

Cycle freight in London: A scoping study



1 EXECUTIVE SUMMARY

This project has laid the foundations that could enable Transport for London to introduce trials of load carrying bikes in a variety of freight roles. We have successfully engaged with a large number of stakeholders (exceeding our proposal estimate), who have expressed real interest in taking further the concept of cycle freight as part of the delivery infrastructure.

In summary:

- Case studies have been completed on existing users of cycles, including three 'cycle freight' operators, plus the Royal Mail and a cycle messenger firm.
- Interviews were conducted with two 'own account' delivery fleet operators, and three third party carriers. Five potential pilot projects have been outlined.
- Interviews were conducted with the managers of two shopping centres, and a potential local delivery partner was identified for a pilot home delivery scheme.
- Valuable contacts were made with a variety of public sector bodies with a view to developing work on their internal mail operations.

In addition, this report identifies one trial that is now taking place the work of this project has led to a large stationery supplier obtaining their senior management's approval for a major trial of the use of cycles.

Finally, this report also identifies a potential model for a large-scale, London-wide approach to cycle delivery, based on La Petite Reine in France, and suggests key individuals to approach in carrying out further research.

General conclusions about cycle freight

The project proposal outlined the advantages and disadvantages of using cycles to move some types of freight and, in the light of these posed the question, "Given the apparent potential benefits of using cycles to move freight in cities like London, why is their use not more widespread?"

It was suggested that there would be both practical and 'human' factors to be investigated – issues around the general perception or attitude to the use of cycles in this type of work. With regards to the latter, the findings of this report are that perception is a factor, and it is suggested that it is probably the single largest factor inhibiting the use of cycles in this way. However, among transport and logistics professionals, the issue is usually one of a lack of information on the vehicles now available, rather than attitudes that are hardened against them, and this is relatively easy to address.

With regard to the practical advantages and disadvantages, our findings are as follows:

- Pro: **Purchase cost** – Cycles are cheaper than vans, but for either mode this cost is small compared to running/staff costs and the turnover associated with the work done by the vehicle.
- Pro: **Running cost** – tax, insurance, storage and depreciation are all lower for cycles than for vans. These elements can result in a significant cost saving, the potential of which is recognised by fleet managers. However, this saving is not seen as a reason to switch to cycles - instead it is only perceived as a benefit of doing so. For dedicated cycle-freight operations, these savings in running costs keep their pricing competitive.

- Pro: **Parking costs and congestion-charge** – Cycles can be parked (almost) anywhere without incurring Penalty Charge Notices (PCNs), and are not liable for the congestion charge. In practice, the congestion charge actually seems to benefit vans as much as cycles, because the benefits of reduced congestion have outweighed the once-per-day charge. In the case of PCNs, the picture is mixed i.e. PCNs appear to be a much more significant cost for operators of larger fleets, particularly if their routes are very variable – in such cases cycles offer large cost savings.
- Pro: **Speed in congestion** – As mentioned above, the congestion charge has actually lessened the advantage that bikes once had within the congestion charge zone. However, one point cited by many customers of cycle freight is the comparative reliability of cycles as their journey times are much less affected by variable traffic conditions. It could be argued that this benefit is not really recognised by van fleet operators.
- Pro: **Driver training requirement** – The requirement since 1997 for drivers of vehicles between 3.5 and 7.5 tonnes to take a C1 licence test has reduced the pool of available drivers for this class of vehicle. While this is not so much of an issue for small companies with relatively good staff retention, larger fleet managers already find it hard to recruit drivers and this is adding to the problem. This may now be a significant enough factor to tip the balance in favour of using cycles in some cases.
- Pro: **Low environmental impact (and associated PR benefit)** – Those customers already using dedicated cycle freight companies mostly cited speed/cost/reliability as more important than the 'green' benefits of cycles. However, for all of the large companies interviewed, the environmental benefits were the number one factor. This is because of the pressure corporate customers put on their suppliers to be 'green'. While these companies would not be prepared to use cycles if they cost more than vans, or failed to deliver, they would potentially choose them rather than vans for their environmental benefits, other factors being equal.
- Con: **Security** – Security concerns came up in almost every interview with those not already using cycles, and they need to be robustly addressed if cycle use is to become more widespread. However, the evidence from interviews with the companies already using cycles suggests that these fears may be exaggerated, as there are almost no instances of theft of cycles or payload reported.
- Con: **Limited range and payload** – Range is mainly an issue when a company's logistics model has led them to have their distribution hubs at the edge of, or outside the city. With either a secondary city-centre hub, or the use of vans themselves as 'mobile hubs', large niches can be created for cycles. Payload is also an issue, but again less so with secondary hubs. Also, payload is the issue where awareness is lagging well behind the technology available, as many managers underestimate the payload of currently available cycles.
- Con: **Driver fatigue** – This is a significant issue for smaller operations, where there are existing staff who would not want (or be able) to switch to using a bike. Larger fleets have enough 'churn' in driving staff to recruit individuals able to do the job.
- Con: **Seasonality** – This was perceived as a problem by at least one operator, TNT, when using cycle messengers on very flexible contracts. Across the board, it seems that this need not necessarily be a problem, but that more stable

contractual arrangements (ideally employing riders directly, but otherwise paying by mileage rather than by 'drops') are more appropriate to riders of freight cycles.

As commissioned, this work was split into three sub-projects, referred to as 'Aspects', each looking in more depth at a particular type of freight/delivery operation, and exploring the potential for introducing cycles to carry out some or all of the work.

Aspect 1.1 – Using cycles in 'own account' fleets¹

Interviews were conducted with two companies. Company A is a small firm operating in the London area only, with a current fleet of seven transit vans. By contrast, Company B is a large stationery supplier, and operates around 150 vans per day into central London. The stark contrast between the two companies was particularly illuminating, and the key conclusions from this part of the project are covered in the comments above. Additional points to note are that companies offering a same day service with an own-account fleet may offer more opportunities for small-payload vehicles like cycles, as there is less opportunity for loads to be consolidated. Also, larger fleets generally mean a larger turnover in the pool of drivers, which may well make recruiting 'riders' into the labour pool less threatening.

Both companies offered an apparent opportunity to run a pilot scheme, and these are outlined in section 4.5 of this report. However, the contact interviewed at Company B was particularly enthusiastic about the idea and requested additional information to present at an upcoming meeting with his senior management. He has since been asked to develop and implement a pilot scheme as soon as possible, and is aiming to have an initial five cycles operational by the end of April 2008.

Aspect 1.2 – Use of cycles by 3rd party carriers

This part of the project explored the use of cycles by 3rd party logistics companies and interviews were carried out with 3 organisations. Additional information was obtained from DHL detailing a trial they had run previously.

Potential pilots with Company C and Company D are outlined in section 5.7 of this report. In addition, Company E is currently using one load-carrying cycle for moving legal documents and is about to add three more, and it is suggested TfL work with them to identify lessons learned.

In the case of Company C, a previous trial using cycle messengers to help deliver next day (express) mail failed, in part because of the limited payload that could be transported by the messengers. This problem could clearly be overcome with larger payload cycles, offering a good opportunity for a pilot scheme.

The Managing Director of Company D was enthusiastic about new initiatives, including the use of load-carrying cycles. He highlighted a key issue also raised by Company E – many courier firms find their customers like to specify the vehicle rather than the job,

¹ In the original brief, Aspect 1 of the project covered the use of cycles to make deliveries currently made by vans in both 'own account' fleets and 3rd party operators. As these two situations are a little different, they have been separated out into Aspects 1.1 and 1.2 for clarity

calling and asking for a van or a motorcycle, rather than simply providing the size/weight of the load, its destination and the required delivery time. As a result, couriers often send a less than optimum vehicle, and customers rarely ask for a cycle. Company D suggested a trial in which customers could be encouraged to use a 'size checker' similar to those used for hand-luggage at airport check-ins – they could thus check whether their delivery could be taken by cycle, and inform the courier firm when ordering.

Aspect 2 – Using cycles for home-delivery of shopping

This aspect explored the feasibility of setting up a service to home-deliver shopping for customers at an outer London shopping centre. The aim would be to reduce car trips by eliminating the difficulty of transporting shopping home by non-car modes.

After various interviews, Sutton was identified as the most likely location for further work, fitting in with the existing 'Smarter Travel Sutton' initiative funded by TfL. Sutton has been the subject of a previous study on home delivery, although it did not focus on the use of cycles. Sutton is also home to an existing cycle delivery business – Company F who started trading in September 2007 and whose managers were interviewed. Section 6.7 of this report outlines a potential pilot project based on a synthesis of the earlier report on home delivery, the interviews with shopping centres and the experience and opinions of Company F.

The suggested pilot takes into account some of the key conclusions of this and other work. Given the types of businesses that currently make use of cycles for deliveries, it is suggested that any service should be run for the whole town centre, not just a 'shopping centre', in order to cover enough suitable goods. The service should run on a 'shop'n'drop' model, in which shoppers buy their goods and take them out of each shop as usual, then drop them at a delivery desk/kiosk/etc to be delivered later. Finally, analysis of shopping (and especially parking) patterns suggests that such a service would find a larger natural clientele in the run-up to Christmas, when shoppers have more to carry and find it harder to park.

Aspect 3 – Use of cycles for intra-organisational deliveries

This part of the project proved to be the most challenging. Large private sector organisations appear to prefer to outsource this type of work – an interview with an organisation revealed that they used Company D, leading to the interview with Company D in Aspect 1.2. The current trial by Company E is for intra-organisational transportation of legal documents. As indicated above, we suggest there is the opportunity to work with both of these organisations, and such work would be likely to provide good 'best practice' advice that could be passed on to other companies with regard to this work and their travel plans etc.

Public sector organisations do often carry out this work in-house, but they proved particularly difficult to access. The management of internal logistics is often fragmented, and operations tend to be small with little room to introduce niche staff and vehicles. Fragmented management provides both an opportunity and a barrier – it means that opportunities for rationalisation and savings are easy to spot, but at the same time they are hard to access when it is not clear who should make the decision to try something different.

The experience of Company G couriers provides good examples. In their work with councils, they have seen some departments using their own staff in private cars to make deliveries (one of many inefficient practices observed) but they have struggled to break

through the procurement issues needed to get their quick and cost effective services taken up by those who could make best use of them, even when they are being used by other parts of the same council.

For this study, interviews were carried out with three large public sector organisations the London Borough of Richmond, the South London and Maudsley Mental Healthcare Trust, and the London Development Agency. Although it was not possible to gather enough information to outline specific pilot schemes for any of these organisations, section 7.7 of this report outlines suggested further work with all three.

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2 INTRODUCTION

This project was commissioned by three different parts of Transport for London – the Freight Unit, the Sustainable Mobility Unit and the Travel Demand Management team in Cycling Walking and Accessibility. All three have a strong interest in exploring the potential for deliveries currently made by motor vehicles to be made instead by small, zero-emission, zero-noise vehicles which can be parked for loading/unloading with little or no impact on traffic flow.

The overall objective, was not to conduct an exhaustive desk-based review of everything that has ever been found out by previous trials and studies on using cycles for deliveries, but to conduct mainly face-to-face interviews focused on practical questions, and to identify opportunities for pilot projects on the ground.

As originally commissioned, this project is essentially three projects in one – referred to as 'Aspects' 1, 2 and 3. Each Aspect has its own more detailed introduction later in this report, so this brief introduction is intended to provide a recap and overview of the original brief, and how this report is structured to respond to it.

2.1 Aspect 1

The overall aim of this stage was to identify as widely as possible the current deliveries made using vans and cars, that could more cheaply and efficiently be made using cycles. It also aimed to identify the best potential partners for carrying out later pilot projects.

As originally proposed, Aspect 1 included the following tasks:

1. A desk-based review of cycle freight, including research into operations and previous trials around the world, a top-level overview of potential by industrial sector and a review of available cycles.
2. Interviews with existing operators making use of cycles – cycle freight companies, a cycle messenger company and the Royal Mail.
3. Interviews with operators of 'own account' delivery fleets (companies operating their own delivery vehicles).
4. Interviews with 3rd party carriers – dedicated logistics companies.

In structuring this report, results from tasks 1 and 2 above have been included as Chapter 3 'Background research', as they are considered relevant to all three 'Aspects'. Tasks 3 and 4 have been separated, with work on own-account fleets described in Chapter 4 as 'Aspect 1.1' and work on 3rd party carriers described in Chapter 5 as 'Aspect 1.2'.

2.2 Aspect 2

This Aspect of the project considered home delivery of shopping, for customers who have travelled to a location (as opposed to delivery of goods ordered online or by phone/post). It was the most novel from the customers' point of view. Our original proposal identified that this service would have a very specific, and therefore limited, target market.

Given a stated aim of reducing short car trips made for shopping purposes, the target market for this service was imagined as a Venn diagram intersection of customers who:

- Have travelled by car
- Have only travelled a short distance

- Have an alternative, attractive transport option that is as cheap or cheaper than the car, or more attractive for other reasons
- Have a significant amount of shopping that they would find it hard to transport via the alternative mode

Work on this Aspect involved identifying potential locations for a pilot through stakeholder interviews, and then carrying out more research on the ground to estimate the likely viability of a pilot. This work is described in Chapter 6 of this report.

2.3 Aspect 3

This Aspect was concerned with intra-organisational document deliveries. The aim was to obtain the views of a representative sample of facilities managers on the potential scope for increasing the use of cycles, especially for document transfer. It was intended that these interviews should consider the issues of cost, security, delivery requirements, timeliness and corporate social responsibility. It was also proposed that the interviews would address the way in which increased use of cycles in this context could further the aims of organisational travel plans and facilities management plans.

Before starting work, it was considered that the development of cycle-based systems for intra-organisational document transfer was potentially the least complex of the three Aspects. It was also thought that it would be the most applicable across a wide variety of organisations.

With no external customer demanding commercially competitive service, it was hypothesised that there would be more scope to adapt the delivery schedules and procedures to fit the characteristics of cycles. Furthermore, given that maintaining an internal fleet of motor vehicles can be costly, it was considered that load carrying bikes might be able to offer both large financial savings and greater flexibility.

In practice, this Aspect proved the most difficult to research because of the difficulties of identifying and contacting the correct people within suitable organisations. Furthermore, once contacted, facilities managers and other similar contacts often have far less capacity to review their own logistics arrangements than the dedicated logistics managers found in the companies interviewed for Aspect 1.

As a result of these difficulties, it was only possible to interview representatives of three organisations as part of this Aspect:

- The London Borough of Richmond
- The London Development Agency
- The South London and Maudsley Mental Healthcare Trust

These interviews also went into less depth than originally intended. However, the experience has provided useful information on the difficulties likely to be encountered in promoting the use of cycles for intra-organisational deliveries, and identified three potential avenues for further work. This work is described in Chapter 7 of this report.

3 BACKGROUND RESEARCH

It was originally proposed that this research should be included under Aspect 1. However, in practice it was considered to be relevant to all three aspects and has therefore been made into a separate chapter.

As originally proposed, the initial desk research in section 3.1 is a 'first pass' only, to provide background and set a framework within which to integrate further information. This section identifies and profiles previous research on, and trials of, cycle freight, as well as existing commercial operations making use of cycles. It is followed in section 3.2 by interviews with delivery service operators, which add considerably more detail.

Section 3.3 is a review of the main load-carrying cycles currently available and their characteristics.

Section 3.4 looks at the actual and potential customers for cycle freight. An initial, top-level sector-by-sector review of delivery needs is followed by a series of customer profiles based on interviews with customers from some of the operations identified in section 3.2.

Finally, some general conclusions applicable to all three aspects of this project are highlighted in section 3.5.

3.1 Review of existing cycle freight operations – global

3.1.1 United States

Airborne Express- New York

Airborne Express is the third largest overnight package service in the U.S and is based in Manhattan in New York. Its fleet consists of 150 tricycles that are manufactured by the Workman Cycle Company that is based in Queens, New York and is a leading U.S. manufacturer of utility cycles. The tricycles are loaded in distribution centres in Manhattan, where they can be loaded directly from trucks via conveyor belts, and then ridden to the delivery points.

It is reported that the tricycles could each save an estimated \$20,000 a year by replacing vans. According to Bob Stetser, Airborne's Manhattan station manager "You don't have to park, you don't get tickets, and you save a lot of money." (Herman et al, 1993)

Pedal Express – Various locations

The US has a number of dedicated 'human powered' delivery operations, many of which are listed under the loose association of the 'Pedal Express' marque – see www.pedalexpress.com. The largest number are sited in California, where a strong environmental conscience, and consistently kind weather, provide favourable conditions.

PedalExpress in Santa Cruz CA is one of the more well established, having operated since 1994 and currently offers a range of services to a wide roster of customers. Like many similar US operations, local 'green' businesses and community organisations are a mainstay of custom. However, the company also counts a number of legal and

professional firms among its clients, offers a 'service of legal process' service, and is the only courier firm in the City to offer a 1hr delivery service (within the city limits). The company has also teamed up with local whole-food/organic retailers to offer the ability to place shopping orders via their website and have them delivered to the door².

3.1.2 Europe

La Petite Reine

This appears to be by far the largest cycle freight project in Europe³, and to some extent seems to reflect the ambitious way that public cycle hire schemes have been introduced across France, and particularly in Paris. La Petite Reine (LPR) is French slang for bicycle (lit. 'the Little Queen'), and the operation started in Paris in 2001 with a turnover of just 28,000 euros. Initial funding was provided through NEF, an organisation which specialises in funding nascent social enterprises that find it difficult to raise funds through conventional means.

By 2007, the company was operating in four cities (Paris, Bordeaux, Dijon and Rouen), with 50 employees, 53 bikes and a turnover of 1.3million euros. According to their own calculations, they transported 700,000 packages, a total of 210,000 km. In the process they displaced nearly 600,000 tonne-kilometres of van transport in Paris alone – largely accounted for by the difference in the weight of the vehicles used – and saved 204 tonnes of CO₂ emissions.

This scheme has grown much larger than any of the other providers researched for this report, and the reasons for this seem to be (a) the ambition of its business model, and (b) the political support and help-in-kind it received at its inception from the Paris city authorities.

From a business point of view, LPR models itself very much as a major logistics provider rather than a niche environmental service. It consolidates inbound deliveries into cities, from a variety of sources, to a single, central hub from which the cycles operate. Deliveries from major partners, including large logistics companies such as TNT, are brought in to the hub early in the morning, and then taken out by a fleet of bikes through the day. The company operates two pick-ups/drop-offs each day. Its recent expansions into Bordeaux and Dijon are greatly helped by the fact that the city centres are closed to delivery vehicles between 7am and 11am (similar to the situation in York, which has benefited Green-Link couriers), while in all the cities, traffic congestion greatly reduces the efficiency of van deliveries.

When the project started in Paris, the city authorities provided strong political support, including high profile launch events, which received good press and TV coverage highlighting the endorsement of top political figures. Through partnerships similar to the London Sustainable Distribution Partnership, the managers of LPR were able to get round the table with the likes of TNT, FedEx and UPS to work out large scale contracts. In

² www.pedalexpress.com/santacruz

³ It is the largest identified by this study's web-based review, which relied heavily on the extensive list of work-bike operators at <http://www.zerocouriers.com/workbike/operators/index.html>. While it cannot be assumed that this list is exhaustive, it does evidence a strong networking of cargo and pedicab schemes around the world, and although it is possible that there are large schemes in Europe that have not come to the attention of Zero Couriers, this is regarded as unlikely.

addition, the city provided, and still does provide, a 600 m² underground storage facility (part of a parking structure) in the centre of Paris close to the Louvre at a minimal rent.

The bikes used are the third generation of an in-house design. They are tricycles, similar to the Cycles Maximus trikes used in several UK operations (see below). However, the enclosed load carrying area has been made tall and narrow, allowing a larger volume of goods and a payload of up to 180kg, on a bike that at 96cm wide is still narrow enough to squeeze through quite tight spaces. Un-laden, the bikes weigh only 80kg, and have electric assist via a motor in the front hub (also shown for the Cycles Maximus in the table below). The load carrying box is made from marine ply and plastics, the chassis from aluminium and chromoly steel. The bikes cost 6,300 euros each.

The company has created a significant extra revenue stream by selling advertising space on the sides of such cycles.

After initial web research (www.lepetitereine.com) highlighted the importance of this example, extra details were obtained by phone contact. Further information can be obtained from Christophe Rippert, who was Project Manager for the "Paris freight plan", City of Paris Transport Department, from 2002 to 2007.

The Royal Province of Gelderland- Netherlands

A trial was undertaken to investigate the usefulness of work bikes to local businesses that would normally operate vans. The areas in which the trial took place were in Arnheim, Locheim, Nijmegen and Apeldoorn. Several local businesses participated from a variety of business sectors including a baker, a printing firm, a newspaper distributor and a supermarket and wine outlet.

Two of the main objectives were to see if van use could be replaced with work bike use and if this could make a positive impact on air pollution. The study found that using a work bike was an effective way to reduce motorised inner city transport. One of the firms recorded an annual reduction in motor vehicle mileage of 2,983 miles (Brock, 2001).

The Pick Up Point Network (Pupnet) Scheme- Antwerp

The Pupnet scheme operates in Antwerp which is a city that has a small, easily congested central business district. Shoppers using the park and ride scheme on the outskirts of the town use a smart card to operate a locker at the park and ride site. Once purchases have been made in the city centre shops, the shopkeepers can arrange for a fleet of quad bikes to drop their goods into the appropriate locker ready for their return to the car park. The scheme not only encourages park and ride, but also allows shoppers to walk around without being laden with shopping.

3.2 Review of existing cycle freight operations – UK

3.2.1 Overview

The UK has a long history of moving people and goods by bicycle (since the turn of the century), in the form of delivery bikes for small butchers, grocers etc., and more commonly the continuing use of cycles on a large scale by the Royal Mail which is profiled in some detail below.

Cycle couriers

The UK messenger scene was established in the 1980s, messengers setting themselves up as independent companies rather than offshoots of conventional firms. In both the US and the UK, the individual cyclists were hired on a very ad hoc, 'no contract, no credentials' basis.

In the late 1980s, the combination of the recession and the arrival of fax machines led to a consolidation of the market and a squeeze on profits. Many companies were bought out by larger operators in order to access their customer base, with the cycles quickly being replaced by motorcycles. By the early 1990s the market had stabilised, albeit with fewer operators and lower profit margins.

Worsening traffic congestion throughout the 1990s made cycles gradually more competitive again. The case study of Company TWO below explores the lessons to be learned from the messenger scene.

Modern cycle freight

The UK now has a small but growing community of firms specialising in moving larger loads (or tackling more multiple drops) using modern work-bikes. These include:

- **Company THREE** – Based in London, this courier company is well established. Most of their work is fairly localised, with only 20% of trips taking them more than 2-3 miles from their operational base. The bulk of their work is making multiple drops or collections using larger payload cycles, such as flower delivery, banking runs, delivering paper media and transferring stock between branches of Blockbuster video. They offer to deliver anything from an envelope to a washing machine.
- **Company G** – Based in York, this company uses larger trikes and faster two-wheelers which extend their range of viable operations to journeys over five miles. In its first year of operation, the company replaced 13,500 van 'movements' in York (defining each pick-up or drop-off as a movement) and carried 220,000 kgs of goods. Company G are in the process of establishing more work in intra-organisational deliveries for York Council, and setting up similar, largely independent operations carrying out local authority work in other locations. Company G is examined in more detail in section 7.2.
- **Company FOUR** – This Nottingham based company deliveries include wedding-related items (including brides), buffets, legal DX, parcels, prescriptions and internal mail.
- **Company FIVE**– Operating in Cambridge, this company uses a small fleet of two-wheeled load carriers to deliver in the largely pedestrianised centre of the town. It also offers deliveries to London by using the fast train service into King's Cross, claiming to reach Leicester Square by bike from Kings Cross Station within 10 minutes. Customers include bakeries, delicatessens, a payroll services company, printing and copying companies, bookbinders, consultants, specialist electrics for performance arts, restaurant/sandwich shops, a farm shop, a florist and the university.

Beyond these third party firms, there are many small businesses using their own cycles throughout the country – cleaners, butchers, newsagents, organic vegetable box schemes and others.

3.2.2 Case study – Company ONE

Interview with Principal Engineer, Company ONE Engineering, August 2007

Introduction

Company ONE's operations are long-established and extensive, but have been subject to a changing environment over the last decade or so. This differs from the situation of most courier firms in terms of the extent of operations, the strong regulatory context and the urgent imperative to respond to challenging market changes. These challenges offer useful lessons for the cycle freight market, especially because power-assisted cycles is one area in which Company ONE has begun to respond to the challenges it faces.

Operations

Company ONE operations involve three components: processing, delivery and collection. 86 centres in the UK act as hubs for all three components. Items collected are brought to the centre and sorted for sending out onto the national distribution network. At around 9pm each evening, the centre begins to receive and sort inward items for its own catchment. This passes to the relevant delivery centre, to be sorted down to postcode level and finally the individual walk. The final sorting stage is 'sequencing', i.e. sorting into door-to-door order for delivery. This was traditionally planned by planning officers but is now moving towards GIS and route optimisation software.

The final mile or last mile is the point at which the item is delivered mail. This is a highly resource intensive aspect of Company ONE's operations, requiring human resources as well as the 'logistics chain' of vehicles (vans and cycles) that take the deliverer to their round and also deliver second and subsequent bags of items to them. This may be done by hand-to-hand transfer (requiring the most coordination), delivered to secure street furniture (i.e. a box fixed on the street) or left at a 'safe drop' such as premises where agreement has been secured. Timing is crucial to all these operations. Company ONE estimates that 70% of its costs lie in the last mile.

The logistics chain is needed because the weight of bag is governed by health and safety policy, which limits a bag to 16kg (note that this diminishes as the walk progresses). However, a typical walk contains up to 90kg of items, hence the need to supplement the initial bag.

One of the biggest challenges to Company ONE is that 'downstream access' has opened up item processing to competition (for example, large companies such as banks doing their own, or services such as one-stop shop services). The last mile is then provided by Company ONE at a fee much lower than stamp prices. This is not the best situation for the Company ONE, since it is simultaneously being forced to make its most resource-intensive service (the last mile) available to competitors at a reduced price, whilst item processing – the area it has already made most investment in, through automation – is unable to recoup this investment since that work is being lost to competitors.

The Changing Market

Volumes are currently static or growing slightly, but the profile of items is changing considerably:

- Customer-to-customer (non-business) items are diminishing.

- Business items are increasingly moving (in large businesses) to being pre-sorted by the business to Company ONEs specifications – this reduces businesses' costs but also reduces Company ONEs revenue.
- Competition has taken away some of the processing work that would provide valuable revenue to Company ONE.
- Mail order services such as Amazon have grown substantially.
- This creates a change in the mix towards more 3D items which are heavier and bulkier.
- More items now needs to be signed for, which has increased costs in terms of staff time and processing.

Distribution networks have also changed:

- Rail is no longer used in any significant way due to unreliability and loss of control. The focus of rail operators is increasingly dominated by passengers and therefore there is too little capacity for delivery items on the rail network.
- distribution has moved in a direction similar to supermarket logistics using larger hubs/centres.
- There is increased use of air transport between regional airports.

Company ONE has been caught out by the changes in the market over the last decade, and slow to catch on/catch up. Its response, to automate item processing, was perhaps too late, but also needs to be matched by improved efficiencies in the last mile. Responses to these changes have included the shift to format-based costings, i.e. differential costs for different sized items, and the removal of the second delivery.

The backdrop to all this is that the regulator is committed to cutting 20% of Company ONEs business.

Investment and Change

Company ONE has a 'Blueprint for the Future' strategy comprising three elements:

- New Delivery methods – see below.
- Best practice – including technology tools such as GIS, optimisation software, track and trace, and other added value products.
- Sequence sortation – this makes it possible to separate the indoor process from the outdoor process of the deliverers work. The indoor process can be changed through automation of sorting in the delivery office, which reduces floorspace through removal of sorting frames, and allows consolidation of operations back to the regional rather than local level. The outdoor part of the process can then be given to part-time workers available in the daytime such as housewives and the retired, and it can be franchised. Unions will resist this change but it is seen by the Royal Mail as a choice between winning the argument with the unions, or losing the current position as the main delivery service.

Sequence sortation (and the new delivery methods described below) are in part a response to human resources and health and safety concerns in Company ONE. The deliverer's job is seen as a 'fit young man's work' which involves early starts, a great deal of bending and physical movement at sortation, and then walking and carrying weight on the route. Combined with the need for security checks, reliability, discipline and good literacy, these characteristics make recruitment a big problem, especially in London. Widening the pool of delivery staff by separating delivery from sortation could help to resolve this problem. There would also be a benefit from the reduced physical burden arising from the new delivery methods.

New delivery methods: Cycle fleet and potential changes

Since 2006, Company ONE has been trialling a variety of new equipment including electrically-assisted cycles, cycle trailers, electrically-assisted trolleys and electric scooters. These options remove weight from the shoulder and improve the situation with regard to manual handling. Because they allow far more weight to be carried in one trip, they also reduce the logistics chain and hence costs. They also make failed deliveries less of a problem since the deliverer does not have to deal physically with the weight of undelivered items being returned to the mail centre.

Company ONE has a cycle fleet of approximately 30,000, which are used in areas with topography 'up to undulating'. They use 3 models currently:

- The Millennium.
- The Mailstar.
- The '92.

These are all Pashley models, though the current contract (renewed every seven years) is shortly up for review. Prior to Pashley, they used Dawes bikes. The non-assisted cycle fleet will be reduced if electric assist is rolled out. The proposed fleet will be 15,000 e-bikes and 5,000 e-trikes.

The solutions currently being investigated are low-powered last mile equipment. Company ONE conducted a scan about 18 months ago of what equipment is available on the market. They are looking specifically at EAPCs – electrically-assisted pedal cycles (*see below for additional information regarding legislation relating to EAPCs*). These fall below the power threshold that would require helmets and protective clothing. The specifications for what is required of the cycles includes 50kg load carrying capacity; ability to tow a trailer; ability to cover heavy terrain; 20 km battery span; capacity to maintain battery life. Security and 'mail integrity' (i.e. the security of items during delivery) are addressed with this equipment by means of secure boxes and locking facilities.

Since 2006, there has been a 'conceptual trial' of various options, with current models under consideration as follows:

- Cycles Maximus trike with electric assist- there have been 13 trikes located throughout the country, which users have been very pleased with.
- Electric bike to be used with a trailer (the trailer they have trialled is made by Carry Freedom).
- Electric scooters.
- Power-assisted trolley to be pushed along the walk route.

Company ONE has been advised that the Maximus does not meet the weight/power requirements to keep within British legislation, although it complies with European limits. Maximus dispute this, but Company ONE has deemed it necessary to withdraw these models. Representations have been made by various parties, and a decision on whether the UK will adopt the EU standards is expected imminently.

Overall, Company ONE has been pleased with the trial results. A common response from users has been that they feel fresher at the end of the day, than without the equipment. Since Spring 2007, Company ONE has been tendering through OJEU for other options to review, with a view to testing and selecting in Sept 2007. The new fleet would be rolled out over 2 years from late 07/early 08.

London: Company ONE sees London as a very different case to the rest of the UK, but there is considerable scope for the new equipment there due to the vast number of

vehicle-based collections. New options could also potentially save a significant amount of money in congestion charge fees.

Current Legislative position for EAPCs

Electrically Assisted Pedal Regulations 1983:

These regulations were enacted in 1983 (Statutory Instrument no 1168) in order to define a new type of vehicle under the Road Traffic Acts. The EAPC regulations set out the minimum criteria such a vehicle must satisfy – or else it will be regarded as a sort of electric motorcycle (thereby requiring tax, insurance, driven by a licensed and helmeted driver). The criteria are as follows:

- *The vehicle must not weigh more than 40 kg if a solo bicycle, or 60 kg in the case of a tandem or tricycle.*
- *The vehicle must be fitted with pedals, by which it can be propelled.*
- *The vehicle must not be fitted with any sort of motor other than an electric motor.*
- *The continuous rated output of the motor must not exceed 200 watts if fitted to a solo bicycle, or 250 watts in the case of a tandem or tricycle.*
- *The motor must not propel the vehicle when it is travelling faster than 15 mph.*
- *Within the 'Construction and Use' regulations the following additional criteria is relevant:*
- *The vehicle must be fitted with a plate (where you can easily read it) showing the manufacturer's name, the nominal battery voltage and motor power output.*
- *The power switch or control must default to off, requiring a constant intervention from the rider in order to maintain power assistance. (No power without pedalling, as required in some other countries, also satisfies this requirement.)*

European Community Directive 2002/24/EC:

This directive relates to European Community Whole Vehicle Type Approval (ECWVTA) of powered two and three- wheeled vehicles.

European Community Directive 2002/24/EC sets out harmonised technical construction standards for powered two and three-wheeled vehicles, including quadricycles (small four wheeled vehicles of limited mass and power). It is implemented in the UK by the Motor Cycles Etc. (EC Type Approval) Regulations 1999 (SI 1999/2920) as amended. The system of ECWVTA normally applies to volume produced vehicles with manufacturers issuing a Certificate of Conformity ("CoC") in compliance with a type approved model. This provides a route for the vehicle to be registered and enter into service. An alternative approval route for vehicles is by way of the Motorcycle Single Vehicle Approval (MSVA) scheme under The Motor Cycles Etc. (Single Vehicle Approval) Regulations 2003 (SI 2003/1959). This scheme provides for the approval of individual vehicles on the basis of an inspection, resulting (where appropriate) in the issue of a Minister's Approval Certificate ("MAC").

The Directive includes within its scope low powered mopeds that may also be similar in definition to EAPCs. These are vehicles with pedals and fitted with an auxiliary electric motor having a continuously rated power output not greater than 1.0kW, capable of speeds not exceeding 25km/h.

However, there are certain vehicles in this category which may be regarded as EAPCs and are exempt from both ECWVTA and MSVA. These are cycles with pedal assistance and an electric motor having a maximum continuous rated power output of not more than 0,25kW where the electrical assistance is cut off when the machine reaches a speed

of 25km/h or where the cyclist stops pedalling. The exemption applies to two, three and four wheeled vehicles. Exempt EAPCs do not need a CoC or a MAC.

A vehicle is not exempt from ECWVTA or MSVA if it is fitted with pedals and a motor that can provide power assistance at any time without the rider pedalling.

However, if such vehicle (i.e. one which is able to provide power assistance without the rider pedalling) is an EAPC, our understanding is that the appropriate authorities (i.e. Trading Standards) are unlikely to take action to prevent the sale of these vehicles simply on the ground that they have neither a CoC or MAC.

3.2.3 Case study – Company TWO

Interview with Managing Director August 2007

Background

Company TWO was formed 23 years ago by two cyclists that were working for another courier. The company was started with a £1,000 Enterprise Allowance Scheme grant. In terms of establishing a client base, The MD & her colleagues made a deliberate decision to target certain sectors that they anticipated would be lucrative for a cycle courier firm in London. They concentrated their efforts on the creative industries, and these still make up a large proportion of their work. They started operating with three cyclists and one moped rider with a controller and a person responsible for sales. The volumes of work in these early years were enormous – with each rider able to complete 40 – 50 jobs a day. Over the years the volume of work has diminished as increased competition and technological innovations have impacted negatively on cycle courier operators.

Another interesting feature of the work that has changed over the last 25 years is that in the early years, the work started at 9am and finished at 5pm, and there was no appetite from Company TWO's clients for extended working hours. The environment is currently orientated towards a much longer working day and the courier industry has had to react to this by extending hours of operation. Over the last 23 years Company TWO's interests have expanded, but it has expanded slowly and operated within its means.

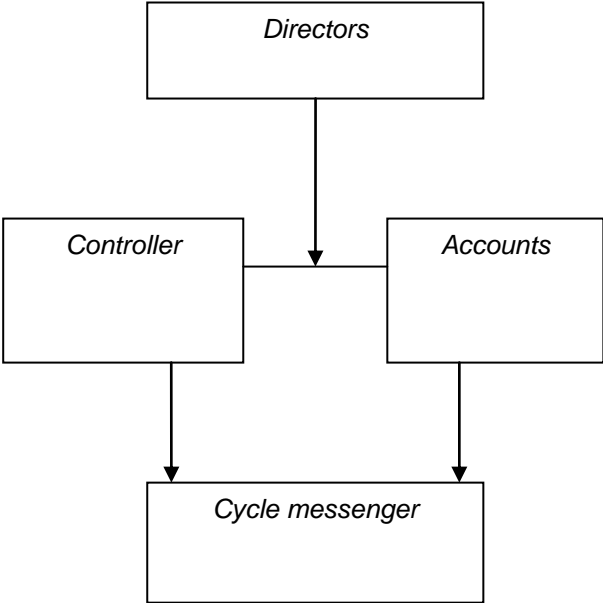
The changing context

As has been documented elsewhere, courier firms have had to adapt to the changing technology available for information transfer, in particular e-mail, and more particularly streaming. This has prompted the MD to diversify her fleet beyond the bicycles and motorcycles (a branch of the business expanded a couple of years after the establishment of Company TWO) into 'passenger cars' and vans. The cycle work was in decline until a couple of years ago, and has since 'stagnated' by which the MD meant that it has stabilised to a level well below the previous intensity of activity. Whilst she was relatively optimistic about the probable survival of the cycle messenger industry in the UK, she warned of the inevitability of decreasing volumes of cycle work because of the impact of new technology – in particular increasing security.

Organisational structure

As befits an operation the size of Company TWO (a small business, but large in cycle courier terms with 20 plus riders), there is a developed management structure organised around three managerial areas. These are a 'directors' office' (*managing director, operations director, sales manager, international sales manager, satellite controller, and*

sales executive), a 'control department and facilities' (customer services, fleet director, van controller and car coordinator, cycle courier controller, senior car controller, van controller, satellite controller, car controller, bookings operator and three bookings agents) and an 'accounts department and café' (finance manager, senior accounts assistant, accounts assistant, credit controller and a chef). However, as far as the cyclists are concerned there is a simple two tier managerial system.



At any time Company TWO can have 20+ cyclists at work or on standby – able to carry a payload of 5kg per package.

Contracts were organised at the inception of the business 23 years ago. The cyclists are employed as independent sub contractors and receive 50% of the value of each individual job – this is in contrast to 60% for the motorcyclists and 58% for the 'vans'. The increased amount per job for the motorised couriers reflects the increased overheads incurred by these workers – for example petrol or congestion charge.

Unlike the example of Company G, the MD at Company TWO thought that independent sub-contractual agreements are advantageous to the types of people that become cycle messengers in London – where the flexibility allows for a degree of freedom not 'enjoyed' by people employed on more formal contracts. Indeed, further divergence from Company G approach came when talking about the types of people that become messengers. There are a wide variety of people, many artists, musicians, graduates from the UK and abroad – and the necessity for initiative and awareness in what is, on the surface, a simple job, were highlighted.

Earnings have reduced for riders in the last few years as the intensity of work has decreased, and the idea that there could be a diversification of freight would be attractive if it could be demonstrated to being a viable proposition – as will be explained later. However, the MD thought that there were big problems with freight bikes in central London and was aware that Company THREE were not as large an operation as many people assume.

Operations

Work organisation

Company TWO core business with bicycles revolves around specific postcodes in central London (*W1, WC1, WC2, SW1, NW1, EC1, EC4, SE1*). Whilst this is a relatively limited area, the intensity of activity does lead to daily distances cycled of around thirty to fifty miles per rider. Similar to Company G in York, Company TWO operate a same day and next day service – with overnight storage provided by them in central London. Bicycles are not used for national deliveries as Company TWO have a fleet of vans, cars and motorcycles that will undertake this work (this is in contrast to other bicycle messenger firms that will send cyclists to collect and deliver in different cities using trains and their bikes).

Delivery pricing is organised around distance from pick up to delivery, rather than set zones.

Customers

As has been previously mentioned, Company TWO has a relatively stable client base rooted mainly in media and arts – any downturn in work is not due to lack of client loyalty, but advancements in information technology. Company TWO do not do any work for GLA or any other civic authorities, in fact the MD did not think that this type of work would be appropriate for their cycling operation (levels of perceived bureaucracy being a major off putting factor) and that it would not really be possible for bikes to undertake work for an authority like GLA unless distributions were strictly within central London and relatively light in weight. She did say that one area that is underexploited/has potential for exploitation, would be in the transfer of medical supplies between the big health institutions in central London.

The client bases of different firms appear to vary according to the connections and interests of those running the firms. The MD intimated that the work generated by law firms had been monopolised by a company that got into this area early, established a reputation and has been dominant for cycle transportation of legal documents ever since.

Company TWO have hundreds of customers who use them to various levels and utilise various modes. Interestingly, whilst acknowledging that some of their customers might request bicycles for environmental reasons, the majority want the quickest and most efficient method of transportation for their items.

Planning and job scheduling

The MD explained that there is a delicate balance between satisfying customer demand and ensuring that the cyclists are earning enough money to make the job worthwhile (even though the wages are still low compared to other employment sectors). Creative also operate on three levels of urgency – each costing differing amounts of money for the client. There is an 'en-route' rate (non-urgent delivery), a standard rate (within a certain time dependent on distance) and an urgent direct rate where the job will be the sole priority of the rider.

Costs

Staffing is, obviously, the biggest cost for the cycling division of Company TWO, especially as riders use their own bicycles.

Security and insurance

Secure overnight storage is provided by Company TWO. Consignments sent by bike are insured for up to £2,000 by Company TWO. Riders, however, have to insure themselves as sub-contractors.

Equipment

As has been mentioned, riders use their own bikes. Company TWO supplies two-way radios or pagers and can provide waterproof courier bags. Many couriers end up buying and using their own bags. The equipment burden on the cycling division of Company TWO is very light.

Partnership/Promotion

Aside from requests from people wanting to advertise, (with messages between spokes and one person who wanted to put sandwich boards on the backs of bikes!) The MD could not think of any partnerships that they had been involved with. She did say that Company TWO might be willing to be involved with any potential pilot that is developed – any proposal for their involvement would be seriously considered.

Viability of expanding load carrying fleet

This point was discussed at some length, and the MD kept coming back to the issue that the practicalities of establishing a fleet, client base and retaining riders would cost a lot of money and that people (consumers) are in denial about the real costs of delivery – and as a result are reluctant to pay for it.

The MD considered that a large amount of retail freight was simply too large to be transported by bicycle. In addition, there were also logistical issues about deciding, in any given retail environment, what should and should not be sent by bike. She considered that there was the potential that bikes would be used as a 'token' green measure, rather than being chosen as genuinely the best vehicle for a given application. However, Lisa did note that people may have said the same about Company TWO when she set it up 23 years earlier.

Whilst she did not wish to exploit local authority work with her messengers, the MD considered that this could work well with load carrying bikes. Basically she considered that freight carrying bikes would be most effective if they were operated intra-organisationally.

3.2.4 Case study – Company THREE

Interview with owner/manager July 2007

Background

Company THREE was formed ten years ago, with the aim of showing that it is possible for an environmental business using pedal cycles to transport goods, to be successful. The founder and owner manager, considered that there was a gap in the market, in that some freight deliveries could be made more efficiently in central London using a tricycle. The first customer was 'Bluebird', Terence Conran's food store in Chelsea, which Conran benefited from both practically and via publicity. Company THREE currently transports a

wide range of products, such as flowers, groceries, leaflets, and parcels for van-based couriers.

Company THREE is based in central London, in ground floor and basement premises which are predominantly taken up by the owner's other business, a bike shop and repair service. Company THREE has little if any visible presence in this location, which reflects in part its low need of physical space and use of a separate location for fleet storage. This also reflects the fact that operations are currently at a fairly low level compared to the past, despite plans for future expansion.

Structure

Company THREE is a limited company owned by the manager, and has always run as a commercial business. It became financially self-sustaining through winning 'some good contracts' after a couple of years.

Operational issues

Company THREE regards the basic requirements for a viable courier firm as four riders and one controller, which provides sufficient income to support the cost of the controller and communications, based on an assumption that each courier grosses £120/day.

Company THREE specialises in work within the congestion charge zone, and up to a few miles beyond the zone. There are currently three riders plus the owner himself, who is currently acting as controller – the aim is to replace the previous controller and take on a fourth rider.

The business has three types of work:

- Express deliveries.
- Timed multi-drops – these are for other companies i.e. time-sensitive deliveries.
- Non-timed multi-drops – these are items like leaflet deliveries which they have 1-2 days to deliver.

There are typically 30 express deliveries per day and 60 multi-drops (timed and non-timed combined).

Riders tend to be focused in a particular area, for example in the City riders will often pass consignments to each other across the home boundaries, though they might also deliver outside their home area. The controller will deploy riders taking into account their individual fitness levels.

Company THREE's operations are currently smaller than they were three or four years ago, apparently due to a combination of the loss of one or two major contracts and a greater focus on the retail/repair business. In 2003-4 there were seven riders compared to the 3-4 currently.

Company THREE has lost business as a result of the congestion charge since a key selling point was beating the congestion. Traffic flow improvements have therefore reduced this benefit. An example of a lost contract was the Evening Standard – Company THREE used to deliver the paper to locations a van could not reach quickly, but the congestion charge has made these locations more accessible to Evening Standard vans. The congestion charge is not thought to pose as great a financial problem for conventional couriers as might be expected, since the single daily payment does not have such a large impact on vehicles making multiple trips around the congestion charge zone.

Staff

Company THREE's riders are all self-employed, but the company does have employer's liability insurance, which the owner believes is unique in the industry. He considers that employing his riders would reduce staff turnover (this is typically 9 months) but it is cheaper not to employ them. Company THREE riders are not regarded as typical couriers since they need to look smart for some deliveries such as flowers.

Riders can expect to take home £300/week after a few months, plus a share of profit which increases that amount up to a maximum of £400.

Customers

Company THREE has a wide range of customers, and carries out focused marketing on specific parts of central London or specific sectors. This marketing is undertaken by the riders when they have a quiet period. An important and regular market, which they target proactively, is flower delivery for flower shops in the congestion charge zone.

Company THREE is on TfL's approved list for deliveries but does not get any work from TfL, despite raising this issue with the Cycling Centre of Excellence.

The motivation of customers for using Company THREE derives from their own focus, in that they specialise in the areas where they can be most efficient. Company THREE aim to provide good value for money, reliability, and ensure that couriers are presentable (smart appearance) for the drops where this matters such as flowers.

Costs

The owner regards the only essential costs for a business start-up to be the bikes that cost approximately £1,200 each (for Christiana bikes) plus a communications network. Their outgoings consist of riders (the largest percentage), communications (i.e. phones), office costs, depot (parking for bikes, which includes access to power to charge the electric assist Maximus trikes), marketing and insurance.

Security / insurance

Company THREE used to have a depot just outside the congestion charge zone, but this is no longer used due to operational contraction. Secure overnight storage of consignments is now provided at the sister company premises.

Where a customer requires secure storage in transit, they will use a bike with a locking facility on the box – only some bikes have this as it is only an occasional requirement. Company THREE state they have a very good security record for consignments.

Company THREE has public liability insurance and goods-in-transit insurance. However, they don't have insurance for the bikes as these are rarely stolen – this has only happened once, because the rider didn't lock the bike and he had to pay the replacement cost.

Bikes are stored overnight in a nearby 24-hour carpark.

Equipment

Company THREE uses two main types of bike:

- Cycles Maximus cargo bikes have a 250kg payload. These bikes are deployed with electric assist. They are used for very specific jobs – mainly postcard and leaflet drops carrying heavy cargo.
- Christiana H/Box (http://www.christianiabikes.com/english/uk_main.htm) is the main model that Company THREE use. These have a 100kg payload, are very manoeuvrable in traffic and good for express deliveries.

The bikes last about five years, based on daily use for eight hours a day. Maintenance costs are about £120/year/bike.

Company THREE uses mobile phones for communication with riders – the phones are owned by the company. An office location is considered to be important so customers can call a landline. The owner uses his own knowledge as controller to map deliveries and is sceptical about software for planning/organising deliveries. He referred to <http://www.ecourier.co.uk/> which uses software for identifying routes, but doesn't feel that expense of this kind is justified for Company THREE.

Partnership/Promotion

Company THREE has relationships with a conventional courier firm whereby Company THREE will transport deliveries, especially time-sensitive jobs, from the other firm's depot to within the congestion charge zone.

The owner attended a meeting some time ago organised by Hammersmith & Fulham Borough Council, to consider establishing a drop-off point for van couriers to transfer items to cycle couriers for residential deliveries. This has not moved forward, largely due to opposition/resistance from the courier companies concerned at losing control of 'the last mile'. The owner believes residential deliveries is the wrong approach for cycle freight, due to questions over who pays for the service and how to address failed deliveries. However, he does think micro-transshipment points could be a way forward, dealing with business deliveries, with a body such as TfL acting as a guarantor of the 'last mile' and thus overcoming courier resistance. The risk with this kind of initiative would be losing speed through transshipment, which could cancel out the efficiency gains offered. Therefore, it would need to be focused in areas with poor access, where cycles offer a benefit, and also somewhere geographically compact, such as Soho.

Future niches and the wider market

The owner has many ideas about building the business back up to where it was, with possible markets including:

- Building on the green aspects of this niche, compared to the current focus on efficiency.
- Marketing to the legal profession that requires transfer of heavy folders etc., and the potential for linking in to the DX network used by legal firms.
- Marketing to companies with more than one office to do their internal deliveries.
- Providing engineering companies with a parts depot in central London.

He sees plenty of scope for the expansion of this market, not just for dedicated courier firms, but also for companies taking on cycles for their own deliveries.

Contacts

The owner has contacts with Stephen Steele and Julian Richardson at TfL, who work on freight issues, especially with regard to the retail sector, and also regarding the Olympics.

3.2.5 Case study – Company FOUR

Interview with owner/manager October 2007

Background

Company FOUR was formed in 1998, using two cyclists to provide cross-town document deliveries in Nottingham. The company's early growth was helped by securing a contract with Boots' head office for document transfer between the out-of-town head office and city centre locations. This contract has since reduced substantially, but provided a secure basis on which to build the business.

Company FOUR regards itself as offering customers a combination of 'delivery solutions' alongside other services such as storage, mobile advertising, document management and archive retrieval. Together, these non-delivery services amount to about 5% of the company's turnover, and provide opportunities for further growth.

Structure

Company FOUR employs six staff, consisting of the owner / manager / controller, three bike riders and two electric van drivers. The owner rides to provide holiday and sickness cover whilst his wife maintains the company's books. The company may shortly take on one piece-work rider to pick up capacity that isn't sufficient currently to justify another full member of staff.

Company FOUR rents an office and storage space in a self-storage facility. This gives them parking for the electric vans, electric plug-in points, storage units, the office and a full-time staffed reception. Whilst it is more expensive than other options, the benefits are considered to justify the cost.

Operational issues

Company FOUR has experienced a change in the nature of the work it gets, as much document delivery is now done by email – though some consignments arise due to technological failure. The workload is currently in 'a bit of a trough', with less work than previously, though the current workload is largely with regular customers. This makes things more stable than before and hence it is easier to manage both consignments and staffing. Consequently there is greater security for the company and staff, despite the dip in workload.

Operational information is managed using Excel spreadsheets to cover destinations, billing information, customers etc. This database has evolved over time to suit business needs.

Staffing

Company FOUR employs all its riders as staff, because they want to give customers reliability. It is considered that paying piece rates would make it difficult to coordinate consignments in the most efficient way, for example transferring documents between different riders/vehicles in order to speed up delivery.

The profile of riders is affected partly by insurance requirements, which restricts them to over-25s only. The majority of staff are in the 25-35 age range, with one exception, an

electric van driver aged 61, who came to Company FOUR via TUPE when they won a contract with the local authority.

Company FOUR places expectation on its riders to be presentable and to ride safely and responsibly in traffic, as they are representatives of both the company and the customer. This requirement is made clear in the induction for new staff.

Customers

Company FOUR invoices about 60-70 customers per month, and has 80-100 customers on the books. Having a customer base spread across a number of different industries reduces the risk of major seasonal fluctuation in workload. Customers range from sole traders, to the various departments of the local authorities (city and county councils) based in Nottingham. Growth in the customer base has been achieved mainly through word of mouth, in particular getting work from their customers' customers.

In 2001 Company FOUR won a contract to provide the internal and external mail service for Nottingham City Council. This then enabled Company FOUR to go on the approved supplier list at the council which means that they can be given further council work. However, it took a year for all of the council to become aware that Company FOUR was now an approved supplier.

The company has an environmental policy, which has been found to be one of the motivations for customers to use them. Their customer surveys have found the key factors are reliability, speed and environmental friendliness.

Equipment

Company FOUR's fleet consists of three electric vans, one biodiesel van, a Brox load-carrying 4-wheeled cycle, a Maximus trike, an electric-assist 2-wheeler to carry trailers, an electric-assist 8-Freight and a Brompton folding bike. The load carrying cycles are currently not used much, except as back-up for the vans. The first electric van was purchased in 2001, and helped Company FOUR win the city council contract.

Company FOUR selects the vehicle to be used for a particular job or location based on which will be the most efficient/effective choice. A bike-plus-trailer is seen to be the most efficient vehicle in the city centre, while vans are the most appropriate choice in the outskirts. Conventional bikes are much more manoeuvrable and faster than load carriers. However, freight cycles are used in the controlled areas in the city centre. Transfers are regularly made between riders and drivers in order to maximise delivery efficiency.

For communications, Company FOUR uses an office landline plus mobile phones for the riders.

Partnership/Promotion

Company FOUR had a partnership with Esprit Eurostar when they took over the Red Star contract delivering parcels via the rail network. Company FOUR provided the link at Nottingham station as Esprit Eurostar closed down the former Red Star depot there. This partnership ended when the terrorist threat made it no longer possible to send unaccompanied parcels on trains.

Company FOUR has had useful support from Business Link for business support/advice/guidance.

One area of failed partnership has been the Turning Point initiative in central Nottingham. Company FOUR consider that this has been watered down from its original intention of being an effective city centre clear zone. The zone now apparently covers only a small area, which in effect allows van drivers to park close enough to their delivery address and then walk a short distance. Consequently, this initiative doesn't actually restrict the van drivers. This has prevented Company FOUR from getting the benefit of the unique access to the city centre they had hoped for, which could have been a way of winning contracts to work with van-based couriers to cover the last mile into the city centre.

Future niches and the wider market

Company FOUR is keen to expand, and is considering options such as franchising the business model to other cities. The next planned step for expansion will be to cover Derby as well as Nottingham, initially using local riders controlled from the Nottingham office using an 0845 number.

Examples of clients and work:

- Providing the link delivering documents between head office and satellite offices for a large firm).
- Providing customers with a later delivery deadline for the ParcelForce network: Company FOUR delivers parcels to the ParcelForce depot up to 6pm instead of the earlier deadline if ParcelForce is collecting from premises itself.
- Providing the 'inner city link' for Nottingham City Council, delivering/collecting between seven main council offices which are each visited three times per day for internal and external mail.

3.3 Summary of available load carrying cycles



A work bike can be loosely defined as a bicycle or other human powered vehicle with two to four wheels and a load carrying area which can be used for delivery or utility work, or the carrying of passengers⁴.




In recent years there have been enormous developments in bicycle technology, including the development of work bikes. One development area has been the production of larger payload tricycles and quad bikes that are still light enough to be easily ridden, many incorporating electric motors to assist the rider on gradients. Another development area has been in trailers and two wheeled, long wheelbase load carriers that greatly expand on the payload of a conventional bike but retain its speed and manoeuvrability.

Examples of some of the Work Bikes available on the market are discussed below.

⁴ Workbike.org, 2001

Table 3.1: Summary of currently-available load-carrying cycles and their characteristics.

Model	Features	Load volume, purchase cost and payload
<p>Courier</p> 	<ul style="list-style-type: none"> • Comes in an 18" and 21" frame. • 3 speed hub gear with trigger control. • 26" rear wheel and 24" front wheel with puncture resistant tyres. • Fully enclosed, all weather brake hubs front and rear, with heavy duty cables. • Front carrier and nameplate are standard fittings, options include plastic carrier insert and rear carrier. 	<ul style="list-style-type: none"> • Price £479.99 inc VAT • 'Moderate' load capacity.
<p>The Courier is essentially the current production version of the classic 'postman's bike'. It is sold as a durable handbuilt construction with reliable hub gears and brakes that reduce maintenance costs. (www.pashley.co.uk)</p>		
<p>Pronto</p> 	<ul style="list-style-type: none"> • Front and rear tubular steel carriers fitted to integrated frame mounts. • 3 speed hub gears with low maintenance hub brakes. • Wheel lock with extension cable and heavy duty prop stand. • Heavy-duty saddle. • Heavy-duty puncture resistant tyres. 	<ul style="list-style-type: none"> • Price £444.99 inc VAT • Loads of up to 24kg, with optional boxes front and rear (pictured)
<p>The Pronto is a more modern version of the courier, and is the general issue version of the bike now used by the Royal Mail for service throughout the UK. (www.pashley.co.uk)</p> <p>This has been designed to be adaptable to different requirements of industrial users, retail outlets and delivery services. It can operate in the toughest of conditions, and allows for quick and easy dismount that is ideal for short journeys and multiple drops.</p> <p>The Pronto is ideal for light delivery needs, and efficient for access to restricted areas e.g. motor vehicle free zones. It is marketed as being easy to maintain, dependable and capable of carrying loads of up to twenty four kilos.</p>		

<p>Delibike</p> 	<ul style="list-style-type: none"> • Hand brazed frame with reinforced carrier lugs. • Three speed low maintenance Sturmey Archer hub gears. • Fully enclosed all weather brake hubs. • Wicker insert for front carrier. • Heavy duty 26" rear / 20" front wheels and tyres. • Large tubular front carrier. • Advertising panel. • Optional traditional leather saddle. 	<ul style="list-style-type: none"> • Front carrier has a load capacity of 32 kg. • Price £699.99 inc VAT
<p>The Delibike is traditional construction and is reminiscent of the old style delivery boy's bike. The maximum weight it can carry is similar to the Pronto, but the large carrying area above the small front wheel allows for items of much larger volume.</p> <p>It is generally suited to mobile advertising and display. This bike, or ones similar to it, is still used by many small businesses across the UK. (www.pashley.co.uk)</p>		
<p>Bob-yak trailer</p> 	<ul style="list-style-type: none"> • Sturdy chromoly construction • Simple attachment to any bike 	<ul style="list-style-type: none"> • Price £235 inc VAT • Trailer weighs 6.1kg • Maximum payload 32kg • Load area 64cm x 41cm x 46cm approx, but open so adaptable
<p>The Bob-Yak is a trailer that fits easily to an ordinary bicycle, and can be quickly attached/detached. It has a low centre of gravity and tracks the rear wheel, thereby having very little impact on the handling of the bike even when fully loaded. Currently used by Green-Link couriers to provide versatile, low cost additional capacity.</p>		
<p>Euro Load Trailer</p> 	<ul style="list-style-type: none"> • Steel frame. • 20" with alloy rims. • SKS Plastic mudguards. 	<ul style="list-style-type: none"> • The platform area is designed to carry any combination of Euroboxes up to a maximum dimension of 800mm x 600mm. • Payload 50kg • Price £270 inc VAT

This is a versatile axle fitted load carrying trailer. This product is generally seen attached to town and city centre work bikes. It can be used to deliver post and packages as well as for tasks such as transporting sandwiches and soft drinks. (www.pashley.co.uk)

8-freight



- Gears: Sram 5.0 8 Speed 46t x 11 -32t
- Brakes: Sachs 70mm Drum front & rear
- Weight (Unloaded): 20Kg
- Length Overall: 3m
- Width: 580mm
- Price £950 (inc VAT)
- Payload Guide: Rider + 75Kg > 100kg
- Payload area 70cm x 54cm x 25cm in low-slung cage, larger, longer open space above can be adapted for a wide variety of loads.

The 8-freight is exceptionally light for a vehicle with a 100kg maximum payload. This combined with its low centre of gravity, and its two (rather than three) – wheel design make it exceptionally fast and responsive for a load-carrier. As a result, it is rapidly gaining a following amongst organisations making use of such bikes, and is a mainstay for Green-Link Couriers and Outspoken Deliveries.

Loadstar



- Heavy duty welded steel tricycle frame.
- Single or 3 speed gears.
- Front hub brake with parking brake.
- Heavy duty wheels with puncture resistant tyres.
- Optional rear wire mesh basket.
- Large rear load area with 200kg capacity.
- £949.99 inc VAT

The Loadstar is traditionally constructed and regarded as a dependable load carrying vehicle. It was introduced in 1979 and has been used by industry and commercial organisations across the world. It has even been used on oil rigs in the North Sea. (www.pashley.co.uk)

Classic No. 33



- Heavy duty 22.5" lugged frame.
- Heavy duty front wheels with annular bearings.
- Rear hub brake with parking brake.
- Holder for display umbrella.
- Rear frame mounted carrier.
- Traditional leather saddle.
- Front load capacity of up to 200 kg.
- Platform size up to 710mm wide, 1060mm long.

The Classic 33 is a vending tricycle for items such as ice cream, soft drinks, hot and cold food, confectionery and literature (www.pashley.co.uk).

It is heavy duty and dependable, with a long life expectancy.

Cycles Maximus trike

Hard top version:



- Weatherproof covers.
- Aluminium sides and drop tailgate.
- Load footprint- 80cm x 120+cm
- Available with both soft top and hard top
- Hardtop has sealed lockable box constructed from reinforced, moulded fiberglass.
- Electric assist options available (see below).
- Cargo with soft top £2,795 (exc VAT).
- Cargo with hard top £3,440 (exc VAT).
- Internal capacity: 123 cm long x 90 cm wide x 94 cm high.
- Loads up to 250 kg (pedal powered).
- Cargo and Custom Flatbed are designed to accommodate the euro-crate and euro-pallet system.

This vehicle is the choice of most of the currently operating dedicated cycle freight operations in the UK, where a large volume payload is required. (www.cyclesmaximus.com)


Cycles Maximus trike with Electric assist

Trike as above, but with Heinzmann power hub (shown below):



- Reliable
- Point & Go
- Light-weight
- Twist-grip throttle
- Standard DIN power connectors
- Removable isolator key
- Economical – pence / cents per day
- Recharge from Mains
- High range and efficiency at low cost
- Ideal for flat and easier terrain. 24 gears and a front hub motor give the rider a smoother quicker ride
- 24-Volt System
- Up to 30mile or 48 Km range
- 2 x 46Ah sealed deep cycle batteries

This is the cheaper of two electric assist options offered by Cycles Maximus, the other being a Lynch power drive. The Greater London area has no hills with gradients that would require the Lynch drive. (www.cyclesmaximus.com)

<p>Brox compact 4-wheeler</p> 	<ul style="list-style-type: none"> • Can be supplied with a variety of body-shells on the basic chassis (shown left) • Currently in use in London both as pedicabs and advertising bikes 	<ul style="list-style-type: none"> • Price £3,150 inc VAT • Working payload 75kg
<p>The Compact copes easily with most small to medium sized loads. By allowing both the front and rear axles to move independently, the proven BROX chassis articulation provides good stability and ensures all four wheels are kept on the ground over both rough and smooth terrain. For reliability and simplicity, a fully sealed single wheel drive transmission is combined with a SRAM seven-speed hub gear. Hydraulic disc brakes front and rear provide powerful, reliable braking.</p> <p>Used by DHL in their trial from 2001 to 2004.</p>		

In light of the experience of the various operators profiled in this report, the following general recommendations are made:

- Simple trailers offer a very cheap and easy way to greatly expand the payload offered by cycle messengers. The Bob-Yak is a particular favourite – it can be coupled/uncoupled from a bike in under a minute, and has a 32kg payload (compared to 4kg for a messenger bag). It is recommended that one or two trailers are included in the 'fleet' of almost any pilot project, as they are an easy way to either (a) provide a little extra capacity (along with a part-time or trainee rider) or, (b) provide an alternative vehicle if the full capacity of a heavier vehicle is not needed.
- Of the largest payload options, the Cycles Maximus trikes appear to be the most popular in practice. These trikes have been used intensively for both pedicab and delivery purposes for many years, and so have a strong operational pedigree.
- Of the mid range options, the 8-freight is relatively new, but has been given a number of good endorsements from those who have used it. This bike also offers a very competitive package on price/payload. Although trikes like the Cycles Maximus are very useful for high density multi-drop operations, it is recommended that the 8-freight should also be considered when deliveries get further apart and speed/distance become more critical.

3.4 Potential customers for cycle freight

3.4.1 Overview by industrial sector

As detailed in our original proposal, the following table outlines a very top-level sector-by-sector overview of delivery needs based on the section headings for Standard Industrial Classifications. The table also indicates how these fit within the five Industry Action Groups set up under the London Sustainable Distribution Partnership (LSDP).

Table 3.2: Top level breakdown of potential for use of cycle freight by industry sector

SIC Sector	Potential for Use			Suggested Types of Freight	LSDP
	High	Med	Low		
Agriculture				Documents and small long shelf life products	No
Fishing				Quay side transfers	No
Mining & Quarrying				Documents	No
Manufacturing				Documents and small high value components	No
Electricity/Gas/ Water Supply				Documents	Yes
Construction				High value components	Yes
Wholesale and Retail Trade; Repair of Motor Vehicles				Small items e.g. non perishable foodstuffs, small garments	Yes
Hotels and Restaurants				Mainly documents but also possibly some linen and toiletries	No
Transport, Storage and Communication				Mainly documents	Yes
Financial Intermediation				Significant documents	No
Real Estate, Renting and Business Activities				Significant documents	No
Public Administration and Defence; Compulsory Social Security				Significant documents	No
Education				Documents	No
Health and Social Work				Documents	No
Other Community, Social and Personal Service Activities				Varied items	No

Private Households with Employed Persons				Documents	No
Extra-territorial Organisations and Bodies				N/a	No

3.4.2 Customer profiles

The following profiles were compiled from short phone interviews with a cross section of the different types of businesses making use of cycle freight. Most of those interviewed are existing customers of Company THREE, Company FIVE or Company FOUR).

Vive la Rose	
Type of business:	Florist
Location:	London
Load type:	Flowers (a few kilos)
Courier used:	Company FOUR
Reason for cycle freight:	Flowers wilt less than in the back of a van
<p>Vive la Rose is a top end of the market florist in Central London who mainly deal with weddings and corporate events. They only have one site.</p> <p>The business has used cycle freight carriers for two years now and is very positive about them. They find them quick, reliable and efficient. Delivery is time sensitive in so far as it has to be reliable, because customers want flowers delivered on a certain date. However, flowers are usually ordered a day or two in advance. Vive la Rose also uses vans, mainly for the deliveries to outer London.</p> <p>The main advantage of cycle carriers is that transport by bicycle does not reduce the shelf life of the flowers as much as transport in a motorised vehicle. This is because flowers can get very hot in the back of a van and the emissions also affect the flowers. Another reason they prefer to use the bicycle couriers is due to the environmental aspect i.e. zero emissions.</p> <p>The number of deliveries made by bicycle varies from day to day. However, Mondays are generally the busiest, with 20 weekly contract deliveries. In addition to the contract deliveries, they also make new customer deliveries e.g. on the day of the interview, seven new customer deliveries were made.</p> <p>The size of the package is approximately dinner plate size and does not weigh very much i.e. a few kilograms. They try to consolidate deliveries to post code areas. Usually deliveries are arranged the previous day.</p> <p>The company actually owns a delivery bicycle. The manager has considered employing a person to use it for delivery, but is worried that she might not find somebody reliable. In addition, the dangers of the traffic are a health and safety deterrent and the manager therefore prefers to leave transport to the experts.</p>	

Pocket Guides	
Type of business:	Publishing (film guides)
Location:	London
Load type:	700 postcard size, multi drop (40-50 sites)
Courier used:	Company FOUR
Reason for cycle freight:	Cost, environmental impact
<p>Pocket Guides have been in existence for ten years and they produce film guides. Their</p>	

customers are film companies who advertise the films. Pocket Guides produce 680,000 guides a month, the majority of which are inserted into London and national magazines. These guides go straight from the printer to the magazine. However, a further 30,000 guides are delivered across London each month to between 40 to 50 sites. All of these are delivered by bicycle.

Each delivery is about 700 postcards and these deliveries are bundled together according to postcode. The deliveries are time sensitive. However, Pocket Guides have found that the bicycle couriers are always very reliable and they have not experienced any problems.

Pocket Guides have been using bicycles for deliveries for seven years now. The main motivation for using bicycles was the environmental aspect. However, although being seen as "green" is of some importance, it has mainly been a personal choice to use bicycles for environmental reasons. In addition, using bicycles also works out slightly cheaper. The company do not consider that there are any negative aspects to using bicycles.

This company firmly believes in the use of bicycles for delivery. They would like to see the use of bicycles in general promoted by central and local government and consider that cycle freight is a good start.

PSC

Type of business:	Payroll bureau
Location:	Cambridge
Load type:	Up to A4 box size, documents, time sensitive
Courier used:	Company FIVE
Reason for cycle freight:	Guarantee of quick delivery (within town)

PSC is a Payroll company in Cambridge, who deal with salaries and produce payslips for companies. The company has been established for 33 years and has only one site with 25 employees. Their customers are other companies and a green image is important for them.

PSC use the postal system for deliveries and a bicycle courier for deliveries in central Cambridge. They have been using bicycle couriers for 1.5 years. The main reason for switching to a bicycle courier was that PSC believed it would be more efficient in the traffic. The environmental advantage of using bicycles was also important.

The company believes that the main advantage of a bicycle courier is the guarantee of a quick delivery. PSC are based outside central Cambridge and believe a bicycle is the quickest way to deliver documents in central Cambridge. Normal car couriers give them a certain delivery time within three hours due to the traffic and parking etc. whereas the bicycle courier guarantees a one hour delivery. Deliveries by bicycle also work out cheaper than deliveries by car or motorbike.

Each month PSC has about 3,000 postal deliveries across the UK, with a further 50 deliveries by bicycle in the Cambridge area. The size varies but can be up to an A4 box size. Deliveries are very time sensitive, as companies require their payslips to arrive on time. PSC don't bundle deliveries together. Instead, they wait until a delivery is ready, then call the courier and the courier will arrive within the hour and deliver it straight away.

PSC feel that bicycle courier is much more efficient and reliable than a motorised courier and would not consider switching back even if that option was cheaper.

Planet Organic

Type of business:	Organic supermarket
Location:	London
Load type:	Food, 3-4 boxes per load, time sensitive
Courier used:	Company THREE, plus conventional courier
Reason for cycle freight:	Cost, convenience, environmental impact

Planet Organic is an organic supermarket and has been established since 1995. The company has three stores in London and has been providing a delivery service since 2004. Their

customers are both individuals and other companies such as restaurants. A green image is very important for Planet Organic.

For deliveries, they use a variety of methods. Planet Organic use the bicycle courier for smaller deliveries in the local area, use other couriers for bigger deliveries and also have their own driver. The company has been using a bicycle courier since the start of their deliveries in 2004 mainly because it is cheap and easy for local deliveries, but also for the environmental benefits.

The bicycle deliveries occur two or three times a week with each delivery typically consisting of three or four boxes. Perishable food is packed with ice packs around it but as the deliveries are usually only half an hour away, there is no requirement for refrigeration. The deliveries are time sensitive, mainly because of the problems with keeping food cold but also because companies require the groceries by a certain time.

Planet Organic would like to use the bicycle courier more if possible. Currently, the main constraint is the capacity of the courier, both with regards to how many boxes can fit on the bike and also with respect to the number of bicycles available. The company would prefer to use a larger number of bikes for a short period for local deliveries rather than have one bike doing deliveries all day. Also, now that Planet Organic has their own driver, he needs to be fully employed and is therefore used for local deliveries tool.

If there were more bicycle companies to choose from with a larger capacity of bikes and riders, then Planet Organic would consider changing their delivery methods to use bicycles for all local deliveries.

Limoncello

Type of business:	Italian delicatessen
Location:	Cambridge
Load type:	Food, 1-2 boxes per load, 1m x 60cm x 20cm
Courier used:	Company FIVE, plus taxis and postal service
Reason for cycle freight:	Speed, reliable journey time, environmental impact

Limoncello is an Italian delicatessen that sells food and provides catering for individuals and businesses. The company also has an internet site via which people can purchase Italian products. This business has been established since 1997 and is based at one site. A green image is not particularly important for this company.

Limoncello has been using bicycles for deliveries for the past two years and these bicycle deliveries are primarily to other companies. Bicycles were initially chosen for deliveries because they were cheaper and quicker than other transport and had environmental benefits. Limoncello also use taxis for more distant deliveries, whilst internet purchases are delivered by post.

The main advantage of using bicycles is their reliability, as taxis can get delayed in traffic. The main disadvantages are that the bike has a smaller load capacity and is also affected by vibrations. The lack of refrigeration is not an issue as deliveries are made very quickly and perishable food is packed in ice if necessary.

The bicycle courier undertakes approximately two deliveries a day, which are usually pre-booked. In addition, they sometimes do rush jobs as well. A delivery is usually one or two boxes measuring 1m by 60cm by 20cm. Deliveries are very time sensitive as they are typically required for lunch, dinner etc, and are also perishable. Limoncello have found that the cycle couriers have been very reliable and consider them to be generally more reliable than taxis.

Fitzbillies bakery

Type of business:	Speciality bakery
Location:	Cambridge
Load type:	Mostly cakes, variable size, door-to-door
Courier used:	Company FIVE, plus taxis and postal service
Reason for cycle freight:	Green image, vehicle access, price

Fitzbillies has been established since 1922 and is a speciality bakery producing wedding cakes, Christmas puddings and confectionery etc. They employ twenty staff at one site and also have a restaurant next door. The company also has an internet site via which where orders can be placed and these are then dispatched by post. Their customers are mainly private individuals, but they do sometimes deliver goods to companies as well. A green image is quite important in an eco-friendly city like Cambridge.

The company primarily uses bicycle couriers for their deliveries. As the cycle courier does not deliver outside Cambridge they use taxis for deliveries over greater distances, whilst internet purchases are sent by post. Fitzbillies have been using a cycle courier for the past 1.5 years, prior to which they used a car. The main reasons for the switch to bicycles were the environmental advantages (both for the green image and because there are no emissions), the competitive prices and the accessibility. The bicycles can access places that are not always accessible for cars such as pedestrianised streets and porter's lodges.

The number of deliveries ranges between two and ten per week. The size of the items varies widely from multi-layered wedding cakes to small parcels. Couriers are usually booked in advance but are also sometimes called up at short notice for 'emergencies'. As parcels are not bundled together in multiple drops but delivered straight to the customer, the security issue and/or lack of refrigeration is not a problem.

It is important to this company that the items are transported responsibly and carefully. The bicycle couriers provide a personal service and are very reliable and consequently are preferred to taxis or other types of couriers.

Families West

Type of business:	Magazine
Location:	London
Load type:	10,000 magazines to 200 addresses over two days
Courier used:	Company THREE, plus van for greater distances
Reason for cycle freight:	Green image important for advertisers and readers

Families West is a free magazine on parenting which is available from schools, libraries, community centres and playgroups. The magazine is paid for by advertising and has existed for six years. There are seven issues a year and they produce 18,000 copies. The magazine only has two full time staff plus a freelance designer.

A green image is important for the magazine, more for the readers than for the companies that advertise in the magazine. Families West has used bicycle couriers for six years. The bicycles are used for the inner London drops, while vans are used for the more outlying areas as these are not covered by Zero Couriers.

The main reason for using bicycles is for environmental reasons. Although bicycles work out more expensive per drop, there are no other charges such as congestion charges, parking charges or parking tickets. The only disadvantage of using the bicycle couriers is that there is less contact between the courier and the magazine staff and therefore less feedback. The people who deliver the magazine by van come back with feedback on the take up of the last issue of the magazine.

Approximately 10,000 magazines are delivered by bicycle to 200 addresses with each magazine usually being about 30 pages long. A further 8,000 magazines are delivered by van to another 150 addresses. The cycle couriers are provided with a list of addresses and the magazines and the cyclists then decide on the best delivery routes. They are given two days in which to deliver the magazines.

Families West would like to deliver all of their issues by bicycle and if a bicycle courier was available for outer London they would use them.

Co-op pharmacy

Type of business:	Retail pharmacy
Location:	Cambridge

Load type:	Individual prescriptions, 20-30 addresses per day
Courier used:	Company FIVE
Reason for cycle freight:	Punctuality, reliability and cost

This pharmacy used to be an Alliance pharmacy but got taken over by the Co-op 6 months ago. There are two other Co-op pharmacies in Cambridge. The Co-op pharmacy customers are private individuals.

The original Alliance pharmacy used a van delivery driver, but this person chose not to transfer to the Co-op. The Co-op therefore advertised for a new delivery driver, but were unable to fill this vacancy. However, they were then approached by the bicycle courier company Outspoken Delivery and decided to try this method of delivery instead. Consequently, in this instance, the switch to bicycles has occurred due to the lack of an available van driver, rather than being a conscious decision to change. However, The Co-op considered the environmental aspect to be appealing.

The main advantage of bicycle deliveries is the punctuality as they are very reliable. It also works out cheaper than having a dedicated delivery driver. This pharmacy was unable to identify any negative aspects of using a bicycle courier.

Every day the bicycle couriers collect prescriptions from surgeries and deliver medicines to addresses in the Cambridge area. The number of deliveries varies, but is generally to between 20 and 30 addresses for which the courier decides on the route. Deliveries are very time sensitive as customers rely on the medicines. There are no special considerations, they are not concerned about security and the medicines do not require refrigeration.

3.5 Key findings from background research

The following general conclusions can be drawn from this section of the report:

- Experience confirms the expectation that factors which limit motor vehicles in some way are beneficial to cycle freight operations. Congested city centres and a lack of loading areas are common - in some cases restrictions are more specific with city centres closed to delivery vehicles (or all traffic) for all or part of the day. The congestion charge has had a mixed impact. Although it adds up to a significant cost for companies operating large vehicle fleets, both cycle-based operations in London reported a downturn in work following the introduction of the congestion charge. This occurred because van based couriers generally found the cost of the charge was more than offset by the benefit of reduced congestion. However, London still appears to present enough problems to conventional traffic to provide opportunities for cycle freight.
- All of the successful cycle based operations have diversified markets. In common with small courier firms generally, they fill in the gaps in niche provision that are not served by the big names – e.g. flower delivery, specialist documents etc. Similarly, all the firms have a variety of bikes in their fleet, providing flexibility in choosing the best vehicle for a particular job. (Since cycles have a low initial cost, and no ongoing fixed costs like vans, having a choice of several vehicles per rider is economically viable).
- On the basis of the limited sample of firms interviewed, cycle messenger firms seem reluctant to take on 'freight' work (heavier loads, larger bikes), and the cycle freight companies seem reluctant to take on significant courier work. This seems to be as much due to cultural differences in the individuals involved as it is to practical business considerations. However, there is overlap in the 'express' area – reflecting the broad niche that exists for cycles in a time limited multi-drop situation.

- The interviews for this (and later) sections of the report generally confirm the perception among non-'cycle freight aficionados' that bikes are slower than in reality, and that they have a very small payload.
- Most of the cycle-based operations have experienced a downturn in work, which they attribute mainly to changes in technology, with more of their traditional work delivering documents occurring via the internet. However, the demand for 'final mile' delivery of goods has increased, with the growth in home shopping and a rise in the number of small vans operating in London. This suggests that existing cycle operations may have been slow to adapt to the changing market e.g. considering the use of bikes with larger payloads, new markets and new logistics partnerships with other carriers.
- Three to four riders per controller/manager seems to be the minimum staffing level needed for a financially self-sufficient cycle delivery operation. Significant economies of scale are possible above this level. Company E has 20-30 riders per controller.
- Having one or two large, steady sources of work at the start is key to establishing niche cycle operations (or any small business).
- Most customers for cycle freight cite the environment or green image as a factor in their choice, but almost all consider cost, speed and reliability to be higher priorities.
- Many of the organisations interviewed for this study as potential hosts for cycle freight pilots, expressed concerns over the security of cycles and their cargo (see subsequent sections). However, the experience of the existing operators of cycle freight, and their customers (at least those interviewed) has been that theft of either bikes or cargo is rare. This is not to say that security concerns should be overlooked – lockable cargo boxes, secure parking and avoiding the use of cycles in particularly risky environments are all sensible risk mitigation measures. However, this bias in perception perhaps underlines the need to carry out pilots to provide a firmer evidence base on such matters.

4 ASPECT 1.1 – OWN ACCOUNT FLEETS

4.1 Introduction

In the jargon of the logistics industry, 'own account' refers to businesses that operate a fleet of their own vehicles to carry out their deliveries. The trend towards outsourcing of services means that there are fewer own account operations now than there used to be, but for some sectors it still makes sense to keep this work in-house.

Stationery is one such sector identified by TfL in the brief for this project. Potential candidates for case studies were identified through the stationery industry body, the British Office Supplies and Services Federation (BOSS). Office Depot was identified first as a major firm with a strong environmental commitment. However, initial attempts to set up a meeting were unsuccessful, so a smaller, London-based firm, Company A, was interviewed. Later in the project it emerged that most of the London Borough Councils have a joint purchasing arrangement with Company B, and this was considered to be so significant that efforts to secure an interview were reinstated – successfully.

4.2 Case study – Company A

Meeting with Despatch Manager, September 2007.

Company history

Company A has recently changed its brand name since starting in 1973. Company A started as a specialist supplier to the graphic design industry, and expanded greatly in the 1980s with the boom in London advertising agencies. Company A still has three retail outlets in London, with a flagship store in central London.

Through the 90s, the business sought to grow its customer base for direct stationery deliveries in the more corporate sector, as computer graphics limited the market for specialist graphics supplies. This area of business has grown steadily, now accounting for about half the customers, and in early 2007 the stationery delivery side of the business was rebranded, to enable it to pursue this market without the 'bespoke graphics supplies' image of the old brand. The company still makes some deliveries to graphics agencies directly under the old brand, via its retail outlets.

The company has approximately 800 active accounts, with many of these needing deliveries to multiple sites. The company is relatively small – on the delivery side there is a warehouse and distribution manager (interviewed), with four supervisors and 30 staff (drivers, pickers etc).

Operational profile

Geographic spread and routes for delivery

The main Company A warehouse and distribution centre is in North London.

Most deliveries are still within the M25, although an increasing number of the larger customers are seeking delivery to satellite offices further afield. At present, an external carrier is used for these, but the company is looking to bring more of them in-house.

The delivery frequency and routes have recently been rationalised. Previously, twelve routes were operated, with two deliveries per day. It was identified that the second

delivery was a service that customers no longer required in most cases, and that cost and environmental impact could be reduced by operating fewer routes with larger vehicles.

There are currently seven routes operated, which are serviced once per day. Three of these routes cover small areas of central London, where there is a high density of customers, whilst the remaining four cover much larger areas of outer London. Each route makes 30-40 drops (about 220-240 drops per day in total across all routes).

Load characteristics and picking

While the company was making two deliveries per day, there was not enough time for multiple orders from individual customers to be consolidated. Under the new system, pickers and other warehouse staff stay later into the evening, and the day's orders are all consolidated (by customer) for delivery the next day.

Orders vary enormously in size and weight, from plastic envelopes with a few pencils, staplers etc, to multiple boxes of paper, or pallets of bottled water. There is therefore no standardisation of deliveries (into pallets, or standard size boxes etc. for automatic loading).

Vehicles used

Vehicles are leased on four year terms. Under the old twelve route system, small Sprinters and Transits were used. Now, with seven routes and single deliveries, long wheelbase vans are used, currently Transit Jumbos. One or two larger vehicles are being considered for making less frequent deliveries outside the M25.

Each vehicle has a dedicated driver, and drivers and vehicles generally specialise in a particular route (allowing for holidays etc.).

In choosing its vehicles, load size was the primary consideration. Small engines were chosen to minimise fuel use given the city location, and driver comfort was one of the other factors considered.

Factors affecting cycle 'niche'

Issues regarding vehicle operation in central London

Congestion charge is not a major operating cost, but is a consideration. Although there are only three central London routes, other routes may go in and out of the congestion charging zone, and one-off deliveries may be made. Altogether, congestion charge is paid on around ten vehicles per day, at £7 each.

The central London routes do have some very tight turns and height/width restrictions on individual drops. Congestion is a major issue, but is simply accommodated in the time allowed for the routes. The school run does have an impact on time taken (quicker in school holidays) as do road works (e.g. roads in W1 are currently disrupted by widespread water pipe maintenance).

Parking and loading is an issue, but currently not a major cost factor. By specialising in a given route, drivers get to know where to park (and to know the parking enforcement officers on their patch). Drivers are penalised if they get Penalty Charge Notices, and

these currently run at about twelve per month. However, parking/loading spaces are under a progressive squeeze.

Company policy and culture

Overall, Company A wants to be innovative. The company is undergoing a period of change - the change in branding was prompted by a management buy-out. The company is quite small, with a simple management structure. Therefore, an issue such as using cycles might be more easily accommodated in terms of organisational change.

In relation to its competition, the company is seeking ways to add value to its offering, rather than competing simply on price (although price has become more of an issue as corporate business has expanded).

The company has an environmental policy on its website, and has considered its carbon impact. It recognises that its corporate customers generally have formal CSR policies that extend to suppliers, and its smaller customers are typically firms such as graphics agencies that wish to be seen as 'green'. Therefore, there is a definite perceived PR benefit to visible green initiatives (such as using bikes).

Potential for integrating cycles into delivery operations

If Company A's only distribution centre was its base in North London, the use of cycles for parts of its central London operation would require major changes and would not have a strong economic case (although they might still be considered for PR value). However, the old company flagship store is located in central London – an ideal location for servicing the most congested and restricted parts of the city.

The majority of orders picked for central London routes (by number, rather than total weight or volume) are small enough to be transported by cargo cycle. There are also still a significant number of 'one-off' deliveries made in this part of London, that are not delivered as part of the standard delivery routes.

Given the factors above, there is a good chance that cycles could be integrated into the central London delivery operations, based out of the company's central London location, without incurring significant additional cost to the company, and possibly with a cost saving. If such a scheme were to be attempted, its main value to the company would lie in the enhanced green image it would provide, rather than significant operational cost savings.

4.3 Additional interview – Company B

Meeting with Regional Transport Manager (South), March 2008

Company background

Company B is an American owned company with a nationwide UK operation. In the last few years it has bought out other organisations in Europe. The company makes use of other providers such as Company C for much of its 'trunking' (i.e. large, long-distance loads), but carries out the final delivery legs using its own fleet.

The company operates two main logistics centres in London, the main one to the west near Heathrow, and a second on the eastern edge of the city.

Although the company sells through a wide range of platforms, the deliveries fall into two main streams. The contract business deals with major companies and organisations, blue chip companies, London Borough councils, government departments etc. This side of the business deals in very high volume orders, making 300-600 deliveries per day in London, many of them whole pallets.

The other side of the business is inherited from a company they took over, which was more targeted at SMEs. This side of the business has many more customers, but lower volumes of business – many customers only placing one or two orders per year, with many of the orders being very small (a single packet or carton). This model also includes a same-day delivery element – orders placed before noon are delivered by 5 pm.

Operational details

The company runs around 150 vans per day into central London, a mixture of 3.5 tonne (transit style) and 7.5 tonne vehicles. The company makes very high volumes of deliveries in EC1-4, WC1, WC2, W1, NW1, SW1, SC1 and E1. The drivers are mostly employed by the company, though some are self-employed. The vans themselves are leased rather than purchased, but depreciation costs are still a significant burden on the books.

Although most of the deliveries by volume are to account customers, there are a significant number of smaller deliveries consisting of just one carton or packet. On one day in SC1 for example, around 900 deliveries are made in total, of which 46 were single carton. Thirty of these were next day deliveries, requiring delivery in the morning, and 16 were same-day, needing delivery in the afternoon. Across the central postcodes this is replicated, so there are several hundred single carton deliveries to be made.



Fig. 4.3: Company B single carton

Single carton deliveries, particularly those needing same-day service, are disproportionately disruptive to the delivery routes and schedules, and therefore add greatly to the environmental impact of the delivery fleet, as well as running costs.

Single carton deliveries also add disproportionately to the number of penalty charge notices (PCNs) incurred, as they are infrequent (so drivers don't necessarily know the area) and typically to smaller businesses that do not have loading arrangements. The company incurs costs of £115,000 pa in congestion charges, and £270,000 pa in PCNs.

Potential for use of cycles

There is large potential for the use of cycles in making single carton deliveries, and during the interview the Regional Transport Manager made it clear that he was very interested in pursuing the suggestion further.

From a financial point of view, cycles have the potential to realise savings not only on congestion charges and PCNs, but also fuel costs (which are currently rising), and depreciation (by allowing the van fleet to be cut back).

Another factor in favour of cycles is driver training. New regulations make it necessary to take an additional driving test in order to drive 7.5 tonne vans, and this is soon to be extended to 3.5 tonne vans. Recruitment of drivers is already a problem for the company (in common with all companies), and using cycles would relieve some of this pressure.

Importantly, Company B already has systems in place that allocate different vehicles to different runs depending on the number and size of deliveries. This system could easily be extended to help target and manage cycle deliveries. The company also has the ability to separate out single carton deliveries.

These practical factors, combined with a strong senior management support for 'green' initiatives, make Company B a very promising host company for a pilot in Stage 2.

4.4 Conclusions and recommendations

Conclusion: Businesses offering same day delivery of goods present a good opportunity

The experience of both operators profiled here suggests that the offering of same day delivery of goods makes the consolidation of deliveries more difficult, and thus favours smaller vehicles and more deliveries carried out in parallel. Same day providers may therefore offer greater opportunities for the use of load carrying cycles.

Conclusion: Companies operating large delivery fleets offer more opportunities to use cycles

The comparison of the two companies profiled here suggest a number of reasons why larger companies are likely to present more opportunities for introducing cycles into their delivery fleets.

- Firstly, a greater overall number of deliveries allows for greater segmentation by size, weight, or destination.
- Larger companies may well have more variable routes, and thus drivers may not be able to get to know their routes well enough to get to know good places for loading, and therefore Penalty Charge Notices will be more of an issue.
- Larger companies will have greater budgets for experimentation with new ideas.
- Larger companies will have greater natural turnover of staff, allowing 'riders' to substitute for 'drivers' with less resistance from the existing workforce.

Conclusion: Local distribution hubs are a key enabling factor

In the case of Company A , the company would not even consider a pilot were it not for their central London retail location. Company B indicated that they were in negotiation to make use of some warehouse space in central London , which would make the logistics of using cycles easier.

Recommendation: Where possible, pilot projects should include trials of 'mobile distribution hubs'

The case study of Company ONE detailed earlier in this report indicates the use of mobile distribution hubs for postal officers making rounds, as one way in which their limited payload is mitigated. Both vans and large payload cycles (Cycles Maximus in one trial) have been/are used for this purpose. If pilot projects outlined in this study, e.g. Company B , could make use of some system involving vans working in tandem with cycles, rather than the cycles using a fixed local hub (such as Company A's central London shop), this would make the lessons learned far more widely applicable to other companies that may not have any physical presence in the destination area.

Conclusion: Driver training requirements favour the use of cycles

Competition in the recruitment of qualified drivers has been an issue for all logistics operations for some time. Since 1997 the requirement for drivers of 3.5 tonne and 7.5 tonne vehicles to take an additional C1 licence test has increased this competition, and enhanced the attractiveness of vehicles with minimal training requirement (i.e. cycles).

4.5 Outline of potential pilot projects – Company A and Company B

4.5.1 Company A

Outline – small pilot, single rider operating from company’s central London shop

- 18 month duration.
- Single rider, based in central London.
- Equipment: 8-freight or Cycles Maximus, plus a normal cycle with trailer.
- Start by covering the one-off delivery requests received at the central London site, look to expand into taking more of the central London deliveries as the capability of the bike becomes more apparent.
- Start with a low-key trial, limited publicity and take the opportunity to canvass the opinion of the customers as it progresses. Depending on the outcome, evaluate whether to market the idea more heavily, and possibly view it as a way of expanding the number of customers/drops on the central London route(s) without having to add another van.

Interest from host organisation 4/10

Interview was with the despatch manager, who was initially sceptical but became more interested. No follow up from senior management since.

Wider applicability of lessons learned 5/10

This would be a small scale trial, and heavily dependent on the fact that the company happens to have its Covent Garden shop to act as a hub.

Cost – low

- Only one rider.
- Simple management structure (simply one more person for dispatch manager).
- Minimal extra overhead requirement, absorbed into current operation.
- Total additional project cost approximately £30K.
- Of this £17.5K is rider’s wages, which it is expected would be paid by Red Box.
- The other £15K comprises management time to set up, recruitment, the cost of the cycles and £6K for evaluation – it is expected that some or all of these costs would be covered by TfL.

Strengths

- Covent Garden site makes for a simple set up.
- The fact that the company is small should mean that decisions can be taken relatively quickly.
- The idea fits with the slightly ‘cool’ self-image of the company.

Weaknesses

- As a small company, Company A may lack the management capacity to effectively support and develop a new idea (although this could be mitigated by the TfL support).

Opportunities

- Could provide a Unique Selling Point for the company.

- May prove to be a good way for Company A to deal with problem one-off deliveries.

Threats

- There may be resistance from the existing pool of drivers, making them unwilling to co-operate with the cyclist and therefore undermining any efficiency gains there might be.

4.5.2 Company B

Outline – Large trial with major company

- Two year duration.
- 5 – 10 riders, could be recruited or drawn from current staff.
- Try out a mix of bikes, 8-freight, Cycles Maximus and trikes developed by Le Petite Reine.
- Seek to experiment with different models.
 - Dispatch from secondary logistics hub in central London area, or other location.
 - Vans drive into central London carrying one or two riders and cycles, share out deliveries and then drive out.
 - Vans rendezvous with cycles at the edge of the Congestion charge zone to replenish them at regular intervals throughout the day.
- Large scale offers the chance to collect a lot of statistically significant data on time savings, efficiency etc – recommend that strong consideration is given to designing the processes for collecting baseline and trial data.

Interest from host organisation 10/10

The interview was with the transport manager for the whole southern region, who considered that there were strong cost savings to be made, and who requested further information to present to the company's most senior management. He has since been given approval to press ahead with a trial in the next few months.

Wider applicability of lessons learned 9/10

As a large company in its sector, Company B is a sector leader with strong credibility. Other companies will seek to follow their lead, even if the lessons are not directly transferable.

Cost – high (but good value)

- TfL can expect Company B to pay most/all of the direct costs of the trial, as this is a company with significant resources, expecting to reap strong benefits
- TfL funding should be directed towards ensuring that the monitoring and evaluation of the trial is of the highest quality, so that the trial has maximum impact elsewhere
- Based on a full complement of 10 riders, operating for 20 months, we estimate the full cost of a pilot at £320K – £370K, although given the number of vans that Company B would hope to replace with the cycles used, only around £50K of this would be 'additional' to the existing costs of making the deliveries affected. It is also quite possible that due to the potential savings identified above, the trial will

be cost neutral or even save the company money.

- Of the above cost, £35K – £40K would be spent on the bikes themselves. The cost of evaluation in this figure is estimated at £12K, but this could vary considerably depending on the exact brief.

Strengths

- As a very large company, Company B has:
 - High natural 'churn' in the workforce, allowing for recruitment of riders without displacing van drivers.
 - Greater surplus resources (management and financial) to invest in new ideas.
- The company has a strong environmental stance, but currently no transport statement.
- The possibility of a central London distribution hub has already been discussed.

Weaknesses

- [Due to the size of the company, decision making processes may be slow.] *Since the time of writing, this has proved not to be the case.*

Opportunities

- The existing costs to the company offer the chance of large financial savings in Congestion charge and Penalty Charge Notices.
- The chance for TfL to gather a large amount of data on cycle logistics.

Threats

- If the trial is not a success, the high profile of the company will make the failure particularly damaging to the promotion of cycle freight.

5 ASPECT 1.2 – 3rd Party Carriers

5.1 Introduction

This aspect of the project looked at 3rd Party Logistics companies (or 3PLs in the industry jargon) – i.e. the household names of deliveries. Meetings were held with representatives of 4 companies.

The delivery market is often described as the 'CEP' market – which stands for Courier, Express, Parcel. Courier deliveries are same day, often with a certain time specified, and the couriers themselves (whether using van, motorcycle or bicycle) operate from point to point rather than the deliveries being consolidated.

Express deliveries are next day – deliveries must be handed over by a certain time, usually 5pm, for delivery by a set time the next day, typically 9am or 12noon. Express operations consolidate deliveries overnight, ship them to distribution hubs and then distribute them in the morning. The early morning i.e. 9am deliveries present a particular problem in their final distribution, as there is usually a requirement for them to be signed for and so there must be someone at the delivery address to receive them. This usually means that they must all be delivered between 8am and 9am – so large numbers of small-payload vehicles acting in parallel are more suited than a single large-payload vehicle with lots of drops.

The Parcel market consists of deliveries with no particular time window. They may be 'next day', 48 hours, 72 hours etc., but even next day deliveries will not have a particular time of delivery. Therefore, parcel deliveries are suited to larger vehicles, making longer rounds, and require fewer distribution hubs.

Contacts for this part of the study were supplied by the customer, who reported that Company E had expressed strong interest in the project and consequently they were the first company to be interviewed. Although the original project proposal only required one case study of this type of carrier, it was considered that Company E alone did not represent a strong cross section of the market and potential uses of load-carrying cycles, due to the fact that as a company they are mostly involved in the Courier market. Therefore, some of the other contacts were also followed up, and Company C proved to be the most willing to give an interview.

5.2 Case study – Company C

Meeting at depot, General Manager, Regional Security Manager and Depot Manager
November 2007.

General setup within Company C

Company C is a major logistics company with multiple operating divisions, including:

- Fashion - specialising in clothing delivery, especially some of the particular requirements to do with hanging garment boxes.
- Mail – providing bulk business mail delivery, usually passing items on to Royal Mail for the last leg.
- Express – express parcel/document delivery.
- Courier – same day courier delivery.

Across the company, most of the operations are outsourced, with Company C working with a variety of subcontractors.

Within London, there are a number of depots. One particular depot handles most of the international deliveries through London, which accounts for all of its work. Most of these deliveries are express (next day). These include pallets, parcels and documents.

The depot is 95% subcontracted. Although various subcontractors are used, the main one is based in Essex. The company has a company-wide agreement on pay rates for directly employed staff, which would present difficulties if they were to directly employ staff on a cycle pilot.

Security

Security is a major issue in London, with organised gangs targeting operations such as Company C with greater regularity than in other parts of the country. A van left unattended for any length of time will be considered at risk of having locks attacked and the payload raided.

Certain types of delivery – e.g. computer equipment, have been particularly targeted and are now separated out and given extra security (two staff, so one remains with the van while the other completes delivery).

Logistics models

Each of the London depots operates to an individual logistics model based on their particular circumstances of location, delivery requirement and payload. However, in most cases the delivery routes are developed based on a postcode system, and will be largely the same each day with some minor changes. This does result in a below-optimal allocation of resources, with some routes being overloaded on many occasions, while others run under capacity.

The company is currently introducing a more sophisticated software system that will do away with the postcode-based approach and move to 'microzones'. This system will do more to take account of the real barriers on the ground – one way systems, rivers etc, including dynamic elements such as road-works. As a result, the routes used will become more dynamic.

Green issues

The company is forward thinking on environmental responsibilities, and is in the process of introducing electric trucks into its fleet (receiving front page coverage in 'Freight' magazine in the process). However, cost is still a factor and any initiative will either have to pay for itself, or have extra money provided - subcontractors are considered to be willing to adapt where new initiatives are cost neutral, but will be very reluctant to take on board anything which increases cost.

Other operating factors

Road-works are a major impediment to delivery routes. The new logistics software may help adaptation to this, but cycles are recognised as possibly bypassing some such obstacles.

The impact of penalty charge notices is difficult to audit accurately due to the high degree of subcontracting, but their incidence does seem to be rising rapidly. One area

where this has been a particular problem has been Westminster, where restrictions on loading have steadily increased. A number of freight operators have jointly lobbied the borough to reverse this, threatening to simply not deliver to the affected areas, and this has had some success.

Previous trial of cycles

The depot manager has recently trialled the use of cycle messengers from the main depot. His motivation for doing so was a perceived potential productivity gain – cycles were cheaper than alternatives, and he believed it was possible they would be faster as well.

The typical cyclist (and indeed motorcyclist) expects to earn around £80 per day (this is gross, as they are self employed). They are paid per drop (Company C paid the subcontractor £1.65 per drop, and they paid the cyclists £1.30). By comparison, small vans are now delivering the same items, at £1.80 per drop, but these vans and drivers are also handling other contracts (bank work), which cycles could not do.

In order to provide a suitable payload for the cycles, and to avoid security concerns, the depot separated out the documents from pallets and parcels – this was practical and acceptable, given the particular circumstances at this depot.

The trial ended, relatively recently, for two reasons:

- The anticipated productivity gains did not materialise, mainly due to the restricted payload of the cyclists. Typically they would have to return to the depot several times per day for more documents. While their small payload is not a problem when carrying out point-to-point courier work, it becomes more of an issue with multi-drop express work.
- Seasonal unreliability of riders – in poor/cold weather i.e. many of the riders would not show up for work.

Potential niche for load carrying cycles

During the course of the interview, it was considered that concerns about security and/or the volume of parcel delivery put the majority of parcels outside the scope of a cycle trial. However, it was considered that the previous trial of cycles might be worth revisiting with cycles with a larger payload. Major plus points to this were:

- The previous trial had demonstrated there was no problem in separating out express documents from parcels/pallets.
- The issue around size of payload would be addressed directly by using larger cycles.

The issue around rider reliability was also discussed, and it was noted that other case studies for this project have found that the type of rider attracted to 'cycle-freight' is generally different to those attracted to courier work – riding load carrying bikes is not a job for the 'adrenaline junkies'! Typically riders of load-carrying cycles are employed on a contract basis rather than self-employed, and the more stable situation allows for more reliable people management.

Discussion of Company C as a potential host company for a pilot

In concluding the interview, the potential for Company C to act as a host company for a pilot scheme operating load carrying cycles was discussed. The staff present were willing to consider such a proposal, with the following issues/suggestions taken into consideration:

- The cycles would be used to deliver express mail (documents only, for security reasons). Previous trials in the main depot have established that it is feasible to separate this out from other consignments. Express delivery is time-pressured enough for cycles to offer an advantage, while still requiring the 'multi-drop capability' of a load-carrying cycle over the limited payload of a conventional cycle/motorcycle courier.
- There would have to be a process of negotiation on the exact details of a trial before Company C would be prepared to sign up to it. If TfL were to approve funds for such a pilot, there would then have to be some further discussion, with Company C unable to give any guarantee at this stage that it would act as a host.
- Company C would want publicity around the scheme kept to a minimum while still in the pilot phase. Like many of the companies interviewed for this project, Company C saw the PR value of using cycles as a significant benefit (the company has already gained good publicity for its electric vehicles). However, if the use of cycles was made public at the trial stage, and subsequently found to be uneconomic, the company would be in a difficult position.
- The development of the pilot would probably need to involve Company C's major subcontractor in the depot.
- Recruitment and training of 'drivers' was identified as a key success factor in any pilot. Company C staff considered that the skills required for the job could easily be underestimated, that quality staff are required and that it would be vital that a high quality service be provided from the off. Basic driver training typically takes two weeks, with it taking around two months for drivers to really know their area. In addition, all staff at the Bermondsey depot require extensive security checks as it is an air-freight site.

5.3 Case study – Company E

Interview with September 2007.

General setup of CitySprint

Company E is a medium to large courier/express carrier, carrying out some of its deliveries under its own name and also providing deliveries as a subcontractor for other carriers.

The company has 32 regional offices throughout the UK, although many of these are very small, with just a controller and service centre manager. The largest office is in London. Below the senior management there are two main divisions – customer services (receiving calls and communicating outside the company) and operations (the controllers directing the various deliveries).

In addition to the two main divisions, there is the 'Fleet, Transport and Specialist Services' team, with management responsible for decisions relating to the vehicle fleet, & internal auditor responsible for ensuring the company's compliance with ISO 9001 and ISO 14001.

Current use of cycles in Company E operations

Company E makes extensive use of cyclists in its courier operation. Of its 32 offices, seven have cyclists on the books (all in urban areas). By far the largest number are based in London – there are approximately 100 riders on the books at the central London office, with around 70 working on any given day, along with three controllers.

All the riders are self-employed, and are paid on a mileage basis rather than by drops. The company encourages cyclists to work a maximum of four consecutive days, rather than a usual five-day week, because experience shows that the physical demands of the job have a significant impact on performance after four days.

The cycle 'fleet' covers approximately 3,000 miles per day, operating all the way from Wapping in the East to Kensington in the West, with the heaviest traffic from the City to the West End. This work is mostly point-to-point, but there is also a 'hub and spoke' element to the logistics to service E14 (Docklands) as the cyclists are unable to use the Limehouse Link. The maximum payload for the cyclists is 4kg. The customers making use of cyclists are mostly financial and media clients.

Turnover of riders in Company E operation is lower than for most cycle courier firms – one rider has been with the company for 25 years. There is also a waiting list of cyclists wanting to work with the company. This is probably down to a combination of factors:

- The policy of encouraging riders to only work four consecutive days may reduce burnout.
- The size of the operation puts less stress on any individual rider, and ensures a more predictable flow of work.
- Payment by mileage rather than drops makes for a more steady income for the rider.
- The company has a policy of (almost) always hiring riders back if they take a break – this suits riders well as the riders tend to want to take breaks to undertake activities such as travelling, climbing, skiing etc. and this allows them to do so. This also suits Company E because the volume of work is seasonal and lower in the summer – so if some riders disappear for several months in the summer it's easier to keep the remainder occupied.

Market niches for cycles

Intra-organisational deliveries

A major growth area for the use of cycles is in transporting documents – particularly archived documents, often in intra-organisational deliveries. Company E supplies a 'man

and van⁵ on a contract basis to a number of clients, to cover intra-organisational delivery. Some of these contracts could be covered by a load-carrying cycle and rider, but there is a perception problem among clients, with many organisations seeing cycles as slower, not very clean and a 'bit hippy'.

A further problem is that the 'driver' in these contracts is usually someone who remains with the host organisation, so although they are officially employed by the contractor (e.g. Company E), if the contractor changes, they stay and simply switch to the new contractor.

Company E is about to start providing a Cycles Maximus trike for a city law firm. It is expected to cover 20-25 miles per day, transferring boxes of legal documents between buildings. It will be supplied (initially) on a daily rate for cycle and rider.

Clients and client perception

When Company E started operating cycles the majority of clients were in media companies. Blue chip firms, by contrast, had a poor image of cyclists. Across much of the courier market, it is still the customers who dictate the mode of transport – they call a courier firm and ask for a motorcyclist, for example, rather than simply specifying the load, destination and time constraint and leaving the choice of vehicle to the carrier.

The situation is gradually changing. More customers are recognising that a cyclist will be both quicker and cheaper, and at the same time the carriers are shifting the culture towards one in which the parameters of the job are specified by the customer, and the carrier decides how to meet the requirement.

Express market

Despite the issues outlined above, cyclists are fairly well established in the 'point-to-point' i.e. courier market. They are less widely used for express work (overnight deliveries – typically specified as 'by 9am' or 'by 12 noon').

However, Company E does make considerable use of cycles for this type of delivery, especially the 'by 9ams'. These will be consolidated overnight and brought in hub and spoke fashion. There will then be a limited time window in which to distribute them back out through the city, especially if they must be signed for, and this coincides with the worst traffic congestion of the day. Although the deliveries would potentially all fit into one van, it simply wouldn't have time to complete the drops, so such deliveries are distributed among the cycle fleet for multiple simultaneous delivery.

Pharmaceuticals

One potential niche market for the use of cycles is pharmaceuticals and other medical supplies. It was identified as a market to investigate the initial assessment of this project, and Company E have considered it. However, in practice, most of the delivery 'hubs' for this type of product in the London region are a long way out of the city. In addition, this type of payload presents significant security challenges, and often consists of light but bulky packages.

⁵ The van supplied is in turn leased by Company E – the company as a whole does not own any of its vehicles, due to the rapid pace of technological development and the need to keep depreciation off the books.

'Low carbon' deliveries

In the opinions of both interviewees, the relative carbon emissions associated with different types of vehicle is becoming an increasingly important factor for many clients. Most large companies now employ Corporate Social Responsibility managers, who are usually looking for 'quick wins' in terms of improving the company's environmental performance. Applying tough standards to their subcontractors is generally easier than making internal changes – e.g. specifying their choice of courier firm according to which has the lowest carbon emissions will be easier than changing their own vehicle fleet.

Additional notes from supplementary conversation (March 2008)

Since the interview detailed above was carried out, Company E has learned more about this area of work from the trial with a city law firm previously referred to.

The Cycles Maximus trike that was originally used for legal document (DX) work has now been reassigned to regular 'rounds' of deliveries within EC14 (docklands). In this area there are high numbers of regular business-to-business deliveries in a small area, making it ideal for this vehicle. The company is just buying an additional three trikes to cover similar work in the 'square mile'.

The existing vehicle has experienced some unexpected difficulties with windy weather conditions. Whereas hills have not been too much of an issue, windy days can have a severe impact upon the speed of the trike, due to its large cargo box. The new vehicles will all have the more powerful of the two electric assist options available i.e. the 'Lynch powerdrive'. This will not only help with wind and hills, but also with loading ramps, which have provided another unanticipated challenge.

The company has some concerns about the possible registration requirement for the new vehicles – strictly speaking an electric assist vehicle over 60kg should be registered under UK law, but not under EU rules. This is the same issue that is detailed in the case study of the Royal Mail earlier in this report. Company E currently receives a lot of PCNs for delivery vehicles in loading bays – the majority are voided on appeal, but this is clearly an unwanted administrative burden. Company E are keen to use trikes partly to avoid the PCN issue. However, if these vehicles had to be registered, they would then become liable to PCNs anyway. The company are keen to see the EU regulations adopted as UK law.

Since the original interview, the customer demand for low carbon deliveries has increased. In the last six months, the number of Company E customers requesting CO₂ data as part of their monthly performance report has risen from 10 to 65. This provides an increased incentive to bring more trikes into service. The company still has a problem providing low carbon Express and International deliveries, because it can't find delivery partners in this area that provide the carbon reporting required.

5.4 Other interviews – Company H

During the background research for this project, one source referenced a trial of load carrying bikes carried out in London by Company H. This was followed up with telephone and email contact.



Fig. 5.4: One of the bikes used in the Company H trial

Discussions regarding the trial started mid 2001. Company H had established strong 'green' credentials at that time, winning three awards for use of innovative alternative fuels:

- Fleet Week Gold Award for Innovation (LCC Award).
- Liveable City Award for Contribution to Air Quality (LCC Award).
- Liveable City Award for Traffic Reduction and Transport Management.

The company was both keen to build on this success, and to find a solution to increased congestion in the West End and financial districts. A trial was introduced, using 15 'Brox' four-wheeler cycles with load-carrying boxes (see picture). The bikes were used to transport small document parcels, 0.5kg > 2.0kg, mainly in the financial sector.

The trial came to an end in late 2004. The bikes had worked well when the density of document deliveries in the trial area was consistently high. However as IT / internet systems improved, the document volumes fell, resulting in heavier and larger shipments, which became an issue with the bikes. The company decided to end the trail due to capacity, productivity issues, and the then bikers becoming courier van drivers in their new LPG fleet.

5.5 Other interviews – Company D

The managing director (MD) of this small but rapidly expanding company was by far the most entrepreneurial individual interviewed for this project. All the interviews with other companies involved middle management, despatch managers etc. As MD he was far less interested in detail (it was not possible to write up the conversation as a full case study), but very keen to look at the possibility of getting any new idea that could differentiate Company D from the competition.

He saw a definite opportunity to use cycles within the DX system for transferring legal documents. The MD also recognised that in many cases, a van is used where a cycle would do, simply because the customer is unable/unwilling to specify the size of the load before it is picked up. He suggested a system similar to the 'EasyJet' bag size checker – each company post-room has a size checker, and know that if it fits in the checker, then they can send it by load-carrying cycle. (They may also then be encouraged to ask for the bike where appropriate by cheaper prices, or some type of 'green points' system).

The MD suggested that the cost of one 'man and van' would be approximately £30,000 pa, and regarded this as a baseline against which the cost of a cycle and rider could be assessed.

He expressed interest in exploring these ideas further should TfL wish to approach him.

5.6 Conclusions and recommendations

Conclusion: Environmental benefits are of significant interest to Third Party Carriers

It is clear from the case studies and interviews carried out for this part of the study that commercial logistics operators see a clear business need to demonstrate environmental awareness to their customers.

Company C is investing in electric vehicles, which gained it front page coverage in a leading trade journal. The senior management of Company E highlighted the role of Corporate Social Responsibility managers in large firms in driving a 'green' agenda for suppliers, while it considered that smaller firms, particularly in sectors such as media, had for some time wanted to align themselves with the emerging environmental consensus. Company H was reaping the PR benefit of green awards and Company D sees green initiatives as a way of getting a 'first mover advantage' in the market place.

Company E went further than the other interviewees in identifying carbon emissions savings as the key underlying indicator of environmental performance, but this was implicit in the actions of the other firms.

Recommendation: CSR, marketing and environmental officers should be involved in pilots

If any pilot studies with this group of companies are taken forward, staff responsible for marketing and environmental performance should be contacted and brought into the process at the earliest stage of planning.

Recommendation: If possible, environmental benefits, especially CO₂ savings, should be quantified

The website for La Petite Reine in France (see background research) highlights the number of tonne-kilometres saved by its cycle deliveries, as well as quantifying how this translates into CO₂ and particulate emissions savings. The ultimate aim of this project will be to demonstrate the potential benefits of cycle freight, so calculation of these benefits should be built into any pilots from the start.

Conclusion: If pilots are to be successful, cycles should ideally be used for multiple, targeted roles

Company C's previous trial of cycle messengers within its operation failed partly because the cycles were not able to take on multiple roles – their small payload restricted them purely to courier work, whereas vans are used for a different type of work later in the day. The Company H trial ended largely because the particular type of delivery the cycles were used for decreased in volume. Company E uses its cycle fleet for express deliveries in the morning, and courier work for the rest of the day.

Cycles are not an option for some types of load – security concerns and issues with bulk largely rule out the parcel market. However, Company C has shown that it is possible to filter deliveries into different streams, isolating those that can be carried by cycle. Deliveries can also be sorted by destination, allowing bikes to be used primarily in those areas that are most congested or where parking is most restricted.

The Company C trial, the Company H trial and the Company E operation all use(d) one type of cycle. All of the dedicated cycle freight operators examined in this study use several different types of bike. One of the advantages of cycles is that they are relatively cheap, and there is no reason why a company need restrict itself to only one type of bike available to each rider. This opens up the possibility of pilots in which riders can perform multiple roles through the day, possibly using more than one type of load carrying bike.

Recommendation: Investigate the possibility of using the latest logistics software to target deliveries best suited to cycles (Company C is just introducing new software to allow more flexible route planning)

Recommendation: If possible, trials should make use of cycles for more than one type of job – e.g. courier, express mail and intra-organisational document transfer. If necessary, more than one type of cycle should be available to each rider in the trial, e.g. a Bob-Yak trailer (cheap and fast, payload 32kg) and a Cycles Maximus trike (slower, payload 250kg)

Conclusion: Recruitment, training and conditions of employment are key

The cycle messenger business generally makes use of self-employed riders, and pays them by the 'drop'. Although this is the most common model, it does not necessarily facilitate the move towards moving more and larger loads by cycle.

Company E has a much lower turnover of staff than most cycle messenger firms, and the evidence suggests that this is at least partly due to the fact that they pay riders by the distance travelled, not the drops made – resulting in a fairer and more predictable income. The dedicated cycle freight firms interviewed often pay riders a salary, and generally report that cycle freight riders are less transitory employees than messengers.

All the firms highlight the importance of well-trained and reliable staff, and the evidence suggests that investing in recruiting and retaining committed individuals will pay off.

Recommendation: Pilot projects should seek to recruit, train and retain staff with contractual arrangements that encourage a longer-term commitment than is usual among cycle messenger firms

Conclusion: A shift in the way customers specify courier jobs would help moves to expand cycle freight

Both Company E and Company D highlighted the fact that customers will typically ask for a type of vehicle (e.g. "send a motorbike") rather than give specific details of the load to be carried. Both firms were keen to shift this culture, particularly because it means they are at the mercy of customer prejudice rather than being in a position to specify the most efficient vehicle for the job.

5.7 Outline of potential pilot projects – Company C and D

Two potential pilot schemes are outlined below, with Company C and D. In the case of Company C, the opportunity lies in reviving their previous experiment in using cycle messengers as part of express mail operations, but solving the problems encountered (limited payload / unreliable staff) by using load-carrying cycles and changing the recruitment/contract arrangements for the riders.

In the case of Company D, a pilot would use bikes in a variety of contexts, courier, internal mail runs, DX work etc. The unique aspect of this pilot would be to trial the idea of a 'size checker' for the load to be carried, which would be installed in each of the customers' post rooms.

Finally, it is also recommended that TfL maintain contact with Company E, and make sure that their current trial of using cycles for their work with a City law firm is monitored and evaluated. Since the interview with Company E was carried out this trial has been expanded. An initial single vehicle working is now to be joined by a further three cycles. The new cycles will have an electric assist pack for the few hills in the area.

5.7.1 Company C

Outline – use of load carrying cycles as part of an express mail operation

- Two year duration.
- Essentially a modified version of a previous trial using cycle messengers, which proved to be limited by their small payload (4kg).
- 5-10 riders with 8-freights (25 x the payload of messengers) or Bob-Yak trailers (8 x the payload of messengers).
- Cycles may incorporate lockable boxes, and possibly sorting compartments.
- Work with the current subcontractor and try to establish riders on a par with drivers.
- Unreliability was a drawback with messengers. This trial should seek to put the riders onto more stable contracts, with more training, and riders paid by their mileage rather than by drops.

- The trial should focus on express mail delivery, but also look for other complementary roles that the riders and bikes can take on.

Interest from host organisation 4/10

Wider applicability of lessons learned 7/10

The interview was with management at the operational level. Overall, the company is investing in electric vehicles as its major means of reducing environmental impact. Those interviewed were fairly reserved regarding their expectation of cost savings.

This is a major company, and so a trial of cycles within Company C would have credibility elsewhere. The limitation is the focus exclusively on express mail.

Cost – medium

- Ultimately Company C should be able to bear the direct costs of the trial from revenue derived from the service delivered. However, after the previous failed trial of cycle messengers, some level of subsidy may initially be required to reassure the company that a 'modification' of the previous trial carries an acceptable level of risk.
- Significant input of time may be needed from consultants/managers/TfL to broker acceptable approaches to the various parties involved (Company C and subcontractors).
-

Strengths

- The previous trial demonstrates the feasibility of some aspects (especially the filtering of mail suitable for carriage by cycles).
- Company C has an existing partnership with cycle delivery firm Le Petite Reine in France.
- Company C is introducing new dynamic route planning software, and it may be possible to test the use of this to integrate cycles into the whole operation.

Weaknesses

- The company has existing (well founded) concerns about security.
- The failure of the trial of cycle messengers has created a certain amount of scepticism.
- This interview, and potential trial, is only with one depot. Each Company C depot has its own models and systems.

Opportunities

- As a major provider, a trial with Company C brings strong credibility.
- Confining the trial to the express mail area may be limiting, but it is a good area to target, well suited to load carrying cycles, and may keep the operation focused.

Threats

- A successful trial will probably rely on good co-operation from the subcontractor who has not yet been contacted.
- It may prove difficult to recruit quality riders.

5.7.2 Company D couriers

Outline – smallish pilot, 3 riders (initially), testing customer ‘load specification’	
<ul style="list-style-type: none"> • 18 month duration. • Three riders initially. • Workload likely to be varied, provide a mix of cycles for riders to try – 8-freight, Cycles Maximus and trailers. • Target at least one sub-contracted internal mail run and some DX runs. • Key point of this trial to be the introduction of ‘Easy-Jet style’ size checkers in customers’ mail rooms – customer puts the item in the size checker and if it fits, then a bike is despatched rather than a van. 	
Interest from host organisation 8/10	Wider applicability of lessons learned 8/10
Interview was with the MD of the company, who was very enthusiastic, and the size checker is his idea.	Opportunity to use the bikes for multiple roles. Size checker idea addresses a fundamental problem in delivery culture – that the customer should be moving towards specifying the load and not the vehicle.
Cost – med	
<ul style="list-style-type: none"> • Only three riders and most direct costs should be borne by the company • Company is small, and will need management support if novel ideas like the size checker are to be brought in within an acceptable timescale. • 	
Strengths	
<ul style="list-style-type: none"> • Enthusiastic support from the MD, small growing company looking for fresh ideas. • At least one willing customer already identified. • Good central London location, so no extra hub needed for bikes to reach their likely area of operation. 	
Weaknesses	
<ul style="list-style-type: none"> • Small firm, possibly with limited resources for introducing new ideas (although they have been quick to introduce new technologies in the past). 	
Opportunities	
<ul style="list-style-type: none"> • Chance to pilot a genuinely new idea (the size checker) that originates with the MD of the company (so he’ll be committed to it) and which addresses a clear problem. 	
Threats	
<ul style="list-style-type: none"> • The company is keen to exploit first mover advantage, and so may not be keen to share any lessons it learns from the trial. This might be overcome by agreeing to market the benefits to the customers rather than the operators. 	

6 ASPECT 2 – HOME DELIVERY OF SHOPPING

6.1 Introduction

This aspect of the project, home delivery of shopping for customers who have travelled to a location (as opposed to delivery of goods ordered online or by phone/post), was the most novel of the three investigated. The risk attached to potentially introducing such a novel product is exacerbated by the very specific, and therefore limited, target market. As per the customer's brief, the work focused on the idea of operating such as service from an outer London shopping centre.

Given the stated aim of reducing short car trips made for shopping purposes, the target market for this service can be imagined as a Venn diagram intersection of customers who:

- Have travelled by car.
- Have only travelled a short distance⁶.
- Have an alternative, attractive transport option that is as cheap or cheaper than the car, or more attractive for other reasons.
- Have a significant amount of shopping that they would find it hard to transport via the alternative mode.

This work started with a desk based review of home delivery in general, and any other trials or projects that might have a bearing on this idea (section 6.2). Potential locations for a pilot were identified through desk research and telephone interviews (section 6.3).

Finally, interviews were carried out with the managers of two shopping centres named 1 and 2. These are detailed in section 6.4.

In the original proposal, it was suggested that without an obvious host organisation, any pilot for this aspect would require a great deal of direct management support and thus be more expensive than the other pilot projects. During the course of this research, it was discovered that there is an existing project in the area of Shopping centre 1, Company F, which is interested in acting as a delivery partner for a pilot. An interview was carried out with Company F detailed in section 6.5.

6.2 Review of home delivery operations

6.2.1 Background

Home delivery is defined as all goods delivered to customers' homes (or another location selected by the customer – such as a workplace) regardless of the ordering system. Home deliveries have been taking place in the UK for centuries. However, the home delivery of grocery products market is relatively new with a significant growth potential.

⁶ 'Short distance' will need to be defined with reference to the research on load carrying cycles and their existing operation in Aspect 1 Stage 1.

Based on an assumed average online purchase of £80, the total number of grocery home deliveries in the UK rose from 2.5 million in 1999 to 6.6 million in 2000. The home delivery grocery products market is estimated to be 6.6 million deliveries per year, and could potentially grow to 62.5 million by 2005 (University of Westminster, October 2001).

A survey for existing and potential home delivery customers conducted by Verdict Research (2001) showed that customers were more likely to use home delivery if there were lower prices/charges for goods purchased and delivered to the home, delivery time slots were made more flexible, delivery time windows were shortened, there was no cost to return goods and if delivery options were more flexible, for example being made to their homes when they were not present, or made to different locations (University of Westminster, October 2001).

6.2.2 Case Studies

Tesco Home Delivery

Tesco.com is the UK's most popular on-line delivery service covering 98% of the population. Tesco.com has over 6,000 drivers and delivers shopping to over 260,000 homes a week. The service enables customers to shop online and have their shopping delivered to their home in a chosen two-hour delivery slot for a delivery charge of £3.99 to £5.99 (www.tescocorporate.com). Tesco.com delivery drivers cover most of the country. However most of its delivery drivers serve fairly small catchment areas - typically, they deliver within a six to ten mile radius of stores. (www.itpro.co.uk)

Tesco chose not to create a separate logistics operation for Tesco.com – when customers order online, the order is picked from the shelves of their local store and then loaded on the van. This contrasts with Ocado (see below).

Tesco.com is to be the first company in the UK to run a fleet of battery powered, zero-emission home delivery vans, which save 21 tonnes of CO₂ per year. The vans have the same carrying capacity as a standard Tesco.com van, cover a range of over 100 miles before they need recharging and are governed at a maximum speed of 50 mph. (www.tescocorporate.com)

John Lewis

John Lewis provides a home delivery service for their online shopping service. Most items are delivered Monday to Saturday, 9am-6pm. Customers can choose standard delivery (Within five working days), next working day or named day delivery with prices ranging from free to £9.95 (www.johnlewis.com).

Waitrose & Ocado

Waitrose customers can shop on line or at selected Waitrose branches and choose to have their shopping delivered home. There is a £5 delivery charge for orders up to £50, which is reduced to £3 for orders over £50. Customers complete their shopping, up to one hour before the start of their delivery slot and at the checkout, tell the cashier that they are using the Delivery Service. The cashier then arranges for the customers' bags to be packed and stored appropriately until the delivery time. (www.waitrosedeliver.com).

Waitrose has also entered into partnership with Ocado to provide an internet shopping option for its range. Unlike Tesco, Ocado operate a separate network of high-tech warehouses, which are stocked through Waitrose. As these warehouses are used solely

for the internet operation, the stock of every item is tracked and re-ordered automatically, so items are very rarely out of stock. This contrasts with the Tesco model, where internet shoppers are effectively competing with shoppers in the store. The downside is that Ocado has to fund and operate a complete nationwide network of premises parallel to the Waitrose stores.

European examples (from TRL report 2005)

The Feasibility Study for a Bromley Town Centre Home Delivery Service, (TRL Limited, 2005) reviewed various home delivery systems developed to serve local shops and town centres in continental Europe. These systems are summarised below:

Nanterre PAD – Home delivery service

The Nanterre Portage et Accompagnement a Domicile (PAD, i.e. Home Delivery and taxi service) operates in the city-centre of Nanterre, a city with 100,000 inhabitants in the Paris region. The scheme was the first and largest of a number of PAD projects undertaken throughout France. The public-private experiment started in 1998 and will continue if more subsidies are secured. Its members, the Ministry of Transport and other public and private sources currently finance the scheme.

The scheme had a number of objectives including to promote walking, provide an alternative to shopping by car and to develop a common delivery system for local shopkeepers, reducing car use and air pollution.

The Nanterre PAD experiment has 150 shopkeeper members, and employs six people who pick up the goods purchased at member shops and deliver them to the customer's home. The basic premise of the project is that products are either bought in member stores or ordered by phone, the retailer then calls the PAD centre to request delivery, the product/order is collected by the PAD employee for delivery to the customer either by electric motorcycle or electric car. The customer is charged 1.5 euros per delivery.

The PAD centre executes around 100 deliveries and 20 rides a day. The centre tries to co-ordinate a delivery tour in order to rationalise the use of vehicles. However, this is not always possible due to the delivery within one-hour promise. The project is considered successful, but has not been profitable and is considered to always need at least a 25% subsidy rate from the public sector.

Nanterre: customised services in regional railway stations

This Nanterre project was launched in 1999 and is an extension of the original PAD scheme, conducted by the same organisation of local shopkeepers and service providers. The project allows rail commuters to store their shopping in specialist units called 'Relais' which comprise fridges, freezers, clothes hangers and shelves or gives the rail commuters the option to have their shopping done for them for later collection. The services are available between 7am and 9pm. There is no charge to customers, but retailers pay an annual fee.

This scheme has not been successful for various reasons including a lack of marketing, and the closure of one of the Relais sites in 2000.

Versailles Porterage

The Versailles Porterage scheme was developed in 2000 and is supported by the government and local commerce. The scheme allows goods purchased in Versailles (either in store or via telephone) to be delivered either to the customer's home or to their

workplace, usually within two hours by mopeds or Renault Kangoo car derived vans. The scheme completes approximately 700 to 1,000 trips per month. Deliveries are free, but customers and shopkeepers pay an annual membership fee.

St. Etienne (Homeport Drop-off system)

This scheme began in 2003 and is subsidised by the local council in partnership with transport provider Connex. The scheme has installed Homeport devices at a park & ride location in St. Etienne. An electrically powered vehicle delivers customer purchases to the Homeport systems twice daily, in the early afternoon and early evening. Registered customers can then pick up their goods from the Homeport boxes. The cost for the customer is around three Euros.

Homeport devices are small devices that can be installed at most locations and enable secure collections and deliveries to be made outside the constraints of normal working hours. Goods are secured within one or more containers, which are attached to the Homeport unit by a chain or cable. Access to the containers is either gained with a PIN number or a Smart Card, or a combination of both.

La Ciota Harbour to Door

The Harbour to Door operation in La Ciota, South of France, was started in 1999 and is an initiative of the city council and shopkeepers with government and business partnership.

The scheme operates two small vans (one refrigerated), which complete around 400 trips per month. Delivery is free, but customers pay an annual membership fee of 30 Euros (£19).

RegLog, Regensburg, Germany

The Regensburg home delivery service was implemented in 1998 by the Association of Regensburg Town Centre Retailers in co-operation with a shopping centre located outside the town centre. A regional parcel service provider was contracted as transport operator. Deliveries from outlets in the old town centre were consolidated in a depot and then distributed by an independent operator to customers' homes.

Due to the lack of promotion after the pilot phase, customer awareness declined and the service was eventually withdrawn.

ISOLDE project, Nuremberg, Germany

ISOLDE is an inner-urban delivery initiative, funded by the Department of Trade and Industry in Bavaria. Its main feature is a bundled deliveries service to retailers in the town centre. Consignments are consolidated in the outskirts of the town centre and then delivered to retailers by electric vehicles. The City-shopping service, designed to promote the use of public transport, offers three forms of delivery to customers:

- to the customer's home.
- to the car park.
- to the ISOLDE-depot or to tube-stations.

Home delivery service, Vienna

Vienna's city centre operates a so-called "Packerl-Bus" during the Christmas period. This is a standard bus that has been slightly modified for the storage of goods. Customers of city centre stores can deposit their purchases on the bus, continue with their shopping and then collect the goods before they return home. The Vienna Chamber of Commerce extended the service in 2002, adding the option of home delivery for a service charge.

6.2.3 Conclusions

Based on the case studies and previous research it can be seen the grocery retailer's home delivery is proving to be an expensive system to operate (University of Westminster, October 2001). However, most companies charge for delivery, regardless of the order size.

The European experience suggests that a cooperative home delivery service is both difficult to achieve and virtually impossible to maintain without subsidy and that the impact of a home delivery service on traffic congestion and the associated environmental issues are not entirely clear and require further investigation (EBM Strategic Consulting, March 2007).

Providing the customer with their preferred delivery time windows (typically 6pm – 8pm) may give home delivery schemes significant difficulties. Therefore, ways to overcome this difficulty will need to be explored, such as an unattended delivery system (University of Westminster, October 2001).

There is uncertainty about the best approach to unattended deliveries; the customer being at home at the time of delivery seems to be key to devising simple and efficient systems. The establishment of Collection and Delivery Points such as workplaces, local stores or Petrol Stations, Park and Rides, schools or rail stations could replace the need to deliver to the customer's home. The installation of secure storage boxes at the customer's home would also remove the need for them to be present at the time of delivery. These options would allow home deliveries to optimise transport routes and schedules.

6.3 Stakeholder interviews and identification of potential locations

In parallel with the desktop review, interviews were carried out with a variety of stakeholders.

These interviews were used to:

- Ensure that all existing/previous schemes/trials have been identified and reviewed.
- Ensure that all relevant issues have been identified and considered before designing the pilot scheme (e.g. regulatory environment, standards of customer service).
- Identify potential large stores or shopping centres to work with in outer London.

Making contact proved very difficult e.g. locating contact details was a time consuming job in itself. In addition, the management of the centres tended to be very heavily concealed behind numerous 'gatekeepers' e.g. often numbers given on websites or

directories simply went through to security. In many instances it then proved difficult to persuade staff to pass enquiries through a chain of command to centre management.

Eventually two centres were selected for further work named Shopping centre 1 and 2 .

A summary of the calls made to stakeholders and shopping centres as part of this Aspect is given in Appendix 1.

6.3.1 Stakeholder interview: Stakeholder 1 - retailers

Interview with Director and Vice Chairman August 2007

The rationale for contacting this particular member of the stakeholder board was his clear overview of a national situation and his particular interest in innovative ideas to improve town centre environments.

The vice chairman now spends most of his time promoting good practice from location to location and conducting local reviews for many of the 500+ TCM schemes now in place in the UK. Currently the shaping and delivery of Business Improvement Districts across the UK and the creation of an innovative KPI monitoring mechanism are taking precedence in a busy work schedule.

Review of previous schemes

He was unaware of any schemes that operate bicycles. In relation to questions covering this area the following points were made:

- Stakeholder 1 have considered how to promote the sharing of delivery resources in town centres as a response to multiple vehicles servicing one retail area. He implied that an innovative approach, such as the one explicit in the pilot might assist closer co-operative working between stores.
- Marks and Spencer have been using non-petrol based transporters, '(electric sledges)', to move goods from stores to remote car parks.
- A paper was delivered at the stakeholder annual meeting earlier in the summer by John Hurst, BID manager for the Broadmead shopping centre in Bristol about shared delivery resources using electric transporters. It was suggested that Hurst should be contacted regarding their viability, and the advantages/disadvantages as the sector perceive them.
- Some delivery services were exploring the possibility of a PO box type approach where goods are taken from congested centres and dropped closer to people's homes, but are not actually delivered to the door i.e. goods are left in an easily accessible collection point. This offers quick delivery from outlet to drop off point, but there are security and pick up issues to resolve to ensure that people actually receive the goods that they have ordered.

Other possibly relevant issues

No regulatory impediments to the implementation of the scheme, outside of the normal traffic regulation issues, were envisaged, although as with motor vehicles there would be problems connected with where one would load/unload. These issues were not

considered insurmountable but would involve close working with multiple interested parties – centre managers, shop managers, car parking managers etc.

The two key areas identified were:

- operator safety (the riders themselves).
- door to door security.

In terms of foot-fall, it was agreed that a project such as this offered a way to encourage consumers back into shops rather than shopping on the internet.

Suggested shopping centres to consider for pilots

No new centres were added to the existing London suggestions. However, some suggestions about alternative sites for pilots or schemes were offered, Cambridge being particularly attractive because of the perception of widespread bicycle usage that already exists in the city.

6.3.2 Stakeholder interview: Stakeholder 2 - retailers

August 2007

Stakeholder 2 was immediately interested in the idea of the pilot, describing it as innovative and relevant to the current interests of retailers. It was considered that 'green' credentials and choice were important in the retail environment at the moment, and that there are particular retailers that are sensitive to the green debate (Marks and Spencer, Tesco and John Lewis were the three he named) whereas others were not (e.g. retailers such as Primark where the imperative is simply to keep prices as low as possible).

Review of previous schemes

The stakeholder is aware of initiatives in the area of Shopping centre 1. The understanding was that the town centre was to have two distribution hubs established at either end of the High Street with freight distributed from these hubs – (in fact this is not the case, but it illustrates how initiatives are being talked about/construed/misconstrued).

There was no awareness of any previous or planned schemes using bicycles.

Other possibly relevant issues

In common with other interviews, the primary concern was that bicycles would be unable to carry the freight that people were unwilling to carry themselves. Televisions were highlighted as being the benchmark for unwieldy retail freight from shopping centres. There were three major issues that if properly addressed would make any proposal attractive to members of Stakeholder 2:

- First, the scheme would have to be presented as 'more carrot than stick'. If retailers considered for a moment that they were being railroaded into any scheme they would not participate.

- Second, the relationship between the co-ordinators of any scheme would have to be with management groups of a number of retailers and he agreed that the only real example of these groups is in shopping malls.
- Finally, there was the question of ownership. An interesting point was made that the scheme could not be perceived as a local authority initiative as retailers consider that they often pay money into schemes co-ordinated by local authorities and that the money is squandered. It was considered that if a scheme was seen as 'owned' by retailers – i.e. they had a say in its organisation and running – and that the local authority was seen to be responsible for optimising opportunities for public transport use, the scheme would receive widespread support from Stakeholder 2 members.

There was strong agreement with Stakeholder 1 that the marketing potential for retailers to be seen to be doing something positive about congestion and the environment would be an attractive proposition for retailers. It would satisfy their 'Corporate Social Responsibility agenda.

Suggested shopping centres to consider for pilots

It was suggested that the new Westfield development in White City, Shepard's Bush sounded as though it would be suitable when it opened. The fact that it wasn't open at the time of the interview allowed for a pilot to be established as part of an initial strategy – rather than having to be incorporated into existing infrastructure.

It was considered that the people that would be key to implementing many of the issues that were discussed were the landlords of the developments. The two major landlords of shopping malls in the UK are Land Securities and Hammersons.

Finally, there was enthusiasm for the proposal for a pilot. If TfL were to contact Stakeholder 2 about potential partners in retail they would be happy to assist.

6.3.3 Stakeholder interview: Stakeholder 3 - London borough

Head of Transport Strategy August 2007

The head of transport strategy intimated that when he took on this role there was a semi-active initiative that incorporated a cycle delivery focus. This was a July 2003 study of the potential for a home delivery service, commissioned by the borough from consultants TRL, and funded by a grant from TfL ("*Final report – Feasibility Study for a Town Centre Home Delivery Service*"). The study looked at a number of continental delivery systems where goods were delivered to a central pick-up point. An assessment of the potential impact of a home delivery service operating from borough Town Centre was also undertaken.

The study indicated that any home delivery service of this kind would require a substantial operating subsidy. The technical assessment in the report suggested that a service operating from the borough town centre, with an initial service radius of 2.5km, and a 10% take-up of the service, would offer a reduction of 13 car trips a day, which would then be reduced by the number of motorised delivery trips. He considered that this reduction did not justify the financial or staff resources required to create this innovative service from scratch, or the levels of risk involved if the service could not be effectively "sold" to the public.

The study considered both cargo cycles and vans as potential delivery vehicles, without any particular bias towards the cycle option. It appeared to him that the idea of using bicycles for home delivery was partly derived from a perceived need to obtain most benefit from the already marginal forecast reduction in car trips. In addition, he was particularly concerned with the absence of firm and detailed implementation plans, including staffing implications, a risk assessment and cost/income forecasts, suggesting that the scheme had not been fully thought through to delivery on the ground.

In the circumstances, he felt compelled to recommend that the project should not continue in the borough in its present form.

Nevertheless, he was supportive of the same-day home delivery concept, and was sure that, in the right circumstances, this could be developed by the retail sector as a “unique selling point”, by picking up some of the costs for delivery of goods sold in their premises. The concept was supportive of most local authorities’ transport objectives, by easing congestion or more generally encouraging sustainable travel.

When asked about issues with cycle deliveries that he perceived as being potentially difficult, the head of transport strategy highlighted the size and weight of freight from the retailers (often bulky or heavy), the inevitable question of security of goods on a bicycle compared with a lockable van, and the more general need to build public confidence that their valuable purchases would be safe and delivered on time.

6.3.4 Stakeholder interview: Stakeholder 4 – lobby group

Chief Executive Officer (CEO) August 2007

CEO was interviewed in order to sound out a ‘lobbyist’ perspective on the project. Generally speaking he was enthusiastic about the project. He was most interested in knowing what the uptake will be and also spoke about the transformative potential of the visible presence of freight bikes being used in the way proposed. It was interesting to note that the idea of transporting bulky items by bike does not seem alien to those with knowledge of the broader scope of cycling. He pointed out that if it were possible to identify any cycling enthusiasts that work in the upper echelons of retail, this would be useful – quite how one identifies such an individual/s is a difficult question.

An interest was expressed in assisting with any future developments with this project.

6.4 Interviews with shopping centre managers

6.4.1 Shopping Centre 1

Centre Manager, October 2007.

General description of the centre

Shopping Centre 1 management work closely with the tenants’ association, which is an independent limited company in its own right, and which employs a marketing manager.

The centre has a floor-space of 375,000 sq ft, accounting for 30% of the town centre retail floor space, and has just over 60 retailers currently trading. Attached to the centre

is a 750 space car park, and a 6 screen cinema. The overall footfall is around 20,000 visitors per day during the week, rising to around 35,000 on Saturdays (and obviously higher in the Christmas peak).

The breakdown of shops in the centre is a mix of fashion, electrical and other (although not quite as fashion dominated as Shopping Centre 2).

The catchment of the centre is mixed, with affluent areas to the South-East and South West, and a large, less affluent estate to the North. Currently, the centre fails to capitalise on the more affluent parts of its catchment, losing market share to other shopping centres to the East, and West. As a result, the slightly less affluent part of its catchment from the North are the strongest part of its customer base.

Car parking is seen as a key factor in attracting customers – there is generally space in Shopping Centre 1 car park, and its charges are lower than many comparable destinations. The centre also markets itself on the ease of access to the shops via parking at the attached car park. Despite this, the more affluent customers to the South of the centre are travelling to other destinations. Customers from the North of the catchment area are less likely to have use of a car, and are in any case better served by frequent bus services. It should also be noted that the centre has a financial interest in the car park, and so is keen to see it used to capacity and slightly wary of initiatives to specifically reduce car trips to the centre.

Overall, the centre is getting a little old, and is in the process of developing a plan to 'spruce up' and re-market itself. The intention is to launch a sustained and integrated marketing campaign to kickstart the process, and on the back of this to attract new and more up-market retailers to improve the image of the centre.

Potential for cycle deliveries

Although the centre management is willing to consider a cycle home delivery scheme, primarily for its PR benefit, a number of problems were highlighted in the interview.

First of all, as with Shopping Centre 2, there is the issue of which goods the service would be used for. The centre has a less fashion-oriented retail offering than Shopping Centre 2, so there are a significant number of electrical retailers, selling goods that would be difficult to carry home by public transport. However, as high value and often fragile items, these present other challenges too. Housewares from Debenhams, and toys, would be other likely candidates.

From a marketing point of view, the centre is keen to attract more of the ABC1s from its catchment, and one of its main selling points is its ease of driving/parking. The existence of a cycle home delivery service might give the centre a green image, which would possibly appeal to the ABC1s, but a question remains over whether they would then be likely to use the service. One type of car trip that might be displaced is the return to collect goods – shoppers who arrive by non-car means do sometimes purchase bulky items on impulse, and then return later with a car to collect them.

In the interview, two models for operation of the service were discussed. In the first, the service is provided through the retailers – shoppers pay for their goods, but do not take possession of them immediately. They agree the address and time for delivery in the shop, and the shop then takes the goods to a central 'behind the scenes' consolidation area in the centre, from where they are shipped out. This has the advantage that it does not require any extra staff or location to run the service – customer liaison is done through the existing shop staff. This is of particular benefit at Shopping Centre 1, as it

does not currently have a staffed information desk. A possible downside of this approach is that the transaction is not complete until the customer takes possession of the goods – it is possible that they could refuse the goods at point of delivery, or say that the wrong goods have been delivered.

The alternative model would involve shoppers taking goods to a desk/kiosk in the centre, and arranging for their delivery. In this model, the shopper would have already taken possession of the goods before handing them over, so the purchase transaction would be complete, and furthermore multiple purchases by the same customer would already be consolidated. However, this would mean that the goods would need to be checked for any damage at the time they are dropped off. Importantly, this approach would require an additional full time staffing of the drop-off point, and the location of the drop-off would need to be provided by the centre.

With both models, there would also be the need to decide on the parameters for delivery – would the goods be delivered at a particular time, on a single drop basis, or as part of a multi-drop round in a time window? What would be the delivery radius? And what would be the procedure if there was nobody there to receive the goods?

A final issue discussed was the problem of encouraging the retailers to work together. The centre management have attempted to organise a system of consolidated deliveries to the centre – with the stock for the various retailers being dropped at a more accessible remote location, consolidated, and brought into the centre by a single daily multi-drop delivery. This plan was explored in response to concerns about the number of different LGVs visiting the centre each day, but met with considerable resistance from a large proportion of the retailers. Most are part of larger chains with their own internal logistics protocols, and most with their own branded vehicles.

In conclusion, the centre management were willing to consider a proposal for such a scheme, especially as part of the overall 'Smarter Travel project, but remained unconvinced that a sufficient benefit would be derived for them or the retailers to be prepared to fund it in the long term.

6.4.2 Shopping Centre 2

Interview with Operations Manager, October 2007.

General description of Shopping Centre 2

Shopping Centre 2 is a mall of 126 shops run located in a town centre, with an integral leisure centre. It is run by one of the UK's largest managers of shopping centres.

Shopping Centre 2 is predominantly a fashion retail centre – around 75% of the shops are fashion/clothing outlets. It has a relatively upmarket feel, and works hard to attract boutique names. The customers are 81% female, and 70% ABC1. The dwell time is not measured directly, but it is estimated at an average of one to two hours based on car park records.

The centre is a short walk from both of central rail stations, and has an attached car park with 1,530 parking spaces, for which it charges. The management estimate that at peak times, the centre could attract enough customers to fill an extra 25% over and above this number. The major competitors to the centre are outside of London, and the fact that they provide free car parking is seen as a definite selling point in their favour.

As reported at other centres, marketing of the centre is mostly via 'event marketing' – kid's events (such as Santa's grotto at Christmas), and fashion shows. The objective is to make the centre a more complete leisure destination rather than a collection of shops.

The centre management have taken a variety of 'green' initiatives:

- Directly recycling some waste on site, and thoroughly sorting the remainder. 55% of the centre's waste is recycled, the rest incinerated.
- The centre has a travel plan in place, and has talked to all the staff of the tenant retailers on this issue.
- The centre has introduced smart systems to control lighting to minimise energy usage, as well as other energy saving systems. It is looking at purchasing green electricity for its remaining consumption.

The centre has not previously trialled any form of home delivery service.

Potential for cycle deliveries

On the plus side, the centre has limited car parking capacity, for which it charges, and good public transport availability – suggesting that if some customers are driving because they need a vehicle to transport their goods home, an alternative mode of transport is available and attractive. The centre also has a good track record for 'green' initiatives, and would recognise the potential environmental, and PR benefits of an initiative such as a cycle delivery service. Finally, the centre already has an information and service desk in a prominent location, from which such a service could be provided.

The major difficulty in attempting to provide home delivery of goods by cycle specifically from The Glades is the mix of goods being purchased. With a preponderance of clothing retailers, there are few shoppers for whom the bulk of goods purchased is such that they would find it difficult to travel by public transport.

6.5 Additional interview – Company F

Interview January 2008, plus extracts from Company F Business Plan

Background to Company F

Company F local deliveries is a project run by a local charity which since 1987 Company F helped the borough Council draft one of the first environmental statements prepared by any local authority in the UK. Later they received a grant to pilot recycling in the borough, and later still their remit took on the new agenda of sustainable development. They hosted a cross-sector 'visioning conference' in the borough which was very much a forerunner of LA21. In recent years Company F have moved towards more of a social enterprise model, and shifted their emphasis from awareness raising to running a range of practical implementation projects. The charity implements projects in conjunction with a social enterprise (legally a company limited by guarantee), which covenants profits back to the charity.

Against the backdrop of the 'Smarter Travel project, Company F developed a business plan for a local, cycle-based delivery service. The plan predicted a loss in the first year of the service, moving into profit by the second year of operation. Company F successfully bid to Smarter Travel (funds supplied by TfL and administered by the borough Council)

for a grant to cover the shortfall in the first year. Company F deliveries started operation in September 2007. Sales in the first six months of trading have met the first year end target. A two year contract has just been won, to deliver mail to borough Councillors' homes twice a week.

Business model

Company F deliveries has a fairly simple business model. Company THREE suggested that they regarded four riders as the minimum needed to sustain one controller/manager and thus create a viable business unit. Company F has the advantage of sitting within the larger services company, and thus only has to pay a share of existing overheads and management time. Therefore, the business has started with a single rider, supplemented by additional riders working on an occasional basis. A pool of riders is being developed so that rider resources are available as the business grows.

The market strategy is to target customers that will provide regular work, particularly multi-drop rounds, first, and then to move on to a secondary market containing a wider variety of businesses needing fewer drops. The primary market consists of:

- Local government, schools, statutory bodies.
- Nappy laundry collections.
- Local food distribution, health food shops, farmers' markets.
- Sandwich companies.
- Florists.
- Printers.
- DX.
- A few large companies, targeted on the basis of strong CSR policies / and through links with the Smarter Travel Project.

The secondary market includes an expansion on the above, plus a further exploration of the legal and professional sectors, the voluntary sector, smaller shops and pharmacies. In light of some of the other operations around the world, there are many other potential sources of work that could be investigated – services targeted at the elderly and mobility impaired for example. The intention is to integrate work from the secondary market into and around the regular delivery customers.

The pricing model is based on the number of deliveries per hour that seems achievable, cross-checked against the target profit margin and a comparison of price against the competition. First they assume revenue of around £40Kpa with one rider, which gives a gross profit margin (revenue minus direct costs) of around 50%. To achieve this the rider would have to bring in revenue of £20 per hour, over a 42 hour week. With a target of 4-5 deliveries per hour, which is a reasonable assumption by comparison with other similar businesses, this would suggest a price of £4-5 per delivery, which is competitive.

In practice, the business has been charging £5 for individual deliveries, and £3 each for multiple drops in the case of whole-food deliveries for a local shop. Contracts for regular rounds are negotiated on a case-by-case basis, but with the overall profit margin borne in mind. The company started out with a lot of work delivering materials as part of the Smarter Travel project, and has recently succeeded in securing a wide ranging contract with borough Council.

Equipment used

Company F started with one 8-freight and an electric assist Cycles Maximus. In addition, the business has a small electric 'Mega Van', which could be used if it proved necessary. Six months into operation, the company has bought several trailers, of different carrying

capacities, that can be attached to any bike. This is to provide flexibility both in delivery and to provide vehicles that suit the level of ability of the riders using them.

6.6 Conclusions and recommendations

Conclusion: Shopping centres are not the ideal focus for this type of project

Reviewing the customer base of existing cycle freight operations, along with the results of the EBM study of home shopping delivery carried out for borough , it appears that the majority of key business types that benefit from cycle based delivery operations are not the types found in shopping centres. In the borough, the Town Centre Partnership is a more obvious partner than Shopping Centre 1.

Conclusion: Combining home delivery work with other, more regular, delivery rounds is likely to be a necessary strategy in establishing a service that does not rely on unsustainable levels of subsidy

Research suggests that the optimum time for making home deliveries is 4pm-7pm. An operator carrying out these deliveries would be much more economically viable if the work was combined with business-to-business work during the day, lunchtime sandwich deliveries, leaflet drops for the council etc. that could provide steady income and occupy other timeslots.

Conclusion: Concerns expressed about the legal position regarding ownership of goods are largely unfounded

One issue raised in the interviews with representatives of both Shopping Centres was that of a delivery service assuming responsibility for the goods to be delivered, and what would happen in terms of breakages etc. On reviewing the evidence collected for this project, it is suggested that were this a genuine concern, almost no delivery service would be able to operate. Clearly, any pilot will have to operate to best practice with regard to insuring goods in transit, and have sensible guidelines in place for assessing the condition of goods at the time they are dropped off by the customer, but these need not be onerous.

6.7 Outline of suggested pilot

Outline – Shop’n’drop, launched at Christmas and run in partnership with Company F

- Launch as a Christmas service in November and December – town centre shoppers have higher volumes of shopping, parking is under more pressure, and the cycle could be decorated to look like Santa’s sleigh.
- Operate a ‘shop’n’drop’ model – i.e. shoppers visit shops and buy their goods, then they take them to a drop-off desk and arrange the home delivery. (As opposed to the alternative model in which the customer never takes the goods out of the shop – they pay and the delivery service makes regular rounds of the participating shops to pick up paid-for goods that require delivery.)
- Include plans that will make it possible to extend if successful – e.g. take email addresses of all who use the Christmas service so that they can form a customer

<p>base if the service is extended; survey all those who use the service or show interest.</p> <ul style="list-style-type: none"> • Work with the existing service to provide the service. One dedicated rider plus bike to be provided for the project, plus the option to use some of Company F 's existing capacity should demand require it. • Provide next-day delivery for free, or low cost, within a certain radius and if total spend is over a set amount (e.g. £30). Charge extra for longer distance, or same day delivery. • Partner with the Town Centre Partnership (TCP) to create an overall marketing campaign that encourages shoppers to come and use the town centre for other activities besides shopping (while using the delivery service so they can still leave their cars at home and avoid traffic). 	
<p>Interest from host organisation 7/10 Wider applicability of lessons learned 4/10</p>	
<p>Company F very keen to look at this; staff at Shopping Centre 1 prepared to consider. Would need to pitch to the TCP.</p>	<p>Does rely on the existence of the existing cycle delivery partner, and if continued will probably require ongoing subsidy.</p>
<p>Cost – med</p>	
<ul style="list-style-type: none"> • Only one dedicated rider and bike, but will be unlikely to generate much revenue in the pilot phase. • The total cost of running the service, in conjunction with Company F , for 3 months (October to December) is estimated at £25K. • The cost includes two members of staff, as it is assumed that in addition to the rider, a 'customer service' person will be needed to book items in. The figures also include £2K per month in rent/utilities for a shop space to operate from – it is assumed that the town centre partnership will help the project lease a disused shop in the run up to Christmas, in the same way that charities often do. • Unlike the other pilots, it is expected that very little revenue (if any) would be derived from this project in the first instance. TfL should reasonably expect to bear the whole £25K cost, in the interests of generating hard evidence on how such a service could run, and what kind of demand it could generate. During the course of the project part of the evaluation would be to question users of the service on what they might be willing to pay for it, and to question town centre businesses on whether they might provide some level of subsidy. 	
<p>Strengths</p>	
<ul style="list-style-type: none"> • Existing delivery partner. • Christmas offers a good chance to try a service. • Shop'n'drop model requires minimal co-operation between businesses. 	
<p>Weaknesses</p>	
<ul style="list-style-type: none"> • 	
<p>Opportunities</p>	
<ul style="list-style-type: none"> • Research suggests that walkers spend more than people using other modes. However, drivers are more likely to use other town-centre amenities combined with shopping (largely because they can leave their shopping in their car while they go to do other things.) This scheme offers the chance to encourage walking (and spending) while at the same time letting people combine various reasons for 	

their trip.

- Christmas is a time when people are engaging in non-standard behaviour, which is another reason why it's a good time to pilot this service. By dressing the bike as Santa's sleigh it also offers the chance to harness 'pester power' (much of the advertising of the service could be aimed at children).

Threats

- The shop'n'drop model requires the project to find a town-centre location for its drop off point.
- It is very difficult to forecast demand. If demand is too low, the worst that can happen is that the money used to subsidise the service is seen as being spent on an unsuccessful trial. On the other hand, if demand is too high and customers are disappointed, it could harm the whole concept.
- It will be necessary to get retailers to co-operate in marketing the scheme.

7 ASPECT 3 – INTRA-ORGANISATIONAL DELIVERIES

7.1 Introduction

The original intention for this aspect of the project was to focus on an in-depth analysis of the potential for intra-organisational deliveries for TfL. Momenta's proposal included telephone interviews with six facilities managers in other organisations, plus face-to-face interviews with three to four facilities managers within TfL. The final task proposed was to draw up a draft plan for a pilot to be carried out within TfL.

In practice, it proved surprisingly difficult to find suitable contacts, and this significantly hampered and delayed the work.

Two responses were secured to an email put to TfL's 'Corporate' travel planning group, one from Kier Group, and one from Land Securities. Momenta held meetings with both – however, it turned out that the Kier Group had no significant internal delivery requirement.

Land securities had an internal mail operation. However, its service is provided by Company D couriers, so they were then interviewed on the same day. As a third party carrier, they have been included in this report under Aspect 1.2. It is recommended that the possibility of a trial be explored with Company D, and it may well be that should such a trial be carried out, Land Securities' internal mail would be one of the jobs that could be carried out by cycles.

In parallel with the email appeal to the corporate database, the Momenta team started separate lines of enquiry to some possibilities discussed at a meeting with the customer, as follows:

- **London Boroughs:** The London Borough of Richmond was focused on because the Momenta team had an existing contact with the sustainable transport officer. Following subsequent communications with a post-room contact, an interview was undertaken (see section 7.3).
- **The London Development Agency (LDA):** A short interview was carried out in mid-March (see section 7.5).
- **The NHS:** A meeting with the Travel and Transport Manager took place in March and is reported in section 7.4.
- **The Metropolitan Police Service:** It did not prove possible to identify a suitable contact in the MPS.
- **Better Bankside travel plan network:** It was considered that this network could potentially include some larger businesses/organisations that may have significant internal mail operations. However, it did not subsequently prove possible to identify a suitable contact in this network.

The case study of Green-Link couriers is included in this section because of Green-Link's particular focus in recent years on securing intra-organisational delivery work for local authorities, although much of the case study is similar to the findings of the interviews with Company THREE and Company FOUR.

7.2 Case study – Company G

Interview with manager, June 2007

Background

Company G is one of several cycle businesses (linked through informal networks and the labour mobility of personnel) established in York during the last eight years that together cover cycle freight delivery, rickshaws, cycle promotion, training and consultancy. Company G itself is focused on cycle freight delivery mainly in the central (pedestrianised) area of York, but its founders have also worked alongside other firms, to help establish separate cycle freight businesses, also badged as Company G in Luton and Darlington. This case study concerns the York operation but also draws on some of the Luton experiences.

Structure

Company G is owned and managed by one of its founders. The company has six staff in total, comprising the owner himself who acts as both manager/controller and as a rider, plus five other full-time riders. There is no office, with admin carried out at the owner's home. Communications are managed by mobile phone, with riders basing themselves on street if they are waiting for a job. The company rents a container at a self-storage site just outside York city walls. This acts as a hub for consignments, for overnight secure storage of bikes and consignments and also as a transfer point between Company G and a partner van-based courier firm.

Operational issues

Key to Company G 's approach is the perspective that this is not a cycling business but a problem-solving business. This is especially important in light of changes in the market since Company G was founded, notably the growth of electronic communication. For example, Company G generally no longer transfers draft documents between businesses, but has been forced to increase its role in transferring final documents to and from printers.

Company G 's core business is focused on the centre of York, an area with restricted car access and parking. The 'footstreets' around the central shopping area are closed to motor traffic from 11am till 4pm, and there are parking restrictions throughout the city centre. Company G overcomes this constraint by pushing its vehicles through streets that are closed to traffic.

Company G provides the following main levels of service:

- Same day, local deliveries (by cycle)
- Same day, national deliveries (by cycle, integrated with train)
- Next day, local deliveries (by cycle)
- Next day, national deliveries (by cycle, integrated with a van-based courier)

The city is divided for operations between three zones (see Figure 7.1): the city centre and footstreets, the outer areas of the city, and further afield. Goods may be transferred between different vehicles/riders across the two city zones, or between York and elsewhere. The latter includes same-day deliveries to London via folding cycle and train, and transfers between Company G and a partner van-based courier firm (this firm provides onward delivery for Company G next-day national consignments, and uses Company G to deliver its own central York consignments).

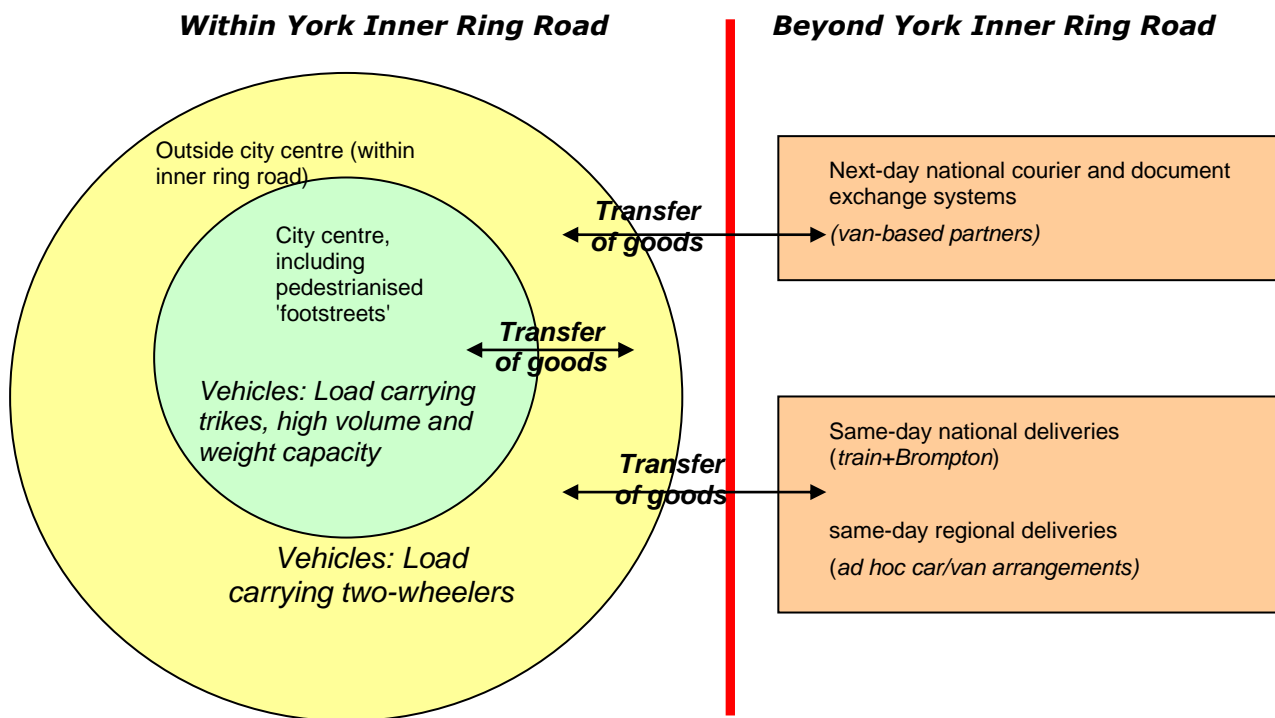


Figure 7.1: Company G's delivery/collection range and methods

Staffing

All riders are employed on a salary, and not paid per job as is typical in the courier industry. Within the last two years, Company G has achieved what it regards as a major landmark in becoming able to pay riders more than a bus driver earns. As a result, staff turnover is low – six years compared to 3-9 months typical for London cycle couriers. This is facilitated by the fact that since riders do not need to maximise earnings per job, work can be scheduled to allow them to recover after especially strenuous jobs, which in turn reduces turnover.

Company G's riders are in the owner's words 'smarter' than typical courier staff, in that they do not need to be so closely managed. The controller role draws on riders' own expertise in managing the work – for example their knowledge of customers' needs in the timing of a delivery. All Company G riders know all the different roles needed so as to provide maximum flexibility and prevent gaps being left during holiday or sickness. Consequently, Company G employs a different rider profile than elsewhere in the industry, i.e. those who are older and more experienced.

Customers

Company G has about 120 customers, and carries consignments for about 40 of these in any week. The customer base is predominantly public sector and smaller businesses, which do not have their own fleets and are more likely to be located centrally.

Company G has experienced difficulty engaging City of York Council effectively as a customer, and this is backed up by the experience of the Luton operation. In particular, the local authority does not operate as a single customer, forcing couriers to deal separately with each department. From the authority's perspective, using cycle couriers would greatly increase efficiency by preventing the use of relatively senior staff to deliver

documents by hand or car, the considerable cost of which is masked beneath salary costs. Solutions to this market barrier are considered to be a need for less bureaucratic purchasing regimes and, most importantly, clear commitment and leadership at the most senior level in the local authority. This has not so far been forthcoming in either case, and provides potential lessons for how to engage local authorities in any pilot project set up in London.

Costs

The largest running costs for the business are salaries, which are £13k x 5 / year plus the owner's salary and staff on-costs such as tax and NI. Other costs include:

- Cost of mobile phones and network service.
- Cost of cycle purchase and maintenance.
- Self-storage hire cost.
- Public liability insurance.
- Goods-in-transit insurance: this would cost £4k/year, which Company G bypasses by providing self-cover of £200 per consignment. This has only cost the company £200 in 8 years. (As much of what is conveyed is intellectual property, this would not in any case be covered by insurance.)
- Bike insurance: this has been found to be a problem with insurers, so the bikes are not insured, on the grounds that on the rare occasion that one is left unattended, it is locked. Only one bike has ever been stolen from Company G.

Equipment

Company G view the required fleet size for a courier operation to be twice as many bikes as might be needed. This allows for contingencies such as emergencies and maintenance. The company uses two types of load-carrying bike:

- They have four **Cycles Maximus trikes** (www.cyclesmaximus.com/) which are used in the central core area of the York footstreets. These have a 300kg payload and are good for high volume (i.e. bulky) items irrespective of the weight. Maximus trikes have a seven-year life expectancy.
- They also have four **8-freight** load-carrying two-wheelers (www.velovision.com/mag/issue9/8freight.pdf) for the outer area.

These two models largely remain within their own zones, with documents passing between the two as appropriate. This combination enables Company G to cover the variety of jobs needed and to balance the issue of weight v. volume. In addition, a Brompton folding bike is used to take documents on the train, especially to London. Riders' own bikes and trailers may also be used in some circumstances, as may riders' own cars. When not using the load-carrying vehicles, riders use large waterproof rucksacks to carry documents.

Partnership/Promotion

The owner has acted as a consultant for others in setting up similar kinds of initiatives, including the Company G projects in Luton and Darlington, and helping to set up the logistics and impact analysis of the York cycling paramedic service. Other partnerships include the link with the national courier referred to above, and the use of City of York Council buildings for short-term consignment storage.

Company G is positively interested in being involved in any pilot work that might emerge from this project.

Some examples of clients and work

- Posting council planning notices
- Distribution of travel tickets for travel agent (with largely public sector clientele)
- Delivering wholesale wine to restaurants
- Local distribution and collection of documents for York solicitors, interfacing into the national van-based DX (document exchange) system
- Integration with a national courier firm, which delivers to and collects from the GL depot for those businesses in city centre where van access is restricted. GL then delivers to the businesses and brings back to the depot anything for national collection.
- Delivering materials from the LEA to the city's schools.

Luton Greenlink services for Luton Borough Council:

- Document deliveries from council to schools
- Delivering the council newspaper to central locations
- Delivering internal mail to outlying offices
- Street cleaning and legal notices
- Councillors' packs
- Payroll deliveries

7.3 Case study – London Borough of Richmond

Interview with Customer Services and Performance Manager, February 2008.
Supplemented by phone and email by Postal and Support Services Manager.

Description of internal mail operations

The main internal post service is based in York House, an old building behind the Civic Centre. The Postal and Support Services Manager is responsible for Postal and Support Services relating to all departments with the exception of the Education Department.

Mail between council buildings – ‘man and van’

The service have a ‘man and van’ that collects the mail from the sorting office on Twickenham Bridge. This is usually boxed and can be between six and twenty boxes per day.

Throughout the day, this ‘man and van’ deliver to outlying locations in a shiftlike pattern. For instance, from 9.00am he will deliver to the Teddington/Twickenham side of the borough before returning to York House with all the mail (both internal & external) that he has collected. This mail is then sorted ready to be redistributed or for franking. The quantities range from three bags to four boxes on a daily basis.

The second round of the morning covers the Richmond/Sheen side of the borough and once again the courier collects both internal and external mail. This part of the round contains time sensitive items that have to be returned to Regal House by 11.30am daily

to ensure onward delivery. Once the local departments have had their mail delivered/collected and after a lunch break, this delivery schedule is completed again.

There are approximately twenty outlying locations but not all are covered every day.

Royal Mail collects from York House on two occasions through the day. The first collection occurs at approximately 3.00pm, when they take all the franked items, packet post, Special deliveries and any Standard Tariff postings. The second collection is about 5.15pm when the remainder of the standard mail is collected (only 1st/2nd and packet post).

The deliveries for both 'rounds' are completed in several 'trips'. It is only occasionally that the vans are not full, as the service tries to take any 'add on' deliveries where available to ensure a full load is completed. With the 'man and van', there are approximately six bags and four boxes per round going out, and he covers between 10 and 15 miles per round trip.

Members' Courier

The Members' Courier delivers to all 54 elected members on a daily (evening) basis. These items consist of Committee agendas, publications, general correspondence from officers of the authority, items from members of the public, photocopying paper for printers, toner cartridges and replacement laptop computers (where necessary).

The Members courier also collects items that have been left out from the elected members to be returned for confidential destruction or for officers' attention. He will also help cover other jobs within the section such as the transportation of boxes, stationery, leaflets etc to locations that are considered too far for the couriers to walk to.

The Members courier has a full delivery every evening and covers approx 60 miles per night. Some of the deliveries/collections are time sensitive and all of the items for Elected Members mail are treated as confidential post.

Other details

Both the Members Courier and the 'man and van', are employed by the authority. The Members courier is employed on a full time basis starting work from 2.00pm daily. The 'man and van' are contracted through the borough's Central Depot.

The vehicle used is a VW Caddy, and this was procured through the authority's transport replacement programme. All the replacement vans were procured as standard, using criteria suitable for a 'job lot' of tasks.

The service does make use of a private courier company that delivers items that are time sensitive and cannot be accommodated in the normal runs, but these are usually items that need to go into central London.

The libraries have their own courier.

Borough initiatives and potential to use cycles

The Customer Services and Performance Manager sits on the 'project board' for the borough's Green Transport Plan. The board also includes Director of Environment, who is the plan's senior level sponsor, and two further environment people, plus two HR people. The plan covers staff travel to work, staff travel during work and post, contractors etc.

The Customer Services and Performance Manager sits on the board partly due to her current role, and partly due to past project experience within the borough, including managing a review of staff parking.

Both interviewees confirmed a strong interest in the potential to use cycles in their internal operations, but considered that the present operation as described above is fairly efficient in terms of making full use of staff time and the van. There is currently little 'light running' of the van, and although there may be potential to use a cycle for some of the work, it would be difficult to justify displacing existing staff arrangements in any way. If/when current arrangements are reviewed and/or expanded, both thought that cycles would be an option given serious consideration.

7.4 Interview – South London and Maudsley Mental Healthcare Trust

Interview, March 2008, with Senior Communications Officer, IT, Borough Development Co-ordinator, Lambeth Adult Mental Health, Travel and Transport Manager (Travel Planner for Central Corporate Unit).

Background to the trust

South London and Maudsley Mental Healthcare Trust (SLAM) is the largest mental healthcare trust in the UK. It is an amalgamation of organisations across the four boroughs of Lewisham, Lambeth, Southwark and Croydon. At the time of its creation, the mental health operations of all four boroughs, plus some social services, plus three main hospitals were brought within the single entity.

In terms of physical presence, the trust has the three main hospitals and an additional 197 satellite sites, ranging from those with clinical functions through to sheltered housing.

Provision of services, including postal services

The most striking thing about the trust overall was the complexity of its structures – largely caused by the history of multiple reorganisations. The impression given by the discussion overall was of a range of organisations which had effectively merged in some areas, retained localised control in others and outsourced some services as well – but with no apparent overall plan, and possibly nobody in the organisation having a coherent overview of all the services in operation. (The discussion did focus on ancillary rather than clinical services. It may be that there is a more coherent rationale for the organisation of the primary functions, but that the ancillary services have been left to 'catch up').

Some specific services were discussed. There is a central SE London Shared Services Partnership (SELSSP), that provides various services including facilities management and 'men and vans' for patient transfer, postal service, meal transport and the distribution of supplies from NHS logistics.

The main Lambeth site at the Lambeth Hospital on Landor Road provides the postal service for the hospital and around 30 satellite sites. It also has a service level agreement with Lambeth Primary Care Trust to sort and deliver post to their 34 sites. They do this with two postal runs per day, carried out by SELSSP, and the furthest point

visited is Beckenham. The post room at the Lambeth Hospital alone spends £50Kpa on franking mail.

The Maudsley Hospital in Southwark has its own in-house courier service run by its porters. This service carries post, medical samples, pharmaceuticals and other special items on an ad-hoc basis. The service uses transit and small vans belonging to the trust, and usually makes one round per day, sometimes two if necessary. The round takes about two hours to complete.

The Lewisham section of the trust is undergoing changes to its facilities (primarily the closing of its main administrative building) and has discontinued any internal postal service. As a result, all items are currently sent by Royal Mail, even between buildings. While the cost of this was not known by those interviewed, it was assumed it was substantial.

Opportunities for the use of cycles

A variety of opportunities for the use of cycles were discussed, both in terms of the specific types of deliveries that could be carried out, and in terms of the ways that new services might fit within the organisational framework of service provision.

Deliveries suited to cycles

Medical records – these are still sent from one hospital/clinical site to another by post, and because they are sensitive they have to be sent by registered mail, at a significant cost. A courier-type service (as opposed to a consolidated run) is required for these as each file needs individual treatment, and using vans/motorcycles to provide this would be both costly and inefficient compared to cycles. (N.B. It is suggested that an ordinary bike with a trailer would be adequate for this payload, and very cheap and inconspicuous).

HR documentation – the trust currently buys in a lot of courier services, often using local taxi firms, to deliver HR documentation (passports and other personal documents) that need to be returned to staff quickly. As with medical records, a cycle based in-house courier service could provide a cheap and reliable alternative.

Deliveries within large hospital sites – the Bethlam Royal Hospital in West Wickham is the largest site in the trust, covering 47 acres and consisting of many buildings. Cycles would be ideal vehicles for making general internal rounds on such sites, because they would be easily able to ride right up to all the entrances of each building.

Hot food deliveries – this area was discussed, and no firm conclusions reached. Several of the other cycle delivery operations profiled in this report make time sensitive deliveries of food. The advantage of using a fleet of larger load-carrying cycles for this task instead of vans is the ability to have more of the bikes for the same cost, and thus carry out multiple delivery rounds in parallel – making it easier to do all of the deliveries within a short (1hr) time slot. However, this would require specially modified cycles, and may become redundant as the trust is considering moving to a system of preparing frozen meals and re-heating them at the various sites.

General delivery rounds to satellite sites, especially those with parking issues – this is a very attractive proposition in some ways. Many of the trust's sites have very limited parking, and delivery drivers often pick up parking fines, or fail to make deliveries at all, as a result of having nowhere to stop. However, the nature and location of these sites raises serious security concerns – many sites are in 'rough' areas (e.g. parts of Brixton) and involve treatment of people with addiction. Any vehicle making deliveries may be assumed by those nearby to be carrying drugs, and be a potential target. It was

considered that regardless of the actual security of the cycles, they would be more of a target than vans.

Opportunities to bring cycles into the organisational structure

Several possibilities were recognised:

1. Augmenting services already run within the trust – for example, introducing the use of cycles as part of the mix of vehicles used by the porters providing the delivery rounds at the Maudsley.
2. Replacing services already provided by third parties – it was suggested that some parts of the trust were open to reviewing the services provided to them by SELSSP or taxi firms etc., and that this could present an opportunity for a cycle-based provider to take over some contracts.
3. Provision of new services where there are currently none available – the particular example was that of Lewisham, where no internal mail service currently operates.

In discussion of all of the above, it was considered that any cycle operations would have to be provided by a form of contracting out, because NHS pay scales would make it impossible for the NHS to pay a rider the going rate within the logistics industry. (This is because the pay scales are based on skills and responsibilities, and 'riding around' would not be considered skilled enough to justify anything above minimum wage. The same problem is causing a chronic lack of quality administrative staff.)

Overall, it was recognised that a complete audit of logistics across the trust is needed. No audit of postal services has been done for five or six years, and with the various re-organisations there is nobody in the Trust who has an overview of what services are provided, by whom and at what cost. There is not really any chance of the trust funding such an exercise, as it is under pressure to make £11million in cuts.

7.5 Interview – LDA

Interview with Facilities management, March 2008.

The LDA is currently developing its own travel plan for the Palestra building in Southwark which it shares with TfL. This will be finalised over the next few months, and the agency is open to discussions of related issues such as internal mail.

The agency has a very limited 'internal mail' requirement, as most of their staff are now located in the Palestra building, but they do have 40-50 staff located in the ODA's offices in Canary Wharf, so there is a requirement for a regular mail run between the two sites. There would also be an opportunity to review the transfer of mail between the ODA itself and the LDA, which could be a significant volume.

In discussion, it was considered that a much greater opportunity lay in the LDA championing the use of 'alternative' freight modes between the different organisations in the GLA 'family' of functional bodies – the GLA itself at City Hall, the LDA, TfL, the MPS, the Fire Service and others. The MPS can be administratively complex to work with, but initially it was considered that examining the exchange of mail between the LDA in the Palestra building and the GLA in City Hall could present a quick win opportunity.

The Facilities Managers were unable to provide any additional, specific information regarding logistics and organisation at the interview, but both expressed a willingness to engage in further work should TfL wish to take it forward. One manager will be leaving his post soon, so the other interviewee is taking over as head of Facilities Management, and should be the primary contact from now on.

7.6 Conclusions and general recommendations

Recommendation: TfL should issue guidance, in partnership with the GLA and London Councils, on valuing cycle freight in public procurement

Both Company THREE and Company F have had difficulty in securing contracts from, respectively, TfL and the borough, despite being on their supplier lists. Although both companies are small and will have the same difficulties as any small supplier dealing with large public sector buyers, the fact that both TfL and the borough have such strong interests in sustainable transport suggests that they should be actively looking for this kind of supplier, and the lack of contracts suggests that the policy message hasn't got through to procurement departments.

7.7 Suggested further work

7.7.1 London Borough Councils

There is the potential for cycles to be used for a lot of the internal mail within London boroughs – although councils will typically have multiple outlying facilities, they usually have several main office buildings relatively close together, and mail distribution between them could easily be done by cycle, possibly combining with stationery delivery. Councils will also have the evening mail runs to councillors, which offer an excellent opportunity to use load carrying cycles, as they involve multiple drops in a relatively compact urban area (presenting problems for vans), but many of the packets delivered will be of a size that precludes the use of cycle messengers (i.e. lots of papers, toner cartridges etc.)

Unfortunately, Richmond Council does not seem to offer an immediate opportunity for a trial. Borough mail operations will typically be fairly small, involving only two or three staff in the deliveries themselves. In any borough, if trialling the use of cycles is going to displace existing staff, then it will be difficult to introduce. The introduction of cycles to such operations is only likely to be successful if:

- The service is expanding in scope, and there is a need to add new delivery capacity. In such circumstances it may well be possible to suggest this capacity could be provided using a bike rather than an additional motor vehicle.
- The service is under review anyway as part of a wider process, and managers are mandated at a senior level to explore alternative working methods.

It is recommended that TfL establish contact with all the boroughs, possibly via the officers with responsibility for their own travel plans in the first instance, and highlight the cycle freight option whilst also ascertaining whether either of the two conditions above exist. It is likely that at least one borough will be either expanding or reviewing its service at any given time, so it ought to be possible to find a suitable host for at least one pilot scheme, and then to disseminate the lessons learned.

7.7.2 An NHS organisation: South London and Maudsley Trust

Although a number of potential opportunities to use cycles for internal logistics were identified above, the complexity of this organisation is such that we do not feel we can suggest even an outline of a pilot scheme with the information currently available.

The SLAM Trust alone, and more importantly the NHS as a whole across London, offers a huge opportunity for cycle freight and travel planning more generally. For this reason it is considered that there is ample justification for a full logistics review of the trust, if funds are available. It is suggested that this review could be limited to document and parcel transport, including medical records, mail, stationery deliveries etc, but excluding movement of meals and patients. (Although if the TDM team considered that such a study would have wider applicability to NHS travel planning, it might be considered worth expanding to cover these areas as well.)

Although it may be argued that this is something the trust should be carrying out for itself, the reality is that they are currently accommodating budget cuts of £11 million, and the chances of such a study being made a funding priority in the foreseeable future are nil. However, the potential benefits of establishing successful trials of cycle freight and other sustainable transport initiatives within a major London NHS trust are significant. If best practice from such trials could be shared across the capital, the number of motor vehicle trips saved would be likely to justify the cost of the initial work many times over.

As an indication, it is suggested that such a review might require a budget of anything between £30,000 and £60,000, depending on its exact scope. This would examine variables involved in moving documents and parcels, including medical records, mail, stationery deliveries etc, as referred to above. The key variables would be volume, place, time and price/cost. The scope of the review could be the entire Trust, or it could select one or two boroughs and one or two hospital sites to focus on.

7.7.3 London Development Agency

It is recommended that TfL, or its consultants, schedule one or two further meetings with the Facilities manager plus his opposite number in the GLA. The objective of these meetings should be first to establish the practicalities of a simple trial involving one or two cycles making regular internal mail runs between City Hall and the Palestra building. If/when such a trial is established, and assuming it is successful, the aim should be to extend it to cover the main administrative centres of all the organisations in the GLA 'family'.

8 OVERALL CONCLUSIONS AND RECOMMENDATIONS

This study has found a variety of potentially viable opportunities to trial the use of load-carrying cycles to move freight. The advantages and disadvantages of each opportunity are outlined in detail in the earlier sections of this report, along with an indication of the likely cost, timescale and wider applicability of any lessons learned.

8.1.1 Suggested approach to commissioning and implementing pilots

None of the potential host organisations for pilots was ready to commit to taking part in a pilot project before a properly planned and costed proposal was drawn up, and it was beyond the remit of this study to prepare such plans. Therefore, any of the pilots that TfL chooses to take forward will have to be carried out as a two-step process.

Step one will be to draw up a detailed proposal, working with any key partners/host organisations. The proposal would need to outline all the tasks involved, who would undertake them, the timescale, and importantly, what funding would be provided by the host and what by TfL. It is suggested that in most cases this task should not involve large pieces of research (either logistics reviews or market research) – from a practical point of view, such research could cost nearly as much as simply jumping in and running a pilot, and would provide far less conclusive results⁷. The one exception to this is the SLAM NHS Trust, which is so complex that a full logistics audit is recommended.

Step two, which will only proceed if all parties agree on the proposal drawn up, will be to implement the plan.

We would suggest four possible approaches to commissioning this work:

1. TfL chooses which potential pilot projects it would like to investigate further, and writes more detailed proposals for each, as an extension of this project (i.e. without an additional tender process). On the basis of cost, and whether the plan is acceptable to the host/partner, TfL would choose which projects to put out to tender (either individually or collectively).
2. As for option 1, except that the development of the detailed proposals is carried out by TfL in-house, possibly with assistance from members of the Momenta project team on a day rate/call-off basis.
3. As for option 1, except that the development of the detailed proposals is put out to a separate tender.
4. TfL invites tenders for both steps, asking the bidders to provide separate prices for steps 1 and 2, on the understanding that the step two part of the bid will only be taken up if agreement to proceed is reached.

⁷ Note especially the research on, and subsequent trials of, centralised drop-off points and home deliveries. Several studies have found that far more people say they will use such facilities than actually do when they are trialled in practice.

Options 1 or 2 are recommended. Option 3 would involve significant delay and additional tender process for a relatively minor piece of work. Option 4 avoids a third tender, but it may be very difficult to estimate the costs of step 2 (implementation) at the bidding stage, since the detailed plans will not have been drawn up. As a result, the bidders will have to bid high to avoid this risk, and TfL is unlikely to secure the best value for money.

8.1.2 General recommendations not covered elsewhere

Public procurement

Both Company F and Company THREE mentioned that they were approved suppliers to large public sector organisations but had not received any work from them. The Office of Government Commerce has framework agreements for public sector postal services – ultimately getting cycle freight operators included in the supply chains for these, and raising awareness in procurement circles of the value for money that cycles can offer, could do a lot to boost the sector.

TfL funding

Throughout this project, when interviewing organisations that could potentially host pilot schemes, the question of funding from TfL for these schemes was raised. In all cases, it was indicated that while TfL had indicated an intention to fund some pilots, its approach would be to fund the 'marginal' costs of the pilot – i.e. the extra costs that the organisation concerned would incur for switching some deliveries to cycles, over and above what those deliveries were currently costing. The cost of recruiting new staff would be one example, and also the costs associated with monitoring and evaluating the results of the trial.

There is also potentially a question of unfair competition, should TfL be seen to be subsidising services that compete with existing private operations, in the long term. Therefore, it is recommended that TfL should only seek to fund pilots that have at least the possibility of being financially self-sustaining in the long term, unless they can clearly be shown not to compete directly with any commercially available service.

9 REFERENCES

Brock, 2001, The Gelderland Project, referenced in Rogers, 2002

EBM Strategic Consulting, March 2007, Feasibility Study for Shopping Delivery in London Borough of Sutton

EcoLocal, May 2007, EcoLocal Deliveries Business Plan

Herman et al, 1993, Bicycle Blueprint – A plan to bring bicycling into the mainstream in New York City, [Specific information referred to is in Chapter 15, accessed on www.transalt.org/blueprint/chapter15/chapter15b.html]

www.itpro.co.uk

www.johnlewis.com

www.lepetitereine.com

www.pedalexpress.com

Rogers, 2002, 'Assessing the Viability of Sustainable Freight Distribution in Urban Areas Using Work Bikes; with Reference to York London and Belfast'

www.tescocorporate.com/

TRL Limited, 2005, Feasibility Study for a Bromley Town Centre Home Delivery Service

University of Westminster, October 2001, Overview of Home Deliveries in the UK (A Study for DTI)

www.waitrosedeliver.com

www.workbike.org

10 ACKNOWLEDGEMENTS

TfL would like to thank the following individuals for their assistance in the preparation of this report

Simon Baker, CitySprint
Chris Beattie, Pedal Express
Colin Bell, London Development Agency
Debbie Boreham, London Borough of Richmond on Thames
Jonathan Burns, South London and Maudsley Mental Healthcare Trust
Lisa Byrne, Creative Cycle Messengers
Andrea Casalotti, Zero Couriers
Mark Chauveau, MPC Couriers
Ed Cook, British Retail Consortium
Sonia El-Harrak, South London and Maudsley Mental Healthcare Trust
Iain Forbes, London Borough of Bromley
Richard Gautrey, RedBox
Chris Hollins, Association of Town Centre Managers
Mick Huggett, St Nicholas Shopping Centre
Ann Johnson, South London and Maudsley Mental Healthcare Trust
Wayne Josh, DHL
Jan Kojro, Royal Mail
Trevor Lancefield, EcoLocal
Giles Manuel, La Petite Reine
David Monk, Office Depot
Rhys Roberts, TNT
Christophe Rippert
Ailsa Rutherford, London Borough of Richmond on Thames
Martin Schulz, TNT
Andy Scott, TNT
Laurie Taylor, The Glades Shopping Centre
Mick Thomas, Green-Link Couriers
Koy Thomson, London Cycling Campaign
Phil Ward, London Development Agency

Organisations

Co-op Pharmacy (Cambridge)
Families West
Fitzbillies Bakery
Limoncello
Momenta
Outspoken Deliveries
Planet Organic
Pocket Guides
PSC
Vive la Rose