



# SUGAR

## SWOT ANALYSIS OF CITY LOGISTICS AND URBAN FREIGHT TRANSPORT

*CITY OF PRAGUE*

*JPE Prague & Ústí nad Labem  
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# Strengths (1/5)

## S1 Partial measures for solution of issues of supplying of the city included in conceptual materials of the city

- The measures and tasks aimed at solution of city logistics are included in the strategic materials of the City – e.g. in the Strategic Plan of the Capital City of Prague (strategic goals I.2.2 and I.2.3 aimed at restriction of car transport in the streets and reduction of negative impacts of freight transport in the city) or in the Integrated Regional Program of Emission Reduction and Improvement of Air Quality in the Territory of the Agglomeration of the Capital City of Prague for the period of 2010-2012 (e.g. restriction of entry of heavy trucks, time organization of supplying, introduction of toll system in the centre of the city) – approved by the elected bodies of the City (Council / Local Authority).

## Strengths (2/5)

**S2 Demarcation of lands for construction of terminals of combined transportation / city logistic centres is included in the Principles of Land Development and in the currently discussed concept of the Landscape Plan (the lands demarcated in the Principles of Land Development / Territorial Planning Documentation of the Capital City of Prague)**

- The Principles of Land Development (PLDs) of the Capital City of Prague constitute a relatively new tool of land planning at the level of the region to coordinate conceptually the development and arrangement of the territory of the city and to set the basic strategy for the development of the territory with regard to the conditions of sustainable development and its economic use. At the same time they set the principles of development of the administrative territory of the capital as a whole and the basic conditions for development of individual city parts.

## Strengths (2/5)

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- The approval of PLDs that, among other things demarcates selected localities for future establishment of terminals of combined transportation and city logistic centres, was the first step in preparation of development of the infrastructure for city logistics (sufficient territory reserve was left for the city distribution terminal linked to railway and the City Circuit).

(According to PLDs, it is particularly the area of the Smíchov Station – territory reserve for transport terminal including the new bus station, P+R parking area and city logistic centre linked directly to the railway station and Prague-Malešice).

## Strengths (3/5)

### S3 From the perspective of railway transport quick and ecological connection of the Central Bohemian Region and the edge of Prague with the centre of the city

- At present, the status of the railway infrastructure in the Prague railway crossing is unsatisfactory. Equipment is often obsolete and the railway network is not able to master the required volume of particularly passenger transport. But in spite of all problems, the railway is showing quite markedly its strengths now already. Numerous lines offer quick and ecological connection to Central Bohemian Region and the edge of Prague with the centre of the city, which can have positive impact not only on the passenger transport but also on the area of supplying.

# Strengths (4/5)

## S4 Relatively high usability of the railway for transportation (including freight transport) in the city

- Railway is a part of the system of the Prague Integrated Transport (PIT); the railway freight transport maintains its significant position and its growth can be expected based on Europe-wide trends in freight transport.

# Strengths (5/5)

## S5 Parts of the City (Road) Circuit already built in the south and in the west

- At present, the southern part of the City Circuit (so called Southern Connecting Road) is in operation already; together with K Barrandovu Street and Štěrboholská Radial Route they constitute the most significant capacity west-east communication link in Prague, transferring temporarily a considerable part of the transit road transport. The design parameters of the southern part of the City Circuit, arranged as direction-divided road with three through lanes for each transport direction with overpasses, except for the Barrandov Bridge (where traffic light crossings are in the route), allow transferring the strong transport burden even if an essential part of the Prague Circuit is still missing.

# Weaknesses (1/12)

## W1 Restricted possibilities of the city in the area of legislation

- The city has very restricted possibilities in the area of legislation; all regulations are in competence of the state; the city can regulate the traffic of vehicles in the city by a regulation but it cannot enforce its observance efficiently without close cooperation of the state (state police).

# Weaknesses (2/12)

**W2 The city still has not tried to solve the area of city logistic in essence → there is no coordinated and efficient transport logistic of freight transport and service in Prague**

- So far partial solutions / measures have been applied in essence only in the area of transport in rest (zones of paid parking in the centre) and regulation of freight transport where a zone under 6 t or under 3,5 t has been declared in the central part of Prague. In the zone under 6 t, entry of vehicles over 6 t is restricted and the extent of the zone is modified based on the progress of the construction of the City Circuit, i.e. at present it includes particularly the western and southern central part of Prague, including the whole territory of the Prague conservation area. The zone under 3,5 t has restricted entry of vehicles over 3,5 t; the zone includes the territory of the city part of Prague 1 – the historical centre (a substantial part of the Prague conservation area, namely its northern part).

# Weaknesses (3/12)

## W3 Complicated territorial-technical and urbanistic conditions making difficult the possibilities of solution of transport problems

- Overstrain of the communication network already has global character in Prague at present; the whole area of the extended city centre and the adjacent compact parts of the city in size of about 7 x 6 km can be considered overstrained. There are transport congestions in the area of the extended city centre on and outside the strained roads more and more frequently; the difference between the strain in peak hours and off-peak periods; the time when the capacities of the crucial crossings are exhausted is getting longer during the day. The influence of transport congestions and “stops and goes” of convoys before the crossings has very negative impact on the environment mainly due to high concentrations of pollutants in ground-level atmosphere layer where pedestrians and particularly children walk. The present communication system, shaped by the natural historical development of the city, does not and cannot satisfy the present transport demands in many places. Besides, the deficit of use of latest telematic systems can be also seen; the telematic systems should integrate information and telecommunication technologies with transport engineering in order to optimize transport performance, improve transport safety and increase the transport quality for the existing infrastructure. The principles for the development of transport telematics in the capital of Prague were approved by the Council in 2002 already and they define 11 application areas in which telematics is and will be developed in Prague.

# Weaknesses (4/12)

## W4 Unsuitable concentration of work opportunities in the historical heart of the city

- The strong increase of the number of cars and the intensity of road transport in Prague are not matched by the status of the present communication network that is influenced by the historical development of the city to a considerable extent, particularly in the area of the city centre. The achieved degree of road transport in Prague and the layout of jobs on the territory of the city (distinctive concentration of jobs in the centre of Prague), unifying the economic processes within Europe and resulting particularly in increased transit freight transport constitute the main factors that lead to considerable increase and extent of road transport on the territory of Prague, related to frequent congestions.

# Weaknesses (5/12)

## W5 Missing adequate data

- In 2005-2007, the City implemented the “Transport Modelling” Project under use of the means from EU structural funds (within JPD2). Its goal was to create a transportation model allowing testing of variant methods of optimization and regulation of transport in the city. The model is used to test selected designs, transport measures and plans of transport development in the city. The state-funded institution of the City, Technical Administration of Roads of the Capital of Prague, administrates further the websites monitoring the current transport situation in the city (road strain, accidents, transport closures, occupancy of parking areas of the P+R system).

Both cases constitute tools for evaluation of traffic flows in general level. However, the City does not have corresponding outputs (data) evaluating the issues of supplying (e.g. size of demand, identification of forwarders, partners, carriers and customers and the corresponding flows of freight transport, organization of delivery and traffic volumes).

# Weaknesses (6/12)

## W6 Missing compact superior communication system (in the sense of lack of transportation infrastructure)

- A) Missing parts of the City Circuit in the north and east  
The unfinished northern and eastern parts of the City Road Circuit constitute a serious drawback from the point of view of traffic regulation in Prague and protection of central parts of the city against national and international transit transport.

The opening of the City Circuit should create conditions to restrict the present parameters of so called North-South Arterial Road that should have the character of a city avenue in the future, with corresponding quality of parterre particularly in the area of Pankrác, the city centre and Holešovice (transfer of traffic from central part of the city and from North-South Arterial Road that runs through the city centre and is considerably overstrained; close bond to the completion of the Prague Circuit).

- B) The considerable missing part of the Prague Circuit for transfer of transit transport has negative impact particularly on the urbanized city territory. A lot of streets in Prague transfer transit transport in unsuitable conditions; numerous sections of the street network in contact with residential buildings are undesirably strained by car traffic.

The persisting strain of the historical heart of Prague (N-S direction – area of National Museum, Václavské Square, I. P. Pavlova Street; W-E direction – Smíchov – Nové Město – Vinohrady; riverbank streets) → suppression of car traffic = one of the future priority goals aimed at achieving higher attractiveness of the city centre and at preserving the environment quality. Possibilities of solution: toll, stricter traffic-regulatory measures, higher quality of public transport system.

***The construction of the main street network with the priority of the City and (Road) Prague Circuit is the main condition to achieve the defined strategic goal I.2.3 of the Strategic Plan of the Capital City of Prague from 2000, “reduction of negative ecological impacts of freight transport in the city”.***

# Weaknesses (7/12)

## W7 Unfinished reconstruction of Prague railway crossing

- The Prague railway crossing (PRC) is still in the stage of modernization at present. A part of the buildings are being implemented (sections Prague Libeň–Prague Běchovice, Strančice–Prague Hostivař); a part is under different levels of preparation (sections Prague Bubny–Prague Holešovice, Prague Běchovice–Úvaly).

So the unfinished reconstruction of the PRC, combined with other partial problems (missing infrastructure to provide for multimodality, obsolete fleet of railway transport and unsuitable technological equipment), does not allow its adequate use for the needs of railway freight transport in the area of city logistics.

But we can consider the influence of completion of the PRC on the development of city logistics in the city rather indirect; the main contribution of the reconstruction will consist particularly in freed capacity of the crossing for freight transport thanks to construction of new sections that should increase the capacity of the main conventional routes.

## Weaknesses (8/12)

### W8 Railway transportation in Prague does not meet the conditions of multimodality

- The infrastructure in the Prague railway crossing does not meet the condition of multimodality, i.e. it does not dispose of good link to other transport modes, which prevents it from increasing its competitiveness.

The unsuitable technological equipment for modern transport services (logistic terminals with link to railway) and the complicated conditions for possible increase of capacity of the railway crossing in the centre of the city constitute a problem too.

# Weaknesses (9/12)

## W9 Cancelling of railway spur tracks

- The preservation of the network of railway spur tracks is a relatively important conditions for operation of railway freight transport because the loading and unloading tracks in the railway stations and the adjacent spur tracks constitute the basic points of loading and unloading. Although Prague faces the problem of their cancelling and loss of territories suitable for spur tracks (Vysočany, Malešice-Hostivař area), the cancelling of spur tracks does not endanger immediately the L/U localities or consolidation / logistic centres (spur tracks either still exist in the localities utilizable for city logistic and there is no strong pressure on them to be cancelled, or they do not exist, but their missing does not have substantial impact on possible measures in the area of city logistics).

At present, about 60 spur tracks in total length of about 120 km are in operation in the territory of Prague. Stations significant for freight transport are: Prague Hostivař, Krč, Radotín, Uhřetěves and Vršovice. Stations with potential for development are: Prague Běchovice, Horní Počernice, Libeň, Malešice and Smíchov.

The cancelling of spur tracks has its legislative level (i.e. cancellation of the line), building level (i.e. decision of removal of construction) and practical decay of the existing spur tracks. KUP keeps monitoring the connection of numerous production territories on the railway network.

# Weaknesses (10/12)

## W10 Conflict of localities for loading / unloading with parking (traffic in rest)

- The strongly increased number of cars in Prague has led to considerable demand for parking lots. That pressure can be seen particularly in the strongly urbanized part of the city, i.e. in the area of the extended city centre and the compact city. Streets and spaces in the above stated city parts are filled with parking cars. Difficult seeking of free parking lots under such conditions contributes to further avoidable movement of vehicles and to resulting overstrain of street profiles by individual car transport.

Parking lots for cars on the street network in a part of the extended city centre of Prague is regulated, with regard to considerable demand for parking and lack of parking lots, in form of “paid parking zones” (PPZs). The rules of parking in PPZs are regulated by notices and regulations of the city. The streets in PPZs are divided into sectors with time-restricted parking, so called “orange and green zone” for vehicles of visitors and sectors constituting so called “blue zone”, intended for time-unrestricted parking of residents (individuals with permanent residence in PPZs) and subscribers (juristic persons or individuals doing business with registered office or place of business in PPZs).

L/U zones as such are not demarcated; the above stated PPZs are used for loading and unloading of goods. Thus the overstrain of streets and lack of parking lots has negative impact also on the area of supplying of the city centre.

# Weaknesses (11/12)

## W11 Missing full-blown centre of building logistic

- The main potential for utilization of combined transport making use of railway and water transport in building logistics consists in major construction actions (e.g. construction of residential premises, shopping and administration centres, large transport constructions).

At present, no station of the Prague railway crossing operates a full-blown building logistic centre. Some railway stations perform reloading, loading and unloading of some building materials. The Radotín Port gets the closest to a full-blown building logistic centre.

# Weaknesses (12/12)

## W12 Cooperation and discussion of the city with private forwarders still virtually does not exist

- Discussions concerning the possibilities of introduction of measures in the area of city logistics have taken place at general level and essentially only with two subjects (České dráhy, a.s. and Dopravní podnik hlavního města Prahy, a.s.) so far.



# Opportunities (2/12)

## O2 Preference of and support to development of ecological transport subsystems in freight transport (city logistics and combined transportation) in the Czech Republic

- On one hand, the transport influences substantially the development of economy and its level and quality is also an important aspect of life quality of the inhabitants; on the other hand, it constitutes numerous risks from the perspective of the environment, particularly in case of considerable demands on individual passenger and freight road transport, from the point of view of undesirable excessive fragmentation of landscape, high demands on occupation of land fund etc.

The development of rail transport subsystems and other forms of ecological transportation and reduction of number of trips of road vehicles in the cities is therefore stated as one of the priority areas of transport development in the Territorial Planning Documentation of the Capital City of Prague.

# Opportunities (3/12)

## O3 Examples of successful restrictive economic measures against individual car transport (e.g. toll system in central area) in European cities

- Potential of use of the „best practices“ in the area of restrictive measures for reduction of individual car transport (ICT) applied in European cities of comparable sizes.

# Opportunities (4/12)

## O4 Use of telematics for more distinctive influencing and controlling of individual car transportation in the territory of the city

- Although it was already in 2002 when the City has approved the Principles for Development of Transport Telematics in the Capital City of Prague, defining the areas of development of telematics in the territory of the city, the specific measures in the area of transport telematics as a significant tool of logistics in individual modes of transport and in multimodal transportation systems (optimization of traffic, reduction of financial losses of forwarders / hauliers through increased capacities of overstrained network sections with the help of ITS) still have not been implemented. There is therefore potential for further development of transport telematics with link to the area of supplying (city logistics).

# Opportunities (5/12)

## O5 Opening of (road) City Circuit

- Creation of conditions for restriction of the present parameters of so called North-South Arterial Road that should have the character of a city avenue with adequate parterre quality particularly in the area of Pankrác, the centre of the city and Holešovice in the future. Completion of the construction of the NW part of the City Circuit → opportunity for introduction of subsequent more distinctive regulatory measures in the centre of the city to increase the resulting effect of that construction.

# Opportunities (6/12)

## O6 Completion of the construction of (road) Prague Circuit

- Potential of the state-built Prague Circuit not only to transfer the transit road transport away from the city but also possibility to convey the external source and target traffic to the circumference of Prague and partially also the possibility to implement some internal city traffic relationships between the edge parts of Prague.

# Opportunities (7/12)

## O7 Significance and size of the railway crossing of Prague → potential use of non-road types of freight transport

- The Prague railway crossing (PRC) constitutes the biggest railway crossing in the Czech Republic and an important intersection of railway corridors of trans-European network and of routes of combined transport. Three railway corridors intersect in the territory of the city; however, they are still in the stage of modernization at present, and therefore not fully utilizable for logistics. The unsuitable infrastructure for logistics must be taken into consideration too.

In spite of marked increase of the transport share of road freight transport, the performance of freight transport of České dráhy, a.s. and ČD Cargo, a.s. ranks fifth within the EU. To keep its position, the company intends to invest into infrastructure supporting connections of industry precincts to railway transport, construction of terminals of combined transport and logistic centres and reconstruction and modernization of railway freight wagons.

# Opportunities (8/12)

## O8 Position of localities of goods stations (Smíchov, Žižkov etc.) in connection with the road network

- The favourable position of some goods stations (Smíchov) offers the potential of use of the possibilities of the multimodal manner of supplying the city with beneficial impact on the environment. But there is growing pressure on abandoning those traditional localities of goods stations in order to transform the territories into residential-mixed functions.

There is possibility of creation of a consolidation centre for the needs of supplying of the city for example in the Prague-Malešice station (potential for use of the unbuilt eastern part or possibly also of the western part where the existing container terminal is not used – but property relations cause problems; the terminal is owned by Austrian railways).

# Opportunities (9/12)

## 09 Potential of the Ruzyně Airport (high potential for development of freight air transport)

- At present, the check-in of cargoes and postal items is performed in the northern check-in area of the premises, in the CARGO premises of the Menzies terminal and in the CARGO terminal of SkyPort.

The project capacity of the SkyPort CARGO terminal is 60 000 t per year (after completion of technological equipment up to 100 000 t per year). The planned capacity of the Menzies CARGO terminal is 100 000 t goods and mail items per year (provided that it is additionally equipped with technological devices).

So with regard to the increasing volume of the goods transported in a year (about 35 thousand tons / year for many years; in 2004 and 2005, the weight of the goods exceeded the limit of 50 thousand tons; in 2007, 55 180 t goods were checked-in) and to the above stated planned capacity of the freight terminals, there is substantial potential for further development of freight air transport.

The fact that the Ruzyně Airport constitutes an important entrance gate to Central Europe is evidenced also by growing interest of companies carrying on business in the area of provision of logistic services – for example in 11/2010, the international transportation company FedEx opened its first Czech branch at the airport.

But a problem of development of this type of freight transport linked to the development of city logistics in Prague consists in missing subsequent logistic connection e.g. in form of railway line to the centre and in the tendency to restrict the airport operation particularly on passenger transport due to its proximity to the city and fear from increased freight transport.

# Opportunities (10/12)

## O10 Logistic potential of the Vltava River

- Vltava is navigable in Prague in the whole section running in north-south direction through the territory of the capital; it flows through the historical centre of the city (Prague conservation area).

The potential of the river for supplying of the city centre is relatively limited because Prague ports and transshipment points do not have very favourable position; most of them are situated in a territory where freight transport should be regulated (inside the city circuit; often near residential quarters). None of the ports allows transshipment to other transport modes constituting an alternative to road transport.

Therefore the usability of water transport on the Vltava River for the needs of city logistics can be perceived primarily from the perspective of building logistics; that type of transport is focusing now already mainly on transportation of bulk substrates, heavy parts or containers.

The potential for freight transport (logistics) is contained particularly in the port of Radotín or possibly Holešovice.

# Opportunities (11/12)

## O11 Slowly increasing interest in logistic premises

- In the external zone (the area between the compact city and the administration borderline of Prague) of the capital city of Prague, new phenomena of the Prague (Road) Circuit find distinctive use as a marked landscape element and big-capacity shopping centres and logistic precincts in close proximity to the city borderline, particularly along the radial access roads.

Although the development of the logistic precincts has not been finished yet, their expansion is not expected on the territory of Prague. An exception consists in the development possibilities of the areas under the Ruzyně Airport.

So in the given case, it is potential of increasing occupancy of the existing premises – transfer of production or logistic capacities – rather than new construction.

# Opportunities (12/12)

## O12 Creation of conveniences for combined transportation and development of city logistics in the territory of Prague considered in the new Territorial Planning Documentation

- The concept of the new Territorial Plan of the Capital City of Prague (2010) assumes the creation of conveniences in the extended container transshipment point of Prague-Uhřetěves and partially in Prague-Malešice, as substitution for the goods station of Žižkov to be cancelled, for combined transportation in the territory of Prague. The city logistic terminal of Prague-Malešice and the terminal of Prague-Smíchov are proposed for the development of city logistics.

# Threats (1/6)

## T1 Low enforceability of law → influence on logistics solution in cities

- The Czech legislation is characterized by generally very low enforceability of law, which has impact also on the issue of demarcation of specialized areas within city traffic. From the perspective of repressive measures defined by the legislation with direct link to traffic, there are very limited possibilities to enforce possible violations of regulations (e.g. parking in banned zones) at present. On the contrary, e.g. the legislation in the area of land planning is often very strict (e.g. specification of binding minimal widths of roads for passage of vehicles that can prevent building of L/U zones in narrow places of historical city parts) and can affect essentially the possible introduction and the general implementability of measures in the area of city logistics.

# Threats (2/6)

## T2 Political pressure from some businesspersons

- The City still has not negotiated with businesspersons officially about the need to solve the situation in the area of supplying of the centre. So there is potential threat that the businesspersons may oppose the prepared measures because they can be unfavourable to them for different reasons (e.g. the need to agree about a common U/L area with the other businesspersons).

# Threats (3/6)

## T3 Worse financial conditions for implementation of some key measures for support to logistics from EU resources in the territory of Prague

- Lower percentage of support as against territories falling under the “Convergence” goal → on one hand, decreasing risk of increased freight transport not related to supplying of Prague; on the other hand, possible increasing share of freight ICT intended for supplying of Prague e.g. due to transfer of terminals of combined transport to Central Bohemian Region.

# Threats (4/6)

## T4 Growing share of road transport in freight transport

- The danger consists in expansion of territories affected by congestions in the road network due to increasing car strain and limited capacity of the system. With regard to the completion of construction of the Prague and City Circuit, the problems with transit freight transport should be resolved to a large degree (if it does not increase extremely); but problems could keep emerging or growing in the area of direct supplying of the city centre in connection with possibly increased share of road transport.

# Threats (5/6)

## T5 Possible conflict in demarcation / modifications of localities for supplying in the historical centre with regulatory measures imposed by historic preservation

- The possible modification (technical solution – L/U bays, marking etc.) of spaces in the historical centre for supplying needs can collide with legislative and regulatory measures of the National Trust as the subject of preservation and care for cultural monuments.

# Threats (6/6)

## T6 Big-capacity shopping centres in adjacent part of the region without link to capacity rails systems of public transport

- The pressure on construction of more and more shopping centres and office complexes constitutes certain danger related to the problems in composition of live metropolitan structure and in transport network and causing problems in places in which their capacity obviously exceeds actual demand already. The new European trends turn their attention back to mixed compact development with building of lower-capacity facilities.

The missing connection of shopping centres to rail systems of public transport can lead to increasing ICT including freight ICT (truck transport to supply the centres).



# ***DISCUSSION***