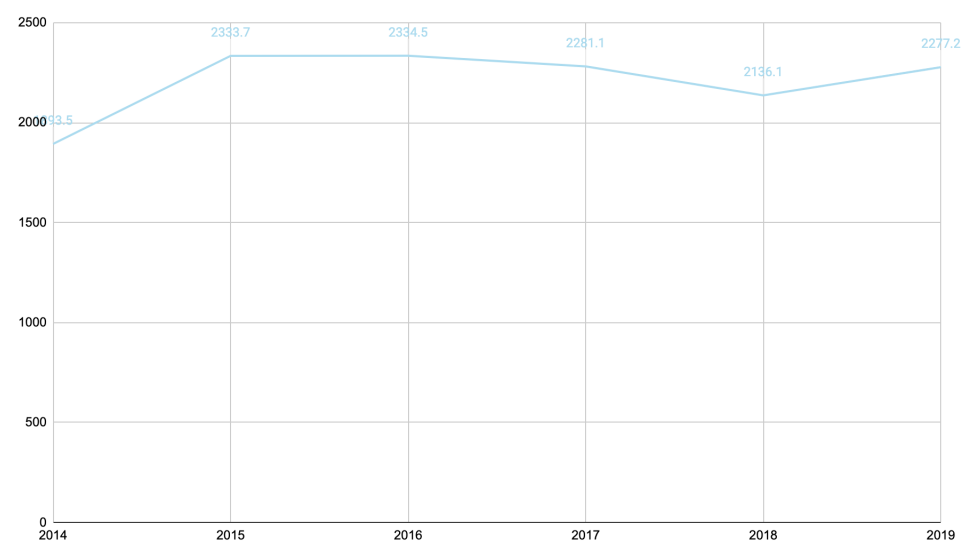
Figure 54: 4G coverage, 2014–2020 (% population)



Overall capex went up after convergence

France

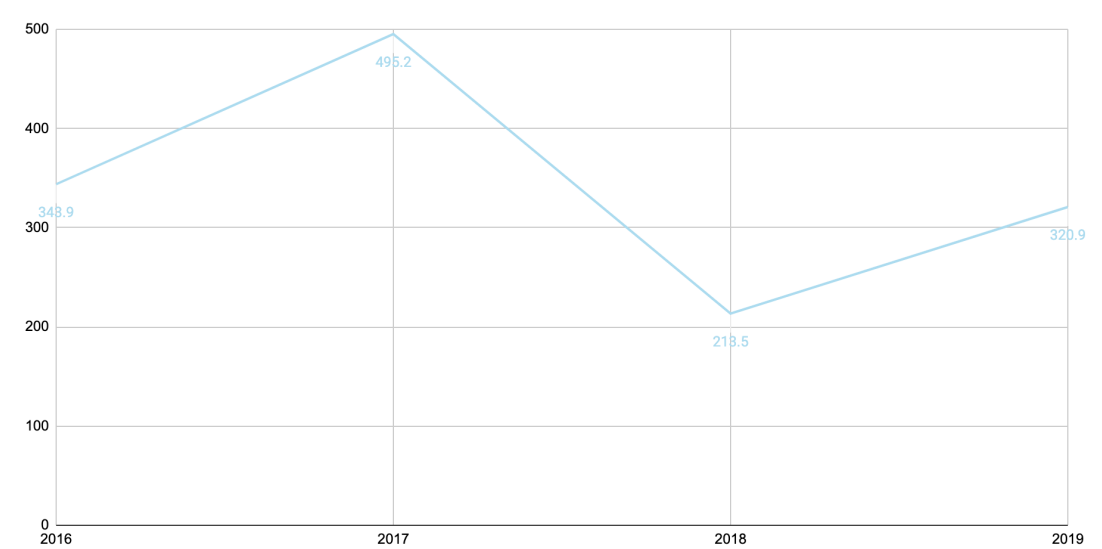
Figure 55: Capex of SFR, 2014–19 (€/m)



- After the tie-up with Numericable, capex of the converged operator SFR has increased
- In 2019, capex was 20% higher than in 2014

Netherlands

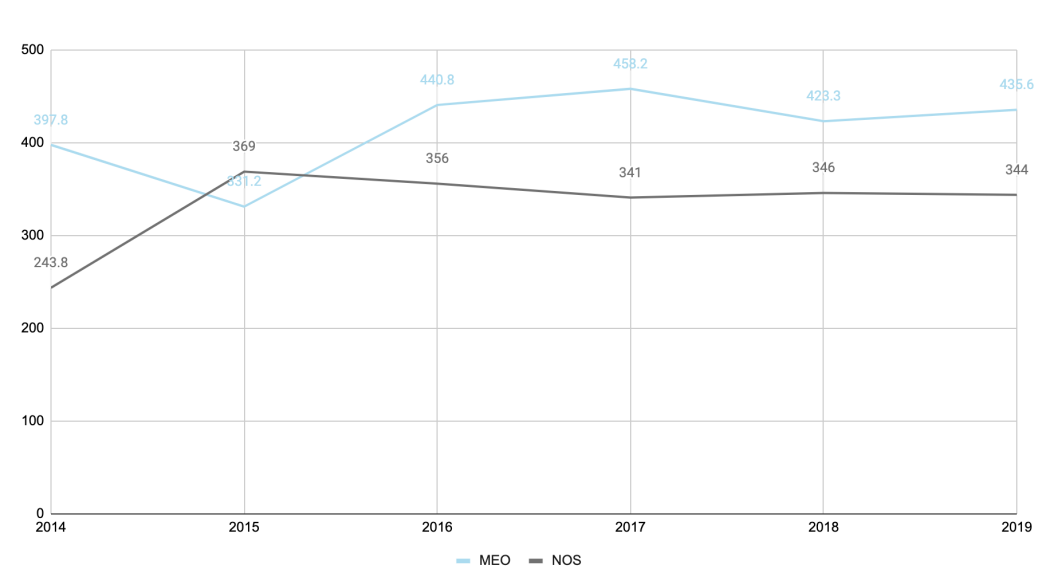
Figure 56: Capex of VodafoneZiggo, 2016–19 (€/m)



- VodafoneZiggo’s capex grew by 43% between 2016 and 2017, i.e. in the year post-merger

Portugal

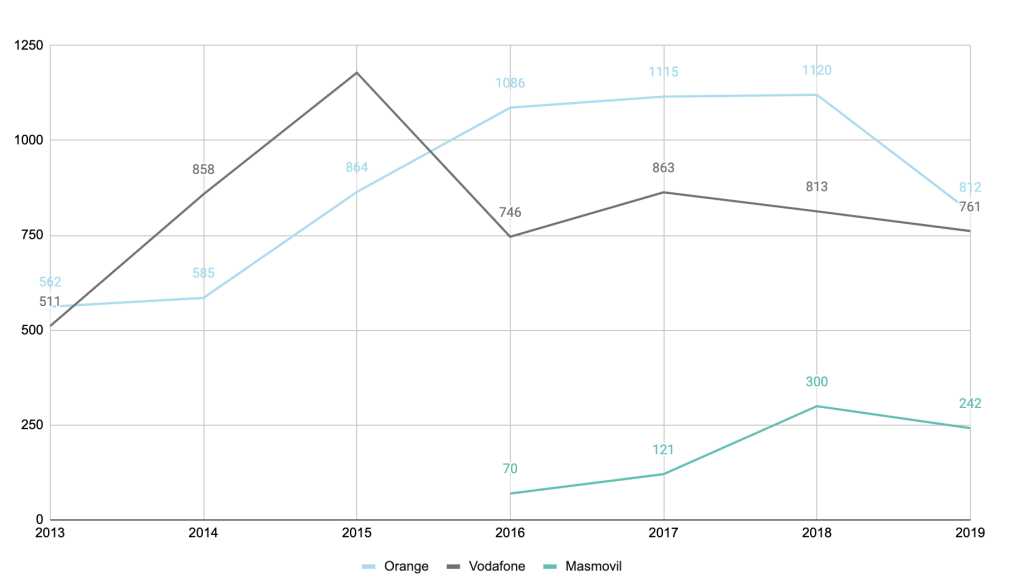
Figure 57: Capex of MEO and NOS, 2013–19 (€/m)



- Between 2014 and 2019, capex of MEO and NOS grew by 21.5% on average
- NOS’s capex for 2019 was 41% higher than in 2014

Spain

Figure 58: Capex of Orange, Vodafone, Masmovil, 2013–19 (€/m)

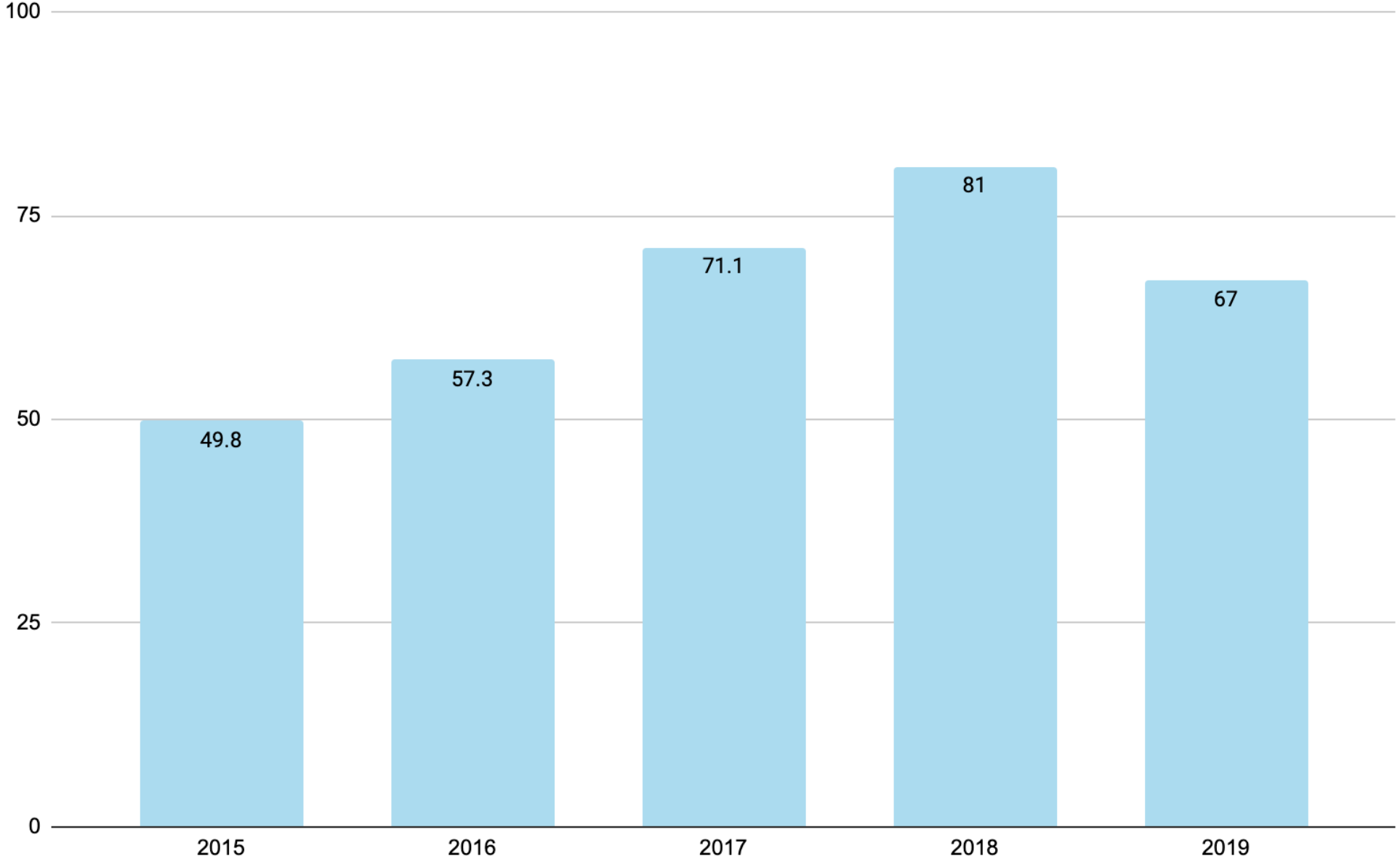


- Orange and Vodafone both increased their capex compared to the year in which they merged with Jazztel and ONO, respectively
- In 2019, the respective capex levels were 1.4 and 1.5 times higher than in 2013
- Masmovil has increased its overall capex by 3.5 times since it acquired Jazztel’s FTTH network

Infrastructure capex increases post merger

Portugal

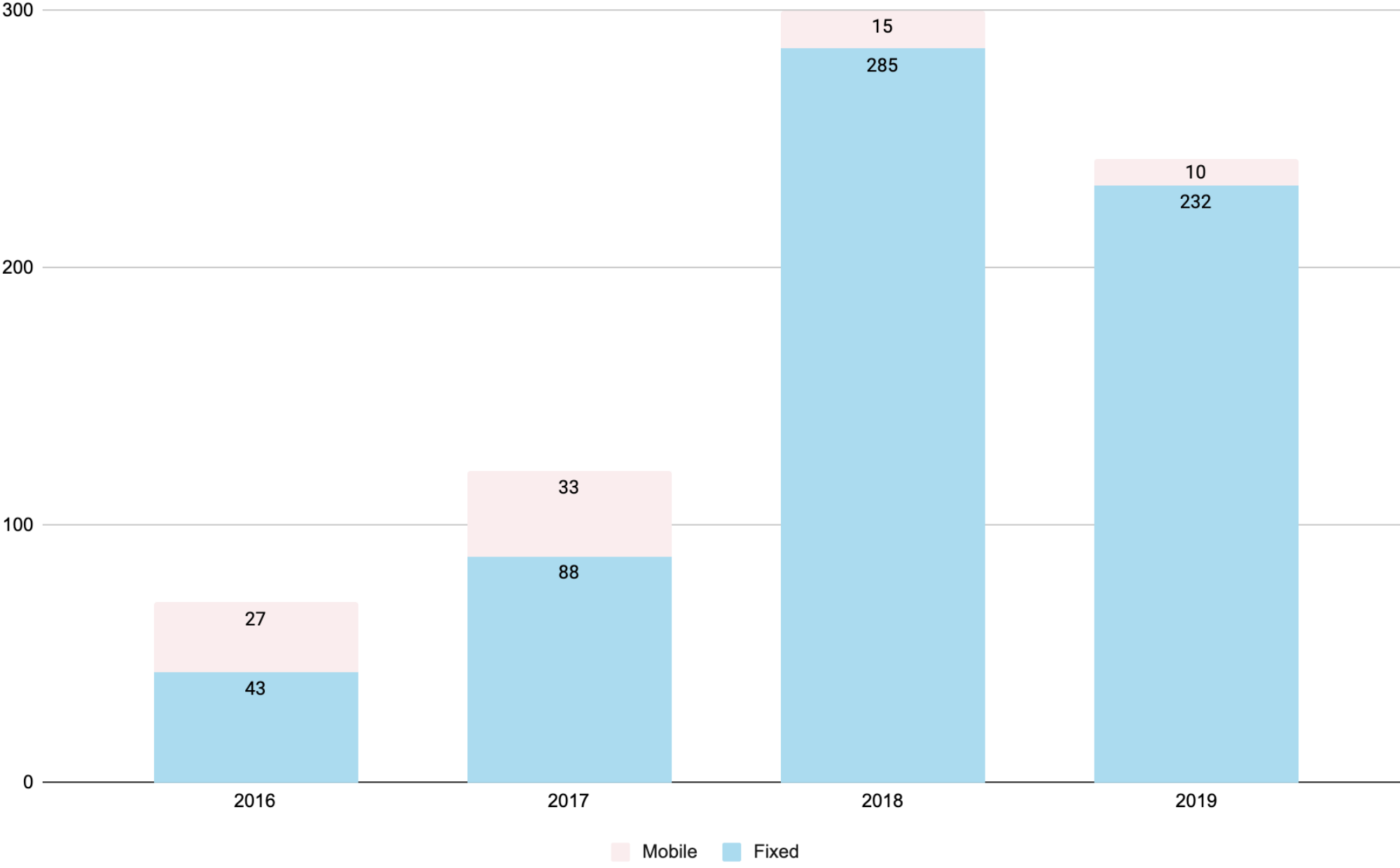
Figure 59: Infrastructure capex of NOS, 2015–19 (€/m)



- In Portugal, NOS increased its infrastructure capex for three consecutive years post-merger
- On average, between 2016 and 2019, NOS’ infrastructure capex has been 38.8% higher than in 2015

Spain

Figure 60: Infrastructure capex of Masmovil, 2016–19 (€/m)

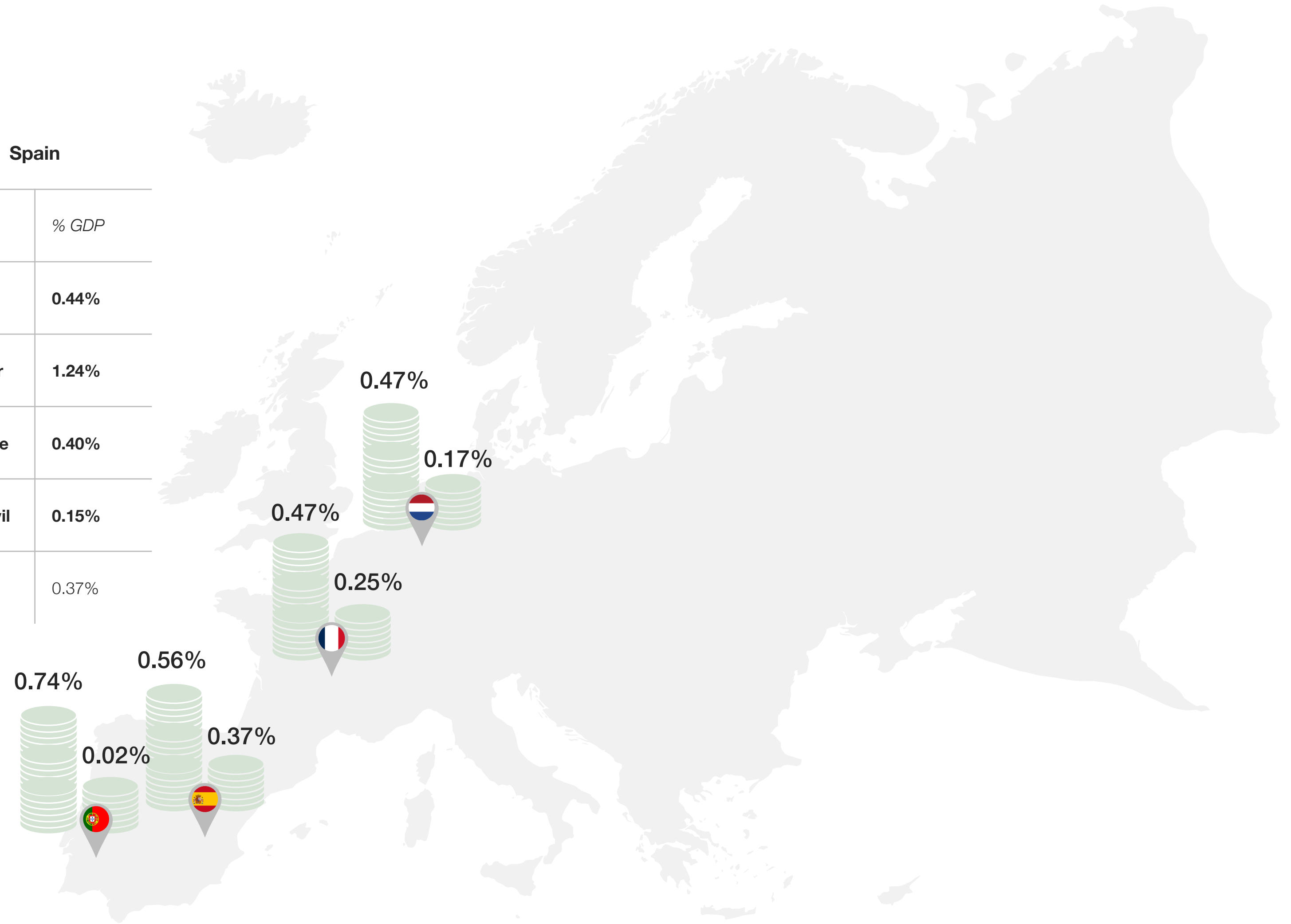


- In Spain, Masmovil continued to invest in FTTH after acquiring Jazztel’s fibre assets. Its FTTH capex in 2018 was 3.2 times higher than the previous year
- On average, between 2017 and 2019, Masmovil’s FTTH capex was 4.7 times higher than in 2016

The economic contribution from FMC players is higher

Table 5: GDP contribution, by operator (2019)

France		Netherlands		Portugal		Spain	
Operator	% GDP	Operator	% GDP	Operator	% GDP	Operator	% GDP
Orange	0.75%	KPN	0.68%	MEO	0.96%	Orange	0.44%
SFR	0.44%	Vodafone Ziggo	0.49%	NOS	0.75%	Movistar	1.24%
Buoygues	0.25%	T-Mobile	0.24%	Vodafone	0.51%	Vodafone	0.40%
Free	0.22%	Other	0.17%	NOWO/ ONI	0.02%	Masmovil	0.15%
						Others	0.37%



Assembly

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