SAP MM MODULE HELPS CQEP TO ACHIEVE LIFE-CYCLE MANAGEMENT OF METERING SYSTEM

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ABSTRACT

This article describes the first attempt of jointing the SAP ISU-CCS (Industry Solution Utility – Customer Caring System) module with MM module to achieve metering system’s life-cycle management in Mainland China. From the technical difficulty of the implementation of the project, implementation methods and benefits, the authors analyze how to use the integration of SAP MM and ISU modules to realize metering life-cycle management and also give analysis of implementation benefits.

Keywords: Life-cycle management, Stock turnover, Vendor evaluation, Request planning, Real-time interface, Logistics

GLOSSARY

MRP: A tool offered by SAP to estimate material request planning. By pre-setting MRP strategy and program, the system will create purchase request after running MRP.

INSTRUCTION

SAP, the world-wide known software company, had entered China for couples of years, and its ERP solution had been implemented among industries and areas. However, the use of SAP IS-U/CCS (Customer Care System) and SAP MM module to achieve metering life-cycle management, in China power industry, was the first attempt.

In October 2006, SAP ISU/CCS completed the full-implementation, which is the first case of implementing international packaged solution in utility industries’ marketing and customer service management in China. The implementation of the project made CQEP become domestic leader in advanced operating, high-tech applying and Hi-end user servicing.

In 2007, CQEP decided to implement a supply chain solution base on SAP platform. The goal is that improves the distribution capability and stock turnover in supply chain side, reduce current fund employment rate. Using the advantage of the seamless integration between SAP ISU and SAP MM, CQEP wanted to realize full life-cycle management of the metering equipments, and implement end to end process, from requirement management, RFQ, purchasing, inventory and distribution management, meter reading, billing and revenue, scrapping and recycle. By implementing and optimizing the process, CQEP can improve service quality, assets utilization, and to serve for anti-stealing power actions.

METERING EQUIPMENT MANAGEMENT MODEL

CQEP established CEMC (Chongqing Electricity Metrology Center) in 2004. After that, CQEP realized the central procurement, central inspection, central storage and the central distribution of metering equipment. CQEP used such a organization structure to manage the metering equipments as below:

Marketing branch is a functional department, which was responsible for the Power Supply Bureau, Metrology Centers’ marketing business.

CEMC was responsible for the purchasing, detecting, distributing of metering equipment, it was also responsible for the metering equipments’ stock management.

The 12 Power Supply Bureau belongs to CQEP was responsible for user need’s collection, assembly/disassembly of metering equipment and meter reading. Based on geography situation, each bureau set different architectures to meet their demands. Monthly Power Supply Bureau estimated the next month’s metering equipment demand based on the consumption of this month. After summarizing and
balancing the demands, CEMC purchased and detected the equipments, and then distributed them to every Bureau’s warehouse. After receiving the application, Front Desk Staff created maintenance order, according to which workers get equipment and then assemble it. The disassembled ones should be returned to stock, and scrapped by CEMC.

LIFE-CYCLE MANAGEMENT TECHNICAL ARCHITECTURE

1. Redefine the business process scope in system
The assembly/disassembly/change of metering equipment has been managed by CCS. So base on CCS’ architecture and platform and expand MM module to achieve metering management is the most economical and integrated method. CEMC also had a warehouse management system to manage the metering stock, so using the interface between WM and MM, we can achieve metering life-cycle management. Below is the life-cycle management flowchart

2. Interface Scheme
There was a high requirement of real-time between WM and MM. So we can’t use daily/monthly interface. CQEP used a web service transformation method offered by EAI. They designed 13 types of business documentation, all base on XML. The download processing was:
MM accomplished this mission by developing enhancement on material/purchasing document. The system generated a interface task when user saved the document. It assured MM and WM finish interface transfer in 5 second.

REVOlUTION TAKEN BY THE IMPLEMENTATION OF MM

1. Standardized metering materials , reducing the difficulty of management.
   After the implementation of MM, CQEP standardize the material, reduced some special ones, only remain general materials, and revised the material usage regulation. According those methods, CQEP formed business scope, reduce stock and difficulty of management.

2. Using CPFR theory , setting reasonable technical parameters to improve supply chain efficiencies.
   Before MM implementation, there was a time span as long as one and a half month s between Bureaus’ demand and the distribution of equipment. It caused both Bureaus and CEMC had lots of stock, substantially occupied the company’s liquidity. Based on SAP MM, CQEP used Collaborative Forecast And Replenishment (CFAR) Theory, set Vendor, CEMC and Bureau as Key Factor, forecasted the material demand and reordered the material based on safety stock. After taking this, CQEP shortened the lead time to 10 days, also improved demand accuracy.

3. Using SAP MRP to do the material purchase and to improve purchase efficiency.
   SAP MM offered MRP function, MRP used pre-set parameters such as safety stock, purchase lead time, demand, CEMC stock etc. to calculate re-order amount, the generation rule listed as below:

   \[ \text{Re-order amount} = \text{open order amount} + \text{stock} - \text{safety stock} - \text{open demand} \]

   Procurement Staff can run MRP any time and conducted procures procedure according to the result.

4. Realize the Synchronization of material amount and account by using MM auto-posting function.
   MM offered auto-posting function, we can use background configuration to assign a account to every stock movement. When user did stock movement, System automatically generated material document and accounting document. End user just needed to control the business process, and the system guaranteed the unity of logistic accounts and financial accounts.

   Supply chain’s efficiency could be impacted by vendor behavior, such as delay or poor quality. So It is very important to manage the vendors. Belongs to the managing structure of SAP, we set price, quality and delivery and service as the main factor, and set the availability punctuality and amount reliability as sub factor, set each of them smoothing factor.

   Amount reliability’s calculation method:
   \[ AR = \frac{\text{Good Received} - \text{Good Ordered}}{\text{Good Ordered}} \times 100 \]

   The role of smoothing factor is as follow:

   For instance, we set SF to 0.1, the former point was 80, and new is 20, so the point of this time is:
   \[ 80 \times 0.9 + 20 \times 0.1 = 74 \]

   We use this method to smooth vendor performance fluctuation and get a average vendor performance and material performance. We use this performance point to choose optimize vendor.

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<th>Total</th>
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<th>Qual</th>
<th>Del</th>
<th>Service</th>
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<table>
<thead>
<tr>
<th>Evaluation for material XY</th>
<th>Total</th>
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<td>98</td>
<td>70</td>
<td>97</td>
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</tbody>
</table>

BENEFITS

According to the implementation of MM module, CQEP achieved the life-cycle management of metering system; the system also gave a strong support to the company’s goal of lean management. The benefits mainly reflected in:

1. Effectively reduce stock quantity , improve stock turnover.
   By implementing the MM module, the metering stock reduced form 210,000 to 60,000.

2. Realize the identical of good , account and card.
   MM module offer the simulation of real business, by using background configuration, we can automatically generate finance document and post. This method guarantees the identical of good, account and card.
3. Offering CQEP the advanced managing thought and method.
During the implementation of MM module, we use the best practice of logistic management, such as CPFR mentioned before, obviously shorten the demand lead time, improve stock turnover.

4. The implementation of MM standardizes the management process.
MM conduct the concept of batch management and material management, give a detailed management of each metering equipment. The MM module also offers a role management function, by using this CQEP standardize its management process, improve the management level.

AUTHOR INTRODUCTION

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