CYIENT

DRIVING WORLD-CLASS TELECOM ASSET MANAGEMENT WITH A ROBUST WAREHOUSE MANAGEMENT SYSTEM

Contents

Abstract

Successful telecommunication service providers operate with a clear asset management strategy that encompasses effective tracking, managing, and reporting of their fixed as well mobile assets. Lack of effective asset management capabilities can result in inefficient planning, delayed network construction, and revenue loss. A Warehouse Management System (WMS) developed on top of the GIS System, an ESRI ArcGIS Desktop, and Ericsson Network Engineer (ENE) application can help telecommunication companies streamline their day-to-day operations related to inventory warehousing activities. Through close monitoring, it enables Communication Service Providers (CSPs) to control and track inventory requirements, consumption, and order management. As the WMS is tightly integrated with the physical network inventory systems and its work order life cycle, it shows the real-time inventory status of the work order thus helps superior decision-making.

This paper introduces a WMS solution that CSPs can deploy to enhance asset management. It goes on to discuss the unique features of a WMS that drive informed decision-making and concludes, by explaining the benefits of WMS system in managing telecom assets.

Unlocking the power of inventory management to improve operational efficiency

The procurement, planning, and implementation teams at a majority of CSPs function in silos with each department maintaining its database and following diverse methodologies to track departmental activities and day-to-

day operations. This often leads to lack of visibility into the available inventory, shipment progress, and alternative planning options. This, in turn, significantly delays the network planning and implementation process.

In fact, according to a recent case study, 40% IT managers are of the opinion that telecom asset management needs to be improved and speeded up through superior network implementation processes. This makes it imperative for the CSPs to deploy robust Physical Network Inventory (PNI) systems to efficiently track, manage, and report on their assets and operations, including the warehouse system. This will help them consistently monitor, inspect, and maintain their assets from planning to build and deployment stages, thereby improving productivity and streamlining network engineering.

Enabling end-to-end control over inventory planning: Leveraging a robust WMS

Typically, CSPs have separate database systems to store procurement and GIS inventory data. A WMS solution can help CSPs address this challenge by integrating procurement data with the GIS inventory database. This will not only contribute to improving control over the work order flow in the PNI on the availability in WMS but also contribute to knowing about the indenting requirements and trends based on the inventory consumption. Through the inclusion of purchase indent life cycle, WMS can be securely integrated with enterprise database (see Fig. 1), resulting in easy alignment of WMS data with enterprise data.

Typically, every PNI system has an inbuilt work order life cycle, which can be easily

Enterprise Database

Warehouse management System (WMS)

- Indent Materialized
- Add Inventory
- Request Indent
- WMS
- Consume Inventory
- Reserve Inventory

Physical network Inventory (PNI)

- Release
- Planning
- Testing
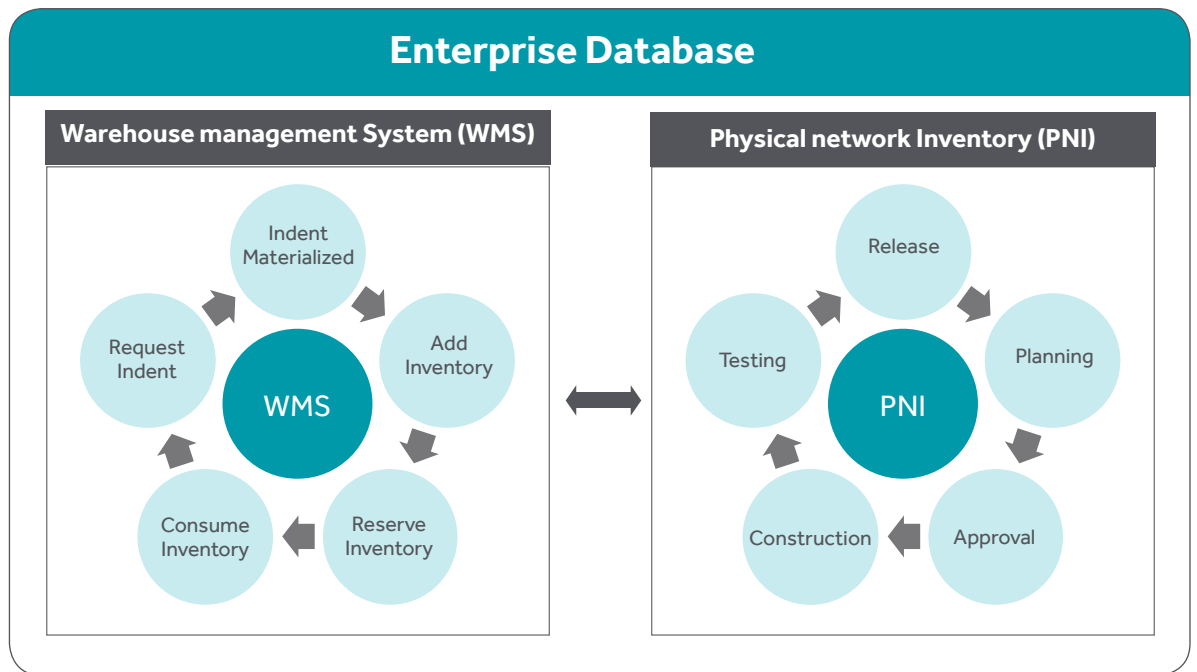- PNI
- Construction
- Approval

Fig. 1 | WMS integration with PNI

configured for the CSP's implementation life-cycle requirements such as planning, approval, release for construction, and construction completion. During the planning phase, the planner first analyzes the needs and plans the site location, structure, cable, and equipment inventories in the PNI system. During this stage, the WMS provides insights into the availability of inventory in the warehouse system and allows planners to reserve the required inventory in the WMS. If the required inventory is not available during the planning stage, the planner can change the plan with alternative inventory. This will ensure that the required inventory is available during the critical construction phase.

While transitioning from planning to construction, the WMS checks the final list of planned inventories and automatically reserves or releases the required inventory. Through the WMS, CSPs can raise a purchase request for the inventories that are not available in the WMS. This way, the WMS ensures that planner does not transition from planning to construction until the inventory is made available or indented, thereby providing complete control over planning until the construction phase begins.

In addition, the WMS enables users to configure the inventory threshold values. Using the threshold values, the WMS checks the availability of the inventory on a periodic basis. If the inventory falls below the threshold value, it automatically sends an alert or indent to the concerned parties. The WMS also raises an automatic indent in case the required inventory for the current job is available but is likely to fall below the threshold upon reservation. Also, the WMS also helps CSPs configure the minimum reorder quantity, driving superior planning.

Improved decision-making with better inventory control and monitoring

The role-based functionality of WMS such as user, manager, and administrator helps in differentiating the planner, approval authority, and warehouse administrator. The user fulfills the planning role and reserves the required inventory or raises the indent. Meanwhile, the manager allocates inventory to specific work orders, changes the reserved inventory for release to priority work orders. He can also generate the bill of materials report and configure minimum reorder quantity for an auto alert generation. The administrator can add additional records to
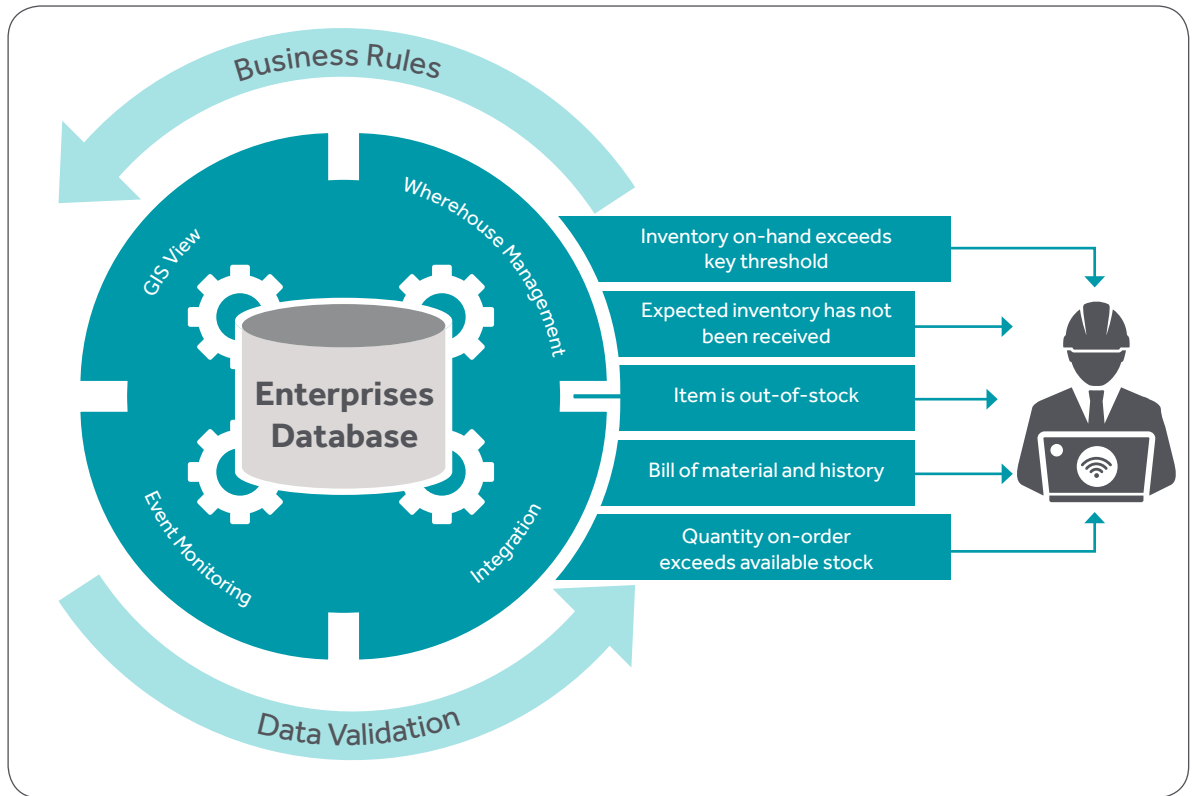
Fig. 2 | WMS solution features

increase the available inventory quantity or decrease it in the case of loss of inventory, error correction or inventory audit. The construction crew can also return unused inventory for restocking.

The WMS (see figure2) helps in making informed decisions and prioritizing the jobs or work orders by providing accurate and detailed inventory tracking information in real–time. It also helps in improving collaboration between internal departments and suppliers through automated communication of inventory requirements – based on planning and actual consumption. This, in turn, results in the timely availability of components and inventories. By configuring the bundling of components as one inventory in the WMS, CSPs can easily manage the interoperable communication between the inventory and warehouse systems. This enables component level monitoring and controlling. The WMS can also be equipped to configure unique rules to address the special consumption requirements for linear items such as one reel of cable.

In PNI, if the entire reel is not required, the WMS will consider only that percentage of the reel that is consumed or reserved. It prioritizes the remaining portion of the reel for a suitable new requirement. However, if the majority of the linear feature is consumed, it will consider it as the complete consumption of one reel based on the consumption rules.

With WMS, CSPs can create and store the historical information related to various BOM versions of a work order and store the information beyond the life of the work order. They can also generate BOM variance reports, and integrate purchase order and warehouse reports management with PNI. Through GIS data, it is easy to automatically update consumption details and configure alert generation on the minimum quantity available. Consumption reports based on user, time, and work order help in improving inventory visibility. Most importantly, the WMS solution can be configured to any PNI workflow life cycle.

Robust demand planning and minimized operational cost

WMS not only helps in process optimization but also improves supplier and customer relationships, thereby reducing operational expenses as well as planning, design, build, and roll out time. With increased transparency and visibility into their inventory, CSPs are better-positioned to tackle demand planning. The automatic inventory shortfall alerts help CSPs monitor and control the consumption of inventory. Also, the feature to raise and track the inventory indents helps have better control of the workflow, based on availability.

Bolstering the PNI system and enhancing competitiveness

WMS reinforces the existing PNI system functionality, enabling the planner to choose the required inventory based on the availability in store. It also provides the facility to raise the indent for planning inventory and to allocate the available stocks on priority requirements, thereby improving control over the work order implementation life cycle and speeding up the network implementation. By providing insight into inventory availability in store, the demand for the new requirements and real-time updates on purchase order updates WMS offers a holistic and accurate view of the system data helping CSPs to monitor and control the assets comprehensively.

About the Author

Mr. Guru Murthy Buddha has vast experience in design, development and implementation of ESRI, Ericsson and AutoCAD products in GIS, Utilities and Telecom domains. He is currently working as a Technical Consultant for Communication Solutions group, Cyient.

Guru holds a Bachelor of Technology degree in Mechanical Engineering from Jawaharlal Nehru Technological University, Hyderabad and certified Project Management Professional from Project Management Institute, USA.

About Cyient

Cyient (Estd: 1991, NSE: CYIENT) provides engineering, manufacturing, geospatial, network and operations management services to global industry leaders. We leverage the power of digital technology and advanced analytics capabilities, along with our domain knowledge and technical expertise, to help our clients solve complex business problems. As a Design-Build-Maintain partner that takes solution ownership across the value chain, we empower our clients to focus on their core, innovate, and stay ahead of the curve.

Relationships lie at the heart of how we work. We partner with organizations in ways that best suit their culture and requirements. With nearly 14,000 employees in 21 countries, we combine global delivery with proximity to our clients, functioning as their extended team. Our industry focus spans aerospace and defense, medical, telecommunications, rail transportation, semiconductor, utilities, industrial, energy and natural resources.

Follow news about the company at
www.twitter.com/cyient

Contact Us

NAM Headquarters
Cyient, Inc.
99 East River Drive
5th Floor
East Hartford CT 06108
USA

T: +1 860 528 5430
F: +1 860 528 5873

EMEA Headquarters
Cyient Europe Ltd.
High Holborn House
52-54 High Holborn
London WC1V 6RL
UK

T: +44 20 7404 0640
F: +44 20 7404 0664

APAC Headquarters
Cyient Limited
Level 1, 350 Collins Street
Melbourne, Victoria, 3000
Australia

T: +61 3 8605 4815
F: +61 3 8601 1180

Global Headquarters
Cyient Limited
Plot No. 11
Software Units Layout
Infocity, Madhapur
Hyderabad - 500081
India

T: +91 40 6764 1000
F: +91 40 2311 0352

cyient.com
connect@cyient.com

In partnership with ESRI India