

Innovation Across Borders – Forum VBO-FEB

Innovation Case Preparation Form

WHO

- Welke onderneming(en) werd(en) hierbij betrokken? (grootte, bedrijfssector,...)?
- Met welke partner(s) (clusters, O&O-centrum, spin-offs, hubs,...)?

The initiative was launched by Brussels Airport in collaboration with:

- the private companies active at the airport:
 - [ACMAB](#) vzw (association of airlines) e.g. Brussels Airlines
 - [BAFI](#) vzw (forwarding industry association) e.g. Jan De Rijk, Essers, Panalpina, NinaTrans, Nippon Express, UTI
 - DHL Global Forwarding and DHL Aviation
 - Ground handlers e.g. Swissport, WFS, Aviapartners
 - The recently founded [ACB](#) (Air Cargo Belgium)
- Voka Kamer van Koophandel Vlaams-Brabant
- VIL (Vlaams Instituut Logistiek) as the knowledge centre
- Nallian NV, a Belgian start-up founded in 2012 as a platform/technology provider

WHAT

- Wat was de doelstelling van de innovatie?
- Waarin bestaat precies de innovatie (toepassing, soort innovatie – product/procedé/businessmodel/support diensten/management,...)?

The purpose of the innovation was to create a community of autonomous but interdependent players in the air cargo value chain that was at least as effective and efficient as a fully integrated player such as DHL Express.

What is the problem? A typical air cargo value chain consists of anywhere between 10 and 15 partners, with a handover point between each partner. Due to imperfect coordination, valuable time, sometimes amounting to several days, is lost at the handover points. The root cause of imperfect coordination is the fact that the partners' systems do not communicate with one another, even though such communication could lead to perfectly synchronised processes and perfect visibility of the status of all partners. In the rare cases where the systems do communicate, this is often limited to n-1 and n+1, which means that any visibility ripples through sequentially at best. Compare this to a fully integrated player, where the door-to-door process is run by just one overarching system. As a result, fully integrated players can deliver a package to the other end of the world in just two days, whereas a chain of autonomous but interdependent players would need seven.

Why is this a major problem? The transport and logistics industry is highly fragmented, and the problem is exacerbated by rapidly rising consumer expectations with regard to delivery times and increasingly congested logistics infrastructure. Better coordination can alleviate this problem without putting extra pressure on the infrastructure because there is currently a lot of slack in the transport infrastructure. Load factors of 57% for road transport and 43% for air transport illustrate perfectly that existing assets could generate significantly higher returns.

Why do we say at least as efficient and effective as fully integrated players? In a loosely coupled network of autonomous but interdependent players, market forces will put pressure on the competitiveness of each link in the chain. If a link is not the most effective and efficient one, then that link will be swapped for a better link. A fully integrated player, on the other hand, will tend to stick to its own assets at the expense of efficiency, letting consumer value fall by the wayside.

The BRUcargo Cloud platform is an integration platform based on Nallian's data sharing technology that offers apps in order to synchronise cross-company processes and generate insight to foster efficiency within value chains. It enables all stakeholders involved in cargo transportation to share their information in real time resulting in a smarter use of resources (e.g. people, machines, vehicles, space) through:

- improved visibility of the status of other value chain partners;
- optimised planning based on this visibility;
- automated planning based on software;
- a more monitored and secure supply chain.

The BRUcargo Cloud platform leads to more efficient planning, shorter waiting times, higher load factors and increased collaboration between the partners connected to the cloud platform.

IMPACT

- Voor de business/ de onderneming (verwerving van een nieuwe markt, groei, kostenvermindering,...)
- Op de markt (eindafnemers, tussenpersonen)
- Over het geheel genomen, ten aanzien van de maatschappelijke thematiek

For the Nallian Network:

- Extra users on the network, which enhances value for all other users as it increases bundling opportunities in the quest for multimodality.
- Extra apps, which enriches the network and generates pull from other logistic hubs e.g. air cargo in Heathrow and Schiphol helps Nallian's internationalisation, and the Port of Antwerp and Liège encourages expansion to other transport modalities.

For BRUcargo:

- Generates international exposure as an innovative hub.
- Provides strategic visibility on flows, driving marketing and investment policy.
- Increases efficiency which in turn boosts competitiveness (see slot booking app).
- Improves security and safety (see non-conformity reporting app used to monitor CEIV (Centre of Excellence for Independent Validators) in Pharmaceutical Logistics and the Cool Dolly app used to warrant the cold chain).
- Highlights positioning as specialist pharma hub.

For the participating companies:

- Increases efficiency and therefore competitiveness. Users are typically global companies active in multiple air cargo hubs (e.g. Swissport, DHL, WFS, Jan De Rijk, Essers, J&J, Solvay, Pfizer). They are looking for non-proprietary apps (i.e. not linked to one single airport or to one single transport mode), which are common across multiple hubs, so that it pays off to invest from their side. This has not been the case over the past 20 years. This led to underinvestment in automation and process improvement, which resulted in a loss of competitiveness to other transport modalities.
- Improved visibility and predictability, which leads to less waste and fewer safety stocks.

For society:

- Less congestion, shorter waiting times, less CO₂.
- Lowered risk of expired products in the market.
- Improved competitiveness of the region. A strong logistic hub is an important economic engine for the country; Zaventem is Belgium's number two economic engine, with the Port of Antwerp coming in first.
- Passenger air transport leverages cargo for profitability. It is extremely difficult to operate passenger flights profitably without cargo on board.
- Extra improved sustainability due to increased asset usage owing to the improved load factor of transport assets (currently barely 43% in air cargo)

KATALYSATOREN & OBSTAKELS

- Hoe verloopt / verliep de ontwikkeling van het project (duur, algemene indruk)?
- Wat vergemakkelijkt / vergemakkelijkte het verloop van het project (katalysatoren)?
- Wat zijn / waren de moeilijkheden en uitdagingen waaraan het hoofd moet /moest worden geboden (hinderpalen)?

The project started in 2014 as a result of:

- START (Strategisch Actieplan voor de Reconversie en Tewerkstelling in de luchthavenregio), an initiative of the Flemish Government to stimulate the Airport region, launched in 2005.
- BRUcargo Secured Gateway: a study conducted by VIL aiming to turn BRUcargo into Europe's most efficient and safe cargo airport. One of the conclusions of this study was that a CCS (Cargo Community System) was a prerequisite to achieve these goals.

As of 2014, the project has been developed in close collaboration with the stakeholders (involving three to four FTEs on average).

The intent is to continue to add value-added services (apps) and include more stakeholders further up and down in the global value chains. These stakeholders can be very diverse, as they come from both the private sector and public services (e.g. customs, FAVV).

An important catalyst for this project has been and still is the effort made by Brussels Airport's BRUcargo team to create a community where all stakeholders are considered and involved. Individual companies are often not in a position to introduce changes or systems that have an impact on and need collaboration amongst different parties.

Furthermore, the initial funding provided by Brussels Airport and the Flemish Government has been instrumental in getting such 'public' soft infrastructure off the ground. Once launched, users are prepared to contribute financially to the services used.

One of the constant difficulties is the missing sense of urgency. Managers are stuck focusing on day-to-day operational challenges and are often not sufficiently aware of the changes ahead. Technological inventions introduced elsewhere can change market forces at an unprecedented speed while creating existential threats to the current value chains. If these trends are monitored at all, then it is done in the HQs of these global companies. The lack of regional or global headquarters is not favourable for Belgium.

LESSONS LEARNT

Wat kon er / had er kunnen verbeterd worden om deze innovatie te vergemakkelijken? (enkel invullen indien van toepassing)

- Organisatie/management van het project
- Samenwerking/partnerschap
- Beheer van de intellectuele eigendom
- Lancering van de innovatie op de markt
- Financiering van het innovatieproject (fiscaal beleid, beschikbaarheid van kapitaal, investeringssubsidies, enz.)
- Andere beleidsaspecten /regelgevingsaspecten

Make it easier to finance 'public' soft infrastructure

The Cargo Community System is a platform that serves a whole community. This kind of 'public' soft infrastructure needs substantial investments and finds it difficult to receive funding from individual companies due to its public nature.

Generally speaking, the challenges ahead, such as the poor loading factor of transport assets and low utility rates of transport infrastructure (e.g. rail and inland waterways), are often so complex and go far beyond a single company that a collaborative cross-company approach is needed. A community that promotes data sharing technology is a fundamental building block to adopting a virtual integrated approach, even if the value chain is composed of independent actors.

Awareness of the need for continuous technological innovation and support for early adopters who run the initial risks

BRUcargo was definitely a global first with this open innovative data sharing and apps concept. This has generated a lot of exposure and has attracted new customers/volumes.

However, a technological lead cannot be taken for granted and needs to be nourished, as BRUcargo's exposure and success has triggered a response from a lot of other competitors. Schiphol, for instance, recently launched its new strategy that is completely based on the same technology/concept and announced an investment of €2 million to modernise their Cargonaut platform.

Continuous technological innovation is key to future competitiveness.

Associations and government institutions can play a very important role as a catalyst behind these initiatives.