Case Studies

Case Study - Reckoner for Construction

Ascomp Technologies

The construction industry, being a project-oriented industry has a complex set of business processes because of the following reasons:

- Specified time-period of the project.

- Large quantities and complex composition of materials.

- Need for efficient project planning and budgeting.

- Need for cost control so that actual cost does not exceed the budgeted cost.

- Proper scheduling of activities is of utmost importance, as sequence of activities should follow a particular path.

- There is a difference between processes from site to site.

- Need for free flow of information amongst concerned persons.

- Need for collaboration between various internal and external parties like architects, engineers, clients, suppliers, subcontractors, and contractors.

- Need for continuous monitoring of the construction project to avoid activities becoming uncontrollable.

- Need for proper control on work teams.

Now, let us take the case study of our Construction client. Prior to the implementation of Reckoner, the company faced various problems while compiling the process flows and their linkages. Some of the problems of the client and their recommendations by Ascomp are as follows:

1. **Unplanned Purchases**

    Unplanned purchases were a major problem area with the client. There was no formal Material requirement planning procedure. The indents were received from the site and the purchasing was done against it, regardless of whether enough budget and cash flows were available for its purchase. Also, most of the time no lead-time was provided by the person raising the indent, so sometimes material had to be bought at higher rates (in case of urgency). Majority of purchase requirements were sent to the purchase department only at the last minute and then constant reminders were sent along with the indent in the form of faxes, telephone calls and personalised messages etc., adding to cost of purchases and constant pressure.

2. **Non Execution of payment commitment**

    The purchase department and accounts department worked in complete isolation and therefore, couldn't work towards other departments' priorities. Account department struggled with managing proper cash flows and hence had to prioritise the payments, whereas purchase department needed to obtain the best services and terms from the vendors and had to ensure timely payments to the vendors.

3. **Follow Up Mainly Through Telephone**

    Another problem with the existing system was that all the follow up for the indent, PO, MRNs was done through telephone. Telephone, which should be a tool to be used for informal and general communication had become an inseparable part of the existing system. In most of the transactions taking place between HO and Site two or three phone calls were made for verification or any other reason. Also through phone no one could be held responsible for any type of misinformation.

4. **Untimely or No Exchange of Documents between sites and HO**

    Another issue was the untimely or non-existence of exchange of documents between the sites and HO. Most of the time purchase orders were raised from the HO and material was received at the site. Now for the follow up for that particular PO it was desirable that the copy of MRN should reach the HO in time. It was observed that the document either did not reach the HO or reached quite late. This lag had a wide implication as both follow up of the PO and bill clearing of the vendor was affected.

5. **Document exchange between sites and HO was incomplete:**

    Documents that arrived from the site were incomplete or incorrect. Indents that arrived from the site sometimes did not contain the proper specifications of the item to be purchased. Such lapse on the part of the indenter, initiated the process of indent follow up. This resulted in the loss of lead time. Indent follow up was done mainly through phone calls that resulted in non-specific and error-prone information. Phone calls also resulted in increased expenditure for communication.

6. **All Material receipts were directly treated as consumption**
   Material that were directly dumped at sites were treated as consumption. This was a wrong practice, as this would render the stock ledger incorrect at any moment of time. It was basically dumped at the site and a one-time requisition was raised for the consumption of the materials.

7. **Minimum Stock Levels for Items: -**
   Spare parts accounted for the majority of emergency purchases. Emergency purchases reflect poor planning. Also it requires immediate payment and high prices.

8. **Vendor Enlistment at the Start of New Site: -**
   Whenever a new site project started, the purchasing of a wide range of material was a problem. For each type of purchase the purchase department had to find out the probable vendors, which was always a time consuming task. This was also because a vendor who supplies at one site may not be willing to supply material at another site. Or even if he were willing, freight charges would make the purchase uneconomical.

9. **Client Bills submission at Head Office**
   The client bills from site were either received very late or not received at all. It was only the Certified bills that were received and that too after quite a few months. Hence the, as of month, net profitability at site could never be ascertained. Also a consolidated voucher for the deductions made on the 12 bills was entered at the year-end.

10. **Inter-site Reconciliation**
    In case of transfer of material from one site to another no vouchers were entered either at HO or at site for the amount of material transferred. Hence material consumption at a particular site could never be known accurately.

11. **Closing of Purchase order**
    At the time of Bill Clearing in the Accounts Department, no information regarding the processed as well as expected bills was available. The accountant cleared the bill oblivious of these details. Also the changes made in the PO on telephone were never recorded.

12. **Identification of fund based JVs for site.**
    If the PO (Purchase Order) had been prepared at the site the party was debited at the site itself. In case the payment was made from HO the inter-site account was debited. Also when funds were sanctioned to the site this account got affected. Both these entries were made through JV (Journal Vouchers). It became difficult to distinguish fund vouchers from others.

Solutions

1. **Recommendation: -**
Raw Material accounted for 80% of the total inventory value. To start with, Ascomp suggested that monthly planning of Raw Material should be done. However in the long run, it should be extended to all the class A and class B items. A specific process has been initiated in this report, after consultation with the end users. Initially, in the first phase, planning needed to be done manually based on the Project Schedule and the allocated budget for each month. The same plan should be handed over to the purchase department in the form of indent with proper lead-time and delivery schedule, so that timely procurement of material at reasonable prices can be done. For this purpose, it was suggested that the sites should send this indent to the HO by the 25th of every month for next month purchases.

For all the other items, which are not covered against monthly planning, specific thoughts must be given. It was recommended to set up certain norms for planned v/s unplanned purchase items based upon the item values, percentage of planned v/s unplanned purchases, percentage of total budget allocation towards unplanned purchases. Here, planned purchase means that proper lead-time was provided for its purchase. In the second phase, when Reckoner was implemented the delivery schedule came to be accessed by the HO through the option of reports in the solution. Further by going through the indent browser option in Reckoner, Construction client's HO was able to plan material purchase well in time and at economical rates.

2. **Recommendation: -**
Ascomp recommended a two-fold solution. Firstly, the accounts department was recommended to look at its cash flow availability right at the time of making the commitments itself. This could be done by preparing the budgets for each month for various types of purchases and providing that information to the purchase department, who may in turn, prioritise their purchases as per the allocated budgets. If required, accounts department should also get a weekly report on released purchase orders so that they may send proper directions to purchase departments on a weekly basis. Reckoner provided for a complete integration of accounts and purchase department. As and when any purchase took place the entry in the system automatically generated a purchase voucher leading to improved communication.

3. **Recommendation: -**
Reckoner provided an online follow up for indent, PO and MRNs by automatic creation of reference numbers for these documents and linking these documents through such reference numbers.

4. **Recommendation: -**
Sites would enter their documents through eReckoner. Purchase orders raised by HO against the sites' indents were visible to the site engineers. Material receipt would be entered against the PO online at the site. The MRN would be automatically available to the HO to facilitate the bill passing as well as to be able to see the pending order quantity of each order.

5. Recommendation: -

Ascomp recommended entering indents directly on to eReckoner. This also helped in Budgeting and being able to link indents against each site. He would not be required to inform the HO about his indent. If the item did not exist or the specifications of an existing item did not match, then the engineer was required to inform the HO through verbal or written means so that the item could be entered in Reckoner item Master.

6. Recommendation: -

Posting of consumption was recommended to be on a daily basis, and based only on actual consumption. A method was devised to find the actual consumption. It was difficult to find the exact consumption of the raw material, but some close or approximate figures were figured out which became more and more accurate once the system was completely implemented. Material issue then was being automatically generated based on Project Order Confirmation and the quantity was calculated on the basis of a predefined BOQ breakdown of resources required for each activity. Entry of Project Order Confirmation was made available through eReckoner for the sites.

7. Recommendation: -

It was recommended that a minimum stock level should be maintained for each and every material. This helped in proper planning and timely purchase of the material. Though the actual requirement of the spare parts was obtained when the Plant & maintenance module was implemented, but initially it was advised to maintain the minimum stock level. Subsequently Reckoner kept all the details about the stock status of spare parts that facilitated their timely purchase.

8. Recommendation: -

It was recommended that before the start of a new site probable vendors of some major items should be enlisted. This exercise when carried out helped reduce time consumption and eventually led to a better procurement in a course of time. Reckoner helped the client by keeping a full track record of its vendors.

9. Recommendation: -

On line project activity confirmation and measurement book entry allowed both client and the HO to keep track of the progress without having to wait for any confirmation from the site.

10. Recommendation: -

The transfer of material from one site to another should be as per HO decision (which was not followed at that time). On transfer of material, vouchers should be entered at HO. One of them for material transfer and the other one for respective inter-site accounts debit/credit. Reckoner provided complete integration and communication between the HO and the site.

11. Recommendation: -

There should be a process followed for closure of purchase order. If there are no pending quantities or items against a PO, the purchase department was asked to close the particular PO. Also as of now a letter is sent to accounts Department in case of change in PO. Instead of the letter the PO can be revised in Reckoner.

12. Recommendation: -

Since Reckoner supports definable voucher types, the organisation was asked to create a separate voucher type for Funds Transfer. Entry for funds disbursed to site should be made through this voucher. Whenever funds were transferred to a site, details would be available online even before the amount was actually received by the site. Details of expenditure by the site would also be entered online.

The implementation of Reckoner in Construction client was carried out in 3 phases:

Phase 1 - Financials and Materials
Phase 2 - Tendering & Estimation And HRM
Phase 3 - Project Planning & Monitoring, Equipment   Maintenance and Gap Filling

With the implementation of Reckoner and eReckoner Ascomp Technologies helped the organisation bring the following changes in its business process through the implementation of Reckoner package:

- Comparison of actual and estimated cost on a monthly basis with the help of Reckoner's reports
- Definition of Responsibility Centres
- Two types of plans were introduced - (1) Master Construction Plan : (to be revised quarterly), (2) Project Plan (to be revised monthly - a rolling plan)
- Projection of future estimates
- Monthly status reports
- Daily Progress Reports

NOTE:
These are recommendations given to a specific client. Different organisations would have different processes even within the same industry. Due to the availability of eReckoner, the client was able to connect remote sites to the main server thereby controlling the main locations of any construction company (the construction sites). Without the availability of an integrated web solution, it could be difficult to get the degree of integration required for effective planning and control for a construction company particularly in the area of Job confirmation and material issue. Issues related to Tendering and Estimation, equipment maintenance, BOQ item breakdown have not been mentioned in this case study although these were part of the project

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