
Quick, easy and reliable switching

Annex 7 – Estimated costs of Code to Switch and One Touch Switch

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A7. Estimated costs of Code to Switch and One Touch Switch

Introduction

- A7.1 This annex sets out the costs that industry have told us they would incur under Code to Switch and One Touch Switch respectively. We first describe the approach used to estimate the cost of the two options and then provide the resulting net cost estimates.
- A7.2 Providers expect to incur setup costs (capex) as they adapt their systems and processes to meet the requirements of the new switching options. They said that they also expect to incur additional operating costs (opex) that they will incur over time once the new switching process is in place. One provider reported that it could benefit from cost savings – for example, where the new process automates part of the current processes.
- A7.3 The estimated costs reported below are based on capex and opex projections that the industry reported to the OTA (see Table A7.2). We note that the cost information is preliminary and relatively high-level. The estimates do not account for potential dynamic changes that could impact – for example, the fact that the number of switches could change in future.
- A7.4 Finally, the figures reported below are a projection of the potential costs borne by providers and do not necessarily reflect the costs (or cost savings) that might ultimately be passed through to customer bills.

Approach to gathering cost estimates

- A7.5 In this cost assessment, the aim is to measure the impact on providers as a consequence of implementing Code to Switch or One Touch Switch. This is the net effect of any cost increases caused by the introduction of the new switching process after considering any benefits from cost savings that might also be generated by bringing in Code to Switch or One Touch Switch.
- A7.6 There are two main elements to obtaining the net implementation costs:
- a) the value chain, i.e. the parties in the industry that may need to undertake implementation work. This includes all parties that the OTA engaged with and that we understand would need to undertake development work and investment and, where relevant, incur training and/or ongoing costs to implement either of the two options;¹ and

¹ OTA, September 2020. [ECWG Cost Estimates and Methodology](#), p3.

- b) the cost estimates for different providers/provider types, i.e. the individual activities, resources and costs that one or more parties will need to undertake. The OTA specified that these are 'Rough order of Magnitude' estimates that "as with any undertaking of this scale, will change as the detailed design process progresses and interface specifications are agreed."²

Value chain

A7.7 Based on information provided by the OTA, the different parties which would incur costs to implement any of the two options can be split into three broad categories:³

- **small, medium and large providers** – defined as the losing and gaining providers that have or will have the contractual relationship with the customer. These, especially the large ones, may also have other roles in the supply chain, such as resellers (to other providers) or wholesalers (with or without end customers). In particular:
 - small providers are typically providers that use the billing and operational support systems of a third-party integrator (TPI) (e.g. regional/small alternative networks);
 - medium providers are typically providers that develop and support their own systems (e.g. medium and small retailers/resellers); and
 - large providers are those that develop and support their own systems (e.g. BT, Sky, TalkTalk and Virgin Media). These providers currently account for the vast majority of switching activity.
- **medium and large network providers** – defined as the companies that run the networks which providers use to deliver communications services to end users;
- **third parties** – both options involve three types of third-party providers, i.e. a Hub⁴, a TPI service⁵, and system partners for small communications providers.

A7.8 We have therefore reported costs for the two options based on the following value chain components:

² OTA, September 2020. [ECWG Cost Estimates and Methodology](#), page 10.

³ OTA, September 2020. [Appendix F - ECWG Cost Estimate Template Guidance](#), pages 4 and 5.

⁴ The Hub would allow providers to communicate and share information with each other to support customers switching between different networks or within the same network.

⁵ An organisation that provides business integration services to providers to support their provision of retail services to customers. It may also support these providers' interactions with the access provider or the Hub.

Table A7.1: Fixed services value chain

Role	Operator	Number
Large network providers	Openreach, Virgin Media	2
Medium network providers	Hyperoptic, CityFibre, Gigaclear	3
Large communications providers	BT Consumer, BT Wholesale, BT Business ⁶ , Sky, TalkTalk, Vodafone	6
Regional/small alternative networks	e.g. INCA members	100
Large retailers/resellers	e.g. Post Office	5
Medium and small retailers/resellers	e.g. FCS/ITSPA members	1,000
Hub provider	TBD	1
Hub – On-boarding	Not applicable ⁷	15 (Code to Switch), 510 (One Touch Switch)
TPI Agent		4

Source: OTA submissions on 24 September 2020, ECWG Final Cost Estimates for Ofcom V1.3

Cost estimates

Providers' costs

A7.9 In order to obtain cost information from industry the OTA provided relevant providers with high-level assumptions including baseline requirements and assumptions on the number of switches that the new solution will need to accommodate each year. The OTA estimated that switching volumes are currently c.200,000/month. The two solutions were designed to

⁶ At this stage, we expect that the switching rules that would underpin a new switching process will apply to residential customers only. It is therefore not clear that all of these costs are incremental to the introduction of Code to Switch or One Touch Switch respectively. To the extent that this estimate includes costs that are not incremental to the change in switching process, our calculations will overstate the costs of Code to Switch and One Touch Switch.

⁷ Hub on-boarding figures refer to the estimates of the number of parties that would connect to the central Hub under either option. The difference in the estimates is driven by the design of the two options. In Code to Switch, the proponents of the process proposed that network providers and large retail providers connect directly to the Hub. In One Touch Switch, the proponents of the process proposed all retail providers connect to the Hub (either directly or through a TPI). The different approaches to connecting to the Hub could be used under either of the two options.

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allow up to c.300,000 switches/month. The OTA explained that industry broadly agreed with these assumptions.⁸

- A7.10 Providers submitted information on:
- a) capex, including process development, testing, staff training, new hardware, other (e.g. reporting/tracking development and delivery); and
 - b) opex, including customer service agent and the related agent resources (i.e. full-time equivalents) and the average handling time to support each option.
- A7.11 We note that while some providers have provided cost ranges, others provided point estimates.
- A7.12 The OTA explained that they have not applied any adjustments to the cost estimates provided by respondents. However, for the large retailers/resellers (e.g. stand-alone retailers), where no cost estimate was provided by the relevant parties, the OTA estimated a 'ball-park' figure based on costs provided by systems partners. This is because large retailers/resellers typically use third party systems partners.

Third party costs

- A7.13 Both Code to Switch and One Touch Switch are expected to involve three types of third-party support, namely:
- a) a Hub;
 - b) TPI services; and
 - c) Systems Partner (e.g. for small/medium-sized alternative networks, retailers and resellers).
- A7.14 The OTA contacted five companies that offer 'Hub services' to request indicative cost estimates to provide a Hub service to support the two options. The OTA provided the companies with a set of assumptions including assumptions on switching volumes. The OTA used the responses to estimate the cost of the Hub to incorporate into the overall cost summary.
- A7.15 The OTA also engaged directly with two well-established system integrators to get a view of indicative costs to provide TPI-type services for the large community of small retailers. These generally use Openreach products and typically do so via an already established relationship with a TPI agent. The retailers would connect through a port interfacing the TPI which, in turn, would interact with the Hub over an application programming interface.

Summary of OTA cost information

- A7.16 A summary of all capex and opex that industry reported to the OTA is presented in Table A7.2 below.

⁸ OTA, September 2020. [Appendix G - Volumetrics Statement](#).

Table A7.2: Summary of capex and opex information submitted by industry

Role	Stakeholder	Costs for Code to Switch	Costs for Code to Switch	Costs for One Touch Switch	Costs for One Touch Switch
		Capex (£m)	Opex (£m p.a.)	Capex (£m)	Opex (£m p.a.)
Large network provider	Openreach	[X]	[X]	[X]	[X]
Large network provider	Virgin Media	[X]	[X]	[X]	[X]
Large provider	BT Consumer ⁹	[X]	[X]	[X]	[X]
Large provider	BT Wholesale	[X]	[X]	[X]	[X]
Large provider	BT Business ¹⁰	[X]	[X]	[X]	[X]
Large provider	Sky	[X]	[X]	[X]	[X]
Large provider	TalkTalk	[X]	[X]	[X]	[X]
Large provider	Vodafone	[X]	[X]	[X]	[X]
Medium network providers	Hyperoptic	[X]	[X]	[X]	[X]
Medium network providers	CityFibre	[X]	[X]	[X]	[X]
Medium network providers	Gigaclear	[X]	[X]	[X]	[X]
Regional small alternative networks	e.g. INCA members	[X]	[X]	[X]	[X]
Large retailers/resellers	e.g. Post Office	[X]	[X]	[X]	[X]

⁹ These are costs for BT Consumer only and do not include costs for EE or Plusnet. We note that their exclusion understates industry’s aggregate costs for both options. Such understatement could be more significant for Code to Switch than One Touch Switch, considering that [X]. However, as EE and Plusnet represent a small set of customers relative to BT Consumer the impact of such omission is likely to be modest, particularly if there are economies of scale deriving from being BT brands.

¹⁰ See footnote 6.

Role	Stakeholder	Costs for Code to Switch	Costs for Code to Switch	Costs for One Touch Switch	Costs for One Touch Switch
Medium/small Retailers	e.g. FCS/ITSPA members	[X]	[X]	[X]	[X]
TPI Service	TPI Agent	[X]	[X]	[X]	[X]
Hub	Hub provider	[X]	[X]	[X]	[X]
Hub	Hub - On-boarding	[X]	[X]	[X]	[X]
Total		35.4 to 48.8	-5.9	28.3 to 39.0	3.1

Source: OTA submissions on 24 September 2020, ECWG Final Cost Estimates for Ofcom V1.3

A7.17 Table A7.2 above shows that capex information was provided for all industry participants. Overall (across all participants) capex is lower in aggregate for One Touch Switch than for Code to Switch. There is much variation between industry participants, with capex correlated with size (i.e. larger providers typically reporting higher capex than small providers – as would be expected) although not perfectly. A specific estimate of capex was provided for 11 industry participants. Six of these reported higher capex for Code to Switch. Four reported capex that was identical or very similar for both options. One participant reported higher capex for One Touch Switch.

A7.18 Several industry participants did not provide opex estimates. Of the six that did, one reported higher opex for Code to Switch and five said that opex would be identical across the two options. The other respondent reported negative opex (i.e. an overall saving in operating costs) of over £7m per year for Code to Switch but positive opex of around £2m each year for One Touch Switch.

A7.19 This is the only respondent to report opex savings as a consequence of implementing a new switching process. The value of these savings is very large relative to the capex involved and in absolute value is an order of magnitude greater than the opex impacts reported by any other industry respondents.

A7.20 Overall, on the basis of the information presented in Table A7.2 we observe that:

- in aggregate industry expects to incur lower capex for One Touch Switch compared to Code to Switch;
- in aggregate, the estimates reported indicate an opex saving as a result of Code to Switch and an opex increase as a result of One Touch Switch;
- this, however, is driven by the opex estimate of one respondent, i.e. substantial savings related to Code to Switch. For the remaining respondents who provided opex information, four had estimates which were the same across the two switching options and one respondent reported higher opex for Code to Switch;

- many respondents did not provide opex, however, we have opex estimates for providers (six in total) that accounted for around half of industry capex; and
- Hub costs have only a marginal impact on aggregate costs of either option, i.e. about 1% of capex for Code to Switch, and about 3% of capex for One Touch Switch.

Time horizon and discounting approach

- A7.21 We expect that capital expenditure will be incurred at the start of the process as providers adapt their systems to fit the new switching process. Operating costs and savings will accrue over time. To calculate the overall net present cost (NPC) for the industry we have estimated the cost impact of Code to Switch and One Touch Switch over a 10-year time horizon.
- A7.22 Total industry cost comprises setup costs (capex incurred in year 1) and 10 years of operating costs (opex) or cost savings. We assume that the number of providers, the number of customers, and industry switching rate are all constant over the period.
- A7.23 In deriving the NPC of the cost estimates from industry, we have discounted future time periods at the Weighted Average Cost of Capital (WACC). Specifically, we have used the WACC for 'Other UK telecoms' from the 2020 Wholesale Fixed Telecoms Market Review (WFTMR) consultation.¹¹ This is 7.9% pre-tax nominal, which corresponds to 5.8% pre-tax real, assuming 2% CPI inflation. In any subsequent analysis we would update the NPC to reflect any revision to the WACC reported in the WFTMR statement.

Impact of Code to Switch and One Touch Switch on industry costs

- A7.24 As mentioned in paragraph A7.17 information provided by respondents to the OTA was incomplete as some respondents did not provide opex information. Where data was available, we used the respondents' specific cost estimates as reported to us by the OTA.
- A7.25 We have used two scenarios to account for the missing opex estimates in the data provided:
- a) in our first scenario we have assumed a cost of zero where cost data was not provided; and
 - b) in our second scenario we have assumed an opex value based on the value of capex provided by that operator multiplied by the average 'opex to capex ratio' reported by respondents who provided both capex and opex estimates.
- A7.26 As some respondents provided ranges for capex, in Table A7.3 below we provide a range of estimates. 'Low' scenarios in Table A7.3 are based on the minimum values of the provided ranges, while 'high' scenarios are based on the maximum value of these ranges.

¹¹ Ofcom, 2020. [Promoting investment and competition in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26](#), page 147.

Net present cost

A7.27 Table A7.3 sets out the net present value of industry costs as a result of Code to Switch and One Touch Switch (NPC). The NPC is calculated as the incremental capex, operating costs and cost savings, aggregated across all affected entities, and discounted over the 10-year time horizon.

Table A7.3: Estimated net present costs of implementing Code to Switch and One Touch Switch

£ (million)	Capex scenario	Code to Switch	One Touch Switch
10-year NPC			
Opex scenario 1	Low	-£9m	£51m
Opex scenario 1	High	£4m	£62m
Opex scenario 2	Low	£6m	£60m
Opex scenario 2	High	£19m	£71m

Source: Ofcom analysis of data provided to the OTA by industry.

Equivalent Annual Costs

A7.28 The equivalent annual costs (EACs) can be interpreted as the average annual cost of building, operating, and maintaining an asset (in this case the switching infrastructure) over its lifespan, taking account of the time value of money.

A7.29 We have calculated the EAC for the two options, based on the industry reported costs (see Table A7.2). This is calculated by dividing the NPC of either solution over 10 years (based on the mid-point of the NPC values reported in Table A7.3) into a series of payments made at equal (annual) intervals using a real WACC of 5.8%.

A7.30 Relevant EACs for the two scenarios are reported in Table A7.4.

Table A7.4: Estimated Equivalent Annual Costs of Code to Switch and One Touch Switch

Scenario	Code to Switch	One Touch Switch
Opex scenario 1	-£0.3 m	£7.6 m
Opex scenario 2	£1.7m	£8.8m

Source: Ofcom analysis of data provided to the OTA by industry.

Cost per switch and cost per connection

A7.31 Finally, we have calculated the cost per switch for the two options under the two different opex scenarios. The cost per switch represents the equivalent annual cost divided by the number of switches per year (2.4m) provided to us by the OTA.¹² We have also calculated

¹² OTA, September 2020. [Appendix G - Volumetrics Statement](#).

the cost per residential connection (£ per month) for the two options under the same scenarios.¹³

A7.32 Relevant cost per switch and monthly cost per residential connection for the two scenarios are reported in Table A7.5.

Table A7.5: Estimated cost per switch and monthly cost per residential connection

Scenario	Code to Switch		One Touch Switch	
	Cost per switch	Monthly cost per connection	Cost per switch	Monthly cost per connection
Opex scenario 1	-£0.1	-£0.001	£3.2	£0.02
Opex scenario 2	£0.7	£0.01	£3.7	£0.03

Source: Ofcom analysis of data provided to the OTA by industry.

A7.33 The costs presented in Table A7.3 to Table A7.5 are at industry level. We observe that the aggregate cost would be small on a per connection basis across either option, i.e. the aggregate impact would be £0.03 per month or less per connection. We recognise that the cost impact is varied across providers, but remains small on a per connection basis. We considered the individual costs that could be incurred by the top four providers and found that they will incur a cost per connection, no larger than £0.02 per month for Code to Switch and no larger than £0.05 per month for One Touch Switch.¹⁴

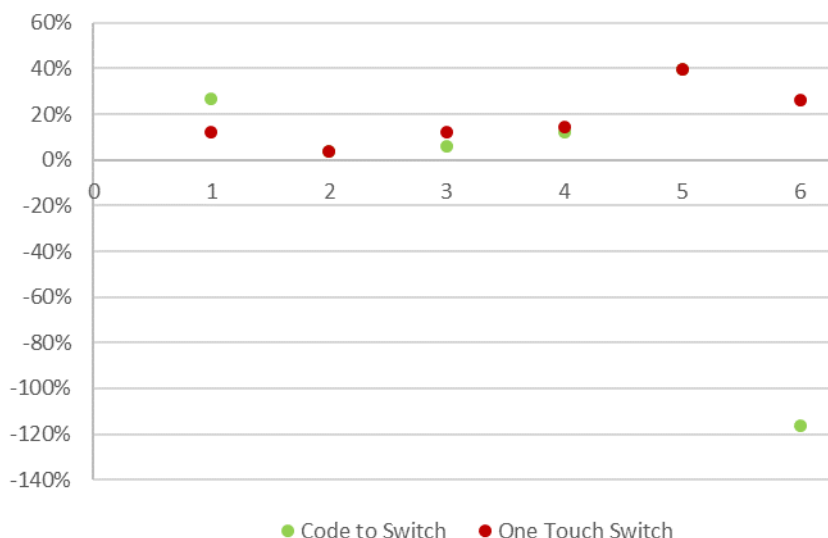
Outlier observations

A7.34 As mentioned in paragraphs A7.18 and A7.19, the cost estimates reported by one respondent are a significant outlier when compared to other industry participants. In Figure A7.1 we present the opex to capex ratio for those respondents that have provided relevant information.

¹³ This is calculated as the annual cost divided by the number of fixed residential connections in the UK (26.2m) and by the number of months in a year. The number of UK fixed residential connections in the UK is from: Ofcom, 2020. [Telecommunication Market Data Update Q3 2020](#), Table 7.

¹⁴ This is calculated as the EAC incurred individually by the Top 4 providers divided by the respective number of customers and by the number of months in a year. The number of customers of individual providers is from Enders Analysis, 2020. UK broadband, telephony and pay TV trends Q3 2020, p21.

Figure A7.1: Opex to capex ratios across the two options



Source: Ofcom analysis of information from the OTA.

A7.35 Figure A7.1 above shows that five out of six respondents had an opex to capex ratio that was the same or very similar across the two options. For these, the difference between the ratios for the two switching options is between 0 and 14 percentage points. However, for one respondent the difference between the two ratios is 142 percentage points.

A7.36 We note that the opex figures reported by the sixth provider in the chart above have a significant impact on the overall industry costs estimates. By way of illustration, if we replace the opex figures reported by this provider for both Code to Switch and One Touch Switch with a value that reflects the average opex to capex ratio amongst the remaining providers (using the same approach described in paragraph A7.25b)) we see that the costs of Code to Switch would be significantly higher than in opex scenarios 1 and 2.

Table A7.6: Illustration of the impact of a potential outlier

	Code to Switch	One Touch Switch
Net present cost	£65m-£78m	£50m-£62m
EAC	£9.6m	£7.5m
Annual cost per switch	£4.0	£3.1

Source: Ofcom analysis of data provided to the OTA by industry.

Note: EACs are based on the mid-point of the NPC values reported in Table A7.3

Note: The annual cost per switching is based on the EACs included in this table.

A7.37 We sent a section 135 request to the respondent in question asking them to provide details of their workings alongside the evidence and assumptions relied on to prepare its estimates.

- A7.38 We found that this provider had assumed that 62% of switchers under One Touch Switch would continue to call their losing provider. This was based on Ofcom research conducted in 2015 regarding the number of customers switching providers over the Openreach network that contacted their losing provider.¹⁵ More recent data, however, shows that the proportion of switching customers on the Openreach network that contact their losing provider has reduced. Our 2020 consumer research found that 49% of switching customers on the Openreach network had contact with their losing provider.¹⁶
- A7.39 Using this more recent data, the incremental cost of One Touch Switch reduced substantially. For example, in opex scenario 2 the NPC would reduce to £47m-£58m, the EAC would reduce to £7m and the cost per switch would reduce to £2.90.

Customer pass-through

- A7.40 As mentioned in paragraph A7.4 the estimates provided above are a projection of the potential cost impact of Code to Switch and One Touch Switch on industry. These estimates do not necessarily reflect the costs (or cost savings) that would ultimately be passed through to customers in the form of higher or lower prices.
- A7.41 Economic literature shows that the 'pass-through rate' (i.e. the extent to which a change in costs results in a change in price) depends on a range of market factors and their interactions.¹⁷ A wide range of pass-through rates is possible. Under many market settings the pass through is less than the original cost change.¹⁸
- A7.42 We note that Code to Switch in particular appears to have an asymmetric impact on the costs of industry participants in that it is claimed to deliver a large cost saving to one firm and a cost increase to others. Where costs increase this may provide an incentive for those firms to increase prices. Where costs decrease this may provide incentives to reduce prices. The potential impact of Code to Switch on prices is therefore ambiguous. In addition, economic theory suggests that cost reductions that affect only one firm are less likely to be passed on to consumers than cost reductions that affect all industry participants. Empirical evidence supports the prediction that the price response to firm-specific cost shocks is lower than industry-wide cost shock.¹⁹
- A7.43 Finally, even if the change in costs generated by either option were to be passed to customers in full, the impact of this would be £0.03 per month or less which is very small

¹⁵ Ofcom, 2015. [Triple Play Switching Research](#), slide 55.

¹⁶ Ofcom, 2020. [Switching Experience Tracker](#) Q14A/B/C Net of those who switched a dual or triple play package within the Openreach network and did one or more of: contacted their previous provider (23%), experienced the losing provider trying to persuade them to stay (22%) and tried to negotiate a better deal (24%). We note that some of these contacts may have been outbound contacts by the losing provider and so this figure may overstate the proportion of Openreach switchers that contacted their losing provider.

¹⁷ See, for example, A. T. Kate and G. Niels, 2005. [To What Extent are Cost Savings Passed on to Consumers? An Oligopoly Approach](#). See also RBB Economics, 2014. [Cost pass-through: theory, measurement, and potential policy implications](#), sections 4, 6 and 7.

¹⁸ RBB Economics. [Cost pass-through](#), footnote 18, sections 4, 6 and 7.

¹⁹ RBB Economics. [Cost pass-through](#), page 154.

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when compared to the typical bill for landline and broadband services of a UK household (c.£37 per month).^{20,21}

²⁰ For cost per connection see Table A7.5.

²¹ Ofcom, 2020. [The Communications Market Report 2020](#), Summary of UK telecoms metrics.