



## Digital Communications Infrastructure (DCI) Review

### Broadband Survey Report

#### Background

Community Partnership Executive North Dorset (CPEND) is concerned that current broadband connectivity poor in the local, substantially rural, area; this negatively effects economic performance and leads to progressive social exclusion of parts of the population unable to participate in the advantages of high speed data communications.

The “Digital Divide” between the urban areas and the more rural parts of the nation is forecast to increase as the concentration of customers in the urban areas can demand and support Digital Communication Investments whilst those in more rural areas are precluded from participation due to the relatively low population densities.

In July 2010 CPEND set up a working group, under the management of DT11 Forum Community Partnership (DT11), with a variety of talents to review the current situation and to look at future possibilities for participation in the roll out of Next Generation Access (NGA) otherwise known as High Speed Broadband.

Two different approaches were taken but with the object that they would together form a comprehensive cohesive overview.

1. An on the ground survey of user experiences This report is a commentary on the survey and subsequent analysis undertaken
2. A detailed desk research project by a consultant actively working in the field of rural broadband provision, both nationally and internationally. The project being specified and guided by the DT11 working group. This research is reported elsewhere as:

#### **Broadband Within the Sowing SEEDS area**

#### **Analysis of the broadband landscape & prospects for the future**

Adrian Wooster - April 2011

## Methodology

A questionnaire was generated as shown in Appendix 1, for completion on-line or by hard copy postal return. The existence of the survey was well publicised through community websites, local press and the distribution of flyers. The survey period was October through December 2010.

## Geographical Coverage

The geographical coverage was restricted to the "Sowing SEEDS" area to integrate with the detailed desk research being undertaken as referenced above. A map of the territory can be found later in this report. The target area has a population of circa 90,000 with an estimated 40,000 internet user locations.

## Responses

920 on-line responses were logged with a further 203 by hard copy returns.

Out of the above total returns 861 were considered useable of which 663 had a near complete data set.

Over 99% of responses stated, or it could be inferred, that they were connected to the internet by conventional land line.

Although the returns represent 2 to 3% of estimated user locations it has to be acknowledged that the responses will not necessarily be truly representative of all internet users or potential users. Inevitably there will be unquantifiable biases for factors such as "dissatisfied users complaint mechanism", "enthusiastic internet users more likely to respond", "absence of an easy mechanism for response from the non-broadband enabled" and no doubt many others.

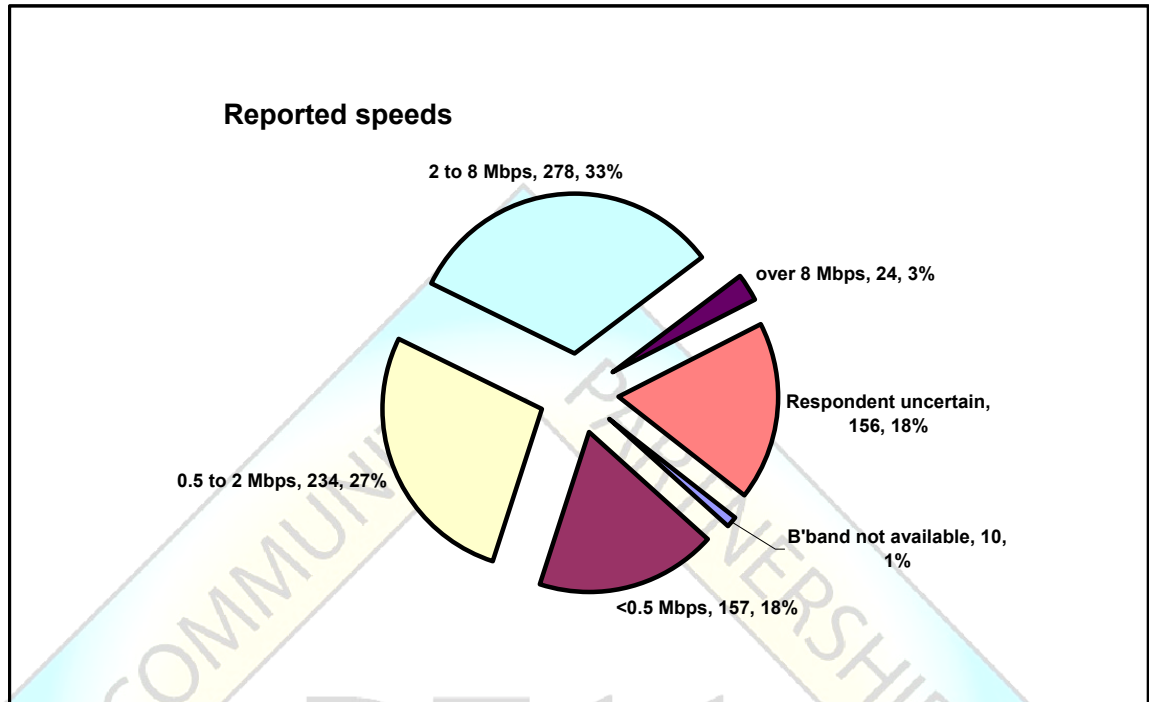
Whilst recognising the shortcomings the work carried out is considered a worthwhile broad picture, in essence a lot better than no information.

## Data analysis

Analysis of the data has been restricted to a fairly high level due to the comparatively low sample size, circa 600 to 800 effective respondents. The temptation to analyse small sub-sets has been resisted in order to avoid potentially flawed conclusions associated with small sample sizes.

Occasional missing data fields in the respondents returns account for the discrepancies when comparing total respondents for each characteristic studied.

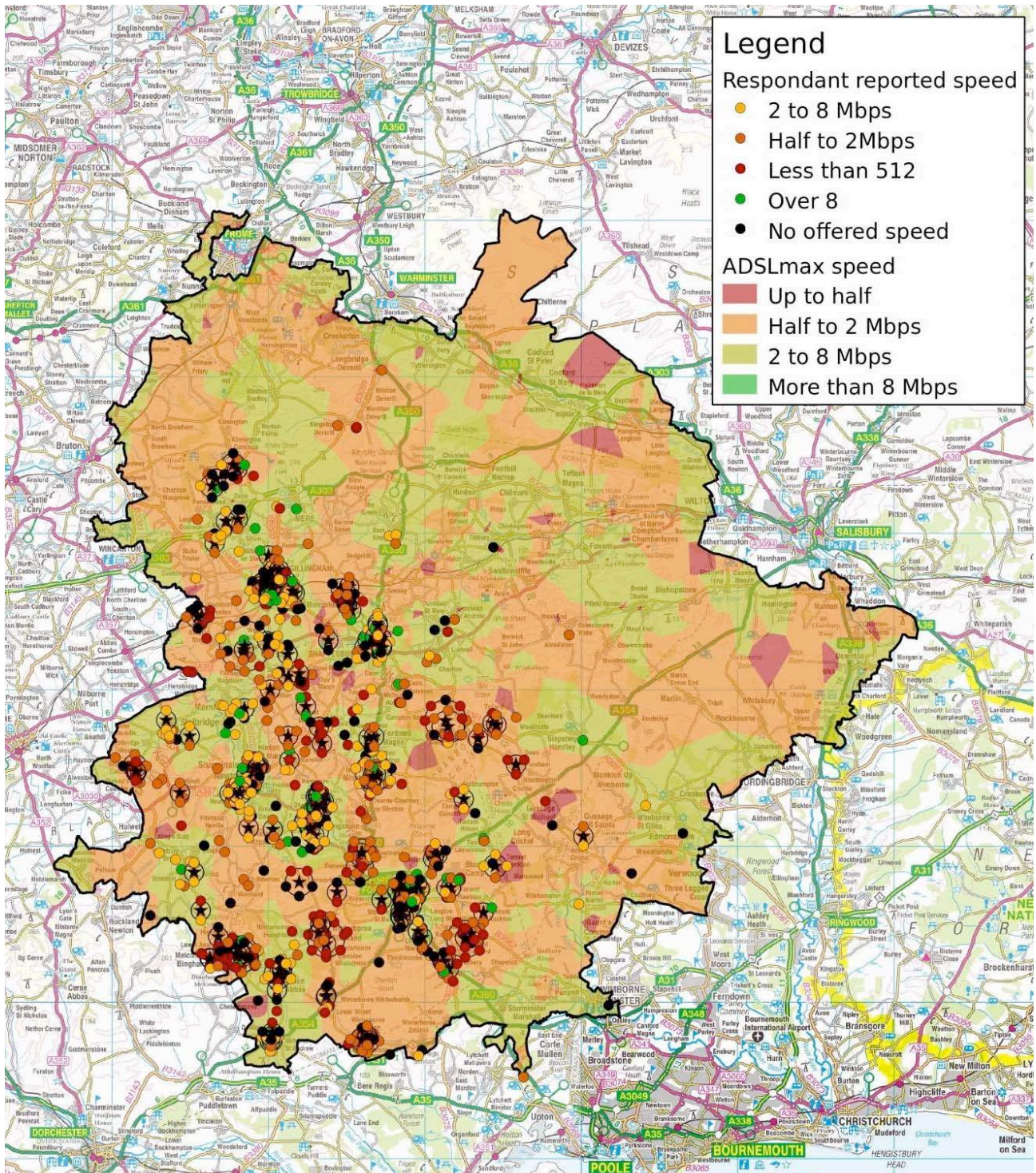
## Respondents reported speeds



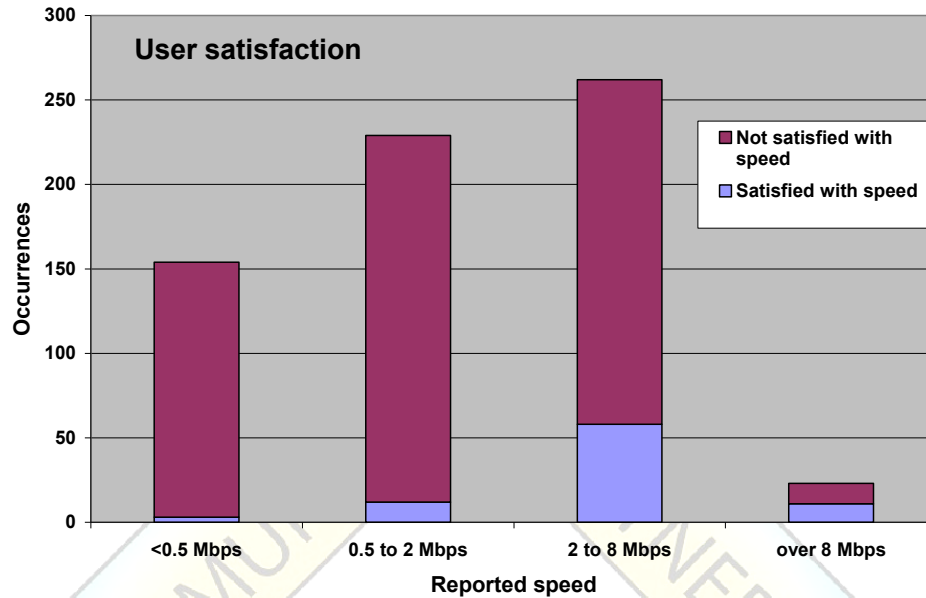
Respondents reporting of current broadband speeds can be unreliable and this factor is addressed in Appendix 2

## Mapping

Respondents reported speeds are plotted below against a background of the speeds projected by BT based on line capability



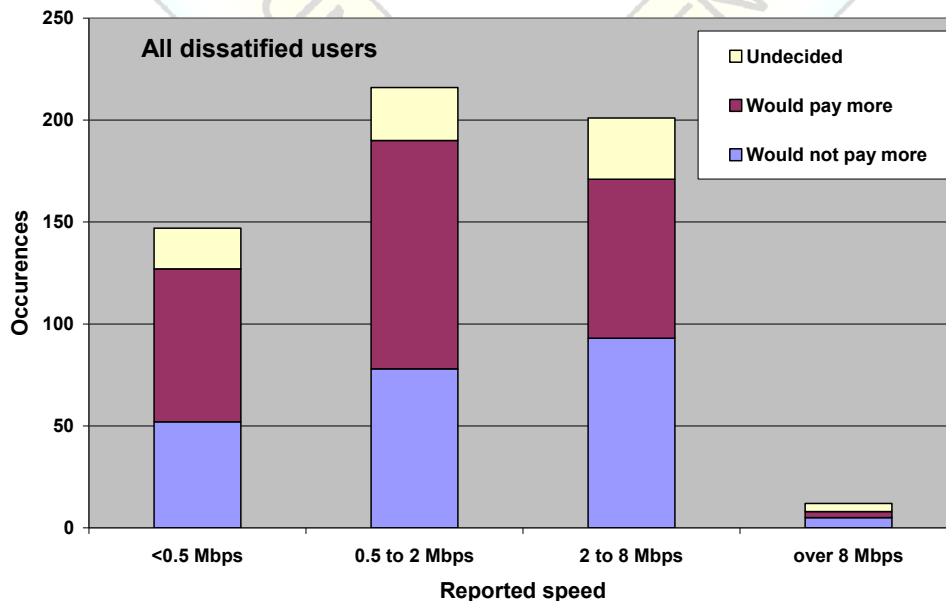
## User satisfaction



The above chart shows the degree of User Satisfaction for all respondents in answer to the question – “Are you happy with the current speed of your broadband? As can be seen the satisfaction levels are miserably low. This might be due to the inclination of the dissatisfied to dominate the returns, the respondents reflecting the service provided in the rural areas in comparison with their more urban contacts or just the sheer frustration of not being able to cope with more and more data heavy websites, communication systems (both domestic and business) or the entertainment downloads and interactive games.

## Willingness to pay for improved service

### All respondents



From the above chart it can be seen that dissatisfied users are not always willing or able to pay for a higher level of service provision. Anecdotally one can hear the opinions “BT should provide a better service at no increased cost” or “why should the rural community pay more for the same service as urban dwellers receive”

**Business respondents**

Respondents were asked to score the following two questions on a scale of 1 to 10 (10 being the highest possible affirmation)

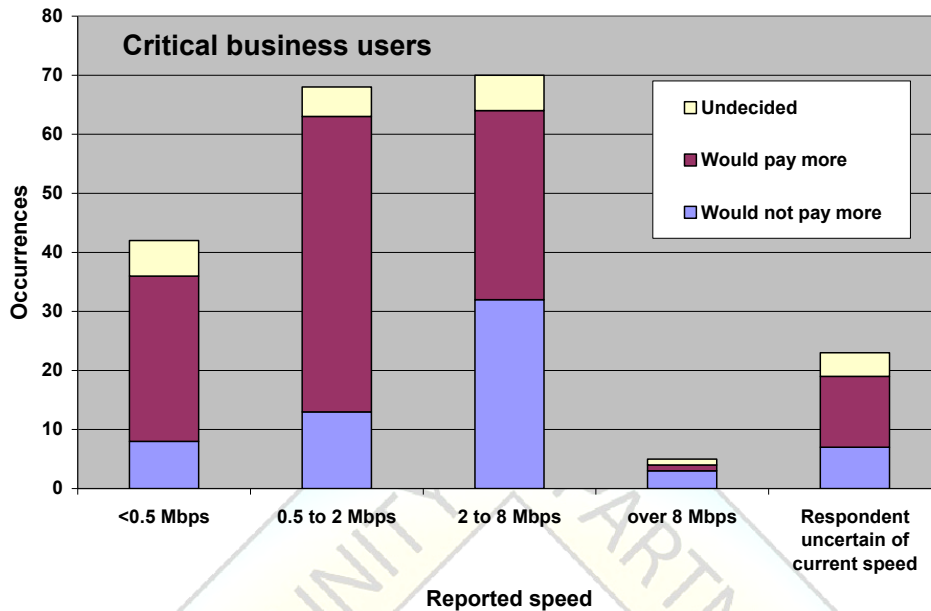
How important is good broadband access to your choice of business location?

How critical is broadband internet access to your business?

Responses scoring 8 or higher to both questions were then termed “critical business users”. Responses fitting this criteria were from the following economic group.

Agriculture,	19
Construction	7
Consumer Services	2
Education/Distance Learning	11
Hotels	5
Manufacturing	8
Marketing	6
Media	6
Other	40
Professional Services (eg, Financial, Accounting, Legal, IT Support, Recruitment, Consulting)	59
Public or Voluntary Sector	20
Restaurants	2
Retailing/Wholesaling	15
Transport/Distribution/Storage	8
Utilities	1
	209

This data is taken from all respondents expressing an opinions on the business they are involved with, not solely responses from business proprietors.



### Internet service providers (ISP)

The survey returns identified 59 ISP's being contracted by 651 users; those providers having more than 20 users (a total of 539 users) within the survey data are detailed below with satisfaction levels provided by respondents. "Don't knows" have been ignored thereby those not reporting "satisfied" can be considered as "dissatisfied"

ISP	Users	Satisfied with speed	Satisfied with connection
BT	266	11%	44%
Talk Talk	113	25%	40%
Orange	40	5%	35%
Plusnet	35	11%	51%
AOL	32	3%	41%
Sky	27	0%	15%
Virgin	26	19%	42%

It has to be recognised that the degree of satisfaction reported might well be a reflection of experience versus the service apparently offered rather than benchmarking against an absolute performance standard.

"Satisfied with connection" is interpreted as the time from selecting "Internet" from the computer menu to achieving access to a search engine; this might well be a measure of the computer system and software rather than ISP functionality or land line performance.

Based on this survey BT (Plusnet is owned by BT) has a 46% share of the ISP market.

Available broadband speed is largely determined by distance from the telephone exchange and user's satisfaction rating is likely to vary accordingly.

## Observations

In common with nearly all surveys, following the analysis of the results, it is evident that the questionnaire could have been improved but adding detail and tightly controlled specifics can deter potential respondents.

Although the number of responses fell short of the initial target of 2000 industry sources suggest that this survey is the most comprehensive conducted in the UK to date.

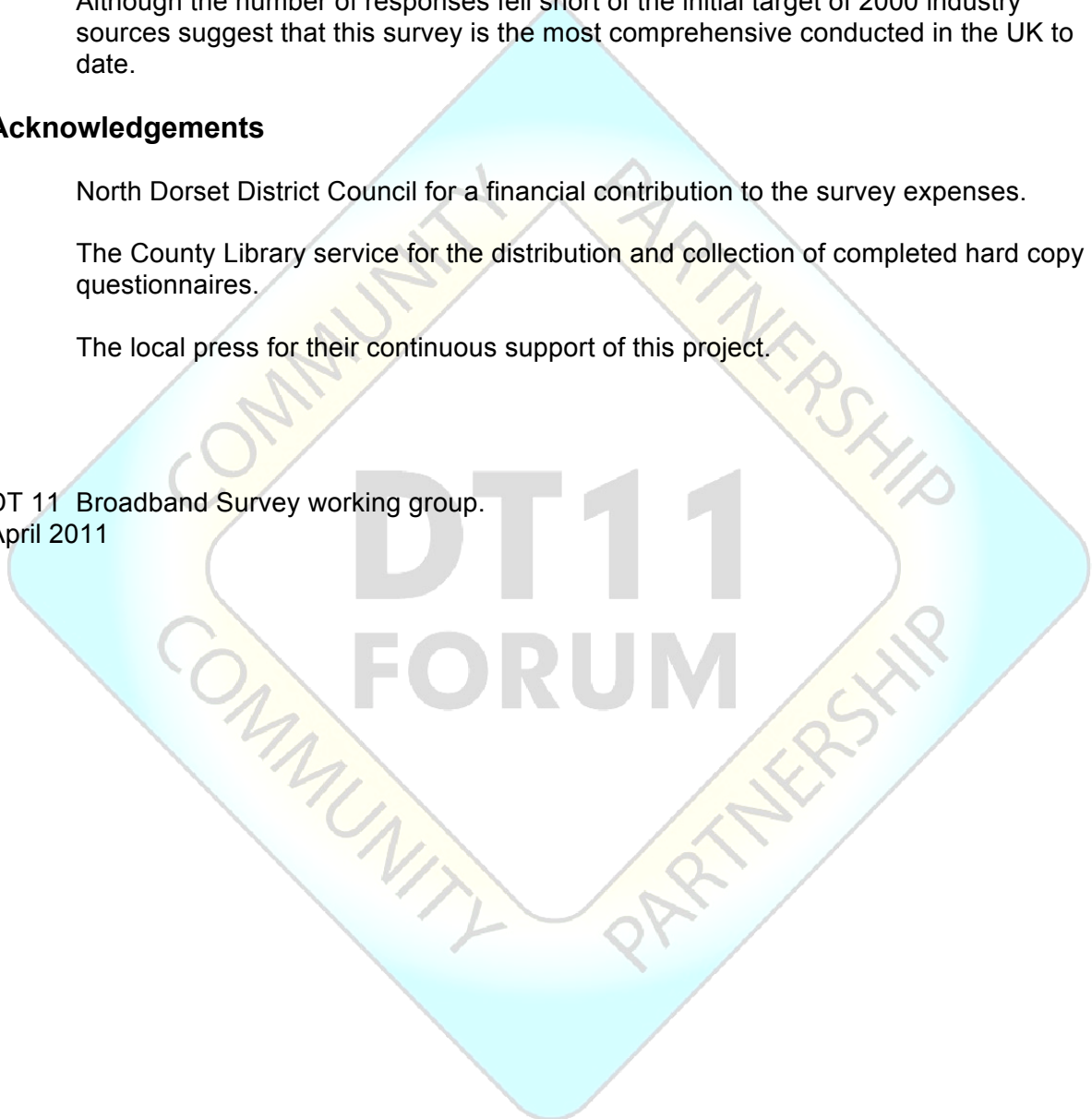
## Acknowledgements

North Dorset District Council for a financial contribution to the survey expenses.

The County Library service for the distribution and collection of completed hard copy questionnaires.

The local press for their continuous support of this project.

DT 11 Broadband Survey working group.  
April 2011



# Appendix 1

## CPEND BROADBAND SURVEY

Date:

The purpose of this survey is to gather information on current broadband usage in the CPEND area, covering North Dorset primarily. The results will be used to investigate options on improving broadband in the area. It should only take 10 minutes to complete. All information provided will be treated in the strictest confidence.

Please provide a postcode so we can map interest and current broadband status to an area.

Name (Last, First):		<input type="checkbox"/> M <input type="checkbox"/> F	POSTCODE:
Telephone number:		Email Address:	
Do you currently have broadband?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
If yes, is your current speed over 2mb?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
If yes, is your current speed over 8mb?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
		To test your speed, go to the following link: <a href="http://www.broadbandspeedchecker.co.uk">www.broadbandspeedchecker.co.uk</a>	
Who is your current broadband supplier?			
Are you happy with the current speed of your broadband?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
Are you happy with the quality of your connection?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
If you don't currently have broadband, why not? (Please tick all that apply)		<input type="checkbox"/> Not available (rural/isolated area) <input type="checkbox"/> Too expensive <input type="checkbox"/> Can't see the benefit <input type="checkbox"/> Don't like choice of service providers <input type="checkbox"/> Other – please give details:	
How is your broadband delivered currently into your home/office? (Please pick one from the list)		<input type="checkbox"/> Not available (urban/industrial area) <input type="checkbox"/> Don't know enough about it <input type="checkbox"/> Lack technical expertise <input type="checkbox"/> N/A or Don't know	
		<input type="checkbox"/> ADSL/Telephone Line <input type="checkbox"/> Satellite <input type="checkbox"/> Mobile / 3G <input type="checkbox"/> Dial-up <input type="checkbox"/> Other – please give details:	
Would you be willing to pay more for a better, faster connection?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	
What do you currently use your broadband connection for? (Please tick all that apply)		<input type="checkbox"/> Browsing <input type="checkbox"/> Business Use <input type="checkbox"/> YouTube / Video Downloads <input type="checkbox"/> Skype / Other Voice over <input type="checkbox"/> Music <input type="checkbox"/> Webcam / Video Conferencing <input type="checkbox"/> Remote Working	
		<input type="checkbox"/> Email <input type="checkbox"/> Shopping <input type="checkbox"/> Website <input type="checkbox"/> iPlayer / Catch-up TV <input type="checkbox"/> Internet <input type="checkbox"/> Instant Messaging <input type="checkbox"/> Video <input type="checkbox"/> VPN <input type="checkbox"/> Other – please give details:	
If you use Broadband for business / remote working - How many people use broadband?		<input type="checkbox"/> 1-10 Employees / people <input type="checkbox"/> 11-20 Employees <input type="checkbox"/> 21-50 Employees <input type="checkbox"/> 51-100 Employees <input type="checkbox"/> 101+ Employees <input type="checkbox"/> Not Applicable	
What is the name of your business/organisation or the business/organisation you work for? (This is optional but would be helpful)			
What is your principle business / home activity?		<input type="checkbox"/> Agriculture <input type="checkbox"/> Fishing <input type="checkbox"/> Utilities <input type="checkbox"/> Construction <input type="checkbox"/> Hotels <input type="checkbox"/> Transportation / Distribution <input type="checkbox"/> Marketing <input type="checkbox"/> Professional Services (eg Financial, Accounting, Legal, IT Support, Recruitment, Consulting) <input type="checkbox"/> Tourism <input type="checkbox"/> Public or Voluntary Sector <input type="checkbox"/> Not Applicable <input type="checkbox"/> Other – please give details:	
		<input type="checkbox"/> Forestry <input type="checkbox"/> Mining <input type="checkbox"/> Manufacturing <input type="checkbox"/> Retailing / Wholesaling <input type="checkbox"/> Restaurants <input type="checkbox"/> Storage <input type="checkbox"/> Media <input type="checkbox"/> Consumer Services <input type="checkbox"/> Education / Distance Learning	

<p><b>How critical is broadband internet access to your business / remote working?</b> (on a scale of 1 to 10 where 10 is most critical)</p>	<p>Least critical</p>	<p>1   2   3   4   5   6   7   8   9   10</p> <p><input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/></p>	<p>Most</p>
<p><b>How important is good broadband access to your choice of business location?</b> (on a scale of 1 to 10 where 10 is most critical)</p>	<p>Least critical</p>	<p>1   2   3   4   5   6   7   8   9   10</p> <p><input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/>   <input type="radio"/></p>	<p>Most</p>
<p><b>General comments</b></p>			

Thank you for completing this survey – your information will be treated in the strictest confidence and used to improve broadband in your area.



## Appendix 2

### Speed analysis

The following is reproduced from the separate detailed desk research report which comments on the survey and brings together the two aspects of the CPEND project.

#### Broadband within the Sowing SEEDS area

#### Analysis of the broadband landscape & prospects for the future

Adrian Wooster - April 2011

The survey asked respondents to classify their own internet connection speeds within four bands:

- Less than 512kbps
- Between 512 kbps and 2 Mbps
- Between 2 Mbps and 8 Mbps
- Above 8 Mbps

These bands were compared to the reported postcode average speed from the Samknows (a proprietary data base) information obtained from BT, resulting in the table below. The first column counts survey responses where the average broadband speed for the postcode is likely to be lower than reported by the survey; and the third column highlights responses where the average speed reported by BT is higher than the responses to the survey. At first glance, this suggests that respondents are recording lower speeds than BT indicates is possible. In rural areas, where postcodes can cover large areas individual customer speeds can vary significantly, especially in the most sparsely populated rural areas.

Reported speeds	BT Postcode average speed		
	Lower than reported	Match reported band	Exceed reported band
Under 512 kbps		0	163
512 kbps to 2 Mbps	1	134	112
2 Mbps to 8 Mbps	28	260	0
Above 8 Mbps	30	0	

To check this, telephone line checks were carried out on responses that reported less than 512 kbps. Within this sub-sample, the broadband speed reported by BT Wholesale averaged about 90% of the Samknows postcode mean, with just 20% of this group actually likely to experience speeds below 512kbps.

Typically achievable speeds for this group is between 2.5 and 2.8 Mbps, with four respondents expected to receive 14 Mbps or greater from the end of March when ADSL2 technology is installed in some areas.

This further supports the initial view that respondents are perhaps overly pessimistic about their achievable broadband speeds. This disconnect needs to be understood before intervention to improve broadband can realistically begin. Experience from other surveys has generally shown that results from

line checks are realistic and can be achieved. There are, however, a number of reasons why people may report slower speeds than has been predicted.

- Network issues beyond the telephone exchange caused by congestion or under-provisioning in the internet operator's network.
- Internal telephone wiring problems within the customers' buildings. This certainly becomes a major factor as broadband speeds rise and can be a significant factor for ADSL2+ and VDSL areas, both of which are currently being deployed in the UK and are available in some parts of the Sowing SEEDS area.
- Customer perception of broadband speeds may be flawed. There is a body of evidence that suggests that broadband customers often misunderstand what Internet packages they have bought and the limitations they may carry. This is perhaps not surprising since the widely advertised "up to" speeds are rarely achieved.

This suggests that the local loop – the OpenReach wiring – is not likely to be the source of the problem, and that any issue may either lie at the customer's location or in the individual ISP's networks.

Many service providers structure their networks to "shape" customers internet use; this is done for a number of motives including to generate profits and create service differentiation. In some cases this shaping may degrade the applications customers may want to use, for example large file transfers, VPNs (virtual private networks), and voice services such as Skype.

To fully understand this requires more detailed analysis at the respondent locations which is beyond the scope of this project. However, links to various speed checkers has been provided earlier in the ADSL broadband section.

Finally, until BT installs ADSL2 in parts of the project area at the end of March there are very few possibilities within the project area for securing a broadband connection above 8Mbps; private leased lines or satellite the main possibilities. None of the group reporting more than 8 Mbps suggested they are using anything other than ADSL, implying that they may be reporting the headline "up to" speed rather than the actual speed they are receiving.