

## K+S: Supply Chain Optimization and ETA Prediction with Synfioo July 11<sup>th</sup> 2017, SAP Leonardo Live

### K-S

### K+S Group Investment Case

- K+S is an international resources company. We have been mining and processing mineral raw materials for more than 125 years.
- K+S is the world's largest salt producer and one of the top potash providers worldwide.
- The products we produce are used worldwide in agriculture, food and road safety and are important elements in numerous industrial processes.
- K+S has more than 14.000 employees worldwide.







### K+S Group Logistics at K+S







- Bulk terminal in port of Hamburg since 1926
- 405.000 mt storage capacity
- 4 million mt handled annually
- 45.000 containers loaded



Ein Produkt der K+S Transport GmbH

- Intermodal hinterland traffic to container terminals in Hamburg and Bremerhaven
- 36.000 containers, of which approx. 50% K+S



Werra Kombi Terminal Betriebsgesellschaft mbH Philippsthal

From truck to rail

 16.000 containers, of which approx. 50% K+S





- Intermodal barge transports from Mittelland canal and river Elbe to Hamburg
- 35.000 containers, of which approx. 20% K+S

Modal Split Europe:



• We transport per year up to 25 million metric tonnes within and out of Europe.



Worldwide we transport per year up to 60 million metric tonnes.

### K+S Group Need for transparency and predictability of arrival times



### Port of Hamburg: K+S container traffic



source: google maps, 2017

container terminals
 major container depots
 major infrastucture bottlenecks

K+S bulk terminal

### Achieve predictability and avoid cost through dynamic calculation of expected time of arrival:

- Tense traffic situation in metropolitan and port area of Hamburg
- Manage idle times for expensive longshore workers
- Today approx. 100.000 € avoidable idle time at K+S bulk terminal
- Knowledge of exact arrival time of trucks allows better employment of labour in terminal operations
- Knowledge of exact arrival time of trucks enables better preparation of terminal operations and shortens throughput times and truck waiting times (→ freight optimization)
- Avoid no-show fees, extra booking or documentation cost through immediate adaptation of booking order through change of number of containers in case of delays (empty container depots, container terminals, traffic)



### Port of Hamburg: K+S container traffic



#### Achieve transparency, deliver extra services and avoid cost:

Terrestrial transport (from loading site to container terminal):

- Tracking empty container depots and container terminals
- Required notices transmitted properly (e.g. verified gross mass)

Maritime transport (from port of loading to port of discharge):

- Monitoring transit times and performance of carriers
- Inform customers as early as possible in case of late arrivals
- Avoid detention or demurrage cost for customer not picking up all containers

#### Outlook:

From use case to transparent and predicable supply chains

- Application for other modes of transport and other loading sites
- Track and trace vs. connect multi-modal and multiple SC participants
- Geofencing vs. short distances
- Advantage Synfioo





# Which transports are delayed and require action?

# the Synfioo value



Dynamic **Decision Support** 



icons made by Freepik from www.flaticon.com

# the Synfioo benefits



+24% increase in **profits** due to better asset utilization



More **effective** management of the delivery time window



+20% increase in **productivity** for Transport Managers

# the Synfioo approach



**Upload** transport plan into Synfioo cloud

## Add data

from external sources



Notify all affected stakeholders

## the Synfioo data science

## **How Synfioo Predicts ETA**



- Establish relevant **incident interdependencies**
- Match data to specific routes by location and time
- Analyze the **delay impact for each way point** along the transport chain
- Learn from existing data to improve predictions machine learning
- Incident detection via fleet data, e.g. truck GPS crowdsourcing



# **Synfioo** – integrated in the SAP Transportation Management application

SAP Transportation Management (SAP TM)

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- Freight Orders sent to Synfioo ETA service
- Synfioo provides in SAP TM:
  - Up-to-date ETA predictions
  - Specific alert messages incl. delay details
  - Route alternatives
- Synfioo enables Management-by-Exception of critical transports in SAP TM

## **Synfioo for K+S** Use Case: Worldwide Potash Transport

- Potash transported to Port of Hamburg "Kalikai"
- From "Kalikai" transported worldwide by ship, connection routes by truck
- Synfioo monitors
  - the (physical) **transport chain** departures, arrivals, delays
  - the (digital) documentation chain e.g. VGM cutoff



# Thank you.



