Commute replacement and commute displacement: the rise of part-day homeworking

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Abstract
Teleworking is a topic which has been the subject of research attention in transport studies for many years. Particular consideration has been given to occasional homeworking by (full-time, paid) employees on the basis that this can represent a very tangible removal of commute trips on homeworking days. However, there has been very little recognition of or attention given to the fact that homeworking may not only be undertaken for part of a week but may be undertaken for parts of given days. This paper focuses particularly upon part-day homeworking. It defines and uses the term "varied spatio-temporal (VST) working" to describe working days where at least 30 minutes of continuous working takes place at home accompanied by work taking place at the workplace. Notably, such homeworking does not remove the commute trips but can temporally displace one or both of them. The research reported in the paper builds upon preceding survey work which had established that the number of people VST working and the number of VST days worked appear to be about double that for full-day homeworking (which has typically been the focus of research attention). The results in this paper are based on 25 in-depth interviews with individuals who practice VST working. The paper's aim is to more closely examine and understand the nature of VST working, the motivations and constraints for it being practiced and to consider its potential contribution as a transportation demand management measure.

INTRODUCTION

The "daily commute" appears to endure as a notable feature of modern lifestyles (1) and as a significant contributor to urban congestion in countries around the world. While the number of people in employment in the UK has been increasing, the average number of (one-way) commute journeys made per worker per year has *decreased* from 374 in 1989/91 to 321 in 2002/03 (2). This reduction in commuting, it has been suggested, could be attributed in part to more people teleworking (3). Interest in the phenomenon of teleworking or telecommuting has been longstanding (4) concerning its implications for travel (5, 6, 7, 8, 9), vehicle miles travelled (10, 11, 12) and emissions reduction (6, 9, 13) as well as for work-life balance (9, 13, 14).

Teleworking embraces a myriad of different interpretations and accompanying terms (15). However, a commonly considered form of teleworking in transport studies, because of its (potentially growing) significance for commute traffic reduction, is homeworking by employees who have a conventional "workplace" which requires a commute from home but who work from home for one or more days per week (thus foregoing the commute on such days). This occasional homeworking tends to be practiced at an average frequency of less than two days per week (16). In the UK, the Labour Force Survey (LFS) has been gathering data on teleworking annually since 1997. This has included asking individuals to report if they worked at least one full day at home in the reference week of the survey. Such "occasional teleworkers" (who do not mainly work from home) are said to have numbered around 1 million people in 2005 (17) compared to a total of some 28 million people in employment. Earlier figures (18) suggest they numbered 357 thousand in 1999 and 513 thousand in 2001. Occasional teleworkers (as at 2001) are predominantly employees (82%) (as distinct from self-employed) and most are in full-time paid employment (90%) (19).

The literature on such occasional homeworking has largely treated each working day in a binary fashion: a day where homeworking is practiced or one on which it is not. This treatment can be further characterised as there either being *full-day* homeworking (where the primary travel impact is the *removal* of the commute) or a day that includes *no* homeworking (and thus one where the commute is not removed).

In this paper we focus upon a form of homeworking, related to employees with a conventional workplace, which has received very little attention in the international literature to date – namely *part-day* homeworking. Our motivation for doing so has been a suspicion that, with a possible growing flexibility of working in the information age, consideration of only full-day homeworking may not be capturing the full extent of the impacts of homeworking on transportation demand and patterns of traffic (flow). We suggest that, on a given day, some people are combining working at home with working at the workplace such that, rather than the commute trip being *replaced* with homeworking, the commute trip may be *displaced* in time.

While temporal displacement of commuters may be less desirable than removal of commute trips, the effect could still be positive and important. Recent figures for the UK confirm that overall weekday travel still has two distinct peak periods in the morning and afternoon (see Figure 1) attributable to commute and school traffic (2). The notion of peak spreading through commute displacement can be seen as desirable in terms of making better use of temporal road network capacity, such that less delay to travellers is experienced than would otherwise be the case in more pronounced peak periods. Similar policy interest has been shown in the potential to stagger school start and finish times in order to ease the burden of traffic in the peak periods (20).

The paper presents findings from 25 in-depth interviews of individuals in full-time paid employment who practice occasional part-day homeworking. The next section introduces and defines part-day homeworking, summarises earlier quantitative research

undertaken by the authors and clarifies the need for this qualitative research. The study methodology is then outlined before turning to and examining the results. A concluding discussion reflects upon the significance of part-day homeworking to the overall ongoing study of teleworking and in terms of the place of teleworking as a transportation demand management measure.

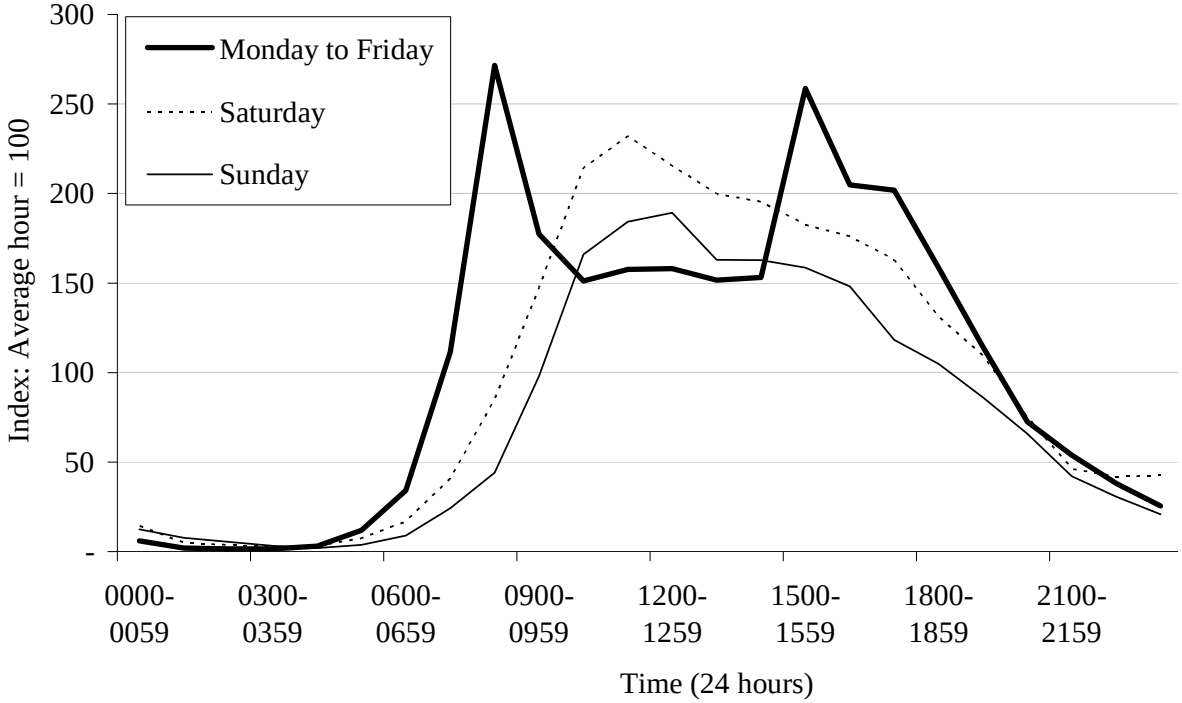

FIGURE 1 Patterns in daily travel in Great Britain – all trips: 1998/2003 (2)

PART-DAY HOMEWORKING

We have previously (21) put forward a definition of part-day homeworking which we call *varied spatio-temporal working* (VST working): *at least 30 minutes of continuous work takes place at home and in the usual workplace in any given day*. In turn VST working can take a number of forms, including:

- *H-W* (the individual does 30 minutes or more work at home (H) and then travels to and works at the workplace (W));
- *W-H* (the individual works in the workplace and then travels home where a further 30 minutes or more of work takes place); and
- *H-W-H* (the individual does 30 minutes or more of work at home, then travels to and works at the workplace, before then travelling home where a further 30 minutes or more of work takes places).

A national survey of 1014 members of the UK labour force (those who are Internet users) in full-time paid employment revealed the following (21):

- the proportion of full-time employees who VST work is more than double that for full-day homeworking (14% compared to 6%) and the number of days of VST working is also more than twice that for full-day homeworking;
- blue collar workers practice more VST working than full-day homeworking;
- women are more likely to VST work compared to men while the reverse is true for full-day homeworking;

- working pattern W-H seems by far the most common form of VST working with Monday being the most popular day of the week for VST working;
- VST working is associated with shorter commutes than for full-day homeworking; and
- there is evidence of some displacement of the commute when VST working takes place.

This survey and its findings have prompted a number of issues to be addressed which form a starting point for this paper.

Firstly, the survey resulted in a substantial number of days being recorded as "other" (i.e. neither VST working, full-day homework or full day in the workplace). Closer examination of response data suggested that an important additional form of VST working to H-W, W-H and H-W-H may exist. Confirmed and developed by examination in the depth interviews (see later), we have termed this *business varied spatio-temporal working* (BVST working): *a working day in which at least 30 minutes of continuous work is undertaken at home as well as work being undertaken at business location(s) which may not include the usual "workplace"* (such as offsite visits, external meetings etc).

Secondly, an important question arose in our minds: was VST working simply *overworking*? In other words it may be that people are working at home at the beginning of the day and/or the end of the day which extends their working day rather than displacing work in time and space. If this is the case then it may in turn bring into question whether the derived commuting travel itself is being displaced on a VST working day compared to a full day at the workplace.

Further issues include being able to better understand why VST working appears much more commonplace than full-day homeworking, why W-H is the most common form of VST working and what attitudinal issues may be important to the practice of (B)VST working.

METHODOLOGY

To begin to better understand the nature of, rationale for and attitudes towards (B)VST working it was necessary to adopt an in-depth exploratory approach. In particular the aim was to conduct a series of face-to-face interviews with individuals who practice (occasional) (B)VST working. Agreement with a major local authority in the UK (Hampshire County Council (HCC) with a pool of 36,000+ employees was secured. This facilitated access to potential participants from across its workforce and thus across a range of different job types and working environments.

HCC is based in Winchester, which is an old Cathedral city located in the county of Hampshire, in the South East of the England, with a population of around 40,000. Within the organisation, recent redevelopments have meant that many parking spaces have been lost at the main "workplace" offices in Winchester. HCC has a policy to enable/encourage homeworking in order, as a major public sector employer, to lead by example in seeking to reduce urban congestion, environmental impacts and be able to respond to constrained parking provision.

It must be acknowledged that the focus on a single employer in a specific geographic location has a likelihood of rendering the findings somewhat context specific. Nevertheless, the aim of the research was to deepen understanding of a hitherto little examined working practice and some logistical advantages in conducting the research prevailed because of the specific context. Indeed it could also be suggested that with a common employer it was easier to synthesise and interpret the qualitative data across the interviews.

Initially there was a need to screen for specific types of workers. A screening questionnaire was developed and uploaded on the organisation's Intranet. Respondents were encouraged, with open text, to say how much homeworking they had done in the past month; noting both whole days at home and days where work took place in the home and workplace. A small incentive to respond was offered. In total 127 responses were received of which 25 individuals were selected and agreed to be interviewed. Selection was based upon ensuring experience of VST working, achieving a gender balance, and a range of commute distances. A £20 gift voucher incentive was offered to participate. Thirteen interviewees were male, and twelve were female. The mean age was 43. Fifteen of the participants had their "workplace" in the centre of Winchester, the remaining ten were based in various locations around Hampshire. The average one-way commute was 16.4 miles. Most people (20 interviewees) drove by car to work; the remaining five used other methods such as bus, walking, train and car share. Most people were more highly educated with nine of the participants having obtained an undergraduate (or equivalent) qualification and eleven being holding postgraduate qualifications. All participants (apart from one) belonged to white collar managerial/professional and professional occupations. Of the sample, three people said they were single, two people said they were single with school age children (who lived at home), nine people said they were in a couple with no children (who lived at home), eight said they were in a couple with children (who lived at home) and two people responded "other" and one response was missing.

Semi-structured interviews were carried out at a mutually convenient time and location in Hampshire and lasted for up to an hour each. The first part of the interview gathered background information, such as explanatory details about the participants' employment role. Discussion then centred upon their "typical" day at the workplace. (As all of the participants worked in an office environment, during the interview "usual workplace" was referred to as the "office"). Topics covered included the commute, workplace ICT use, extra work on workplace days and potential for working at home. This was then followed by exploring people's VST working practices based upon similar topics. The final part of the interview considered participants' attitudes towards homeworking, perceived advantages and disadvantages of VST and full-day homeworking practices and the potential influence of congestion (charging) on future working patterns.

FINDINGS

What is the nature of (business) varied-spatiotemporal working?

From the current research, it is clear that there are two distinct time and space variations of part-day homeworking. The first, established previously (21), is that of VST working. The second, which emerged strongly, is that of BVST. It is found that VST and BVST working are different practices in nature, tasks completed, motivations and needs met. The nature of VST working is mainly ad hoc (though sometimes planned). From the interviews, BVST working is planned. Three key themes emerged as drivers for VST working, namely work, domestic and travel factors; whereas BVST working is predominantly driven by travel (and indirectly work) reasons. These findings are now examined in more detail.

Work-related motivations for VST working

VST working is found to occur when people need to achieve focus on a particular work task; hence a quieter environment is needed, which is often not available in the workplace. However, ad-hoc VST working is also prompted by another important work-related reason: the need to restore lost focus by means of a change of scene. The quotes below highlight how sustained desk work can lead to attentional fatigue and how the act of leaving one's

workplace and changing location can help regain focus. This may go to some way to explaining the previously identified prevalence of the W-H type of VST working (21).

> "It's just totally that, just got to get out, can't cope, you actually, you know you get to that stage where you actually start feeling physical symptoms of I cannot actually sit at this desk any longer. I don't know whether it's like ants in your pants or whatever it is but it is like a mild form of, sort of, yes it's stress isn't it, it's stress. I have been known, yes I'll just pick up my stuff and just think I could do so much better at home, with the cat, with a cup of tea […] so actually psychologically you're now thinking I'm going home to finish my day of work". (Female)

> "I need to get away from my desk, a change of scene, but I can't lose any time. So if I was to get away from my desk here and go and talk to somebody for 20 minutes it would be lost time, but walking back to my car, getting home and then going okay let's tackle the monster, is a lot more effective." (Female)

It has been suggested that tasks needing mental effort can bring about attention fatigue, possibly leading to irritability, anxiety, tiredness and reduced ability to address cognitive and social demands fully (22). Mental restoration can reverse these negative feelings and increase concentration and focus (23, 24, 25). The Attention Restoration Theory (23, 24) emphasises the restorative mental benefits of natural environments. It is not simply the change in scenery which is central to restoration theory but also the features of natural environments (such as woodlands and parks), requiring low mental effort. Mokhtarian and Salomon (26) observe that some people drive to experience "the scenic beauty" of the route – this might be related to restorative benefits experienced. Most of the interviewees who practiced the W-H VST pattern (which was the most common VST pattern and mostly unplanned) said this was because focus was lost and they could not concentrate any longer. The act of changing scene by leaving work and going home to continue work enabled people to regain focus upon experiencing a mental dip during the afternoon. Work would then be carried out (not necessarily immediately) after returning home. This was often seen as a *productive break* because the break was their commute, rather than a break for a break's sake. It could be posited that if the afternoon commute home were not by car but by an "active" travel mode (such as walking or cycling) which passed through a scenic route then this would enhance the restorative process – further, research has shown that physical activity increases brain functioning (27). Commuting also allows reflective time and time for mental preparation (26, 28, 1). When taken in the *displaced* commute context, the (re)thinking of issues during this travel time may assist (re)engaging a person in their work role.

The ad-hoc nature of VST working may in part explain why it is more commonly practiced across the workforce overall than full-day homeworking. The presence of arranged meetings in people's weekly schedules appears to be a particular barrier to full-day homeworking whereas VST working can be engaged in at short notice because it can still accommodate such spatio-temporal constraints.

Domestic/personal motivations for VST working

VST working for domestic/personal reasons appeared more pronounced among female interviewees, especially mothers. Those with childcare responsibilities would decide to spread their weekly full-day homeworking allowance (from their employer/line manager) over the course of the week by VST working on more days. One participant considered that spreading this "work at home" time through the week was personally far more suitable -

every day she would leave the workplace early to pick her son up from school, and then continue working at home later on that day. The main advantage for such workers was reduced childcare costs and the ability to spend time with their children. While the time savings on full-day homeworking days brought about by the removal of the commute can allow more time to be spent with children (9), VST working can also allow this because of the relaxed spatio-temporal constraints of work. VST potentially contributes positively to work-life balance:

> "So I've still got the contact in the office but I've still got a good home life as well and a good relationship with my son as well." (Female)

Travel-related motivations for VST working

A number of interviewees reported deliberately delaying or advancing their commute to avoid congestion. Often in the case of the former, tasks (such as emailing) would be used to "fill in" time. Not only is there a reduced journey time and a productivity benefit in travelling off-peak, but the stress associated with driving to work (29) can be avoided:

> "There is a big traffic element to this because it takes me, like this morning I got here in 40 minutes and it has taken me an hour and a half in the past, so if I do my emails and get them sorted and do a bit of work at home and then come in, then I can save my self three quarters of an hour basically and a lot of stress." (Female)

For other people, traffic was not the *main* reason for off-setting their commute but people were nevertheless aware and appreciative of the easier commute that could result.

> "It's surprising, I only do an hour that morning [working at home prior to attending a weekly private appointment] but it does make a difference, the journey into work is quicker, less traffic, and I just feel a bit more relaxed that day." (Female)

It is also important to note that alongside commute displacement on VST days, a lot of the interviewees who commuted by car also deliberately avoided peak "rush hour" traffic by shifting their whole working day to be earlier (and to a lesser extent later).

BVST working

In open discussion with the interviewees it emerged strongly that BVST working is more consciously associated with homeworking than VST working - perhaps because this is a day where the usual workplace is not visited at all, and therefore has the "feel" of a homeworking day.

BVST working is principally motivated by travel reasons and in particular a wish to avoid excess driving (30) when "other" locations are involved. BVST working appears most practiced when meetings or off-site visits are nearer to home than the workplace when to incorporate a prior visit to the workplace would (unnecessarily) introduce more miles travelled:

> "So if I've got a meeting that's for say 10 o'clock in the morning I will turn the computer on [at home] at eight, half past eight and catch up on things until I go to that meeting and then from that meeting I'll go into work because it's

> kind of on my way in. Rather than going into the office, coming out and then go back again it just doesn't seem right" (Female)

The parking problem (especially in Winchester) was also cited as a reason why people would return home (rather than to the workplace) to continue working after a business meeting - therefore encouraging BVST working. (Parking problems may also be reinforcing why W-H is also more popular than H-W for VST working.)

Most interviewees who said they frequently BVST worked, reported that tasks done at home tended to be directly associated with the impending meeting. Where this is not the case, tasks undertaken are usually not in-depth work, because individuals know that they will need to change locations by a certain time to attend to a commitment elsewhere.

Is VST working overworking?

While the above has highlighted that people are clearly displacing their working days in space and time on VST days, a query remained over whether *overworking* ("topping up" a full working day with further working at home) could sometimes represent or be mistaken for VST working. Most interviewees were clear that in general there *was* a distinction between VST working and overworking. However, checking of email was a task commonly associated with both VST and BVST working days and, while some interviewees noted that dealing with email was now part of working culture (whether in the workplace or at home), it seems that addressing email can blur the distinction between VST working and overworking:

> "Because the computer is usually on in the evenings so if the computer on, it is quite easy to drift on to my work email and then I will send some emails or read my emails, especially like over the weekend as I quite often work from home on a Friday so it blurs it a bit really." (Male)

> "My normal practice would be to just check those emails and see what is going on. It is a bit addictive really." (Female)

It is perhaps ironic that email is so strongly associated with (B)VST working when most interviewees also said that they liked to work at home (part-day or full-day) because of the lack of interruptions. However, it has been argued (31) that email is not typical of other forms of interruption in that it is not forced upon people to divert their attention – email interruptions are controllable. Sometimes email interruptions are avoided because an individual is away from their desk – on (B)VST days this can lead to overworking:

> "I think its typically the case that when people are wiped out of their whole day because they're doing something in a set of meetings, […] most people are looking at their own emails in the evening, so that would be top up." (Male)

It can also be the case that rather than VST working *leading* to overworking, it can ease the burden of (inevitable) overworking in a way which still influences the timing of the (return) commute trip, for example:

> "To do an extra hour doesn't seem that much of a problem, I'm at home, I can have the dinner in the oven, you know I'd be talking to my husband or whatever, but its in a more friendly relaxed environment, whereas the thought

> of having to stay at work till 6.30 and getting home at 7.30, it just feels as if its too much of encroachment into my personal space." (Female)

It is not as straightforward as considering the amount of work on a given day. A number of the interviewees had a "flextime" ("flexitime" in the UK) approach to their week such that while VST days could be longer than other days, this would be compensated for by taking an accumulation of such "overworking" and trading it for time off at another time. Not all individuals were as strict with their working week. Some acknowledged their "bad habits" of doing top-up working at home. Others accepted working extra hours (at home) as part of the working culture, especially in relation to deadlines and the roles of higher management.

Attitudes towards (B)VST working

Interviewees highlighted a factor impinging upon the practice of VST working, namely their perceptions of the attitudes of their colleagues. It seems that while W-H is the most commonly practiced form of VST working it is also the form of working individuals can be most anxious about. On a full homeworking day the individual can be "out of sight, out of mind" with regard to their colleagues. On a BVST day, colleagues are perceived to be readily able to recognise and accept the common sense of working from home to avoid excess driving. Meanwhile, when contemplating a W-H VST day, individuals can feel very conscious of leaving work early with a perception that, to their colleagues, this may appear as *finishing* work early:

> "There is a sort of ambivalent attitude towards homeworking, you can't sort of say, as I have said in other organisations […], at 2 o'clock in the afternoon say 'right I am going to work at home for the rest of today' you would certainly raise eyebrows if you were to say that." (Male)

> "You feel a bit of a part-timer if you leave at three even though you know you are going to work at home, so once I am here I do tend to stay." (Female)

Meanwhile there is some suggestion that, while less commonly practiced, H-W VST working may help overcome perceived negative views from colleagues, because the person arriving to the workplace later in the day has some compunction to then demonstrate how the prior time at home has been used.

Of course it could be suggested that, in practice, colleagues do not have negative attitudes or that if they do, these are associated with an "envy" of those who can VST work rather than a suspicion that they are "underworking". However, there were concerns expressed about presenteeism ("If you come in the morning and you go in the evening it doesn't actually matter what you do, as long as you are here", Male) and calls for performance to be (or a greater feeling of it being) measured more by outputs and less by workplace presence. Consideration of attitudes relates strongly to a more general observation in examination of teleworking elsewhere: teleworking has to be an integral part of an organisation's strategy and work culture in order to flourish (32).

In terms of the attitudes of interviewees themselves towards homeworking, a lot of people said they *preferred* full-day homeworking, (even though it was less practiced than VST working) though people also like VST working. They felt that VST, BVST and full-day homeworking fulfilled different (work/personal/travel) needs. Some participants would never consider VST working and would only BVST when they have meetings. Some people believe VST can overcome isolation commonly associated with full-day homeworking. Most people said they would not like to work at home on a full-time basis throughout the week (due to

isolation), and some could not do this because of the role they had. For others, VST working allowed a perfect balance of interaction and focused work time in any given day:

> "That to me is the absolute perfect balance. I get things done that I need to get done, but I still have that interaction with my colleagues." (Female)

CONCLUDING DISCUSSION

The reported research has sought to gain more insight into the nature of part-day homeworking, motivations for its practice, attitudes towards it and the benefits that can arise. A central issue is very evident, namely flexibility. What distinguishes part-day homeworking from full-day homeworking is the *granularity* of this flexibility.

> "So my working day is that window between getting up and going to bed if you like, and in that block of time I will do things, which is a mix." (Male)

Whole day homeworking places the individual in a given location and working environment for the entire day. Meanwhile, part-day homeworking introduces two or more spatial locations for work, offering also different working environments. With this finer granularity it becomes potentially easier to assign work tasks to appropriate locations and environments. It also becomes easier to accommodate spatio-temporal constraints (e.g. a required presence in the conventional workplace for part of the day) while still meeting other spatio-temporal needs or desires (e.g. collecting the children from school or doing some afternoon gardening in daylight hours). Finer granularity of flexibility relates in addition to being able to respond to pressures for change in the location or time of work more easily and at short notice. Thus flexibility may be at the heart of why in our earlier quantitative work we revealed a much higher incidence of VST working than full-day homeworking amongst full-time paid employees. Further still, whilst this current work has focused upon white collar workers with a generally high level of educational attainment, the earlier work highlighted a greater incidence amongst blue collar workers of VST working compared to whole-day homeworking.

It is known that occasional full-day homeworking is increasing in the UK. One can speculate that this is occurring partly as a consequence of the changing nature of work tasks across the labour force, as well as and combined with the changing nature of communications culture. The knowledge economy is growing – knowledge-based industries were estimated to employ about 40% of the European workforce in 2005 (a figure rising to 48% for the UK) (33). We communicate increasingly through a combination of face-to-face and electronically mediated exchanges, with the latter comprising of both synchronous and asynchronous communication. The changing patterns of communications appear to be diminishing the significance of "place", such that individuals can assert their presence without necessarily always being co-present.

If such changes in the nature of work are responsible for increases in full-day homeworking, then it seems reasonable to assume that the same will be true of part-day homeworking and to a greater extent. Finer granularity means that an individual need only have *some* tasks within their job role which lend themselves to being undertaken at home in order to homework. For example, a maintenance engineer in a production plant might need to be present each day at the plant and yet may have several hours of work a week concerning paperwork and scheduling which could be completed through part-day homeworking. Similarly, to the extent that homeworking requires access to a computer and Internet, people *across* the workforce are increasingly equipped to work from home – as at 2007, 61% of UK

households have Internet access (compared to 57% in 2006) and 51% of households have broadband access (compared to 40% in 2006) (34).

Do such observations point towards future growth in part-day homeworking? According to a recent government publication, 82% of the UK workforce considers that it will not be possible for them to work at home at all (2). However, this seems to be in conflict with the scale of knowledge work observed above and may also reflect difficulties of perception concerning, and familiarity with, the different forms of homeworking. We would suggest that while a point of saturation for occasional homeworking may exist, this point is moving upwards over time as society and the nature of work changes. Further, the point of saturation for part-day homeworking is likely to be higher than for full-day homeworking.

While part-day homeworking may be compatible with a greater proportion of the workforce than full-day homeworking, it does not automatically follow that individuals will engage in it or wish to do so – perhaps because of concerns of going against workplace norms or, more explicitly, a lack of opportunity provided by employers. However, from a policy perspective and from an employers' perspective it is important to recognise that uptake can also be influenced, if it is desirable to do so. Would this be desirable? From the employers' perspective (and an *employment policy* perspective) there are signs that it would – these relate to the opportunity to assist productivity. This arises through the potential for people to have easier commutes (off peak); being able to avert productivity dips by allowing the commute to provide a rejuvenative role; and changing working environments during the day. By affording employees more flexibility there is the prospect of improving wellbeing, staff retention and thus, indirectly, productivity. From a *transport policy* perspective the desirability of more part-day homeworking remains uncertain and yet the prospect that it is or could be encouraged to positively influence transportation demand remains appealing. Primary impacts appear positive – the capacity to displace one's commute suggests that part-day homeworking could contribute at the aggregate to self-regulating congestion.

> "Yes part day working at home to miss the traffic, yes I would do that more if the traffic got worse. There is no way I am sitting in traffic, I will find any other solution […] I really think that homeworking [homeworking in general] is one of the ways that we can reduce congestion and make people's lives better." (Female)

The extent of departure time shift is the subject of continued investigation by the authors and recently collected survey data includes an attempt to better understand how much time is spent working at home on (B)VST days and relate this to changes in commute departure times compared to non-(B)VST days. The possibility of secondary or tertiary effects also requires further investigation. These effects may relate to modal shift implications. One of the major reasons people have said they do not cycle to work, is concern regarding busy traffic. Displaced commutes may encounter less intimidating off-peak traffic which may lend itself to some increase in the attraction of walking and cycling. Displaced commuting could also have implications for public transportation as well as car use. In some parts of the UK, passenger rail demand is leading to overcrowding during peak commute periods with rail operators meanwhile seeing their off-peak services underutilised or with spare capacity. (B)VST working could benefit (and perhaps is already benefiting) both passengers and operators. Bus services could also be affected if (B)VST workers commute by bus – changing profiles of demand could bring about benefits or disbenefits to the operator. Meanwhile, service provision by bus operators may, for some bus commuters, be constraining their opportunities to (B)VST work.

In conclusion, it is clear there remains much to be understood about the nature, extent and significance of part-day homeworking. Meanwhile, the challenge for policymakers is how to respond to the changing world of work and the implications this has for travel. In essence there are three policy options: to be *proactive* (recognising or believing in the possibility that part-day homework can benefit transportation demand and employment productivity and taking steps to bring this about); *reactive* (responding to trends being brought about through market forces so as to accentuate trends concerning part-day homeworking); or *inactive* (deciding, in relation to transportation demand, that part-day homeworking is outside the purview of transport policy, whether or not it may be impacting upon travel). Given the absence of full understanding of the phenomena concerned, it remains to be seen which of these options will prevail.

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