

Courier DHL's expansion project at Brussels National Airport

1. Introduction

Expansion project

In the northeastern part of Halle-Vilvoorde, the district that surrounds Brussels Capital Region (BCR), are situated various offices of the international courier company DHL. Most importantly, DHL's European headquarters are in Machelen and DHL's European superhub is at Brussels National Airport in Zaventem (where a hub is a central airport connecting other airports, a superhub is a central hub connecting other hubs). As an integral part of its 2007-2012 planning, DHL wants to enlarge and renew the Zaventem superhub.

As with any other company, DHL's preference to expand in Zaventem is based on its private costs and benefit calculation. At the same time, however, the expanded superhub would have an impact on the economic, social and ecological functioning of the region. A private investment project is therefore involved in a public process. The core of this article will be about the political controversy DHL's project is provoking, both in and around Brussels and in Belgium in general. This includes a broader discussion, on the role of Brussels National Airport (BRU) and the ecological nuisance it is causing.

A political decision in favour of DHL's expansion will bring many benefits to some groups: all firms that are using DHL's services or that supply to DHL, and all new employees engaged as a direct or indirect result of DHL's expansion. To others it will only bring costs: ecological costs for some—or maybe all— areas in and around Brussels Capital Region, but possibly economic costs too, such as delocation of labour through DHL's supplementary logistics services. Whatever the political decision will be, there is no well-defined common good, and it is not possible to take a plain right decision.

A decision process

In this article the actual outcome—DHL expands in Zaventem or not—is only of secondary interest. We will be concentrating on the way the actors intervene in the decision process. The investors, the trade unions, the protest groups and the several layers of public authorities: all are mobilising means to influence the final outcome. Most notably, they try to define *each other's* choice possibilities.

In addition to the actor network theory concepts that we introduced in Workpackage 2, in this case we will also refer to the concepts of *frame* and *overflow*. In the approach of Erving Goffman (1974) and of Michael Callon (1998)¹, actors can be said to set up a frame each time they want to interact in a very specific and rule regulated context. A most prominent example is interaction within a game: such an interaction is highly defined by a set of rules, and implies disregarding all unrelated conversations or interruptions.

¹ Erving Goffman (1959). *Frame analysis: An essay on the organization of experience*. New York: Harper and Row, 1974. Callon, Michel (1998). *An essay on framing and overflowing: economic externalities revisited by sociology*. In John Law (ed.) *On markets*.

In a decision process, an actor who is making a frame, is trying to define all the elements that are important for a rational decision to be taken. All non-defined elements in the environment are ignored—they are considered to be overflow. Typically, when DHL is framing its decision on where to invest for a new superhub, it defines the private costs and benefits it should take into account and then compares the different locations accordingly.

Similarly, when political actors are framing the economic, social and ecological impact of a superhub, they are trying to bring all relevant elements into one public costs and benefits calculation. All elements outside the calculation are then considered to be overflow. Obviously, not all actors believe in the possibility of such framing. They would for example say that ecological costs and economic profits cannot just be joined into one formula. Or they would argue that it is impossible to foresee and pre-calculate the long-term impact of decisions.

2. Halle-Vilvoorde and Brussels National Airport

The district

As has been mentioned in Workpackage 1, Halle-Vilvoorde in many ways is a bizarre district, bringing together a lot of the complexities of the Belgian state. It is a district with a hole, instead of a centre. Its only identity is the fact that it surrounds Brussels Capital Region (BCR). Although Halle-Vilvoorde is part of Flemish Brabant and, consequently, of Flanders, it strongly interacts with the BCR. It offers jobs to Flanders and the BCR, while it is also the residence of employees working in the BCR. In administrative terms, Halle-Vilvoorde is a Dutch speaking district, while some municipalities have Francophone facilities and a Francophone political majority (e.g. Drogenbos, Kraainem, Wezembeek-Oppem).

To the political complexity is added the heterogeneous nature of Halle-Vilvoorde's outlook and functions. Residential and green areas are combined with areas of heavy industry, such as the triangle of Vilvoorde, Machelen and Zaventem. Classic heavy industry is reconverting into service industry and logistics (see also Workpackage 1).

The airport

The National Airport is situated in Zaventem, northeast in the periphery around the BCR. Its first buildings were inaugurated in 1958, in the context of the World Exhibition of Brussels. However, it was an expansion of some existing infrastructure, such as the military basis at Melsbroek. Remarkably, the basis of the three present runways, was actually made by the Germans, during WWII (Van Humbeek, 2002²). The runways with their present length are denominated 02/20 [north-northeast/south-southwest, 2.984m], 07L/25R [west-northwest/east-southeast, 3.638m] and 07R/25L [west-northwest/east-southeast, 3.211m] (see also Figure 1).

For the inhabitants in and around the BCR this airport is far from well chosen. Planes make most noise while taking off, and, as a general rule, they have to take off and land against the wind (to increase the ascent angle and to shorten the landing). As Western wind is dominant,

² Frans Van Humbeek (2002) *Brussels Airport*.
http://www.airportmediation.be/nl/airport_01.html (June 2004)

most planes depart flying over the outskirts of the densely populated BCR. At present, building a new airport is not an option (there are some plans for Chièvres, at sixty kilometres southwest of Brussels). With ever increasing infrastructure, the central position and role of Brussels National Airport has become irreversible. The entire industrial area around the airport has been filled in by international companies such as 3M, Exxon, Microsoft and Toyota. Broad roads to the airport have been established, and fast train connections are being set up.

In terms of number of passengers, the present Brussels National Airport is somehow still less important than can be expected on the basis of urban size³ (see Figure 2). In 2000, BIAC, the airport operating company, counted 21,6 million passengers. After November 2001, when the national airline company Sabena went bankrupt, the number of passengers passing through the airport dropped dramatically (see Figure 3). In this respect, Brussels National Airport became an infrastructure in search of activities.

The airport is anyway more important for cargo flights. It holds the fifth position in Europe. All companies related to cargo handling are settled on the logistic zone of Brucargo (109ha). The number of cargo flights is however related to the number of passengers flights, as airline companies are using the airport as a hub for both activities (BIAC President Pierre Klees in *De Standaard* of 15 September 2003). In cargo handling too, the infrastructure of Brussels National Airport is at present underused.

3. DHL⁴ and night flights

DHL and Halle-Vilvoorde

DHL is a brand that together with Deutsche Post and Postbank belongs to the group of Deutsche Post World Net. Present DHL includes among others former couriers Danzas and Deutsche Post Euro Express. DHL started its European headquarters in Machelen in 1984 and its sorting centre at Zaventem in 1985 (cfr. www.dhl.be June 2004).

In the Halle-Vilvoorde district DHL grew into a major local employer. At present, at DHL there are 6.600 employees (full-time and part-time together): in Machelen 800 at DHL Global Co-ordination Centre and 2.800 at DHL Express; in Zaventem 700 at European Air Transport (EAT, DHL's air company) and 2.300 at DHL Aviation (DHL's distribution centre). According to BIAC and KPMG studies indirect jobs through DHL's airport activities have to be estimated at 7.400. This leads to a total of 14.000—full-time and part-time—jobs.

DHL's distribution centre presently takes 60% of all cargo handling at BIAC. As a consequence, Brussels National Airport's fifth position in Europe for cargo handling is mainly due to DHL.

³ See: Maurits Schaafsma (2003). Airports and cities in Networks. *DISP* 154, 28.

⁴ Unless another source is indicated, general background information on DHL is based on DHL-Belgium's internal document "Presentatie DHL, Machelen, 12 February 2004" and on an interview with Sabine Van Depoele, Regulatory Affairs Officer, DHL Worldwide Network NV/SA on 23 March 2004.

Night flights and regulations

Night flights are an essential part of DHL's business model. This way, DHL can guarantee that a sending picked up at the end of the working day, is delivered at the consignee's office the next morning. Courier night flights typically have their arrivals starting by 23:00 and their departures from 03:00 onwards. The just-in-time model for transport of goods is said to be essential for, among others, pharmaceutical industry, IT and car industry. It is also crucial for international and European institutions.

Air traffic is necessarily bound to regulations on noise pollution. Especially since the nineties, international and European efforts have been made to ban noisy aircraft. A classification is defined by the International Civil Aviation Organisation (ICAO). In general terms, aircraft is classified into chapters. *Chapter 1* and *Chapter 2* planes include the most noisy aircraft. In the European Union, since 1 April 2002, they are forbidden to operate. B727's, which were used by DHL until January 2003, are classified under Chapter 2. However, the DHL aircraft was *hush kitted*, a questionable procedure which sufficiently lowers aircraft noise emission in order to be classified as *Chapter 3*. Since 1998, DHL started to use Airbus A300 and since 2001, Boeing 757 Special Freighters (ex British Airways) were introduced.

Aircraft is more specifically given a quota count rating (QC) according to how much noise it makes. The separate quota for landing and take off, are based on the measured Effective Perceived Noise Decibels (EPNdB). In Flemish Brabant, since 2003 night flights with a $QC > 12$ are forbidden.

The *total QC* is the total amount of noise that is made by a certain number of flights. A company or an airport is then allowed to use an allocated total QC. If aircraft A is half as noisy as aircraft B, then using aircraft A allows for the double number of flights than using aircraft B. Obviously, the QC and noise budget can be different from what actually disturbs people. One noisy plane can be more disturbing than two half noisy ones. Disturbance is also related to the amount of background noise and to noise peaks.

High figures, low figures

When looking at the night flights at Brussels National Airport, at least two striking observations can be made. First, not only is present aircraft less noisy than aircraft in the nineties, the number of night flights has actually been much higher in the past, with 33.000 in 1990 and 21.000 in 2003. Consequently, in absolute terms night flights are a lesser problem than 15 years ago. This makes a nice contrast to the increase of protest against night flights (see §5).

Second, the definition of "night" is also at stake. BIAC is legally allowed to have a maximal number 25.000 night flights per annum. The 21.000 for 2003 (with a lion share of 16.000 for DHL) are comfortably below that figure. BIAC however sticks to a definition of night as the period between 23:00 and 06:00. The EU-definition takes the night to be the period between 23:00 and 07:00. With this definition there are 36.000 night flights per annum at Zaventem.

4. DHL's project at Brussels National Airport

DHL's preferences

While DHL already has its superhub in Zaventem, it wants to have an even larger and more centralised one. If this new superhub will be in Zaventem, DHL has a planning in two stages. From 2003 to 2007 the daily volume would rise from 1000 to 1500 tons (+50%), while the daily number of night flights would increase from 240 to 310 (+29%). From 2008 to 2012 the daily volume would rise to minimum 1.875 tons (+87,5%, with 2003 as a reference) or maximum 3.100 tons (+210%). The number of night flights would rise to minimum 385 (+60%) or maximum 620 (+158%). In any case, the volumes increase more than the number of flights.

For the new superhub location, DHL has a clear preference for Zaventem. In part this is related to human resources: in and around Brussels well trained and responsible personnel can be found. All other elements have to do with the airport itself. Brussels National Airport has a central position in DHL's network. Moreover, it has good weather conditions, so it is seldom closed. The airport also still has a surplus in capacity and growth possibilities. Finally it has a good transport infrastructure. The latter includes good train connections (although not part of the present decision process, there also is the long-term importance of TGV facilities that are to be built in Vilvoorde or Schaerbeek).

If on the one hand, the new superhub will be in Belgium, DHL foresees a personnel rise of 20% from 2003 to 2007 (from 6.600 to 7.900). By 2012 the minimum personnel increase would be 36% (9.000) and the maximum 68% (11.100). If on the other hand, DHL cannot expand at Zaventem it will compare all alternatives. This could be in Belgium—Bierset (near Liège) or the already mentioned Chièvres—as well as in an other European airport, such as Leipzig or Vatry. With the superhub in Bierset or Chièvres, DHL would on the long term retreat from Zaventem. With the superhub in Germany, the Zaventem hub would remain, but would be downsized.

Simple request, complicated answer

All in all, for DHL taking a decision is a rather simple issue. It has its own clear preference, i.e. Zaventem. Accordingly, in its negotiation with the Belgian authorities it has a rather straightforward message: on the one hand, it has done its efforts on the ecological side and on the other hand, it can offer jobs and an economic multiplier for the region. If the Belgian authorities cannot offer sufficiently meeting conditions, then DHL will consider all other options.

In contrast to DHL's clear and simple request to the Belgian federal government—a pass for the expansion in Zaventem from 2004 to 2012—came an incomplete and wonderfully complicated answer. On 16 January 2004 the federal government decides: (1) that there will be a federal negotiator (Steve Dubois) in the DHL dossier; (2) that DHL will (!) build its new superhub in Belgium according to two site-options (!): either Zaventem or a new site (i.e. Bierset); (3) that the final site choice will be made before 1 September 2004.

In order to understand this position we have to look at the broader public discussion on Brussels National Airport (§5). This will finally bring us to the contrast between thinking in frames (DHL) and thinking in overflows (Belgian federal and local authorities) (§6).

5. The ecological issue: concentration or dispersion of flights

Facing the noise pollution

In matters where Brussels National Airport is involved, decision procedures are never simple. While the airport regulations—including flight routes—are a federal matter, ecological standards are a responsibility of (mainly) the regions and (to some extent) of the provinces. One problem is that each region has its own noise emission standards. Flanders and Wallonia are rather permissive, while Brussels Capital Region has the most severe standards. The BCR plays an easy game: it has no airport, so it only is severe to others.

The last four years, many actors became more involved in airport issues. The federal government has given much attention to the management and regulation of Brussels National Airport, trying out diverse—antithetical—approaches. Night flights (and day flights too) have become a hot issue in the media. Protest groups never have been so vivid on the matter.

The origin of all these dialectics are in January 2000, when the then federal Transport minister Isabelle Durant (of the Francophone ecologist party and elected in the BCR) publishes a ministerial order, banning all night flights between 00:00 and 05:00 from 2003 onwards. DHL is appalled. The personnel and its trade union representatives start a protest, addressing in particular the ecologist parties and their ministers.

Already one month later, the ministerial order is retrieved. Nevertheless, by then Brussels National Airport had become a priority for the government. Inspired by the regulations at Schiphol airport, new measures to diminish noise pollution were considered: incentives for low-noise aircraft and higher charges for noisy aircraft, better take-off procedures, flight routes that would hinder the lowest number of people, and finally insulation subsidies for people who face most noise.

Concentration

In February 2001, Isabelle Durant, in order to diminish noise pollution above Brussels Capital Region, abolishes the “Chabert route”, a route over an area with mostly administrative buildings, which is only used in the evening or during the weekend. From then on, the flights will be diverted to the northern part of Halle-Vilvoorde.

In February 2002, the federal and regional governments agree on a concentration plan of flights. The basic idea is that in order to manage the noise pollution problem, as few people as possible should suffer from it. From there, house insulation can be offered to people in the noisy contours, together with expropriation facilities for houses in the direct neighbourhood of the runways.

In November 2002 the concentration plan is applied. From then on, all nuisance will go to the northern periphery around the BCR. However, this was at a time when all measures to relieve the total amount of noise pollution (retrieval of high noise aircraft, better take-off procedures, insulation) were not yet operational. In the meantime, the local authorities in Halle-Vilvoorde, together with a protest group *Actie Noordrand* had started a petition against the concentration plan. *Daedalus*, a core group inside *Actie Noordrand*, will later on, take legal action against the plan.

Dispersion

Already in January 2003, the federal government agrees to moderate its plan and to reallocate some dispersion. Notably, there would be again some flights over the BCR, also at night. The minister in charge, Isabelle Durant is however reluctant to make the plan operational. She quotes technical reports that doubt the safety of some flight routes over the BCR. In May 2003, after the socialist and liberal ministers have demanded the immediate application of the agreed plan, Isabelle Durant and her colleague Olivier Deleuze resign.

In June 2003, in the affair against the Belgian state started by Daedalus, the Brussels Court of Appeal allows Daedalus, from September 2003 onwards, to demand from the Belgian state a fine of 50.000 Euro for each day flights from Zaventem are not dispersed. According to the verdict, take-offs and landings should be spread in all technically conceivable directions. The verdict, based on principles of constitutional law and human rights, indeed stipulated that there should be a fair *distribution of nuisance* from the airport. This implies that the number of people being disturbed is no longer a criterium; all areas, densely populated or not, have to be treated equally (!). What is to be reduced is the nuisance for the worst off person.

Also in June 2003, the new federal government is installed (a renewal of the coalition of liberals and socialists, but this time without the ecologists). The regulations on the National Airport are part of the coalition agreement. Dispersion of flights is the new standard. Bert Anciaux becomes the new minister of transport. He is elected in Neder-over-Heembeek (a part of the Brussels municipality), and belongs to the *Spirit*-party (Spirit is the left-wing part of former Flemish activist *Volksunie* party; it makes a cartel with *SP.a*, the Flemish socialist party).

In the last months of 2003, the dispersion plan is fully developed. It becomes operational in March 2004. The complicated plan combines theoretical principles with many technicalities and rules. For example, theoretically, the full use of the three runways allows for 6 take-off and 6 landing possibilities. In practice, 25L is too close to Zaventem for taxiing and take-off; on 07L and 07R landing is not possible. Moreover, only a limited amount of combinations in take-offs and landings from the runways is possible. In the end, a certain number of take-off and landing patterns remain.

Typically, the dispersion plan switches patterns from day to night, from week to weekend, and, according to the wind direction, from day to day. In the patterns, the Chabert route is reintroduced (used during the day in the weekends). The Chabert route is Brussels Capital Region's participation in the nuisance. Taking all patterns together, less take-offs are made from 25R (i.e. less over the northern periphery around the BCR) and more from 20 (i.e. over the eastern periphery around the BCR).

Discontentment

Brussels Capital Region opposes Anciaux's plan. According to its environment minister Didier Gosuin (FDF) Anciaux and the federal government could easily have countered the verdict of the Court of Appeal. With the dispersion plan, the densely populated area of the BCR, which already suffers from noise pollution is involved in the nuisance. Flights over the BCR often do not meet the standards that were set by the region. "Our standards are below those of the World Health Organisation" says Gosuin.

All in all, since January 2000, with the restrictions on aircraft and with the improved take-off and landing procedures, there has been a reduction of noise pollution at Brussels National Airport. The resolute choice for dispersion, however, all in all is hard to defend. Some spreading is legitimate, as it is based on a principle of equality. Taking no account of population density, however, will bring forth more discontented people, while the possibilities for problem solution—insulation, expropriation—diminish.

In terms of protest, the dynamics have been quite remarkable. In 2000, aircraft was more noise polluting than at present, and flight routes were not an issue. All flight plans together, kept the middle between dispersion and concentration. Then, the concentration plan has initiated the protest of the northern periphery, leading to its opposite, the dispersion plan. As a result, more people express their discontentment. There has never been so much activity of different action groups: *Actie Noordrand* (in the northern periphery), *Bruxelles Air Libre* (in the BCR), and various action groups in the eastern periphery. They strongly disagree with each other, while they all have the same message: “No planes over my backyard.”.

6. Discussion

Heterogeneous actors

Many actors influence the situation that will eventually lead to a decision on DHL's expansion project. First of all, the *non-human actors* are important. The courier company relies on logistic systems and a highly computerised production process. Moreover, all political discussions are about artefacts: airports, cargo flights, aircraft and noise emission. In terms of *human actors* and organisations there is also a wide range of involvement: most prominently DHL and the federal government, but also trade unions, protest groups, regional government and municipal politicians, and several levels of court.

Typically, what might be seen as *micro and macro levels* of actors connect together: a protest group (Daedalus) connects to the Court of Appeal, which connects to the federal government's decision on the dispersion plan. Also, DHL-trade-unionists address Green party ministers and force them to a clear position on DHL's expansion project. As a result, to have clear and simple needs or interests seems to be the privilege of only a few actors: DHL, who basically just wants to organise its courier activities, and the protest groups, who just want less noise. All political representatives, though, have mixed interests. Politicians on the various levels of representation—municipalities, regions, federal parliament—necessarily are interlinked. They have multiple and conflicting loyalties; they are forced to think both in social-economic and ecological terms.

Contradictions within interest groups

Mixed interests also relate to the fact that some actors actually are composed of different levels. DHL both has European and more local interests. One of its rare publicly contradictory statements came in January 2004 when DHL's European director, Peter Kruse, bluntly and openly rejected the Belgian federal government's two-sites option, saying that DHL would never accept to operate on both Zaventem and Bierseet, and that if DHL could not expand in Zaventem it would leave for the East Midlands in the UK or Cologne or Leipzig in Germany (*De Standaard* 31 January 2004). Immediately afterwards, Belgian DHL commercial director, Xavier de Buck, diplomatically explained that DHL prefers Zaventem, but if this would not be possible, DHL would consider all alternatives, including Belgian

government's proposal for Bierset.

More visible contradictions are to be found inside the trade unions. When in January 2000 Isabelle Durant ordered the ban of night flights starting from 2003, DHL's socialist trade union organised a protest, while on the national level, Michel Nollet, at that time president of the socialist trade unions, spoke very much in favour of this decision. For him night flights not only relate to noise pollution, but also to deregulation and unhealthy night work (*De Standaard* 11 January 2000).

A final example of the embarrassment generated by opposing views, are the Francophone and Flemish ecologist parties Ecolo and Groen! (until 2003: Agalev). When in the first months of 2003 it became clear that Isabelle Durant was reluctant to apply the new federal agreement introducing some flights over the BCR, she not only had to oppose the Flemish socialists and liberals, but also the Flemish ecologists. When in May 2003, the Francophone ecologists resigned (two weeks before the elections), Agalev stayed in government, implicitly acknowledging that (the Francophone) part of the ecologist movement had behaved irresponsibly.

Attempts for new alliances

One advantage of the multiple oppositions and contradictions between parties in the DHL and airport discussion is that the actors can easily welcome new elements and arguments and consider new alliances. For example, Hans Bonte, a socialist member of parliament for Halle-Vilvoorde, advises the BCR to be more tolerant about DHL: "the BCR faces high unemployment of the low-skilled, while DHL could offer a lot of jobs to this group of people. The BCR should think about that instead of implicitly opposing the expansion of DHL" (*De Standaard* 12 December 2003).

On the level of non-human actors, there also is the importance of TGV connections. Once a new TGV station is built in Schaerbeek or Vilvoorde, connection possibilities dramatically change. DHL could then take full use of TGV, which would allow to replace more short distance flights by train transport.

Framing oneself and others

In such a complicated and changing situation, acting according to a frame or a formal decision model seems to be absurd. Nevertheless, for DHL—the economic actor *par excellence*—this makes perfectly sense. On the one hand, for DHL, where to build its new superhub is a matter of comparing its expected private costs and benefits for each location. On the other hand, in order to convince local government, DHL can also include a calculation of its social-economic impact on the region, or prove that it is respecting local environmental rules.

For the government making a decision frame makes much less sense. It can not simply subtract ecological costs from social-economic profits without making ideological choices. Although the government can always link to scientific reports on health impact or on social-economic impact and thicken its decisions with these reports, it will never take a formal decision based on these reports.

DHL can not expect a definite and framed political decision. At some points, DHL has

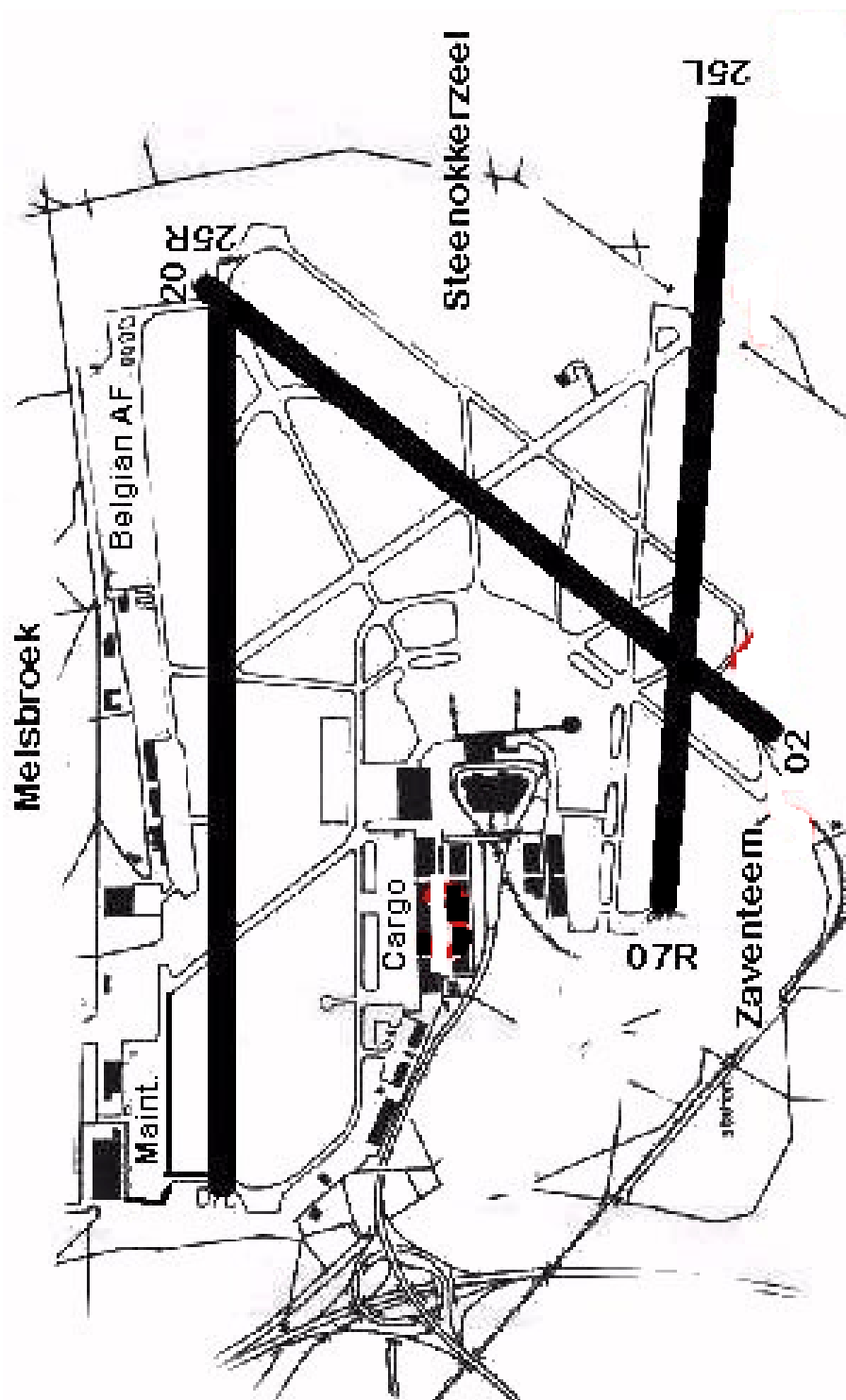
complained about Belgian politics or threatened to go away. Yet until now it has never stopped strengthening its offices in Halle-Vilvoorde; at present it seems to accept the vague promises of federal government. It has demanded a clear answer on its expansion plan from 2007 to 2012, but then accepted to wait for September 2004, where it will once again receive an incomplete and complex answer to its requests.

The airport grows

All in all, in the development of Brussels National Airport there seems to be first little room for rationality. Although the airport lies on the wrong side of Brussels, it never stopped developing. The airport rather looks as an example of what Michel Serres calls “it is working because it is not working”⁵. The present flight dispersion plan is complicated and leads more people to unhappiness. In the meantime, as it is opposed for many different reasons by many groups, the dispersion plan keeps standing. More than that, it might lead to yet another expansion of the airport, as runway 02/20 might be expanded in order to allow heavier aircraft to take-off and land.

In the slippery situation of protest against night flights, for politicians it is still more profitable to attract the new DHL superhub than to refuse it. Bringing in the new superhub equals employment and new impulses to the region, while refusing it, is a non-event that can easily be criticised. Although protest against the airport and night flights are omnipresent, politics can easily profit of the disagreement between protest groups. A mixture of limited facilities to DHL and guarantees on better (less noisy) aircraft and employment from DHL, can seal an agreement in September 2004.

⁵ Michel Serres (1980) *Le parasite*. Paris: Grasset.



Figuur 1. Runways at Brussels National Airport

Figure 2. Passengers and cargo in European airports.

Metropolitan area (Brunet score 1989 in pts.)	Airport (Passengers in millions)	Airport (Cargo in million tonnes)
1 London (83)	1 London (1) (108,5) Hub	1 London (1,8)
2 Paris (81)	2 Paris (2) (73,6) Hub	2 Frankfurt (1,6)
3 Milan (70)	3 Frankfurt (49,3) Hub	3 Paris (1,4)
4 Madrid (66)	4 Amsterdam (39,6) Hub	4 Amsterdam (1,2)
5 Frankfurt (65)	5 Madrid (32,8) Hub	5 Brussels (0,7)
6 Munich (65)	6 Rome (3) (27,1) Hub	6 Luxemburg (0,5)
7 Rome (64)	7 Milan (4) (26,7)	7 Cologne (0,4)
8 Brussels (64)	8 Munich (23,1)	8 Zurich (0,4)
9 Barcelona (64)	9 Zurich (22,6)	9 Madrid (0,4)
10 Amsterdam (63)	10 Brussels (21,6)	10 Milan (0,3)

- (1) Heathrow, Gatwick and Stasted
(2) Orly and Charles de Gaulle
(3) Fiumicino and Ciampino
(4) Linate and Malpensa

Source: Schaafsma 2003; original source: ACI for 2000 (Airports)

Figure 3. Number of passengers per year at Brussels National Airport.

2003	15.194.097
2002	14.410.822
2001	19.670.630
2000	21.646.027
1999	20.040.517

Source: BIAC (2004) <http://www.biac.be/statistics/>