

# Ensuring Food Security through transforming Targeted Public Distribution System into demand driven system by re-engineering the experiences at the moment of truth

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**Abstract**— The paper describes an experimental model for demand driven operation of PDS in Indian scenario. The moment of truth will be epicenter for supply chain management and thus invites dynamism in current modus-operandi which otherwise is very rigid and based on socio-political scenario of 19th century British era. The paper highlights the common problems faced by beneficiary while lifting of food grains and suggest ways for mitigating those challenges.

**Index Terms**— PDS, Public Distribution, Civil Supplies, Food Security, Supply Chain Management, SCM, BPR, Business Process Reengineering

## 1 INTRODUCTION

As per World Food Programme, strong economic growth continues in India, resulting in a substantial reduction in poverty; but food and nutrition insecurity remain high. India is home to 40 percent of the world's undernourished children and prevalence of vitamin and mineral deficiencies is among the highest in the world - yet India has some of the world's largest food-based welfare schemes<sup>1</sup>. Targeted Public Distribution System (TPDS) is one such programme essential commodities are made available to the poor, including food at subsidized prices; it operates through over 5 lacs fair-price shops<sup>2</sup>, benefiting over 200 million households through a ration card system. However, the programme, for mainly being a supply driven is plagued with multiple operational challenges resulting into huge diversion and leakage of food grain making poor people, the end sufferer. The envisaged solution attempts to provide a solution towards transforming the programme into demand driven rather than supply driven and thus, making a path for applying all demand driven supply chain management good practices.

## 2 SOLUTION ENVISAGED

### 2.1 Present Challenges

Under TPDS programme, the State Department of Food and Civil Supplies generate allocation order per FPS based on allocation of food grain from central government and scheme wise number of ration card tagged to each FPS. Also closing balance is checked for the previous period while allocating food grain for the next period. The period may be weekly, bi-weekly or monthly. Few States add few more welfare schemes and increase the allocation that may or may not be accepted by center resulting into adhocism in distribution of food grains

pertaining to those schemes. The fair price shop dealers deposit money against the allotment given and get its supply for further distribution to tagged beneficiaries.

Thus, the overall PDS system depends on pre-calculated supply of benefits rather than variable requirement of beneficiaries. This leads to scenarios where more often than not the beneficiaries are told that the stock is not available or delayed and even it is made to believe that adulterated stock has only been delivered. Since the poor people have limited access to right information, they are simply convinced with what has been told thus enabling all ways for food grain leakage and diversion. This situation has already received prime focus and being dealt by government at various levels. Alternatively, if within the limits of supply, some kind of demand driven mechanism can be established, leakage and diversion can be significantly checked through active participation of beneficiary in the whole process.

### 2.2 Solution Description

To start with, demand in terms of flexibility for lifting convenience can greatly help beneficiary in judicious use of time and money which is significant benefit in itself. One has to lose a day's wage because of fixed timing of ration shop or has to borrow money at higher interest just because lifting of full entitlement to be done within a cut-off date. This situation is continuing year after year. Few states also suspend ration cards if lifting is not done for consecutive two weeks and that make the situation even grim. If these systemic deficiencies can be eliminated, it will result into much higher savings leading towards self-sustainability.

The solution envisaged looks into the current food grain distribution model and tries to bring in flexibility centered towards beneficiary's need and convenience. The solution starts with maintenance of buffer stock at all Fair Price Shops from the beginning of the period. The buffer stock will be given in advance on the basis of utilization in last period. The benefi-

<sup>1</sup> WFP/Executive Board Second Regular Session/India 2008-12

<sup>2</sup> Annual Plan Report of Ministry of Food and Public Distribution, 2012-13

ciary can any time come to any shop and lift the entitlement either fully or partially. This arrangement may however lead to a situation where the tagged beneficiary may not get the full entitlement because of lifting by non-tagged beneficiary. One way to avoid non-availability is by maintaining safety stock. However, this can't address sudden surge of demand and further, there will always stock surplus in some shops and deficit in others. Safety stock is also against subsidy towards targeted beneficiaries and therefore can't be revolved for longer period. Thus have limitation.

On the other hand, if the requisition for lifting from a fair price shop can be assessed in advance and accordingly allocation can be made, we may tackle the requirement with ease. The envisaged solution records the requisition by beneficiary for lifting food grains into the system with likely date of lifting, desired fair price shop, and commodity wise quantity. The system thereafter verifies whether stock will be available with the shop selected during the time desired otherwise provides alternative choice of time and/or nearest fair price shop that will have stock. On the basis of confirmation from beneficiaries, the system evaluates and forecast stock position to be maintained by Dealers and accordingly, the supply side components need to dynamically readjust.

With this change, however the dealers as per the current system always need to be ready for payment to be made towards changing allotment of food grains based on beneficiary's requisition. However this will bring tough time for dealers and further decrease the viability of their business model. One way, to avoid this challenge is by making dealers free from hassle of purchasing stock. They will only enjoy commission on deliver of stock to intended beneficiary. This can be achieved through making the payment cycle starting with beneficiary paying Department against the requisition. Based on requisition received over the time, department releases fund for purchasing stock from FCI and thereafter proceed with stock movement for replenishing stock deficit at various FPS in demand.

This solution however demands constant flow of information among various process actors relating to stock update, demand, stock movement forecast, stock buffering, etc. This can be achieved through massive automation at all points of stock movement and storage. In addition, introduction of UID authentication at the point of requisition and sale will further make the system foolproof against bogus entries.

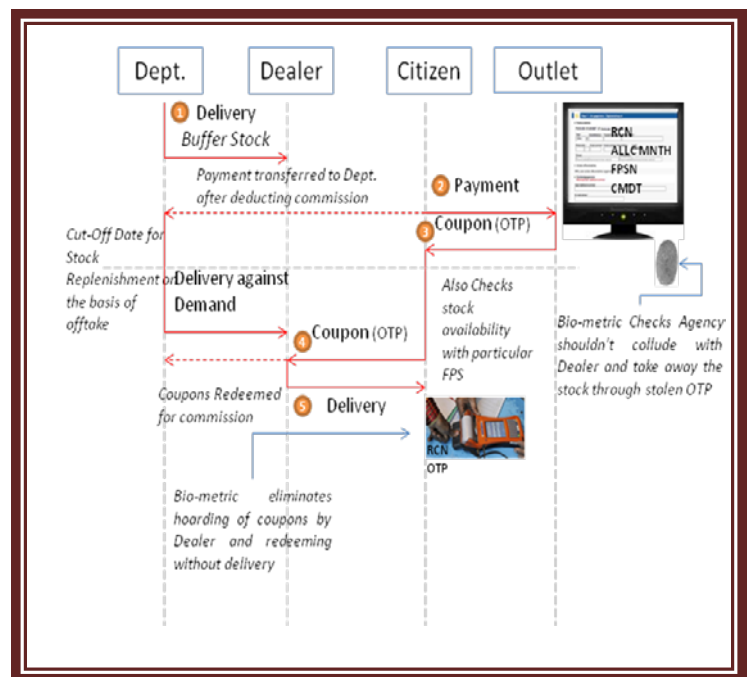
### 2.3 Figures

The overall solution is depicted in the following figure:  
The process flow is as follows:

Step 1- Department delivers commodity wise stock to FPS in advance based on allotment against tagged beneficiaries. *Here, Department may opt to keep security deposit from dealer against stock-in-hand.*

Step 2- Beneficiary makes payment at any registered outlet based on requisition for commodity wise stock to be lifted from selected FPS

Step 3- Based on payment made by beneficiary, amount will



be transferred to Department for purchase of food grains from Food Corporation of India (FCI). Some percentage will be however blocked for payment to FPS dealer wherefrom beneficiary will lift the stock.

Step 4- Once the coupon is the submitted to FPS dealer by beneficiary against lifting of stock, the same will be redeemed by the dealer for the commission.

## 7 END SECTIONS

### 7.1 Conclusion

The advantage from the proposed solution is manifold. With UID enablement at moment of truth, the bogus entries in the system can be completely eliminated. Further, the solution will transform the PDS to demand based system from existing supply based system and thus giving a new orientation for applying modern industrial strategies of supply chain management. This will translate to anytime anywhere food availability for the poor ensuring food security. The win-win condition will also bring relief to FPS dealer for not having to pay any amount towards stock purchase.

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The views expressed in this paper are that of mine and M/S Wipro Limited does not subscribe to the substance, veracity or truthfulness of the said opinion.