INNOVATION AND DIFFUSION THEORY: APPLICATION TO LOCAL TRANSPORT POLICY

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Abstract

It is broadly accepted that a business as usual planning future will lead to deteriorations in congestion and social inclusion and lead to failures in attainment of air quality and climate change goals. This implies a need to develop or transfer from elsewhere policies and practices that will deliver a step-change in impact.

Innovation theory and the theory of the diffusion of innovations offers some useful insights into the conditions that are necessary for innovations to flourish and breakthrough beyond niche status. In particular, this article focuses on the role of governance mechanisms in facilitating the development of innovations and supporting their subsequent roll-out (to the extent they are deemed successful). Examples of governing by enabling and by authority are provided and discussed.

The paper concludes that more resources should be targeted at the innovation and early adoption phases of innovation than is currently the case. Beyond that, the ability of authorities to engage in knowledge exchange becomes critical and this is significantly threatened by the downsizing of local government. Alternative exchange mechanisms are discussed to counter the potential impacts of the financial crisis.

1. Introduction

The short and long-term challenges facing decision-makers in trying to develop and deliver sustainable transport strategies are well rehearsed (May and Crass, 2007). At a local or regional scale there exists a range of policy choices which could be selected and a key dilemma facing these areas is which package of policies is feasible and will work best for them now and in the future (May et al., 2005). In Europe, the Green Paper on Urban Mobility from 2007 suggests that '*European towns and cities are all different, but they face similar challenges and are trying to find common solutions*' (CEC, 2007, p1).

The literature on policy learning suggests that, faced with a policy challenge, the first recourse of an organisation is to look internally for plans or projects that could be applied more widely or more intensively to resolve the problem (Rose, 2005). When it is clear that such actions will be insufficient to resolve the policy problem then a search for new solutions is undertaken.

This paper concerns itself with the search for and the communication of ideas about new policies, systems or practices that could be adopted to enhance sustainable transport strategies. It considers three separate but related processes. In section two, the paper introduces discussion of the process of developing innovations and the role of diffusion theory in the natural spread and uptake of ideas is presented. Section 3 presents examples of governance mechanisms which are imposed, whilst Section 4 provides examples of enabling initiatives. Section 5 examines how the findings can be used at different stages of a policy adoption process to widen or accelerate adoption. The paper concludes with a reflection on the extent to which the current funding climate may stifle or support innovation in local transport policy.

2. Background

This section sets out a brief introduction to innovation and the theory of the diffusion of innovations. It concludes by examining theories behind the motivations of local government organisations. These findings provide the basis to interpret the subsequent case studies.

2.1 Innovation

Diewald (2001) identifies an innovation as the development and application of something new. He suggests that two separate processes need to be considered. Research generates the new products, materials and practices whilst 'technology transfer' is what enables implementation (p59). Technology transfer is the movement of know-how amongst individuals with institutions or companies. In the field of public policy, the technologies that are transferred can be policies, technologies, ideals or systems and this is typically referred to as 'policy transfer' (Dolowitz and Marsh, 2000).

Geels (2002) provides a long-term perspective about major technological transitions. He suggests that three broad levels need to be considered to understand the reasons for particular innovations being adopted and being able to embed themselves in and alter current patterns of consumption. These are shown in Figure 1.

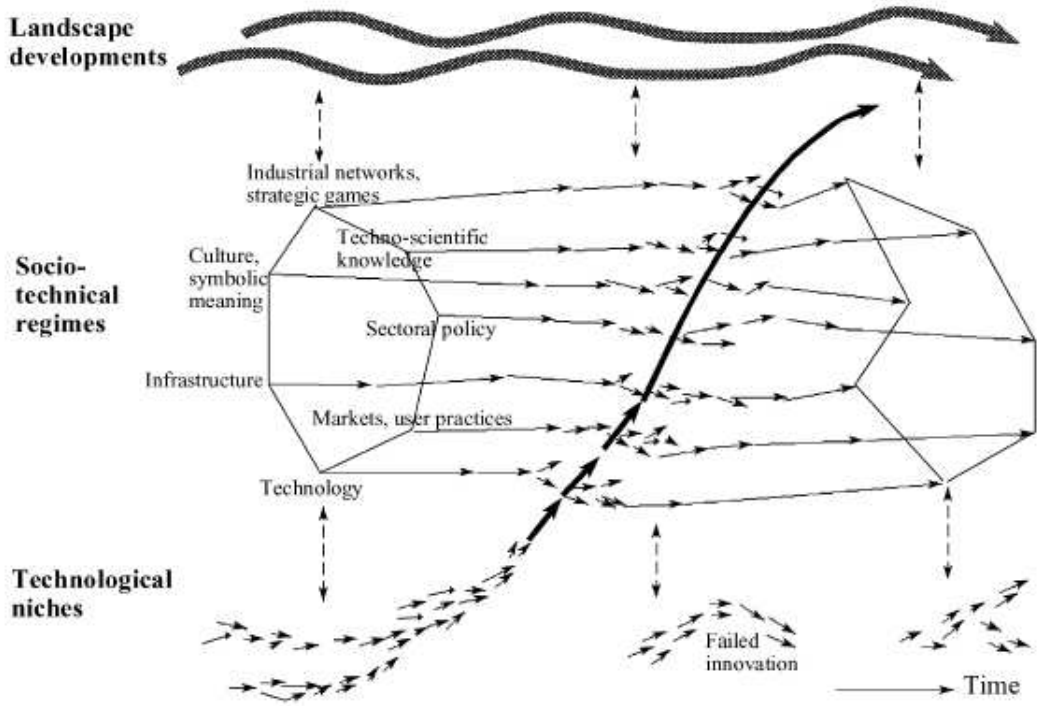

Figure 1: A dynamic multi-level perspective on technology transitions (from Geels, 2002, p1263)

Geels suggests that socio-technical regimes are critical to understanding how innovations survive or fail. The regimes comprise multiple inter-twined relationships for example between the infrastructure provided, the technologies available and user practices. These are typically supported, over time, by legislative policies and by an ever more established industrial-technology nexus which seeks to continue propagating the current practices. One can, for example, consider the difficulties of developing the capability for a network of electric vehicles where there is very large commitment to the manufacture of the internal combustion engine, the established fuelling infrastructure for this and a tax base which has grown, to a degree, reliant on the income from fuel consumption. Geels classifies innovations that occur within these conditions as typically incremental rather than radical. So, one can consider the development of real-time passenger information at bus stops an incremental innovation within an established regime. Bigger transformational innovations, Geels argues, are developed in strategic niches (such as the military) where they can be developed outside of the normal rules of market forces. However, not all of these innovations make it into the mainstream due to the combination of pre-existing systems and practices in place (Geels, 2002 and Van den Bergh et al., 2007). The difficulty of embedding new practices in existing systems is sometimes also referred to as path dependence (Low and Astle, 2009).

Landscape developments are relatively infrequent but major changes in circumstances which provide windows of opportunity for innovations (e.g. the acceptance of the role of man-made emissions to global warming).

Ieromonachou et al. (2004) explore the difficulties of embedding innovations within the complex institutional and socio-technological systems that define transport and travel by using Strategic Niche Management. This technique looks to identify the key contextual factors which explain the success or failure and likely transferability of innovations. The technique is typically used to support the roll out of demonstration projects and aims to help develop clusters which can most easily learn from each other and thus give the innovation the opportunity to flourish before broader transferability is addressed.

2.2 Diffusion

Diffusion theory treats the way in which innovations spread through social systems (Rogers, 2003). Almost fifty years of research in diffusion theory across many disciplines identifies some strong and recurrent themes. Within different policy or practitioner communities there are typically individuals (or organisations) that seek to adopt new policy ideas before they achieve widespread acclaim (e.g. in transport one could consider Edinburgh's decision to adopt an electronically managed city car club as one such decision). Some of these individuals or organisations are seen as 'different' and therefore do not connect well to other practitioners or networks to spread their knowledge. Some well networked individuals or organisations that mix with both the innovators and the mainstream community exist however and these are critical to demonstrating and disseminating new practices. The 'mainstream' adopters can be further classified as 'imitators' or 'laggards' depending on the timescales over which they subsequently adopt an innovation. This implies that social interactions are critical to disseminating knowledge – consistent with organisational learning theory and the earlier reference to innovations which notes the importance of situated learning to allow the application of practices (Boonstra, 2004).

This rather simple introduction to diffusion theory masks a number of important issues which have been uncovered over time. The theory is better at explaining how an innovation diffuses than why it was selected and successful in the first place. Indeed, the evidence base is populated by successful examples not failures or those which achieved only small scale application (Rogers, 2003). The reasons for adoption are complex and depend on local circumstances. It is likely that innovations will not be equally relevant to different circumstances and Rogers highlights the 'matching' stage as being important in organisational adoption decisions. Multiple solutions might also be applicable to a particular problem, in which case diffusion will be affected by the extent to which local preferences steer the selection of one system or policy over another. The literature suggests that policy innovations are most likely to be adjusted and tailored more specifically to local needs by early adopters who take a more pro-active role in the policy learning process (Westphall, Gulati and Shortell, 1997). By contrast, later adopters tend to adopt policies as a response to pressure to do so and are more likely to accept the most common practices (*Ibid*. and DiMaggio and Powell, 1983). Whilst later adopters are often the less networked individuals in the system it is a matter of empirical research to establish whether the 'imitators' or 'laggards' are losing out from later adoption or complete rejection of innovations.

Kern et al. (2007) looked at the extent to which cities belonging to different regions of Germany had adopted Local Agenda 21 policies in one of the few organisational diffusion studies with strong connection to transport. The case study is interesting as there is a significant range of uptake of Local Agenda 21 policies (from 66% in Hesse to under 2% in Saxony-Anholt). In this instance, the Federal government did not intervene so the differential impact of the approaches in the different regional Länder can be studied. As of June 2006, 2610 local authorities (around 20%) had initiated Local Agenda 21 policies and the numbers seem to have reached a plateau (Figure 1), perhaps related to a post Kyoto switch in emphasis to climate change.

Kern et al. found that "the local authorities' capacities (size, wealth, political institutions, social capital) and location appear to be crucial for LA21 diffusion. LA21 pioneers tend to be middle-sized or large cities." (p610). State capitals and university towns were often pioneers. Study of the diffusion of local agenda 21 within each Länder suggests that in the early stages, bi-lateral (authority to authority) diffusion of policies is most likely and that this is

most likely to occur most rapidly in agglomerations and metropolitan regions, largely as the network of actors is more dense (a phenomenon they describe as the "risk of contagion"). Some of the Länder introduced transfer agencies to spread the policies and practices and this lead to multi-lateral rather than bilateral exchanges which they identify as a key factor in the accelerated diffusion of the uptake of LA21 commitments in German authorities.

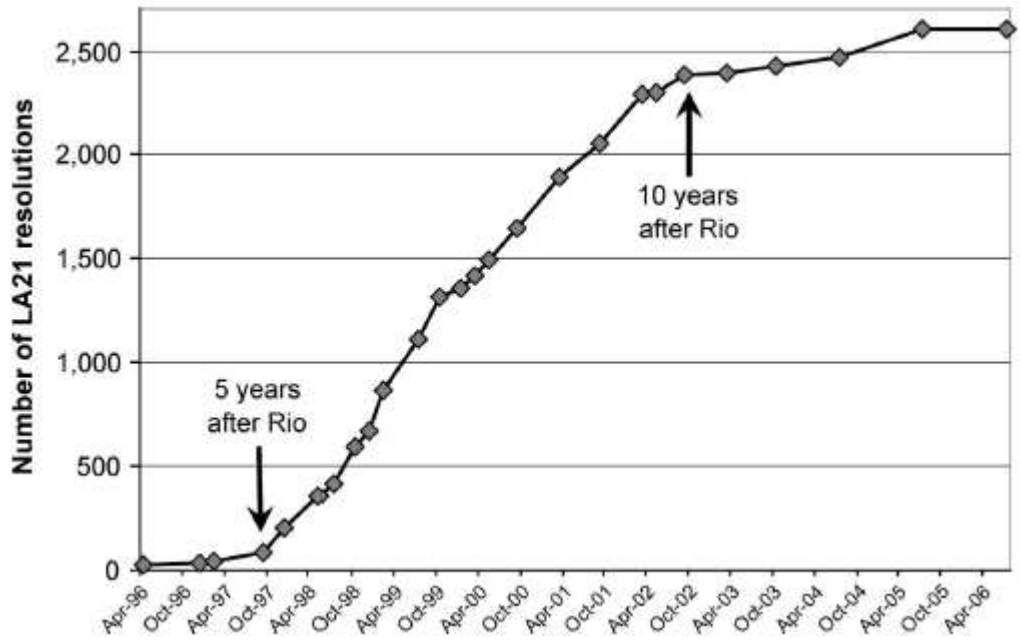

Figure 2 : Development of LA21 resolutions in Germany from 1996 to 2006 (July) Source: Kern et al., 2007, p608

The chart exhibits the S-shaped adoption curve typical of innovation diffusion (Rogers, 2003). The slow start is typical of many product innovations as is the flattening of the curve as the adoption process reaches its conclusion. Only 20% of authorities across Germany adopted which reinforces the limit to voluntary adoption of innovative policies. Kern et al.'s work is also important as it supports the notion of building diffusion around pioneers but it identified the potential to formalise the acceleration of the transfer process through transfer agencies. This worked well at a regional level as, elsewhere in the policy learning literature, it is clear that authorities prefer to learn from other similar authorities – where the transfer of context and institutional arrangements are clearer (Dolowitz and Marsh, 2000).

Taken together the innovation and diffusion literature provide evidence that the ability of innovations to make it through to the mainstream will depend on the extent to which they are provided with a 'safe' environment to develop at the early stages and the degree to which they are seen to be beneficial by the mainstream adoption community. Whilst there is evidence to support the role of social interactions in communicating and transferring policies it is also the case that the broader institutional environment and support conditions will also be important in their ultimate adoption (Marsden et al., 2010).

2.3 Local Governance Context

This paper seeks to explore the extent to which different governmental agencies or private sector partners might seek to influence local transport authorities in adopting innovations. This could be through incentives (e.g. pump priming) and sanctions or more formal regulatory requirements (e.g. speed limits). To do so requires some reflection on the underlying motivations which will influence their response. The political science and public administration literature emphasises the need to consider formal governance structures, the distributions of power (including financial resources) between the actors in the formal process and issues of accountability, local identity and performance. The following contentions emerge:

- They are budget maximising entities which will seek to grow personnel, resources and power over time (Niskanen, 1968)
- They are subject to complex goal complexity and also goal ambiguity in ways which are not so marked in the private sector (where profit maximisation retains a strong although not complete focus in corporate priorities) (Rainey and Bozeman, 2000)
- Acceptance of the need for new policies is subject to the acceptance of a problem and a lack of existing internal solutions. The strategic fit of policy solutions to the local context is important to their consideration and adoption (Marsden et al., 2010)
- Elected bodies will be constrained by assumptions about the attitudes of voters (Feld and Matsusoka, 2003). More complex policies and those involving price adjustments will be subject to higher risk (Van den Bergh et al., 2007). Risk sharing between central and local government has proven to be successful in overcoming the risks of innovation (Marsden et al., 2010).
- Changes are strongly influenced by the nature of past developments and policies (Low and Astle, 2009). Boonstra (2004) notes that significant policy changes require organisational change and that the mismatch between the policy and the implementation environment is often responsible for policy failure – despite the policy often being cited as the problem.

The current retrenchment of government finances within many governments across the world places further pressure on the adoption of innovative policies. Whilst the policy pressures which may drive the need for innovation appear largely unchanged, the funds available to deliver solutions are more constrained, particularly for non-capital projects. This limits staff numbers and the funds to support trials of different kinds. In England, the Department for Transport has however established a 'Sustainable Transport Fund' for local authorities to bid to which may provide one avenue to support innovation.

3. Governing Diffusion by Authority

This section reviews the evidence from two initiatives in the UK where central government has sought to govern the action of local government and other local agencies by authority. This has been done through a variety of means including establishing regulations, mandating compliance, rewarding performance and associating terms and conditions to grant funding opportunities.

3.1 Planning Obligations for Workplace Travel Plans

Rye et al. (2009) define a travel plan as "a package of measures implemented by an organisation to encourage people who travel to/from that organisation to do so by means other than driving alone by private car". Travel Plans emerged in the 1990s, initially at Nottinghamshire County Council based on experiences brought back from California. Travel Plans were subsequently adopted and promoted by central government. This began with their inclusion in a 1998 White Paper and then within the 2001 revision of national planning policy guidance on transport which provides "a strong recommendation to local authorities that they should pursue travel plans through the planning process, for developments exceeding a nationally-prescribed threshold size" (*Ibid.*). The development of supporting guidance makes this the de facto standard approach to development planning. The UK is acknowledged to have one of the most strongly institutionalised approaches to travel plans in the EU (alongside Switzerland).

A national government funded study made an attempt to quantify the likely impacts of the widespread adoption of travel plans estimating the potential for an overall reduction in peak hour commute traffic to be 0.4-1.5% in England with an overall reduction in car commuting of 0.7-3.3% (DfT, 2004)

Rye et al. (2009) surveyed 139 planning and transport authorities in England, obtaining a 62% response rate. This was further supplemented by the results of 18 interviews with staff involved in using the planning system to negotiate travel plans. They found that authorities had secured around 40 travel plans each, of which around 75% were through the planning

process with the balance being voluntary. The introduction of national maximum parking standards had acted as an additional impetus for the adoption of travel plans. However, the study also found that 34.5% of authorities only used planning conditions to introduce travel plans (i.e. the majority had no means of monitoring or enforcing the plan after the site opens). Of those that used planning obligations 40% either did not monitor or could not demonstrate how they monitored compliance with the agreement. Even where plans were monitored there was a reluctance to enforce the conditions and 46 out of 86 respondents could think of examples which would be likely to be or were in breach of their conditions. A lack of resources and a disproportionate legal process were the main factors in an unwillingness to enforce travel plans.

The apparent success of Travel Plans may in part be a result of overinflated expectations emerging from a bias selection of early 'good practice' (*Ibid.*). These are areas for which travel plans have a good policy fit and where expertise has developed over the past two decades. Despite the introduction of legislation and planning guidance to promote the widespread adoption of travel plans the implementation process seems to have been subject to wider institutional constraints. First, there is goal conflict between the imposition of strong planning conditions and fears of deterring economic opportunities that may locate to similar areas with less stringent conditions. Secondly, there are clearly resource constraints both in the establishment of more complicated planning obligations (which are the only way to ensure compliance) and in the subsequent monitoring and enforcement. Those authorities that feel most empowered to extract planning obligations (i.e. economically buoyant cities) appear to be equipped and skilled to do so whilst other areas are less inclined and less able to effectively do so. It may be, therefore, that whilst the formalisation of the process has provided an objective reason to introduce travel plans for all authorities, the effectiveness will be strongly limited by local capacity and preferences.

3.2 Mandatory School Travel Plans

As with the workplace travel plan, school travel plans became part of mainstream policy in the UK in 1998. Many authorities started working on the issue. In September 2003, a major new initiative on school travel was launched jointly by the Departments for Transport and Education. This has included new funding for school travel work. It was accompanied by new legislation, and aims for all schools to introduce a travel plan before the end of the 2010. As with workplace travel plans, a review was conducted for the Department for Transport of the outcomes of 30 pioneering school travel plans (in this instance). It concluded that the average reduction in car use was 23%, walking had increased at two-thirds of the schools by as much as 50%, cycling had increased on average by 25% and bus use had also increased (Cairns and Newson, 2006). Cairns and Newson note that not all schools are willing to engage in discussions about travel reduction although of those that do, over 60% will actually reduce car use.

One of the main reported motivations for schools to engage is clear problem acceptance – usually manifested by visible congestion and safety problems at the school gates and fractious relationships with local residents. Cairns and Newson also note that national certification schemes such as "Healthy Schools or Eco-schools had acted as the stimulus for work" (p9). "Some local authorities highlighted that making funding available for school travel work had acted as a catalyst for generating interest from schools." (p10).

Whilst on the surface it is difficult to imagine a lack of policy fit between school travel plans and broader school objectives it appears that school travel plans are a heavy administrative burden and whilst adoption rates are increasing significantly, engagement rates vary. Interviews with nine local authority School Travel Advisors (STAs) in the North of England suggested that there are no resources to go back and assess whether schools are achieving their plans and the quality of school-led monitoring is generally weak. The STAs suggested that schools could be classified by four behaviours:

- "schools that won't engage;
- schools who put a plan in place but don't do anything with it;
- schools who put a plan in place but could do more; and
- schools who put a plan in place and work well to achieve the targets." [20]

As with the travel plans, it appears that there will be instances where the policy, the place and the people are aligned in some way where most progress will be made. Equally, there will be a proportion of schools to which this agenda is less appealing for practical reasons and this risks minimum compliance, where the resources invested achieve no net gain.

3.3 Target Setting and Performance Rewards and Sanctions

In England, the Local Transport Plan (LTP) process offer insight into the ability of central government to use target setting with performance rewards/penalties to influence the behaviour of local transport authorities. For the Local Transport Plans 2006-2011, local authorities were required to set targets for up to 15 mandatory indicators (depending on authority type) and a further set of locally derived indicators (up to a total maximum of 40 indicators). The guidance suggested that nationally consistent thresholds denoting 'satisfactory' and 'stretching' targets would be established for the mandatory indicators and that authorities would be rewarded or penalised by ±25% of their capital funding for integrated transport measures according initially to the quality of their planning approach and the ambition of their targets and subsequently against their ability to achieve these targets.

Marsden et al. (2009) explored the impact of the system on authority behaviour in the target setting process through interviews and questionnaires (a representative sample of 31 out of 82 LTP submitting authorities). This found that, despite the relatively small sums of money involved (typically less than £150k per year) authorities were motivated to participate and saw the loss of resources as being potentially detrimental to their ability to achieve their goals. This is consistent with the notion of budget maximising entities. The authorities reported being more certain of achieving those of their targets which had been deemed most "stretching"– reflecting a strategy where they try to perform well in areas of core competence. One of the key difficulties of the system was in setting and agreeing the assessments for stretching and satisfactory targets – reflecting considerable concerns over the ability of a centrally imposed system to reflect local circumstances.

It was not possible to assess the outcomes of the system as, during 2008 a reduction in central-local government indicator burdens (driven by broader concerns across local government) meant that the incentive scheme was withdrawn and the requirements on reporting loosened. Marsden et al. employed game theory and an experimental laboratory experiment with transport strategy software to explore the expected impacts of the targets and performance rewards regime. This provided theoretical support to the notion that targets tend to stimulate greater effort. It is also important in suggesting that authorities know their own core competencies and will try to compete most strongly in areas which they know they can perform well. The theoretical work on incentives suggests that authorities will only bid for funding when they feel that they have a reasonable chance of winning (and that the benefits of winning exceed the bidding and compliance costs) and so self-selection will be a feature of any funding contest.

4. Governing Diffusion by Enabling Actions

Section 2.2 provided an example of how expenditure on knowledge transfer agencies assisted in the accelerated diffusion of Local Agenda 21 uptake in some German Länder. Other activities that support diffusion include peer exchange networks, scanning visits, pump priming initiatives and the production of good practice guidance. This section reviews the latter two briefly.

4.1 Pump Priming Initiatives

This section reviews the evidence of the success of pump priming initiatives to support the introduction or mainstreaming of new policies. The expectation from the anticipated motivations of the authorities is that pump priming will appeal because it fits well with notions of budget maximising authorities and it overcomes some of the issues of problem acceptance (as the solution is only partially internally funded). The provision of central funding may also serve to reduce some of the perceived local political risks although the delivery risks are then both locally and nationally significant. It is anticipated, both from the theory (Marsden et al., 2009) and from the evidence above regarding the selection of solutions which match local goals that authorities are most likely to bid when:

a) they think they have a chance of winning (and the costs of bidding are low enough to make the winning pay off substantial); and

b) the funding supports activities that meet objectives they would wish to pursue.

Some recent examples of competitive pump priming initiatives are shown in Table 1 below, along with an indication of the number of bids per initiative.

Table 1: Pump Priming Initiatives

Initiative	Available Funding	Number of Bids	Number Funded
Sustainable Travel Demonstration Towns	£10m	~50	3
Transport Innovation Fund (congestion) Rounds 1 and 2	£18m	32	10
Cycle Demonstration Towns and City	~£100m	~40	11

Judging the success of such initiatives is a challenge. A major purpose of pump priming initiatives is to lead to the mainstream adoption of policies and the diffusion of their adoption from the funded areas to other areas over time. In that respect (rather than in transport outcomes) this type of initiative seems to work. It is clear that there is strong participation (relative to the pool of around 80 LTP authorities) although it is only partial.

Pump priming initiatives can also have downsides. A Rural Bus pump priming competition evaluation found that some authorities had entered the competition with bids containing innovations which they did not feel were appropriate but which were necessary to meet the funding criteria (DfT, 2005). Substantial growth in the services in some areas also led to tender price rises (as supply and demand matched poorly) and the time and skills available to bid for funding were highly constrained leaving some authorities to opt out of bidding.

4.2 Good Practice Guidance

The notion of 'good practice' is contentious as it implies that practice found in one place might be appropriate in another – when there may in fact be better policy choices for the particular local circumstances (Stead et al., 2008). Nonetheless, considerable emphasis is given over to the identification and dissemination of 'good' or 'best' practices (e.g. ITP, 2004 and Twadell and Emerine, 2007).

Wolman and Page (2003) examined the sources of information used by officials working in the field of regeneration in the UK. They found that good practice guides are a common source of information, for example those produced by Government. Their interviews however, found a lack of trust in the outcomes - "a lot of material promoted as good practice wouldn't stand the light of day if it were seriously evaluated" (p495). This was also the case in a study of policy transfer in 11 cities in Northern Europe and North America (Marsden et al, 2010). The city respondents would sometimes look to good practice guides for ideas but would always need to discuss the policy in more detail with the implementing authorities to establish the real credibility of the findings and the contextual factors that explained that. They also identified some biases in what they provide as a representation of success of their own practice. This suggests that good practice guides operate as a support or stimulus to social diffusion processes but do not replace them. Context is key.

5. Discussion

The evidence from Section 3 suggests that regulation can drive adoption of policies and can clearly sometimes be a crucial enabler in providing powers to enforce more widespread adoption. Implementation and the quality of implementation remains very highly linked to the degree of policy fit (or 'matching') that particular initiatives have and the ability of authorities to adequately skill up and resource emerging agendas relative to existing commitments. In this regard the results of evaluations of early adopters seem likely to present an over optimistic impression of the potential for the impacts of a roll out of such policies as they represent committed authorities to which the solution is particularly appropriate.

Establishing rules or conditions which are attached to funding appears to stimulate very active participation of local authorities, particularly where they feel there is a good chance of winning or where the risks of not winning or even losing may also be significant. Here again though, there is evidence that authorities are most likely to compete in areas where they already have competence which presents a challenge if there is a desire to level up poor performers (which may have greater overall net benefits).

Section 4 provides a useful reminder of the importance of diffusion theory and different stages of policy adoption. Pump priming funding appears to be effective at stimulating keen early adopters to develop new policy initiatives. This is consistent with budget maximising authorities. Knowledge transfer agencies may have a role in accelerating the natural processes of policy diffusion between authorities, building up organisational capacity. However, in the case of the German Agenda 21 example, only 20% of authorities overall adopted and even in the highest adopting regions 34% did not adopt. There are some authorities which resist particular policy solutions because they do not fit, do not compete strongly enough with other priorities or are beyond the currently available technical capacities. Neither enabling nor authority based governance tools appear particularly capable of tackling this end of the distribution. This is true of initiatives which are mandated across a whole country such as speed limits or mandatory seat belts. The local policing attitude to enforcement in these examples will dictate the extent to which these policies are effective in different areas.

5.1 Developing an effective roll-out process

To help guide the application of different governance tools in a roll-out process we suggest the use of an S-shaped diffusion curve (Figure 3). Within this curve local delivery agencies can, for any particular policy, be considered as belonging to one of four categories described below.

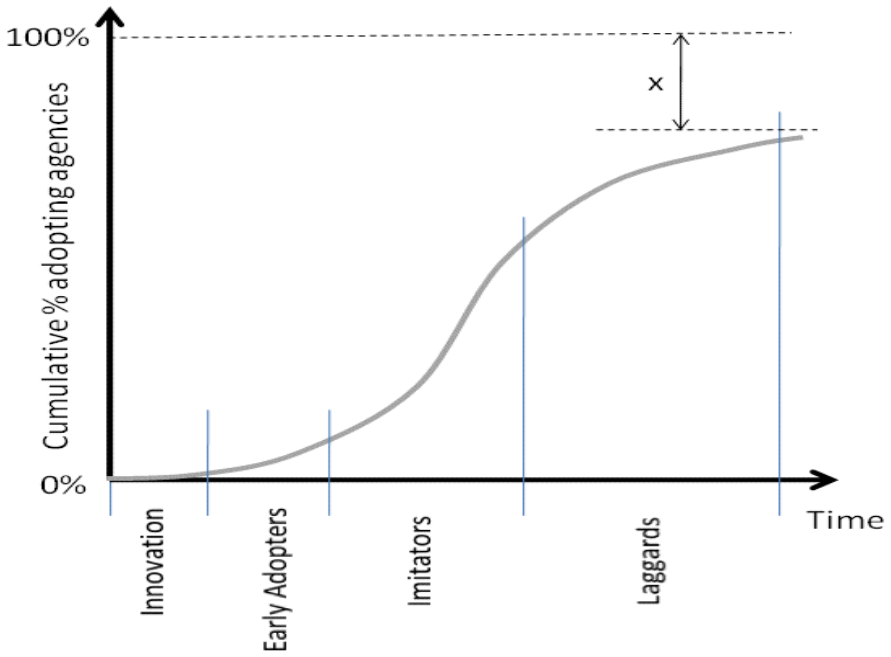

Figure 3: Framework for policy adoption amongst local delivery agencies

- Innovators – forward thinking agencies where new policy ideas are developed at a local level.
- Early Adopters – agencies which are looking for solutions within a particular area and see the policy fit of the proposal, are not overly risk averse in the context considered and are prepared to engage in shaping the policy to their locality.
- Imitators – agencies which wait for policies to become more standardised and accepted as current practice before they are prepared to commit to adopting. There is likely to be a mixed degree of commitment to the application of the policies.

- Laggards – agencies which do not see sufficient reason to adopt a policy. Such reasons may include lack of policy fit, limited potential effectiveness in their area or a lack of resources to implement.

The design principles for supporting the role out of policies amongst local delivery agencies might then be organised around an exercise which matches the different tools to the different stages of the adoption curve.

5.2 Innovation

Support for local agencies to try new initiatives will help to generate some of the policy ideas which are then promulgated. Enabling measures which can help support this phase include:

- Facilitating knowledge exchange (sponsoring conferences, networks, collaborative projects) e.g. CIVITAS CATALIST http://www.civitas-initiative.org/;
- Scanning for and synthesising evidence on initiatives (noting that the local evaluation base will not always be robust enough to rely on) as with US NCHRP syntheses;
- Open calls for small pump priming grants which allow agencies to try new ideas (e.g. the New Horizons programmes of the early 2000s);
- Reducing the pressure on local authorities to devote all their resources (financial and human) to centrally-specified activities;
- Increasing the opportunities for local authorities to raise their own funds and devote them to their own priorities (e.g. Tax Increment Financing where local government can borrow against future increases in tax revenues);
- Encouraging local initiative through announcement of awards to recognise innovation by individuals and authorities (e.g. the European Green Capital award)

These activities will only be engaged in by those motivated to develop new solutions. The results are likely to be preliminary in nature and there will be question marks over transferability. Only some of the innovations are likely to have impacts which suggest their roll out.

5.3 Promoting Early Adoption

Once initiatives are identified as promising (either through central government supported action or through agency to agency learning) there will be a growth in their application from other forward looking agencies that see a good policy fit with the initiative. It is here that lessons about the design of the policies in different contexts are best learnt and more general understanding of their likely effectiveness is developed. However, it should still be noted that performance may be at the high end of expectations as all participating agencies are likely to be committed to the policy (or they would wait before adopting).

Early adoption is also best promoted through “Enabling” measures and it can be promoted through knowledge exchange and scanning as in Stage 1. To ensure a sufficiently broad and rapid expansion in the knowledgebase this period of expansion could also be supported through trials and larger pump-priming initiatives (such as the cycling demonstration towns).

Learning from this stage in the process is important in order to gauge the actions which are required to ensure further uptake and to gain an understanding of how rapid, how complete and how effective the roll out of such policies might be. Indicators include the proportion of bidding authorities competing at the bid stage, the types of authorities bidding (are any particular areas or types not actively engaging?), the proposed intensity of application amongst bidding authorities as well as the actual evaluation outcomes. This stage will benefit from the promulgation of advice notes, good practice guides, publicity and official recognition of successful local action.

5.4 Mainstreaming Adoption of Policies

The best strategies for mainstreaming the adoption of policies will depend on the particular policy measures. For measures which seem to find popular acclaim amongst authorities then the adoption pathway may require minimal further intervention as it becomes an operational norm. Maintenance activities using enabling tools as set out in Stage 1 will support the roll

out of these policies. The rate of adoption can be increased by funding exchange agents and/or agencies (e.g. school travel plan coordinators and specific exchange agencies such as the Energy Savings Trust (www.est.org.uk)) but the limits on skills and capacity in the sector should be recognised as brakes on the adoption rate. It is also not always true that rapid adoption equates to effective adoption (there is much greater variability on the performance on and maintenance of school travel plans than on their initial development). Where enabling measures are used there will be a proportion of agencies (Shown as x in Figure 3) which will not adopt the policy.

There may also be a case to introduce measures which stimulate adoption by "Authority", particularly where the national roll out of a policy looks like being effective but not likely to be achieved through enabling measures alone. This could include performance rewards for target achievement, regulations and minimum standards. This can serve both to accelerate the adoption of policies (particularly reducing the time it takes 'Laggards' to adopt) but also to minimise the proportion of agencies not adopting (i.e. reducing x in Figure 3)

As noted above, there will be a variable commitment to making the paper policies happen on the ground (and the implementation and enforcement of workplace travel plans is a good example of this). The rate of adoption and its likely effectiveness will, in all cases, be limited by the extent to which agencies feel that the benefits of adoption outweigh the costs (including the extent to which this diverts effort from other priorities).

In deciding what route to adopt in mainstreaming the uptake of the policy initiative it is important also to understand the extent to which a policy measure is "unique" and the extent to which its goals are or could be fulfilled by existing or other emerging policies. It is anticipated that diffusion of policies will be more difficult where competing approaches exist.

Conclusions

The current financial climate would seem to place several risks on the adoption and promulgation of innovations in local transport policy. The reduction in revenue and capital funding allowances leaves little scope for authorities to invest in speculative innovations. There are also clear messages about local authorities taking on more of the financial risks from even mainstream projects. Whilst funding shortfalls may themselves develop a pressure to 'innovate' this seems largely to focus on cost saving measures which may not be consistent with more sustainable transport systems.

The 28% reduction in funding through the Department of Communities and Local Government poses even greater pressures on delivery. Core staff numbers are likely to decline which squeezes the ability of authorities to invest in networking and exchange type activities. This will diminish the degree of natural diffusion which takes place.

The language of government is currently about greater local empowerment rather than top down policy making. This suggests a stronger lean towards governing by enabling measures rather than by authority. To a large degree this seems sensible as there are significant difficulties and limitations in governing by authority – although it is sometimes necessary. If this is the case then it would seem that much greater emphasis should be given to providing supported knowledge exchange networks and pump priming of innovative policies than is currently envisaged. Without this, it is difficult to envisage clear mechanisms to drive forward the accelerated uptake of high quality solutions.

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