



SYSLÉN



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INTRODUCTION



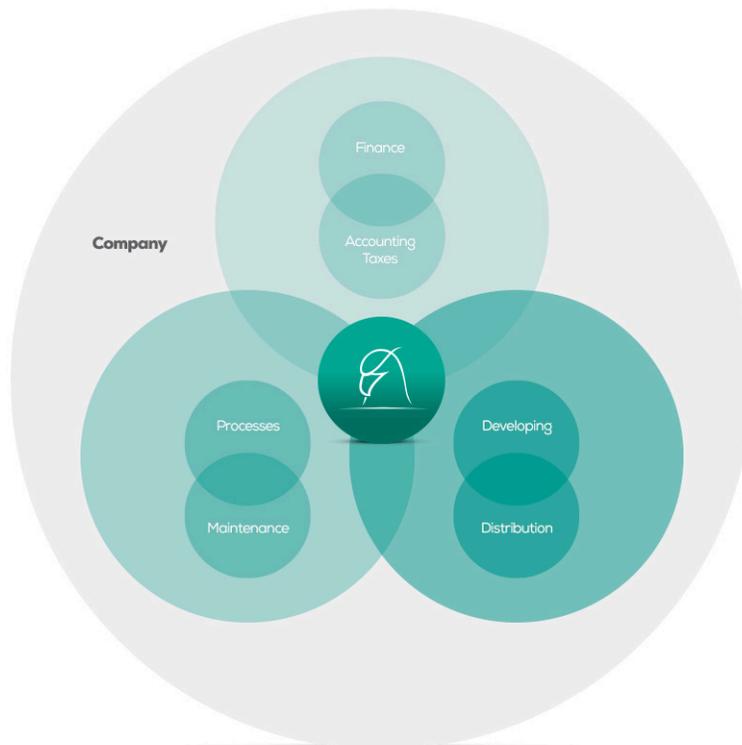
Syslen's Objective

Syslen was created in order to solve administrative or management deficiencies. The mere fact of analyzing a large flow of information today calls for a big administrative structure, which increases the chances for deficiencies to appear. The lower the number of parties involved in any management structure, the more efficient and dynamic will be the result, since there will be fewer possibilities for inter-

pretation and coordination errors.

Therefore, the main objective of Syslen is to simplify the administrative and management areas of a business, thus having the chance to count with reliable information, identify potential failure points, schedule jobs and track them, and monitor the efficiency of processes and resources.

Functional organization chart. Management focused on added value





The organization chart suggested by Syslen comprises three basic functions a company must manage and interrelate to achieve efficiency:

- **Production**
- **Commercialization**
- **Financing**

In its development, Syslen aims to identify each of these functions and interrelations as areas through a management system that allows the efficient implementation of: inventory management; jobs and needs scheduling; activity log; detection of

possible failure or inefficiency points within the organization.

The proposed organization chart focuses on functions and not on the organizational structure. The functions will be the ones to demand the activities of the organization, through flexible delegation of responsibilities among its members, improving the interaction, providing dynamism and reducing management times. The administration would be integrated to the company's operating system, thus reducing the need for complex administrative structures for managing the information.

Why Syslen

The name "Syslen" was obtained by analyzing the proposed organizational chart.

In the Functional organization chart, the organization or company would be a sphere. Within that sphere are other spheres that represent the functional areas. To identify the interaction between the different areas or functions we overlap these spheres. The intersection between the two spheres forms a lens. So, in the organization chart, the lens refers to the interaction and interpretation of data between the different areas. In turn, a lens is physically used to observe visual details that the human eye can't perceive.

The concepts of lens and system are key components of this development, and the name "Syslen" comes as a result of combining two terms, which

could leave us to interpret Syslen as the "system lens."

An organization could be identified as a system, inside which there are other systems that work in combination. In turn, the organization is part of a wider system which is its environment. This complexity of components or interrelations between systems within a system are the ones complicating the interpretation of data, as classification and organization is needed for its analysis. To simplify the classification, and using the ideas of systems and lenses, we have defined the concepts of sys and len to organize information and interrelations of the parts of an organization. In short a sys is a company resource and a len is a classification that identifies it.



Why use Syslen...

The current conventional thinking to organize information within a company (medium or large) generates very complex and bureaucratic administrative structures, which generate high costs, limit synergy and aren't completely efficient. Small companies usually don't have a management system, which leads them to be deficient due to the lack of anticipation, have a personal nature and have difficulties to grow due to the lack of organization.

To ensure that all areas work properly and that the administration is inherent to the proposed management system, it's necessary to generate a flexible information processing method that exempts the organization from processing the collected information.

Syslen seeks to break the complexity of current information systems, based on the concepts of sys and len. Broadly speaking, it could be said that sys is an item and len is the classification used to identify it.

The goal of using new terms is to avoid any preconceptions the user may have of any word we use and

to generate an unified management language.

The software structure is based on processing all physical stock (visible resources) as sys and everything that identifies it as len, so that the user can tailor the software to his or her needs. In other words, the identification is at the user discretion according to the needs or the complexity of the activity.

This interpretation of sys and len would facilitate the link between the resources and the tasks performed within an organization, thus being able to:

- Settle a qualified inventory
- Register completed tasks or jobs (traceability for analysis)
- Schedule jobs or tasks
- Track jobs or tasks (performance and efficiency control)
- Identify traceability and inventory management of parts and supplies
- Define costs
- Identify possible points of failure, inefficiency and threat, through data cross-linking



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PRECONCEPTIONS

INVENTORY CLASSIFICATION



SYS and LEN

As mentioned in the Introduction, the first step to organize and interpret information is to register the LEN and the SYS.

The SYS are the interpretation of existing resources available to the organization. A SYS can identify anything from a physical system to a system component. Thus, the existence of a production line, a motor, a bearing, a shelf, an establishment, an active principle, or a consumable good can all be qualified as SYS. A SYS can contain another SYS and can be contained by other SYS. A SYS represents a unit that along other SYS all play a role within the company.

To identify the SYS is necessary to frame it within a

classification, reason why Syslen allows to register classifications according to the information needs demanded by the organization or company. These classifications are called LEN. The LEN, aside from being a classification which identifies the SYS, must contain the fields that will determine it.

In this regard, and as a previous step to register a SYS, the user has to generate the LEN that will identify it. When generating said LEN, the user must specify the fields that will require SYS information to determine, qualify, compare or analyze it. The LEN fields will refer to the SYS properties that can differentiate them (or not) of other SYS classified within the same LEN.

SYS ESSENCE: SYScod or SYSlot

A SYS must adopt one of two modes for its interpretation. This mode is given according to the essence of the system it represents. There are two SYS essences interpreted by Syslen: CODE essence and BATCH essence. The CODE essence SYS (SYS-cod) is identified as a heterogeneous unit which

cannot be transformed or rationalized, although it may contain or be contained by another SYS (e.g., a truck, a tractor, a tank, etc.). The BATCH essence SYS (SYSlot) can be rationalized (fractioned) and transformed when mixed (e.g., a fuel batch, a cement batch, etc.).



Indicator

The SYS must contain a property to indicate or refer to their status or availability. Such property is known as indicator. It can (and even should) change over time. In the case of the SYScod, the indicator can be the usage hours (e.g. for a machine or tractor), the

number of kilometers (e.g. for a truck or car), the time since its acquisition, etc. For a SYSslot, the indicator should refer to the amount (which may be measured in weight or volume values, number of units, etc.).

Location

The last Syslen concept the user should know before using the software is the concept of LOCATION. In Syslen, the LOCATION refers to the physical location occupied by the SYS within the company.

The SYS occupies a space or a location that can take different interpretations when it comes to processing data. Thus, there are four LOCATION types to interpret the SYS status:

TEMPORARY: The SYScod or SYSslot is located in a SYScod at rest, storage status. The SYS can change its LOCATION. These locations disappear or change when a SYS is removed.

FUNCTIONAL: The SYScod or SYSslot is located in a SYScod and plays a role in it. The SYS can change its LOCATION, but the LOCATION never disappears.

SUBSTANTIAL: The SYSslot is a component of another SYSslot. The SYSslot is located within another SYSslot and it cannot change its LOCATION. The SUBSTANTIAL LOCATION refers to a component of the container SYSslot.

CONSUMABLE: The SYSslot will be consumed and will no longer be available for re-localization.



3

REGISTERING INVENTORY



Introduction to the Inventory in Syslen

For Syslen to be fully efficient, it is necessary for all SYS to be detailed when registering the inventory, from the general items to the specific ones. In other words, if the company has two plants and three warehouses, the optimum would be to load these five facilities, prior to loading the SYS available in

each of them.

In this chapter the user will find detailed instructions to register the inventory, but its organization and classification will be subject to the user's interpretation of his own organization.

SYS, LEN: Categories

Before generating the Categories to locate the LEN that will identify the SYS, it's necessary to understand that the organization of the LEN in different categories is carried out to simplify their search, because what really matters is having the possibility to identify the SYS.

As discussed, the SYS represent the resources available to the company. For example: there is a Toyota Hilux 3.0 TDI truck, 2010, license plate HWE123 in existence. The company identifies it as

Truck1. For the simplified reasoning of Syslen, Truck1 would be a SYS. Truck1 is identified as a Truck type resource. Truck would be the LEN. The Truck LEN considers that four properties should be defined that will identify the SYS: Brand, Model, Model Year and License Plate. The properties of Truck1 would make be Brand Toyota, Model Hilux 3.0 TDI, Model Year 2010, and License Plate HWE123. The location of the Truck LEN could be placed in a category called Transports, created by the user.



Generating Categories

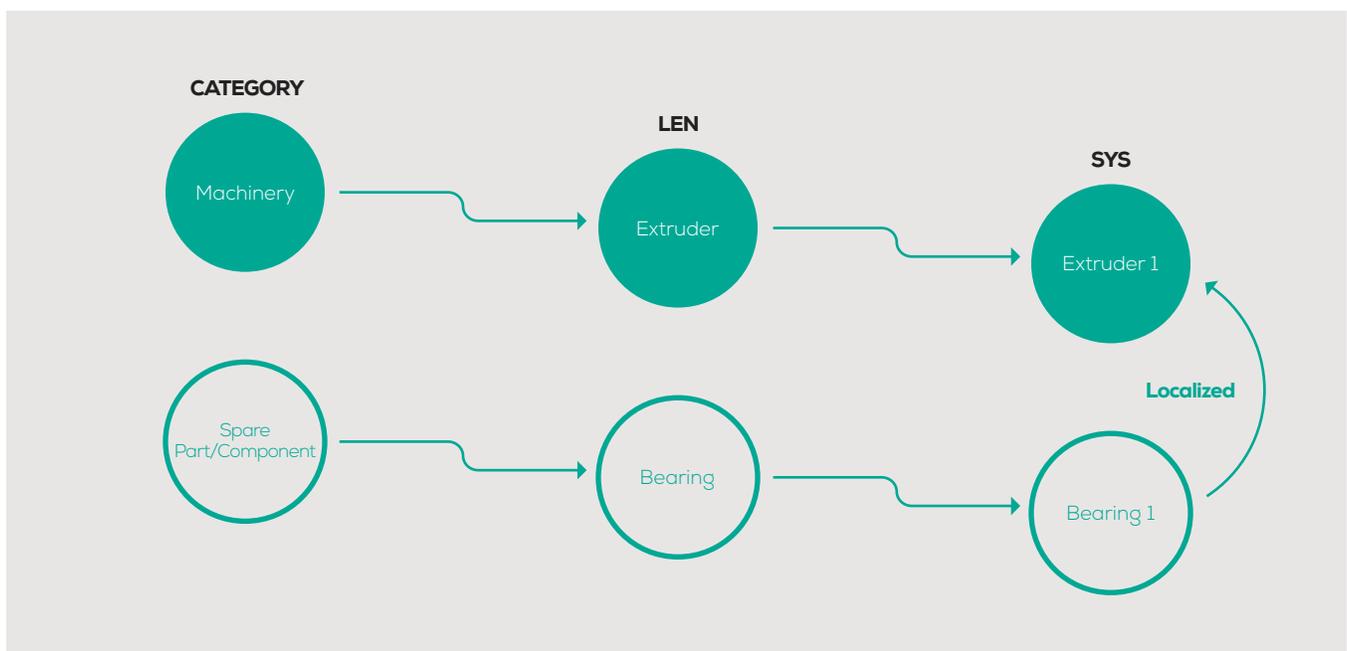
The first thing the user must do is generate the categories. To input a new category, the user must access the Categories tab, select the Add button and fill out the required fields.

A Category can contain one or more LEN and several subcategories simultaneously. The categories and subcategories allow the user to organize the LEN, but they don't condition or limit the location relations between the SYS. It is essential that, to identify the same type or set of SYS, only one LEN is registered. Therefore, the user mustn't register two LEN for the same type of SYS in different categories since it would undermine the efficient data analysis. Both the names of the categories as the ones of the LEN are up to the user, according to the organiza-

tion that the user estimates as the proper choice for his company.

Around this, a SYS of any LEN may be located in another SYS of any other LEN regardless of the category in which the LEN are organized.

Practical example (Figure 3.1) – The user can have the Machinery Category on one hand and the Spare part/component on the other. Within the Machinery category the user can load the extruder LEN and in the Spare part/component Category he can load the Bearing LEN. Of these LEN the user can register the the Extruder1 SYS (of the Extruder LEN) and then register the Bearing1 (of the Bearing LEN) that can be located on extruder1.





Generating a LEN

To add a LEN, the user must access the LEN tab, click the Add button and fill out the required fields. Note that if the category is selected in the tree to the left of the window, the system will pre-select that category to register the LEN.

The user must assign a code and a name to the LEN. The name helps the user to identify it and the code will be used by Syslen to generate the SYS ID

(SYS identifier). It is important to note that the SYS ID will consist of the LEN code followed by the corresponding register number of the SYS.

It should also be remembered that the LEN will be the unit used to analyze for the type of resource it identifies. The LEN will request the loading of the Fields and the LOCATIONS or COMPONENTS if necessary.

LEN Fields

The LEN fields are the units that require information when registering a SYS of such classification. The definition of LEN fields should focus on maximizing the availability and ease of access to the SYS information when the user requires it.

For instance, the user has a LEN called "DECANTER". The user can add the "Model" and "Serial Number" fields to it. When registering the SYS

"DECANTER" the user will have to load the Model and the Serial Number of DECANTER. This will greatly simplify future situations, such as when asking for a replacement for the machine where the supplier requests that specific data. In this scenario, the user will be able to quickly access this information to pass it to the supplier.



Locations / LEN compounds

Sylen includes a function that automatically registers all the SYS within another SYS when registering the latter. In some cases, its use wouldn't be justified but there are certain cases where this will prove to be highly useful. Inside the LEN's register window and in LOCATIONS, the LEN from all SYS have to be loaded, which will be in a FUNCTIONAL LOCATION of the container SYS that is being registered. In COMPOUNDS, the user will have the ability to preset the LEN of the SYS that will occupy a SUBS-

TANTIAL LOCATION in that SYS.

For example, the user registers the LENlot NUT306s. NUT359s is a fertilizer containing 8%N;2%P₂O₅;5%K₂O;3%S;1%OMg. When a new batch of this fertilizer is registered (generating a SYSlot NUT306s1), the LENlot NUT306 will generate the SYSlot of the compounds in the same proportion of reference, which will be localized substantially in NUT306s1.

Generating a SYS

To register a SYS, the user must access the "SYS" tab, select the LEN from the tree on the left side of the window, and click "Add". Then the user must fill out the required LEN fields to completely define the SYS being incorporated.

Keep in mind that each SYS that is registered must be assigned to a location, unless it is an exclusively localized SYS such as "INDUSTRIAL PLANT 1", for example.

The contained SYS are registered automatically, and the user must complete the LEN fields for each contained SYS (if the LEN demands it). These SYS will have the same subsequent treatment as any other SYS of the same kind (that is, the contained SYScod may change location while the Compounds can't).



SYS ID / Location ID

Each SYS will have two identification codes. One will correspond to its correlative LEN code (SYS ID) and the other will correspond to a code that refers to its present physical location (LOCATION ID).

SYS ID: **LENCODECORRELATIVENO**

LOCATION ID: Location identification will consist of an encoding according to the LOCATION ID of the SYS in which it is included. For example, the user has the SYS "TQ15" (tank 15). The tank 15 is the first tank to be placed in the SYS "WAR2" (Warehouse 2), while the Warehouse 2 is the first Warehouse to be built in the "P2" (Property 2). The LOCATION ID would be: TQ1-WAR1-P2. Translated into words, the ID would read "the Tank 1 of the Warehouse 1 of the Property 2."

To register a SYSy, the user will have to select the LOCATION where it will be located and the type of

LOCATION that it will occupy. For that, the user will have to select another previously generated SYSx. If it has no registered LOCATION, the user will have to generate a new LOCATION with a new Reference Name that can be input by keyboard. (The LOCATION ID will be automatically generated according to the process already described).

If the SYSx where a SYSy will be located already has locations, the new SYSy can occupy one of those preexisting locations, and the SYSz which was located at that location will have to change its LOCATION. In other words, a LOCATION may contain a single SYS, while the contained SYS may contain various locations.

The locations of a SYSx can be registered when registering/editing the SYSx or when trying to locate a SYSy in the SYSx and the necessary LOCATION isn't provided.