KDD059 - Supply Chain Enterprise Structure

Status	Approved
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Issue

Syensqo has different types of plants i.e. Manufacturing, Distribution, Subcontracting, Consignment, Traded, Port plants, plants abroad etc. created in order to support different existing As-Is processes ex: Intercompany, Subcontracting etc. A lot of these plants are virtual plants i.e. do not have a physical location and are created to support a business process or legal/regulatory requirements. As part of ERP rebuild program the business processes are being standardised and therefore there is an opportunity to standardise and simplify the plant structure by getting rid of the virtual plants and those that are not needed for the future design. This simplification will improve supply chain transactions and increase opportunities for automation.

Recommendation

Based on the comprehensive analysis conducted, **Option B: Simplify and Standardize the Plant Structure** is recommended. This option involves a thorough evaluation of all existing plants using a decision tree outlined in the accompanying document, which will be applied during the detailed design phase. The goal is to streamline and standardize the number of plants, ensuring that they align with the future design requirements. By implementing this approach, Syensqo will not only reduce the complexity associated with managing multiple plant types but also enhance operational efficiency. Furthermore, this standardization will provide a valuable opportunity to optimize Syensqo's supply chain network, leading to improved overall performance and cost-effectiveness.

Background & Context

Syensqo operates a diverse range of plant types to support various business processes. These include Manufacturing, Distribution, Subcontracting, Consignment, Traded, Port plants, and Plants Abroad. Each plant type was established to fulfill specific operational needs and to manage processes such as Intercompany transactions and Subcontracting. Notably, many of these plants are virtual i.e. they do not have a physical location. These virtual plants were created primarily to address particular business processes or to comply with legal and regulatory requirements, allowing Syensqo to navigate complex operational landscapes without maintaining a physical presence for each plant.

The As-Is plant structure can be found in the Enterprise Structure Catalog.

Following is the Overview of As-Is plants (Only the active plants as of writing this document are considered in the table below)

Type of Plant	As-Is Counts	Purpose of the plants
Manufacturing Plants	67	▪ Any Plant that has manufacturing is tagged as manufacturing plant ▪ These plants can also have distribution activities, R&I centers etc.
Distribution Centers	208	• These plants are distribution centers and store the stock • These plants can also have R&I centers
Subcontracting Plants	196	• These plants are used to track the subcontracting process, and the stock issued for subcontracting
Trading Plants	18	• These are used for Intercompany primarily for tax calculations
Consignment Plants	8	• These are plants to hold the consignment stock
Maintenance Planning Plants	74	• These plants are planning plants for maintenance activities

Maintenance Plants	74	• These are maintenance plants where the maintenance activities are carried out

As a part of the To-Be design, plant represents a physical location where materials are produced, procured, stored, maintained or distributed. Following are some of the key functionalities at plant level

- Materials are valuated at plant level
- Inventory management functions including inventory reporting are carried out at plant level
- Materials Requirement Planning (MRP) is carried out at plant level
- Production and production planning activities are executed at plant level
- Quality management is carried out at plant level
- Maintenance and maintenance planning activities are executed at plant level
- A plant is the location where the technical objects of a company are installed i.e. Workcenter, functional location etc.
- Many master data objects are maintained at plant level ex: Material master MRP, Purchasing, QM etc.
- Plant is a key element for application system security

Assumptions

- Advanced Intercompany will be implemented in Syensqo which will change the behaviour of Intercompany process and therefore traded plants are not required. (ref. KDD017 - Intercompany Processing in the new ERP Solution)

Constraints

Any modifications to the current understanding of tax treatments or regulatory requirements could necessitate changes to the plant design. If there are updates or new interpretations of tax regulations or compliance standards, the plant structure may need to be adjusted to ensure alignment with these legal and regulatory frameworks.

Impacts

Following are the impacts

Data Conversion and Migration: As part of the ERP rebuild program, it is essential to map data from the existing As-Is systems according to the new proposed Plant Structure. This process involves systematically aligning and converting the data from the current plant setups to the standardized plant model. Accurate data mapping ensures that all inventory records, asset details, and related information are properly integrated into the new system, reflecting the updated plant design and structure. This step is crucial for maintaining data integrity and supporting seamless operations post-migration.

Cutover: The approach to migrating inventory during the cutover phase must be carefully designed to align with the new plant structure. This involves planning and executing the transition of inventory data from the old system to the new one, ensuring that all inventory items are correctly assigned to their new plant locations according to the standardized model. The cutover strategy should include detailed procedures for data extraction, transformation, and loading, as well as comprehensive testing to validate that the migration has been successful and that inventory records are accurately reflected in the new system.

Downstream System: The changes in plant codes will affect all downstream systems that rely on this data. These systems, which may include supply chain management tools, financial systems, and reporting applications, will need to be updated to accommodate the new plant structure. A one-time remediation or mapping exercise will be required to adjust these systems and ensure that they continue to function correctly with the revised plant codes. This exercise involves updating interfaces, data mappings, and integration points to reflect the new plant design and prevent disruptions in downstream processes.

Business Rules

A location will be defined as a plant if atleast one the following conditions are met:

- Inventory is held and the ownership linked with this location
- Inventory is valued separately and material price varies
- Technical objects like functional locations etc., are reported and mapped to this location
- Location executes production and / or maintenance activities
- Has its own set of material master data values e.g. lead times, lot sizes etc.
- Location requires separate authorizations

Options considered

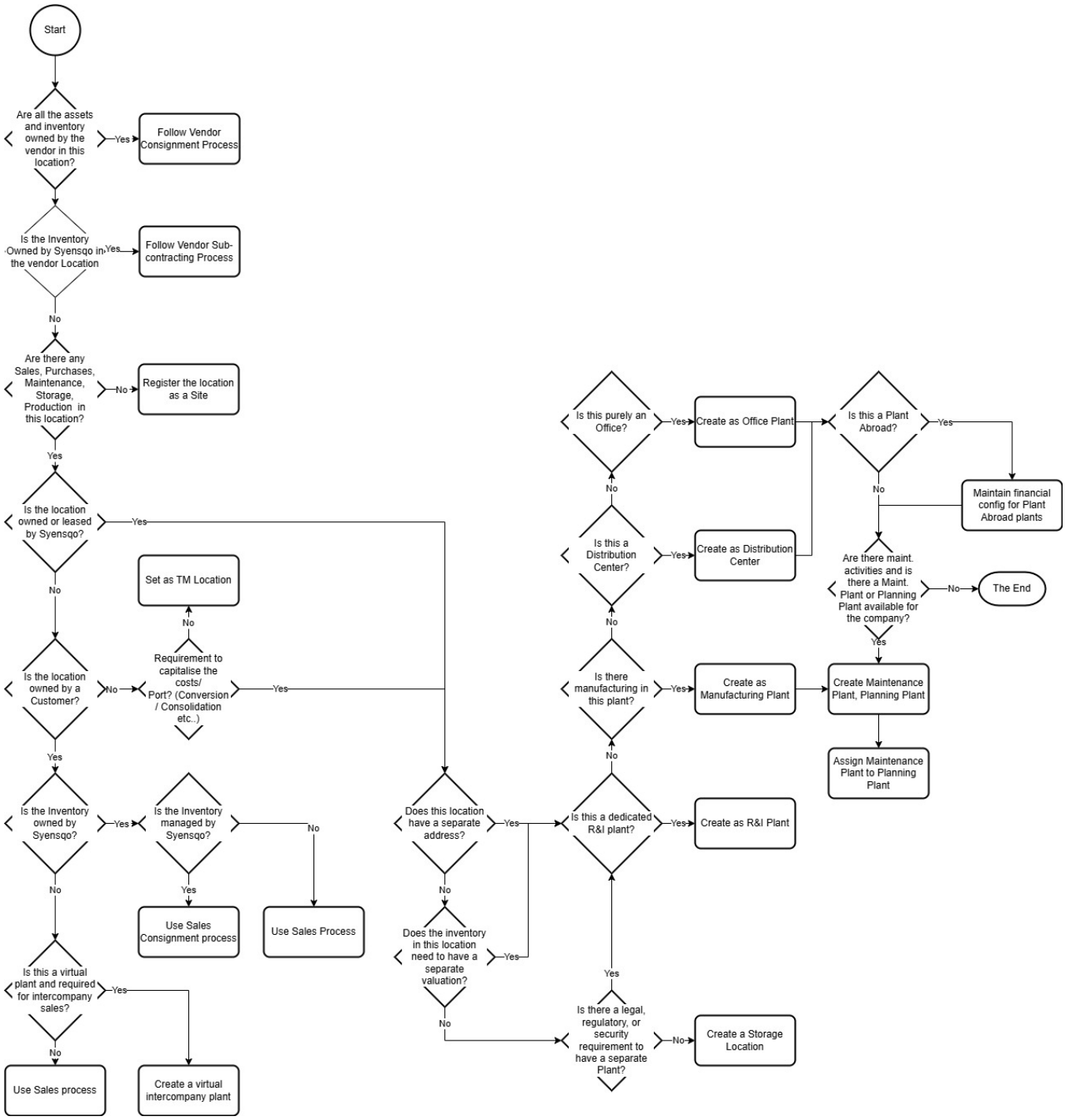
Following are the options proposed

Option A: Continue with the As-Is Plant Structure

Opting to maintain the current plant structure by copying all valid plants from the As-Is system will allow the business to continue operating with its existing setup. This approach ensures that there is no immediate disruption to current operations, as the familiar plant structure remains intact. However, this option will not fully leverage the advantages offered by the future design. By retaining the existing structure, Syensqo will miss out on the opportunity to streamline processes and take full advantage of automation possibilities that a more standardized plant design could provide. As a result, while this option ensures continuity, it limits the potential for enhanced efficiency and modernization that comes with adopting the proposed future design.

Option B: Simplify and standardise the Plant Structure

As part of this option, the proposed approach involves simplifying the plant structure using a decision tree methodology. Each plant within the current As-Is system will be evaluated against this decision tree during the detailed design phase. This process aims to determine which of the existing plants are still relevant and should be retained or recreated in the new To-Be structure. By systematically assessing each plant, the decision tree will help identify which plants align with the future design requirements and ensure that only valid and necessary plants are included in the streamlined plant structure. This approach will facilitate a more organized and efficient transition to the new system, while also supporting the goal of simplifying and optimizing the plant design.



Following is the decision matrix used in the flow chart

Decision Step	Rationale
Are all the assets and inventory owned by the vendor in this location?	If a location exclusively holds inventory or assets owned and managed by a vendor, it should be represented through the Business Partner – vendor. However, if a location contains inventory that is owned and managed by Syensqo, but also includes inventory provided by a vendor under a consignment arrangement, the existing plant can accommodate the vendor consignment process. In such cases, there is **no** need to create new plants.

Are there any Sales/ Purchases/Maintenance /Storage/Production in this location?	If there are no sales or purchases of inventory occurring at a location or, if inventory is never stored in a location, there is **no** requirement to set up the location as a plant.
Is the location owned or leased by Syensqo?	If a location performs sales, purchases or holds inventory (as per question 2) and is owned, leased or managed by Syensqo, there is a requirement to represent this location as a plant in order to perform the relevant transactions.
Is the location owned by a customer?	If a location is owned by a customer, and if the inventory is owned by Syensqo but not managed by Syensqo then a consignment sales process should be adopted in this location. If a location is owned by a customer, and if the inventory is not owned by Syensqo then a normal sales process should be adopted in this location.
Requirement to capitalise the costs/Port ? (Conversion / Consolidation etc.)	If a port is storing inventory for a period of time or if a port is changing the nature of the product (conversion, load consolidation/separation), then the port is playing the role of a distribution centre and should be treated as such. If a port is simply a location where goods transit to get to/from a destination, then a transportation location is sufficient to represent this location in the supply chain. Note that any transport specific costs such as duties, container charges, port charges, etc are all considered part of transport costs (as opposed to storage costs) and are handled through the normal transport management processes (and, therefore, do not require a plant or storage location).
Inventory owned and managed by Syensqo and has a separate address to the existing plants	The location to be set-up as a separate plant
Inventory owned and managed by Syensqo and doesn't have a separate address to the existing plants and needs to have separate valuation	There can be different material valuation requirement in case multiple GBU's exist in the same plant and can have different valuations due to having different supply chain network, Different external suppliers, different country of origin requirements, packing processes etc. If a material has to be valuated differently in two separate locations, there are 2 options, 1. to create a separate plant or 2. To enable split valuation. It is recommended at this point in time to create a separate plant. Further analysis will be conducted during the detailed design based on the analytical requirements if split valuation will be able to fulfil the requirements
Inventory owned and managed by Syensqo and doesn't have a separate address to the existing plants and doesn't need to have separate valuation	The location will be set-up as storage location for an existing plant (If existing storage locations cannot be used)
Is there a legal /regulatory / Security req to have a separate plant	There could be legal/regulatory/security requirements that will require the location to be set-up as a separate plant. The legal/regulatory requirement always takes precedence when we evaluate the location to be set-up as a plant. There will further evaluation done on case-by-case basis for the security requirements, if they can be fulfilled by any other attributes in the process / custom security objects that will take the precedence, however if the design becomes too complex creation of separate plant is advised
Is the plant virtual and required for Intercompany Sales?	There is a technical requirement to have at least one plant assigned to the legal entity for Advanced Intercompany Sales process. In the case, where there are sales from the entities which doesn't have any plant, a virtual plant is created

Evaluation

**The evaluation scoring system ranges from Low to Very High. In this system, a low score indicates a negative attribute, such as high costs.*

	Option A: Continue with the As-Is Plant Structure	Rating	Option B: Simplify and standardise the Plant Structure	Rating
Operational Complexity	⛔ Maintaining multiple virtual plants introduces considerable operational complexity. Virtual plants require transactions to be posted without any physical movement, which complicates the management of these transactions. This can lead to increased administrative overhead and potential errors in tracking and managing inventory. Conducting stock takes becomes cumbersome and challenging because some stock is virtual and not physically present. This discrepancy can complicate inventory reconciliation and reporting.	**Low**	➕ By removing virtual plants and consolidating to a standardized plant structure, operational complexity is significantly reduced. This approach ensures that all plant transactions are aligned with physical document and logistics flows, making transaction management simpler and more straightforward. A unified stock take process simplifies inventory management by clearly distinguishing between different types of stock—such as physical stock, consignment stock, subcontracting stock, and stock in transit (SIT). This clarity helps in maintaining accurate inventory records and streamlines the reconciliation process.	**High**

System Complexity	The need for enhancements to accommodate virtual plants introduces significant system complexities. For instance, transportation management systems must be designed to understand and optimize routes for both virtual and physical plants, which can be technically challenging and resource intensive. Multiple virtual plants can lead to performance issues, particularly in reporting. The fragmentation of data and the added complexity of virtual plant management can slow down reporting processes and impact overall system performance.	Low	With a standardized plant structure that mirrors the physical flow of goods, the system complexity is greatly reduced. Standard SAP functionalities can be leveraged more effectively, as the plant setup aligns with physical processes, leading to easier integration and reduced need for complex customizations. A simplified and standardized plant structure enhances system performance and reporting efficiency. With fewer plants to manage and less data fragmentation, the reporting processes become more streamlined and accurate.	High
Automation	Automated processes may be more difficult to design and implement due to the need to account for various virtual plant scenarios.	Low	Standardizing the plant structure facilitates the development and implementation of new automations as the plants are clearly classified which will define the processes that are implemented in those plants. Without the need to manage virtual plants or virtual postings, there are fewer scenarios to model, which simplifies the automation process and enables more efficient automation solutions.	High
Data Management	Managing data becomes more complex due to the need for additional data that need to be created and maintained. For example, extra material plant views, transportation lanes, and routes must be maintained for each virtual plant. This can lead to fragmented data and inconsistent reporting, complicating data analysis and management.	Low	Standardizing the plant structure eliminates the need for additional data maintenance related to virtual plants. This results in a more streamlined data management process	High
Data Migration	Data migration is less complex when dealing with a larger number of virtual plants, as the data mappings required are minimal. However, there may still be challenges in aligning the data with the future design, which requires careful planning and execution.	Medium	The process of data migration is more complex with a standardized plant structure due to the need for extensive data mapping and de-duplication efforts. Despite these complexities, the migration is a one-time activity that ultimately aligns the data with the future design, resulting in a more coherent and efficient data structure	Medium

See also

File	Modified
PDF File Workspace Mail - KDD Ready for Approval - KDD059 Supply Chain Enterprise Structure. pdf	Sept 27, 2024 by FALL-ext, Cheikh

Change log

Version	Published	Changed By	Comment
CURRENT (v. 31)	**May 05, 2026 12:11**	**HE-ext, Cindy**	
v. 30	May 05, 2026 12:09	**HE-ext, Cindy**	
v. 29	Apr 21, 2026 17:10	**HE-ext, Cindy**	
v. 28	Apr 06, 2026 15:14	**HE-ext, Cindy**	
v. 27	Apr 06, 2026 15:13	**HE-ext, Cindy**	
v. 26	Apr 06, 2026 15:12	**HE-ext, Cindy**	
v. 25	Apr 06, 2026 14:24	**HE-ext, Cindy**	
v. 24	Sept 27, 2024 10:03	**WENNINGER-ext, Sascha**	
v. 23	Sept 27, 2024 08:29	**HE-ext, Cindy**	
v. 22	Sept 27, 2024 08:26	**HE-ext, Cindy**	

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Workflow history

Title	Last Updated By	Updated	State	Status
KDD059 - Supply Chain Enterprise Structure	HE-ext, Cindy	May 05, 2026 12:11	Edited following Approval	

Workflow history

This view shows the 5 most recent entries. The complete workflow log is available from the 'Document Activity' menu item.

From Apr 06, 2026 to May 05, 2026	Actor	Type	Activity	Version
Approved	HE-ext, Cindy	Edit	updated the page at 2:24 pm	
Sept 27, 2024				
	FALL-ext, Cheikh	State	changed state to Approved at 12:19 pm	v24
Pending SteerCo Review	FALL-ext, Cheikh	State	gave *Final Approval* approval at 12:19 pm	
	HE-ext, Cindy and WENNINGER-ext, Sascha	Edit	multiple updates from HE-ext, Cindy and WENNINGER-ext, Sascha	
	WENNINGER-ext, Sascha	State	changed expiry date to '11 Oct, 2024 08:03 am' at 8:03 am	
		State	changed state to Pending SteerCo Review at 8:03 am	v24