Chapter 9
Synthesis

In the previous chapters we have reviewed the topic of 4C or horizontal logistics collaboration from a theoretical standpoint slowly towards a practical perspective. The goals of academia and industry are mostly the same: to improve the efficiency of transport and thereby contributing to important economic and sustainability goals. In this section we aim to synthesize this discussion by discussing 15 propositions about 4C. The first eight are based on the initial expectations formulated by Van Laarhoven (2008) at the beginning of the 4C action program. The others are based on the description of the literature and 4C applications in Chaps. 5 to 8.

By qualitatively assessing the propositions we try to find common ground across all the 4C projects financially supported by TSL and to guide practitioners and policy makers on horizontal logistics collaboration into the most promising development paths. Table 9.1 provides an overview of the 15 propositions about 4C and horizontal collaboration. These were proposed to a group of eight Dutch and Flemish experts on the topic of horizontal collaboration, including the author. Using a Delphi approach the experts first individually scored each proposition. These responses were then collected and summarized. This summary was presented to and discussed with the experts in a joint meeting to arrive at a final judgement of every proposition.

Proposition 1
A successful 4C does not only focus on the physical flow of goods, but also redesigns financial control, forecasting, and data management.

This proposition is **true**. It must be noted that academic literature quite often motivates the concepts of horizontal collaboration by calculating cost savings from a quite limited scope, for example, a joint route planning situation (see Sect. 5.2). And

F. Cruijssen, *Cross-Chain Collaboration in Logistics*, International Series in Operations Research & Management Science 297,
https://doi.org/10.1007/978-3-030-57093-4_9

Table 9.1 Collaboration synthesis propositions

	Proposition	True	?	Not true
1	A successful 4C does not only focus on the physical flow of goods, but also redesigns financial control, forecasting, and data management			
2	4C has disrupted the logistics industry using new business models for existing and new companies that are now standard practice			
3	A 4C can be successful across industry sectors, it does not have to focus on a single industry sector such as fashion, electronics, fresh products, chemicals, etc.			
4	A 4C can be initiated from the shipper's side or the LSP side, but to be successful active participation of both sides is required			
5	4C will strongly reduce the kilometers travelled in the Netherlands as well as the total CO_2 emissions from transport			
6	A typical 4C project will become self-supporting (and profitable) within two years after the initial government subsidy			
7	Beyond the direct savings in kilometers and CO_2, 4C projects have a positive impact on the innovation level of the Dutch logistics industry			
8	Horizontal collaboration in logistics has been "over-studied"			
9	4C as a term has not caught and should be abandoned			
10	4C is a means to an end			
11	The full goals of the 4C program can only be achieved through direct government intervention such as a sufficiently high carbon tax			
12	4C is a logical step in the development towards the Physical Internet			
13	An intra-company control tower is the best way to develop a 4C			
14	Governments should take an active role in coordinating specific collaborative logistics systems, for example, in city logistics			
15	Academic research focuses too much on (methodological) subproblems, rather than on the bigger picture of how to achieve better transport efficiency			

indeed, that is the purest motivation of why horizontal collaboration makes sense. In practice, however, it is widely accepted that 4C-like concepts cannot only consist of redirecting and consolidating physical flows of goods. To achieve a commercially viable implementation of any of the collaborative transport models proposed by Palmer et al. (2019), i.e. co-loading, small delivery consolidation, consolidation centers, UCCs, multimodality, and logistics clusters (see Sect. 6.1.7), at least collaborative data management and some form of (automated) data exchange is required. This communication between consortium partners is key to the long-term success of collaboration and this key activity should normally be executed by a neutral trustee (see Sect. 5.4) or through technology such as a blockchain (see Sect. 5.5) that will facilitate future consolidation models as part of the Physical Internet. Once this data management and data sharing is reliably set up, it is a small step for a 4C to also take forecasts and other information such as contracts into account using centrally available supply chain analytics skills in the 4C. In that way, a 4C can truly add value to individual transport operations exceeding what logistics marketplaces (see Sect. 3.8)

can offer. It was concluded by the experts that a 4C can only be successful if it is considered a safe and trusted extension of a company that helps to make logistics more efficient in any way it can by leveraging on broad collaborative opportunities.

Proposition 2
4C has disrupted the logistics industry using new business models for existing and new companies that are now standard practice.

This proposition is **(possibly) not true**. This is maybe the same as asking if the glass is half full or half empty. It is certainly true that the high expectations formulated by Van Laarhoven (2008) and others in the early phases of the 4C program are not fully achieved. The overall quantified goal of reducing road transport by 50 million kilometers per year was not entirely reached. And the foreseen new transport orchestration industry has not yet developed to the size expected and did not yet disrupt the traditional model of mostly bilateral transport contract between shippers and LSPs. However, unquestionably things have changed as a result of the ten years of promoting and testing horizontal logistics collaboration. Examples of logistics collaboration are presented and studied in (applied) universities and the young professionals entering the logistics industry usually have a mindset that is much more open to collaboration beyond company borders (see Sect. 6.5.1). Therefore, today we see much more supply chain collaboration, better structured data exchange, and overall improved skills of logistics professionals. The 4C program may not have delivered the ambitioned disruption of the logistics industry, but it did create a mind shift. Conferences on collaborative logistics are always well attended and serious attempts are made to bundle flows with other companies, today mostly motivated by sustainability goals. More and more companies are open to explore the opportunities of collaborative logistics. Traditional 4PL companies and other LSPs are also adding many elements of the 4C ideas in their own business model, for example, by using platform technology as a way to initiate collaboration. Fully fledged 4Cs are still in the early phase of acceptance today, but indirectly it has certainly changed the logistics industry. These indirect effects will be the topic of another study by TSL that is yet to appear (see Sect. 8.3).

Proposition 3
A 4C can be successful across industry sectors, it does not have to focus on a single industry sector such as fashion, electronics, fresh products, chemicals, etc.

This proposition is **true**. The definition of horizontal collaboration states that it deals with collaboration between companies that are active on the same level of different supply chains. This definition does not limit horizontal collaboration to

applications within a single industry, and certainly not to combinations of direct competitors. Interestingly, when discussing horizontal collaboration with logistics professionals, often it is assumed that it involves collaborating and sharing information with direct competitors. Under this coopetition assumption (see Sect. 5.3), soon the discussion will be on NDAs, contracts, competition law, cost and gain sharing, etc. That is a pity, because horizontal collaboration can be just as beneficial when a consortium consists or businesses with compatible products (for example, containerized flows or ambient palletized goods) from different industry sectors. Sometimes it even gives better possibilities for synergy when heavy-weight products are combined with voluminous products. Interestingly, four of the seven 4C projects discussed in Sect. 8.4 deal with collaboration within a single industry (FMCG, horticultural, chemical, and construction). The reason is that these companies are historically focused on each other, traditionally as competitors and now slowly but surely also as possible collaboration partners. In addition, usually these industry partners have compatible products and sometimes also common customers and delivery addresses. As the 4C4D, Compose and Next level collaboration projects show, a 4C can also be instrumental to find and propose consortia that do not compete at all and are purely focused on improving logistics efficiency without this being contaminated by competitive hesitations. To summarize, an industry-focused 4C is perhaps the easiest to come up with as it more easily incorporates specific industry standards, but an industry-independent 4C can be expected to scale faster without running into competitive barriers.

Proposition 4
A 4C can be initiated from the shipper's side or the LSP side, but to be successful active participation of both sides is required.

This proposition is **true**. Gansterer and Hartl (2018) state that most academic papers focus on carrier collaborations. However, given the (methodological) focus of most papers on the increased optimization potential due to economies of scale from collaboration, for the theoretical insights it does not really matter whether this is achieved by carriers or shippers. Induced by the sometimes disappointing long-term results of horizontal collaboration initiatives, in the policy area there has been a large debate over the question if the LSPs or the shippers are best positioned to start and lead the collaboration. Therefore, in Sect. 6.2, we added this topic to our extended horizontal collaboration typology. In the collaboration projects described, the first wave starting around 2010 was managed by LSPs (for example 4C4More), then there was a period were shippers took the initiative (4C4Chem) and recently focus seems to be an LSP collaboration again (Nextrust). Shipper collaboration makes sense because in the end the shipper are the cargo owners and they pay the bill for the transport. Furthermore, transport is not their core activity, so it is easier for them to make changes to it without competitive risks. On the other hand, LSPs are the actors that have most knowledge about the actual process of transport and are therefore better

able to judge what is possible and what not. Whoever takes the initiative, experience has shown that an approach purely focused on either the shippers or the LSPs will not likely result in a successful and scalable 4C. The ambitious goals of the 4C concept require active involvement of both the buyers and the sellers of transport. The former pays the bill and will therefore always have the final say, and the latter is the specialist that knows what is possible and what not. In any collaboration, eventually both the LSPs and shippers need to be involved to some extent. This can be quite minimal (getting some freedom as an LSP to change routings, ETA's, etc.) or more intense, for example in more strategic forms of collaboration that require more structural changes.

Proposition 5
4C strongly reduces the kilometers travelled in the Netherlands as well as the total CO_2 emissions from transport.

This proposition is **true**. In addition to an ambitioned yearly €1.8 billion added value to the Dutch economy, 4C is expected to reduce the kilometers travelled by road freight vehicles by 50 million and the accompanying CO_2 emissions by 50,000 tons, both per year. Studies by TNO and BCI (2018) have shown that transport kilometers by road in 2018 were reduced by 25 million per year, i.e. 50% of the target for 2020. Although this is quite far below the required 50 million kilometers saved per year, still it is a significant reduction. It was stated by the experts that 4C has developed at a slower pace than hoped for, but that its impact is growing slowly but surely. They are confident that 4C can scale up in the next years and that it will also benefit from a European wave towards transport innovation, efficiency and collaboration initiated by ALICE and the various projects introduced in Sect. 7.3. After all, efficiency increases through collaboration become more beneficial when distances driven are longer. Sometimes freight bundling requires additional stops at the origin or destination area of route. The additional costs from this must be offset by a cost reduction per kilometer from increased load factors. Therefore, the business case for horizontal collaboration will be more easily positive on long European hauls than on Dutch short distances.

The consulted experts note that only looking at the efficiency gains in terms of CO_2 emissions can be misleading. Of course from a societal point of view this is an important performance indicator, but from a company perspective the incentive to get involved in horizontal collaboration initiatives is usual broader. Sustainability has become an important incentive, but it is important to also take into account more traditional performance indicators such as costs, service levels, flexibility, etc.

Proposition 6
A typical 4C project will become self-supporting (and profitable) within two years after the initial government subsidy.

This proposition is **unclear**. Although it was an explicit expectation of TSL that a subsidy covering start-up costs for commercial 4Cs would enable them to scale independently without further financial support, this has proven to be difficult. The projects in Sects. 7.3 (Europe) and 8.4 (the Netherlands) have sometimes resulted in sustainable collaborations that are continuing and sometimes even growing, while some other 4Cs that were set up in these projects were stopped soon after or even before the subsidy period ended. It is widely established that the start-up period of a collaboration is difficult. In Sect. 7.3.8 this hurdle was discussed. Companies must usually base their decision to engage in a collaboration on calculations based on static, historic data that is gathered for all the potential consortium partners. Currently, these data are not centrally stored and only available in companies' internal systems and in company-specific formats. The process of data gathering and harmonization usually takes a few weeks or even months, and by that time the situation has changed, and the calculations made do not fully apply anymore. Currently this still tedious process may explain why some models of collaboration are not scalable, flexible, or sustainable. On the other hand, as discussed in Sect. 7.2, it is also true that once a collaboration initiative runs, significant savings can be realized: payback periods shorter than six months are no exception. It should be noted that if a commercial trustee is used in the 4C, their costs also must be funded from the cost savings achieved. Unfortunately, given the diversity of 4C initiatives that are supported, each with its own dynamics, it is not possible to formulate a "golden-rule" for becoming a successful self-supporting organization.

Proposition 7
Beyond the direct savings in kilometers and CO_2, 4C projects have a positive impact on the innovation level of the Dutch logistics industry.

This proposition is **true**. The matter of innovativeness and absorption capacity of the logistics industry has been discussed in Sect. 4.6. Van Laarhoven (2008) already stressed the importance of the Dutch logistics industry as a global leader in new logistics concepts and services. That is also apparent from the TSL ambition to have a steady position in the top-5 of the world logistics performance index. Like with the ambitions for reductions in CO_2 emissions and kilometers driven, also this ambition was not fully realized, but almost. In the latest release of the performance index in 2018, the Netherlands was in 6th place, after Germany, Sweden, Belgium, Austria, and Japan. Overall, Europe is doing very well on this ranking. In the top-10 only two countries from outside Europe can be found, see Table 9.2.

The 4C program has brought significant advances in logistics innovation. An important side effect of collaborative efforts is that knowledge is shared among persons and companies in the same industry that did not interact regularly on a professional basis about common issues before. This was, for example, true in the 4C4Chem project (see Sect. 8.4.4) where the consortium members used the project also to establish a supply chain innovation community for the Dutch chemical

Table 9.2 Logistics Performance Index 2018 (Source: https://lpi.worldbank.org/international/global)

Country	LPI rank	LPI score	Customs	Infra	Int'l ship-ments	Logistics comp.	T&T	Timeli-ness
Germany	1	4.2	4.09	4.37	3.86	4.31	4.24	4.39
Sweden	2	4.05	4.05	4.24	3.92	3.98	3.88	4.28
Belgium	3	4.04	3.66	3.98	3.99	4.13	4.05	4.41
Austria	4	4.03	3.71	4.18	3.88	4.08	4.09	4.25
Japan	5	4.03	3.99	4.25	3.59	4.09	4.05	4.25
Netherlands	6	4.02	3.92	4.21	3.68	4.09	4.02	4.25
Singapore	7	4	3.89	4.06	3.58	4.1	4.08	4.32
Denmark	8	3.99	3.92	3.96	3.53	4.01	4.18	4.41
United Kingdom	9	3.99	3.77	4.03	3.67	4.05	4.11	4.33
Finland	10	3.97	3.82	4	3.56	3.89	4.32	4.28

industry and its associated logistics services. In addition, over 200 MSc students and more than 25 PhD's have graduated on a research as part of a 4C project. These students will for a large part become professionals who will bring their collaborative knowledge and attitude into the logistics industry. An interesting remark regarding the relation between innovation and 4C was made by one of the consulted experts. If it is true that 4C and collaborative logistics networks are a steppingstone towards the Physical Internet (see Proposition 12), logistics will be strongly commoditized in the years to come. This would mean that from the traditionally managed supply chains of today, via a phase of collaborative supply chains with a large demand for innovative solutions, the result will be a strongly standardized and automated logistics network that might not need much logistics innovation anymore.

Proposition 8
Horizontal collaboration in logistics has been "over-studied"

This proposition is **not true**. Sometimes in the Dutch logistics industry there is some criticism that subsidized projects on 4C and collaborative logistics in general are too much focused on academia. It is argued that most important academic insights are already there and that focus should be redirected to market uptake and upscaling. A similar argument states that the relevance of applied research such as 4C should really be dependent of industry adoption. Surely, there is an element of truth in there, but it is also true that there is a broad agreement (in fact, the Paris agreement) that the current efficiency level of the logistics industry is not sustainable. Although 4C has not yet been adopted very broadly in Europe and the Netherlands, a tipping point caused by government policy or new disruptive business models (see Sect. 3.5) might not be far away. Once that happens, all knowledge on how collaboration can be used to improve logistics efficiency is extremely relevant.

Therefore, it is considered a good development that academic research on collaborative logistics increases year by year as we saw in Chap. 5. Of special interest is research on suitable business models for 4Cs and on the behavioral aspects of the move towards increased collaboration in supply chains. As the COMPOSE (see Sect. 8.4.7) project has shown, focus on the socio-economic factors influencing the long-term success of a collaboration is needed. This view on horizontal logistics collaboration is still relatively new in academic literature. To make supply chain collaboration work, a multi-disciplinary approach is required and in this respect there are certainly still important gaps in literature.

Proposition 9
4C as a term has not caught and should be abandoned.

This proposition is **perhaps true**. "*What is in a name? That which we call a rose, by any other name would smell as sweet" (Romeo and Juliet, by William Shakespeare).* Collaborative logistics terminology was discussed in Sect. 5.1. It can be concluded that 4C as a term has not caught in literature and in practice only to a limited extent. Although some companies now explicitly offer "4C services,"[1] this is still an exception to the rule. In academic literature, a search on 4C or Cross Chain Control Center does not give a single hit. On the other hand, there is nothing wrong with using the term 4C as it nicely covers its meaning. In the end, it does that matter very much how logistics will be made more efficient, as longs as it happens. And some form of collaboration will play a part in achieving that. This will be further discussed with the next proposition.

Proposition 10
4C is a means to an end.

This proposition is **true**. If tomorrow the Dutch logistics industry would have hundreds of successful 4Cs, but the CO_2 emissions and the number of ton-km's driven on the road stay the same, nothing will have been achieved. The only reason to invest in the 4C concept is that it is believed that it will bring significant changes in these two main KPIs. The Paris agreement, the Green Deal, ALICE's roadmap of sustainable transport, they all have same goal, which is to make the global economy sustainable and safeguard our standards of living for the next generations. To do so, CO_2 emissions must go down sharply. If this can be achieved without new business models for logistics collaboration, that is a good result as well, although this seems unlikely. Companies looking for horizontal collaboration will need a strong motivation to do

[1] See for example: https://www.idsnl.com/products/4c-solutions/

so. It turns out that even the prospect of a significant cost reduction, in many cases is not enough in isolation. Sometimes 4Cs are initiated collaborations for other reasons, like achieving better service to customers. It is expected that external influencing factors, like closures of city centers for non-zero-emission vehicles, congestion charges or supply chain disruptions caused by events such as the Corona pandemic, might turn out to be the decisive incentive for business to engage in horizontal collaboration initiatives on a large scale. Not because they necessarily want to, but simply because they need to. Therefore, policy makers should always critically assess which approach seems most promising and guide research funding and subsidies in that direction.

Proposition 11
The full goals of the 4C program can only be achieved through direct government intervention such as a sufficiently high carbon tax.

This proposition is **true**. However, it is a difficult proposition to judge since answering it depends on one's political beliefs about the desired role of governments. Still, also after consultation with the expert group, it can be said with some confidence that without additional regulations or other forms of direct government intervention it is difficult to see how the logistics industry can accomplish the big efficiency leap that is needed to reduce their emissions by 30% until 2030. Ten years of experience with stimulating horizontal collaboration have shown that despite of sometimes evidently positive business cases there is a general reluctance to start collaborating. There may be various reasons underlying this, from human behavior (hesitation to lose perceived control of one's supply chain) to practical considerations (it is easier to prioritize internal efficiency improvement projects). Whatever the reasons, compared to other industry sectors, logistics is lagging in terms of sustainability improvements and innovativeness. The cases where collaboration did succeed usually had strong external motivations underlying it. For example, the case described by Cruijssen et al. (2014) where French food four retail companies decided to bundle flows was successful because these companies were forced by their powerful joint customer (the retailer) to only deliver in full truck loads. There are also examples of city logistics where collaboration is forced by local governments by means of restricted vehicle permits in the city centers. Another stimulus for collaboration and bundling is the growing shortage of truck drivers in Europe. The most effective external motivation, however, will be of a monetary nature. To really change behavior, a flat carbon tax seems a logical step. If policy is aimed at reducing CO_2 emissions the simplest action is to make the production of it more expensive, like was done for tobacco, alcohol, ammonia, and other products that have negative side effects. If a carbon tax were introduced, this would improve the business case for making transport more efficient through collaboration a lot. Obviously, there are many implementation issues and decisions to be made if a carbon tax was to be introduced, but these fall outside the scope of this study. Taxing is a completely different approach than the current

TSL approach of indirectly stimulating the desired behavior of collaborative transport by supporting pilot projects, hosting conferences, etc. Taxing is a more blunt instrument that unfortunately could very well be the most effective instrument policy makers have.

Proposition 12
4C is a logical step in the development towards the Physical Internet.

This proposition is **true**. Given the promising first results of simulation studies and case studies of the Physical Internet, a lot of attention has been centered around the likely transition towards the PI, i.e. how, when, and where will it emerge. Horizontal collaboration, albeit implicit, is a necessary ingredient of the transition towards the Physical Internet. Transport flows that were traditionally organized independently will be combined from a staffed central consolidation center (i.e., a 4C) first, and perhaps by a powerful routing algorithm for the PI in the future, like happens today for the digital internet with TCP/IP.

From a bird's eye perspective, the current set of logistics services is a suboptimal patchwork of commercial networks of various sizes, which strongly limits overall transport efficiency. Furthermore, the fragmentation of information flows and the heterogeneity of IT systems across various supply chains make it difficult to swap movements between LSPs. According to the ALICE roadmap, the PI should be realized by 2040. The climate agreements made in and between EU member states will probably play an important role in how fast exactly PI will be established. As argued above, when transport gets more expensive due to emission charges, there will be a stronger incentive for LSPs and shippers to make transport more efficient, and based on an obvious way to do this would be to bundle flows by routing them through major hubs and via highly efficient long-distance corridors. Such a development can be a strong enabler for the PI (Cruijssen 2019).

The timing and pace of the transition from traditional transport to the PI aside, it can be expected that the industry will go through several phases before arriving at the PI. A lot of research has been done about these intermediate states that the logistics industry will see towards the PI. Notably, the EU funded SENSE project has provided a roadmap plan for the PI that consists of five phases, i.e. the current situation and four maturity levels (or "generations") of the PI. Figure 3.5 shows that from 2030 onwards all main logistics networks are expected to interact with each other and offer services as a whole: a network of networks. The 4C concepts experiments with this. Without a definitive design of the communication standards, transfer pricing, automation, etc. that are key elements of the mature PI, 4C can accomplish the same goals in a smaller, customized, still more people-driven, and closed user group setting. The goal of course is that this can be scaled up to ever bigger collaborative networks, until the point that really it is not collaboration anymore but seamless supply chain integration. In that way, PI is the automation of 4C.

Proposition 13
An intra-company control tower is the best way to develop a 4C.

This proposition is **not true**. The idea, however, makes a bit of sense. Nettsträter (2019) states that already in generation 1 of the PI it is expected that major LSPs and forwarders will develop internal connections between their departments responsible for different modes, as such achieving the so-called physical intranets. These internal networks will be an important laboratory to test more advanced inter-organizational collaboration. Intra-company experiences will be of great benefit to true horizontal collaboration projects among different companies. After all, when operating companies within a multinational have separate profit and loss accounts, they are likely to show the same behavior as stand-alone firms. The big disadvantage of intra-company collaboration, however, is its limited view on industry-wide roll-out and its understandable tendency to incorporate company-specific details. As discussed in Sect. 6.2.5 for industry specific collaboration, also intra-company collaboration projects are usually motivated in an ad-hoc manner because one or two individuals see a potential to reduce cost or emissions by improved orchestration. Such a collaboration usually is a one-off exercise that helps the company to achieve its optimization goals. On the other hand, collaborations that are initiated by companies that have collaboration support as their business model have the explicit ambition to provide a solution that works for every industry. Typically, these solutions are more software/technology-based initiatives that are aimed at a pool of potential users that is as big as possible.

To summarize, intra-company control towers have a higher probability of success, but generic 4Cs are expected to have a bigger overall impact on the industry than the many successful company-specific control towers.

Proposition 14
Governments should take an active role in coordinating specific collaborative logistics systems, for example, in city logistics.

This proposition is **true**. Although this is a quite general proposition, there are a few areas that are very suitable for direct government intervention. For example, situations where too many stakeholders are involved that organizing regular discussions with all these stakeholders to discuss optimal collaboration models is not realistic. Cities and urban areas are prime examples of this. LSPs delivering shops in inner cities cannot effectively bundle their flows if every shop requires different delivery times or if the permit system of the local government does not support it.

At the same time, especially in cities, the rise of on-demand logistics puts serious pressure last-mile delivery systems. Today, the industry even promises instant (within the hour) delivery and cities are confronted with the negative consequences

of this. Therefore, urban planners, city authorities, and business stakeholders need a sensible collaborative approach to restrain the negative impact of the many fragmented deliveries that occur every day. A good example of a local 4C with active government participation is the project regarding construction logistics discussed in Sect. 8.4.5. A big construction site in a city affects almost everybody active in the city (inhabitants, shop owners, bars, tourists, etc.) are therefore calls for (public) orchestration.

Proposition 15
Academic research focuses too much on (methodological) subproblems, rather than on the bigger picture of how to achieve better transport efficiency.

This proposition is **perhaps true**. In Chap. 5 we have seen that academia has given increasing attention to horizontal collaboration in supply chains. Whereas in the beginning of the millennium only three papers *per year* on the topic were published, in 2019 this was already more than one paper *per week*. Incidentally or not, the start of the rise in published papers per year coincided with the launch of the 4C program in the Netherlands. It is apparent that in scientific literature, much attention is given to quite specific (methodological) elements as surveyed by Gansterer and Hartl (2018), but very few publications focus on the more general organizational and business model aspects. Likewise, most attention is given to short-term collaboration (auctions) instead of more longer-term collaboration under a 4C-like setup. One explanation for this phenomenon is that academic research is used to focus, to have their papers accepted for publication in academic peer-reviewed journals. Usually, it is easier to prove that a new algorithm or gain sharing rule is novel and original, than it is to argue the innovativeness of a new business model or collaboration concept. This is a pity since the challenge for the logistics industry is to become much more efficient fast. And without being forced by legislation or taxes, this can only be achieved if successful novel business models are applied throughout the industry. Arguably, it would be helpful if next to the operations research area, also operations management and policy researchers and even psychologists or sociologists would come up with additional innovations to improve transport efficiency through collaboration and behavioral change. The COMPOSE project discussed in Sect. 8.4.7 is an interesting example of such a multi-disciplinary effort.