

# UK broadband speeds, May 2010

## Data

# Notes

The data which follows was collected by SamKnows Ltd on behalf of Ofcom during May 2010. Data was collected from hardware monitoring units which were connected to a panel of 1,506 UK residential fixed-line broadband subscribers.

The data analysis which follows is based on two samples:

## **(1) All UK Panel**

*Panel Base 1506*

*Notes: (1) Data have been weighted by ISP package and LLU/non-LLU connections, Rural/Urban, Market classification and distance from exchange (to match April 2009 UK line length distribution), to ensure that they are representative of UK residential broadband consumers as a whole; (2) Respondents on Less than 2Mbs were exclude due to insufficient sample, data collected for these packages in April 2009 has been factored in, in proportion to their current share of all connections; (3) Data collected from single-thread download speed tests.*

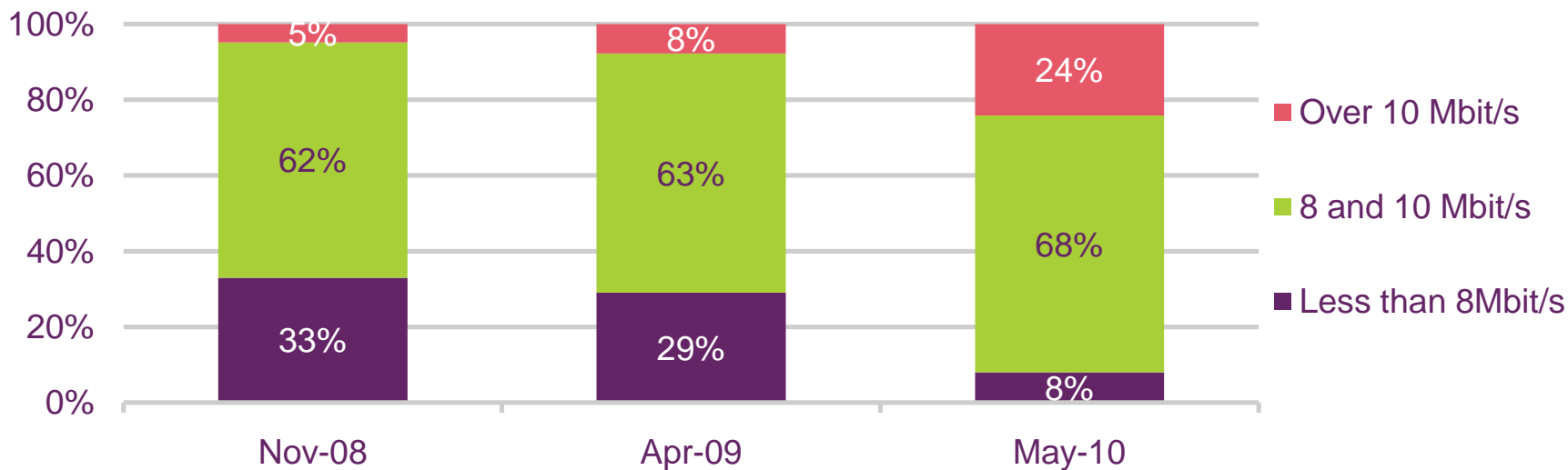
## **(2) ISP Package Panel (a sub-set of the All UK Panel)**

*Panel Base: 1124*

*Notes: (1) Only includes DSL customers within 5km of the exchange (unless otherwise stated) and in Geographic Markets 2 and 3; (2) Includes on-net customers only for LLU operators (3) data for DSL operators have been weighted to ISP regional coverage of LLU lines and distance from exchange (a) 8mb) distance weighted to an approximated line length distribution for LLU exchanges b) 20/24 Mb distance normalised to the aggregated line length distribution of all panellists on 20/24MB packages; data for Virgin Media's cable service have been weighted to regional coverage only.*

## UK residential broadband connections by headline speed

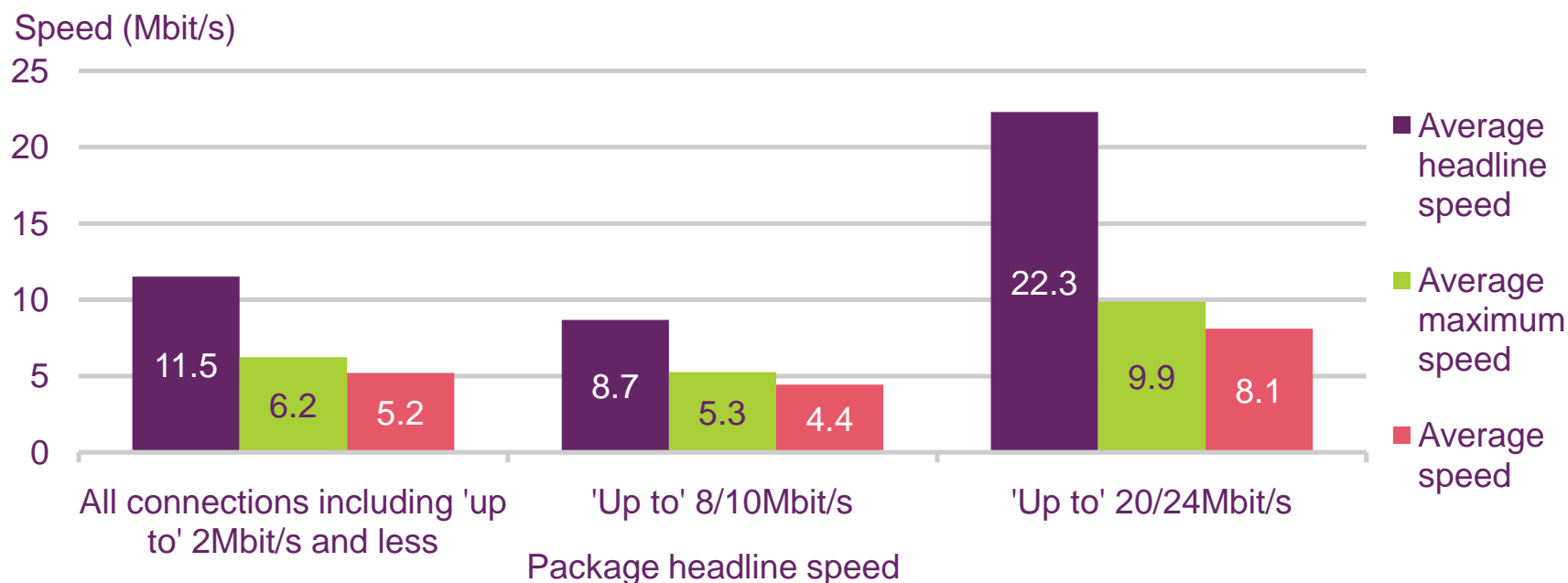
Proportion of connections (%)



Source: Ofcom

Note: Based on data provided by the UK's largest ISPs by retail market share (representing over 90% of the total market)

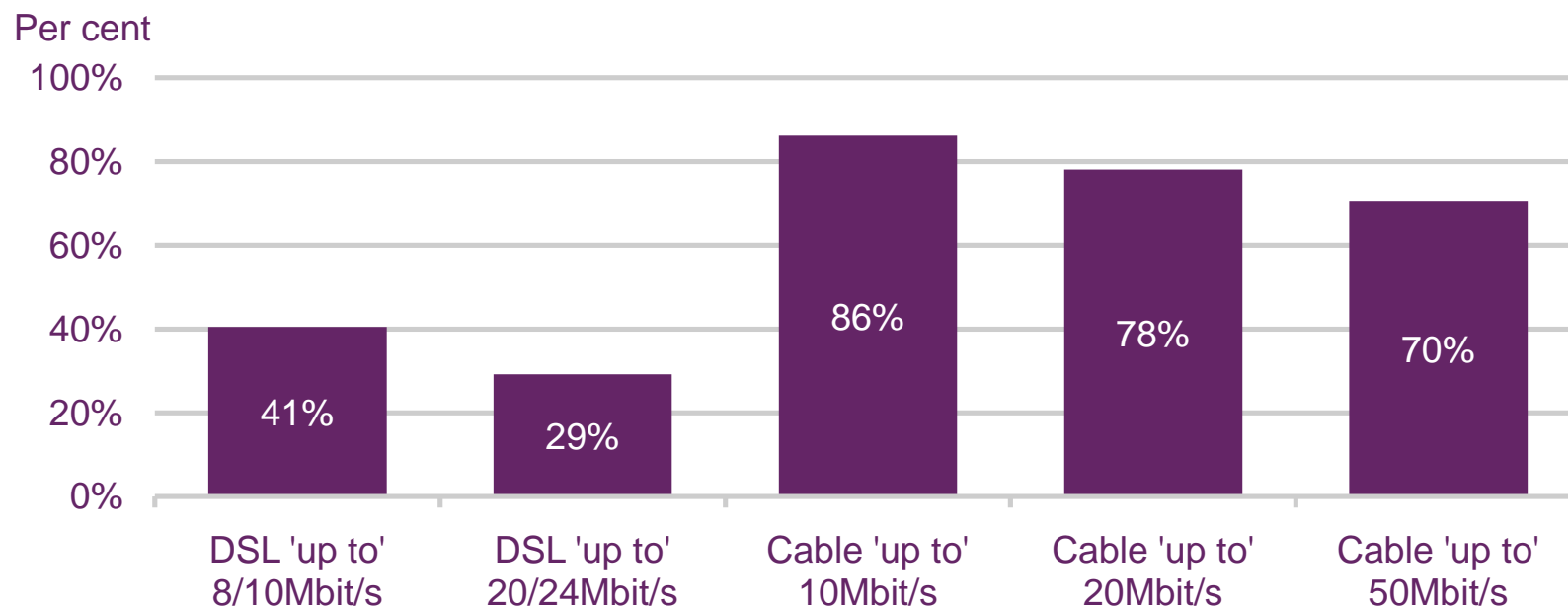
## Average actual download speeds, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

## Average speeds (24 hours) as a proportion of headline speeds by connection headline speed and technology, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010:  
Notes: Data collected from single-thread download speed tests; includes combined LLU and non-LLU customers, data have been weighted to splits provided by ISPs

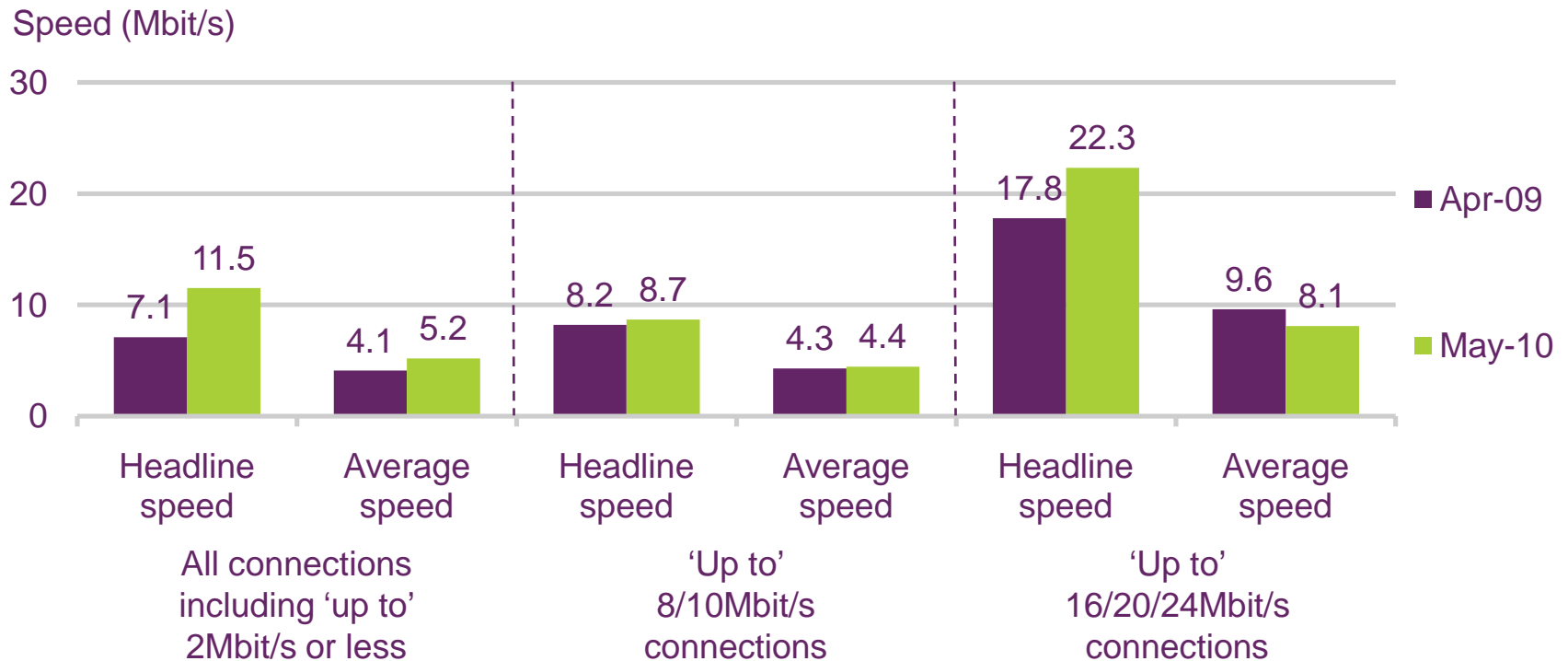
## Average download speeds for DSL and cable broadband connections, all connections including 'up to' 2Mbit/s and less, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

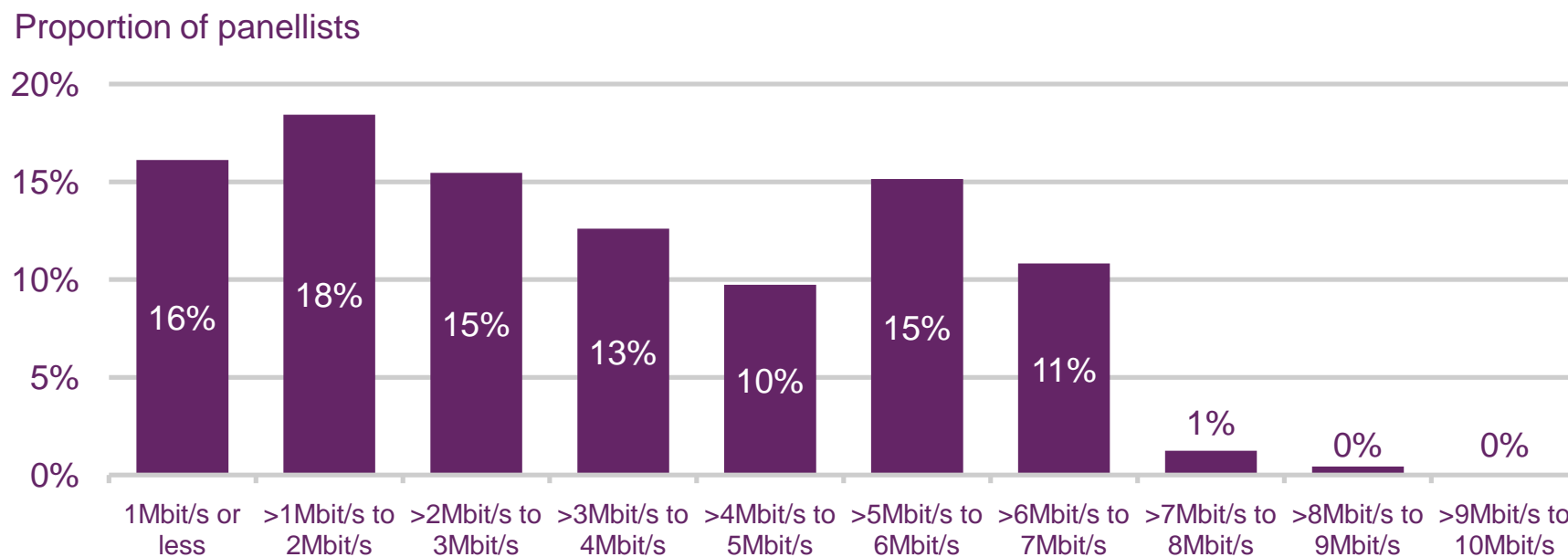
## Average headline and actual broadband speeds, April 2009 and May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

## Distribution of average download speeds for consumers on 'up to' 8Mbit/s and 10Mbit/s DSL packages, May 2010



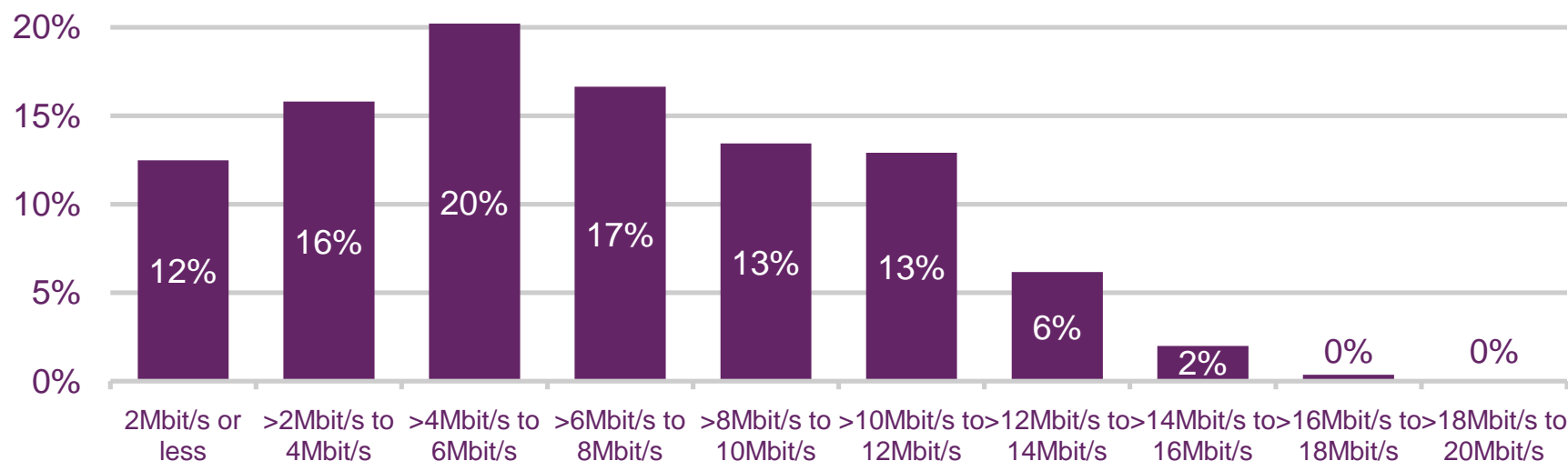
Source: SamKnows measurement data for ALL UK Panel members with a relevant connection in May 2010

Notes: Data collected from single-thread download speed tests



## Distribution of average download speeds for consumers on 'up to' 20Mbit/s and 24Mbit/s DSL packages, May 2010

Proportion of panellists

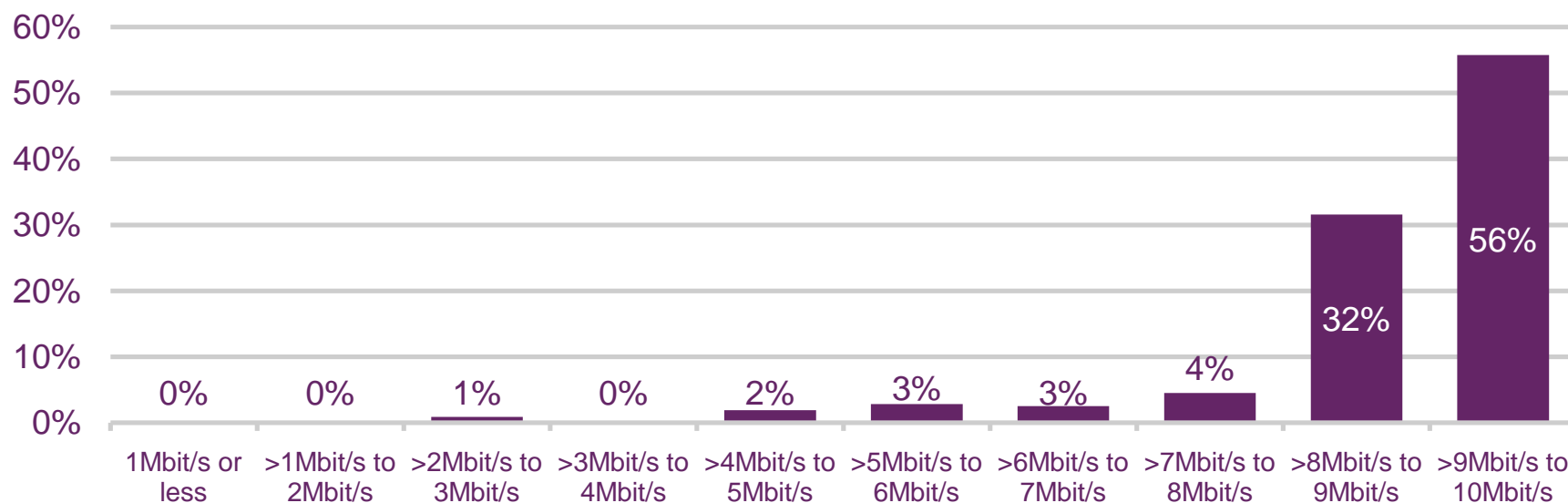


Source: SamKnows measurement data for ALL UK Panel members with a relevant connection in May 2010

Notes: Data collected from single-thread download speed tests

## Distribution of average download speeds for consumers on 'up to' 10Mbit/s cable packages, May 2010

Proportion of panellists

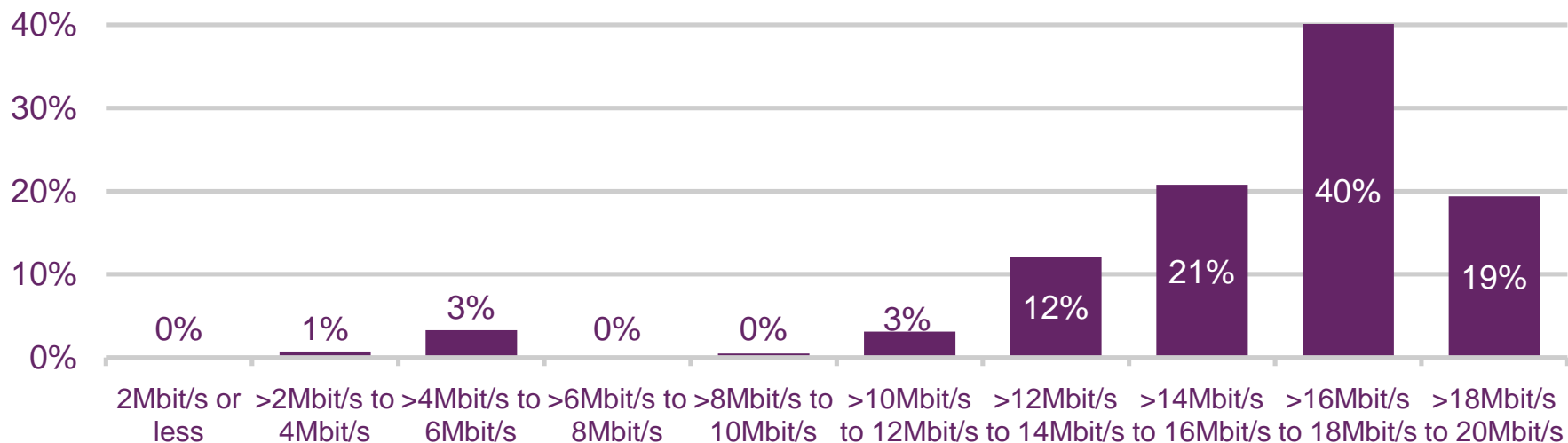


Source: SamKnows measurement data for ALL UK Panel members with a relevant connection in May 2010

Notes: Data collected from single-thread download speed tests

## Distribution of average download speeds for consumers on 'up to' 20Mbit/s cable packages, May 2010

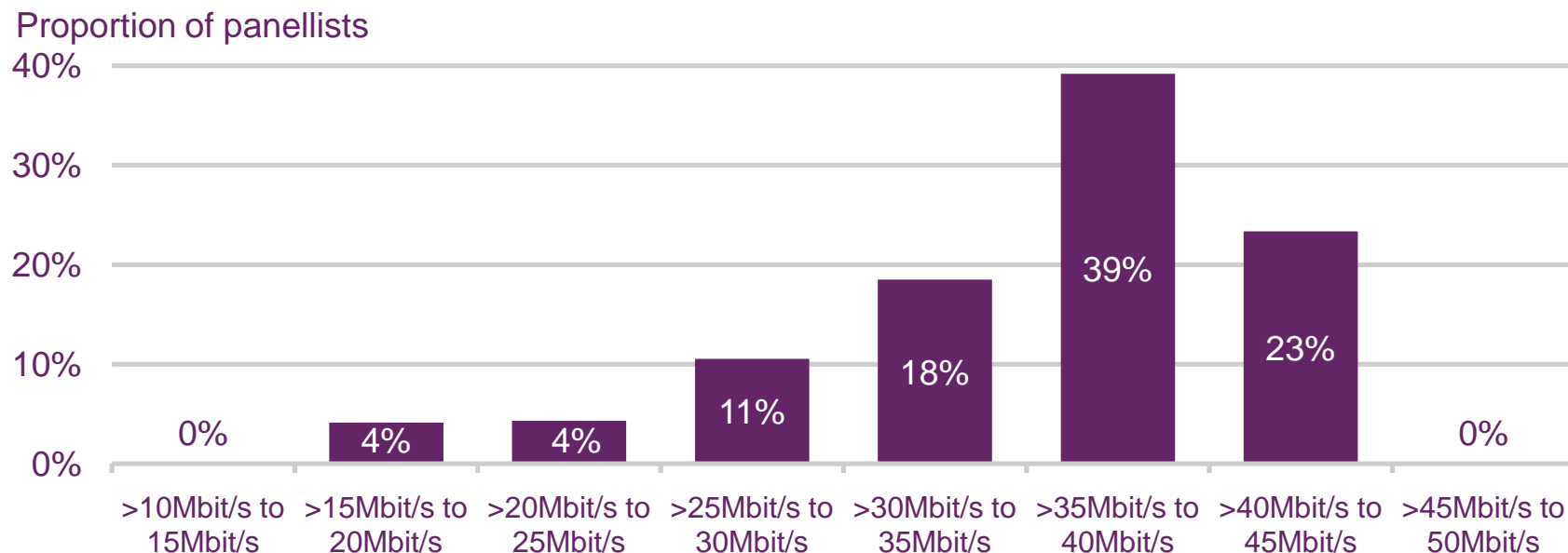
Proportion of panellists



Source: SamKnows measurement data for ALL UK Panel members with a relevant connection in May 2010

Notes: Data collected from single-thread download speed tests

## Distribution of average download speeds for consumers on 'up to' 50Mbit/s cable packages, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a relevant connection in May 2010

Notes: Data collected from single-thread download speed tests

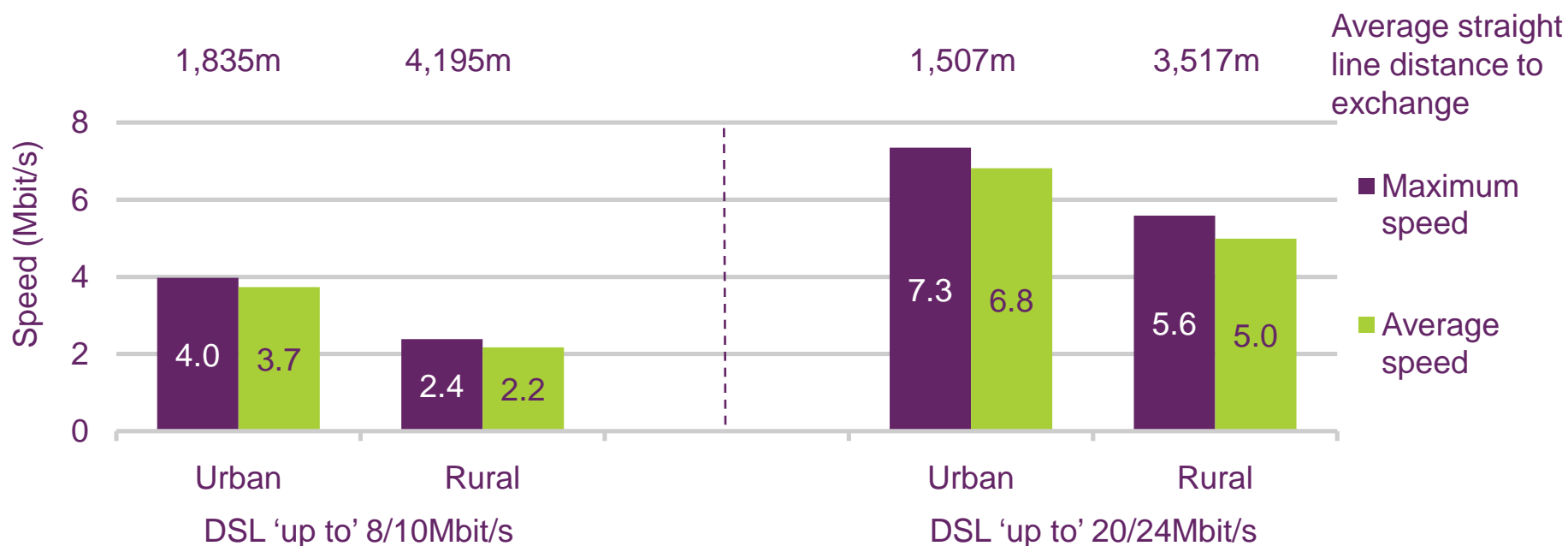
## Average and maximum download speeds for broadband connections in rural & urban areas, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

## Average and maximum download speeds for DSL broadband connections in rural & urban areas, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a DSL connection in May 2010  
 Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

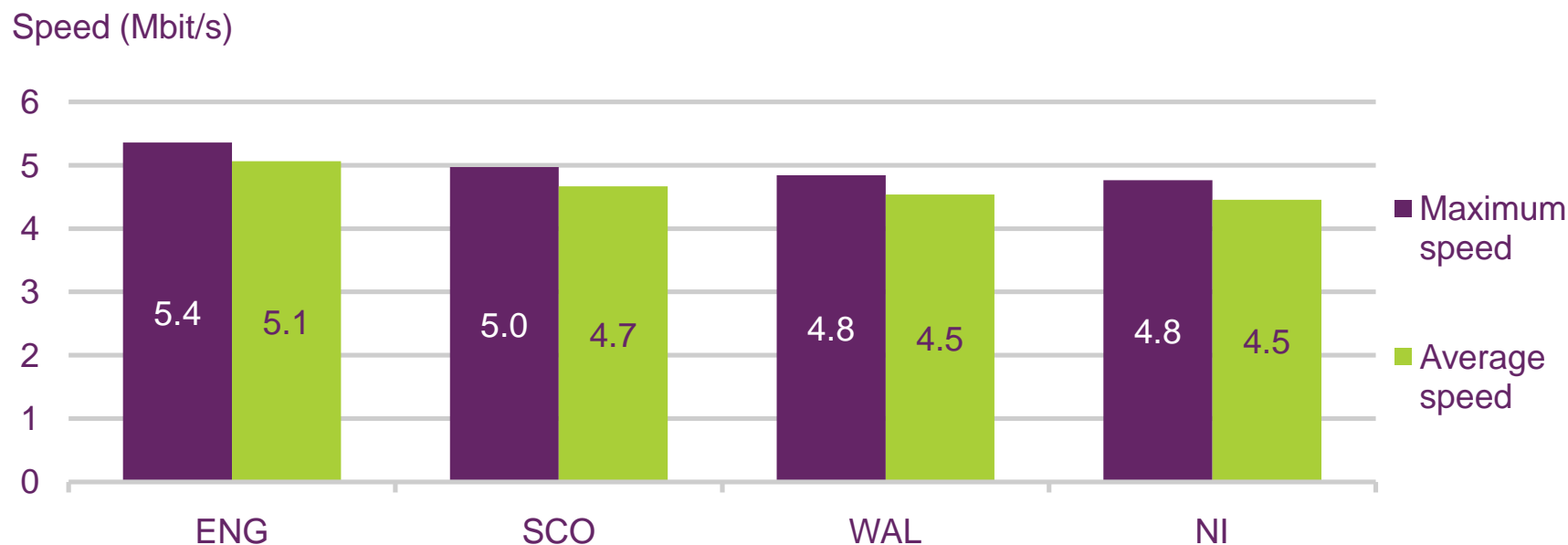
## Average and maximum download speeds by geographic market, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests

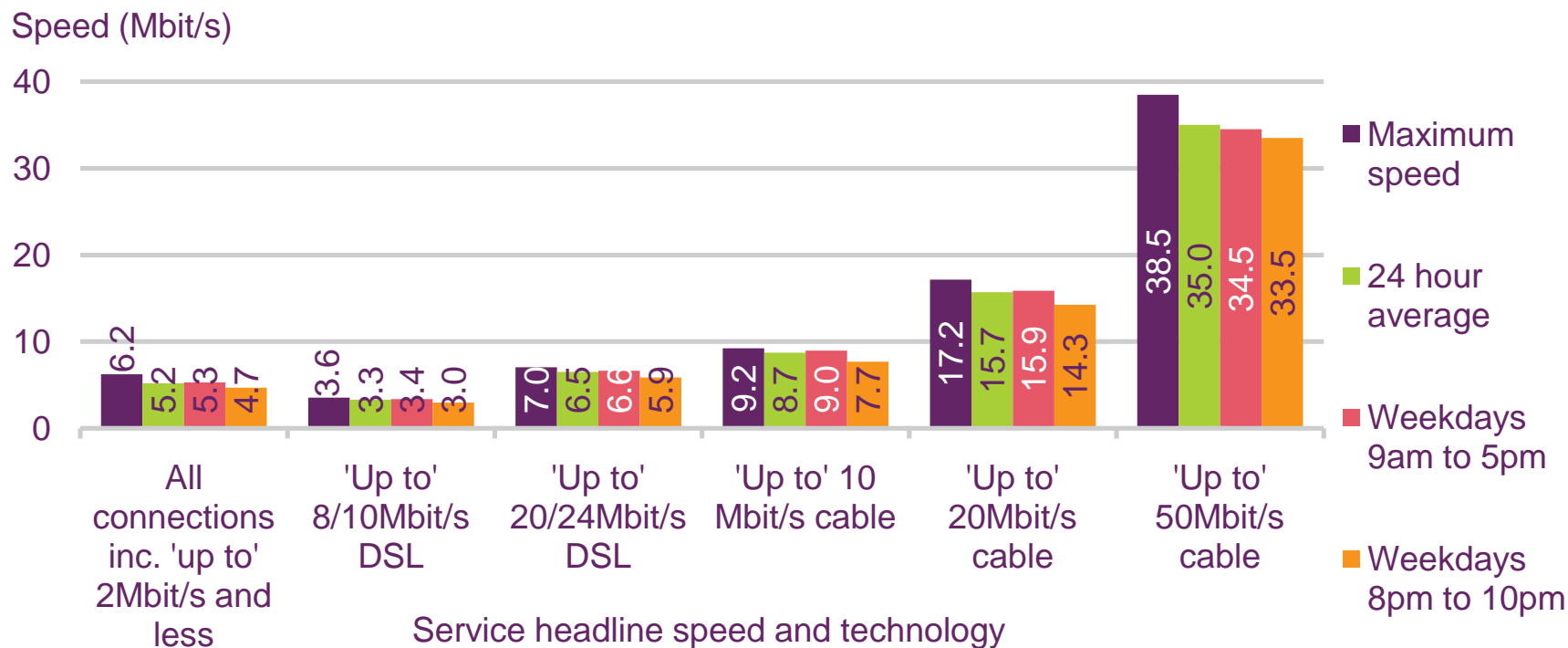
## Estimated average and maximum download speeds by UK nation, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010  
 Notes: Speeds estimated by applying the average speeds of connections in each of the three geographic markets to the split of connections in each of the nations; as sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests



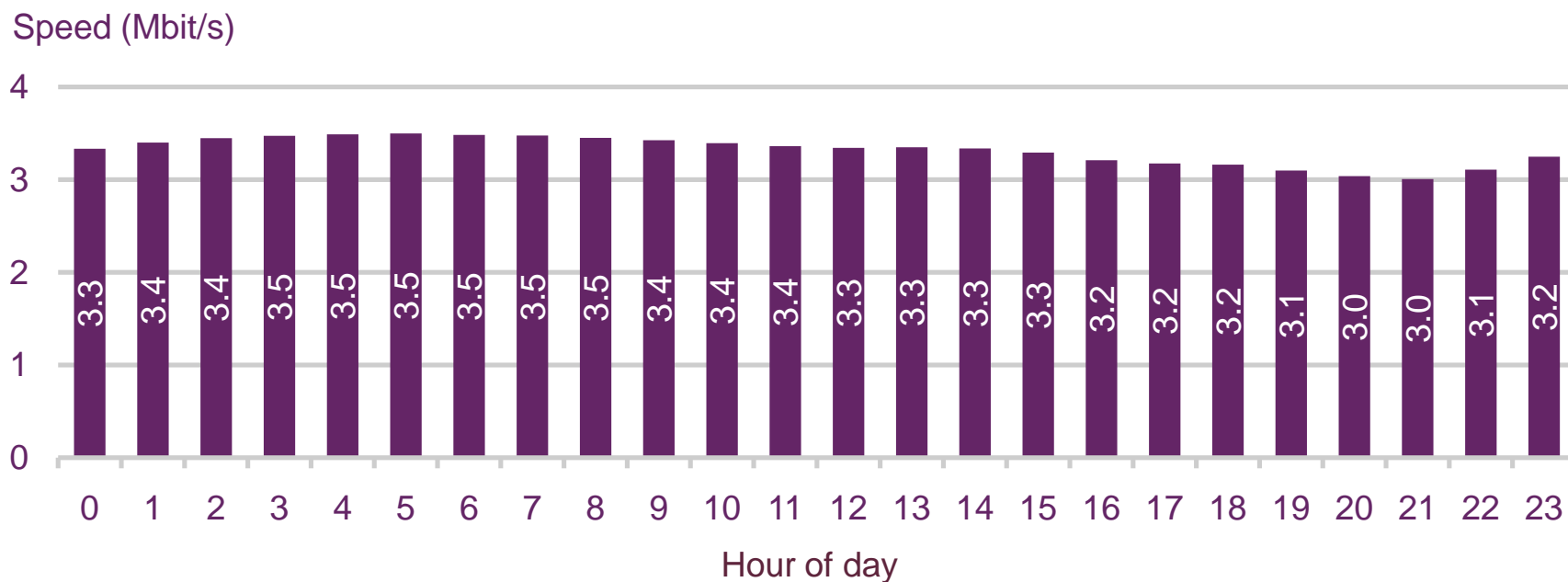
## Variations in download throughput speed by time of day, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: As sufficient sample sizes were not available for consumers on packages of 'up to' 2Mbit/s or less, data collected for these packages in April 2009 has been factored in, in proportion to share of all connections; data collected from single-thread download speed tests; includes combined LLU and non-LLU customers, data have been weighted to splits provided by ISPs

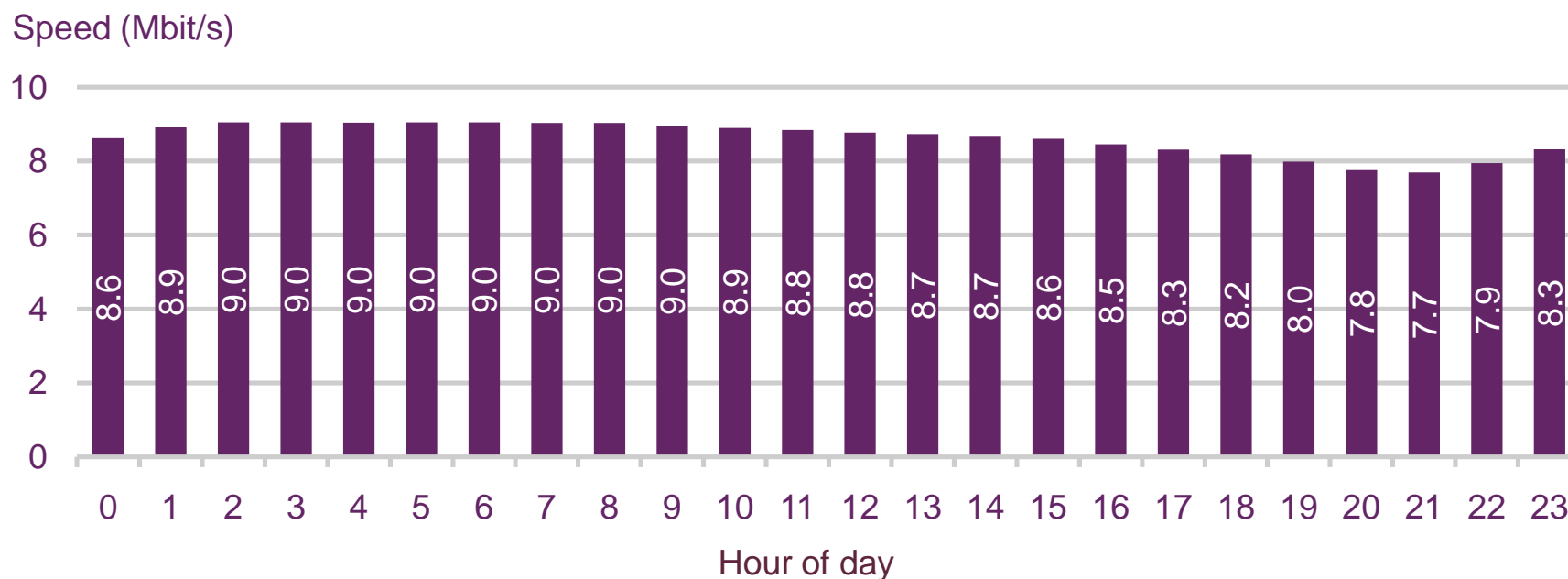
## Average download speed by hour of day for DSL panellists 'up to' to 8 and 10Mbit/s packages, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests

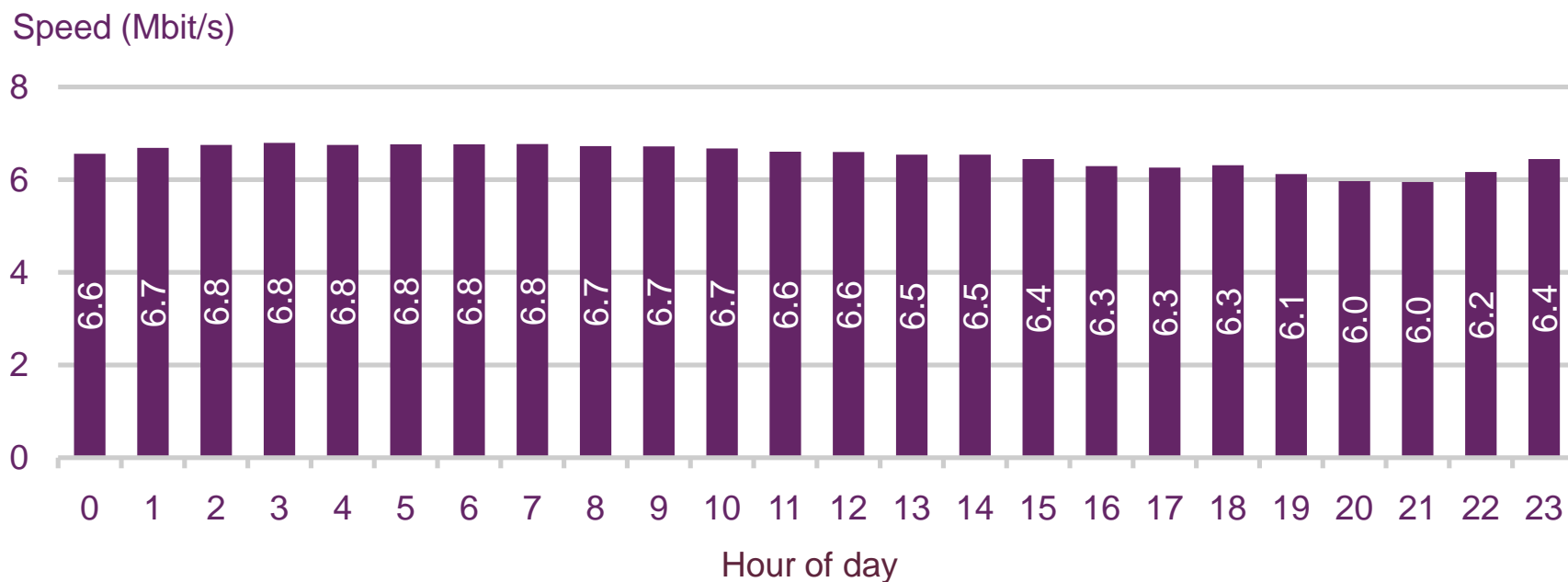
## Average download speed by hour of day for cable panellists on 'up to' 10Mbit/s package, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests

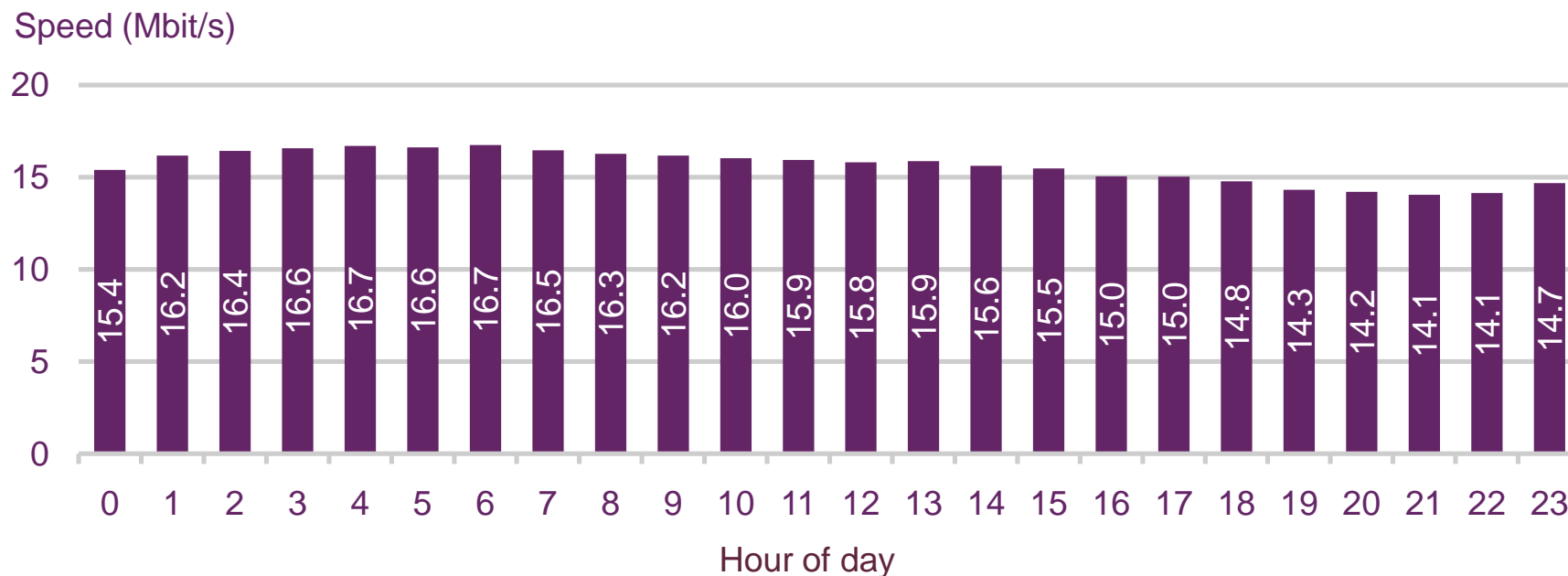
## Average download speed by hour of day for DSL panellists 'up to' to 20 and 24Mbit/s packages, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests

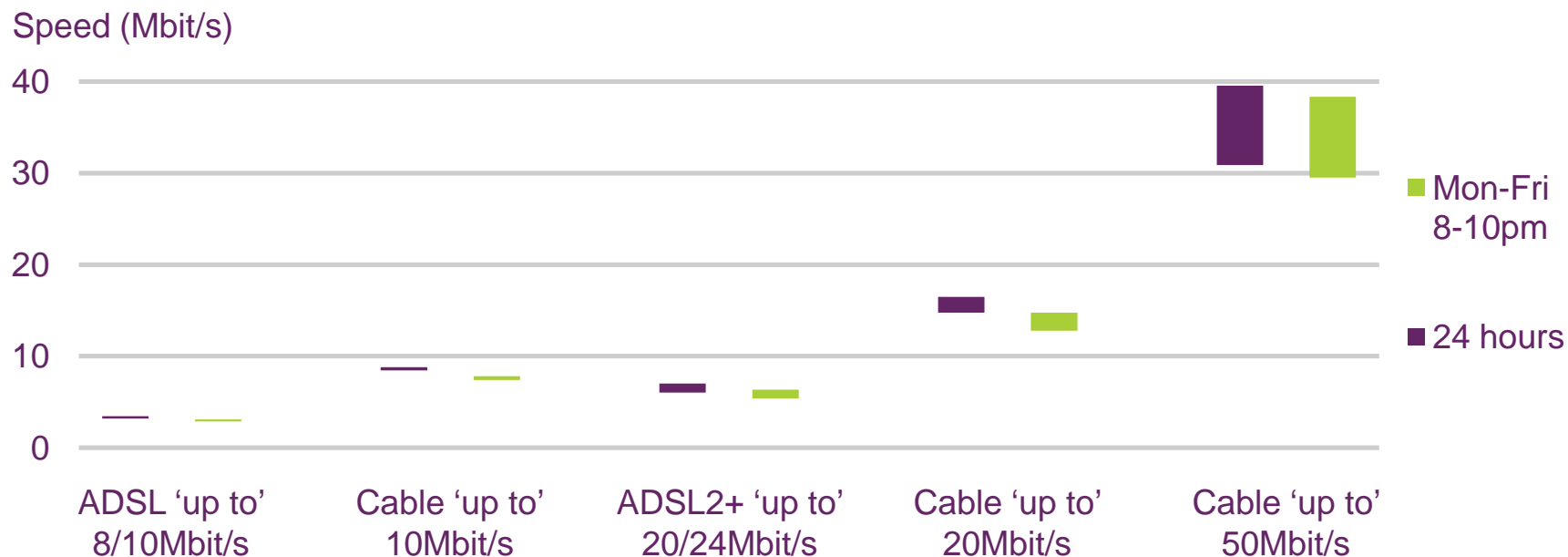
## Average download speed by hour of day for cable panellists on 'up to' 20Mbit/s package, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

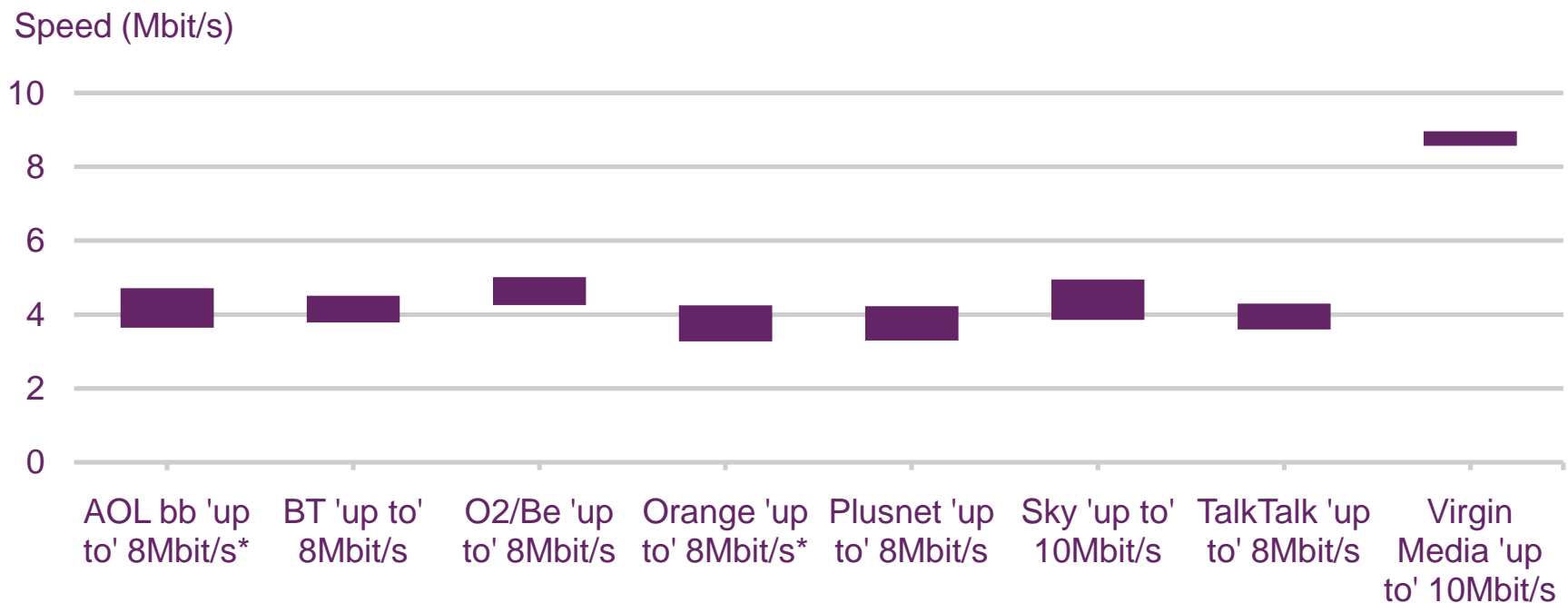
Notes: Data collected from single-thread download speed tests

## Average download throughput speeds by technology and headline speed, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; includes combined LLU and non-LLU customers, data have been weighted to splits provided by ISPs

## Average download throughput speed for 'up to' 8/10Mbit/s connections by ISP, 24 hours, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Significant differences to a 95% level of confidence between average speeds on 'up to' 8Mbit/s and 'up to' 10Mbit/s packages, 24 hours, May 2010

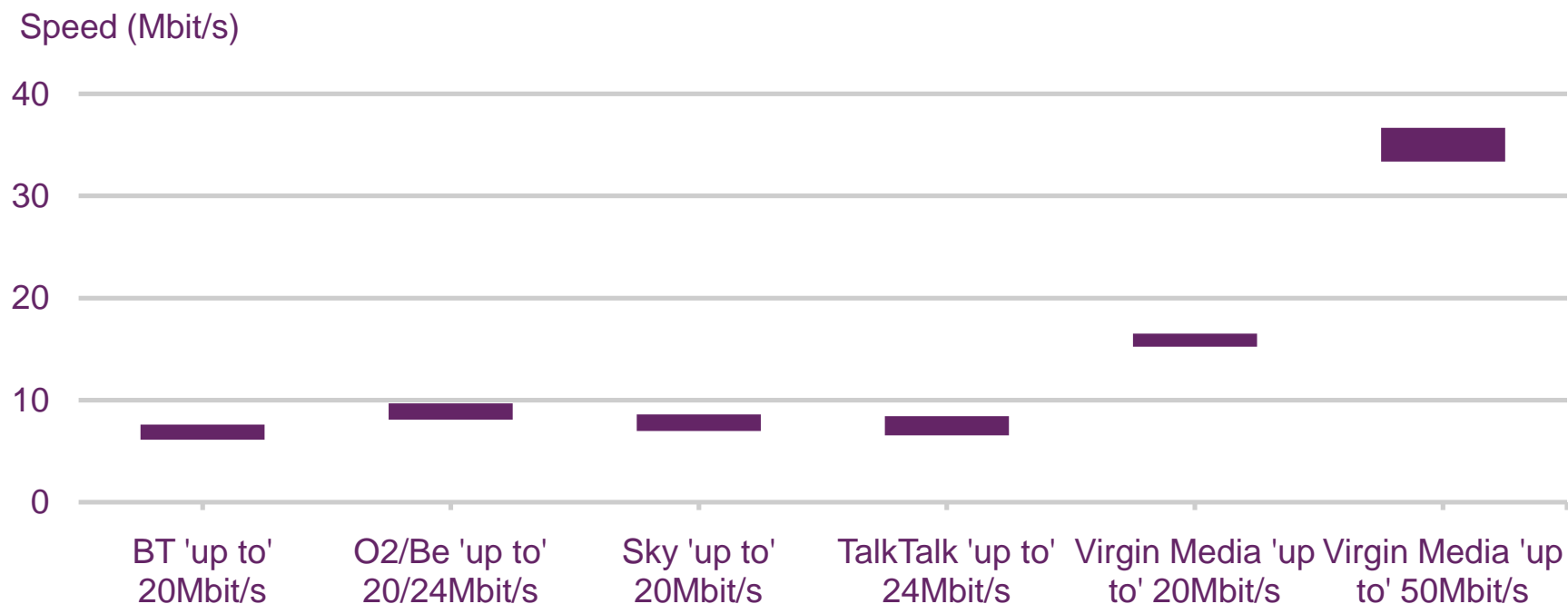
ISP package	Is slower than...	Is faster than...
AOL bb 'up to' 8Mbit/s*	Virgin Media	
BT 'up to' 8Mbit/s	Virgin Media	
O2/Be 'up to' 8Mbit/s	Virgin Media	
Orange 'up to' 8Mbit/s*	Virgin Media	
Plusnet 'up to' 8Mbit/s	Virgin Media	
Sky 'up to' 10Mbit/s	Virgin Media	
TalkTalk 'up to' 8Mbit/s	Virgin Media	
Virgin Media 'up to' 10Mbit/s		AOL bb, BT, O2/Be, Orange, Plusnet, Sky and TalkTalk

Source: Ofcom

Note: \*Small sample size – treat results with caution



## Average download throughput speed for 'up to' 20Mbit/s and above connections by ISP, 24 hours, May 2010



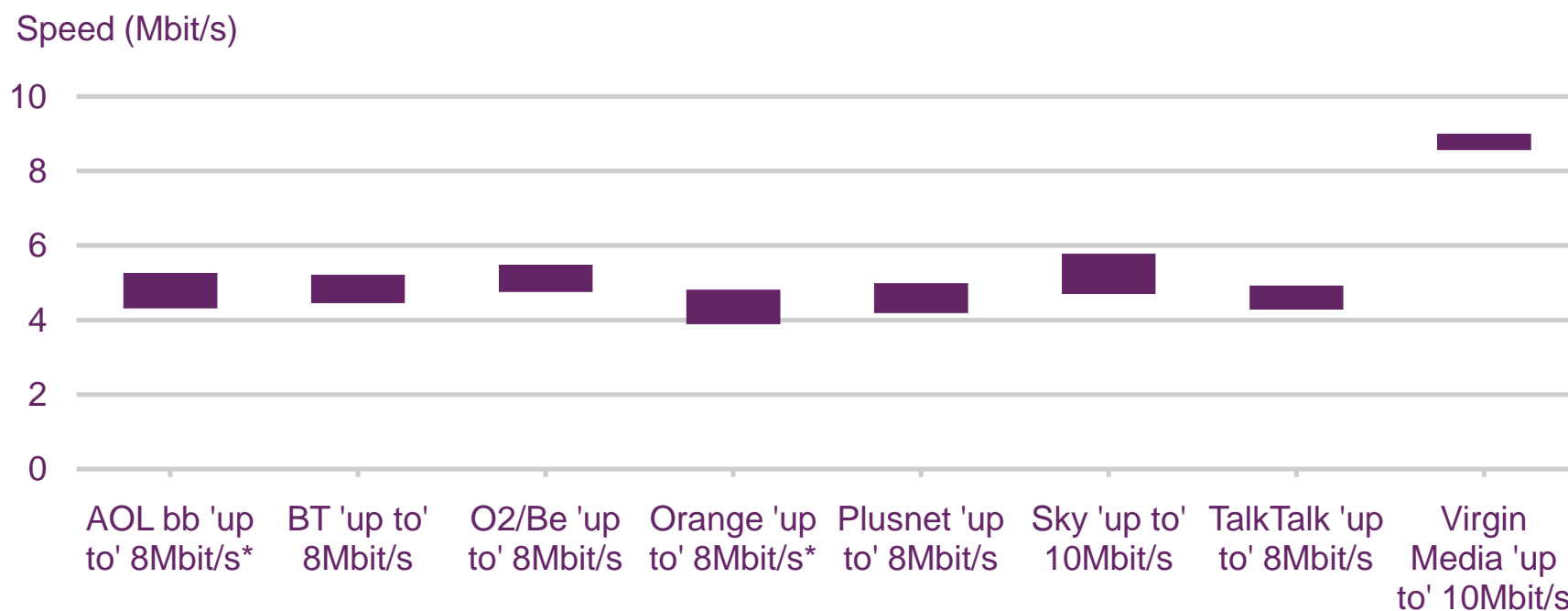
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

Significant differences to a 95% level of confidence between average speeds on 'up to' 20Mbit/s and 'up to' 24Mbit/s packages, 24 hours, May 2010

ISP package	Is slower than...	Is faster than...
BT 'up to' 20Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 20/24Mbit/s	Virgin Media	BT
Sky 'up to' 20Mbit/s	Virgin Media	
TalkTalk 'up to' 24Mbit/s	Virgin Media	
Virgin Media 'up to' 20Mbit/s		BT, O2/Be, Sky and TalkTalk

Source: Ofcom

## Average download throughput speed by ISP package for 'up to' 8/10Mbit/s panellists within 2km of the exchange, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

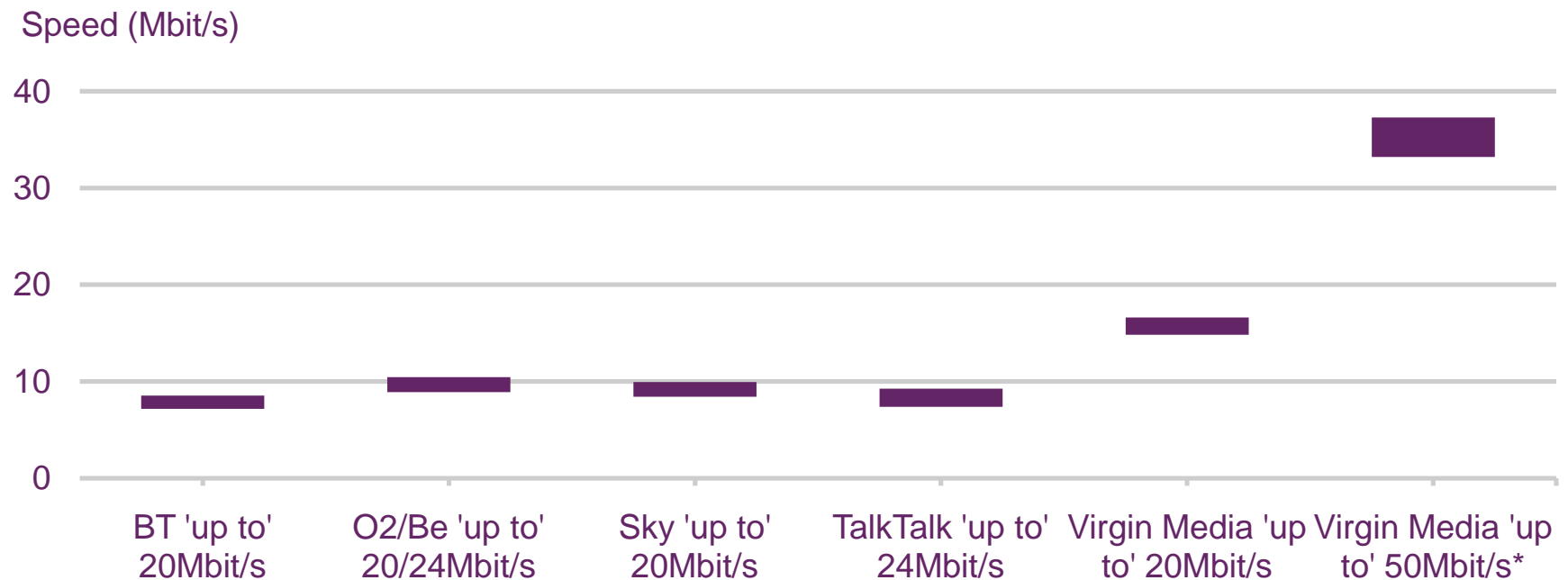
Significant differences to a 95% level of confidence between average speeds on 'up to' 8Mbit/s and 'up to' 10Mbit/s packages within 2km of the exchange, 24 hours, May 2010

ISP package	Is slower than...	Is faster than...
AOL bb 'up to' 8Mbit/s*	Virgin Media	
BT 'up to' 8Mbit/s	Virgin Media	
O2/Be 'up to' 8Mbit/s	Virgin Media	
Orange 'up to' 8Mbit/s*	Virgin Media	
Plusnet 'up to' 8Mbit/s	Virgin Media	
Sky 'up to' 10Mbit/s	Virgin Media	
TalkTalk 'up to' 8Mbit/s	Virgin Media	
Virgin Media 'up to' 10Mbit/s		AOL bb, BT, O2/Be, Orange, Plusnet, Sky and TalkTalk

Source: Ofcom

Note: \*Small sample size – treat results with caution

## Average download throughput speed by ISP for 'up to' 20Mbit/s and above panellists within 2km of the exchange, May 2010



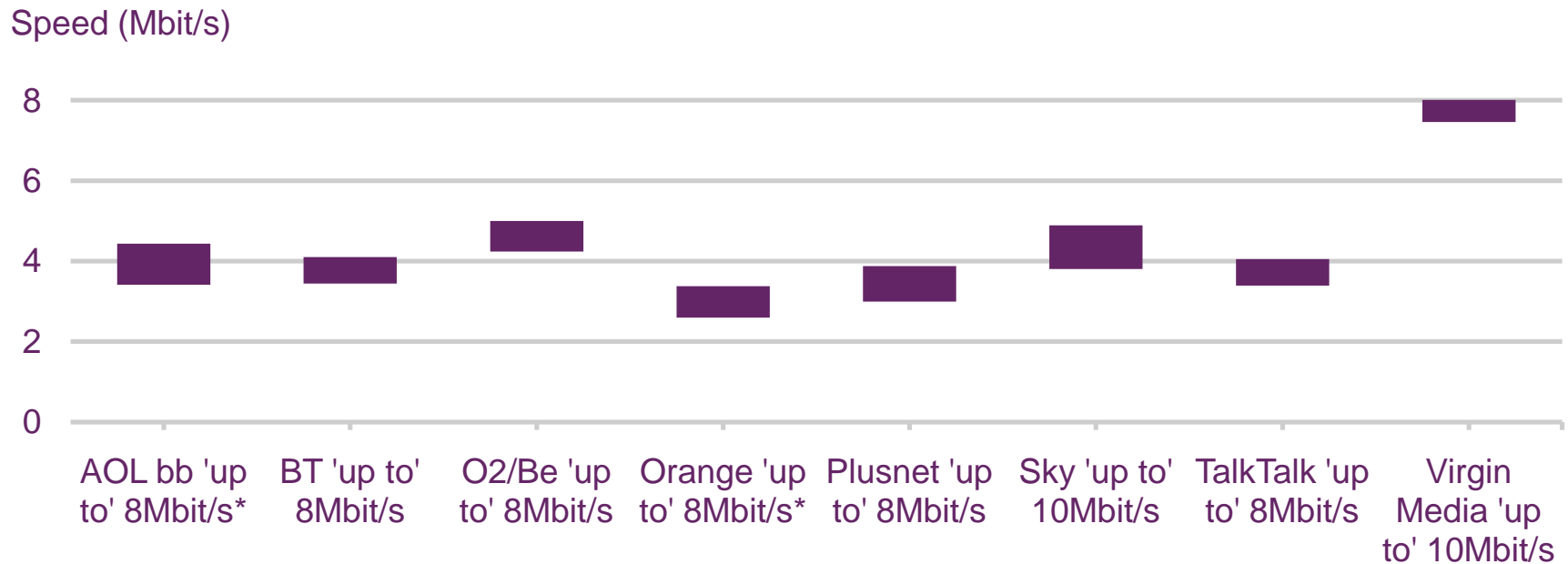
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

Significant differences to a 95% level of confidence between average speeds on 'up to' 20Mbit/s and 'up to' 24Mbit/s packages within 2km of the exchange, 24 hours, May 2010

ISP package	Is slower than...	Is faster than...
BT 'up to' 20Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 20/24Mbit/s	Virgin Media	BT
Sky 'up to' 20Mbit/s	Virgin Media	
TalkTalk 'up to' 24Mbit/s	Virgin Media	
Virgin Media 'up to' 20Mbit/s		BT, O2/Be, Sky and TalkTalk

Source: Ofcom

## Average download throughput speed for 'up to' 8/10Mbit/s connections by ISP, 8-10pm weekday peak period, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

Significant differences to a 95% level of confidence between average speeds on 'up to' 8Mbit/s and 'up to' 10Mbit/s packages, 8-10pm weekdays, May 2010

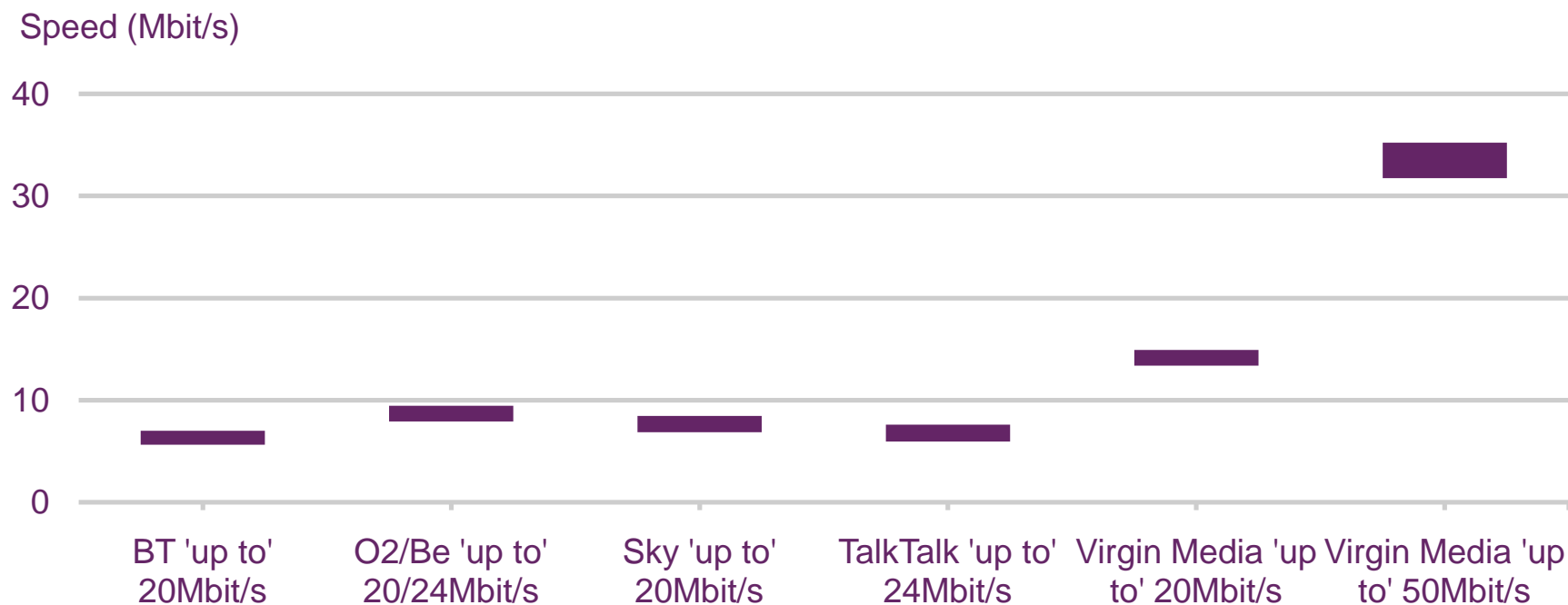
ISP package	Is slower than...	Is faster than...
AOL bb 'up to' 8Mbit/s*	Virgin Media	
BT 'up to' 8Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 8Mbit/s	Virgin Media	BT, Orange, Plusnet and TalkTalk
Orange 'up to' 8Mbit/s*	O2/Be, Sky and Virgin Media	
Plusnet 'up to' 8Mbit/s	O2/Be and Virgin Media	
Sky 'up to' 10Mbit/s	Virgin Media	Orange
TalkTalk 'up to' 8Mbit/s	O2/Be and Virgin Media	
Virgin Media 'up to' 10Mbit/s		AOL bb, BT, O2/Be, Orange, Plusnet, Sky and TalkTalk

Source: Ofcom

Note: \*Small sample size – treat results with caution



## Average download throughput speed for 'up to' 20Mbit/s and above connections by ISP, 8-10pm weekday peak period, May 2010



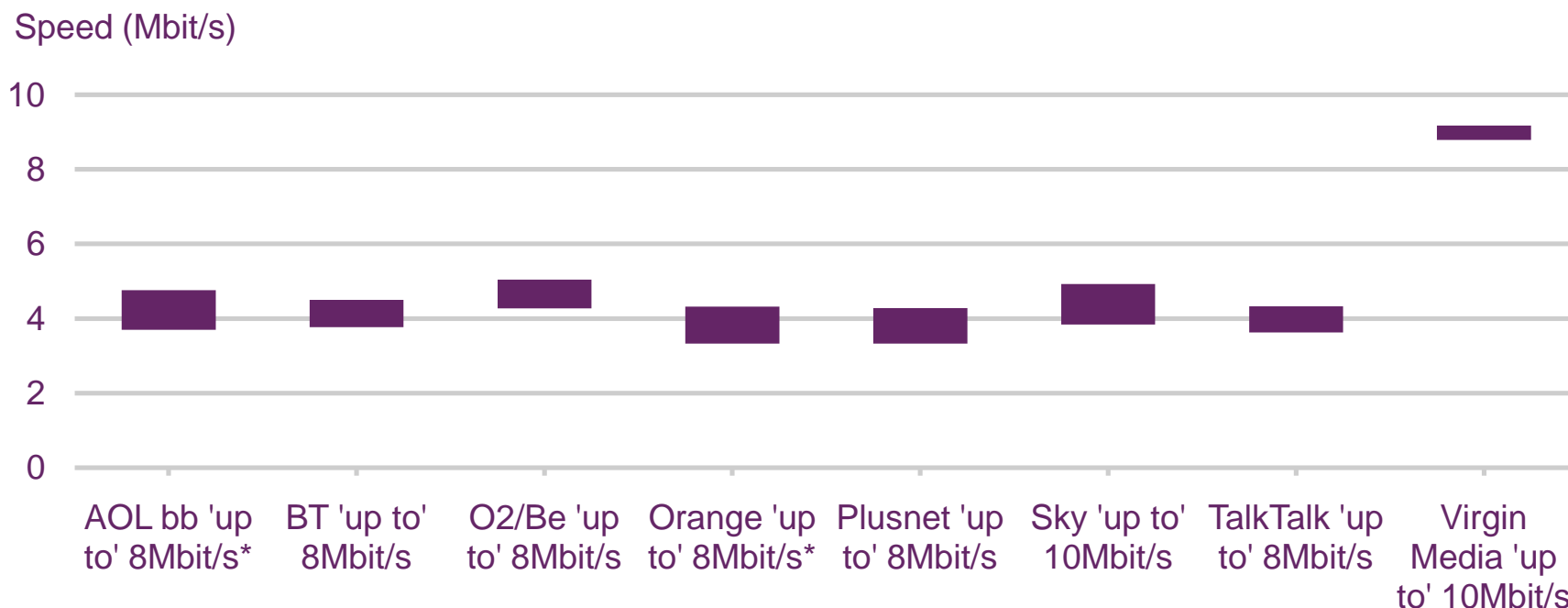
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

Significant differences to a 95% level of confidence between average speeds on 'up to' 20Mbit/s and 'up to' 24Mbit/s packages, 8-10pm weekdays, May 2010

ISP package	Is slower than...	Is faster than...
BT 'up to' 20Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 20/24Mbit/s	Virgin Media	BT and TalkTalk
Sky 'up to' 20Mbit/s	Virgin Media	
TalkTalk 'up to' 24Mbit/s	O2/Be and Virgin Media	
Virgin Media 'up to' 20Mbit/s		BT, O2/Be, Sky and TalkTalk

Source: Ofcom

## Average download throughput speed for 'up to' 8/10Mbit/s connections by ISP, 9am-5pm weekdays, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

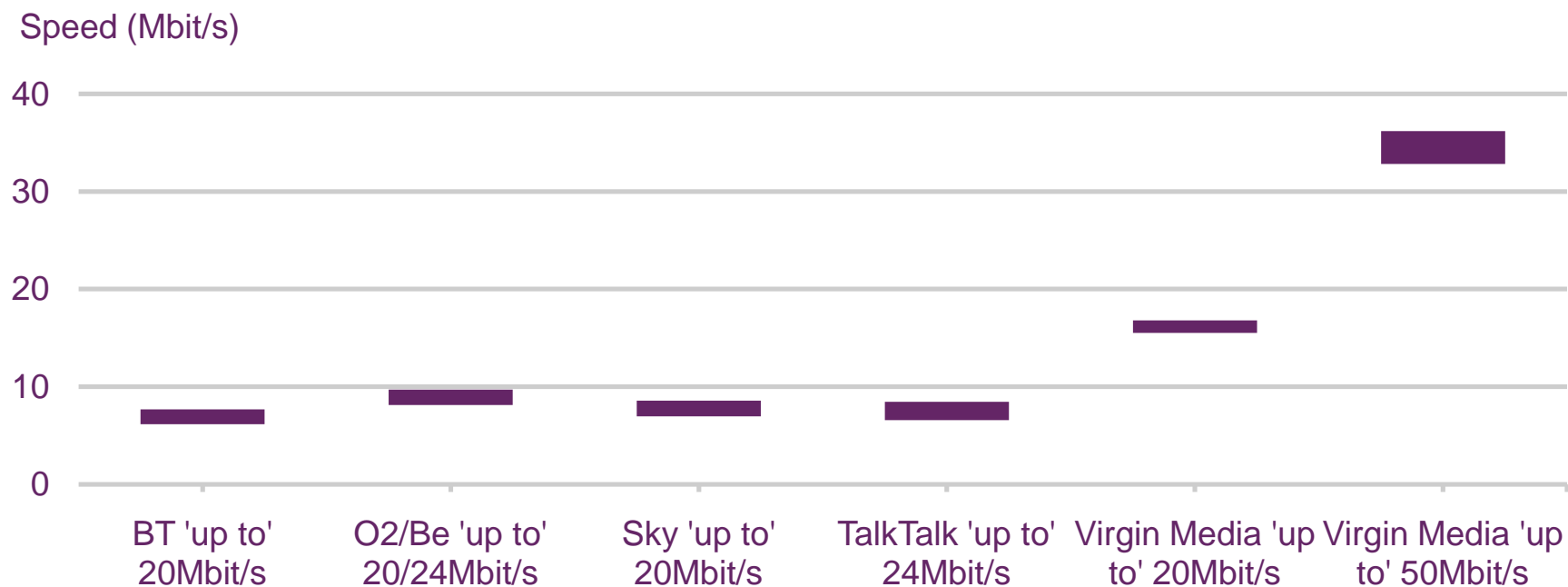
Significant differences to a 95% level of confidence between average speeds on 'up to' 8Mbit/s and 'up to' 10Mbit/s packages, 9am to 5pm weekdays, May 2010

ISP package	Is slower than...	Is faster than...
AOL bb 'up to' 8Mbit/s*	Virgin Media	
BT 'up to' 8Mbit/s	Virgin Media	
O2/Be 'up to' 8Mbit/s	Virgin Media	
Orange 'up to' 8Mbit/s*	Virgin Media	
Plusnet 'up to' 8Mbit/s	Virgin Media	
Sky 'up to' 10Mbit/s	Virgin Media	
TalkTalk 'up to' 8Mbit/s	Virgin Media	
Virgin Media 'up to' 10Mbit/s		AOL bb, BT, O2/Be, Orange, Plusnet, Sky and TalkTalk

Source: Ofcom

Note: \*Small sample size – treat results with caution

## Average download throughput speed for 'up to' 20Mbit/s and above connections by ISP, 9am-5pm weekdays, May 2010



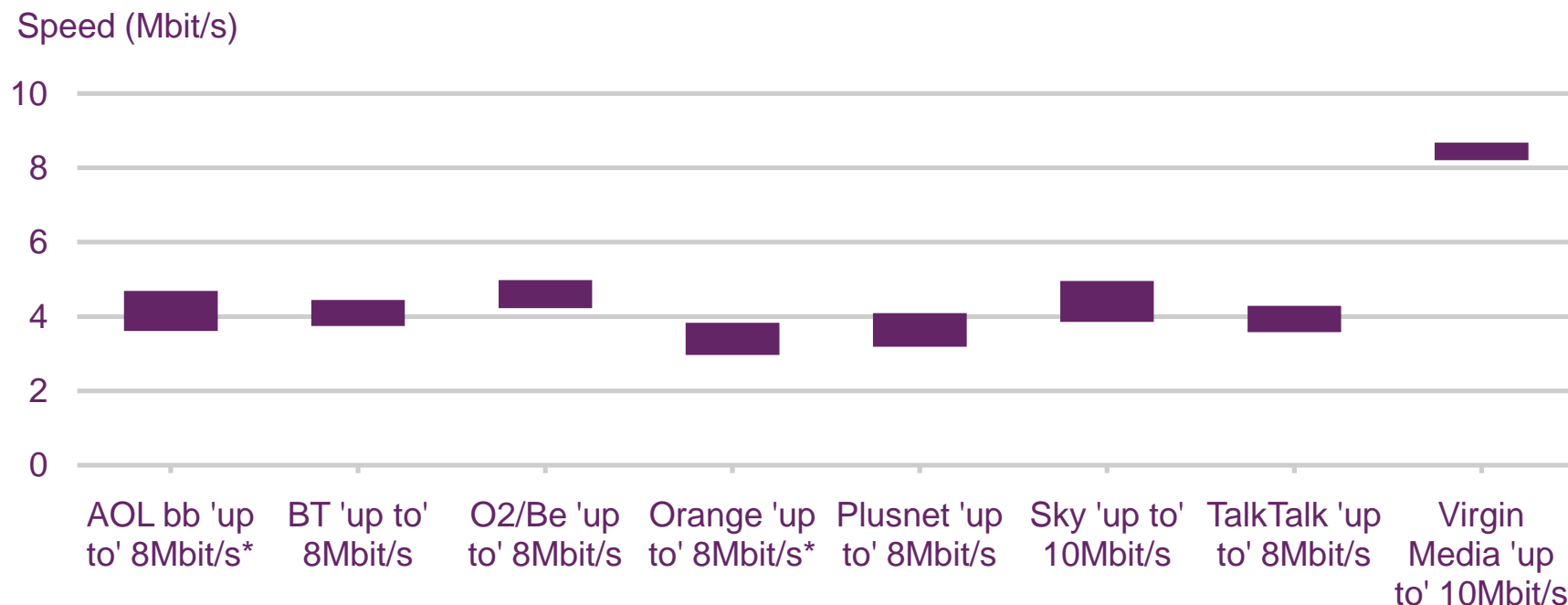
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

Significant differences to a 95% level of confidence between average speeds on 'up to' 20Mbit/s and 'up to' 24Mbit/s packages, 9am to 5pm weekdays, May 2010

ISP package	Is slower than...	Is faster than...
BT 'up to' 20Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 20/24Mbit/s	Virgin Media	BT
Sky 'up to' 20Mbit/s	Virgin Media	
TalkTalk 'up to' 24Mbit/s	Virgin Media	
Virgin Media 'up to' 20Mbit/s		BT, O2/Be, Sky and TalkTalk

Source: Ofcom

## Average download throughput speed for 'up to' 8/10Mbit/s connections by ISP, 10am to 10pm weekends, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

Significant differences to a 95% level of confidence between average speeds on 'up to' 8Mbit/s and 'up to' 10Mbit/s packages, 10am to 10pm weekends, May 2010

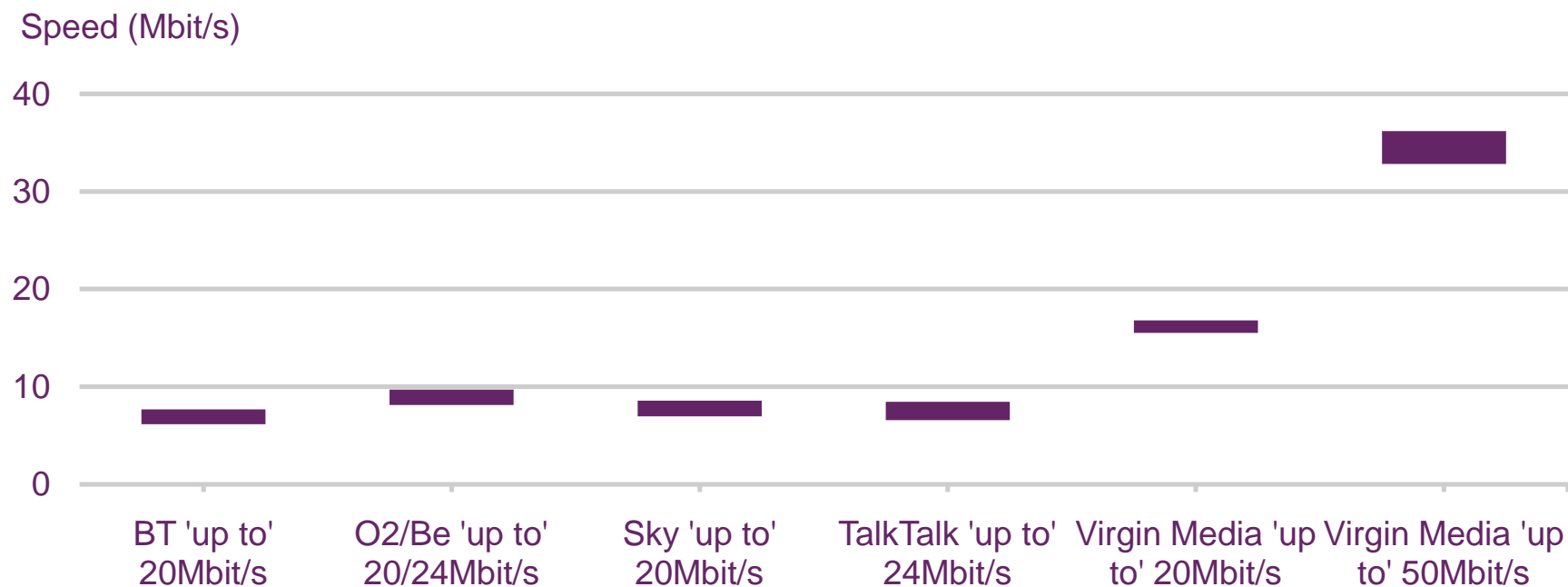
ISP package	Is slower than...	Is faster than...
AOL bb 'up to' 8Mbit/s*	Virgin Media	
BT 'up to' 8Mbit/s	Virgin Media	
O2/Be 'up to' 8Mbit/s	Virgin Media	Orange
Orange 'up to' 8Mbit/s*	O2/Be and Virgin Media	
Plusnet 'up to' 8Mbit/s	Virgin Media	
Sky 'up to' 10Mbit/s	Virgin Media	
TalkTalk 'up to' 8Mbit/s	Virgin Media	
Virgin Media 'up to' 10Mbit/s		AOL bb, BT, O2/Be, Orange, Plusnet, Sky and TalkTalk

Source: Ofcom

Note: \*Small sample size – treat results with caution



## Average download throughput speed for 'up to' 20Mbit/s and above connections by ISP, 10am to 10pm weekends, May 2010



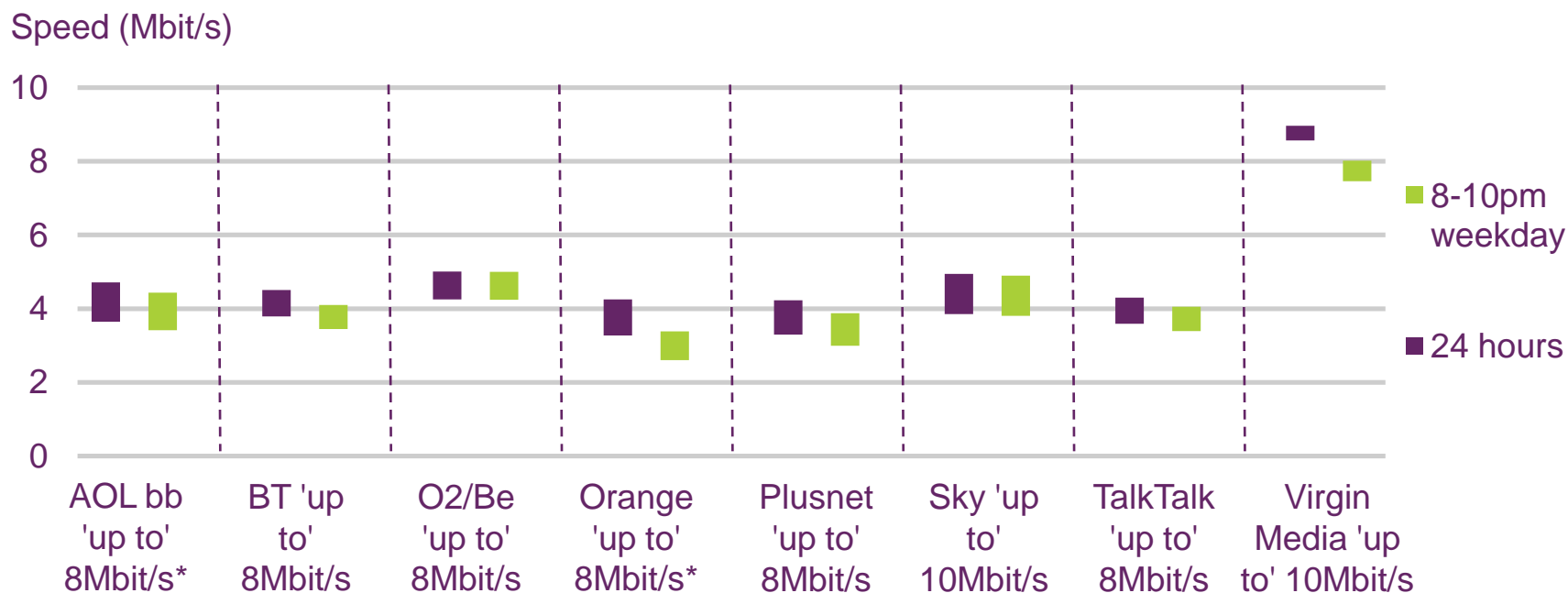
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

Significant differences to a 95% level of confidence between average speeds on 'up to' 20Mbit/s and 'up to' 24Mbit/s packages, 10am to 10pm weekends, May 2010

ISP package	Is slower than...	Is faster than...
BT 'up to' 20Mbit/s	O2/Be and Virgin Media	
O2/Be 'up to' 20/24Mbit/s	Virgin Media	BT
Sky 'up to' 20Mbit/s	Virgin Media	
TalkTalk 'up to' 24Mbit/s	Virgin Media	
Virgin Media 'up to' 20Mbit/s		BT, O2/Be, Sky and TalkTalk

Source: Ofcom

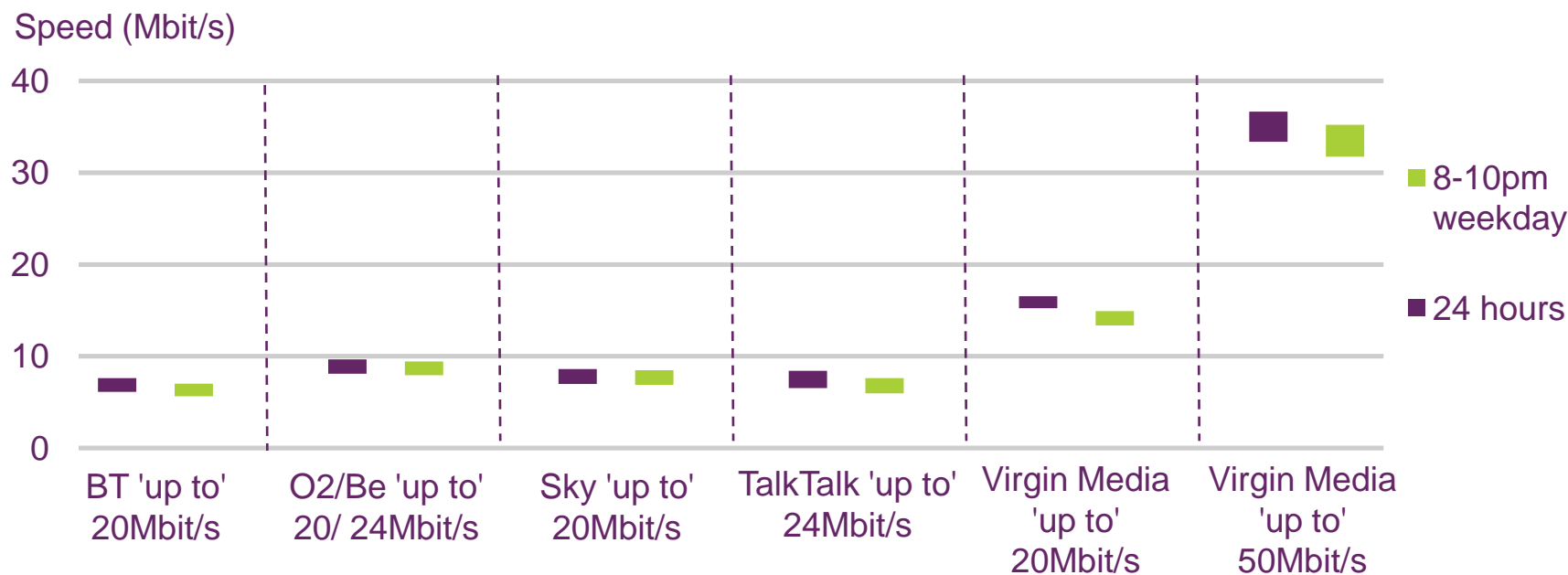
## Average download throughput speeds for 'up to' 8/10Mbit/s connections within 5km of the exchange by ISP, overall and in the peak period, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

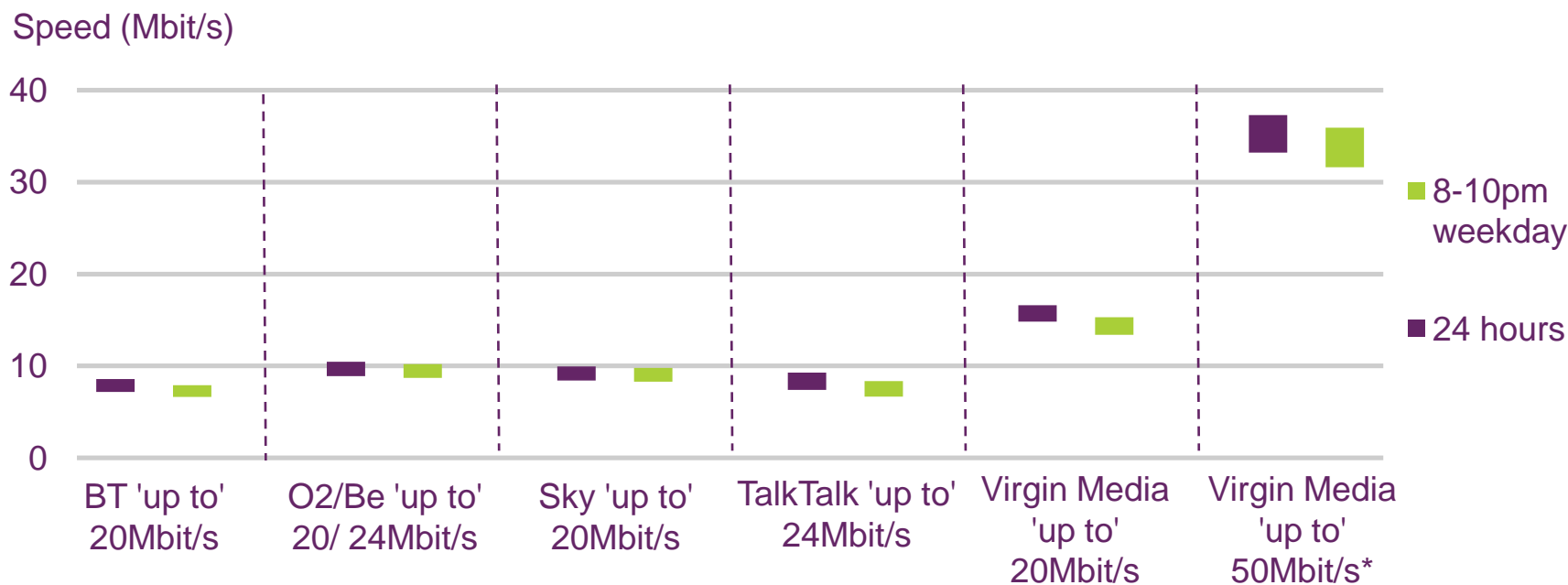
Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Average download throughput speeds for 'up to' 20Mbit/s and above connections within 5km of the exchange by ISP, overall and in the peak period, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

## Average download throughput speeds for 'up to' 20Mbit/s and above connections within 2km of the exchange by ISP, overall and in the peak period, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

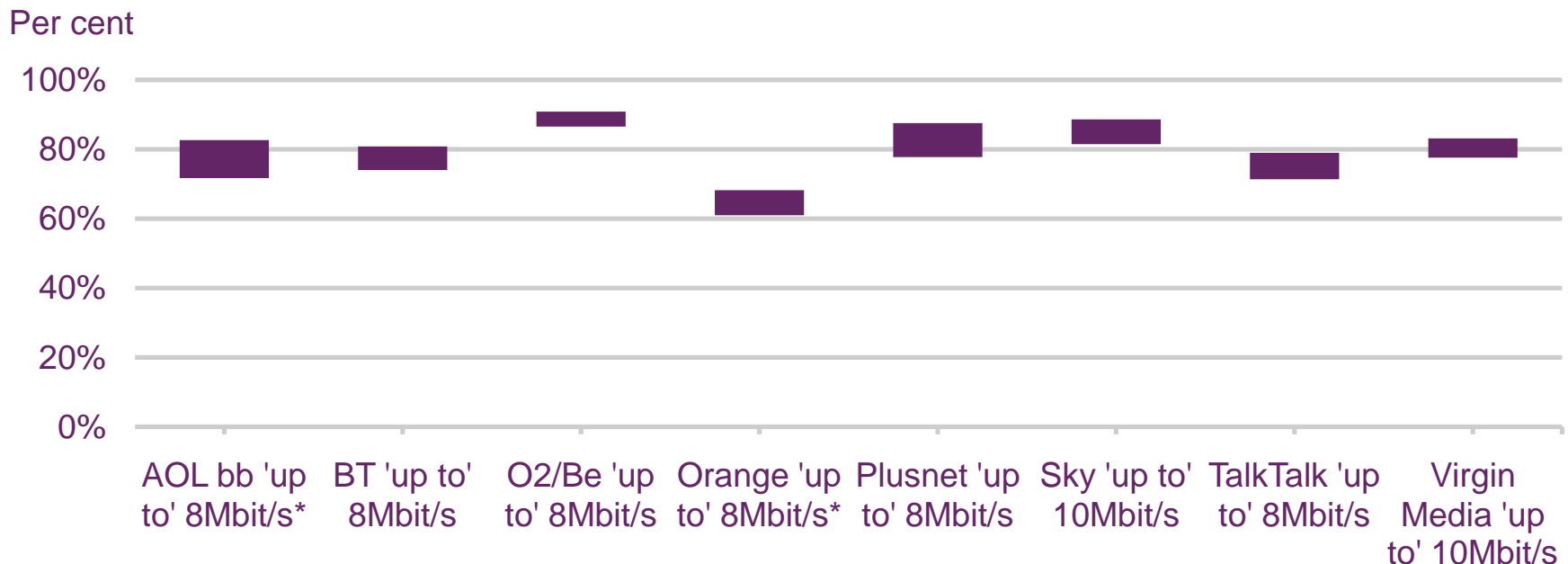
# Summary of average download throughput speed by ISP package, May 2010

	Average download throughput speed during period (Mbit/s)				
	24 hours	8-10pm weekdays	9am-5pm weekdays	10am-10pm weekends	1am-6am
AOL bb 'up to' 8Mbit/s*	3.6 to 4.7	3.4 to 4.4	3.7 to 4.8	3.6 to 4.7	3.7 to 4.8
BT 'up to' 8Mbit/s	3.8 to 4.5	3.4 to 4.1	3.8 to 4.5	3.7 to 4.4	3.9 to 4.7
O2/Be 'up to' 8Mbit/s	4.3 to 5.0	4.2 to 5.0	4.3 to 5.0	4.2 to 5.0	4.3 to 5.0
Orange 'up to' 8Mbit/s*	3.3 to 4.2	2.6 to 3.4	3.3 to 4.3	3.0 to 3.8	3.6 to 4.7
Plusnet 'up to' 8Mbit/s	3.3 to 4.2	3.0 to 3.9	3.3 to 4.3	3.2 to 4.1	3.4 to 4.4
Sky 'up to' 10Mbit/s	3.9 to 4.9	3.8 to 4.9	3.8 to 4.9	3.9 to 5.0	3.9 to 5.0
TalkTalk 'up to' 8Mbit/s	3.6 to 4.3	3.4 to 4.1	3.6 to 4.3	3.6 to 4.3	3.6 to 4.3
Virgin Media 'up to' 10Mbit/s	8.6 to 9.0	7.5 to 8.0	8.8 to 9.2	8.2 to 8.7	8.9 to 9.3
BT 'up to' 20Mbit/s	6.1 to 7.6	5.6 to 7.0	6.2 to 7.7	6.0 to 7.4	6.2 to 7.8
O2/Be 'up to' 20/24Mbit/s	8.1 to 9.7	7.9 to 9.4	8.1 to 9.7	8.0 to 9.5	8.2 to 9.8
Sky 'up to' 20Mbit/s	7.0 to 8.6	6.9 to 8.5	7.0 to 8.6	7.0 to 8.6	7.0 to 8.6
TalkTalk 'up to' 24Mbit/s	6.5 to 8.4	5.9 to 7.6	6.6 to 8.5	6.4 to 8.2	6.7 to 8.7
Virgin Media 'up to' 20Mbit/s	15.2 to 16.5	13.4 to 14.9	15.5 to 16.8	14.7 to 16.1	15.9 to 17.1
Virgin Media 'up to' 50Mbit/s	33.4 to 36.7	31.8 to 35.2	32.8 to 36.2	33.8 to 37.3	33.8 to 37.1

Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from single-thread download speed tests; \*small sample size – treat results with caution

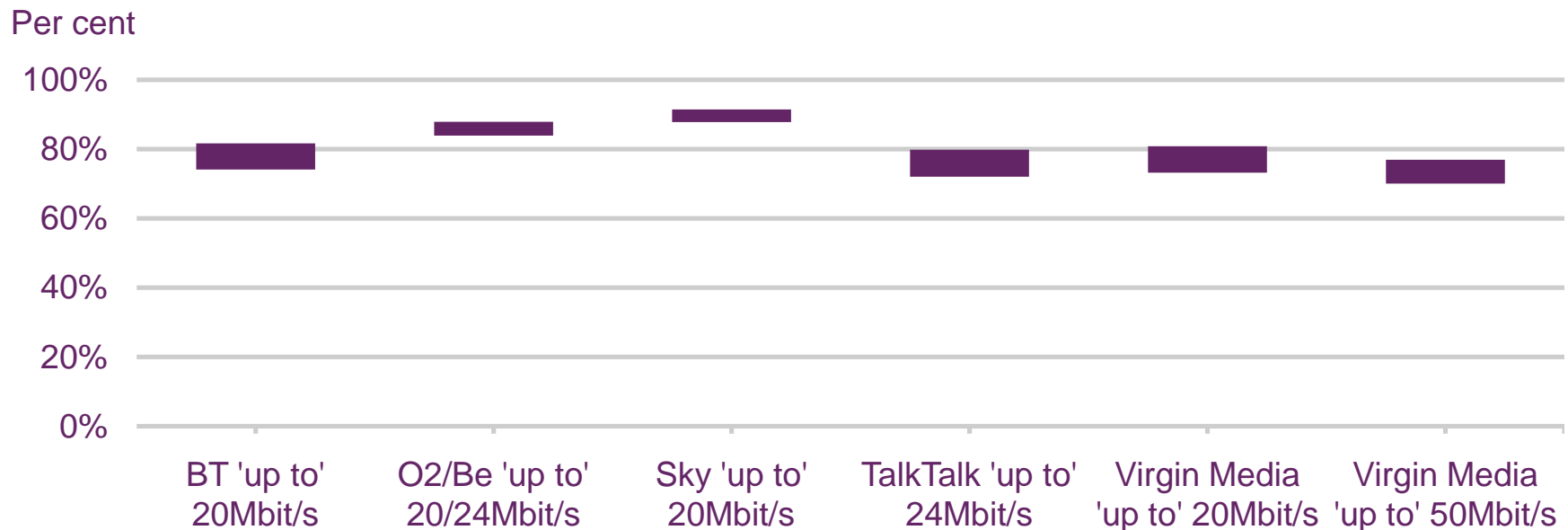
## Peak (8-10pm weekday) speeds as a proportion of maximum speeds for 'up to' 8Mbit/s and 10Mbit/s connections by ISP package, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Peak (8-10pm weekday) speeds as a proportion of maximum speeds for 'up to' 20Mbit/s and above connections by ISP package, May 2010

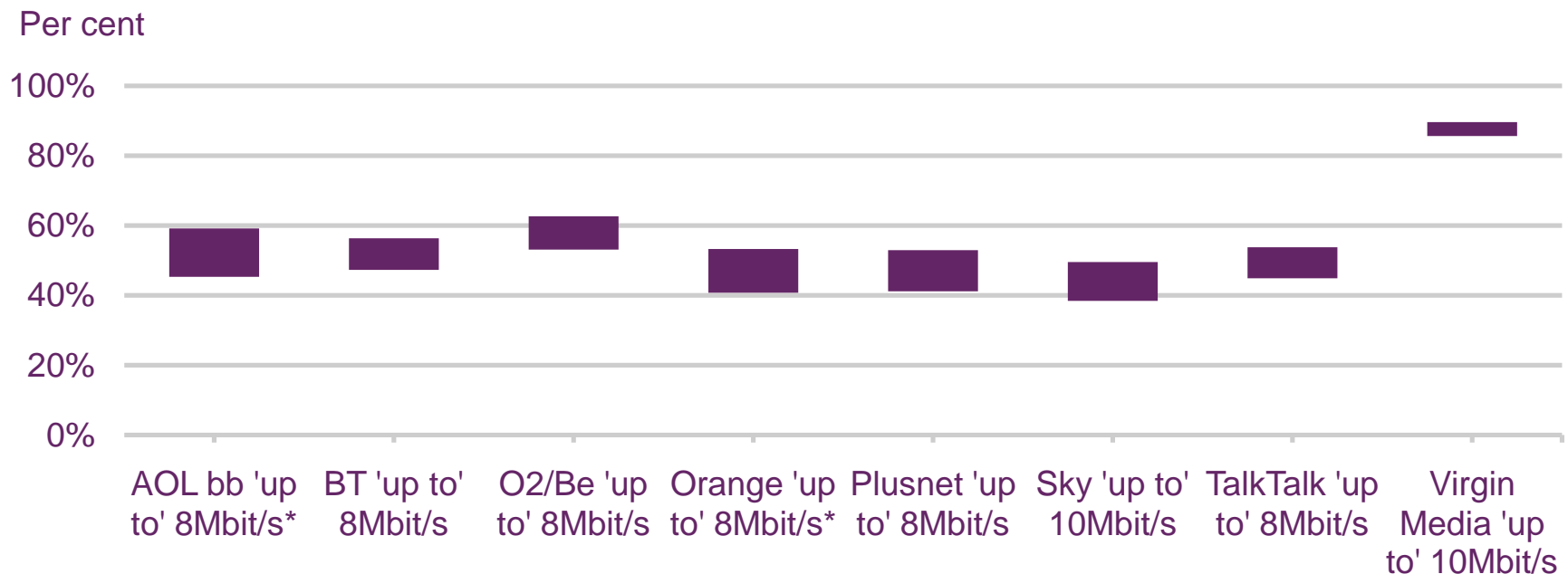


Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval



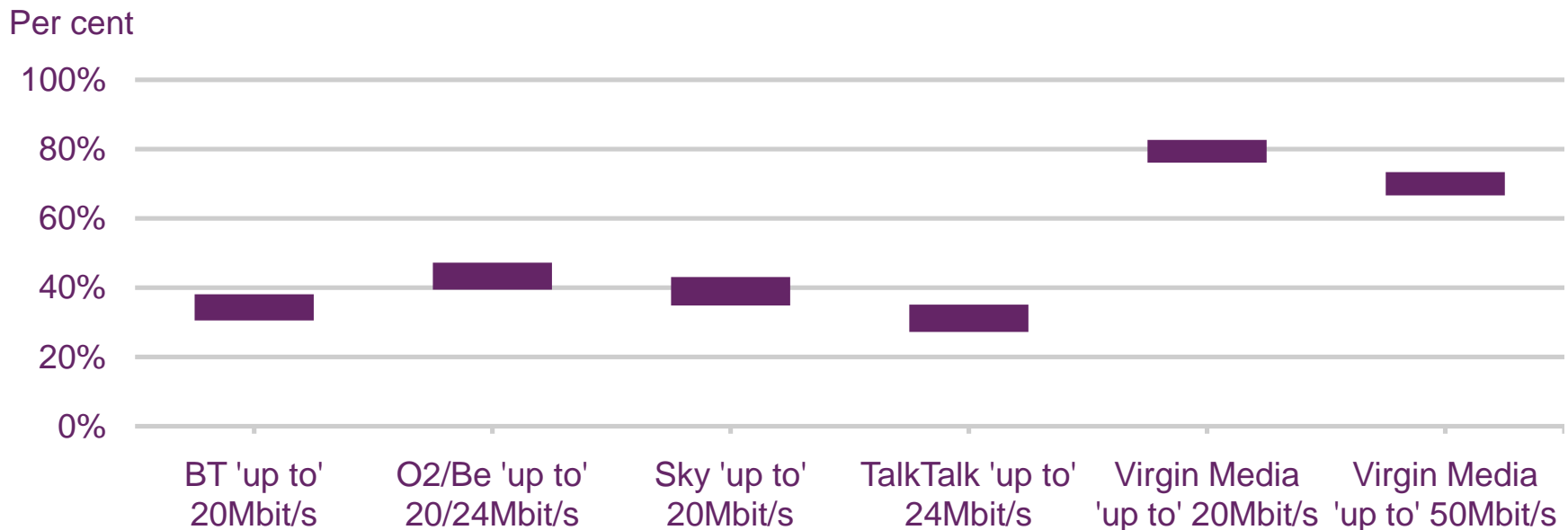
## Average speeds (24 hours) as a proportion of headline speeds for 'up to' 8/10Mbit/s and above connections by ISP package, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

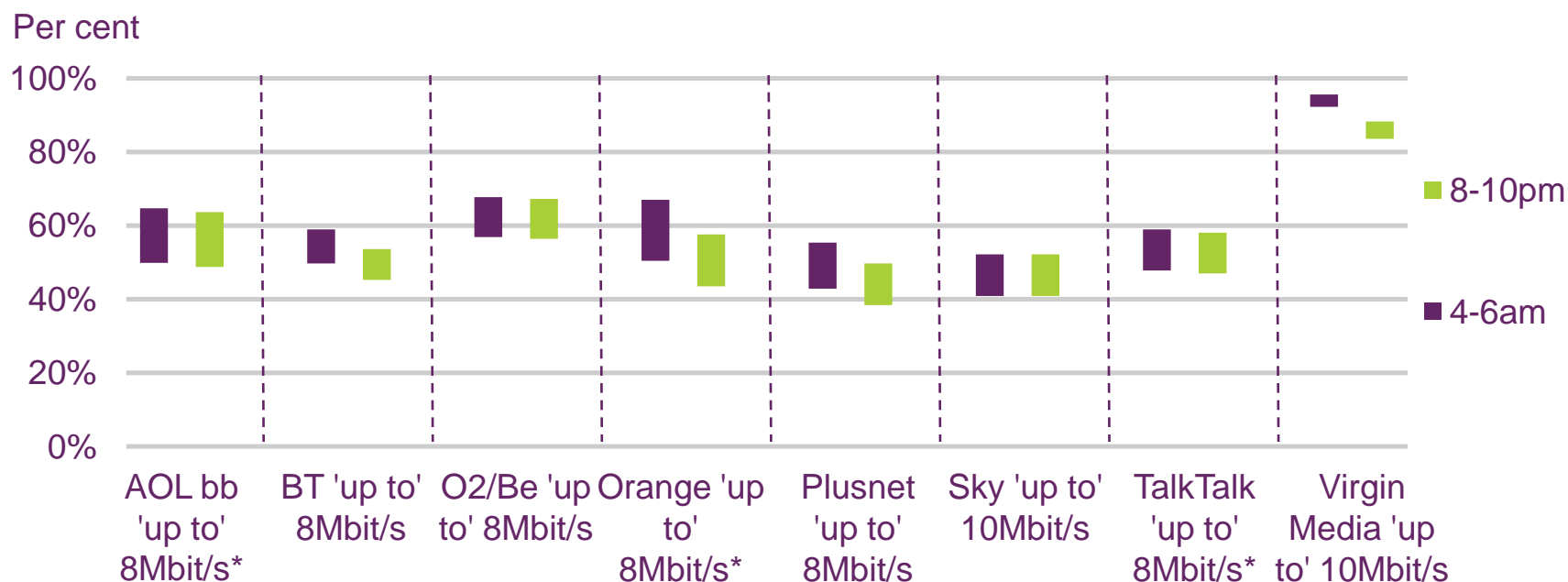
## Average speeds (24 hours) as a proportion of headline speeds for 'up to' 20Mbit/s and above connections by ISP, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

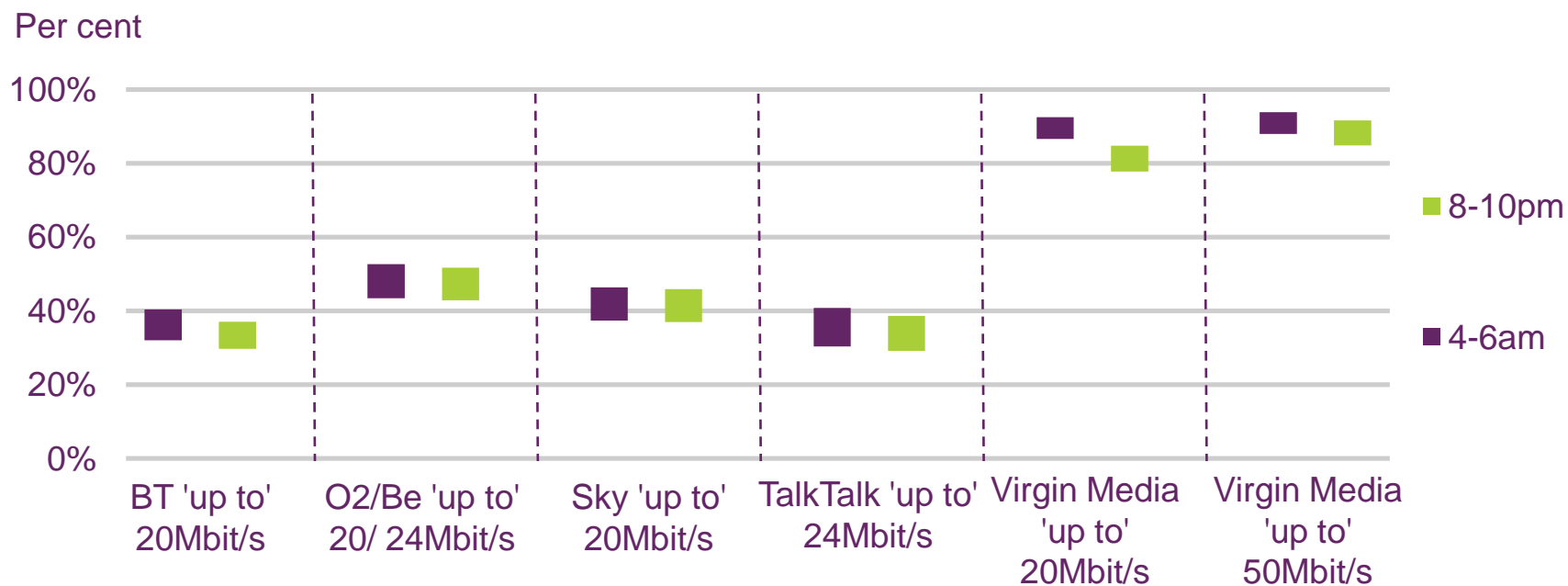
Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval

## Average multi-thread speed test results between 4-6am and 8-10pm as a proportion of headline speeds for 'up to' 8 and 10Mbit/s connections by ISP, May 2010



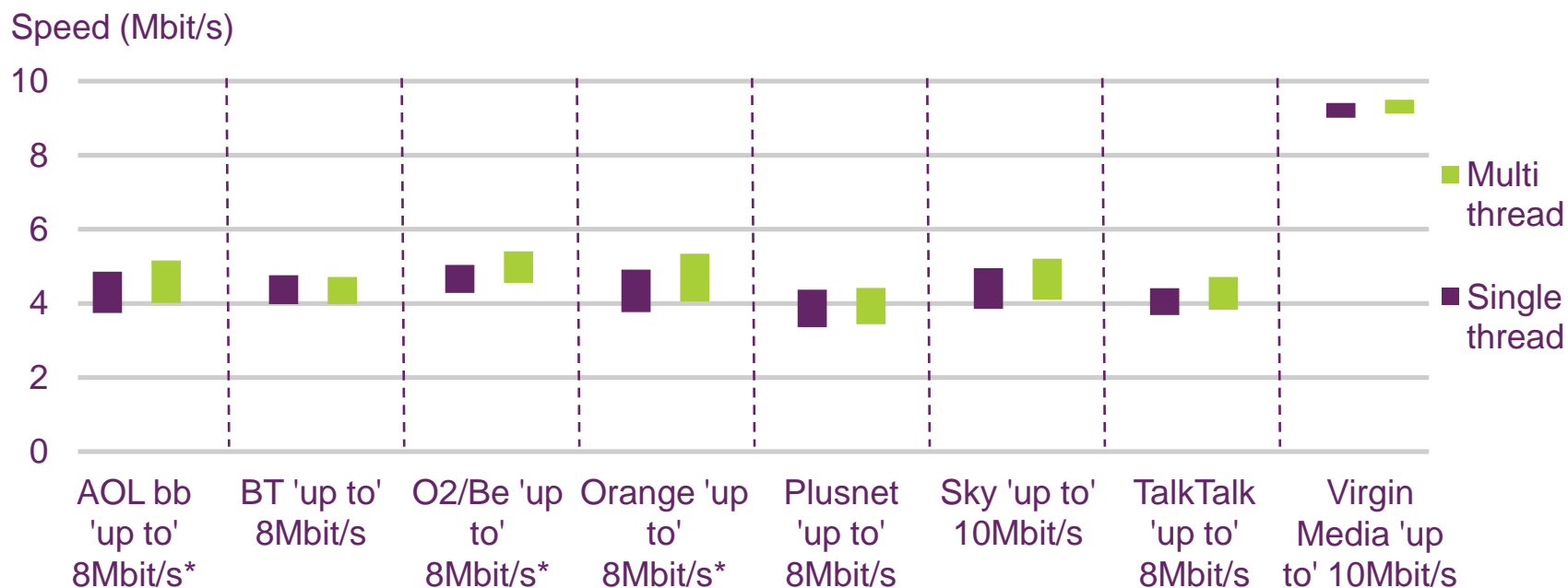
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Average multi-thread speed test results between 4-6am and 8-10pm as a proportion of headline speeds for 'up to' 20Mbit/s and above connections by ISP, May 2010



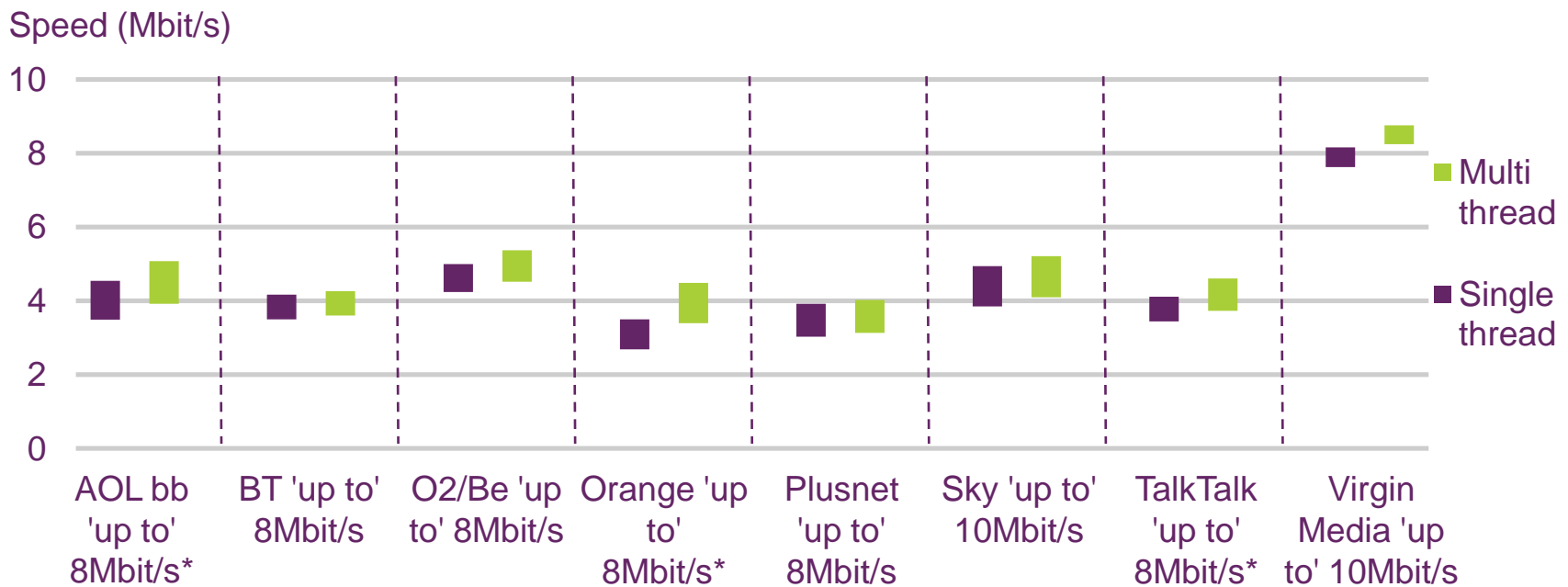
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: Data collected from multi-thread download speed tests; the range shown represents a 95% confidence interval

## Average download throughput speeds for 'up to' 8/10Mbit/s connections by ISP, single and multi-thread test results, 4am to 5am, May 2010



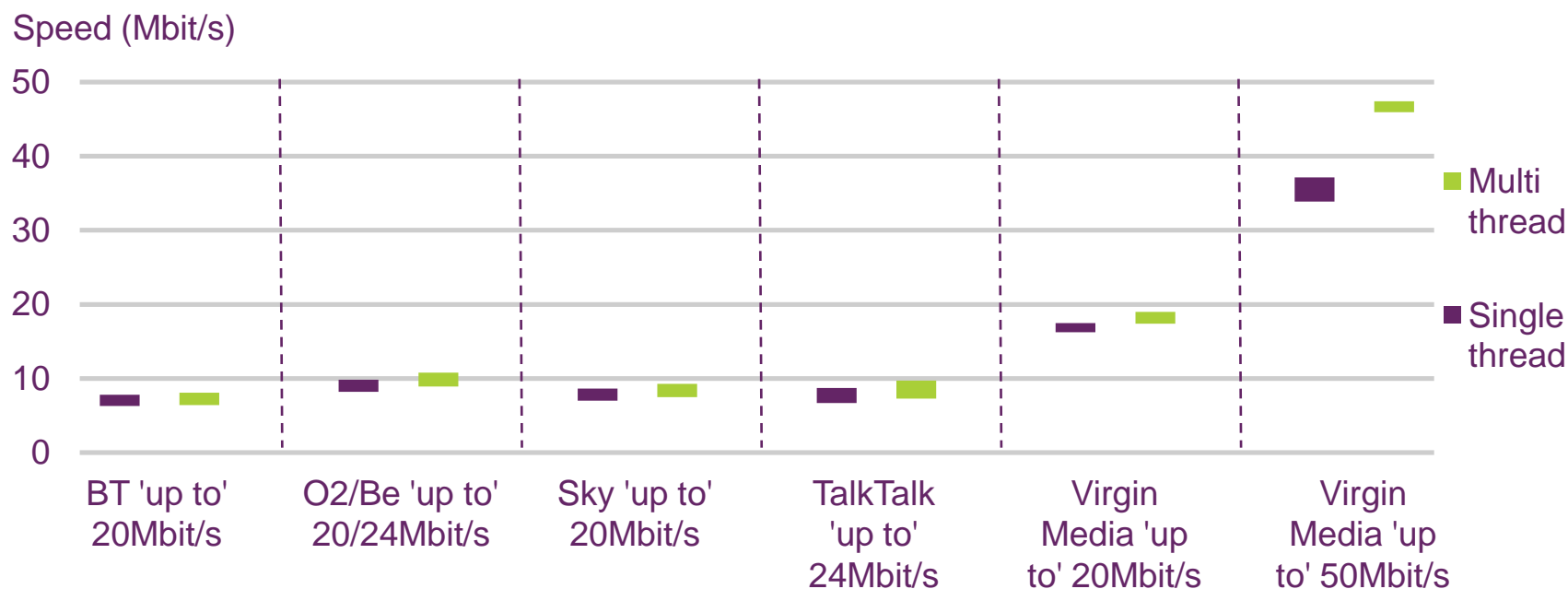
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Average download throughput speeds for 'up to' 8/10Mbit/s connections by ISP, single and multi-thread test results, 8pm to 9pm, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

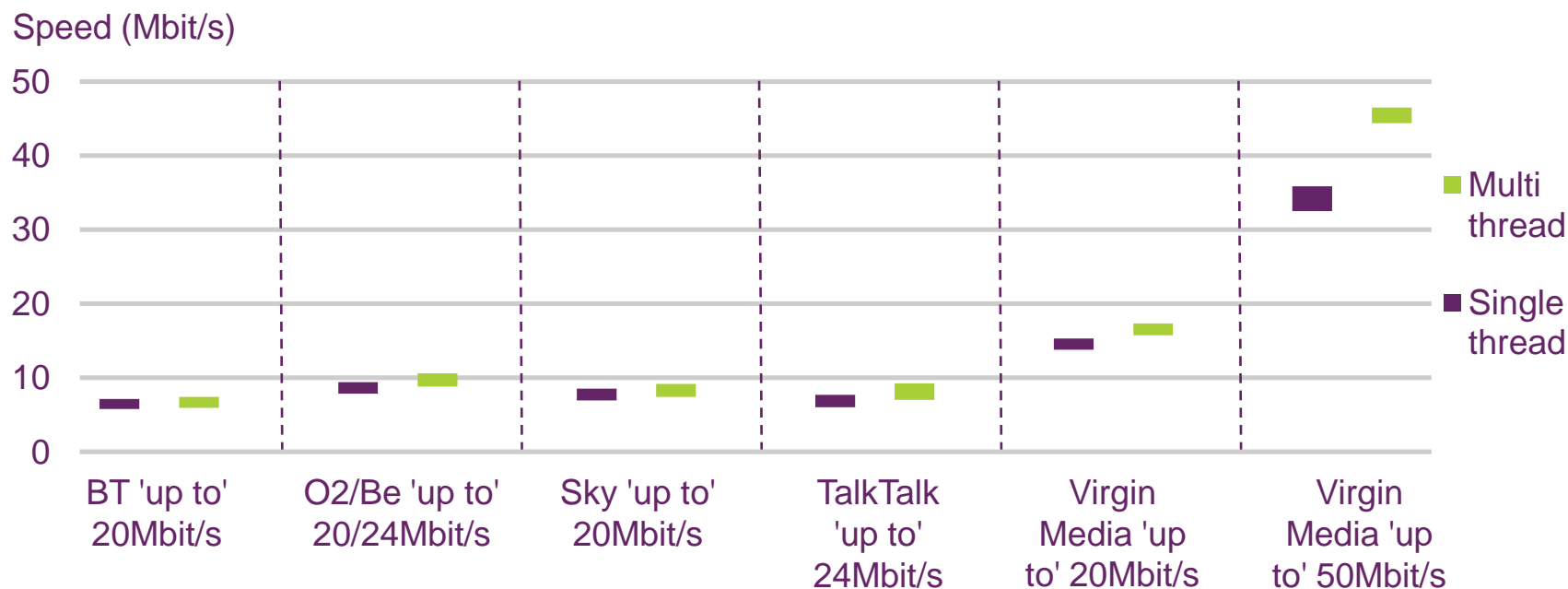
## Average download throughput speeds for 'up to' 20Mbit/s and above connections by ISP, single and multi-thread test results, 4am to 5am, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: The range shown represents a 95% confidence interval

## Average download throughput speeds for 'up to' 20Mbit/s and above connections by ISP, single and multi-thread test results, 8pm to 9pm, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: The range shown represents a 95% confidence interval

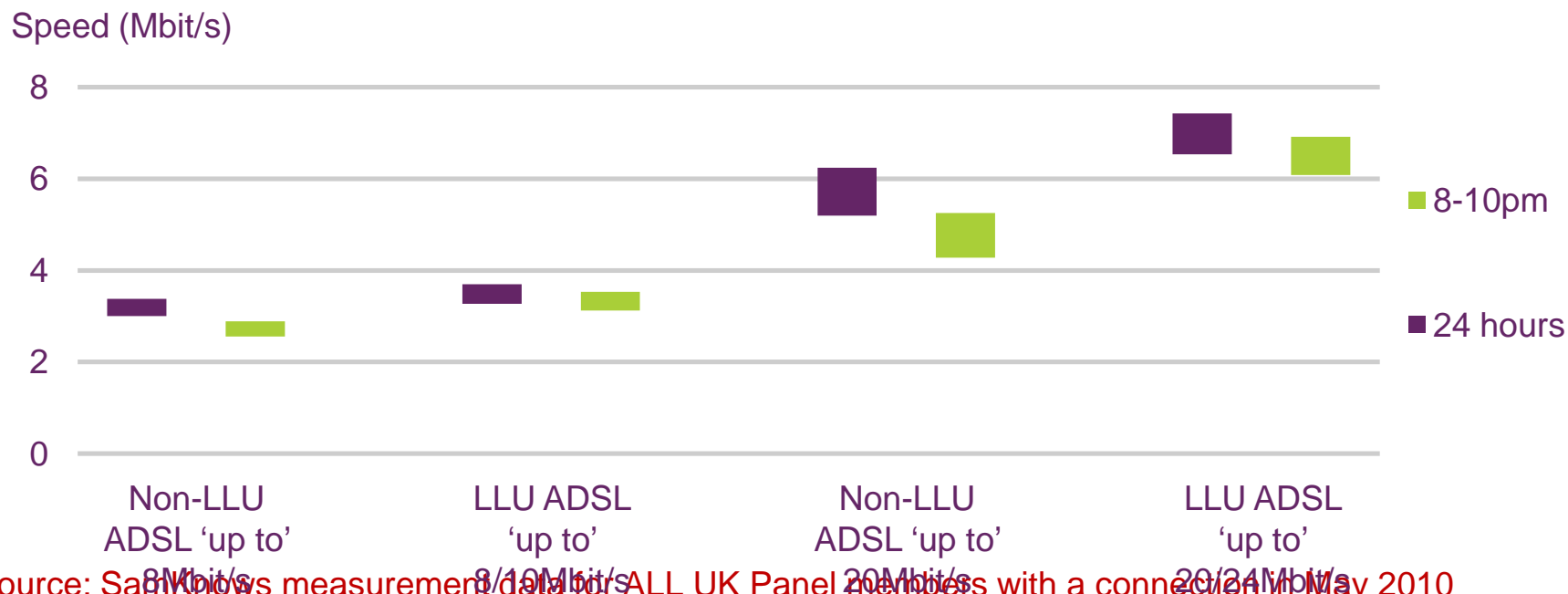


# Average off-peak and peak download throughput speeds for ISP packages, single and multi-thread test results, May 2010

	Average download throughput speed during period (Mbit/s)			
	Off-peak (4 to 6am)*		Peak (8 to 10pm)*	
	Multi-thread	Single-thread	Multi-thread	Single-thread
AOL bb 'up to' 8Mbit/s*	4.0 to 5.2	3.7 to 4.9	3.9 to 5.1	3.5 to 4.5
BT 'up to' 8Mbit/s	4.0 to 4.7	4.0 to 4.8	3.6 to 4.3	3.5 to 4.2
O2/Be 'up to' 8Mbit/s*	4.6 to 5.4	4.3 to 5.0	4.5 to 5.4	4.2 to 5.0
Orange 'up to' 8Mbit/s*	4.1 to 5.3	3.8 to 4.9	3.4 to 4.5	2.7 to 3.5
Plusnet 'up to' 8Mbit/s*	3.4 to 4.4	3.4 to 4.4	3.1 to 4.0	3.0 to 3.9
Sky 'up to' 10Mbit/s*	4.1 to 5.2	3.9 to 4.9	4.1 to 5.2	3.8 to 4.9
TalkTalk 'up to' 8Mbit/s*	3.8 to 4.7	3.7 to 4.4	3.7 to 4.6	3.4 to 4.1
Virgin Media 'up to' 10Mbit/s	9.1 to 9.5	9.0 to 9.4	8.2 to 8.8	7.6 to 8.2
BT 'up to' 20Mbit/s*	6.4 to 8.1	6.3 to 7.8	5.9 to 7.4	5.8 to 7.1
O2/Be 'up to' 20/24Mbit/s*	8.9 to 10.8	8.2 to 9.8	8.8 to 10.6	7.9 to 9.4
Sky 'up to' 20Mbit/s	7.5 to 9.3	7.0 to 8.6	7.4 to 9.2	6.9 to 8.5
TalkTalk 'up to' 24Mbit/s*	7.3 to 9.7	6.7 to 8.7	7.0 to 9.3	6.0 to 7.7
Virgin Media 'up to' 20Mbit/s*	17.5 to 19	16.3 to 17.5	15.7 to 17.3	13.8 to 15.3
Virgin Media 'up to' 50Mbit/s*	45.9 to 47.4	33.9 to 37.2	44.4 to 46.5	32.5 to 35.9

Source: SamKnows measurement data for all panel members with a connection in May 2010 \*Caution: small sample size (<50) Note: The range shown represents a 95% confidence interval around the mean. Note: Figures for single-thread tests are for 4-5am and 8-9pm

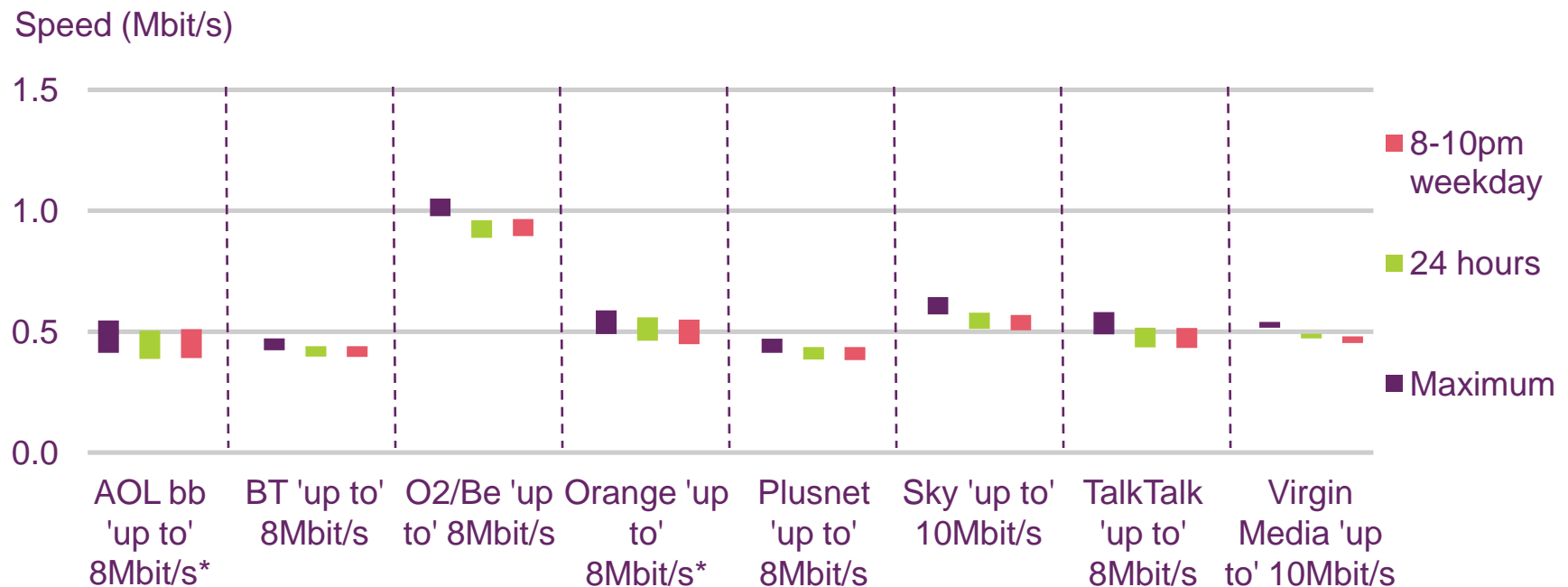
## Average download throughput speeds for LLU and non-LLU DSL services, May 2010



Source: SamKnows measurement data for ALL UK Panel members with a connection in May 2010

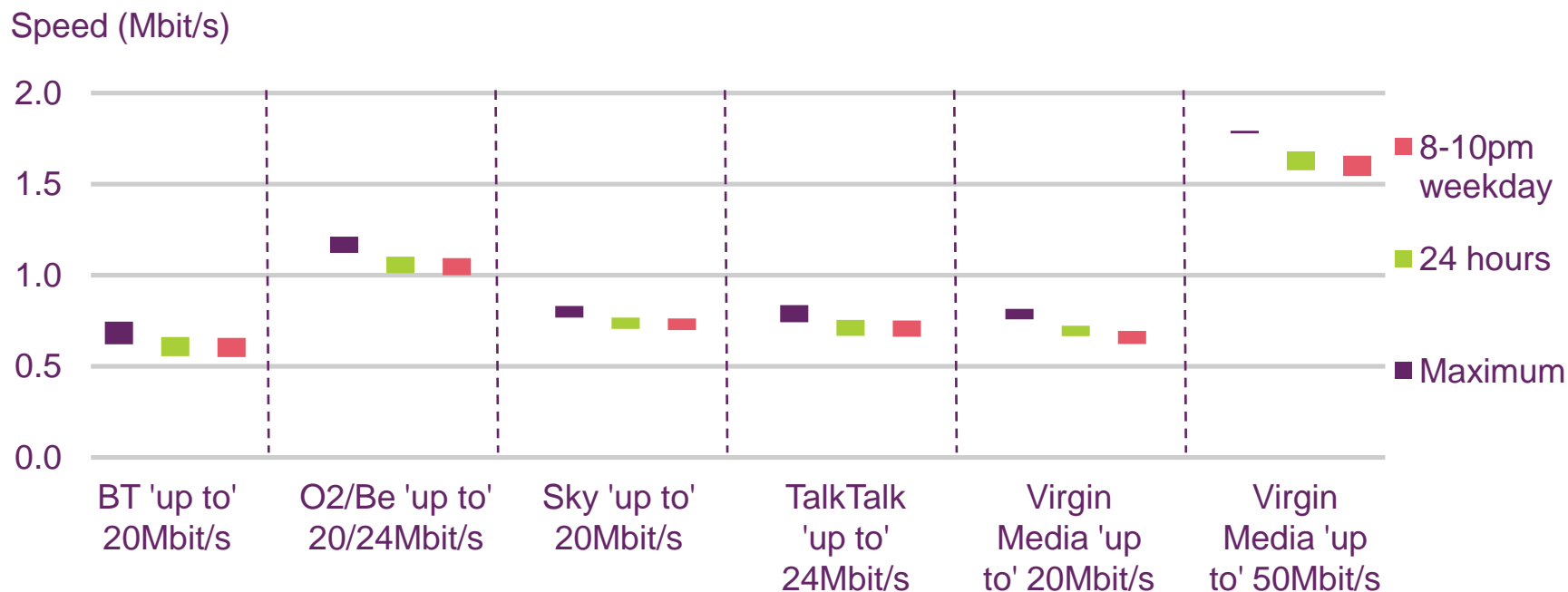
Notes: Data collected from single-thread download speed tests; the range shown represents a 95% confidence interval

## Maximum, average and peak time upload speeds for 'up to' 8 and 10Mbit/s ISP packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

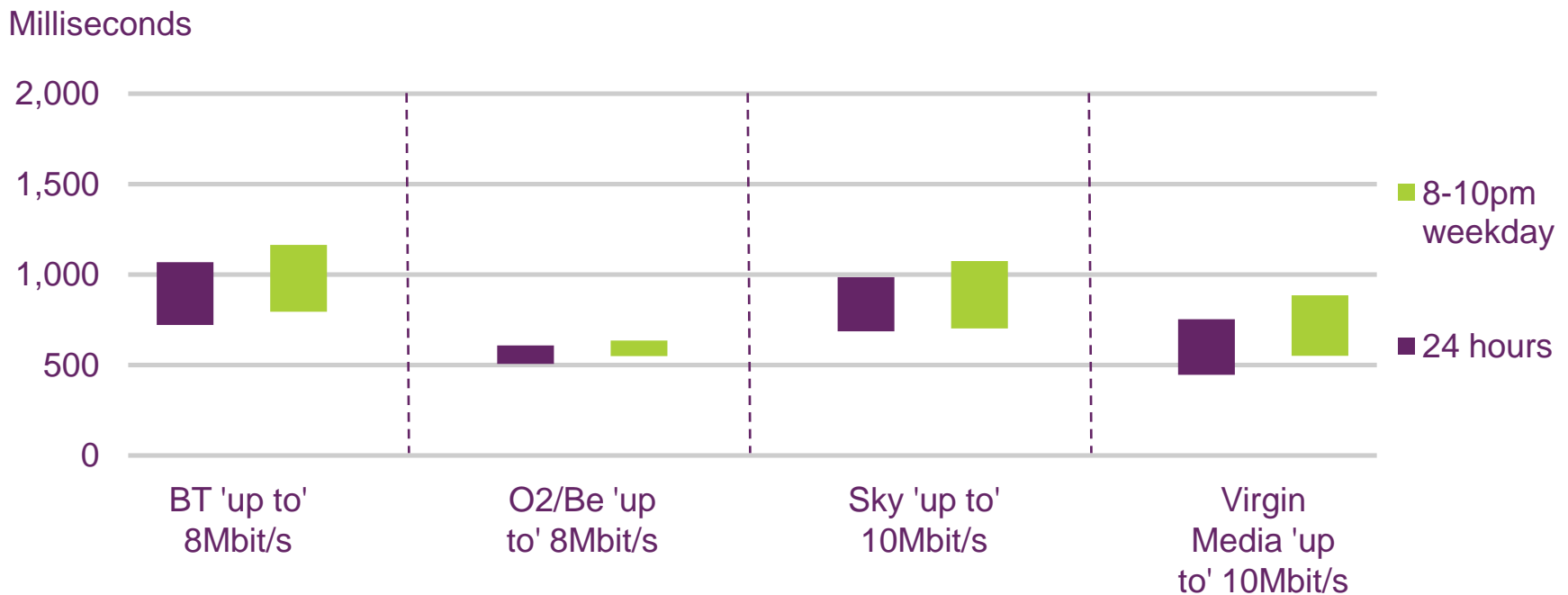
## Maximum, average and peak time upload speeds for 'up to' 20Mbit/s and above ISP packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

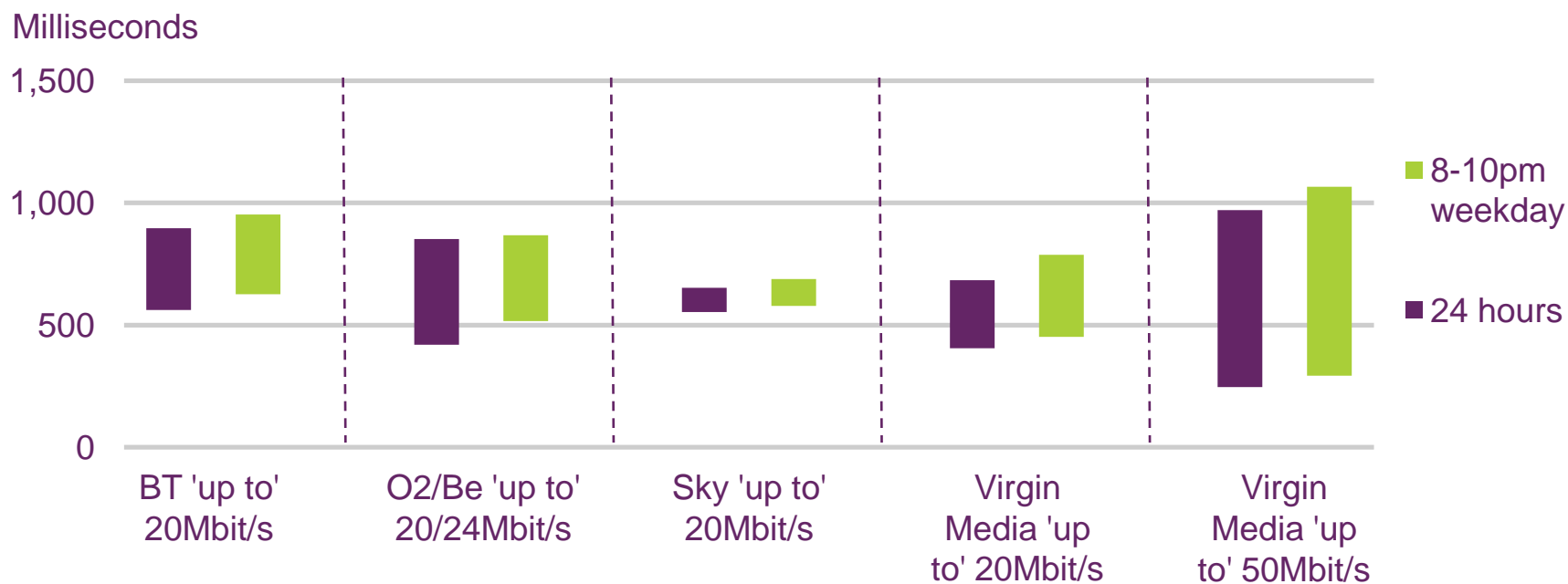
Notes: The range shown represents a 95% confidence interval

## Average and peak time to load web pages by ISP and package for 'up to' 8 and 10Mbit/s ISP packages, May 2010



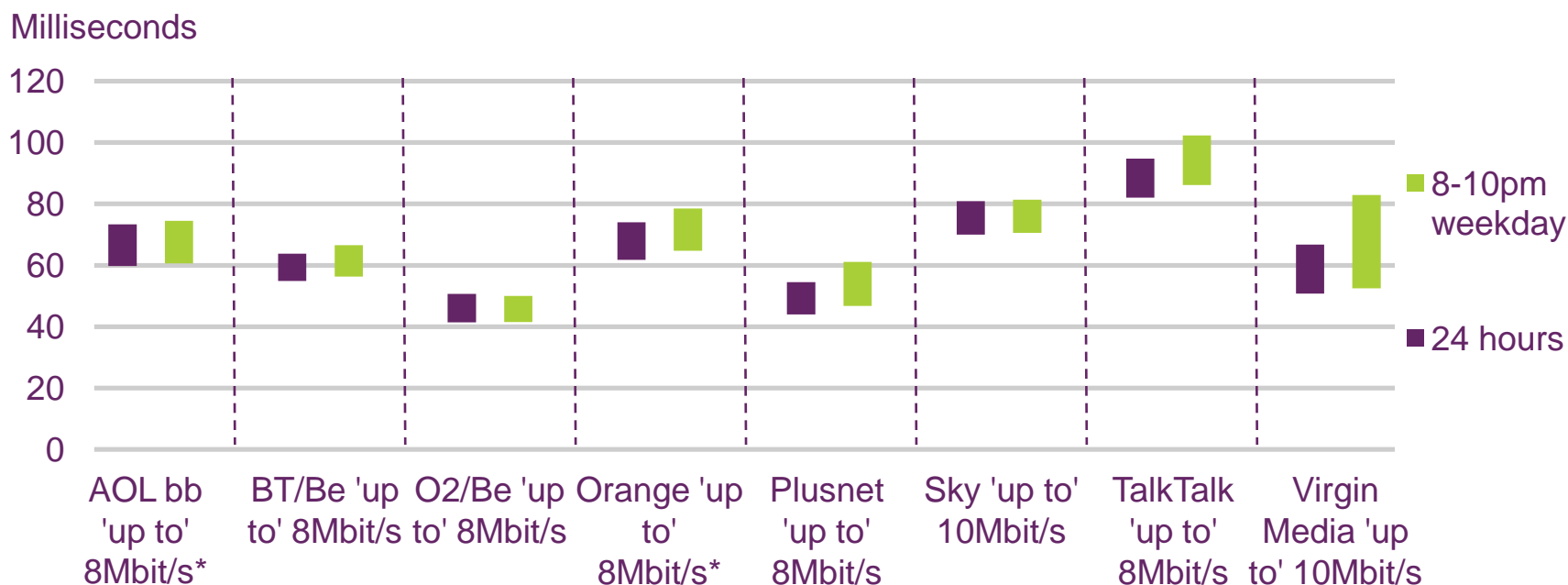
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; excludes ISP packages for which sufficiently robust data was not available

## Average and peak time to load web pages by ISP and package for 'up to' 20Mbit/s and above ISP packages, May 2010



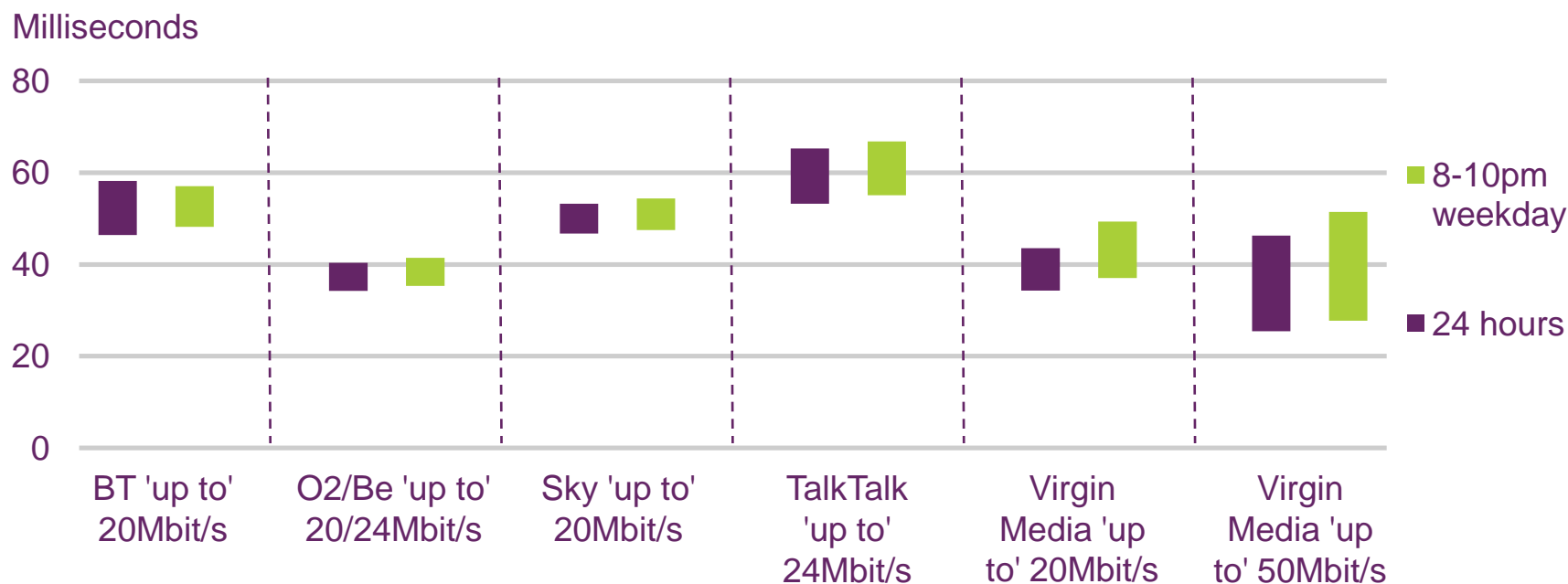
Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; excludes ISP packages for which sufficiently robust data was not available

## Latency by ISP and package for 'up to' 8 and 10Mbit/s ISP packages at average and peak times, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Latency by ISP and package for 'up to' 20Mbit/s and above ISP packages at average and peak times, May 2010

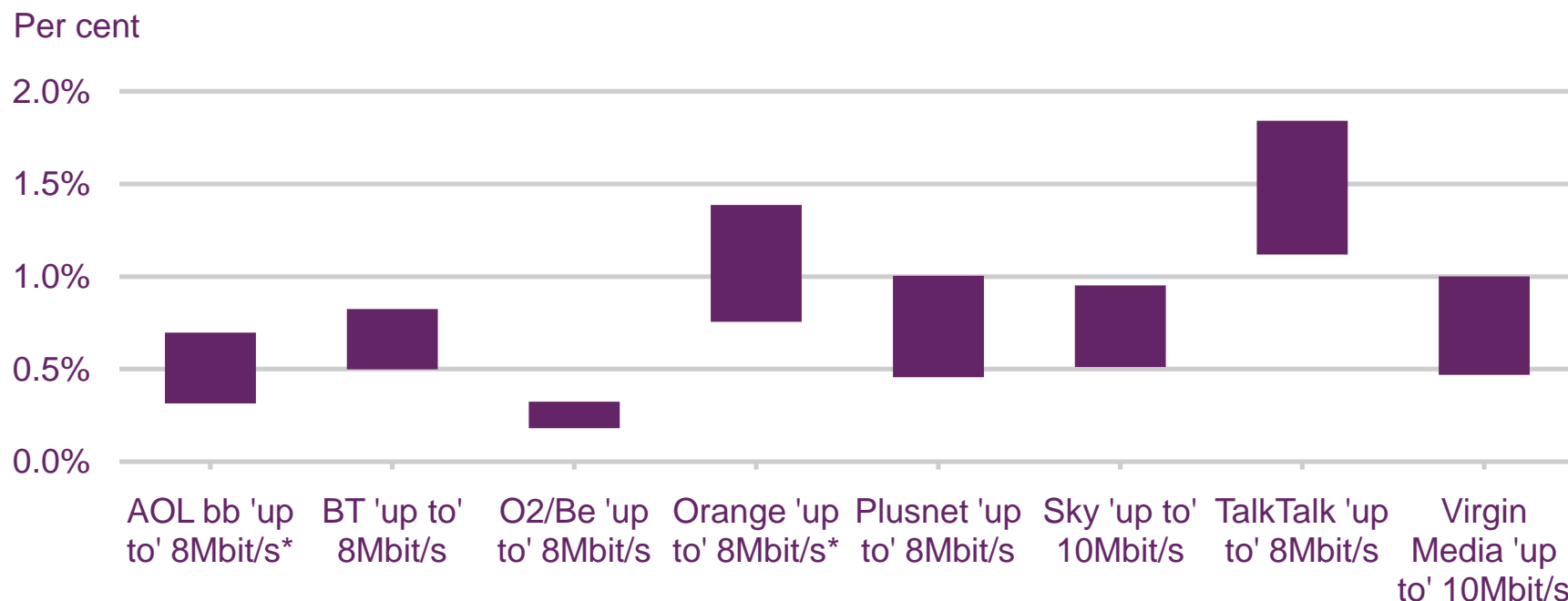


Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: The range shown represents a 95% confidence interval



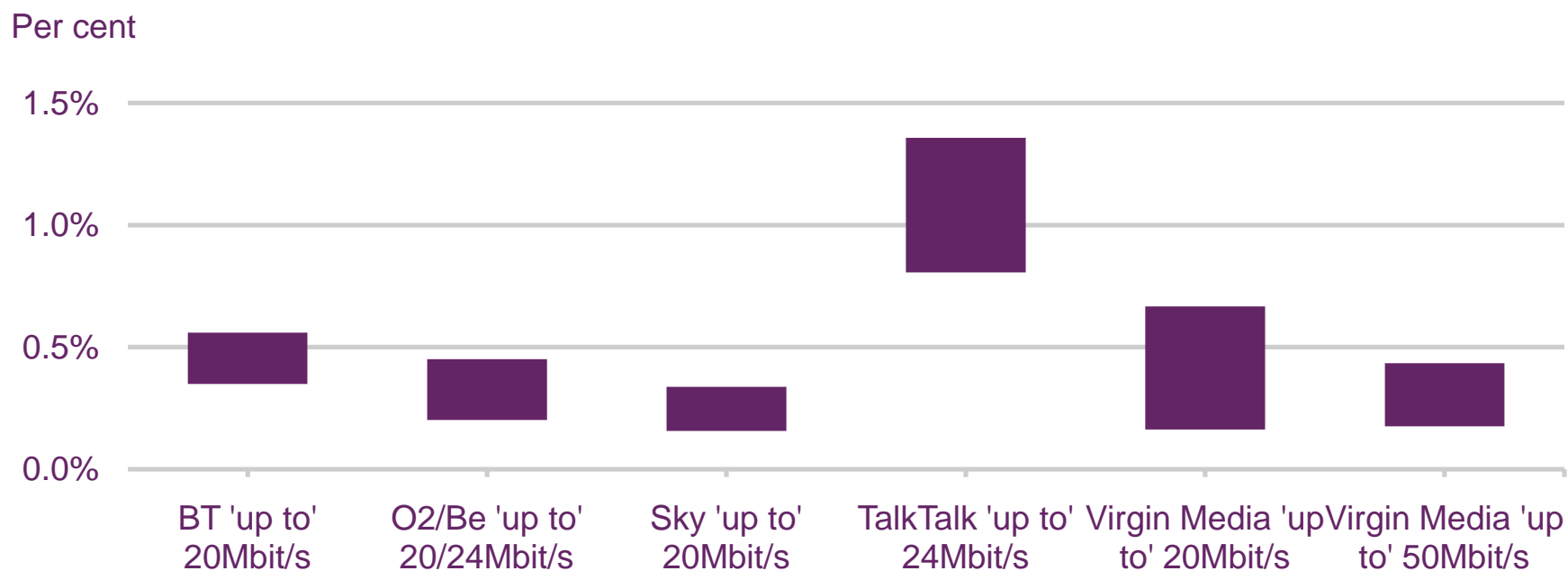
## Average packet loss by ISP and package for 'up to' 8 and 10Mbit/s connections, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

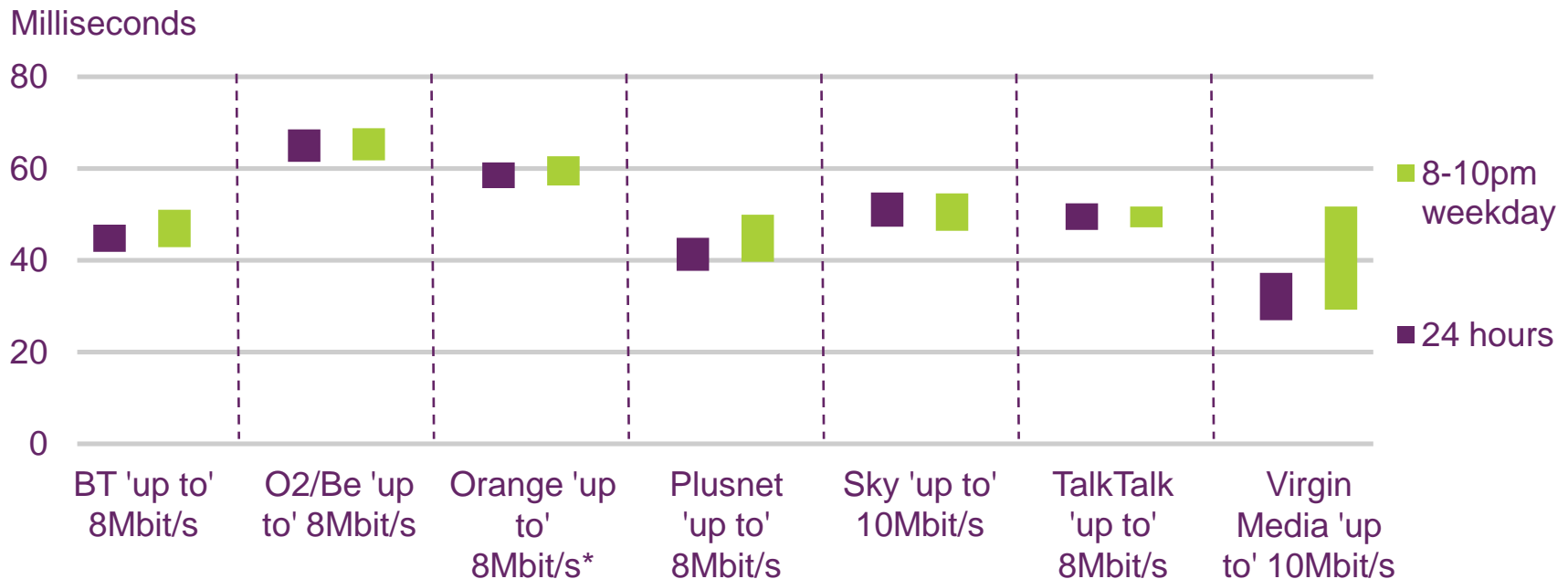
## Average packet loss by ISP and package for 'up to' 20Mbit/s and above connections, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

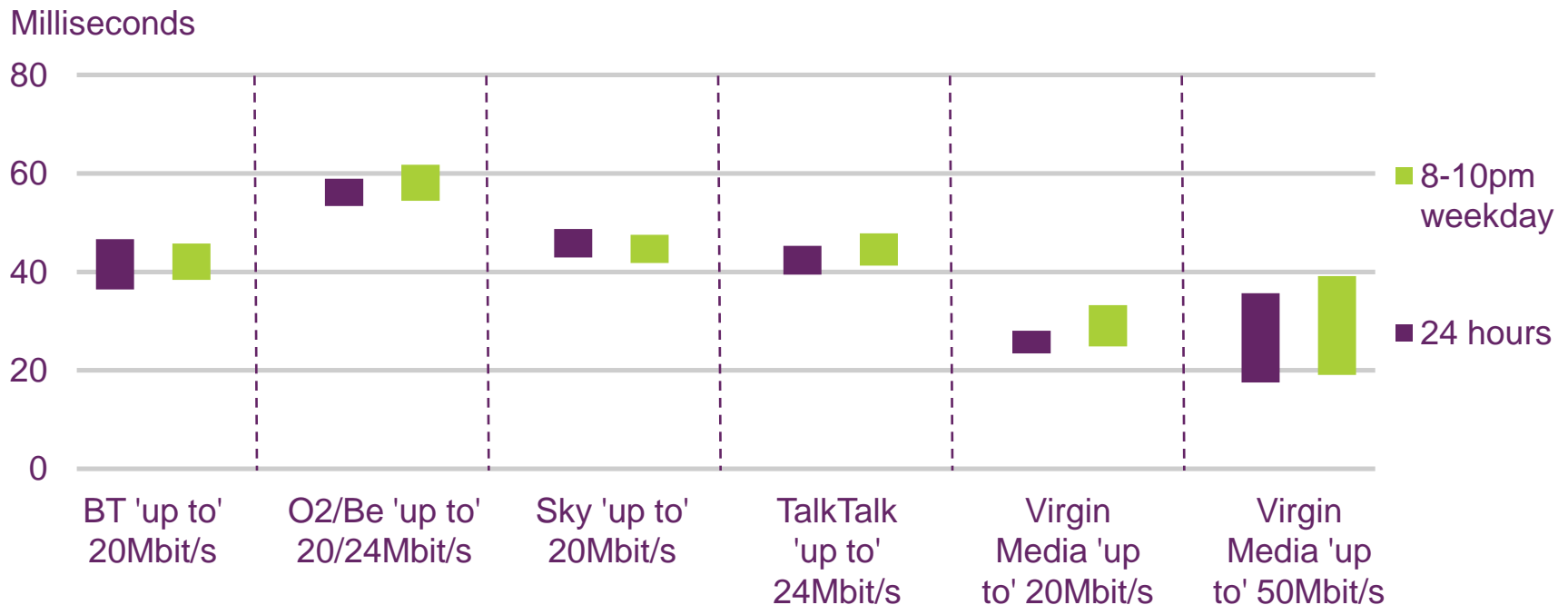
Notes: The range shown represents a 95% confidence interval

## Average and peak time DNS resolution time by ISP and package for 'up to' 8 and 10Mbit/s packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; excludes ISP packages for which sufficiently robust data was not available; \*small sample size – treat results with caution

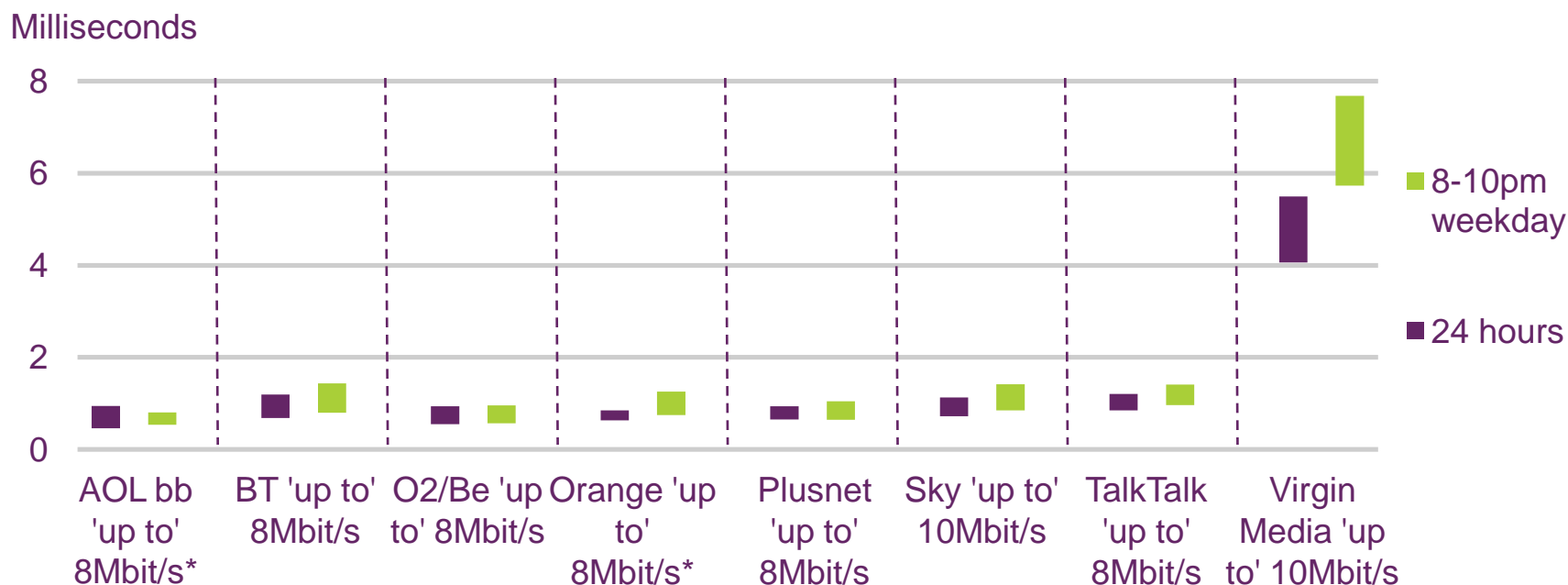
## Average and peak time DNS resolution time by ISP and package for 'up to' 20Mbit/s and above packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

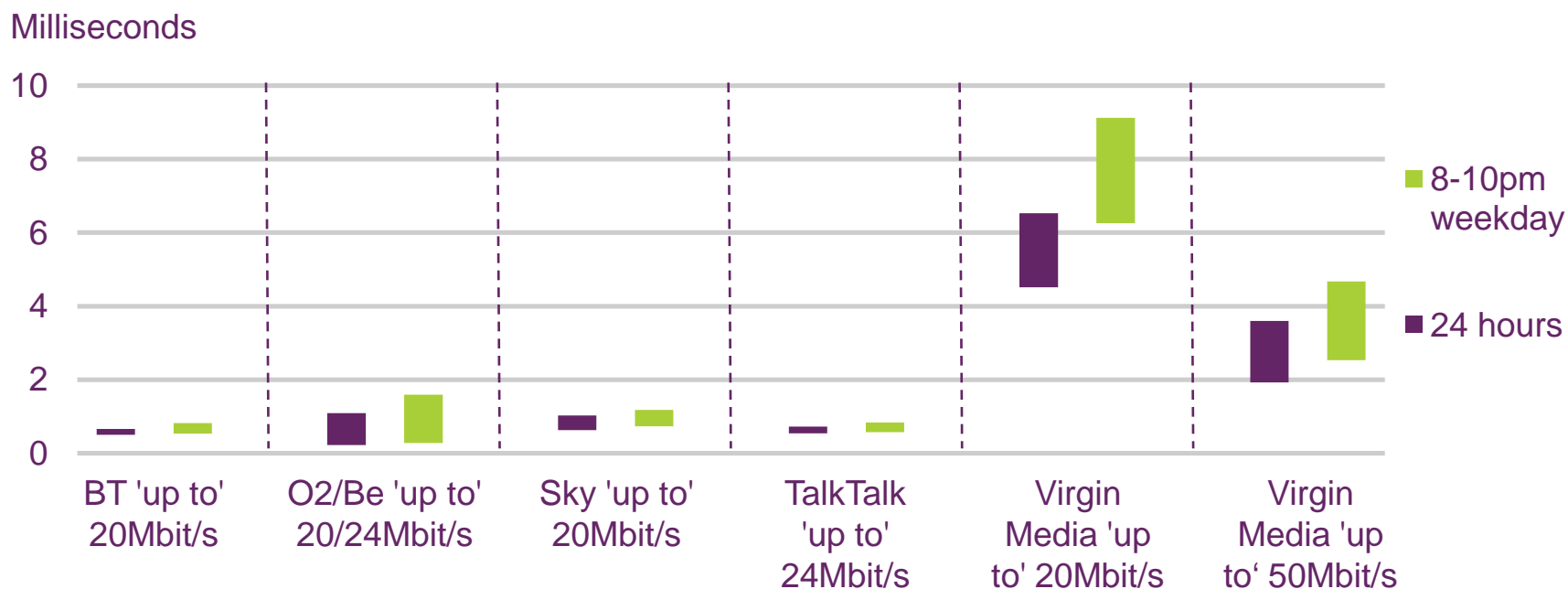
Notes: The range shown represents a 95% confidence interval

## Average and peak time jitter by ISP and package for 'up to' 8 and 10Mbit/s packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010  
 Notes: The range shown represents a 95% confidence interval; \*small sample size – treat results with caution

## Average and peak time jitter by ISP and package for 'up to' 20Mbit/s and above packages, May 2010



Source: SamKnows measurement data for ISP Package Panel members with a connection in May 2010

Notes: The range shown represents a 95% confidence interval