RETAILERS BENEFIT FROM MULTIPLE PARKING SPACE UTILIZATION

The greater the demand for parking on street in compact European city centers, the greater the need from local retail sector for loading and unloading zones for suppliers. This involves existing parking spaces in density areas being converted into so called "loading and unloading zones". At the same time, the need for short-stay parking spaces – also a need from the retail sector to offer shop runners an extra parking service – is increasing. The Belgian city of Kortrijk has recently implemented the solution: intelligent parking bays equipped with a wireless parking sensor to enable multiple parking space utilization.

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There are currently 60 loading and unloading zones in the city center of Kortrijk (within R36), containing a total of 158 parking spaces. There are 145 zones in the total land area of the city, containing 345 parking spaces. The increasing demand for parking is accompanied by an increased demand for loading and unloading zones, along with the need for available parking spaces and more specifically for short-stay parking spaces for the retail sector: shop and go.

A long-term solution is to meet the demand from both the distribution and retail sectors in the same space. Moreover, in terms of timing it is a perfect match: loading and unloading usually take place in the early morning, while shopping takes place from late morning on. The desired location (the immediate vicinity of retail) is also the same.

This provisional formulation of the problem formed the basis for a broader study into possible solutions which needed to meet the following limiting conditions:

- Multiple use of space that meets both needs.
- Ease of parking due to short duration of the activity (free, ticketless, etc.).
- High level of supervision due to intensive rotation
- structural management in combination with minimum operating costs.

MARKET RESEARCH AND LITERATURE STUDY

Based on the conviction that the issue was of a general nature, a study was carried out between September 2012 and December 2012 into existing experiences. This resulted in the following findings:

- In several districts of Brussels, loading and unloading zones have been set up as parking spaces, with high fees charged. As a result, independent parking companies or independent parking operators can carry out monitoring, rather than the police.
- Both the Brussels Capital Region and the French research center Certu have drawn up a methodological guide for loading and unloading zones for the local road managers.
- In Ghent, suppliers and customers have, since March 2012 (in the context of the Civitas Elan European subsidy program), been able to park for free for a maximum of 15 minutes (with ticket) in the vicinity of Vlaanderenstraat, for loading and unloading. The zones are identified by yellow markings.

None of the three projects complied with the limiting conditions referred to above. Parallel to this, a market study into infrastructure solutions resulted in negotiations with five suppliers of various products. Ultimately, only a sensor application was considered, with which extensive experiments took place in various weather conditions and parking situations. Response speed and data communication were also extensively analyzed and graphically represented.

ANALYSIS OF LOADING AND UNLOADING ZONE SITUATION

In Kortrijk, there has been fairly good monitoring taking place for many years and therefore insight into the parking situation. This is by no means the case for the many loading and unloading zones: there is no management and no studies into their use have been carried out. Applications for additional zones are made separately each time and evaluated individually. Monitoring could not take place via an administrative method, from a legal point of view. Therefore additional analyses were necessary.

Studies were carried out into the utilization of the existing loading and unloading zones. This involved inventorying, capacity utilization and usage duration. Loading–unloading zones are usually (70%) located in areas in which there is already a high demand for parking. As a result, they use up a not inconsiderable number of possible parking spaces. The decision on whether or not to provide loading and unloading zones, and the sign method used, must be taken with the necessary care. The current explosive growth must be evaluated, and efforts should be made to achieve uniformity.

A random sampling at 96 loading-unloading zones shows that the average capacity utilization is in relation to the demand for parking in the vicinity. The average capacity utilization during the daytime is not high. This means that, at the micro scale and at peak times, there are no possible distribution problems. The level of improper use of these zones is twice that of the proper use. This points to a low level of monitoring, but perhaps also to a high demand for parking outside these zones at specific locations. Nine parking spaces were used in a period of over six hours by 51 different cars. 10% of the total number of cars remained parked for more than 25 minutes, 16% for more than 20 minutes. Zones in city centers are permanently occupied during peak times. At these locations, parking on street occurs a great deal (with or without flashing indicator lights).

There are no figures on the level of monitoring of the use of loading-unloading zones. As a result, 160 potential parking spaces in the city center (which equates to a possible 1075 cars per day) are not managed, despite a high demand for accessibility and huge potential economic value.

From 'no parking' to 'a maximum of 30 minutes'

PROPOSED MEASURES

In the context of efforts to realize multiple use of the space, the following combination of measures should be taken:

- Change signs: from 'no parking here', to 'parking for a maximum of 30 minutes'.
- Organize administrative monitoring with zero tolerance. It would not be appropriate to impose a ticket obligation or a parking fee for such short activities. After all, the discomfort caused by these obligations is too large in relation to the short duration of the parking stay. Also, no parking fee can be requested for loading-unloading sessions, because these activities are not deemed 'parking' in law.

The organization of compliance must be given sufficient attention, due to:

- The parking rotation to be aimed for (maximum of 30 minutes for short shopping stops).
- The potential wide area of application, distributed across the city as a whole.
- The free nature of these zones, located in a paid parking environment, could encourage abuse.

For this reason, supervision should be automated, and the start and end moments of the parking session must be determined incontrovertibly. The only feasible technology for this is placing sensors at ground level which register the start and end moments at which the zone is in use. The duration of the usage of the space is calculated by the software. If a set maximum permitted parking duration is exceeded, this software communicates wirelessly with Parko.

Supervisory staff can be recruited locally to register parking, if appropriate, draw up the necessary detailing of the registration and add it to the electronic data. This can result in a parking tax (levy after the fact). This way parking enforcement is realized in a structural manner, without large-scale additional personnel deployment.

LEGAL ASPECTS

This proposal is based on the following considerations:

- It is legally permitted to load and unload in a zone reserved for parking. The parking modalities (maximum duration) must not be complied with during such loading-unloading activities.
- Monitoring personnel can determine whether a parking session is in progress, and therefore make a distinction between parking and loading/unloading. This operating method takes place on a daily basis.
- The method whereby a determination in the context of implementing an administrative levy takes place is not determined in law. The only requirement is that, in accordance with current case law, such a determination must be described in sufficient detail. Furthermore, the proposed working method, in combination with the registration by the parking attendant, offers a great deal more data on the parking session than the traditional method provides.
- There are a wide range of instruments used to register parking sessions: parking ticket machines, various types of Piaf devices, blue discs, SMS data applications, access control systems, etc. None of these instruments are calibrated. Moreover, the proposed sensors do not measure any physical size, simply the presence or absence of an object. No standards exist in this area. [1]
- The frequency with which the sensors detect the presence of a vehicle is high (maximum per second). The chance that a vehicle exchange would not be sensed by a sensor is, in reality, non-existent within this application. Each of the sensors has its own unique ID, so that movements can be recorded per sensor.
- The accurate operation of these sensors, via extensive reporting, is guaranteed by the supplier. Parko has also gained the necessary experience during an extensive testing period, in many weather conditions and has fully recorded the operation.

SETTING UP PILOT SCHEME AS A SHOP & GO PROJECT

Based on these findings, a pilot scheme ran for a period of one year (from April 2013 to April 2014), covering 35 parking spaces. The objective of this was to further study the accuracy of the various types of infrastructure, the communication, the parking behavior and the organization of the monitoring. At the policy level, the pilot scheme was integrated into a whole series of modifications to the parking policy: a parking-free Grote Markt, expansion of regulation, increases to levies after the fact, etc. The spaces were selected in such a way that various material types could be evaluated. Permanent recording of images also took place at the sites with cameras, so that observations could be compared to the figures generated by the sensors. The opportunity was offered to various market parties to equip one or more spaces.

Under in-house control, a Senswatch software development was rolled out on the tablet for the desired zero tolerance in monitoring.

EVALUATION OF PILOT SCHEME

Right from the start the project received huge media attention. Relatively quickly, a social basis of support grew for this new type of parking option, as a result of the following:

- The user and the retail sector appreciated the ease of parking (free, ticketless), the large probability of a free space in the vicinity of the destination and the high rotation (800 cars per day). The economic value of the dossier played a clear role in this on the retail side (estimate: 800 x 10 euros = 8000 euros per day). The retail sector in the city center was given more room to breathe!
- Parko was given a positive evaluation, as a result of:
  - The additional possibilities for further detailing of target group policy
  - The positive balance sheet in terms of investment/operating costs versus turnover from levies after the fact
  - The large quantity of digital data available on the use of the spaces, right down to the individual level. This has also resulted in less discussion between the user and operator regarding the levies issued.

Result: genuine added value for the retail sector in city centers.

As a result of the general satisfaction of the pilot scheme, demand quickly exceeded supply, and it was decided to implement the use of sensors across the city as a whole in phases. The project received recognition in Belgium through the Smart City Award, which was awarded by Agoria to Kortrijk.

By this time, a request for tender had been issued for the awarding of a framework contract for the full order. Implementation phase 1 started in the middle of April 2014: the city center is being equipped with 250 sensors, new software was being developed to further optimize the management and additional monitoring personnel were being recruited to realize compliance with the new approach. Phase 2 will probably be implemented in the second quarter of 2014, and phase 3 will follow in the first quarter of 2015.

DECISION

In past years, the construction of loading-unloading zones was evaluated on an individual basis and in accordance with the local needs. Monitoring of compliance was not organized in a systematic manner. Improper use of the zones occurred frequently in the past, with lorries stopping on the roadway as a result. This behavior resulted in congestion on the one hand and reduced accessibility of the retail sector on the other. In an environment with increasing demand for parking and various urban activities, this cannot be tolerated on a permanent basis. Consistent management can be set up in a technically and financially feasible manner.

The multiple space utilization is stimulated by also integrating the parking demand for the shop & go customers. This opportunity results in a genuine added value for the retail sector in the city center.

(Source: Vexpansie, nr. 2 – 2014)

[1] *Advice on automated parking monitoring at locations where the maximum parking duration is limited to 30 minutes. Dr. Eric Van Hooydonk , Research professor, University of Ghent, Advocaat- 06/02/13*