Tracking & Tracing as the Basis for new Logistic Services

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04.11.2008 – ICT Konferenz - Lucern
Agenda

- some slides of Gebrüder Weiss
- our requirements for a Track and Trace environment
- what technology we used and how we implemented a pilot
Gebrüder Weiss History

A long tradition

1330  *first mention* of the name *Wizzie* (Weiss) in a tax list at the St. Gallen monastery (Switzerland)

1788  *Johann Wolfgang von Goethe* is brought back to Fussach from his first journey to Italy by the Milan messenger. The fare: 122 guilders

1823  *founding* of the Gebrueder Weiss company in *Fussach/Vorarlberg*

1872  relocation of the company *headquarters to Bregenz;*

GW sets up offices in Vienna, Venice, Genoa, Trieste but also in Buchs
Gebrüder Weiss History

1921 **Ferdinand Weiss** takes over the management;

subsequently opening of offices in **Hamburg** and **Wels**

1989 After the fall of the „Iron Curtain“: **Expansion** into the neighbouring **Central and Eastern European countries** (CEE), expansion of a branch network in the neighbouring countries (Budapest, Prague, Brno, Bratislava, Maribor, Ljubljana) as well as in the **Far East** (Shanghai, Hong Kong, Quingdao)

1999 Declaration of intent and consequent possibility of establishing a **joint venture** between Gebrüder Weiss GmbH and **Röhlig & Co.**
1999  
*Extension of branch network* in the **Czech Republic** (Budweis, Hradec Kralove, Ostrava), **Hungary** (Györ, Kaposvar, Pápa, Szeged etc.) and in **China** (Nanjing)

2001  
*Extension of branch network* in **Eastern Europe** (Croatia, Bulgaria, Romania) and in **China** (Dalian, Ningbo, Tianjin)  
Extension of branch network in China (Urumqi)

2003  
*Joint Venture with Röhlig & Co* in the **USA** with 5 new locations (Chicago, New York, Houston, Los Angeles, Miami)

For the location **Shanghai** an *A-licence* was awarded permitting complete forwarding business activities
2004  Gebrüder Weiss has opened two new branches in **Belgrade** and **Subotica**

With the GW partner Röhlig & Co a new **branch was opened in Dubai**, while in China the branch network was further extended (**Zhanjiang, Xiamen**)

2005  In **Toronto**, Gebrüder Weiss commenced operation with its first Canadian location.

In China, Weiss-Röhlig offices were opened in **Shenzhen** and in **Xian**.
Gebrüder Weiss History

2006
The company’s largest logistics facility in Maria Lanzendorf (AT) was commissioned.

GW acquired the Slovakian firms M&G Expres Spedition and M&G Spedition.

New branch offices were opened in Constanța (RO), Kiev (UA), Koper (SI), San Francisco (USA), Chengdu (China) and in Ulan-Baator (Mongolia).

2007
The Memmingen location is tripled. New locations were opened in Taipei (Taiwan) and Montreal (Canada).

2008
New locations in Sarajevo (Bosnia) and Hajduboszormeny (Hungary).
Gebrüder Weiss Group

Gebrüder Weiss Holding AG
Lauterach (AT)

Gebrüder Weiss GmbH
at 47 locations* in Austria

GW Switzerland
Altenrhein, Zurich, Basel

GW Germany
Memmingen, Lindau, Passau, Nuremberg

GW International
39 CEEC locations* in HU, CZ, SK, SI, HR, BG, RO, SCG, UA

GW Air & Sea and Overseas
Joint venture companies in China, Hong Kong, Singapore, USA, Canada, Germany, Italy, UAE, Taiwan and Japan

GW CEP services
DPD Austria, primetime, EuroExpress

GW Specialised Logistics
Rail cargo
Fair, furniture and arts transports
Fashionet textile transport company

GW Consulting & IT
xlvise innovative logistics
inet logistics
dicall – call center

* all branches, subsidiary companies and customs offices are locations
Facts and Figures

950,0
Turnover in millions of euros (2007)

129
Number of GW locations worldwide

13
Number of countries in which GW is represented by its own offices.
Facts and Figures

300
Number of regular service routes worldwide.

4,400
Number of GW employees worldwide (yearly average)

250,000
Storage area in square metres
Facts and Figures

2,000
Average number of GW trucks on the road on any given day.

7,300,000
Average number of consignments forwarded by GW worldwide annually

35,800,000
Number of parcels handled via the DPD Austria System (2005)
Because we've been around for 500 years.
Agenda

- some slides of Gebrüder Weiss
- our requirements for a Track and Trace environment
- what technology was chosen and how was it applied in the pilot project
typical process for groupage

pre-carrige → main carriage → on-carrige
different quality requirements

Continuous tracking of valuable/time critical shipments

Discrete tracking (hubs) for standard shipments

Position

known

unknown

Supplier 1

HUB 1

HUB 2

Customer 1

Supplier m

Customer n
A scalable System is needed
A modular concept is needed for cost-efficiency

T&T Modul

- Temperature sensor
- Light sensor
- Humidity sensor
- Vibration sensor
Agenda

- some slides of Gebrüder Weiss
- our requirements for a Track and Trace environment
- Choice of technology and implementation of a pilot project
Radio Frequency IDentification

- Identification technology for goods
  - electronic ID „Barcode“ or Auto-ID
  - Enables contactless reading
  - Memory for additional information (Good-, status-, transport-specific)
  - Ability to read several tags at once (Bulk Reading)

- Components
  - Tag, Transponder, Smart Label (active/passive)
  - Reader (stationary / Handheld)
  - Antenna
- Shipment is labelled with transponder chips (RF)
- Reader devices at gates recognize shipments passing by (entry/exit)
GSM LBS (Local Based Services) Service

- **GSM capability**
  - GSM works everywhere (also in trucks, buildings)
  - GSM is standardized worldwide

- **Components**
  - GSM device without display and keyboard
  - industrial devices
  - interfaces for sensors

- **Disadvantages**
  - positioning accuracy 500 m
  - Battery lifetime
continuous T&T

- Shipment is equipped with mobile SLK
  - Positioning Component for localizing the shipment
  - Communication component (GSM) for transmission of position- and status-specific information to the logistics server

- Shipment is loaded and sent

- The SLK automatically determines its position in predefined intervals and sends this information to the central database
combine GSM and RFID

sender

RFID

pre-carriage

Hub A

RFID

main carriage

Hub B

GSM

on-carriage

Customer

GSM

mSLK

mSLK
Summary

- Real time Track and Trace for all containers
  - For predefined event points
  - online positioning using GSM-technology

- Easy and quick implementation of new event points
  - Plug&Play SLK
  - No need to integrate the different IT-infrastructures of the parties involved.

- Independent of participating partners in the supply chain
Thank you for your attention!

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