

# Digital Ecosystem in Social Security Pensions for Direct Benefit Transfer

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## Abstract

**Objective:** Digital ecosystem in social security is an excellent example which can avoid many problems like wastage of public fund, corruption and role of middlemen who restricts the beneficiaries from getting benefits in time. **Methods/Statistical Analysis:** Ecosystem in Social Security is the framework established between citizens and decision-makers, by tracking, organizing for participatory policy design or conducting surveys on policy impact strengthen service delivery, database creation and decision support system to the poor across the state and help in bringing about effective and transparent administration and mobile based governance. This contains set of parameters related to direct benefit transfer to deliver e-Services to the social security beneficiaries and to transfer benefits to their bank accounts. **Findings:** Methodology analysis and adaptively assessment of this framework has been conducted to evaluate the service adaptively of the system and compare the current methodology with other existing methods. This methodology focuses to spread the system all over the government departments which are directly or indirectly concerned with direct benefit transfer. The proposed system supports all these schemes and programs for disbursement of funds to the citizens/beneficiary on time to their bank account. Stakeholder analysis has been done to identify the possible stakeholders and to examine various characteristics of the stakeholders and their roles and responsibilities, partnership and possibilities. This study analyses the stakeholders responsibilities towards the system and their position toward the system, their adaptively towards the system and their interest in adopting the system. The Electronic Benefit Transfer system will be transformed to accommodate newer technologies and shall be further customized in accordance with feedback. NPCI has introduced advanced payment service such as Interbank Mobile Payment Service (IMPS) which uses mobile devices to transfer fund to other bank accounts in real time. **Application/Improvements:** To empower citizen to use Aadhaar as identity to access respective Aadhaar enabled bank account and perform basic banking transactions like balance enquiry, Cash deposit, cash withdrawal, remittances that are intra-bank or interbank in nature, through a Business Correspondent.

**Keywords:** Direct Fund Transfer, EBT, E-Governance, E-Services, Framework, Mobile Governance, Social Security Scheme

## 1. Introduction

In spite of that huge amount is being spent on subsidy and substantial manpower has been deployed in the field formations for distributing subsidy to the people are still struggling for their needs on day-to-day basis. Major shortcomings of traditional approach of distributing benefits have been non-scientific framework for the

identifying the targeted scheme beneficiary, lack of proper and effective method of benefit distribution, lack of interest in implementation of scheme of concerned authority, delay in delivery of services in rural areas, non-availability of banking services, reaching to the targeted beneficiaries not at their doorsteps and lack of knowledge and awareness among rural masses about the various benefits of direct benefit transfer. The Direct

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Benefit Transfer (DBT) based methodology can be used in social security scheme and other rural development schemes whose identification of the beneficiary would be validated on the basis of 'Aadhaar' Number or bank account linked with the Aadhaar number. This can eliminate various ghost or fake beneficiaries and ensure that true beneficiaries are getting the benefit of subsidy<sup>1</sup>. Observably, this path breaking methodology may be adopted after analysing so many years of problems such as less transparency, unnecessary delays, leakages and diversion of benefits which may take place while providing required subsidy to the citizen. The current research work aims to create a centralized database of Social Security Pension Beneficiaries and transfer funds through direct transfer benefits scheme to their bank account so that it is possible to identify total benefits given to a family in any financial year and analyze different aspect of their financial growth. This also uses Aadhaar framework individual identification and mobile nos. for digital communication<sup>2,3</sup>. It is necessary to create an integrated ICT enabled e-governance framework for rural areas which can convert requirements of rural citizen and their knowledge along with their inputs along with inputs from other stakeholders into an effective service oriented process.

## 2. Electronic Direct Benefit Transfer (EDBT) to be Adopted for Schemes

Digital ecosystem in social security pension's methodology using Electronic Direct Benefit Transfer may provide various features to its users, especially to the beneficiaries and the department. For the citizens, it can provide online benefit search facility which helps the users to identify the existing benefit schemes and whether they are eligible to avail the benefits of the scheme<sup>4,5</sup>. They can also fill online application forms which are simple to understand, as it supports local languages. Also, the services can be availed through various channels like internet, Common Service Centre (CSCs), Kiosks<sup>5,6</sup> as well as directly through the departmental offices. The system can be highly customizable, as it can be used in various departments, irrespective of schemes. The methodology can be designed to meet the performance and usability requirements of the stakeholders, thereby enabling improved service

delivery levels. The methodology also provides tools which will enable departments to carry out data analysis of the captured data and helps in policy formulation<sup>3,7</sup>. The methodology also provides a payment gateway which provides link with banks, which enables the departments to disburse fund. The EDBT system is expected to provide audit trail functionality so that it possible to verify each transaction and perform reconciliation of financial transactions. SMS alert feature can also be enabled so that it can be used to send transaction alert to the stakeholders. In addition SMS alert can also be added so as to inform them about the status of their transaction and to provide the stakeholders to raise queries through SMS. Mobile App can be developed to access on-line services, receive alerts and access e-services at remote location.

## 3. Methodology for Proposed Architecture using Public Finance Management System (PFMS)

Social welfare benefits to the citizens through various schemes for the social development and growth of citizen are targeting rural poor and their number is also large in number. Identification of these beneficiaries and then transferring funds to their account has always been difficult process. At present these financial benefits are being disbursed to the beneficiaries by means of traditional methods. Most of the beneficiaries do not get the opportunity of availing the benefits due to lack of awareness about existing schemes. In addition due to improper targeting by the government policies also the real benefit do not reach to the citizen<sup>7,8</sup>. Citizens have to face a lot of hurdles for availing the benefits due to middlemen. There are also problems like wastage of public funds, corruption and presence of middlemen does cause delays in the routine disbursement of benefits<sup>4,5</sup>. Taking this into account and with an aim to reduce the leakage, cut down the corruption, eliminate middlemen, target beneficiaries better and speedup the transfer of benefits to the beneficiary, state and central governments have taken various administrative reforms. By introducing Electronic Benefit Transfer System, the genuine beneficiaries can avail the advantage and corrupt practices can be minimized. Direct benefit transfer scheme transfers the benefits without any delay, directly

to the bank account of the entitled beneficiaries<sup>6,9</sup>. The proposed system of electronic Direct benefit transfer functions in such a way that the concerned government department need to deal with a sponsoring bank which can be any nationalized or private bank, which will obtain the fund from the department and, in turn need to transfer the fund through core banking fund transfer facility and credited the required amount to the targeted beneficiary. Public Finance Management System <sup>2,1</sup> provides facility to transfer details to their SFTP (Secured FTP) server for payments. Then they transfer the money in bulk to multiple account debiting sponsoring bank accounts and crediting the beneficiary account. Later a file can be provided indicating status of fund transferred. In case fund is successfully transferred then a reference number like UTR number can be generated otherwise it can provide an information indicating reason for failure of the transaction<sup>4,1</sup>. Such information can easily be analyzed to understand reason for non-transfer. The architecture and interfacing of the proposed system with existing platforms is shown in Figure 1.

Digital ecosystem in social security pension's methodology using Electronic Direct Benefit will help the beneficiaries to receive welfare related govt. payments through a single payment platform through public finance management system and Aadhaar number. Hence, this can help to reduce corruption and management cost. This can also put check on duplicate beneficiaries using the Aadhaar platform and will increase transparency in identification and authentication of beneficiary.

#### 4. Issues to be Addressed for Electronic Fund Transfer

The beneficiary accounts can be are Aadhaar-enabled or their account can be validated though Public Finance Management System. In case the beneficiary bank account is linked to the beneficiary's Aadhaar number then process can be further optimized however due to non-availability of Aadhaar numbers the process need not be delayed rather PFMS can be used to transfer funds.

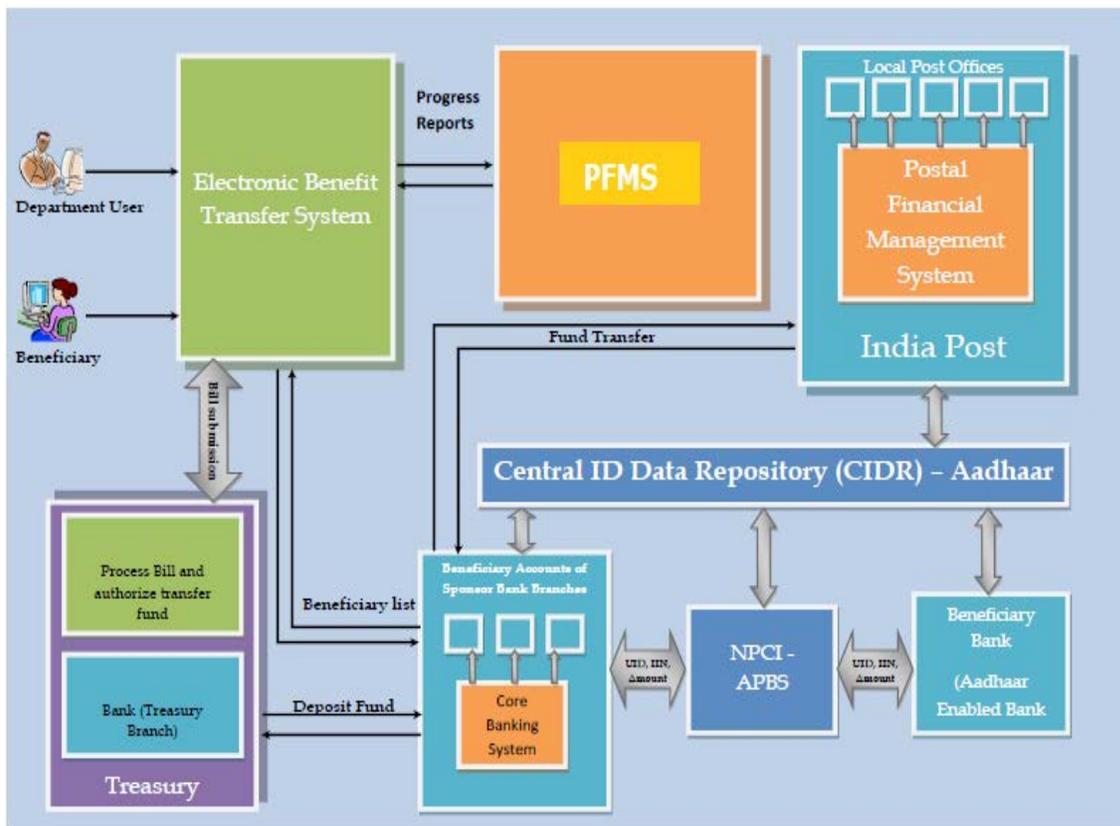


Figure 1. EDBT System interfacing architecture.

Beneficiaries can perform their bank transactions at the standard off-take points of bank branches and ATMs. However, in order to ensure easy access to the banking services, the Business Correspondent (BC) model<sup>9,8</sup> has been deployed<sup>4,2</sup>. BCs can carry out financial transactions using micro-ATMs (biometric point-of-sale devices) which allow authenticating the identities of Beneficiaries by connecting to the Aadhaar online system and thus ensuring that funds are not withdrawn fake.

#### 4.1 Unique Beneficiary ID

For fund transfer directly to the beneficiary, as a pre-requisite, it is necessary that all the beneficiaries are covered under the unique identification system. After enrolling the beneficiary it is necessary that a centralized database of beneficiary should be created and it can be fed with collected Aadhaar Number. Authentication of Aadhaar Number is also facilitated through UIDAI in bulk mode.

#### 4.2 Access to Bank Account

It is necessary that all the individuals have access to bank, in some form or the other and the facilities must be easily available. Each beneficiary must have a bank account opened. Recently govt. has launched Jan Dhan Yojana

which claims to open bank account for every family. All the Bank Accounts can be linked with Aadhaar platform.

#### 4.3 Database of Beneficiaries

There should be standard format defined for mandatory columns for each beneficiary for creating a uniform database for the citizen. For various schemes and programs the target group will be different. These databases are required to be linked with the Aadhaar ID, so that there is a common platform for financial transactions. Aadhaar seeding and its linkage with the bank account is a key component to make the electronic direct benefit transfer system a success.

#### 4.4 Business Correspondence (BC) Model

There is also need for a payment gateways/bridge to be created and creation and integration of related ICT infrastructure, banking infrastructure, supported with detailed rules, procedures and regulations. Government can set-up ultra-small branches and also use the BC model of branchless banking and Micro-ATMs which enhances access to banking service to rural areas. The process cycle of fund transfer using BC model is shown in Figure 2.

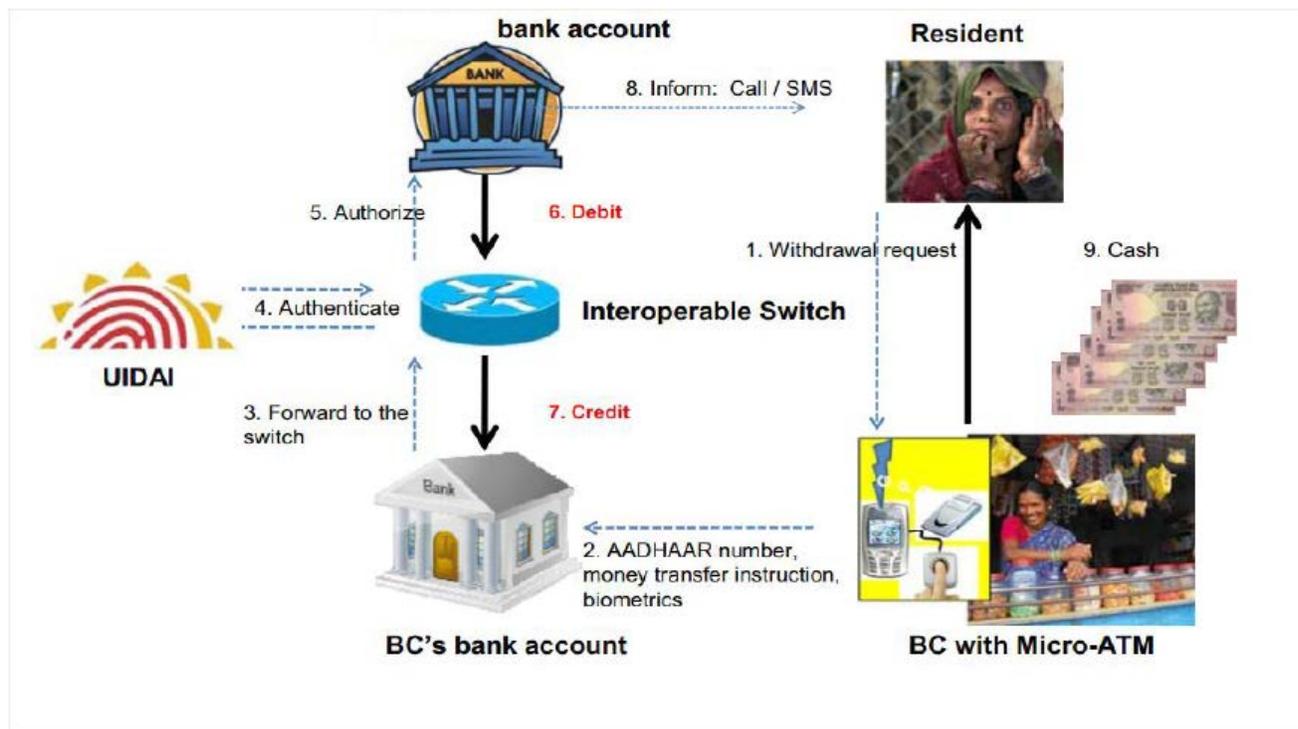


Figure 2. Payment to beneficiary using banking correspondent.

## 5. Lifecycle of Direct Benefit Transfer

State govt. and central govt. is running variety of different schemes for the citizen especially to rural masses. Schemes may vary across these departments and the workflow followed by one scheme of any department may not be the same as another. The process of identification of beneficiary, criteria for selection, method for approval, authority for approval, amount of fund to be transferred<sup>2</sup> etc. may change from scheme to scheme. But most of these benefit schemes follows a common workflow which consists of the following stages from initiation to finish. The activities in life cycle of fund transfer are shown in Figure 3.

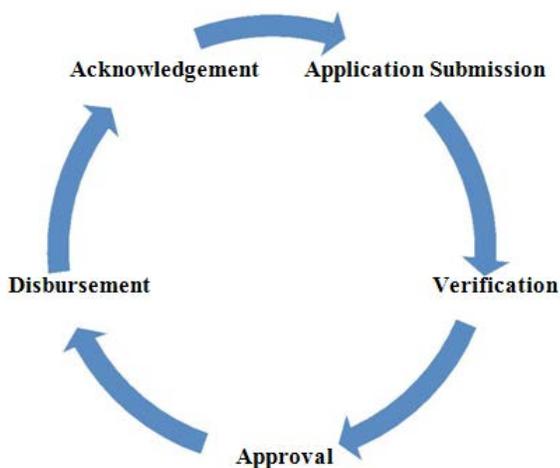


Figure 3. DBT life cycle.

### 5.1 Submission of Application

In this stage the citizen need to submit the filled in application online using a portal along with the required documents. The form is well designed to capture most of the aspects of the requirements of the scheme. It is also possible to collect the entire relevant document with the application itself in scanned format.

### 5.2 Application Verification

The application form is routed to the appropriate officer for verification of the particular scheme. The officer verifies (including physical verification if required) the application is then forwarded it to the approving authority who can be senior officer in the hierarchy along with the verification report.

### 5.3 Application Approval

The approving authority checks the application form and verification report and takes decision whether to approve or reject the application form. This process can be done both offline and online. The offline process is followed to ensure that these documents are preserved in offices and later can be used for verification purposes. If the application is approved then it can be forwarded to the disbursing officer, else it is returned to the verification officer for further enquiry or is rejected outright based on the verification report.

### 5.4 Fund Disbursement

On approval of the application the physical file may reaches to the disbursing officer for payment. The disbursing officer can then disburse the benefit electronically using various electronic fund transfer mechanisms available at his disposal. During transfer it can either be done individually or in bulk. An acknowledgement receipt is received for the bank whether the fund transfer has been done successfully or if the request has been rejected along with the reason for such rejection.

## 6. Technology Perspective

All the business transaction conducted through the system should be encrypted so that it is prevented from unauthorized access using Secured Socket Layer (SSL) including Aadhaar number and personal details. Industry standard / IT Act compatible encryption techniques and technologies need to be implemented for this purpose. The integration framework of fund transfer using PFMS is shown in Figure 4.

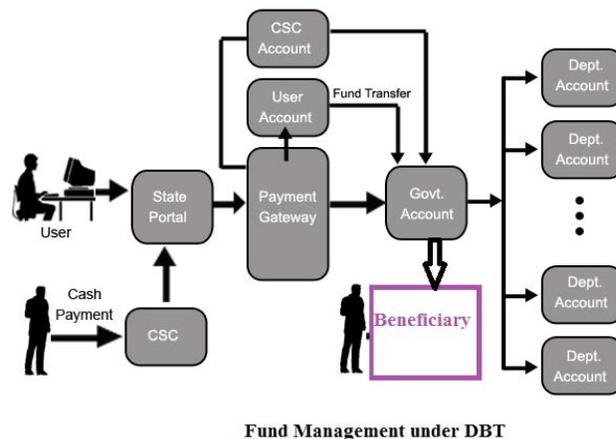


Figure 4. Transfer of fund to beneficiary.

The proposed methodology is interoperable, so that it can be integrated with other external interfaces like:

### 6.1.1 Online Banking Gateway

The proposed system should be operable with an online banking gateway (connected to Bank Net)<sup>4,5</sup> to allow various govt. departments of the state govt. to disburse the funds to the targeted beneficiary in their own account.

### 6.1.2 Postal Network

Payments are also made through Post Offices. Currently core banking services are being implemented by postal department.

### 6.1.3 PFMS

Most of the state as well as central sponsored benefit schemes disbursement is being done through Public Finance Management System (PFMS) services. For disbursement of central sponsor funds, interoperability with the PFMS system is required through EDBT system.

### 6.1.4 NPCI

National Payment Corporation of India (NPCI) payment gateway facility for the system can be used for fund transfer. All the payments made through the system may be routed through the NPCI's payment gateway infrastructure.

## 7. Methodology Analysis

Methodology analysis and adaptively assessment of Electronic Direct Benefit Transfer (EDBT) System, has been conducted to evaluate the service adaptively of the system and compare the current methodology with other existing methods. This methodology focuses to spread the system all over the government departments which are directly or indirectly concerned with direct benefit transfer. The proposed system of EDBT supports all these schemes and programs for disbursement of funds to the citizens/beneficiary on time to their bank account. Stakeholder analysis has been done to identify the possible stakeholders and to examine various characteristics of the stakeholders and their roles and responsibilities, partnership and possibilities of the EDBT system. This study analyses the stakeholders responsibilities towards the system and their

position toward the system, their adaptively towards the system and their interest in adopting the system. It also taken into account the stakeholders level of participation in the proposed system. Also, the services can be availed through various channels like internet, Citizens Service Centres (CSCs), KIOSKS as well as directly through the departmental offices.

## 8. Conclusion and Future Work

The Electronic Direct Benefit Transfer (EDBT) System has been envisaged as a major transformation in electronic service delivery and financial inclusion which can bypass the inefficiencies of existing service delivery mechanisms. Funds can be transferred by the banks directly to bank accounts of identified beneficiaries. The Electronic Benefit Transfer system will be transformed to accommodate newer technologies and shall be further customized in accordance with feedback provided by the customers in a later stage. NPCI has introduced advanced payment service such as Interbank Mobile Payment Service (IMPS) which uses mobile devices to transfer fund to other bank accounts in real time. This can also be made as a payment mode in future.

## 9. Acknowledgement

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