

Benefit Distribution Program

Executive Summary

Governments since antiquity have tried to offer some level of welfare to the poor and these programs have expanded in modern times to truly large proportions. Reducing the cost of administering these programs and increasing their effectiveness (by better targeting, eliminating fraud and corruption, reducing the number of intermediaries) has been a key challenge for all governments.

The use of technology has improved benefit administration considerably. We have gone from expensive paper tokens (US food stamps printed at the mint to minimize fraud) to electronic transfers straight to the beneficiaries' bank account (India's Direct Benefit Transfer scheme).

*Despite the tremendous strides by DBT in eliminating waste, the system still suffers from many problems, which can be solved using **blockchain technology**. The proposed system will provide a full-proof mechanism for implementing Benefit Distribution Program in India.*

Issues in the Current System:-

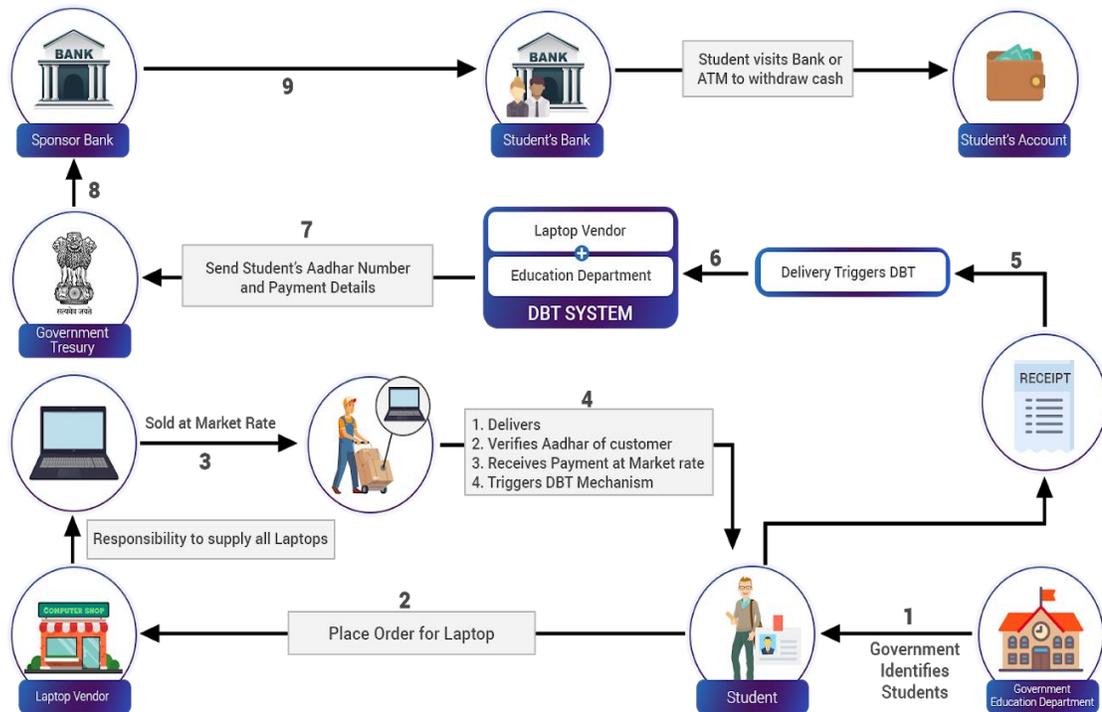
The public distribution system in India is riddled with inefficiency that results in a massive leakage of both money and goods. Government spends money but the poor people do not benefit.

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India's implementation of Direct Benefit Transfer (DBT) has been a big step in eliminating a lot of the waste of earlier forms of benefit distribution. It not only reduces administration cost but by leaning on Aadhaar, the DBT system reduces both types of fraud – of 'duplicates' (a name getting benefits more than once) and of 'fakes' (benefits being taken in the name of a non-existent or fictitious person). These features alone make DBT far superior to other

forms of benefit transfer.

The following Infographics, shows the whole process involved in Benefit Distribution of Laptops to the Identified students. The process involves long chain of Intermediaries and an interdependent ecosystem.



But the system still suffers from other numerous problems, such as:

1. Cash Flow Issues for the Beneficiaries:

While DBT has reduced the need for intermediaries, it has added cash flow burden for the end-beneficiary.

2. Reliance on the Banking Network

Bill Gates famously said: "Banking is necessary. Banks are not."

The current DBT system has banks baked into its core as the system cannot work if the beneficiary does not have a bank account. Moreover, it adds extra operational cost of the bank account.

3. Lack of Ongoing Transparency

Verification and transparency remains a challenge. From identifying the “students”, to ensuring the benefit transfer include many intermediaries.

4. Operational cost of an Bank Account

The cost of operating a bank account is estimated to be \$5 per annum. Hence, public lenders need to provide extra fund to balance the operational cost of the bank accounts.

5. Low Quality Laptops to students:

Since, laptop vendors are independently supplying laptops to the students. They may use cheap material. They may also sell, “refurbished or seller second products” and still charge for new item.

6. *Time-taking Process of Reimbursement :*

The whole process includes a value chain and is time taking, following which student has to wait for a long time.

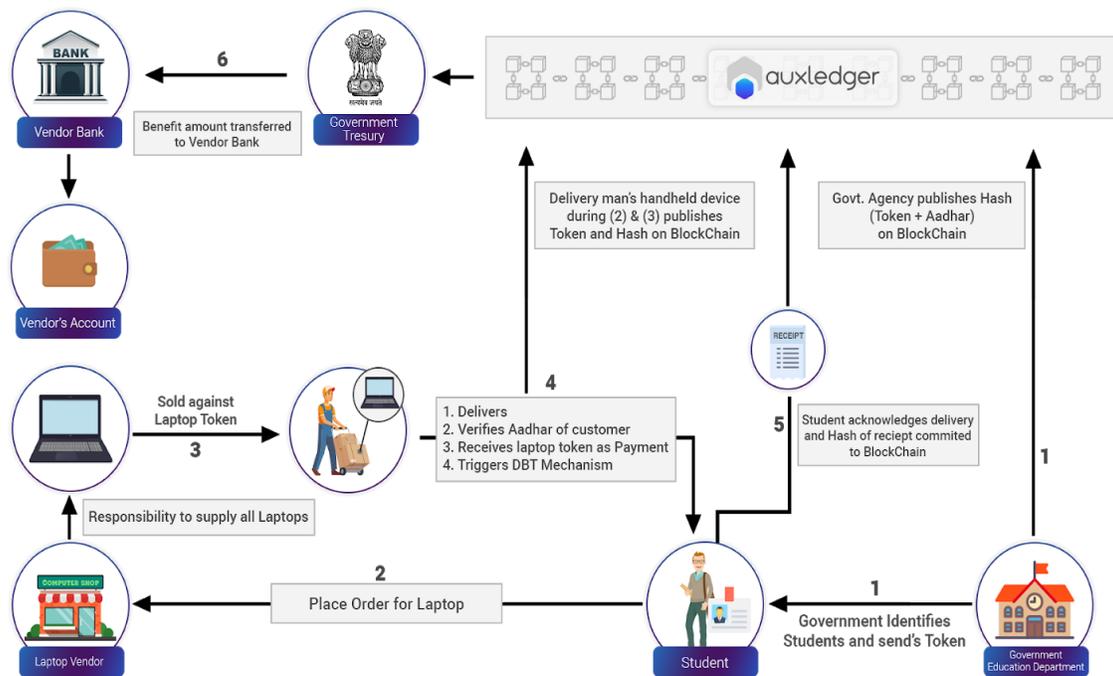
7. *Cost Inefficient and Time Consuming Process:*

Auditing and monitoring of these student enrollments in itself is a burdensome process for the government.

The Proposed Solution with blockchain:

Fundamentally, *blockchain enables programmable money* – a concept that can transform the provision of welfare. Broadly, programmable money allows for payments to be made only if certain conditions are met. In this case, you can trigger payment if and only if the purchase is related to an Laptop.

This allows the creations of tokens that can *only* be used for a specified transaction and their usage generates a fully transparent and real time audit trail. The beauty here is that these tokens cannot be copied as they are cryptographically generated.



Some main advantages of blockchain are:

- 1. Value chain made efficient:** Multiple banking transactions (from the government to consumers) are replaced by a handful of transactions (from the government to Vendor banks).
- 2. Fraud-proof system:** The token is a digital code that will be sent to the end consumer's mobile phone number. This digital code will be tagged to the Aadhaar number using a mathematical hash function, thereby making every digital code unique to the Aadhaar number.
- 3. Automated Reconciliation:** Using the blockchain technology as both the government agency issuing the tokens and the laptop vendors redeeming the tokens are using the same distributed ledger.
- 4. Cost and Time efficient system:** Following the simplification of reconciliation and Value Chain. The whole process will take less time and cost.