Smartlogic™

Case study

Semantic AI Drives Supply Chain Management

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Introduction

Data is the driver for progress in the 21st century – where organizations used to make products, now they make data. It's the hallmark of how businesses are run, and yet most of the information needed to make critical business decisions is stored in textual documents; not something a computer can easily process.

Patients are dependent upon supply chains to deliver medicines and healthcare. In an emergency, supply chain performance might be the difference between life and death. Emergency transport can save lives by quickly delivering accident victims to hospitals for emergency treatment. Medicines required for treatment will be available at the hospital as a result of excellent supply chain execution.

Today's information-driven supply chains are data dependent. The ability to efficiently track and manage supply chain data allows organizations to make informed decisions and optimize supply chain performance.

One American multinational biopharmaceutical company evaluated Semaphore's Semantic AI platform as part of an overall strategy to drive efficiencies in calculating time-sensitive lane management analytics. On a regular basis, information about lane management, temperature monitoring, and KPI indicators, are calculated to evaluate lane effectiveness, ensure medicines are delivered in a timely manner, and in-transit spoilage is identified and minimized.

The Opportunity

The information regarding lane management, which includes lane assessment information, monitoring, and KPI indicators, is manually gathered and calculated each month. The process requires multiple staff members, takes hundreds of hours to generate and is expensive. The relevant data is gathered from multiple disparate systems; by the time the information is calculated and distributed, it's out of date.

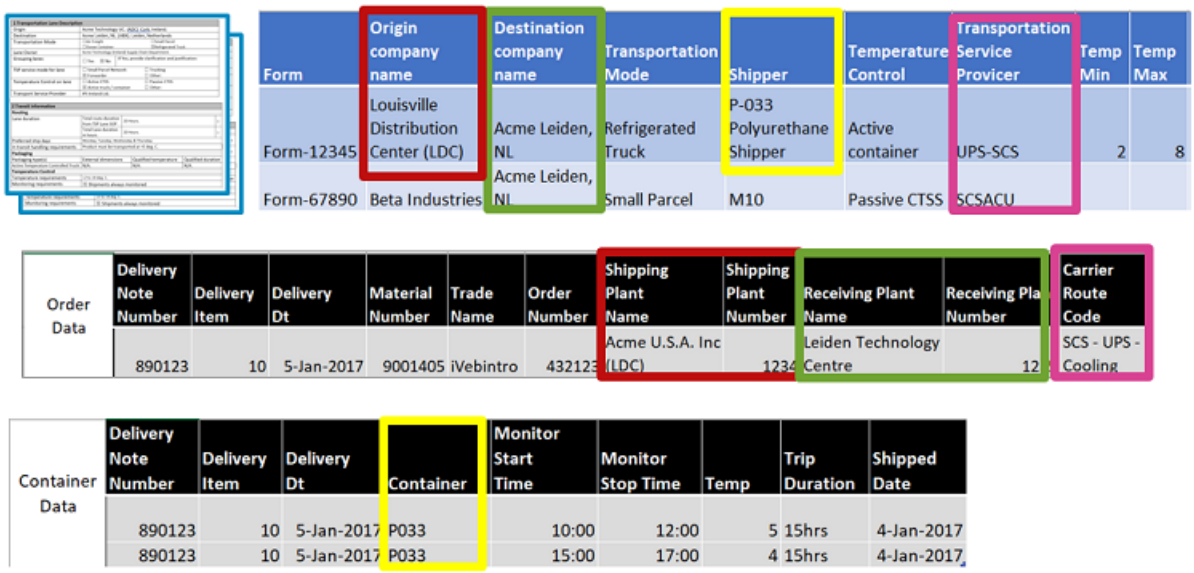
The organization lacks a single platform to connect diverse and disconnected information to create meaningful analytics. The information used to manage logistics is located internal and external to the enterprise. Documents that are similar contain different data and often the same data is represented in different ways as the process of collecting and managing logistic information has evolved over time.

Key data points are buried in textual documents and the organization is dependent upon external providers such as transport companies, to provide them with critical pieces of information to manage the business. As the data is not connected, there are semantic gaps and a lack of master data oversight.

How They Did It

The organization leveraged existing Semaphore models and extended them to include logistics and transportation information such as the shipper, transport provider, transportation types, carriers, and company sites. They use the expanded knowledge model to normalize disparate terminologies across systems and create a single harmonized 360-degree view of the relevant information.

Semaphore's Fact Extraction Framework (FACTS) is a key component in the solution. By creating a document fingerprint (schema) of the relevant fields from the forms, the required information can be identified, tagged, and leveraged in the analytics process.



Form	Origin company name	Destination company name	Transportation Mode	Shipper	Temperature Control	Transportation Service Provicer	Temp Min	Temp Max
Form-12345	Louisville Distribution Center (LDC)	Acme Leiden, NL	Refrigerated Truck	P-033 Polyurethane Shipper	Active container	UPS-SCS	2	8
Form-67890	Beta Industries	Acme Leiden, NL	Small Parcel	M10	Passive CTSS	SCSACU		

Order Data	Delivery Note Number	Delivery Item	Delivery Dt	Material Number	Trade Name	Order Number	Shipping Plant Name	Shipping Plant Number	Receiving Plant Name	Receiving Pla Number	Carrier Route Code
	890123	10	5-Jan-2017	9001405	iVebintro	432123	Acme U.S.A. Inc (LDC)	1234	Leiden Technology Centre	12	SCS - UPS - Cooling

Container Data	Delivery Note Number	Delivery Item	Delivery Dt	Container	Monitor Start Time	Monitor Stop Time	Temp	Trip Duration	Shipped Date
	890123	10	5-Jan-2017	P033	10:00	12:00	5	15hrs	4-Jan-2017
	890123	10	5-Jan-2017	P033	15:00	17:00	4	15hrs	4-Jan-2017

Figure 1. Semantic harmonizing provides efficiencies - in the Origination document (top row), the destination is identified as Destination Company Name. In the Order Data (center row) it is defined as Receiving Plant Name. Bringing them together provides a 360-degree view of the lane information to drive metrics.

Harmonizing the data provides efficiencies; information can be aggregated and reused, and direct and opportunity savings identified. The time and staff required to develop the metrics are reduced and the information is timely and of high quality. Report generation is created and delivered to the business in a timely manner allowing them to optimize both shipper and carrier lane selection.

The Semaphore Advantage

Today the organization is driving efficiencies through data optimization. By harmonizing all information into a 360-degree view, lane metrics are efficiently and economically calculated, compliance obligations are easily met, and the business can make course corrections and alter business practices when required.

Future opportunities and benefits to integrate supplier data have been identified; create awareness of geopolitical events that may impact deliveries, and identify and redirect impacted shipments when required.

A strong digital foundation allows the organization to capture, analyze, integrate, access, and interpret high quality, real-time data to fuel further automation, enhance predictive analytics, and improve business outcomes.

To find out how Semaphore, our Semantic AI platform, harmonizes enterprise information, efficiently drives analytics, and supports compliance, contact us at info@smartlogic.com .

SMARTLOGIC – AMERICAS
111 N MARKET ST.
SAN JOSE, CALIFORNIA, 95113
TEL: +1 408 213 9500

SMARTLOGIC – EUROPE, MIDDLE-EAST AND AFRICA
200 ALDERSGATE
LONDON, EC1A 4HD
TEL: +44 203 176 4500

WWW.SMARTLOGIC.COM
INFO@SMARTLOGIC.COM