A Taxonomy of Start-Ups in the Logistics Industry

Hanno Friedrich [1], Alexander Staudinger [1], André Ludwig [1] and Alan McKinnon [1]

[1]*Kühne Logistics University (KLU), Hamburg, Germany*

Abstract. This paper discusses a theoretical taxonomy of start-ups in logistics. Two data sets are used to categorize and analyse existing start-ups, one from Crunchbase and the other from a combination of LinkedIn and Crunchbase.

1 Introduction

In recent years, many new start-ups appeared in transport and logistics. After success stories like Uber in passenger transport, the logistics sector currently seems to be a new target area for investors. Among the main reasons are the trend of digitization. Also, many of the current players in the sector seem to be rather conservative and slow to change, leaving a lot of opportunities for new innovative companies. Much logistics-related innovation is currently being driven by new entrants to the sector whose core competence lies in IT, automation, robotics, social media etc. Finally, there is large amount of available capital on the financial markets that needs to be invested. The business cases of these new start-ups often seem promising, stating that they target the huge logistics market (of 960 Bn EUR in Europe for example). This number is of course rather misleading, since no start-up targets the overall logistics market but mostly only a small part of it.

In the beginning, such a number might suffice, but better information will be needed when start-ups become more mature, get international or want to merge. Little attempt has so far been made to classify start-ups, examine their market positioning and differentiate them in terms of their technology, business model, competitive strategy, value proposition, funding source etc. Such a categorization would be beneficial to potential investors but also to entrepreneurs trying to understand their possible contribution and longer term growth prospects. Therefore, we propose a theoretic taxonomy of logistics start-ups based on three dimensions: market, technology, and value proposition. Based on two data sources some first analysis are carried out.

2 Theoretical Dimensions of a Taxonomy

Theoretically the following dimensions of a start-up taxonomy would be useful:

- Logistics markets (like Fraunhofer Top 100 [1]) for example ocean cargo,
- Core competence of the business – specialist knowledge / skills of founder(s)
- Nature of the new service or product being offered – its hardware and software
- Target market for the innovation – its scale, diversity and geography
- Disruptive effect on existing processes – such as transport bookings or consignment tracking
- Business model and market entry strategy
- Heritage – e.g. spin-off from a larger business or grassroots business
- Source of finance

However, in practice, data availability is limited and data quickly is outdated. In the following we present two data sources and show some selected analysis that are possible.

3 Data Sources

We use two data sets. The first origins from Crunchbase, for a subset we have investigated additional data from LinkedIn and company websites.

Crunchbase is a business information platform, specializing on companies in the start-up phase. It is the primary source for gathering company intelligence, used by investors to find new companies and by experts to identify industry trends. Data input to the data set of Crunchbase occurs from employees at Crunchbase who add information about a start-up, or employees who input data on their own start-up. Since the source is often used by investors it can be assumed that a start-ups wants their data entry to be as complete as possible at least within US. Crunchbase itself contains data on 11,500 companies in the category group 'Transportation' (in June 17). To filter out a sample of start-ups from the Crunchbase dataset, two binding filter criteria have been used. Firstly, the company must be younger than 10 years, secondly, the company must be in the category group 'Transportation'. This gave a result of 5524 start-ups.

A subset of 18 companies has been further investigated. For the subset internet pages of the companies and LinkedIn profiles of the founders have been searched. The list of companies in the subset can be found in table 1.

Table 1. List of Start-ups analysed in detail

Companies	
Xeneta	Cargonexx
InstaFrieght	FlexPort
EverTracker	FreightHub
Liefery	Graphhopper
Seven Sender	Freightos
Shyp	Transfix
Cargomatic	Eyefreight
project44	FreightFilter
Traxens	uShip

4 Selected Results

4.1. Analysis of Crunchbase data

Crunchbase categories
Within Crunchbase the data can be sorted by categories belonging to the category group 'Transportation'. Table 2 shows the split of the 5.524 companies.

Table 2. Start-ups by Crunchbase categories

Category	# of Start-Ups
Air Transportation	85
Courier Service	24
Delivery	216
Fleet Management	64
Freight Service	10
Logistics	1428
Railroad	10
Same Day Delivery	48
Shipping	272
Supply Chain Management	465
Transportation	1810
Warehousing	18

As can be expected Logistics and Transportation are dominating. The number of start-ups in Warehousing is surprisingly low.

Geography
Out of the 5524 start-ups in the database, 4928 have added their headquarter location to their Crunchbase profile. The 4928 recorded headquarter locations are placed in 104 countries. The highest number is in the United States with 2228 start-ups being located there, accounting for 45% of the sample size. In second comes India, hosting 462 start-ups, followed by the United Kingdom with 347 and Germany with 174 start-ups. When refining the search to Europe based start-ups only, the total amount shrinks down to 1324.

Founding Year
Looking at the founding year of the start-ups, it seems that there was peak in 2013 (see figure 1). However, the data of newer start-ups might not be in the database yet. Especially non US start-ups might enter their data later.
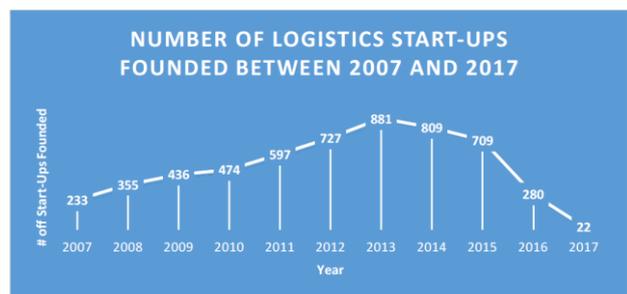

Figure 1. Distribution of founding years

4.2 Detailed analysis for subset

Most dimensions in the taxonomy require more detailed data. Often such data is not available on Crunchbase, at least not in a standardized form. Therefore, some searches have been carried out on a subset of start-ups. While the representativeness is limited, the insight get more interesting. In the following, we show two examples.

Logistics market

Figure 2. Allocation of start-ups to logistics markets

Clustering by logistics markets, it seems like trucking and Ocean container transport are currently heavily targeted by start-ups. Especially for technical startups (like Evertracker) a clear assignment to a market seems difficult.

Work experience of founders

For the following very detailed analysis, the LinkedIn profiles of the founders have been searched. Figure 3 shows the work experience of the founders in number of years. While it differs significantly between the companies, the average experience (about 14 years) seems surprisingly high.
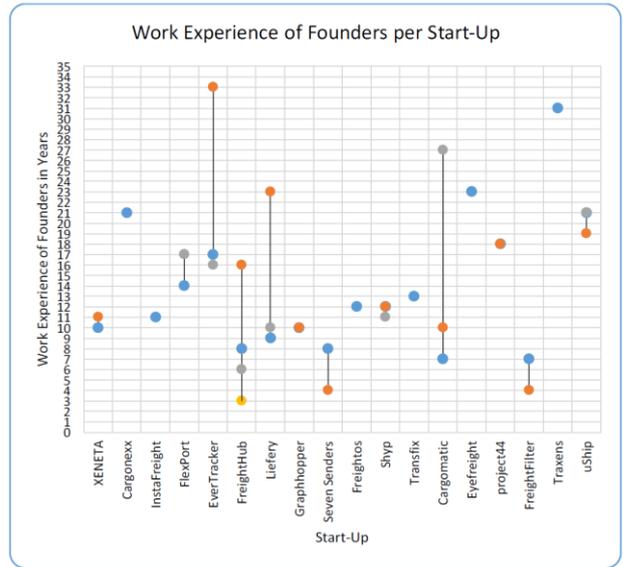

Figure 3. Work experience of start-up founders

Also surprising is, that most start-up founders in the subset do not have experience in the logistics industry (see figure 4).

Figure 4. Work experience of founders in the logistics industry