SURFLOGH WP 6 BUSINESS MODELS

Development of the Business Model framework to be used in SURFLOGH

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Executive Summary

As part of SURFLOGH Work Package 6, SEStran and Edinburgh Napier University have been tasked with developing a framework to allow the identification of successful business models in the SURFLOGH pilot projects run under Work Package 5. This document lays out the framework to be used and the methodology behind its development. Consistent with the Action Research methodology, the approach is based on the development of a very basic business model framework, and then through examination of the literature on last mile deliveries and reference to basic micro economic theory, refine, develop and tailor to the context of the SURFLOGH pilot projects. What has emerged from this process is identification of the SURFLOGH 'PESSO' model overall framework, relating to policy, environment, strategy, structure and operations. A further refinement was to then drawn out the SURFLOGH Business Model Canvas, and the key questions and issues to be examined grouped under the ten headings of the value propositions, customer segments, customer relationships, channels, key partners, key activities, key resources, cost structure, revenue streams and policy perspectives.

One major criticism of the previous application of the business model framework to the study of last mile consolidation was that such approaches tended to break the business proposition down into component parts, which acts directly against the major advantage of the business model approach, i.e. it should identified the key issues behind a unified business model. As the framework has been developed, each of the ten components can be directly translated back into the four basic business model components of what, why, who and how, which should allow identification of the underlying business model in each of the SURFLOGH pilot projects.

Contents

1. Background

As part of the SURFLOGH project, SEStran and Edinburgh Napier University TRI are tasked with delivering WP6 – the development of a business model framework and case studies for each of the 5 regional pilots.

Agreed deliverables for WP6 state that the business models should have a uniform framework in approach but should be designed to be adaptable so that the individuality of each pilot is not compromised. Key learnings and best-practice should be highlighted in each case study. This report is produced consistent with completion of deliverable 1 in WP6, the development of the business model framework.

2. Purpose

This document aims to develop the focus and framework that SURFLOGH project partners will be able to use to capture information as the five pilots develop across the life of the project. This document should be used as a set of guidelines for project partners. WP6 is concerned with identification of the underlying business model associated with each pilot project. For terms of reference, a 'business model' is formally defined as:

> *'…a description of the means and methods a firm employs to generate the revenue projected in its business plan. It views business as a system and attempts to answer the question 'how does the business make profit to survive and grow?'* (Gassman et al, 2014).

In more general terms, a business model is the identification of the key factors that lead to medium to long term profitable operation and thus financial sustainability. The basic framework not only recognizes the importance in identifying underlying economic factors in any business situation, but other important dimensions that lead to the successful 'conversion' of a potential business opportunity. These include identifying the basic value proposition offered, key company resources, marketing initiatives, corporate identity/image, customer relations/channels, critical partnerships and so on. Hence, if there exists an advantageous business opportunity (the underlying economics), how is this converted into medium to longer term profitability (the business model)?

As a consequence, identification of the underlying business model is the proposed approach to be taken in the evaluation of the pilots in SURFLOGH as they develop. Nevertheless, Björklund et al (2017) highlight that few researchers have actually provided profound insights into the design of viable business models for success with regard to urban freight consolidation initiatives. This suggests the approach has been taken before but with little success. Whilst appearing to present a major challenge to the SURFLOGH project, it does nevertheless point to the first stage of the process, namely the review of past studies and identification of why to date little success has been achieved. Through this process, our own framework should recognize previous limitations and be designed to overcome, or at the very least, minimize any such affects.

A further consideration in the development of the framework was to evaluate a number of existing business modelling tools. These include the STOF approach (de Vos and Haaker, 2008), E3-value (Gordijn and Akkermans, 2001) and the more commonly known Business Model Canvas (Osterwalder

and Pigneur,2010). It was quickly recognized however, that given the research methodology employed (action research), using a rigidly structured framework was not an appropriate way forward. It could also be argued that this has been one of the major deficiencies in the research highlighted above. Furthermore, the real value in the business model approach is in its simplicity, certainly with regard to the dimensions to be examined, as this breaks down to four key components – who, what, how and why. One potential criticism of its application to the UCC concept in the academic literature is that it has tended to 'drift' from that fairly simple approach, and in the process lost a high degree of its real value in terms of an analytical tool. The aforementioned 'Business Model Canvas' (BMC) could be argued to be a clear example of this. This has been used to evaluate a number of recent EU funded urban freight projects (e.g. NOVELLOG, TURBLOG), in which the central question of identifying what actually creates value, and how that is facilitated in the business operation, has generally been lost in the rhetoric and added dimensions of the BMC. Furthermore, as applied in the literature the BMC has been used to break the whole business operation down, when what is required is a tool that should identify the key elements in the business that lead to value creation and join these up. Hence for example, 'a franchise' immediately suggests a single consistent approach to the business operation (a single business 'in a box'), whilst an 'add on' a pay as you go type model, but any semblance of such well recognized business models are completely lacking from the UCC literature.

3. Primary and Secondary Research

It is useful at this stage to consider where the business models analysis fits in the overall research framework to be adopted in the evaluation of the SURFLOGH pilots, as this has strong implications on the nature of the structure to be employed. A mixed methodology is to be used, that will be a combination of existing literature/secondary data and primary data derived from the pilot projects (i.e. identification of viable business models). This is summarized in figure 1.

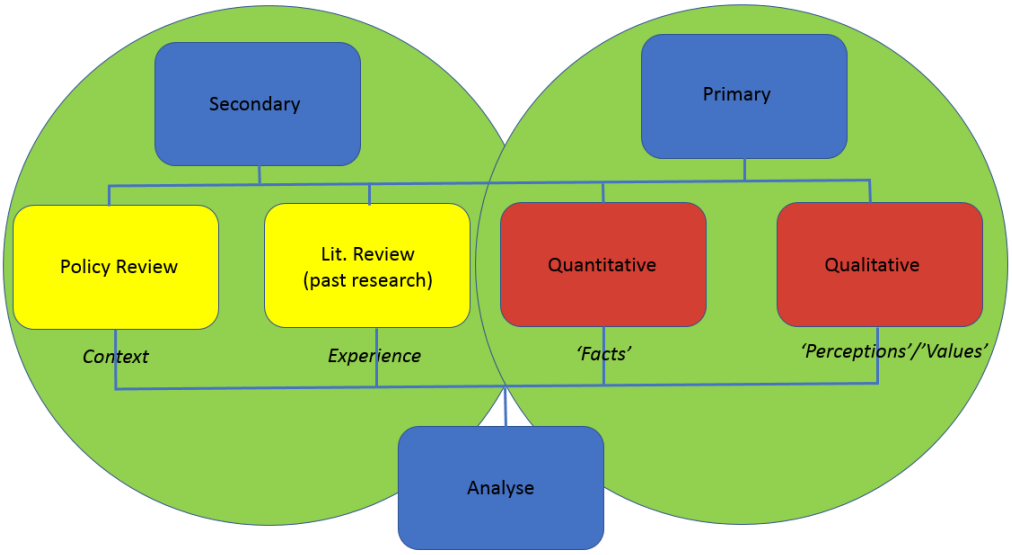

Figure 1: SURFLOGH Pilots Evaluation - Methodology

In terms of the overall framework, the research has elements of both action research and to some extent, grounded theory. In the former case, the research is an integral part of the process, and looks to draw out salient points from any ground level developments. It is an iterative process of plan, act, observe and reflect (Bryman, 2008). One issue identified in the literature is a lack of laboratory and field experiments in the general area of sustainable supply chain management (e.g. Carter and Easton, 2011), and hence this should in part address this issue. Grounded theory (Glaser and Strauss, 1967) on the other hand is where, through inductive research, theory emerges from the research process, and hence bridges the gap between theory and empirical research. As such, the research component in SURFLOGH is not positivistic in nature, i.e. the issue to be researched is not highly structured and the framework rigid, but it will nevertheless include quantitative data as part of the process. Rather the methodology will evolve within the specified framework as the research progresses in light of pilot developments. This approach is inevitably reflected in the business model framework.

4. Business Models in the Urban Freight Academic Literature

Presented below is a review of the application of the business model framework as it has appeared in the academic literature relating to the general area of sustainable urban freight. This is presented under two sub headings, 'standard' business models and 'social' business models.

4.1 'Standard' Business Models

The importance of identifying the underling business model in the operation of UFC initiatives has been well recognized in the academic literature. Bjorkland et al (2017) for example highlight that many UFC initiatives have not materialised due to problems with business model limitations, hence suggesting that identifying the underlying business model becomes the key to understanding the potential success of the UFC operation. Despite this, there has been a general lack of studies in either business modelling or economic viability[1]. In a subsequent study, the same authors recognize this lack of primary analysis and suggest that a key area for future research is the need to design successful business models for UFC solutions (Björklund and Johansson, 2018).

As noted above however, as applied in the academic literature any business model framework has generally been used to break the operation down into component parts, rather than to identify the key areas that define a concerted approach to business operation. This has been particularly the case with the business model canvas. Quak et al 2014 for example in a 'business model' evaluation of the Bentobox concept broke the main costs of the operation down into its component parts (e.g. personnel costs, training costs, maintenance, capital costs), but failed to undertake any form of analysis that would categorize these to allow the costs to be matched against revenue streams. This is a basic requirement for identifying profit streams, and then extending the analysis, the extent to which profit streams may match the value proposition to the customer and potentially identify how that may be achieved, i.e. the business model. Furthermore, a further category added to the BMC framework represented 'externalities', which have no financial value and hence in the business model

[1] There have been a number on the latter issue, economic validity, but the research validity of most of these studies can at best be described as questionable. For example, Janjevic and Ndiaye (2017) present a conceptual model of UCC costs, and show that for lower levels of deliveries, these lead to significantly lower delivery costs. Why is no one doing it therefore?

context how a business addresses externalities is completely irrelevant, or where it is relevant, it is already covered by the BMC framework[2].

Of more value is the work of Björkland et al (2017), who in a case study of 5 UFC initiatives identified seven critical elements in the business model. These specifically related to the ability to scale up and down the UFC solution; an ability to continuously develop and adapt to a dynamic environment; the entrepreneurial role of the initiator; the acknowledgment of society (public recognition?); ability to innovate new services; logistics and supply chain management competencies; and the ability to take full advantage of advanced IT. Whilst some of these may be questionable, following the authors' logic what becomes clear in the business model is the importance of human capital/resources (entrepreneurial role/logistics competence), the need for flexible working, and the critical area of IT systems.

One further issue from the literature relates to the actual definition of a 'business model'. As an example, Benjelloun et al (2010) use a 'business model' as one of the criteria in the development of a taxonomy of city logistics projects, however it could equally be argued that all the description does is outline the company form and the market situation facing it. In other words, standard mainstream economic theory, specifically the theory of the firm. Quak and Tavasszy (2014) attempt to outline a business model for the Dutch initiative 'Binnenstadservice' (BSS), but tend to focus on delivery cost, and state '…the market will enable a change in the structure of trips by itself where the decrease in costs of the main carrier are greater than the increase in the costs of outsourcing (to a UCC) of the city tours (of deliveries).' This considerably simplifies the 'business model' to the economists' idea of the perfectly competitive firm (all that matters is price) and assumes all logistics decisions are based on cost, which in practice is far from the reality of the situation. In both cited examples the basic who, what, how and why components of the business model framework appear to remain largely unanswered.

4.2 Social Business Models

Within the literature on UFC, one extension of the basic business model has been to attempt to include external benefits, and hence the idea of a 'social' business model. Nevertheless, whilst Björkland et al (2017) state that the value proposition to society is another component that distinguishes city logistics business models from many others, they also highlight that how social and environmental components are considered in existing business models remains limited. In a similar vein, Bakos et al (2012) note that external costs should be included in (business) models, yet how this is to be done remains unclear. All of these points overlook the basic idea that a business model is a business model, and notions such as wider social benefits are alien to such concepts. As highlighted above, these are externalities and hence an output/service for which the firm cannot charge. As such, it is not a part of the business framework/model. Where the confusion possibly arises, and in addressing Bjorkland et al (op. cit.) concerns as to how such issues should be included in the business model framework, the answer would be where only a financial benefit could be attached to it, e.g. it could directly represent a value proposition where this relates to any subsidies or grants received by the firm in recognition of reducing public social costs. The business model framework could then be used in the

[2] To clarify, 'externalities' on their own have no financial value, it is only where some form of financial benefit to the firm can be attached to these that the issue of externalities then becomes relevant. Hence being 'green' may add some value to the business. This however would be generated through marketing promotions, corporate image, pricing strategies etc, i.e. issues already covered by the BMC.

context of how that value (in the form of the subsidy/grant) was generated. It is, nevertheless, a considerably underdeveloped area, although some of these aspects will be covered by the SURFLOGH business model framework.

5. The 'PESSO' Business Model

In light of the above, the 'PESSO' business model has been developed by taking a basic business model framework (Lim, 2010) and adapting and revising in light of the research literature[3] so that it is designed specifically to fulfill the research needs of WP6 of the SURFLOGH project. Using this framework, we can begin to outline the key areas that the research will target as each of the pilot projects will operate in and therefore use these 'key headlines' as focus areas for data gathering. These are the 'internal' and 'external' influences for the development of the pilot case studies, and hence should capture key operational, business environment and legislative factors relating to each of the five pilots. The PESSO model is shown in Figure 2.

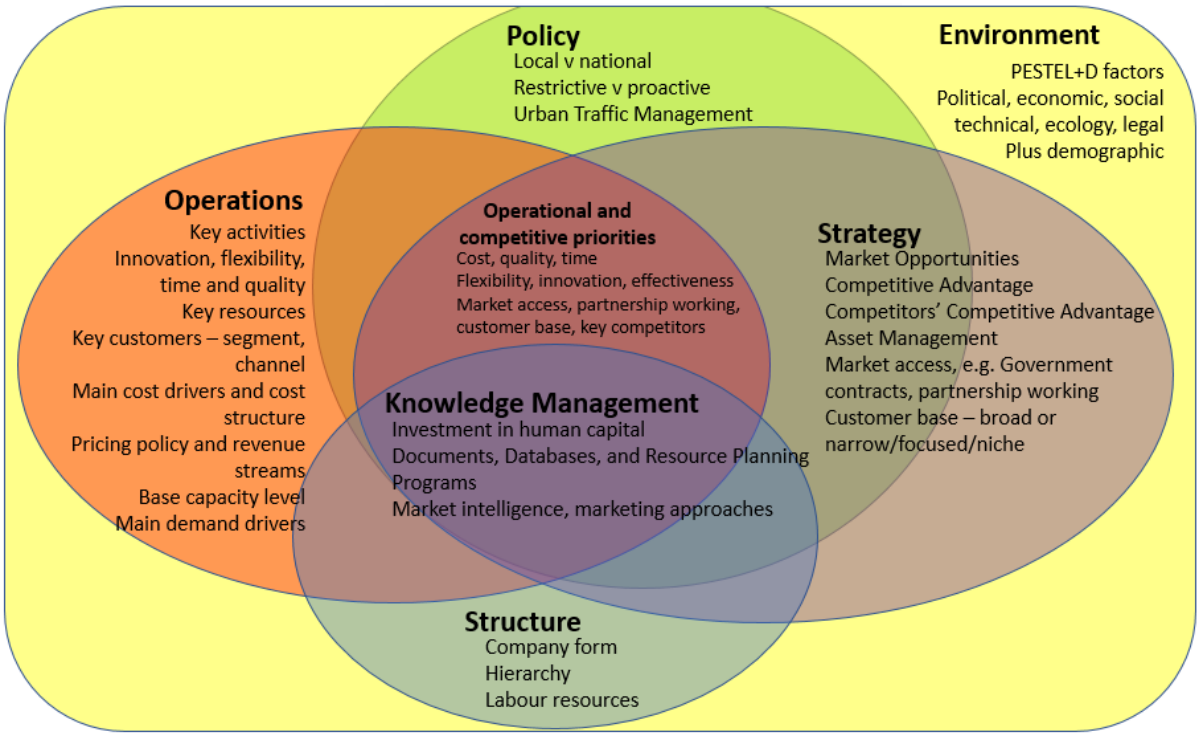

Figure 2: SURFLOGH PESSO Business Model Framework

These issues will be developed as SURFLOGH progresses over time, as through action research this should allow us to come to a better understanding of the key issues surrounding the actual and the potential economic viability of sustainable urban logistics. This will also examine the extent to which policy can influence the financial sustainable of such initiatives (grounded theory). To underline the point, even at an early stage issues had emerged regarding the whole idea of 'consolidation' in freight

[3] See 'Sustaining the freight last mile. A critical literature review.'

consolidation centres, and whether new definitions would be required to adequately describe these processes.

From the PESSO framework, key questions surrounding identification of the supporting business model in each of the SURFLOGH pilots were developed. These are given below and should be used as guidelines to inform potential lines of research and case study pilot development. It is important to note that some may be more relevant to pilots at different stages of pilot development, and that one of the key aims of the overall framework is that the research should be primarily led by on-the-ground developments rather than past research[4].

The research questions should be used by SURFLOGH partners to record and track development of pilots, to help inform potential future decision making. What have you done in each of the key areas and what will you be considering, and why? What works and importantly what does not work. Partners may also wish to refer to the Surflogh Business Model Canvas[5] as given in appendix 1, and available (in large size) from the SURFLOGH google drive under the Business Models folder. This will then be combined with stakeholder interviews and inductive research to build the case study stories and to identify the underlying business models in each pilot.

5.1 Key Research Questions to Develop Framework

From the PESSO model these are the key questions as we develop the 5 pilots. These were originally based on a generic model by Gassman et al (2013), but have been considerably developed/contextualized since:

What? (value proposition – the main benefits provided to customers)

- Why should a client use the offered delivery service? (i.e., what is the value proposition?)
  - What customer problems are solved and what needs are met?
- What alternatives do customers have?
  - How do offerings differ from those offered by the competition?
- What delivery services are offered?
  - Is it just one standard service
- Who are the most important business partners?
  - For each main partner, what is the working relationship and what do they add to the business?
  - To what extent therefore, would a partner be describe as a 'customer' or as a 'partner'?
  - Are all partners viewed as being equally important to the business?
- Are there any other potential markets in which the current value proposition could be offered?

[4] It should be stressed however that we are not advocating ignoring past research before undertaking our own, but rather that in the design of the framework, the context to which it is to be applied should drive the overall design of the framework. This is then 'populated' with the aid of past research.

[5] Whilst the possible use of the BMC framework was 'discarded' above, its application to SURFLOGH will become clear later.

Who? (customers)

- What customers and customer segments are mainly served? (types of customers)
- Who are the most important customers?
- What kinds of working relationships do customers expect and how does the company maintain them?
- Who are the other important stakeholders that need to be considered?
    - In what way do they need to be considered?
- In terms of the delivery service provided, what are the most critical elements from the customer's perspective (e.g. cost v reliability v speed v flexibility v security etc)
    - Where this cannot be defined singularly, what are the different priorities for each customer base?
- Does the current value proposition meet customer needs fully?
- Are the clients the final customer?
- In terms of the most important customers, what kinds of business pressures are they operating under?

How? (value chain – the process by which a company adds value to an article)

- What are the key competences and key activities within the business?
    - How does each contribute to the value proposition?
- How is the value or benefit that is created for customers communicated to the wider business community?
- To what extent are the labour skills that are employed specialized or general?
    - If specialized, how are these skills maintained over time?
- What are the main capital requirements and how do these contribute to the value chain?
- IT – tracking systems, interface with partners, how are IT systems managed, and what more could be done?
- What would need to change to allow the current value proposition to be offered in other markets
    - What key resources would be employed in undertaking these activities (How can this be done?)
    - What is preventing the business from accessing these key resources?
- Pricing (1) – what is the mechanism through which pricing policy is determined?
    - What is the basis of the price – size v weight v speed?
- Pricing (2) – to what extent is price used to manage demand to match capacity?
    - Are all services priced to ensure profitability?

Why? (profit mechanism)

- What are the main sources of income (and does this match with the most important customers)?
- How is the income generated (is there any evidence of the 20/80 rule)?
    - Are there any secondary revenue streams? (e.g. 3PL services)
- Is there an identifiable 'critical mass' in terms of a customer base?
    - Is so, to what extent is the business operating at, under or above it?
- What are the main costs and the main cost drivers?
    - How are cost acquired? E.g. overhead v running costs
- To what extent do revenue streams match cost drivers?
    - What is the contribution of premium delivery services to profitability?
- What are the main financial risks in the current revenue model?
- Profit distribution – where profits are made, to what extent is this paid out as dividend and to what extent is it retained profit?

Policy? (the influence of state intervention)

- What are the main policy documents relating to urban freight in the area concerned?
- What current restrictions are in place with regards to deliveries (e.g. loading, time, area)
- To what extent does the value proposition (current offering) mitigate against these restrictions?
- Are there any revenue streams available under state provisions?
- To what extent is the local authority engaged with the city centre business community?
- Does there exist any wider community city centre stakeholder/business group/organization?

Whilst initially dismissive of the Business Model Canvass approach used in the assessment of many EU urban freight related projects in the past, in developing our own framework from the basic business model approach it became clear that, whilst very different in nature and outlook, most of the resulting key questions and issues could be slotted into the BMC framework. The results of this are shown in Appendix 1. It also became clear that the early concerns regarding the BMC approach was not with the framework as such, but rather how it had been employed in previous UFC pilots. A critical view would be that it had simply been 'taken off the shelf' with little pre-thought as to the context to which it was to be applied, and then the various boxes filled in. This pigeonholing of different aspects of the business does not constitute identification of a business model, and hence the validity of the research may be questionable. With the approach adopted in SURFLOGH, validity should be considerably enhanced through a combination of development of a context specific framework, and the process of 'reconnecting' the resulting BMC with the basic business model framework. Part of this process will also include primary case study research on each of the SURFLOGH pilots.

5.2 Quantitative Data Requirements

There is a tendency in such situations to ask for data requirements in the form of a very simple standardized spreadsheet that simply needs to be filled in. Such an approach however does not reflect the nature of the SURFLOGH pilots or the research methodology designed to study those pilots. Some guidance is given in the questions above and in the SURFLOGH BMC in the appendix as to the type of data that is required. Given the individuality of the pilots however, the SURFLOGH partners should identify what data the operators are willing to give. One issue is that we need to identify and respect commercial confidentiality where it is found to be present. We also need to acknowledge that our operator partners are running a business, and hence any data will be geared towards that purpose and there may be only limited resources to provide it to ourselves. As a wide guidance therefore, SURFLOGH partners should seek to obtain any data relating to revenue streams and costs that the pilot operators are willing to provide, disaggregated as much as possible in terms of time periods and items. Beyond that, until we know what data is available in each pilot, no further guidance can be given. Note however that this will be used to inform the qualitative research, and hence in simple terms we will make use of whatever (quantitative) data our operator partners can make available to us.

6. Closing Summary

This document has outlined the development of the business model framework to be used in the analysis of the five SURFLOGH pilots. This is consistent with the overall research framework to be adopted, which is primarily Action Research, underpinned by elements of Grounded Theory. As such, the research will mainly be informed through qualitative data, supported by quantitative data in whatever form that may be available.

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APPENDIX 1 – SURFLOGH BUSINESS MODEL CANVAS