# SURFLOGH WP 6 BUSINESS MODELS

## Edinburgh Case Study: Zedify Cycle Logistics

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# CASE STUDY 1: EDINBURGH (/GLASGOW), ZEDIFY, CYCLE LOGISTICS

## 1. Introduction/Background

The case study surrounds the establishment and subsequent development of a bicycle logistics provider in and around Central Edinburgh. The company concerned, Pedal Distribution Ltd (PDL), is an SME private limited company, with the shares entirely owned by one individual, Mr Charlie Mulholland. Charlie is the main driving force behind the enterprise, developing it initially from a one-person sole trader business in Glasgow and now looking to expand operations into Edinburgh and other parts of Scotland.

## 2. Edinburgh Area

Edinburgh is the capital city of Scotland and houses the Scottish Parliament, four universities and the annual Edinburgh Arts Festivals. It is traditionally the financial and political centre of Scotland, and headquarters to several major financial institutions such as RBS, HBOS and Scottish Widows, as well as home to the Scottish Parliament and government buildings (Victoria Quay). Population size is 480k, and the city covers an area of 119km$^2$. The city also has a vibrant tourist industry, attracting some 1.5m foreign visitors a year, with a particular attraction being the aforementioned Edinburgh Festivals which occur annually in August. This includes the Fringe Festival, the largest arts festival in the world.

## 3. Policy Framework

Transport Scotland is the main transport authority in Scotland and published the most recent National Transport Strategy (NTS) in early 2016, with freight issues considered in consultation with an advisory group, the Scottish Freight and Logistics Advisory Group (ScotFLAG). The NTS had the stated goals of providing accessible, safe, integrated and reliable transport with respect to economic growth, social inclusion and sustainability, i.e. the 3BL, and is supported by other national transport plans and policies. In terms of freight related issues, these include Clean Air for Scotland (2015), the now dated Freight Action Plan (2006) and the Strategic Transport Projects Review 2, due to be published in 2021. One final piece of legislation worth highlighting is the Transport Act 2019, which requires the imposition of an LEZ to Euro 6 standards in Edinburgh from 2020 onwards. As regards urban freight transport (UFT) however, the NTS and related documents provide only limited coverage, this whole area being largely seen as primarily the responsibility of local authorities/city councils. They, together with the regional transport partnerships (RTPs), publish their own local and regional transport strategies in line with the NTS and other policy documents.

The city council in Edinburgh implements different types of restrictions that target both freight and non-freight vehicles such as loading restrictions, weight restrictions and time window limits. As an example, large segments of the Royal Mile (the historic core of Edinburgh) is pedestrianised during certain hours of the day. Weight restrictions for HGVs are in place on some streets, where structural constraints exist. This is in the form of both time-based or permanent loading restrictions. Time based restrictions bar vehicles from loading and unloading operations during peak, whilst permanent restrictions place a complete ban on such activities, with the city council providing designated loading/unloading bays (LUBs). Parking restrictions are also in place in Edinburgh. These are

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implemented to avoid illegal parking on designated LUBs and in other places such as pavements and kerbsides. One potential future issue worth highlighting is the Edinburgh City Centre Transformation Strategy, which proposes sweeping changes to traffic patterns in the centre of Edinburgh. This will require more innovative solutions as regards freight deliveries and pick-ups.

From a practical perspective however, in terms of freight policy interventions, Edinburgh can probably best be described as having a low level of maturity according to Kiba-Janiak's (2017) five model classification of urban freight city maturity. Little mention is made of freight in the main policy documents, and the whole activity is by and large left to the market. As highlighted, policy tends to be 'problem focused', with interventions centred on traffic management issues rather than developing the general concept of city logistics.

## 4. PDL Edinburgh Operations

PDL set up operations in Glasgow in 2014 after negotiations with the established 'Outspoken' cycle logistic provider in Cambridge, subsequently rebranded as 'Zedify'. As such, PDL was the first franchisee, to which a further six have been added, including the Edinburgh depot in July 2018. Under the terms of the original agreement, PDL paid a fixed annual fee which gave entitlement to use of the brand name in all business dealings, as well as access to a high-level knowledge base in cycle logistics. As a simple example, the current seven Zedify operators have the same webpage layout all linked directly to the corporate head, the only differences being the addition of text to reflect differences in operations in each of the geographical areas covered. What is presented to the user therefore is a unified business, whilst the reality is that it is made up of six independent operators under the same brand.

In terms of the original 'franchise' agreements, due to differences in geographical locations the reality was very different from the franchising business model, or 'business in a box' approach. Following the rebranding to Zedify in 2018 therefore, all franchisees became licensees. The business relationship however is very similar to previous arrangements, although Zedify are looking to develop the whole brand as a national operator, with some progress being made with this at a regional level between a number of the licensees in England.

The main capital assets of PDL consist of one electric van, 5 cargo bikes (bullets) and 8 three-wheeler tricycles, all enhanced by electrically assisted drive chains, and a rented operational base located close to the city centre in the Gorgie area of Edinburgh. In total across both Edinburgh and Glasgow operations, PDL employs 10 staff, with most working on a part time basis. Experience suggests this works well for people in the gig economy and given the nature of the work, even with electrically assisted bikes this is an occupation that would be very difficult to work at on a full-time basis. The company structure is the simplest possible, one company head and general business manager (Charlie) and 9 couriers. Inevitably in such an organisation, working practices tend to be very flexible, with most staff involved at one point or other in all aspects of the operational side of the business. The one area of exception is in bike servicing and maintenance, which is generally undertaken by one specific individual.

## 5. Critical Elements in the PDL Operation (i.e. the Business model)

Whilst the above represents the bare facts of the operation, presented below are the key elements drawn out in the course of the research associated with the Surflogh project that identifies the critical factors that lead to a successful commercial operation, i.e. the business model.

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## 5.1 Elkington's Triple Bottom Line (3BL)

Elkington's (1999) idea of the triple bottom line (3BL) advocates that the goals of economic, social and environmental performance can be pursued simultaneously. The last two of these are generally viewed, from a business perspective, as aspects of Corporate Social Responsibility (CSR), and as such an obligation or responsibility that may compromise economic performance. The 3BL approach however suggests that companies can identify activities that improve economic performance but that avoid social and environmental 'bads'. The key issue is in not making trade-offs between the three, but rather in pursuing complementary action where this is possible.

This particular area was considered by Björkland and Johansson (2018) to be significantly underdeveloped in the urban freight literature, with very few articles considering its relevance or even acknowledging its existence. Given the context of sustainable last mile deliveries, the whole idea of the 3BL would appear to be of significant relevance. The PDL business operation in many ways reflects the successful employment of many of these principles. One clear example is in the employment practices that exist, such as certification as a Living Wage Employer, all employees are trained to Bikeability Level 3, specific cargo bike training[i] is given and finally all employees are developed as all round ambassadors for good cycling. All of these practices represent a strong commitment to staff development. This is combined with a management philosophy of leading by example, and hence all staff members, from the top to the bottom of the organisation, are directly involved to some degree in the primary activity of the actual last mile delivery. Whilst no clear evidence can be given, it is clear from conversations with personnel that what this produces is a high level of employee 'buy-in' to the business, and what it represents is not merely a training cost/expense, but rather constitutes an investment in human capital, which results in low levels of staff turnover and the open discussions (over a Friday beer) on ways to increase the efficiency of the business. Also consistent with such views, this is sacrificing short term profitability (economic) in the pursuit of long-term goals in terms of company survival and continued commercial, social and environmental development. Nevertheless, it also has short term benefits, hence staff costs are lower as a result of improved working conditions which produces higher levels of staff motivation, higher productivity and less absenteeism. In a business operation where the key activity is performed outdoors in all weathers and involves an element of physical effort, this is particularly important. Accidents rates are also extremely low. From a broader perspective, many of the elements within PDL reflect key 3BL principles, and it is difficult to see how such a business could operate successfully in this area under any other type of business framework.

## 5.2 Bottom up verses top down

One issue not explicit from the last mile research literature, but become clear in the process of reviewing it, is that in the vast majority of cases the UCC component in the city logistics network has been implemented from the top downwards. Normally this occurs where the local authority takes the initiative/lead and sets up a UCC centre. It could be strongly argued however that such an approach imposes an alternative logistics network upon a system that is not only already in place, but over time has been largely developed along free market principles. As a consequence, given a very high level of

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economic efficiency of the existing urban distribution system due to strong competitive pressures, then any attempt to replace it with something else will ultimately result in economic failure. This also reflects the view of Ogden (1992), who stated that if profits are to be made from such a logistical framework, then why is no one doing it? In other words, if this was the most efficient economic solution, then the market would have already produced it.

In the case of PDL, the model of establishment can be clearly identified as 'bottom up'. Operations in both the initial venture in Glasgow and the expansion into Edinburgh have begun at the lowest possible level. Initial business was established through what can only be described as a modified form of the door-to-door foot salesman approach. Specific sectors were identified, particularly legal practices and local printers, and potential clients approached directly by the company, which to repeat, at the initial stage constituted a one-person sole trader. Over time, this basic approach to business has been complemented by increasing levels of partnership working.

## 5.3 Partnership Working

Whilst in the academic literature partnership working has received a considerable amount of attention (see Cowie, 2019 for a review), this has exclusively examined the issue of public-private partnerships. With reference to the current case, whilst it may be an isolated example, it would almost seem inevitable that the success of any bottom up approach will be highly dependent upon establishing meaningful working partnerships with existing carriers and other stakeholders. In many respects, complementarity is the issue rather than competition/substitution, and this would also be consistent with the triple bottom line. Hence lowering final delivery costs of the whole supply chain (economic), results in, as a minimum, improvement of public spaces through reductions in emissions and general traffic 'clutter' (social and environmental). One key advantage of cycle logistics in confined urban environments is accessibility to delivery points. In what admittedly should be considered as an extreme case, this has been found to be a major issue. Allen et al (2017) conducted a survey of delivery rounds in Central London. What the results showed is that in an 8 hour run, on average the vehicle was parked for 62% of the time. Furthermore, whilst the total distance covered by the van was on average 11.9km, each driver walked 7.94km, in other words almost two thirds of the distance that they drove. What this results in is very slow average speeds, and from a highly critical perspective, only a 40% utilisation rate of the main capital input factor (the van). As stated, this is perhaps an extreme example, but does present cycle logistical operators with an opportunity to offer a viable complementary service to an existing urban logistics provider.

In the case of PDL, this does not lead to complete subcontracting from the prime operator, as the business case outside of London is less clear cut but nevertheless is still present at the margin. As an example, PDL work in conjunction with a major PCS provider (TNT) to offer an express next day multi drop service. From TNTs perspective, the main reason they use PDL is purely financial, given the evidence above, using cargo bikes for the last mile in this particular sector is about half the cost per stop. TNT also have a national goal linked to emissions reductions, although perceptions from PDL is that this is less of an issue at the local level and that outright costs are the main driver of operations. At the moment, there is no integration of IT systems, each contract on the system is run for the relevant carrier,

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because as things stand this is the easiest solution. In practice therefore, this would not appear to be a barrier to co-operation. In terms of future development of the business relationship, there may be possibilities of branding the cargo bikes in the carriers' brand image, but at present this is not feasible given current volumes.

On the back of the partnership with TNT, PDL have also developed a number of strong working relationships with local businesses, including dental laboratories, bookbinders and even local cafes offering lunch deliveries.

## 6. Future prospects and current constraints

Future possible developments surround the issue of the first, rather than the last, mile, specifically the consolidation of consignments from retailers where these have been purchased through freight auctions or other associated platforms. As a consequence, one retailer may have a variety of consignments for different PCS providers. The whole issue of collections is particularly problematic for these companies, as whilst deliveries can be pre-planned, the need for collections tend to arise in the course of delivery runs. PDL would basically consolidate these consignments over the first mile, and hence the PCS carrier would collect from one single point.

A second potential growth area surrounds the idea of the re-emergence of 'localism', something that has come to the forefront in light of the Covid-19 situation. A second pilot has therefore been established in Edinburgh surrounding the Morningside area on the south side of the city, with the potential of linking up local businesses with local clients, with the offer of a 'one-stop shop' (and delivery) option.

In terms of the Edinburgh pilot, one constraining factor has been the availability of suitable warehousing space. In Glasgow for example, there exists commercial space available both in the city centre and very near, but in Edinburgh that is simply not the case, and this has had a major impact on operations. This is particularly true with regard to the working relationship with TNT, where this side of the business could be extensively developed if access could be gained to larger premises in the right location. A second general constraint surrounds the issue of 'proof of concept', where many potential clients simply do not believe that PDL have the capacity to do what is required. Although a general issue (and one highlighted and discussed during the SURFLOGH mid-term conference), the extent of the issue tends to vary by location. Within Cambridge for example, as generally speaking there is little need for a car to get around, the city has a far lower level of car dependence and cycling a considerably larger modal share, hence potential clients are far more receptive to the idea of cycle logistics.

## 7. Closing Discussion and Summary

Establishing and being involved in the running of the Edinburgh pilot has been an interesting and rewarding experience for the Edinburgh Surflogh partners, and has provided the opportunity to be involved in action research which has presented the opportunity for insights not usually open to those involved in research. Over the two and a half years of the running of the pilot, the critical factors in its operation have clearly emerged over the period, and there is no doubt that what has been established is a clear viable commercial business model that has a very strong foundation to continue to develop and evolve once the pilot phase has been completed.

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# SURFLOGH BUSINESS MODEL CANVASS

City pilot: Edinburgh

Date: Nov 2020

## Value Propositions

**Why should a client use the offered service?**
- Shop owner: in some respects, for shop owners using such a service represents 'buy-in' to the reduction of inner city traffic levels, particularly 'the white van' and hence the development of more pleasant public spaces.

- Transport company: two aspects, for small consignment deliveries, this represents considerable cost savings. For 'first mile' pick ups, these are logistically very difficult, hence costly, use of the service consolidates these into single consignments, hence considerably reduces the problem.

**What alternatives do customers have?**
- Most potential (shop owning) clients operate in the decentralized supply chain system, hence a combination of main supplier and ad hoc PCS deliveries.

**Does the current value proposition meet customer needs fully?**
- The key area is first mile for PCS providers, as stated, these are highly disruptive to delivery schedules.

**What is the mechanism through which pricing policy is determined?**
- In the original business model, pricing was used to reflect delivery windows, hence more urgent deliveries charged at a higher rate. This initially 'worked', however as the business developed it was found that this was highly disruptive to delivery schedules, and whilst still in operation, other Zedify providers have since dropped this option.

**To what extend is price used to manage demand to match capacity?**
- As stated, whilst still an option, price is not used at all to manage demand. Zedify operate to a standard delivery schedule, hence similar to PCS providers, operate a 'fixed' capacity network which is based on movement of goods through the system. There is therefore no role for price to manage demand.

## Customer Segments

**What customers and customer segments are mainly served?**
Local shops and food outlets.
- Legal firms; dental practices/medical; magazine and leaflet drops; Private ad hoc customers

**Who are the most important customers?**
- TNT, Door2Door

**Are there any potential markets in which the current value proposition could be offered?**
-Through a process of 'localisation', specialty shops better connected to the final customer, e.g. butchers, delicasstans, coffee specialists etc.
- 'First mile' collections, where picks are made for PCS operators and consolidated into a single pick up.
- Expansion of the Zedify network to offer a national network, already occurring in parts of the network on a regional basis, but requires a partner for the long haul

## Customer Relationships

**What kind of working relationships do customers expect and how does the company maintain these?**
- A personalized service; Reliable deliveries; Urgent deliveries prioritised; Face to face contact with operations manager

**In terms of the most important customers, what types of business pressures are they operating under?**
- Magazine deliveries are time reliant
- In terms of TNT, a fixed courier network, hence the need for constant movement of consignments through the system

**How is the value or benefit created for customers communicated to the wider business community?**
- The level of business is small scale, visibility, no more than branded cargo bikes on the street
- There is virtually no marketing budget
- Primarily dependent upon word of mouth and a

## Channels

**What are the critical elements in the service provided?**
- Reliability; Cost ; Time Sensitivity; Direct personal approach; Flexibility

**Are the clients the final customers?**
- Sometimes yes, mostly not.

**What would need to change to allow the current value proposition to be offered in other markets?**
- Proof of the concept. Many potential clients simply don't believe in the ability of Zedify to deliver large volumes on a regular basis.
- Larger premises in Edinburgh, this has proved very difficult to obtain.

**Is there an identifiable 'critical mass' in terms of the customer base?**
- No real evidence of a critical mass
- Business is more based on regular delivery runs.
- What these provide is a 'turning wheel', and thus a turning wheel is an earning wheel, critical in supply side economics

## Key Partners

**Who are the most important business partners? To what extent would a partner be described as a 'customer' or as a 'partner'?**

Current in the project:
- TNT (sole partner in Edinburgh)
- Door2Door (in Glasgow)

Future possibilities based on the Glasgow experience include:
- Other PCS operators, particularly for first mile collections.
- Local speciality businesses, e.g. flower deliveries, butchers, delicatessens

**Are all partners equally important?**
- At the moment, TNT's involvement is key to the Edinburgh operations, this is the very founding stone of the business, from which it is hoped more business will be generated. . ?

## Key Activities

**What are the key competences and key activities within the business?/How does each contribute to the value proposition?**
First/last mile delivery
- This is key to the business, particularly in complementing rather than competing with existing provisions in the urban freight market

Key competences are:
- Business development, identify gaps in the market where cycle logistics can provide a viable service
- Flexible work patterns, simply goes with the nature of the work
- Bike maintenance and upgrading/development in order to be fit for purpose.
- Warehouse management & IT systems, particularly the lack of an interface with the main partner IT system, hence the need for manual scanning and management.

All are key to the value proposition.

## Policy Perspectives

**What are the main policy documents relating to urban freight in the area concerned?**
*Local*
- City of Edinburgh Local Transport Strategy (LTS), 2014 - 2019
- Continue to develop 'Transport 2030 Vision'
- Edinburgh City Centre Transformation Strategy
- Most policy actions re freight as a result of addressing issues of traffic congestion
- Empty commitment to a sustainable procurement policy

*Regional:*
SESTran Regional Transport Strategy (RTS) 2008 - 2023, four main objectives:
1. Economy: to ensure transport facilities encourage growth, regional prosperity and vitality in a sustainable manner.
2. Accessibility: improve accessibility for those with limited transport choice.
3. Environment: development in an environmentally sustainable manner.
4. Safety & Health: promote a healthier and more active SESTran area population.

*National:*
- Scottish Government National Transport Strategy 2 (NTS 2)
- Transport Scotland's Strategic Transport Projects Review (2)
- Transport Act 2019, imposition of LEZs to Euro 6 standards in Edinburgh
- National Planning Framework

**What current restrictions are in place with regards to deliveries (e.g. loading, time, area)**
- Very limited restrictions; designated loading bays in city centre; elsewhere, ad hoc approach, but few time or location restrictions
- Could significantly change due to Edinburgh City Centre Transformation Strategy

**To what extent does the value proposition (current offering) mitigate against these restrictions?**
- Cargo bikes provide better direct access, but overall, fairly limited.

**What revenue streams are available under state provisions?**
- Again, very limited, possibly the Freight Facilities Grant, but this would need to be in conjunction with a rail based project.

**Does there exist any public-private partnerships/forums etc. with regard to city centre management?**
- SESTran Freight Forum
- There are currently three Business Improvement Districts (BIDS), namely Essential Edinburgh (city centre), Edinburgh's West End and the Greater Grassmarket.
- 'Business Gateway' (support for local businesses) and the Edinburgh Chamber of Commerce
- Engagement however is fairly limited re urban freight issues.

## Cost Structure

**What are the main costs and the main cost drivers**
**How are costs acquired, for example, overhead v running costs**

Main cost drivers:
- Rider rates, these account for around 50% of all costs
- Premises, in the Glasgow operation, this is not a major cost driver, but likely to be far higher in the Edinburgh context
- Materials (bikes, boxes, clothes) and maintenance, although per bike this only totals £2k pa

Overhead vs running:
- Direct quoted figure is £16 ph for each rider, of which the rider is paid £9 per hour, hence split between overhead v running is around 45:55.
- Which is quite high, but undoubtedly reflects the small scale of the business, hence a high level of fixed costs
- One would expect with expansion of the business, this ratio will considerably decrease, down to around 25:75 (complete guestimate).

## Revenue Streams

**What are the main sources of income (and does this map onto the most important customers)?**
- For the Edinburgh pilot, the sole revenue stream is from TNT. For Glasgow, most revenue comes from TNT and Door2Door.
- Zedify are paid per package delivered as opposed to per delivery, if the former was applied, then this would considerably compromise the whole operation

**How is the income generated**
**e.g. are there any secondary revenue streams such as 3PL services?**
- Very much so, the main source of income is from TNT, as stated, in Edinburgh this is 100% of the operation, for Glasgow the combined income from TNT and Door2Door is almost 80%, so hence, yes, more than 80% of the revenue comes from less than 20% of clients.

**To what extent do revenue streams match cost drivers?**
- Difficult to tell due to how Zedify cost operations (see cost structures), which is by applying a high overhead, but a lot of this is to cover running costs.
- In reality therefore, most cost drivers arise when in revenue earning services, hence a high level of direct costs

**What are the main financial risks in the current revenue model?**
- Short term, highly dependent upon a limited client base, longer term, this situation remains unchanged due to failure to attract enough (stable) customers

## Key Resources

**Are labour skills specialised or general? If specialised, how are these maintained over time?**
- The couriers need to know how to act/behave with a cargo bike in the city.
- In house training has resulted in very few accidents, most damage caused in parking incidents
- Specialized skills are required in the adjustment and maintenance of the bike fleet, as these need considerable modifications on receipt from the supplier and constant servicing.
- Specialized business skills, specifically identifying and developing business opportunities, this is particularly pertinent in identifying complementary, rather than rivalry, services.

**What are the main capital requirements and how do these contribute to the value chain?**
- Costs: Vehicles (cargo bikes / ZE-vehicles), Personnel costs, Physical Hub-location
- Income: Payment per delivery / parcel, Payment for warehousing goods, Payment for additional services

**IT – tracking systems, interface with partners, how are IT systems managed?**
- Zedify have their own app for receiving and allocating deliveries, but at this point the interface with TNT systems is non existent, all parcels need to be individually scanned.

**Where profits are made, to what extent is this retained in the business?**
- Low profit levels, with all profit being retained in the business, the owner receives a paid salary.

[i] Given there is no nationally recognised training award for cargo bikes, this is an in-house Zedify certified course.

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