

User Scenario: Supply Chain

Part II: User Scenarios

Overview

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A [Supply Chain](#) covers the entire system of producing and delivering a product or service, from the initial sourcing of raw materials to the final delivery to end consumers. In other words, the supply chain defines the entire production process, including all the adjunct activities involved at each step of the supply chain. It includes the information flow, natural resources transformed into useful materials, human resources, and any other components (i.e., packing materials, shipping containers, energy consumption) that are perceived as part of the final finished product or service.¹⁾

A very important part of understanding is to conduct an external analysis of the Supply Chain, including documenting all the steps in the Supply chain, the flow of products, goods and services into the step and the processing accomplished in the step. The Supply Chain and the external analysis of the supply chain are essential for strategic planning for any participant in the Supply Chain.

Each step in a supply chain can a separate industry (i.e., producers of raw materials, transport companies, warehousing, and retail). In large corporations such as Walmart, the “separate industries” may actually be part of the same corporation. Although related, the Supply Chain and the [Value Chain](#) are different. For example, the Supply Chain might consider all the steps from raw material to final product while the Value Chain only covers the portion of the Supply Chain that a corporation has control over and/or what steps it feels it can add value to the final product.

In other words, the supply chain involves all parties in fulfilling a customer request and leading to customer satisfaction, a value chain is a set of interrelated activities a company uses to create a competitive advantage.²⁾ Within the Supply chain, there is often a many-to-many relationship between parties along the chain. In other words, one producer may service multiple distribution centers, one Distribution center may service multiple grocery store chains.

The following are some of the restrictions or benefits apply to Supply Chains in General³⁾⁴⁾:

- Identification and Listings of Hazardous Waste⁵⁾
- Restriction of Hazardous Substances⁶⁾
- Registration, Evaluation, Authorization and Restriction of Chemicals⁷⁾⁸⁾
- Conflict minerals as defined under the Dodd-Frank Act⁹⁾
- Waste from Electrical and Electronic Equipment¹⁰⁾
- Traceability of pharmaceuticals and medical equipment¹¹⁾
- Electronic Records and Electronic Signatures¹²⁾
- Protection of Workers, peonage, slavery and Trafficking in Persons¹³⁾¹⁴⁾
- [USDA Specialty Crop Block Grant Program \(SCBGP\)](#)

- General Data Protection Regulation (GDPR)
- Data Protection Act 2018
- California Consumer Privacy Act (CCPA)
- **Note:** Obviously, depending on the industries associated with the Supply Chain, there will be industry specific regulations that apply (e.g., [Health Insurance Portability and Accountability Act \(HIPAA\)](#)).

The Agricultural Supply Chain

- 1.0 Problem Statement
- 2.0 Existing Simplified System without DIDO
 - 2.1 Existing Activities
 - 2.2 Existing Issues
- 3.0 Theoretical Simplified System Using DIDO
 - 3.1 Activities
 - 3.2 Theoretical Issues
 - 3.2.1 Organic Producer COI (OPC)
 - 3.2.2 Agricultural Supply Chain Col (ASCC)

- problem
- existing
- theory

1. needs to identify a Community of Interest (Col) that cov
2. He joins an agriculture Community of Interest (Col) with a membership that reflect the problems that are unique to the community (i.e., the Domain). The Col selects a DIDO platform to use and work to have Domain specific Smart Contracts developed to address the COI's needs. For example, the COI define Smart Contracts describing Fruit Lot, a Field or Plot that have properties for Organic, GMO, etc. They also create Smart Contracts that represent the Owner and the Operator of the Field or the Plot. In addition, they describe Smart Contracts that represents farming actives (i.e, plowing, plant variety, "feeding", watering and harvesting, etc.) for the field or plot. Associated with the activity are a group of individuals that conducted the activity as well as a list of materials used during the activity.
3. After the harvest, Sal is ready to send the produce to market. He hires outside firm to load and drive the produce to market. Sal clones an anonymized subset of his blockchain to the delivery person as a side-chain or as a stream of the main DIDO. he driver accepts the Side-chain and adds the appropriate information about the people who loaded the truck and the specifics about the truck. The Truck has its own side-chain that is added to to the side chain provided by Sal. It includes specifics about the truck driver and the truck (i.e., what was its last few loads, when was the truck cleaned last). While in transit, the refrigerated deliver truck keeps track of environment conditions within the truck (e.g., temperature, humidity) and the total transportation time.

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