

Qamcom

Presentation on CARI Conference

January 2022



CONTENT

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SHORT FACTS ABOUT THE QAMCOM GROUP

- Qamcom is a Research and Consulting firm
 - communication, data & image processing, AI, sensor technologies, optimization
- Qamcom Research & Technology (QRT) was founded in 2001 in Gothenburg, Sweden
- The Qamcom Group has >350 employees
 - Offices in Sweden, USA, New Zealand and Hungary
- The Central Europe office in Budapest
 - Founded in January 2019
 - Today 12 employees
 - **Ambition: to serve the CE market with CE talent and global competence**

OUR MISSION



INDUSTRY INDEPENDENT OFFER

Reinforcement

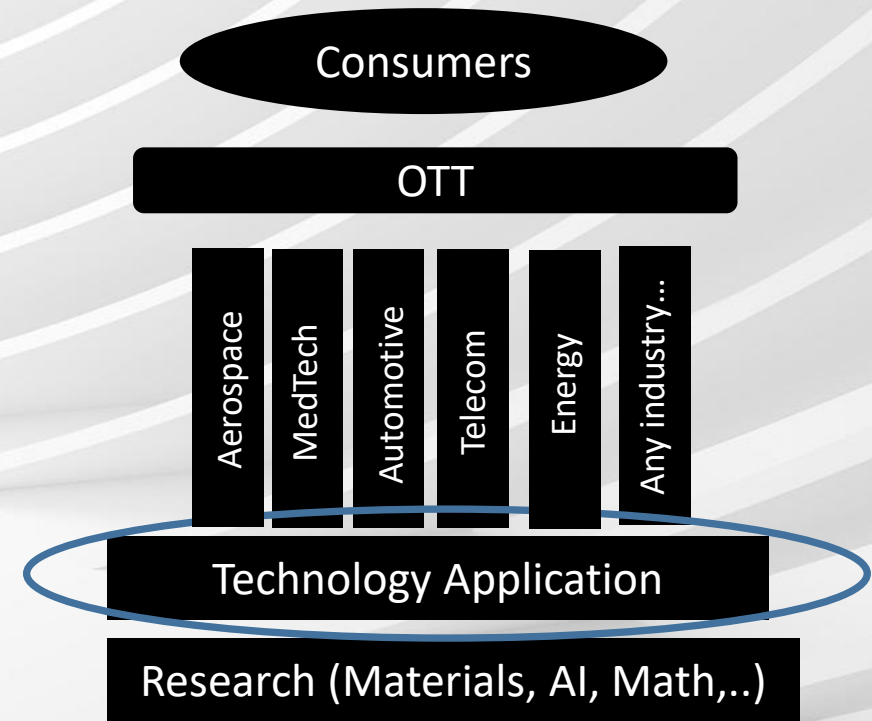
On-site consultants to cover missing key knowledge.

Research and Development

Project team with key knowledge to innovate or refine a product or a service.

Realization

Full-service solution for advanced transformation or making an idea come true.



MYSELF

- Géza Fülöp, PhD Theoretical Physics
- 25 years in Telecoms, IT and Space industries
- Research engineer, Project / Program manager, Manager
- Worked in Sweden, Hungary, Romania and Brazil
- Leading Qamcom CE since Jan 2019

OUR COMPETENCES

Cloud technologies

Back-end SW

- Python
- C / C++
- Java
- FPGA

Artificial Intelligence

- Machine learning
- Data mining
- Computer vision
- Sensor fusion
- Forecasting
- Data processing
- Robotics
- NLP
- Predictive maintenance

IT business understanding

IT development

- Project management
- IT architectures
- IT security
- Functional Safety
- Testing, test strategies

OpResearch

- Optimization
- Flow optimization

Management consulting:
teal, holocracy



INTERESTING PROJECTS WITH ENVIRONMENTAL RELEVANCE

- Artificial Intelligence (AI)
 - **Smart City Stockholm**
 - Smell Recognition
 - Predictive Maintenance
- Optimization (Operations Research)
 - **Vehicle Routing Problem**
 - Personnel Planning
- Functional Safety

STOCKHOLMS STAD.

A safer, smarter and more sustainable city

CHALLENGE

Help The City of Stockholm to become the world's smartest city by the year 2040.

SOLUTION

- Advanced neural networks for object detection and classification
- Advanced tracking and counting
- Using traditional image processing techniques and knowledge to enhance the results
- Detection of different types of vehicles, bicycles and pedestrians
- Traffic measurements and collection of traffic data
- Providing traffic data for sharing through the city's central IoT platform
- Input to automatic traffic light control

OUTCOME

A Multi-Functional Smart City Solution



VEHICLE ROUTING.

A more sustainable and efficient task

distribution

CHALLENGE

Help the customer to distribute transport task among its trucks to minimize empty runs.

SOLUTION

- Advanced mathematical model of the VRP problem
- Include all rules and legislation on personnel
- Define an easy-to-use interface

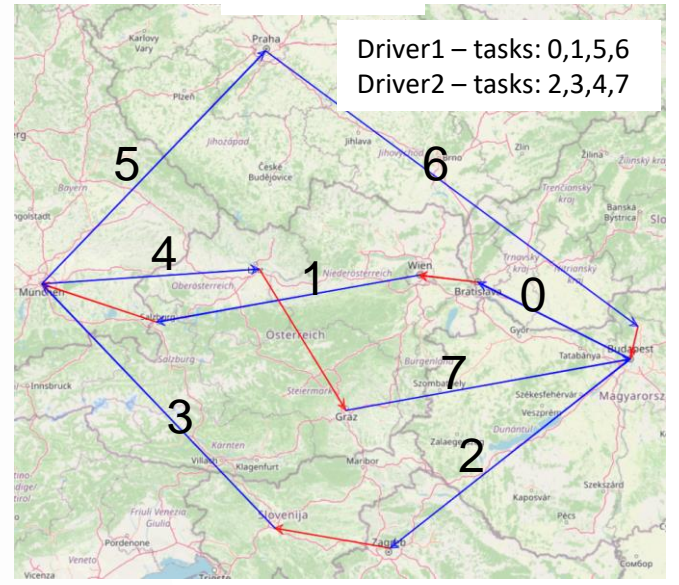
OUTCOME

- Efficient planning tool
- Human planners can concentrate on higher value added work

INPUT

Nr	From	To	Start	End
0	BUD	POZ	Mon 02:00	Mon 08:00
1	VIE	SAL	Mon 11:00	Mon 15:00
2	BUD	ZAG	Mon 16:00	Mon 22:00
3	LJU	MUN	Tue 02:30	Tue 10:00
4	MUN	LNZ	Tue 10:00	Tue 15:00
5	MUN	PRA	Tue 10:00	Tue 18:00
6	PRA	VÁC	Tue 20:00	Wed 20:00
7	GRA	BUD	Wed 09:00	Wed 18:00

OUTPUT



INTERESTING PARTNERS WITH ENVIRONMENTAL RELEVANCE

- **Librixxer**
 - Game changer in recycling
- Smartergy
 - Smart electric grids and distribution
 - Intelligent energy storage
 - Forecasting energy production for renewables (Solar, wind)
- Viking Analytics
 - Predictive maintenance for heavy machinery

LibriXer.

Re-thinking Re-cycling

Challenge

LibriXer wants to redefine sustainability in a world where climate change and pollution are among the biggest challenges in human history. They wanted to create something that covers sustainability from different aspects in terms of reuse, recycling and refinement.

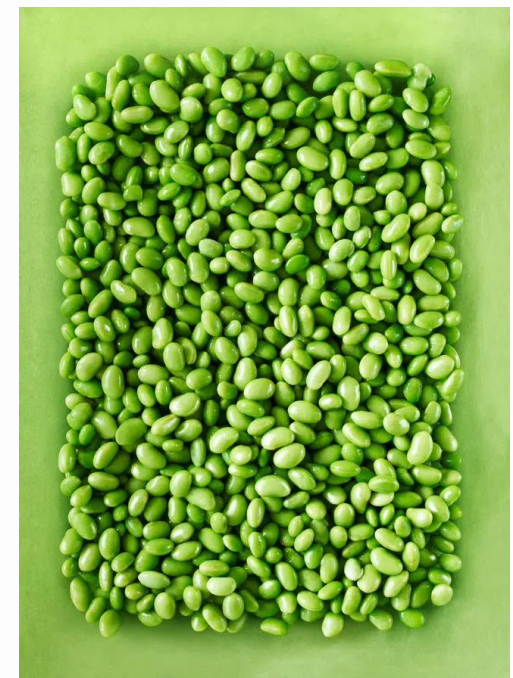
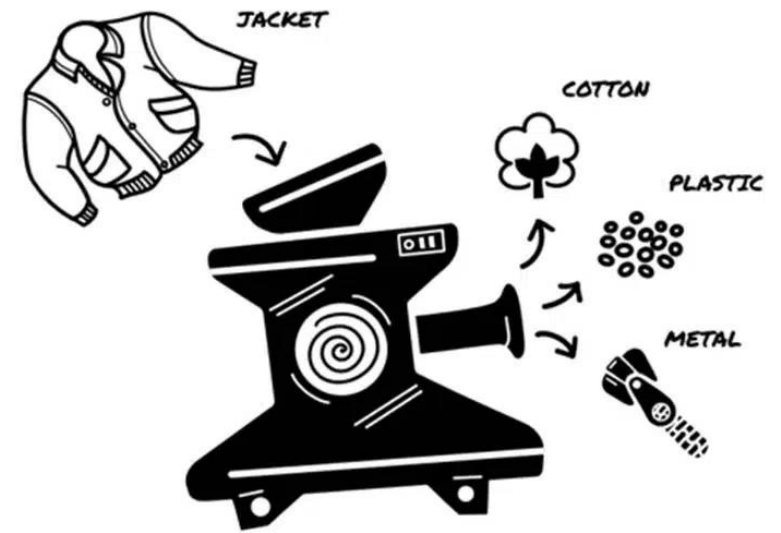
Solution

Qamcom assists LibriXer with mechanical design to improve the process into pure excellence.

Outcome

A method that offers instant material separation through a dry, advanced and energy efficient technology process – with zero emission and no chemicals.

A solution that for example can reuse or recycle textile and refine food. You can optimize current products or create completely new ones from the separated materials. Everything from pea protein to different metals.



CONCLUSIONS

- Qamcom believes in using technical advances for good purposes
- It would be an honour to hear about your most difficult problems

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THANK YOU FOR YOUR ATTENTION!

KÖSZÖNJÜK A FIGYELMET!

TACK FÖR UPPMÄRKSAMHETEN!