



Urban food logistics is facing major challenges: population growth, congestion, environmental damage along with the increased use of convenience stores and home delivery of groceries purchased online. The U-TURN project aims to identify new models for urban food transportation through three live pilots in Athens, Milan and London.

Update on Project U-TURN

The first of three years of the U-TURN project has been successfully completed, and good progress has been made in each of the pilot areas. The key insights from each pilot are shown below:

Pilot 1 - Athens

- The potential for decreased costs is driving third-party logistics operator participation
- An increase in last mile deliveries is driving the need for daily distribution services
- Initial data analysis shows that there are significant opportunities for shared logistics services in Athens

Pilot 2 - Milan

- Analysis shows that farmers around Milan produce more than 26 different products that are sold across channels
- The Ethical Purchasing Group is becoming an important resource for the fresh food supply chain
- Interviews with farmers reinforced the need to reduce transport costs and use innovative fulfilment strategies to reach consumers

Pilot 3 - London

- By 2020 online is expected to be 10% of the UK grocery market, with ~185m orders placed
- The economics of delivery means retailers are serving this channel at a cost to their margin
- Research by U-TURN shows the customer experience being poor – customers are forced into delivery times that are not their real preference

We have experienced good levels of participation from suppliers, retailers and logistics providers demonstrating that there is a real appetite for alternative solutions, driven by a disruptive and competitive environment.

Overview of Pilots

Three live pilots will be used to test alternative solutions and demonstrate the potential economic, environmental and societal benefits:

1. Distribution of packaged goods from food manufacturers to retail outlets located in urban areas (Athens)
2. Distribution of fresh food from local producers to consumers in urban areas (Milan)
3. Food delivery from online retailers to consumers in urban areas (London)

Pilot 1 – Athens

Objective

- Support sustainable shared logistics practices among suppliers and third party logistics operators in urban environment that reduce cost, increase efficiency and minimize the environmental impact

Activities

- Requirement analysis for urban freight distribution from suppliers, transport carriers and 3PL companies
- Collection of freight delivery data and identification of opportunities for logistics pooling practices
- Implementation of matching algorithm for the support of urban freight transport pooling techniques
- Simulation experimentation for the use of Urban Consolidation Centers and shared freight deliveries scenarios

Results

- First analysis of data and scenario definition for two industrial working groups (ECR Hellas and Hellenic Logistics Association)
- Preliminary validation of matching algorithm
- Scenario definition and data validation for simulation experimentation

Next Steps

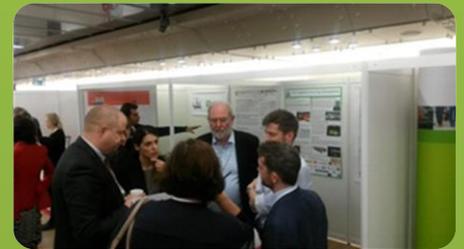
- Second round of data collection and in-depth analysis
- Deliver results for the specific transport pooling scenarios
- Matching algorithm validation and simulation experimentation with real-life data
- Analysis of results and design of real-life pilot tests

U-TURN was presented at various conferences in the past year...

CIVITAS Forum Conference in Ljubljana

In September 2015, U-TURN shared a stand with 3 other Horizon 2020 projects at the CIVITAS Forum Conference with the main theme 'Sharing the City'.

The focus was on sustainable urban mobility as an important driver to build an accessible and liveable city for all, as well as to constantly improve the quality of urban life.



The picture shows LCP's Chairman, Professor Alan Braithwaite, representing U-TURN at the conference stand.

Logi.C 16 LOGISTICS CONFERENCES in Greece

During the conference on the 19-20th May 2016 in Greece, U-TURN was presented to the audience.

Multiple panel discussions were held, including one on urban freight distribution organised by OPTILOG Advisory Services, with logistics clusters and how they are operated within Europe, new initiatives and how to upgrade current solutions discussed.



Conferences planned in the future...

EURO 2016 in Poznan (3rd-6th July 2016)

Cranfield University, AUEB, Intrasoft and OPTILOG will be presenting U-TURN at the European Conference on Operational Research



ESCC Conference in Marathon (10th – 16th July 2016)

Cranfield University, AUEB, Intrasoft and OPTILOG will be presenting U-TURN at the International Conference on Energy, Sustainability and Climate Change. U-TURN is a sponsor of ESCC 2016.



Civitas Forum in Gdynia (28th – 30th September 2016)

Intrasoft and TRT will participate in the Civitas Forum to present U-TURN



Pilot 2 – Milan

Objectives

- Reduce the cost and impact of transport from local farmer's activities to create a sustainable and collaborative operating model for short-food supply chains

- Disseminate the benefits achieved from this collaborative model

Activities

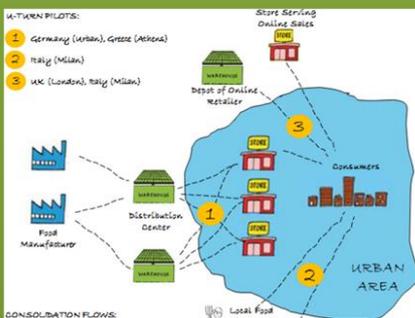
- Organisation of focus groups & in-depth interviews
- Submission of questionnaire
- Analysis of survey results
- Introduction of alternative food distribution strategies
- Development of solutions of logistics pooling/sharing

Results

- 23 farmers involved in the survey (Milan area)
- Identification of used transport methods and types of vehicle
- Identification of a target group and their characteristics for the pilot

Next Steps

- Involvement of farmers in developing shared logistics strategies
- Organise meetings & interviews to understand buyer's PoV
- Assess boundaries and constraints for the TO-BE scenarios
- Quantitative assessment of transport flows and pilot execution



Pilot 3 – London

Objectives

- Define and scope the grocery home delivery market in London
- Conduct modelling/simulation to identify the economic and societal value of alternative solutions
- Test solutions on a small scale in London to evaluate the results and make recommendations

Activities

- Engagement with retailers, local authorities and service providers to understand the challenges and opportunities
- Developed survey to identify consumer preferences
- Secured an anonymised home delivery data set from a major retailer and profiled the market in London
- Modelled the market to calculate the costs of a range of fulfilment methods including home delivery, locker collection and an autonomous collection pod
- Reviewed options for retailer collaboration (shared hubs, joint fleet of trucks)

Results

- The UK online grocery market is set to grow to ~185m orders by 2020, representing 16% CAGR
- On average it costs £9 per home delivery, but this varies by postcode sector and retailer due to drop density
- Modelling of alternative delivery solutions such as home deliveries or an independent Click & Collect location shared by retailers indicates the potential for a reduction in fulfilment costs and CO2
- Retailers are trialling new apps and technologies to expand their service offerings: e.g. Sainsbury's offering same day delivery

Next steps

- Run and evaluate the consumer survey
- Continue to engage with retailers, local authorities and service providers
- Continue to profile the online grocery market
- Build a model to evaluate the benefits of retailer collaboration and simulate identified scenarios to quantify the impacts
- Explore these delivery solutions (e.g. home deliveries and / or Click and Collect) based on a comprehensive analysis of relevant data

Future journal publications...

September 2016, Transportation Research Part B: Methodological, Vehicle Sharing for E-Commerce of the Food Retail (Cranfield)

September 2016, Transportation Research Procedia, A New Process Model for Urban Transport of Food in the UK (Cranfield)

November 2016, Elsevier Journal, Pareto Optimal Integral Allocations in the Discrete Optimization (AUEB/Intrasoft)

November 2016, International Journal of Production Economics, Collaborative Logistics Models in Urban Areas: Current Status and Evidence from the Fast Moving Consumer Goods Sector (AUEB/Intrasoft)

January 2017, Logistica edizioni Tecniche Nuove, The U-TURN Project: A New Model for Urban Food Transportation (Pilot 2) (TRT)

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