

Significance of E - Procurement in the Changing Business Scenario: A Case Study of Kerala Feeds Ltd

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Abstract

E-procurement system in many forms and modes are being used by business organizations in their supply chain nowadays. This is said to have enhanced their competitiveness in the highly challenging market place. Kerala Feeds Ltd. (KFL) is a Govt. of Kerala undertaking in the livestock feed business with multi-locale manufacturing facilities and have a turnover of Rs.500 crores. E-procurement system was implemented and being used by KFL for more than last 5 years. This case study on e-procurement network at KFL reviews whether the system is successful in terms of its responsiveness and effectiveness. The study reveals that the system has played a significant role in the supply chain management domain of KFL by enhancing the vendor base, affirming greater transparency, speedy procedure handling, ensuring cost effective purchases and by increasing supplier satisfaction. This case also reveals that the e-procurement is not a one sided B2B activity. Magnitude of relevance of e-procurement management is very crucial in today's highly challenging and competitive business environment as it make sure better control and ensures efficiency. Such types of electronic system, in any form or with any module can be used by the business entities based on each industry type for enhancing its value chain.

Keywords: E-procurement; Supply Chain Management; E-Tendering; E-Reverse Auction; Kerala Feeds Ltd.

Introduction

Now we are in an era of Industry 4.0 lead by cyber-physical systems, internet of things and networks. Everything has gone digital. At the same time many industries/organizations are still in Industry 2.0 level dealing with conventional mass production and assembly lines. Even usage of computers, automation and electronics which all are the characteristic of Industry 3.0 is still a nightmare for many, at least in Indian context. Apt revolution in the procedures and practices is need of the hour. Procurement is one such activity which requires changes as time suggests. As per the industrial standards, more than 60% of the total cost incurred by manufacturing industry is contributed by cost of raw materials. Here lies the relevance of improvements in the procurement system.

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SCM and Procurement

Supply Chain Management (SCM) is a set of approaches utilized too efficiently to integrate supplier, manufacturer, warehouses and stores so that goods are produced and distributed at right quantities, to the right location and at the right time, in order to minimize system under costs while satisfying the service level requirements. The objective of every supply chain should be to maximize the overall value generated. The value (also known as supply chain surplus) a supply chain generates is the difference between what the value of the final product is to the customer and the costs the supply chain incurs in filling the customer's request.

The act of obtaining or buying goods and services is known as procurement. The process includes preparation and processing of a demand as well as the end receipt and approval of payment. E-procurement is a procurement system through electronic/internet mode which include indent management, e-data exchange, e-tendering, e-auctioning, vendor management and order integration. E-procurement system in many forms and modes are being used by business organizations in their supply chain nowadays. This is said to

have enhanced their competitiveness in the highly challenging market place.

Changing Business Scenario

During the course of this decade India has emerged as a major growing economy thanks to many reasons. Many multinationals had already set-up their manufacturing and operational facilities in India. At the same time, some of the Indian business houses emerged as multinationals by tapping the inherent resources and by acquiring overseas firms. In the other side usage of computers, internet and other digital platforms has made the business domain more vibrant. Now 'survival of the fittest' slogan is ruling the world once again. The business organisation shall have enough competitiveness to satisfy its customers in terms of price, quality and service without which they cannot succeed.

As manufacturing entities strive to focus on core competencies and become more flexible, they have reduced their ownership of raw materials sources and distribution channels. These functions are increasingly being outsourced to other firms that can perform the activities better or more cost effectively. The effect has been to increase the number of companies involved in satisfying consumer demand, while reducing management control of daily logistics operations. Less control over the raw materials and more supply chain partners led to the creation of supply chain management concepts and e-procurement system in manufacturing industries.

The Organisation- Kerala Feeds Ltd.

Kerala Feeds Ltd. (KFL) is a Govt. of Kerala undertaking in the livestock feed business with multi-locale manufacturing facilities and have a turnover of Rs.500 crores. The Company has started its operations in the year 1999.

Manufacturing facilities of KFL are as given below:

1. Cattle Feed Manufacturing Plant, Kallettumkara, Thrissur Dist.
2. Cattle Feed Manufacturing Plant, Karunagappilly, Kollam Dist.
3. Cattle Feed Manufacturing Plant, Thiruvangoor, Kozhikode Dist.
4. Cattle Feed Manufacturing Plant, Thodupuzha, Idukki Dist. (under construction)
5. Mineral Mixture Plant, Athavanadu, Malappuram Dist.

6. Densified Fodder Block Plant, Muthalamada, Palakkad Dist.

The Company manufacture more than 1000MT of feed and feed supplements per day from these units. Major Products manufactured and marketed by KFL is as follows:

- KF Elite (cattle feed)
- KF Rich (cattle feed)
- KF Midukki (cattle feed)
- SLBP Feed (cattle feed)
- KF Malabari Premium (goat feed)
- Kerabbit (rabbit feed)
- Keramin Special (feed supplement)
- Keramin Organic (feed supplement)
- TMR Block (fodder block)

The entire manufacturing process is automated and PLC controlled. Most of the major equipments are imported from Italy, Netherlands and Germany and the technology used is being adapted from Netherlands.

Procurement System at KFL

Following are the major categories of material purchased and used by KFL.

- Raw materials
- Packing Materials
- Engineering items which include spares, consumables and capital goods
- Miscellaneous items such as administrative, welfare and promotional items

More than 80% of total cost on procurement goes to raw materials. For the study purpose, hence, this category is being chosen.

Most of the raw material required by the cattle feed industry are agri-commodities or processed commodity byproducts. Rice bran (raw and de oiled), grains (maize, jowar, wheat etc.), de oiled cakes (of coconut, ground nut, sunflower, cotton seed, rapeseed, soya etc.), molasses, minerals and vitamins are the major raw materials used in the process.

The major steps involved in the raw material procurement system are

- Vendor sourcing
- Vendor pre-evaluation
- Requirement planning
- Order placement

- Order management
- Post-receipt formalities
- Re-evaluation
- Feedback assessment

Pre-electronic Period Procurement

It is mandatory for all the Government entities to purchase the material adhering to CVC (Central Vigilance Commission) guidelines and Stores Purchase Rules. According to the same closed tenders are supposed to call for raw material procurement. As most of the raw materials are agri-commodities or their byproduct, these are subjected to frequent rate fluctuation. Hence usual tendering procedure is not at all viable in this case. In this ground Govt. had given a special sanction to KFL for need based purchase without tender formalities.

KFL sources vendors in different modes from those based on information from media, journal or websites to that of representatives' visits. Such sourced vendors are evaluated based on their credibility (by seeking information from their other clients), vendor plant visits and by analyzing the samples provided by these vendors.

The raw material requirement planning is done after considering feed market requirement, stock position and on order quantity jointly by Materials Dept., Purchase Dept. and Animal Nutrition Dept. It is a committee chaired by Managing Director and convened by Purchase Head having various dept. heads as members is taking purchase decisions after evaluating the offers received and by considering the market trends. This Committee used to sit at least twice or thrice in a month.

As the rates may be valid for a day or two, the decision on offers received has to be taken on the same day itself. During the pre-electronic period, the company used to intimate the offer request by fax to all the enlisted vendors and the vendors are instructed to quote the rates between a particular time periods with a span of 3-4 hrs. by fax. To ensure transparency, the fax machine will be kept in a separate locked room till the time ends.

For purchase order and inventory management, a software was there. Post receipt formalities such as in-pass generation, truck weighment and goods receipt note preparation were also done through this software. Drawback of this system was non-integration of various modules. Re-evaluation comprising of vendor rating and grading was used to done manually. Same was the case of feedback analysis by sending questionnaire to vendors.

E-Procurement System at KFL

E-procurement system was implemented and being used by KFL for more than last 5 years. Following software solutions are the backbone of this system.

1. ETRAS (E-Tendering and Reverse Auction System)
2. Microsoft Navision
3. Web based Vendor Interface Solution

Other than vendor sourcing and pre-evaluation, all other activities related to procurement are now being executed through these e-procurement systems.

1. ETRAS

E-Tendering and Reverse Auction System used by KFL is a custom made solution by Karnataka State Electronic Development Corporation (KEONICS), Bangalore. This is being in use since 2012. All the registered vendors are intimated by email and through sms alerts whenever the offer requests are posted in the portal. The vendors can enter the tendering platform using their login id and password and can bid the offers. System automatically assesses the lowest quote against each raw material for each unit and this rate is taken as base rate and will undergo auction procedure in the next stage.

As KFL is looking forward for lowest rates, the auction has to be conducted for decreasing value, and hence is known as reverse auction. A decrement value of Rs.10/- is assigned normally and the vendors can provide their auction offers accordingly. There is no provision for KFL or vendors to see the bidders / auctioneers during the entire bidding / auctioning process, they can see only the rates. This ensures maximum transparency to the system.

Auction reports are generated against each raw material for each unit separately, which will have the details of lowest bidder, rate comparison and auction history.

2. Microsoft Navision

Navision is an ERP solution from Microsoft and was implemented in the financial year 2011-2012 with adequate customisation. It integrates entire procurement, inventory, marketing and finance activities spread across various units through relevant modules. Though initial migration issues were there, now the system is functioning well.

Order placement, follow-ups, material receipt, weighment, goods receipt note generation, quality cuts and payments are done using this ERP solution.

Vendor rating and grading method is being adopted for re-evaluation of vendors and the system automatically assess the same based on the data available against each purchase order. Vendor rating is done based on four parameters, viz, quality (60% weightage), quantity (20% weightage), delivery (20% weightage) and service (10% weightage). The formula $VR = QLR + QTR + DLR + SVR$ is applied here.

3. Web based Vendor Interface

There is a provision in the website to provide vendor feed backs, which will be evaluated regularly. In addition to that after the end of each 6 months, an online questionnaire will be made available for vendors. They can provide their ratings against each factor in a 5 point scale. This will be tabulated and supplier satisfaction index (SSI) against each vendor and each factor will be listed out using interface solution.

The Study & Findings

This case study on e-procurement network at KFL reviews whether the system is successful in terms of its responsiveness and effectiveness. For the study purpose 5 year data during the financial years 2013-14 to 2017-18 were taken. Various records in the Purchase Dept. were referred. This study was conducted based on following parameters

- Rate
- Manpower
- Cycle time
- Transparency
- Vendor satisfaction

1. Rate

As frequent rate fluctuation is applicable on raw materials, one cannot compare rates during pre and

Raw Material	Initial Tendered Rate (per MT)	Auctioned Rate (per MT)	Difference (per MT)
De Oiled Rice Bran	13,614	13,402	212
Raw Rice Bran	19,875	19,702	173
Maize	14,900	14,471	429
De Oiled Coconut Cake	13,810	13,505	305
De Oiled Cotton Seed Ext.	21,555	21,509	46
De Oiled Rape Seed Ext	18,010	17,998	12
De Oiled Groundnut Ext.	36,337	36,312	25
Soyabean Meal	43,200	43,120	80

poste-procurement system implementation periods. At the same it can be easy to find out the advantage of reverse auction in comparison with tendered rates. Weighted average of this data calculated on the past five years is as depicted below:

The above figures indicate that there is substantial reduction in rates after the implementation of new system, especially e-reverse auction

2. Manpower

As the Microsoft Navision is a totally integrated ERP solution, it has avoided the duplication of several works. As a result of this KFL is still relying on same strength of manpower related to procurement activities in the managerial and clerical cadre even after three new units has become operational.

3. Cycle Time

A detailed discussion with staff reveals that the cycle time was too long during yester years for order placement, follow-up, payment processing etc. In comparison to that the current system require much lesser cycle time, even below half during the past.

4. Transparency

During all these years the number of registered vendors has shown a trend of sharp increase. Other than the initial years, during the pre-electronic procurement period the number of registered vendors almost remained stagnant or it has shown a very small raise. Also the number of dropouts is very low during these 5 years. This is an indication of higher level of belief on the transparency of the system among the suppliers.

	FY 2012-13	FY 2017-18
Number of Active Suppliers	71	152
Number of dropouts during prior 5 years	12	3

5. Vendor Satisfaction

Through the web interface, the response against the online questionnaire is overwhelming. During 2012-13, only 32% of the vendors have responded against the questionnaire send by post. This has increased to 92% in 2017-18. The Company has reported losses during few years under the review period and this has affected timely payments. Other than this factor, against almost all other factors, supplier response is very positive.

	FY 2012-13	FY 2017-18
Percentage of respondents	32%	92%
Supplier Satisfaction Index (excluding 'payment' factor)	48.3	87

Advantages of e-Procurement System

The above study reveals that KFL has got enough benefit in purchase as well as in total organizational perspective, after the implementation of e-procurement system.

- Raw-material costs reduced substantially as a result of introduction of e-auction. The data shows that company has saved Rs.2-3 crores per year in this way only.
- The vendor base has increased significantly. This has increased the competition among the vendors and in turn resulted in attractive rate for raw materials.
- Increase in number of vendors helped KFL to ensure uninterrupted supply of materials even after starting the operations in 2-3 new manufacturing facilities during these years.
- Transparency of procurement system has increased. This has boosted confidence and belief among vendors.
- Cycle time of various purchase related activities were reduced drastically. This in turn had made the system faster and its reflections are there in all spheres.
- Increased level of vendor satisfaction is another outcome.
- Several man hours were saved and requirement of additional manpower is curtailed.
- Avoided duplication of several works and

thus reduced overall system cost.

- All the above factors provided a competitive edge to KFL over others.
- Value imparting to customers is also increased.

The drawback of the system being prevailed at KFL is they are using three modes of software systems to cater various purposes. These are not integrated or in other sense all the activities are not done on a single software platform. But this has not affected much when the overall output is considered.

Conclusion

This case study reveals that e-procurement system has a significant impact on the entire business process. Being a Government Undertaking, KFL has its own limitations; still it has implemented and managed an e-procurement system very successfully. This indicates that any organisation, whether small or big across various industrial sectors can implement similar system. The cost involved in implementing such a system will be very negligible when compared to its return on investment. This study also showcases the point that it is not only in the procurement domain, but also in any domain, electronic/digital system can be implemented successfully if the organisation really have the thrive for that and the result will be enormous.

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