Chapter 4
Collaboration in Other Industries

In the previous chapter we have discussed a few recent logistics developments that impact collaboration in the logistics industry. Most often, these developments are aimed at improving efficiency and as a result they reduce the negative impact of transport on our climate. In the end, transport is not a goal in itself. It enables consumption, it does not generally improve it. A product is produced at location A and will be consumed at location B, all transport in between should in principle be minimized. It is therefore understandable that there is a tendency to foster collaboration to make this possible. However, as we will see in later chapters, collaboration in logistics proves to be cumbersome. Enthusiastic pilot projects are often discontinued when external funding or internal collaboration champions disappear. There are success stories of collaboration, but it goes too far to say that the logistics industry went through a major paradigm shift and has broadly switched from competition to collaboration.

We will see that in some other sectors collaboration and sharing is more common than in traditional logistics. It is argued by ALICE (2015) that many of the supply chain principles and logistics solutions applied today were developed in an era in which sustainability, globalization, and the digital transformation were not paramount determinants. Therefore, it can be instructive and inspirational to look at collaboration in other industries. These other industries are selected on the basis that they still have an arguable connection with transport or mobility.

4.1 Chemical Industry

Reniers (2011) discusses the drivers and challenges for horizontal collaboration in the chemical industry, based on empirical research in industrial areas around Western-European ports. Chemical companies within the Antwerp–Rotterdam area,

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handling ever more amounts of dangerous materials, are faced with an ever-increasing complexity of their activities. As a result, the need for collaboration between chemical firms increases. Congestion may be lowered and the efficiency and effectiveness of safety and security within the area may be increased through collaboration. Moreover, collaboration leads to more sustainable solutions and ultimately to a sustainable chemical industrial cluster. To obtain an idea of current collaboration perceptions within industrial companies, Reniers (2011) investigated collaboration drivers and partner characteristics in vertical and horizontal collaborations within the Antwerp–Rotterdam chemical cluster region.

Although cooperative arrangements within the chemical industry have a long and successful tradition, further optimization of these arrangements is still possible. By augmenting collaborative agreements and relationships and by linking up with other firms on the same level of the market, a company may enjoy options otherwise unavailable to it, such as better access to markets, pooling or swapping of technologies and production volumes, access to specialized competences, improved research and development, enjoying larger economies of scale and benefiting from economies of scope. Current industrial practice indicates that factors driving safety collaboration between companies situated within a chemical cluster include, for example, firefighting, emergency response, crisis management, environmental compliance, and safety training. The driving forces behind the existing horizontal collaboration initiatives are either major accident risks or financial optimization opportunities. It should be noted that in case of cross-plant accident risks prevention, cost reductions can be realized through more intensified horizontal collaboration. Instead of single companies individually taking cross-plant prevention measures (and thereby possibly creating economically inefficient precaution redundancies), companies should cooperate to prevent cross-plant accidents. The same reasoning can be followed in case of security collaboration in the chemicals sector.

4.2 Aviation

Compared to landside transport, in aviation collaboration is quite omnipresent. Key drivers are the relatively high costs per km, the increased importance of safety, and the geographic clustering around airports. For example, in the area of safety, international agreements prescribe that every incident with certain minimal risk characteristics should be openly published. This makes it possible to create searchable databases such as the Aviation Safety Network[1] that has as its mission statement: “Providing everyone with a (professional) interest in aviation with up-to-date, complete and reliable information on airliner accidents and safety issues.” Currently, the ASN Safety Database contains detailed descriptions of over 20,300 incidents, hijackings, and accidents.

[1] https://aviation-safety.net

More intense forms of collaboration can also be found in aviation, and in fact airline alliances have existed since the 1930s. Today, the three main airliner collaboration are: SkyTeam (19 airlines), Star Alliance (26 airlines), and Oneworld (14 airlines), see Fig. 4.1. There are strong economic incentives for airlines to operate dense international networks. Growth through mergers and acquisitions may provide a strong expansion of a network. However, the granting of international traffic rights is largely confined to specific carriers substantially owned by individual countries. This has left collaboration between independent carriers as an effective compromise to international carriers, thus increasing the joint market power (Fan et al. 2001). In addition to the increased customer service that is offered, aviation collaborations (in literature these are more commonly referred to as alliances) enable higher load factors for aircrafts and more efficient back office organization.

Benefits of collaboration for airliners are often realized through codeshare agreements. Many alliances started as codeshare networks only. Cost reductions come from the sharing of sales offices, maintenance facilities, operational facilities (e.g., catering or computer systems), operational staff (e.g., ground handling personnel, check-in and boarding desks), investments and purchases (e.g., to negotiate extra volume discounts). Traveler benefits can include lower prices due to lowered operational costs for a given route, more departure times to choose from on a given route, more destinations within easy reach, shorter travel times as a result of optimized transfers, a wider range of airport lounges shared with alliance members, and possible fast track access on all alliance members.

Airline alliances are widely studied in academic literature. A good starting point is offered by Zou and Chen (2017) who discuss the rationale behind codesharing alliances. In the Netherlands, a relevant project was executed by the airport

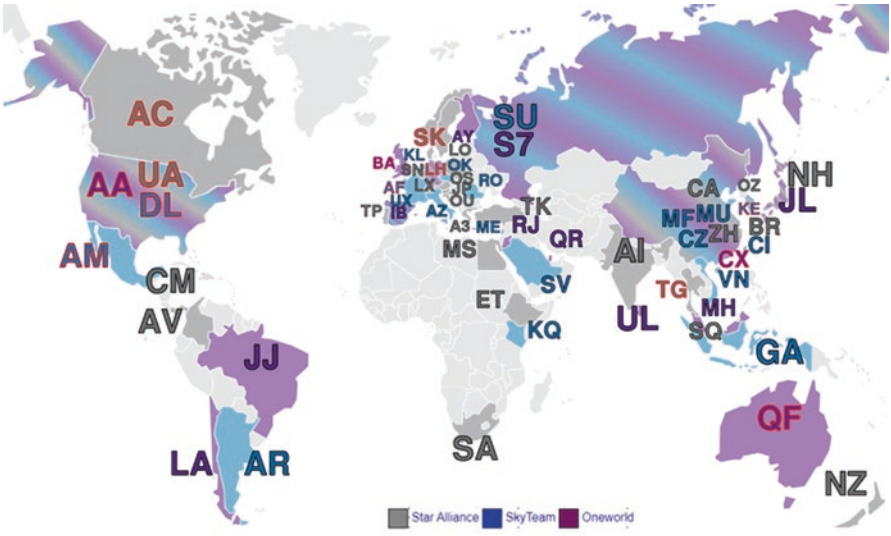

Fig. 4.1 The three main airline alliances (Source: Wikipedia)

community system Cargonaut, which studied the possibilities to share airfreight data in a safe and controlled manner. It concerns data sharing between the airports of Amsterdam, Hong Kong, Singapore, and Mumbai, based on a set of agreements called iSHARE.[2]

For a review of other forms of horizontal collaboration specifically in the air cargo industry, we refer to Ankersmit et al. (2014).

4.3 Banking

Compared to the highly fragmented and competitive logistics industry, banking is a much more concentrated industry. There are only a small number of suppliers (banks) available and together they execute an important role in both society and the economy. Because of the limited number of companies, it is possible to initiate industry-wide initiatives much more easily than in a competitive industry with lower entry barriers such as the transport industry. Therefore, collaboration is much more visible and logical, but also tracked very closely by competition authorities. For example, in the Netherlands, it took until 2013 for banks to be allowed to bundle money transport to branches and cash machines at a single external service provider. The Dutch competition authority observed that this might reduce competition between the Dutch banks, but the (cost) benefits to consumer outweighed this, thereby allowing a beautiful example of horizontal collaboration in transport.

Another area of collaboration between banks is in online payments. For example, in the Netherlands, iDEAL is the most popular method for online payments. iDEAL is owned by the Dutch organization Currence, which also owns PIN and Chipknip. As of April 2016, the total number of iDEAL payments exceeded one billion. The participating banks in iDEAL are ABN AMRO, Bunq, Friesland Bank, ING Bank, Knab, Rabobank, Triodos Bank, Van Lanschot, and De Volksbank. Together they serve most of the Dutch online banking market.

4.4 The International Space Station (ISS)

The ISS is a great example to show that collaboration is possible even between unlikely partners (in this case the USA and Russia) if the stakes and benefits are big enough. The ISS program is tied together by a complex set of legal, political, and financial agreements between 15 sovereign nations involved in the project, governing ownership of the various components, rights to crewing and utilization, and responsibilities for crew rotation and resupply of the station (Fig. 4.2). These agreements tie together five space agencies and their respective ISS programs and

[2] See: https://www.ishareworks.org/en

Fig. 4.2 The 15 nations involved in the ISS

govern how they interact with each other daily to maintain station operations, from traffic control of spacecraft to and from the station, to utilization of space and crew time.

4.5 Humanitarian Aid

Humanitarian aid concerns material and logistic assistance to people who need help immediately, typically as part of humanitarian relief efforts including natural and man-made disasters. It is usually short-term help until the long-term help by

governments and other institutions replaces it. Among the people in need are the homeless, refugees, and victims of natural disasters, wars, and famines. The primary objective of humanitarian aid is to save lives, alleviate suffering, and maintain human dignity. Gossler et al. (2018) investigate situations in which Non-Governmental Organizations (NGOs) act in an uncoordinated way and reduce their bargaining power through competitive behavior. This is a commonly reported issue, which coordinating bodies such as the United Nations Clusters would like to solve. Cluster coordinators can increase the impact of disaster relief by coordinating which organizations should best cooperate to leverage maximum synergies in specific circumstances.

The UN cluster approach was adopted in 2005 to address consistent gaps and weaknesses and to improve international responses to humanitarian crises. It is a means to strengthen response capacity, coordination, and accountability by enhancing partnerships and by formalizing the lead role of particular member NGOs in each of the following sectors: Sanitation, Shelter, Protection, Nutrition, Health, Food Security, Emergency Telecommunications, Education, Early Recovery, Camp Management, and Logistics.

The Global Logistics Cluster (GLC) provides coordination and information management to support operational decision making and improve the predictability, timeliness, and efficiency of the humanitarian emergency response. Where necessary, the GLC also facilitates access to common logistics services. Based on its expertise in the field of humanitarian logistics, the World Food Program (WFP) was chosen as the lead agency for the GLC. WFP hosts the GLC support team in its headquarters in Rome. WFP also acts as a "provider of last resort" offering common logistics services when any gaps hamper the humanitarian response.

The central role of the GLC is to act as a liaison between NGOs, where logistics operations are concerned. To that end, GLC staff organize and participate in a variety of inter-organizational for a and working groups and prepare and disseminate regular updates on GLC activities. At field level the GLC organizes and chairs coordination meetings to streamline activities, avoid duplication of efforts, and ensure the optimal use of resources. An overview of the 2019 KPIs can be found in Fig. 4.3 as an illustration of the scale of the GLC.

Schulz and Blecken (2010) investigated the benefits and obstacles for horizontal collaboration between NGOs in relief operations specifically. It was concluded that collaboration leads to more effective management of relief emergencies as well as to a cost reduction. They also identified the following main impediments for coordinated action: a lack of proper perception of the importance of logistics, cultural and structural differences, mutual distrust, and inadequate capacity of relief materials.

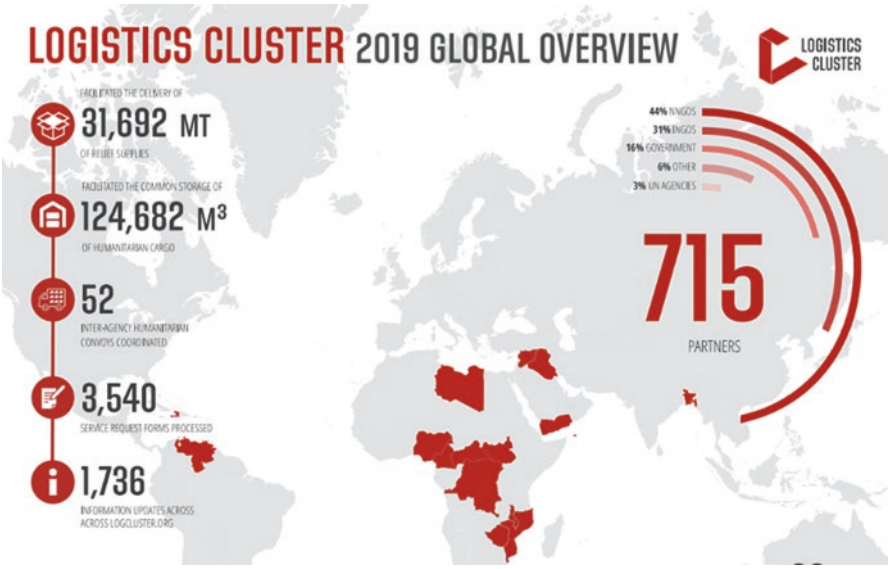

Fig. 4.3 UN's Logistics Cluster 2019 highlights

4.6 Discussion: Innovation and Absorptive Capacity in Logistics

In this chapter we have discussed horizontal collaboration in other industry sectors, which still had links with transport and logistics. The logical question now is how the transport and logistics industry performs compared to these other industries. In their advice to the Dutch government in which the term 4C was coined, Van Laarhoven (2008) already sent out a warning by putting forward that the transport and logistics sector has been relatively slow in innovation adoption. There are a few possible reasons for this. Firstly, the logistics industry is made up of small companies, with low profit margins and fierce competition. In addition to this, many logistics innovations require external collaboration and considerable investments in time and money.

To make a statement about the ability of the logistics sector to innovate, it is good to look at the research topic of *absorptive capacity*. Absorptive Capacity (ACAP) can play a significant role in the value extraction from innovations such as big data analytics (Arunachalam et al. 2018). ACAP can be defined as the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to its commercial ends. The concept is used by many researchers to explain organizational learning from a strategic management perspective. Firms with low absorptive capacity will generally find it difficult to adopt innovative technologies. For a study on the absorptive capacity in supply chains we refer to Gölgeci and Kuivalainen (2020).

Judging how the logistics industry's innovation capability compares to other industries is a rather subjective matter. Iddris (2016) notes that the measurement of supply chain's innovation capability should help supply chain managers to determine the important innovation areas that need attention most and to permit them to respond to challenges posed by any kind of innovation capability that needs to be enhanced.

TNO (2018) developed an innovation-adoption model which was designed for and tested specifically in the logistics industry. The aim of the model is to see how innovations can be accepted by professionals. It turned out this mostly depends on (1) the technology readiness, (2) the perception of the innovation, (3) the organizational context, and (4) the skills of the professionals. This shows that social aspects of innovation are very important for their success. This is particularly true for the implementation of 4C solutions, as they require structural changes of processes and roles within companies.

Consultation with a group of academic supply chain experts in the preparation of this report suggested that generally the innovation capability of the supply chain industry is low compared to other industries. Reasons brought forward were that logistics still is a rather labor-intensive activity, and competition is strong as transport in an open market with relatively low entry barriers and a relatively commoditized product. Therefore, on average the industry sees low profit margins, which reduces its innovation budget.

If this is true, of course this is a particularly important hurdle for innovative concepts such as 4C. And it gives a competitive advantage to other companies vertically integrating into the logistics industry, such as Amazon (see Sect. 3.5).