Future City Logistics

Swisslog

Swisslog is a world leading global supplier of integrated logistics solutions with extensive experience in building complex warehouses and material handling automation. As the topic of future city logistics falls right into their business expertise, they are interested in either finding new uses for their existing solutions to facilitate urban distribution or finding partners to work on the development of new solutions.

Cities’ Issues

If cities have precise knowledge about their people flows, they have rather limited consciousness about their running freight flows. Moreover, freight flows are often limited to truck movements which are always less welcome in urban centers as they deteriorate traffic congestion and make noise. Under the pressure of citizens, delivery time windows are reduced, trucks size and load are sometimes limited and unfortunately, delivery parking areas are often converted into much needed car parking making the daily deliveries always more difficult.

In spite of these difficulties, demand in cities is growing continuously. In 2008, History passed the critical point after which more than half of the global population lives in urban areas. Furthermore, development of e-commerce and shop’s home delivery policies increase pressure on freight transport and lead experts to predict major changes in the area for the next 10 years.

Future Supply Chain

The supply chain will face major changes in the coming years. These are represented on the figure. In order to adapt to these new conditions, the sector has to develop new Key Performance Indicators (KPIs).

Until very recently, the only parameters considered in the conception of supply chains were the cost-efficiency ratio and the service level. Nowadays, according to the new concerns regarding both financial performance and regulations for the environment protection, cost-efficiency ratio and the service level. Nowadays, according to the new concerns regarding both financial performance and regulations for the environment protection, new KPIs have to be considered:

- Traffic congestion
- Energy consumption
- CO₂ emissions
- Water consumption
- Security compliance
- Infrastructure simplification
- Collaboration level

Overview of solutions

Successful Urban Distribution Centers are rare today, but initiatives on the implementation of new solutions are numerous. First, for replacing trucks on the trip between the UDC and the city center, existing infrastructure can be considered as multi-modal transportation system: trains, bus or subways with a freight wagon/trailer. Another option is the development of fully automated systems such as CargoTube project or Masdar’s Personal Rapid Transit system which also integrates freight pods.

For the last hundred meters, home delivery using bicycles or electric vehicles is recommended unless customers are absent, in which case solutions such as secured drop boxes should be developed to offer more flexibility in the distribution.

Automated distribution system is also an option. Based on a smaller size than previous projects, it will allow the connection between homes and apartments since it should be able to climb into tall buildings.

Collaboration

For the development of future city logistics, collaboration between the actors of the supply chain is the key. This can be achieved by adapted communication and information system as well as shared infrastructure. As an example of the benefit of the last concept, GCI and Cap Gemini propose the two following models to compare today’s situation with a model using shared warehouses and Regional and Urban Distribution Centers.

Swisslog’s Opportunities

Gathering personal ideas, ideas from interviews and ideas collected through the IdeaWarehouse Challenge (online challenge organized for Swisslog’s experts from all around the world), five clear opportunity areas were identified.