

DBT in Education:

A study on the delivery of in-kind benefits to secondary school students in Uttar Pradesh

August 2018



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Market-led solutions for financial services

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Suggested citation:

Parakh, Neha; Ravi, Vijay; Saindane, Nishant; Singh, Aishwarya; Thapliyal, Mitul. *DBT in Education*. 2017-18. *MicroSave*, 2018.

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1. Executive Summary

The meaning of the term Direct Benefits Transfer (DBT) in India has evolved over the years. Initially, DBT only referred to cash transfers into the bank account of beneficiaries under different government schemes. At present, it refers to cash transfers and in-kind transfers to beneficiaries, as well as wage payments to government intermediaries¹. In order for a government scheme to qualify as [DBT](#)²:

- The benefits should reach identifiable individuals;
- The scheme should make use of modern technology and Information and Communications Technology (ICT) tools for implementation.

In terms of actual changes, as a result of DBT, cash-transfer schemes have shifted from dispensing physical currency to transferring money directly into the bank accounts of beneficiaries. Meanwhile, in-kind transfers have begun to use ICT tools for multiple functions.

Current figures show that [487 schemes from 64³](#) different

central government departments are under the purview of DBT. In the financial year 2017–18, benefits worth [INR 2,02,224 crores \(USD 30.58 billion\) were transferred by the central government to 12.4 billion⁴](#) beneficiaries under different DBT programmes. Popular [programmes like the Public Distribution System⁵, PAHAL⁶, and MGNREGS⁷](#) have the highest number of DBT beneficiaries.

These figures only depict the DBT initiatives of the central government. State governments have also moved multiple schemes under the ambit of DBT. Most states have constituted dedicated [DBT cells⁸](#) that coordinate with the central [DBT Mission⁹](#). These cells are nodal agencies for all DBT schemes in their respective states.

Part of DBT's popularity is attributed to the increased efficiency that resulted from factors that include de-duplication of beneficiaries, elimination of ghost beneficiaries, and improvement of the delivery process. The government estimates that DBT programmes will

1. Government intermediaries are people who are engaged in implementing government programmes, for instance ASHA workers

2. <https://dbtbharat.gov.in/data/circulars/cir31mar16.pdf>

3. <https://dbtbharat.gov.in/scheme/getallschemeservicelist>, as on 25th April, 2018

4. <https://dbtbharat.gov.in/>

5. <https://www.pdsportal.nic.in/main.aspx>

6. <http://petroleum.nic.in/dbt/whatisdbt.html>

7. <http://www.nrega.nic.in/netnrega/home.aspx>

8. <http://pmsky.gov.in/pdflinks/DBTCellGuidelinesforState.pdf>

9. <https://dbtbharat.gov.in/page/frontcontentview/?id=MTc=>

cumulatively save the central government [~INR 82,985 crore](#)¹⁰ (USD 15 billion) by year-end, 2018.

In the field of education, scholarship programmes have seamlessly moved into the fold of DBT. Money is being transferred into the bank accounts of beneficiaries rather than being handed over as cheques. In-kind transfers have begun using Management Information Systems (MIS) platforms for multiple functions and are now being termed DBT.

MicroSave conducted a study in Uttar Pradesh on DBT in education. We specifically looked at in-kind benefit transfers to schoolgoing children.

We conducted the study based on primary qualitative research and allied techniques. We covered the districts of Gorakhpur, Lalitpur, Lucknow, and Meerut to ensure a representative sample for the study.

The objectives of the study were to:

- 1 Understand the processes for the distribution of benefits;
- 2 Understand the allied systems that the processes make use of;
- 3 Identify gaps in the processes and suggest opportunities for improvement.

The Department of Secondary Education (DoSE) distributes benefits to a targeted section of students between classes IX–XII as announced by the Government of Uttar Pradesh from time to time.

The following table highlights our observations and recommendation of the study:

1. Management Information System		● ● Medium priority
<p>Observation 1.1</p> <p>The department is feeding data into multiple MIS platforms but there is no evidence that this data is being put to use.</p>	<p>Recommendation 1.1</p> <p>Modify and utilise the MIS platforms for in-kind transfers.</p> <p>Use the available data for planning and monitoring.</p>	<p>Expected outcome 1.1</p> <p>Reduction in time taken for application and verification processes.</p> <p>Improved functioning of stakeholders by utilising data.</p>
<p>Dependencies: Software modification</p>		
2. Communication		● ● ● High priority
<p>Observation 2.1</p> <p>Many beneficiaries report that awareness of in-kind transfers is low among their peers.</p>	<p>Recommendation 2.1</p> <p>The department must adopt a multi-channel communication strategy to ensure that people are aware of their eligibility.</p>	<p>Expected outcome 2.1</p> <p>Better awareness among beneficiaries on programmes</p>
<p>Observation 2.2</p> <p>Beneficiaries report that their peers, who have applied for but did not receive benefits, are unaware of the reason for their rejection.</p>	<p>Recommendation 2.2</p> <p>In case an application is rejected, the individual candidate should receive a formal letter that states the reason for their rejection.</p>	<p>Expected outcome 2.2</p> <p>Improvement in the quality of applications received.</p>
<p>Dependencies: MIS modification</p>		

10. <https://dbtbharat.gov.in/>

3. Grievance resolution mechanism

● ● Medium priority

Observation 3.1

The department does not have a formal GRM in place.

Recommendation 3.1

The department should consider developing a formal GRM and may make use of existing generic mechanisms to develop their own.

Expected outcome 3.1

Increased stakeholder satisfaction.
Process improvements through stake-holder feedback.

Dependencies: Developing software

4. Processes

● ● Medium priority

Observation 4.1

In-kind transfers in secondary education is an excellent programme. The processes being followed are robust and any improvement will serve only to marginally increase the ease of operation.

Recommendation 4.1

Shift the application process to be fully digital. This will reduce the time spent by beneficiaries applying for benefits, as well as the time taken for the application to reach the department.

Expected outcome 4.1

Reduction in time and effort taken for the application.
Improved stakeholder experience.

Dependencies: MIS modification

5. Authentication

● Low priority

Observation 5.1

The system is robust with no evidence of leakages.

Recommendation 5.1

Digital non-*Aadhaar* based OTP authentication can help reduce the workload associated with programme management.

Expected outcome 5.1

Reduced workload

Dependencies: MIS modification

2. Acronyms

APL	Above Poverty Line
BPL	Below Poverty Line
BRC	Block Resource Centre
CWSN	Children With Special Needs
DBT	Direct Benefits Transfer
DCF	Data Capture Format
DIOSE	District Inspector of Secondary Education
DM	District Magistrate
DoSE	Department of Secondary Education
EWS	Economically Weaker Section
G2P	Government to Person
GeM	Government e-Marketplace
GoI	Government of India
GoUP	Government of Uttar Pradesh
HDI	Human Development Index
ID	Identity
IGRS	Integrated Grievance Redressal Mechanism
INR	Indian Rupee
MHRD	Ministry of Human Resource Development
MIS	Management Information System
NGO	Non-Governmental Organisation
NUEPA	National University for Education Planning and Administration
OTP	One-time Password
PoS	Point of Sale device
PTA	Parent Teacher Association
RMSA	<i>Rashtriya Madhyamik Shiksha Abhiyan</i>
RTE	Right to Education, Act
SC	Scheduled Caste
SDMIS	Student Database Management Information System
SMDC	School Management and Development Committee
SMS	Short Messaging Service
SQL	Structured Query Language
SSA	<i>Sarva Siksha Abhiyan</i>
ST	Scheduled Tribe
TC	Transfer Certificate
UDISE	Unified District Information System for Education
UIDAI	Unique Identification Authority of India
UN	United Nations
USD	United States Dollar



3. Background

We can ascertain the importance of education in today's world from the fact that it is a metric by which we judge the development status of a nation. The Government of India (GoI) realises the importance of having a well-educated demography. While the government has not made education above the elementary level compulsory,¹¹ it offers education incentives to make it an attractive option for the masses. Incentives are either in the form of scholarships or in-kind benefits. The government provides these incentives to aid and encourage children to pursue education.

The [Ministry of Human Resources Development](#) (MHRD)¹² is responsible for formulating policies on education at the national level. The state education departments manage government schools¹³; implement and monitor education-related schemes.

The Department of Secondary Education (DoSE), Uttar Pradesh, is responsible for [12 million students who study in 24,569 high schools across the state](#)¹⁴. As part of its duties, DoSE oversees the distribution of benefits to meritorious students under various targeted schemes.

Benefits are disbursed to a targeted section of students based on criteria set by the incumbent government. Criteria specified by the government varies and may include factors such as students belonging to the economically weaker section, students obtaining grades above a minimum specified level, etc. These benefits are available to all eligible students in the state. The benefits are not distributed annually, but are at the discretion of the DoSE; DoSE has not distributed in-kind benefits since the academic year 2014–15.

The following are the benefits, scheme names, and

programme details of the most recent schemes managed by DoSE:

Benefit	Laptop	Bicycle
Scheme name	Free Laptop Vitaran Scheme	Savitribai Phule Balika Shiksha Madad Yojna
Objective	Encourage students to pursue higher studies	Improve condition of female children through education
Students Benefitted*	39,600 meritorious students ¹⁵ received free laptops	62,975 eligible female students received money and 52,082 received bicycles ¹⁶
Criteria	<ul style="list-style-type: none"> Resident of Uttar Pradesh Successfully cleared class XII or equivalent 	<ul style="list-style-type: none"> Resident of Uttar Pradesh Girls from BPL families

*Last session for which the distribution was done

Figure 1: Details of benefits distributed in the past

The advent of technology has given DoSE an opportunity to improve the efficiency of their programmes through digitisation. The department is using digital technology in communication, data transfer, and information exchange.

This study endeavours to:

- Understand the current MIS operation in DoSE, highlight existing gaps, and suggest plausible improvements.
- Map the process related to the distribution of in-kind benefits, identify bottlenecks, and suggest corrective action to enhance efficiency.

11. The Government of India has made free and compulsory education a fundamental right of every child in the age group of 6-14 years through the Right to Education (RTE) act in 2009.

12. <http://mhrd.gov.in/about-mhrd>

13. Schools managed by the government. For details see Appendix I

14. <http://udise.in/Downloads/SEMIS-STRC-2015-16/09.pdf>

15. <http://indianexpress.com/article/cities/lucknow/uttar-pradesh-government-to-give-free-laptops-to-class-x-xii-pass-out-students/>

16. http://www.bspindia.org/bsp_govt_scheme.php



4. Methodology

The approach followed during the course of the study included:

- Secondary research to understand the current ecosystem;
- Qualitative primary research to understand the existing processes related to the delivery of benefits;
- Gap analysis based on process-mapping of on-ground practices, as outlined in Appendix V.

In our primary qualitative survey, we met stakeholders in 15 secondary schools and multiple government offices across the area of study¹⁷.

The following table shows the sample size covered for different types of stakeholders:

Stakeholder	Number of respondents
Beneficiary	5
School Staff	31
Government Officials	6
Total	42

Figure 2: Sample size

Since in-kind transfers by DoSE is an intermittent programme and have not been conducted in the past two years, beneficiaries were difficult to find. Most recipients

of benefits have shifted locations from the area where they received benefits. Accordingly, we derived the bulk of the information in this report from interviews with teachers who oversaw the delivery of benefits, and government officials.

- Beneficiaries include students and in the case of young children, parents.
- Government officials include executives across the department involved in programme execution, monitoring, and MIS
- School staff includes principals, headmasters, teachers and non-teaching staff

We gathered stakeholder perceptions through focus group discussions¹⁸ (FGD) and personal interviews¹⁹ (PI). Each interview refined our understanding of the processes and corroborated previous findings.

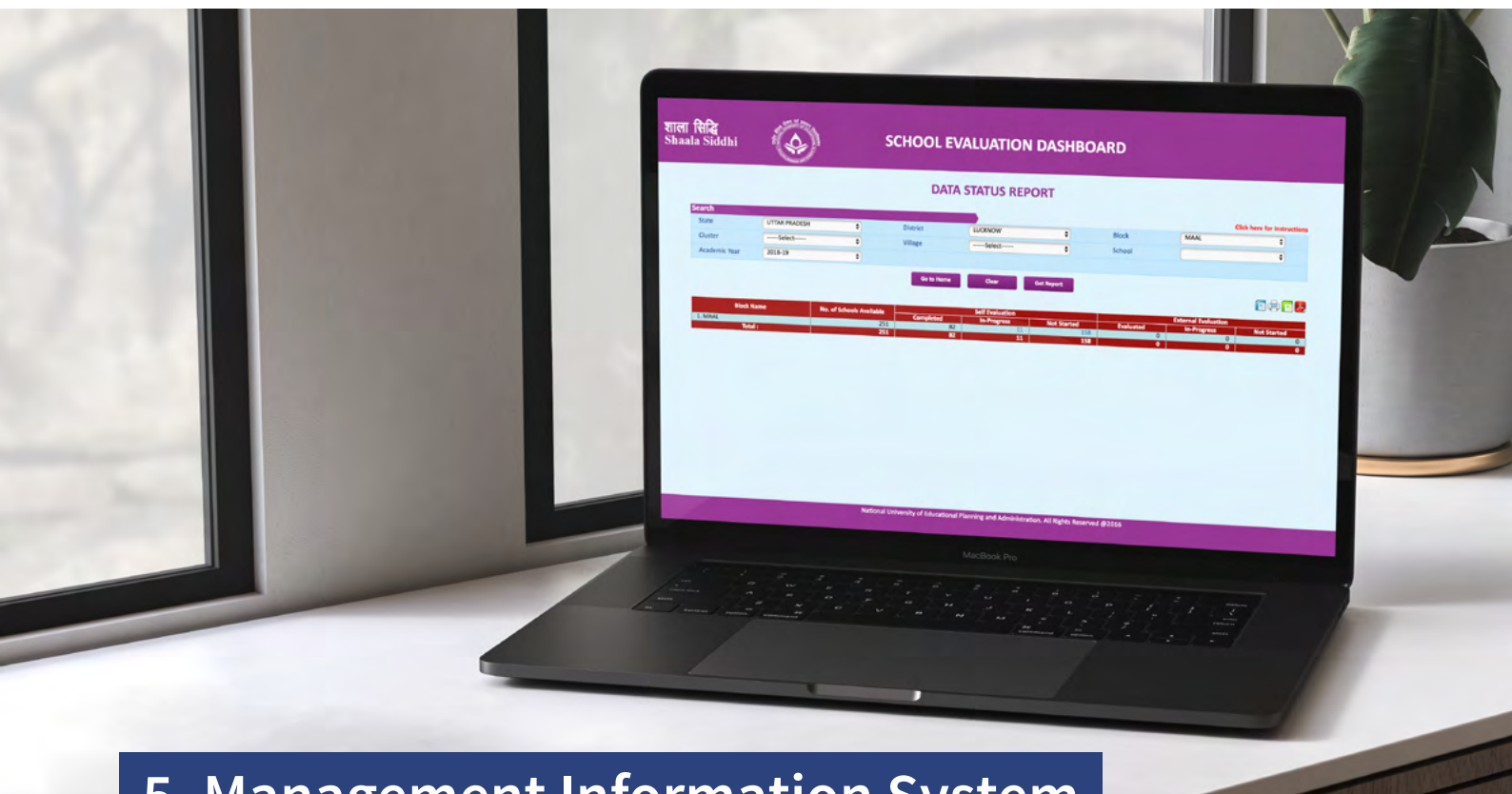
In this report, we have analysed each of the components that have an impact on the transfer of benefits based on multiple parameters.

We have provided additional research details and framework of the study in Appendix I.

17. Districts selected in UP were Gorakhpur, Lalitpur, Lucknow, and Meerut.

18. FGD is a qualitative research technique that encourages participants to come to a consensus on their perception. It is normally used to explain factors that cannot be understood statistically.

19. PI is used in qualitative research to gain a deeper understanding of perceptions around the research topic. PI also helps the researcher observe non-verbal behaviour of the respondent for better understanding.



5. Management Information System

Key findings

The department is feeding data into multiple Management Information System (MIS) platforms but there is no evidence that this data is being put to use.

Suggestions

Modify and utilise the MIS platforms for in-kind transfers. Use the available data wherever possible.

DoSE has two platforms into which department officials feed data, [UDISE](http://udise.in/)²⁰ and [Shaala Siddhi](http://shaalasiddhi.nuepa.org/)²¹. The National Institute of Education Planning and Administration ([NUEPA](http://www.nuepa.org/))²² has designed and owns both these platforms. The department collects and enters data for all schools in the state. The following table depicts the general details of these platforms.

Platform	UDISE	Shaala Siddhi
Description	A comprehensive platform that captures data on the entire education ecosystem	School evaluation tool used for both internal as well as external assessment of an institution
Method of filling	Form available offline; details have to be uploaded online	Online
Point of digitisation	District	School
Frequency of update	Annual	Annual
Month of completion	December	February

Figure 3: Details of MIS platforms

While DoSE feeds data into these platforms, the Board of Secondary Education²³ also collects and maintains accurate data on students' personal details. This is because these details, such as caste, income category, and marks obtained are a prerequisite for graduation certificates.

20. <http://udise.in/>

21. <http://shaalasiddhi.nuepa.org/>

22. <http://www.nuepa.org/New/>

23. The Board of Secondary Education is an autonomous body under DoSE. The board is responsible for preparing curriculum, conducting high school and intermediate examinations, and awarding transcripts of performance.

The following table provides a comparison of UDISE and *Shala Siddhi* on data capture and utility. Appendix III provides a more detailed explanation of this summary.

Platform	UDISE	<i>Shala Siddhi</i>
Responsibility of digitisation	District MIS officer	School
Responsibility of data storage and security	District Inspector of Secondary Education (DIOSE)	DIOSE
Thematic areas of data collected	<ul style="list-style-type: none"> Infrastructure School demographics Performance Finance 	<ul style="list-style-type: none"> Performance Extra-curricular student activities
Submission deadline	Schools submit data by the end of September. District MIS officer uploads data by 30 th December.	Online data entry for every school is done in the month of February.
Use	-	School evaluation

Figure 4: Comparison of UDISE, *Shala Siddhi* and household survey

There is considerable overlap of data among the platforms. The data collected by the Board of Secondary Education is in addition to the data collected to populate the platforms.

5.1 The process of data collection and compilation under UDISE

Since the primary responsibility of collecting and entering data into UDISE lies with the department, we've analysed the steps followed. The detailed MS Visio Process Map that we've used for this analysis is available in Appendix VI.

<p>Gap identified #1</p> <p>Data is first filled manually and then digitised; this doubles the workload of data entry.</p> <hr/> <p>Suggested improvement</p> <p>The data should be entered online at the school level. Limited access should be given to stakeholders up to the level of the principal.</p>	<p>Gap identified #2</p> <p>Data is shared using manual channels and the process is time-consuming.</p> <hr/> <p>Suggested improvement</p> <p>Data should be shared digitally; this will drastically reduce the time taken for data transfer.</p>
<p>Gap identified #3</p> <p>Data is updated annually and does not always reflect the current status.</p> <hr/> <p>Suggested improvement</p> <p>The MIS should be modified to accept and reflect real-time data.</p>	<p>Gap identified #4</p> <p>There is a shortage of staff in the MIS department.</p> <hr/> <p>Suggested improvement</p> <p>The department should increase manpower in consultation with MIS officials.</p>

Figure 5: Analysis of the UDISE process

Other observations: For all these improvements, there is a need for extensive capacity-building of government officials and school staff.

5.2 Data security

Data security, especially with respect to data that the government collects, has recently become the topic of much debate. We believe that the department should follow two guiding principles:

<p>Guiding principle #1</p> <p>Employ professionals specifically to monitor security measures on a regular basis to protect the integrity of the data and the MIS platforms.</p>	<p>Guiding principle #2</p> <p>Ensure that the department has consent for all data collected and explains how it will use sensitive information like biometrics. This will ensure that core consumer protection norms are respected</p>
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Figure 6: Principles for data security

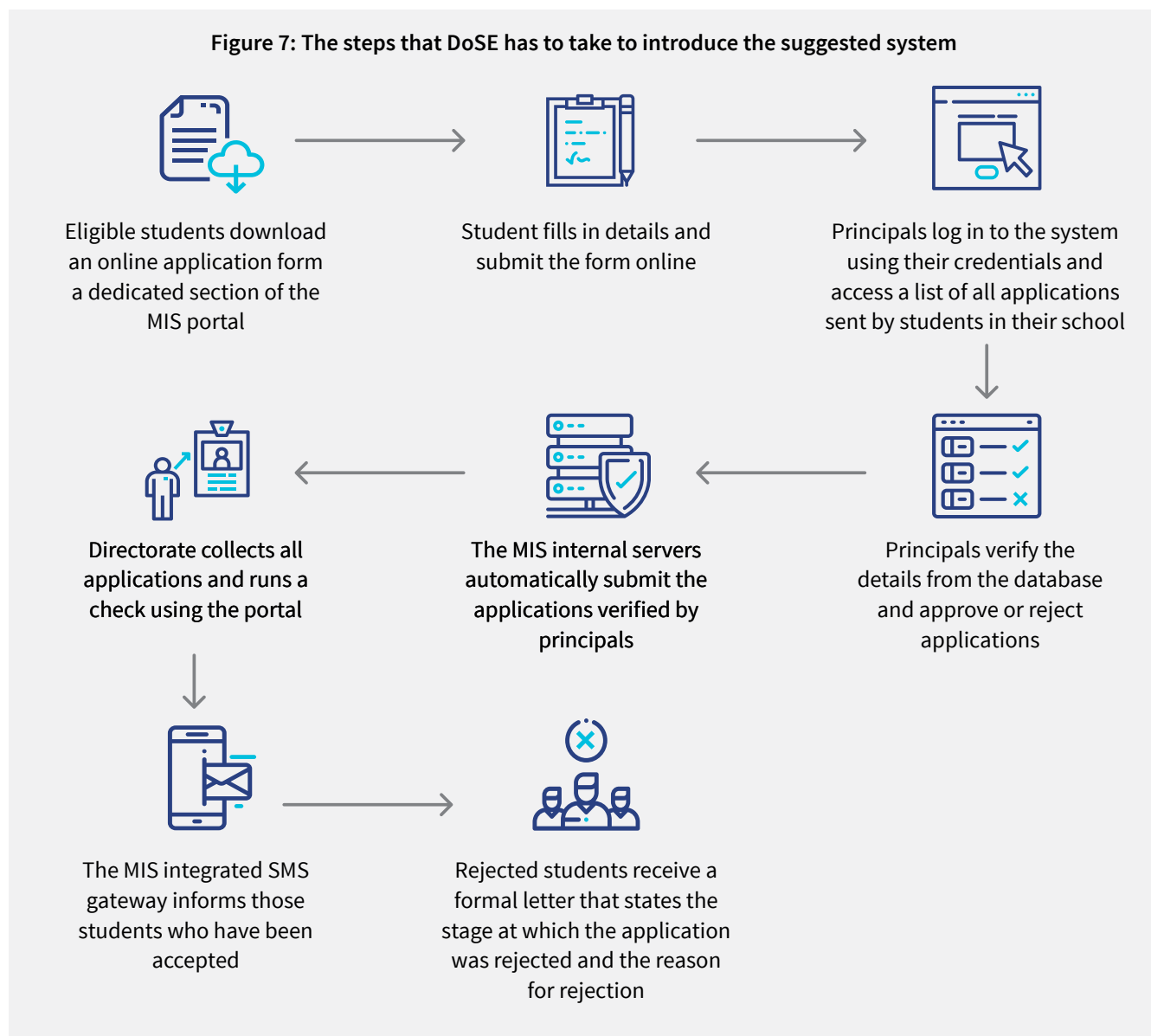
5.3 Suggestions

The department officials undertake the cumbersome process of entering data into UDISE and monitoring data entry into *Shaala Siddhi*, yet we were unable to discern how the department uses this data. In addition to these platforms, the Board of Secondary Education also collects and maintains similar data. Based on our observations, we recommend the following for the MIS system.

1. The data must be digitised at the school level;
2. A single data point must be collected and entered only once. Similar data points from different platforms should auto-populate in the other platforms²⁴.
3. Since data is being collected and entered, the
4. Specifically, with respect to in-kind transfers, a modified MIS could be used to collect and verify student applications.

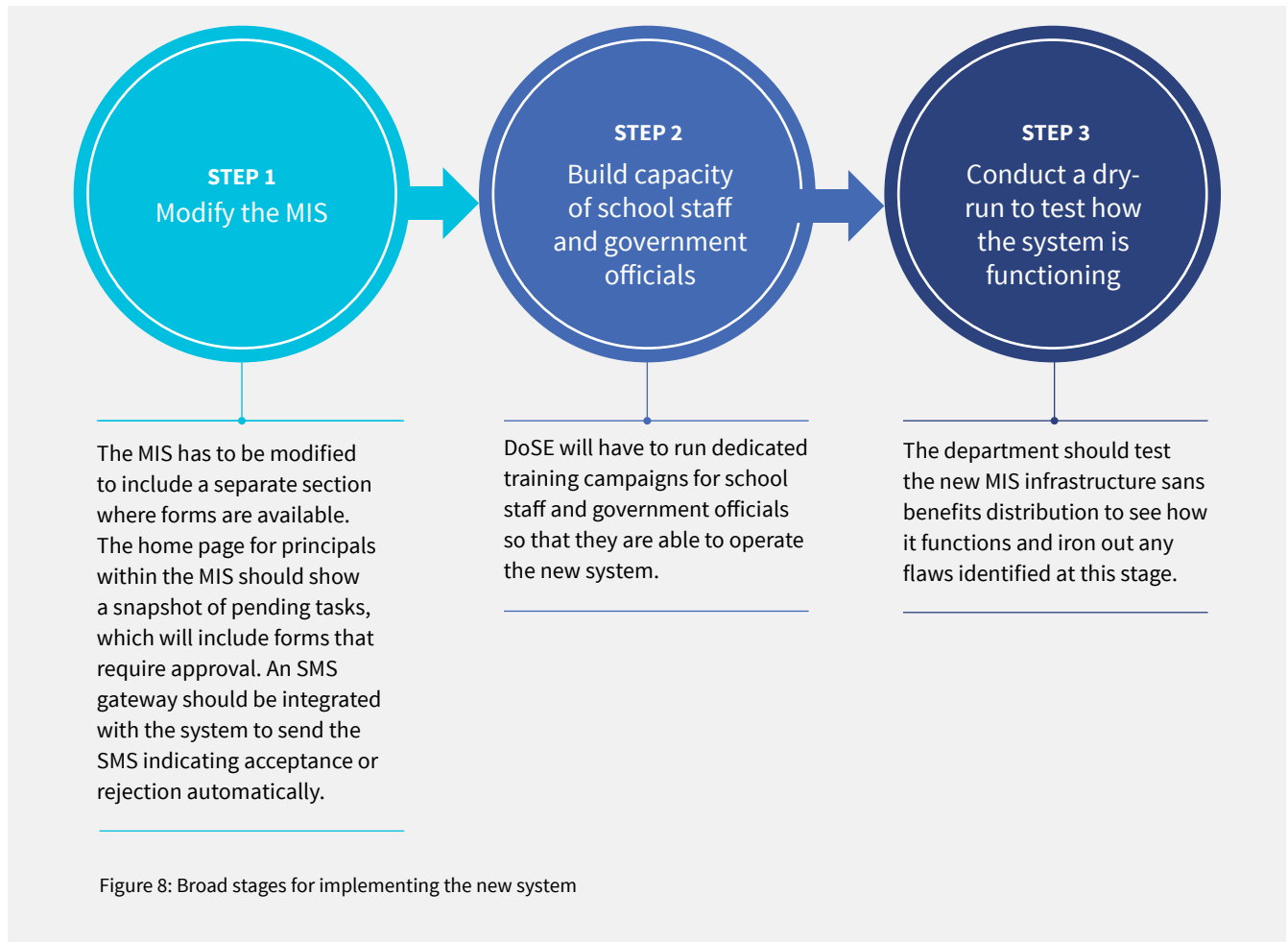
department must envisage uses for this data. If the MIS is modified to capture and reflect real-time data, the scope of use will broaden to include everyday operations like monitoring the distribution of benefits and student verification at the time of admission. Some of the potential areas where data captured in these systems could be used are planning, everyday monitoring, teacher deployment, performance evaluation, and reduction of paperwork, among others.

Figure 7: The steps that DoSE has to take to introduce the suggested system



24. As a next step, the department can work on creating a single form that captures all data. This form should be designed to auto-populate all the platforms including UDISE and *Shaala Siddhi*. This form should also cover all the details required by the Board of Secondary Education so that the same data does not need to be collected again.

The following is a broad, step-by-step guide on the how we can move towards the system described above:





6. Communication

Key findings

1. Many beneficiaries report that awareness of in-kind transfers is low among their peers.
2. Beneficiaries report that peers who applied for but did not receive benefits are unaware of the reasons why they were rejected.

Suggestions

1. The department must adopt a multi-channel communication strategy to ensure that all those eligible to receive benefits are aware of the process of application.
2. In case an application is rejected, individual candidates must get be given a formal rejection letter stating the reason for their rejection.

The Department of Secondary Education (DoSE) has established a formal communication system with standard procedures and protocols. Appendix IV provides detailed information on government communication.

Internal communication within the department is primarily conducted through e-mails followed by a physical copy of the document.

We can gauge the effectiveness of the department's external communication with respect to in-kind transfers by looking at the awareness level of beneficiaries.

As discussed in Section 2 of this report, the distribution of benefits by DoSE is an intermittent scheme. Beneficiaries report that they became aware of this scheme either through their teachers or through mass media, such as newspapers and television advertisements. Beneficiaries stated two major problems:

Problem #1	Problem #2
Many of their peers are not aware of these schemes, and consequently, fail to apply for benefits	Peers whose applications are rejected do not know why they've been denied benefits

Figure 9: Awareness level of stakeholders

To tackle the first problem of lack of awareness among peers, DoSE should use a multi-channel communication strategy to ensure that all eligible candidates are aware of the programme. The reason students are likely unaware that the programme exists is that the communication channel being utilised is faulty. Teachers may make the announcement during study-holidays, days on which a student is absent, or not make an announcement at all. Students and parents, especially from poorer households, may not be consumers of mass media.

Since benefits are targeted, the department can utilise the MIS to send mass SMS²⁵ to all students who are eligible to

receive benefits. This will increase the number of channels through which the programme is being communicated.

For the second problem of peers being unaware of the reason for rejection, the department must send out formal letters of rejection to candidates. These should mention:

1. The stage in which the application was rejected;
2. The reason for rejection.

The department may choose to also send out an SMS by integrating an SMS gateway to the MIS as described in section 5.3.

25. This will be a feature of the software as discussed in section 5.3.



7. Grievance Resolution Mechanism

Key findings

The department does not have a formal GRM in place.

Suggestions

The department should consider developing a formal GRM and make use of an existing generic mechanism to develop its own.

The beneficiaries we met did not report having problems with their benefits. There were a few complaints surrounding process, primarily around the way the application procedure was communicated. It does not make sense to have a GRM in place only for in-kind benefits because it is an intermittent scheme and the utilisation of a dedicated platform will be limited. However, the department would benefit from having one dedicated GRM for all of its operations, including the in-kind transfers program.

There are multiple common platforms of formal GRM in the state of Uttar Pradesh. One such platform is the *Tehsil Diwas*, which is a district-level public hearing at which anyone may submit an oral or a written complaint to a committee. The committee comprises district heads of all government departments and is chaired by the District Magistrate (DM). *Tehsil Diwas* events take place on the first and third Tuesdays of each month and occur in different tehsils (districts) on rotation.

Another public hearing initiative, *Jan Sunwai*, has been merged into a newly introduced platform called IGRS or the [Integrated Grievance Redressal System](#)²⁶. This is available to all residents of the state to voice their concerns. The complaints are directed to district departments but may be viewed by the Chief Minister's office. Since the IGRS is an online system, it is available round the clock. Complaints are only deemed to be settled once the complainant gives feedback on the resolution. If the feedback rating is low, the complaint is automatically reopened.

This, however, does create a minor problem when the

complainant has low awareness. Often complainants do not understand or are unaware concerning the process and, consequently, do not provide feedback. As a result, many complaints that have indeed been resolved satisfactorily are reopened, which creates infinite loops that clog the system.

The IGRS is a good initiative, but it is not a dedicated system for the Department of Secondary Education. DoSE should consider setting up a dedicated platform to resolve grievances. This platform may make use of an existing system like IGRS. DoSE should refer to international guidelines on GRM, such as the one from [UNDP](#)²⁷, to ensure the creation of an unbiased usable system.

We can then utilise such a system to enlist feedback on the in-kind transfer programmes. The exact method of registering a complaint must be communicated in a brochure distributed along with the benefits. Feedback will help the department understand the concerns of stakeholders, thereby improving their experience with in-kind transfers.

26. <http://jansunwai.up.nic.in/HomeE.html>

27. https://info.undp.org/sites/bpps/SES_Toolkit/SES%20Document%20Library/Uploaded%20October%202016/Supplemental%20Guidance_Grievance%20Redress%20Mechanisms.pdf



8. Process observations and recommendations

Key findings

The processes followed for in-kind transfers in secondary education are robust. Improvements will serve only to marginally increase the ease of operation

Suggestions

Fully digitise the application process, as this will reduce the time beneficiaries spend in applying for benefits, as well as the time it takes for the application to reach the department.

This section provides details on our observations and suggestions with regard to the process. These observations draw from our study of the actual processes being followed. Appendix V provides detailed MS Visio process maps, which are the basis of the following observations.

8.1. The process of beneficiary identification

Observation #1	Observation #2
These schemes are dependent on the incumbent government. The criteria changes at their discretion.	Beneficiary identification is a smooth process

Figure 10: Process analysis of beneficiary identification

8.2. The process of distribution of benefits

We have prepared this process map based on our understanding of how distribution of laptops and bicycles were carried out.

Gap identified #1

Verification is conducted multiple times and is a long drawn out process for the beneficiary.

Suggested improvement

The whole application process can be completed online:

- Beneficiary completes the application and uploads it to the MIS platform, instead of printing out the form.
- School authority verifies and approves the application online inside the MIS using their login credentials.

Figure 11: Process analysis of distribution of benefits

Other observations: Distribution of laptops and cycles is a smooth process.

9. Cash versus in-kind

Key findings

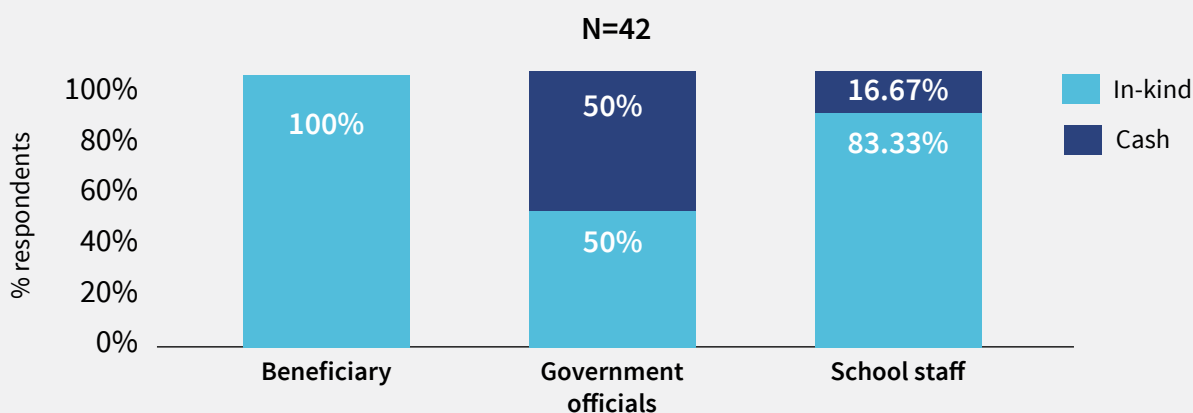
There is a strong preference for in-kind transfers among all stakeholders

Suggestions

Continue with in-kind transfers; the time has not come for cash transfers in lieu of in-kind benefits.

Cash transfers are a potential alternative to the distribution of in-kind benefits. The major advantage of cash transfers is the reduction in the administrative cost of the programme. Proponents of cash transfers argue that this cost reduction can be used to increase the percentage of the welfare budget that actually reaches intended beneficiaries. Cash transfers will also reduce the workload of government functionaries who monitor the distribution of benefits. The following graph shows the preference of different stakeholders for cash or in-kind benefits.

Figure 12: Preference of different stakeholders for cash or in-kind benefits



There is an overwhelming preference for in-kind benefits across stakeholders. The reasons cited for this preference are:

- Beneficiaries will not be able to purchase goods of the same quality with the money that the government provides;
- The goods being provided are not easily obtainable in rural areas. Beneficiaries will have to travel long distances to purchase them, further adding to the cost;
- Beneficiaries will have to travel to withdraw money from banks, which would add to the time they spend for receiving benefits;
- If money is transferred, households may use it for another purpose because education is not a priority for many.

All these reasons favour continuation of in-kind transfers in education. In addition, beneficiaries face the problem of fungibility²⁸ when asked about their preference for

“Kise pata kaun istemaal kar raha hai? Bahut log to bech dete hain.” (Who knows who may be using the benefits? Some even sell the goods received)
- School staff, Lalitpur

cash transfers. The bulk purchase allows the government to procure goods at a price that retailers will likely not be able to match. Even if the government passes off the administrative cost savings onto beneficiaries, the money received may not be sufficient to purchase all the goods currently provided.

Improving market access and bank penetration across the state can, at best, serve as a long-term goal. Also, cash transfers reduce administrative costs and improve efficiency considerably only when the government does not need to monitor how beneficiaries spend the money. In a scenario where it is unlikely that beneficiaries would use cash for its intended purpose, monitoring is essential, and therefore, cash transfers do not make sense.

28. Fungibility the ability of a good or asset to be interchangeable with another individual goods or assets of the same type.

10. Authentication

Key findings

The system is robust with no evidence of leakages.

Suggestions

Digital authentication can help reduce the workload associated with programme management.

Authenticating the receipt of benefits can ensure that they are given to legitimate, eligible beneficiaries. In doing so, leakages are plugged and ghost beneficiaries are eliminated. The in-kind benefit transfer programmes of DoSE has multiple verification checks to ensure that only genuine beneficiaries receive benefits. Due to the presence of a robust verification system, no leakages were reported during distribution.

However, introducing a simple digital authentication technique, coupled with shifting the entire verification process online, could reduce the department's workload. Available authentication methods are based on:

Factors	Basis	Example
Knowledge factors	Something an individual knows	Password
Ownership factors	Something an individual has	Mobile connection (OTP)
Inherence factors	Something an individual is	Biometrics

Figure 13: Authentication factors

There are several possible methods of digital authentication. We explored a number of alternatives ranging from the simple, such as SMS authentication, to nascent techniques such as facial recognition. Based on our research and the requirements of DoSE, we conclude that a simple OTP authentication that makes use of the in-house MIS is the ideal option. The figure below provides features of the system, while Appendix VI provides detailed costing.

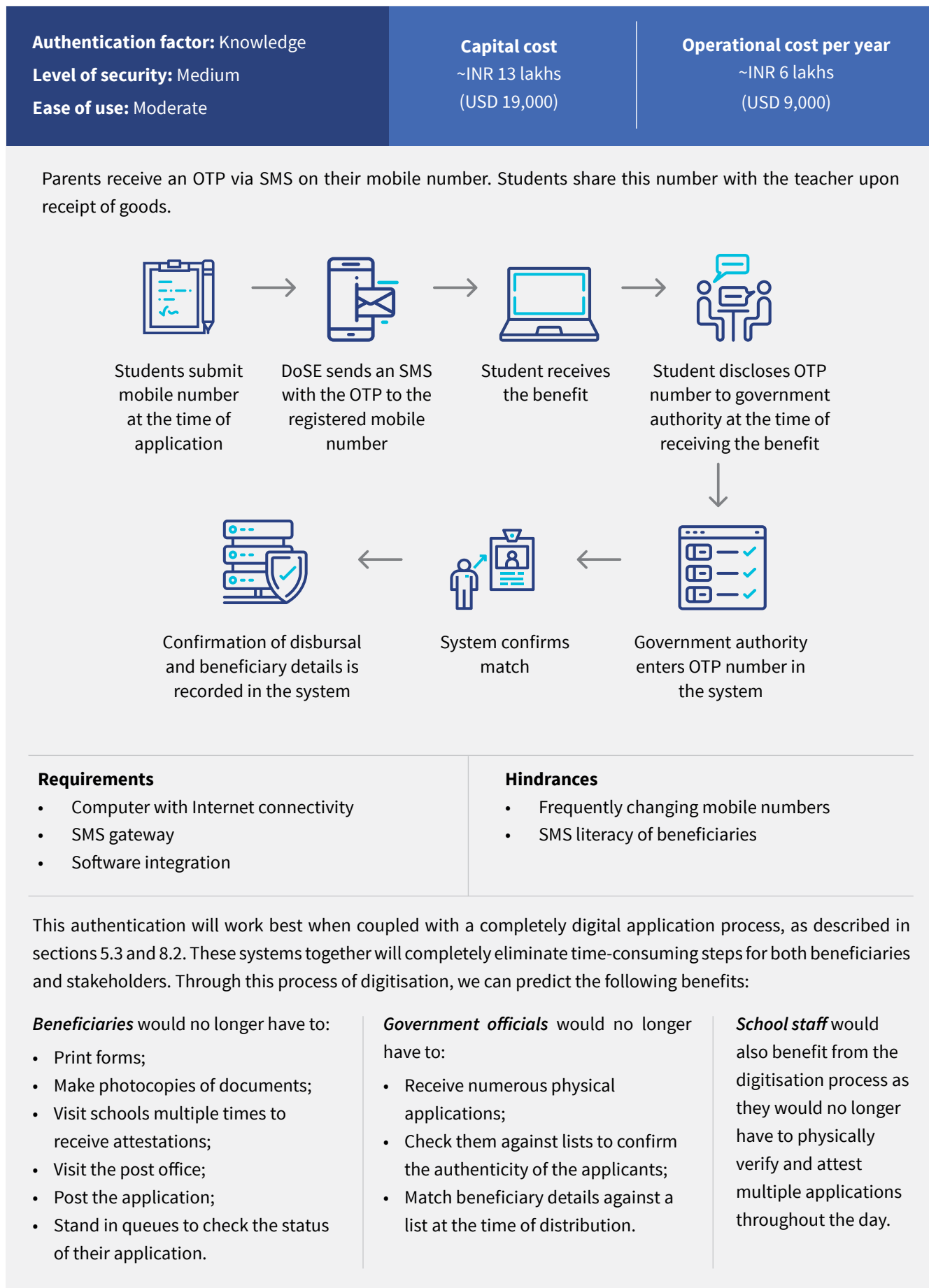


Figure 14: Details of non-Aadhaar based OTP authentication

शिक्षित बेटियाँ राष्ट्र की अमूल्य धरोहर हैं।

ईमानदार है ही का अर्थ है हजार मनकों में अल्पा
रानी लक्ष्मी बाई

जय हिन्द

कक्षा-6

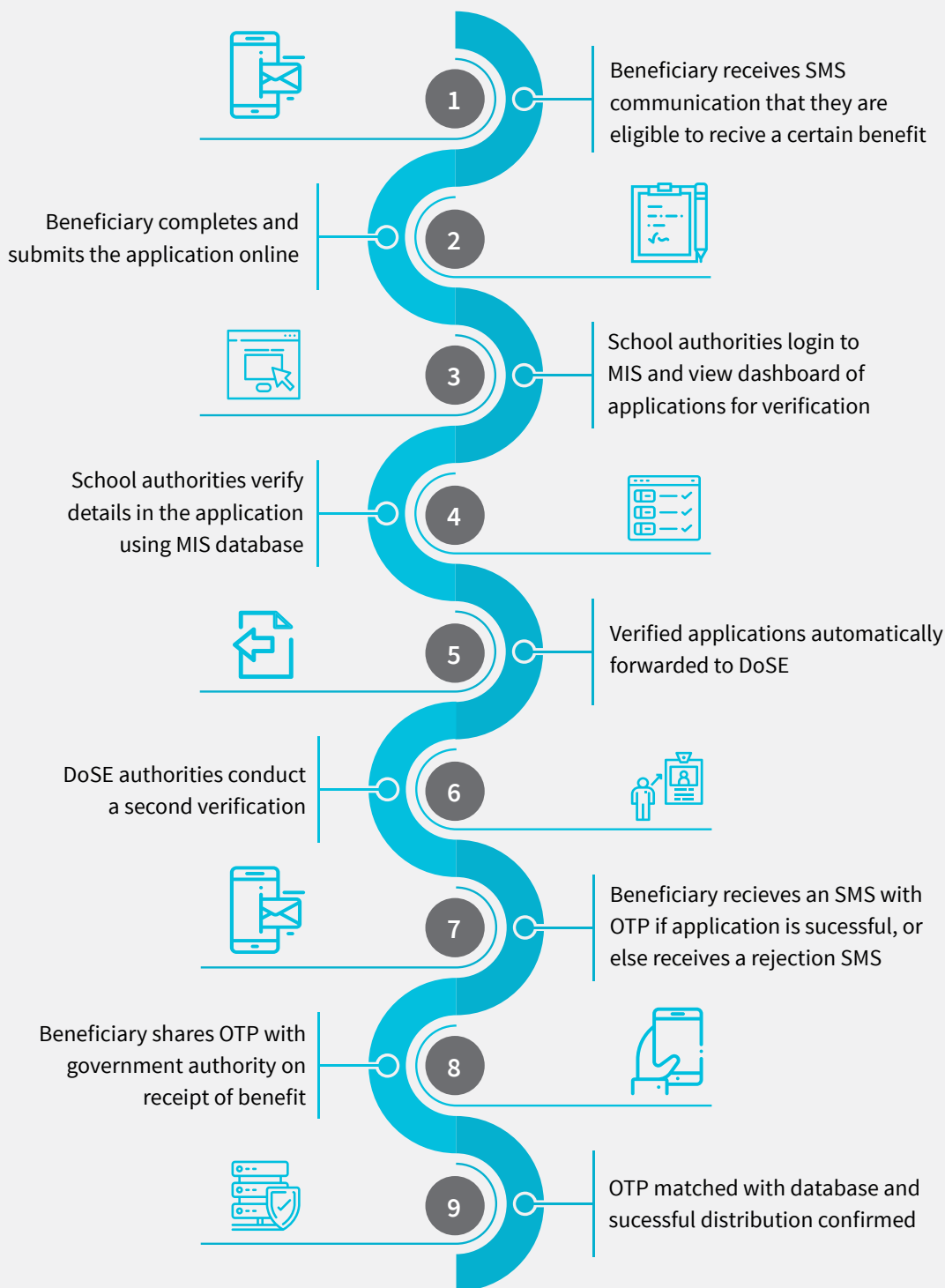
अध्यारक विभाग

क्र. सं.	नाम	पद	वेतन
1	श्री. म. ल.	अध्यारक	₹ 1,00,000/-
2	श्री. म. ल.	अध्यारक	₹ 1,00,000/-
3	श्री. म. ल.	अध्यारक	₹ 1,00,000/-
4	श्री. म. ल.	अध्यारक	₹ 1,00,000/-
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9	श्री. म. ल.	अध्यारक	₹ 1,00,000/-
10	श्री. म. ल.	अध्यारक	₹ 1,00,000/-



11. Conclusion

In-kind benefits to secondary school students constitute a well-planned and well-managed programme. However, small shifts from what are now manual processes to digital can simplify the process and reduce the workload for stakeholders. This would improve the experience of stakeholders with in-kind transfers in secondary education. The following diagram illustrates the process that makes use of digital technology:



As with all technology-driven initiatives, there is also a need to focus on the people who operate the technology. Adequate training and a sufficiently long period of handholding are crucial to ensure that stakeholders are comfortable using the new systems.

Figure 15: Step by step guideline for implementation of recommendations



Appendix I: Research details

The sample size of the qualitative study was spread out sufficiently to capture a sample of stakeholders’ perception and challenges for the area of study – the state of Uttar Pradesh.

We conducted the analysis based on the experience reported by stakeholders. Districts selected were Gorakhpur, Lalitpur, Lucknow, and Meerut. These districts cover the four regions of the state, that is, Purvanchal,

Bundelkhand, Awadh, and Western UP. We made the selection based on consultation with both departments.

The government has numerous categories of schools. For the sake of simplicity, and because of the low impact on our study, we only distinguish using some of the categories that fall broadly under two types of classification, that is, scope and management.

Based on the scope of the study, we can categorise schools as:

Classes	Department	Schools covered in the research
VI–XII	Secondary Education	7
I–XII	Secondary Education	8
Total		15

Based on the management of the schools, some of the classifications are



Government schools

Schools managed by the government



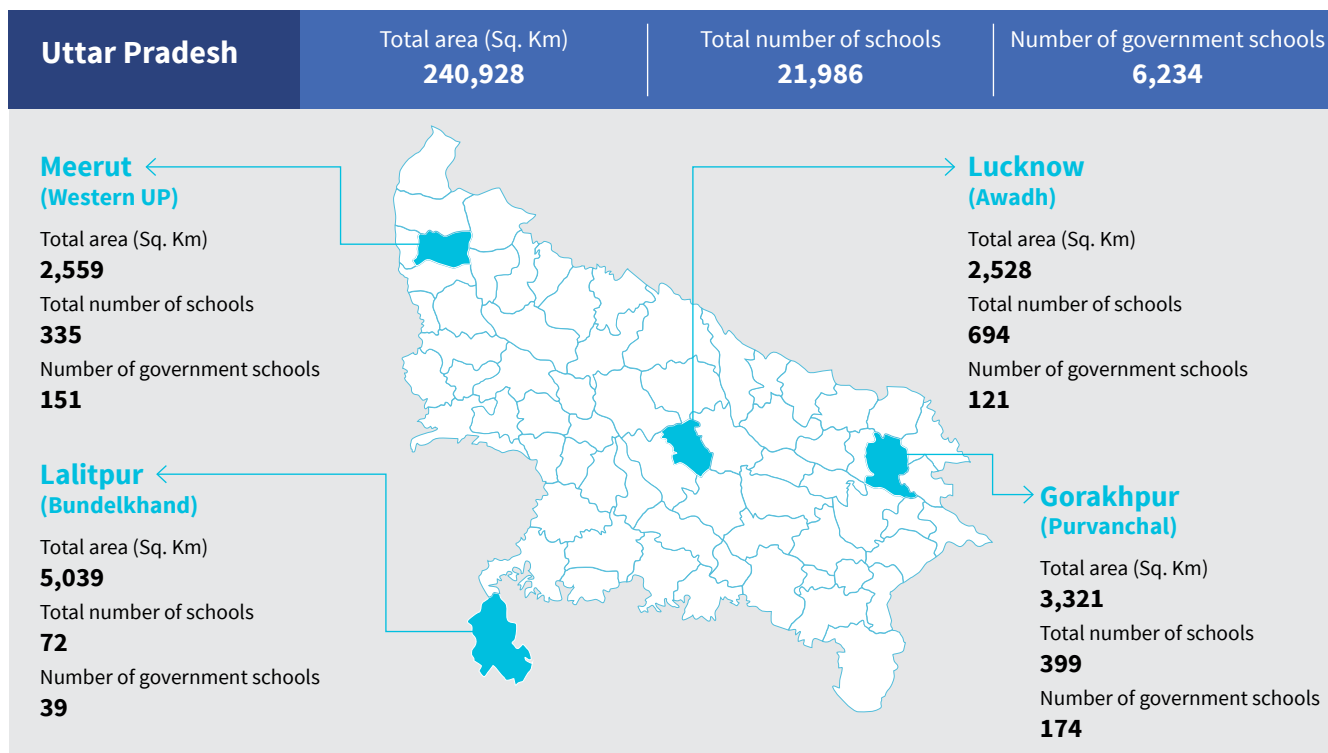
Government-aided schools

Schools that receive government funds but are managed by an independent board which received approval of the government post-formation

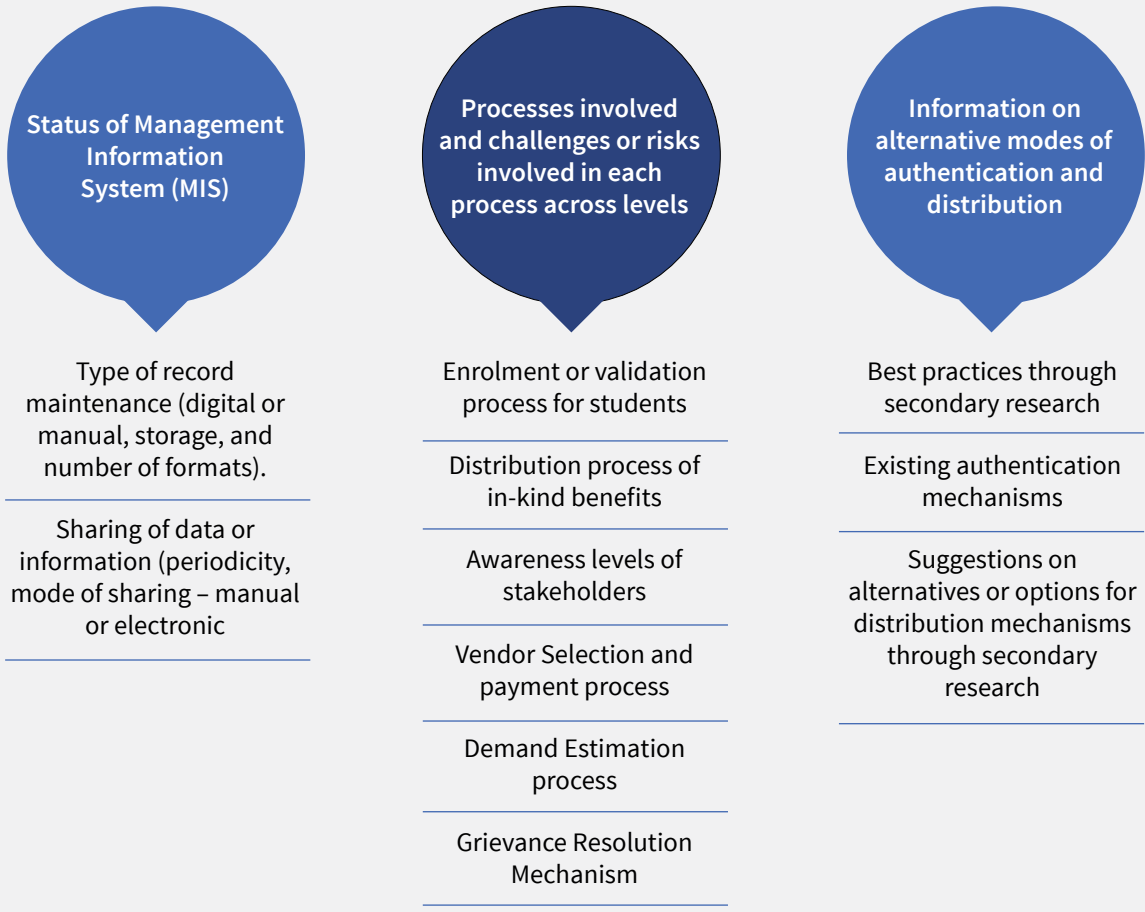


Private schools

Schools that do not receive government funding and are run independent of government influence



Provided below is the framework that we used to conceptualise the study:



Appendix II: Other important concepts

This section outlines some of the important terminology and their respective meanings.

Poverty line	This is a classification of households in India, based on family income. Households are classified as Below Poverty Line (BPL) or Above Poverty Line (APL). Present limits are based on the recommendations of the Tendulkar Panel made in 2010-11. The panel recommended a minimum daily wage of INR 27 (USD 0.417) in rural areas and INR 33 (USD 0.509) in urban areas as the level of demarcation. If a household is classified as BPL, it is eligible to receive a host of government-sponsored benefits.
Girl education	The state gives special attention to educating a girl child as it recognises traditional barriers that prevent girls from availing opportunities that are similar to boys. The department manages a number of girls' schools and girls receive preference to avail certain state-sponsored benefits, regardless of other parameters.
Government Act	A bill which has passed through the legislative houses of parliament and becomes a law. State governments adopt Acts passed by the Government of India to make it a law in the state.

Appendix III: MIS details

Unified District Information for Education System (UDISE) – UDISE is a comprehensive platform that captures data on the entire education ecosystem. It is a primary database for decision-making, planning, and allied activities. Data is collected from every school in the state and is not limited to government schools.

In Uttar Pradesh, prior to the academic year 2017–18, information for UDISE was collated at the back-end by merging a database called Student Database Management Information System (SDMIS) and another database called Data Capture Format²⁹ (DCF). In 2018, both were merged into a [single format](#)³⁰ to be completed by every school. UDISE data can be completed offline through an

application form and uploaded online when connectivity is available.

Shaala Siddhi – *Shaala Siddhi* is a school evaluation tool used for both internal as well as external assessment of an institution. Schools are given grades on multiple parameters. Like UDISE, the grading is not limited to government schools. Authorities use this platform to understand specific areas that require improvement. *Shaala Siddhi* focuses on the school as a unit and does not concern itself with individual student details. *Shaala Siddhi* is an online dashboard for data entry and only completed reports can be downloaded to be used offline.

S No	Field	UDISE	Shaala Siddhi
1	Student demographics	✓	✓
2	School UDISE ID	✓	✓
3	Infrastructure	✓	✓
4	Teacher profile	✓	✓
5	Exam results (all classes)	✓	✓
6	Vocational training	✓	✓
7	School profile	✓	x
8	SMC details	✓	x
9	New admission, enrolment and repeat-ers	✓	x
10	Pedagogy capability	✓	x
11	Incentives and benefits, including SSA benefits provided	✓	x
12	School accounts	✓	x
13	Placement details	✓	x
14	Student details – through SDMIS	✓	x
15	Details of parents, teachers, and school principals	✓	x
16	Details of children with Special Needs (CWSN)	✓	x
17	Details of teachers and principals	✓	x
18	Receipts and expenditures (grants)	✓	x
19	Details of non-teaching staff	x	x
20	SMC performance	x	✓
21	Teacher competence	x	✓
22	Overall student performance of the school	x	✓

29. DCF is the terminology used by the NUEPA to refer to this format which captures school level information

30. http://udise.in/DISE2001/U-DISE/2016-17/SDMIS/Format4StudentProfile_18July2016_FormatColumns.pdf

23	Subject-wise student performance of the school	x	✓
24	Teachers assessment	x	✓
25	School leadership	x	✓
26	Community partnership	x	✓
27	Locality demographics	x	x
28	Household demographics	x	x

We can see from this table that there is considerable overlap of data collected for UDISE and *Shaala Siddhi*. While the platforms serve different purposes, a single integrated platform would remove the need for duplicate entries – both of data points and instances of data entry.

The department could develop a system so that the data is collected only once and different platforms communicate with each other so that similar data points are auto-populated. Representation of the data for different purposes could continue, but the bifurcation must be automated and take place at the back-end by the software.

An MIS system is capable of generating three kinds of reports:

- **Periodic** – Reports that are generated regularly. Reports may be produced daily, monthly, yearly, or on at any other time interval. They are useful for comparison purposes., for instance, the Annual report generated for budgeting.
- **On-demand** – Reports that are generated using existing data whenever a user request. They are used normally to answer questions on current status., for instance, Report generated to check the status of distributions when activities are ongoing.
- **Trigger** – Reports that are generated automatically when exceptions occur. They help alert users to situations where immediate action may be required, for instance, in the case of a report to indicate depleting stock during distribution.

MIS reports may be used at different levels for different purposes. The levels of decision-making are categorised as follows:

- **Strategic management** using MIS is done both at the state-level and at the national level. Strategic management is the use of MIS for long-term planning for things, such as changes in the external environment using periodic and on-demand reports. Strategically, MIS is used to make projections based on current scenarios, identify areas of concern, plan interventions based on identified gaps, and allocate resources necessary for interventions. MIS finds application in the strategic sphere based on its ability to present a macro-picture of the scenario, as well as showcase a detailed picture of specific areas of interest.
- **Tactical management** at the district level. Tactical management is the use of MIS to administer ongoing programmes and plan for impending ones using on-demand and trigger reports. Tactically, MIS finds application based on its ability to present comparative reports. Officials at the district-level can look at specific thematic and geographical areas that need improvement in their district, to focus and plan their efforts accordingly.
- **Operational management** using MIS can be conducted both at the block and school levels. Operational management is the use of MIS for tracking progress and taking immediate actions using trigger and on-demand reports. Operationally, MIS finds application based on its ability to present real-time data. Officials responsible for day-to-day operations can use MIS to monitor implementation and check for compliance..

Appendix IV: General information on government communication

We may classify government communication as:

- Internal and external communication
- Top-down and bottom-up communication.

Internal communication includes all information exchange within the department. Modes of communication used are government orders, memoranda, compliance notices, utilisation certificates, information requests, data, official letters, file management, etc. Channels of communication used are official letters issued (by post) and emails with scanned copies of letters.

External communication is the exchange of information between the department and entities outside the department. Outside entities include external stakeholders, central ministries, government agencies, private agencies, public agencies, vendors, service providers, media, etc. Government departments have increasingly become sensitive to the media's role in shaping public opinion and international discussions as it pertains to managing mainstream and social media are ongoing. Modes of communication used are official letters, notifications, brochures, data or reports, press releases, advertisements, tender invites, information provided on the official website, etc. Channels of communication used are print media, digital media, internet, and government publications.

Top-down communication is the communication that flows from a higher level to a lower level in the organisation's hierarchy. Top-down communication takes the form of

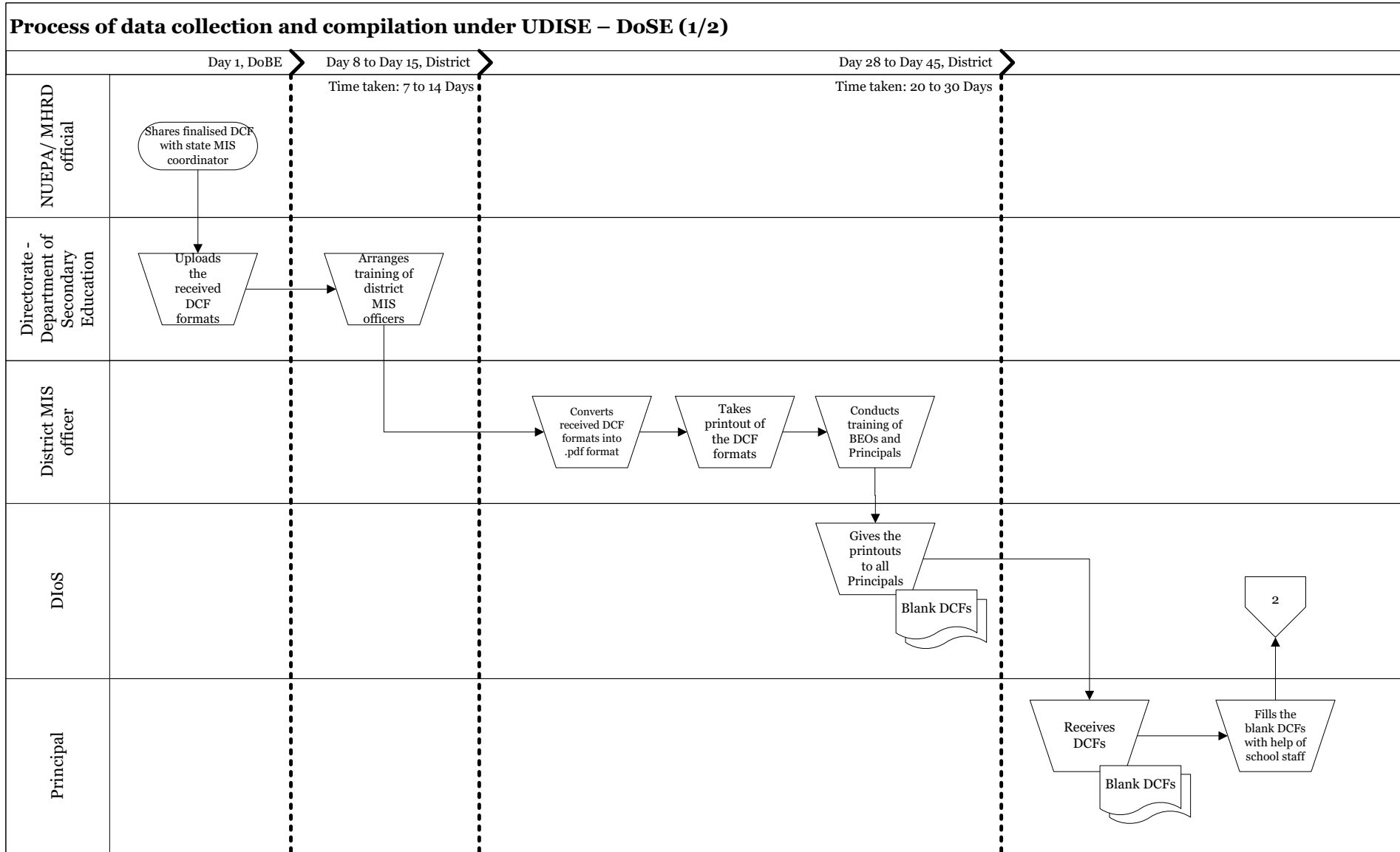
orders for compliance, requests for data, information on decisions taken in form of directives or government orders. Channels used are email, fax, telephone, and official letters.

Bottom-up communication is communication that flows from the lower level to a higher level in the organisational hierarchy. Bottom-up communication takes the form of order receipt confirmations, compliance notifications, data inputs, and utilisation certificates. Channels used are similar to top-down communication and include email, official letters, telephone, and fax.

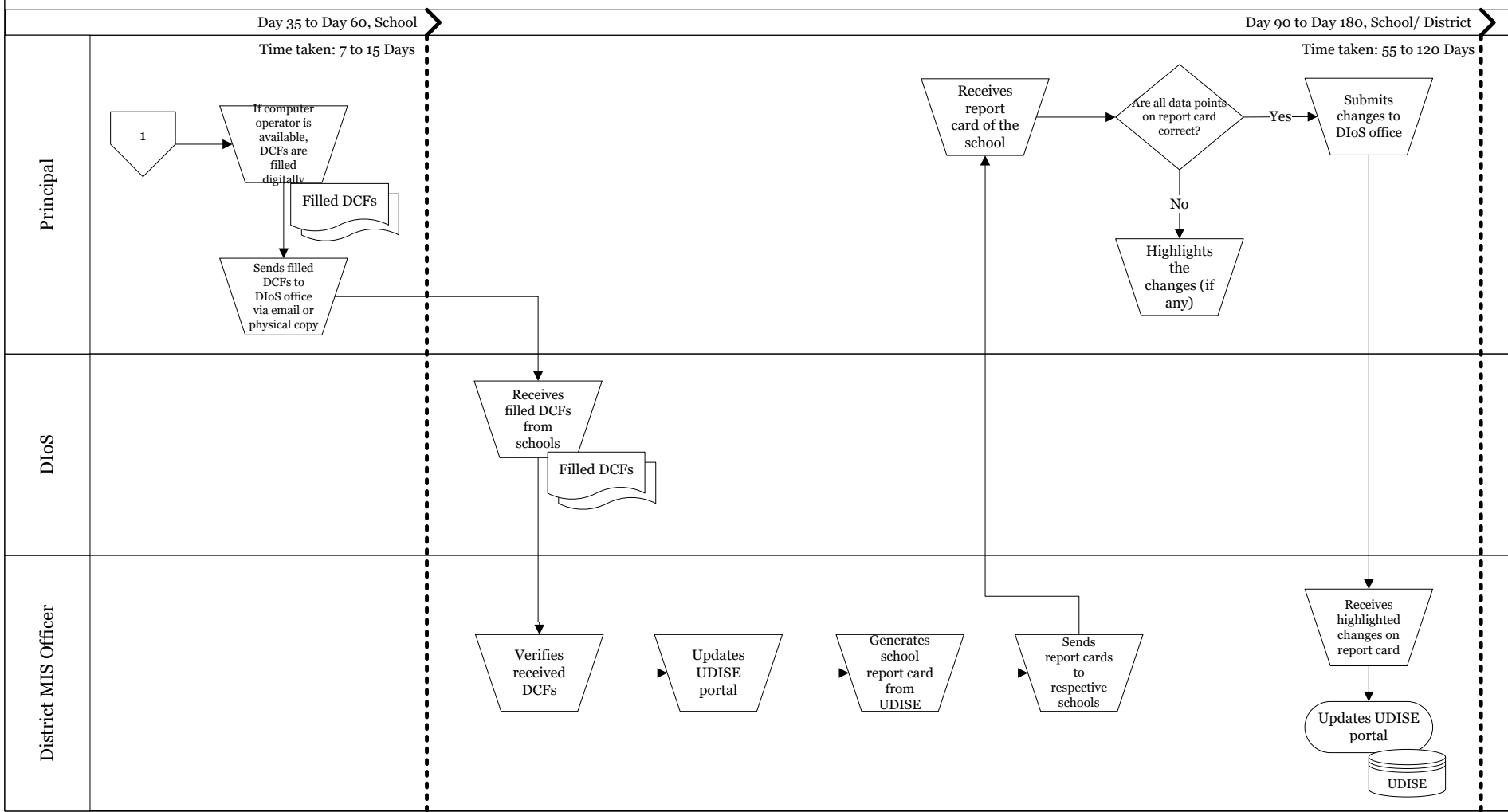
Failure to plan and execute each of these methods of communication has different impacts as described in the following list:

- Internal
 - » Top-down – Staff will not execute orders to the best of their capacity
 - » Bottom-up – Senior management will not have an accurate picture of the activities being conducted and will not be able to take correct decisions.
- External – Beneficiaries and other stakeholders will not be aware of work that the government is doing nor be in a position to comply if anything is expected of them. Also, failure on part of the government to communicate programmes effectively can lead to confusion among beneficiaries and stakeholders regarding the rationale behind the government's actions.

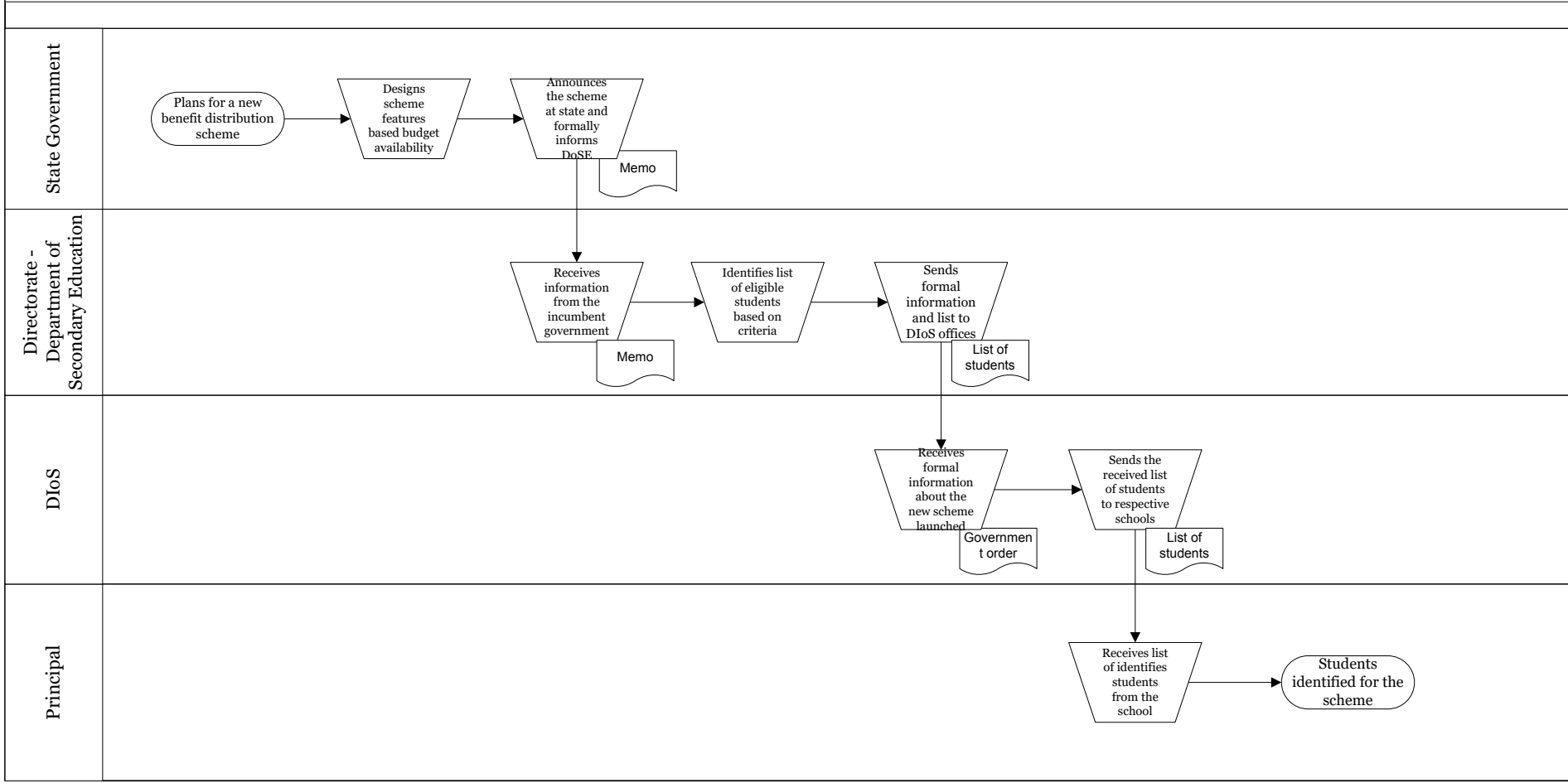
Appendix V – Process maps



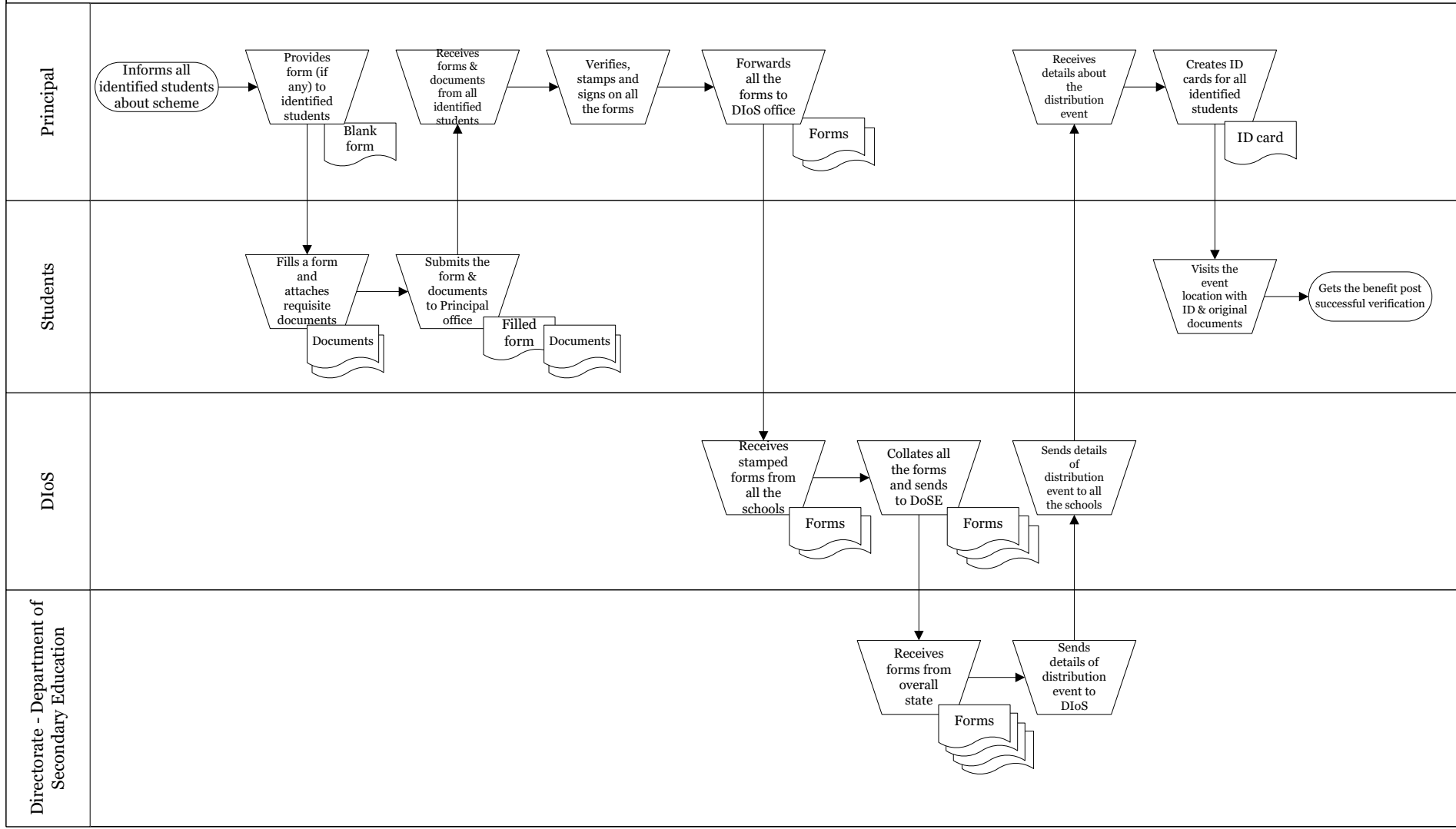
Process of data collection and compilation under UDISE – DoSE (2/2)



Process of beneficiary identification – DoSE



Process of benefit distribution done in past (laptop and cycles)



Appendix VI – Costing sheet for authentication options

Note:

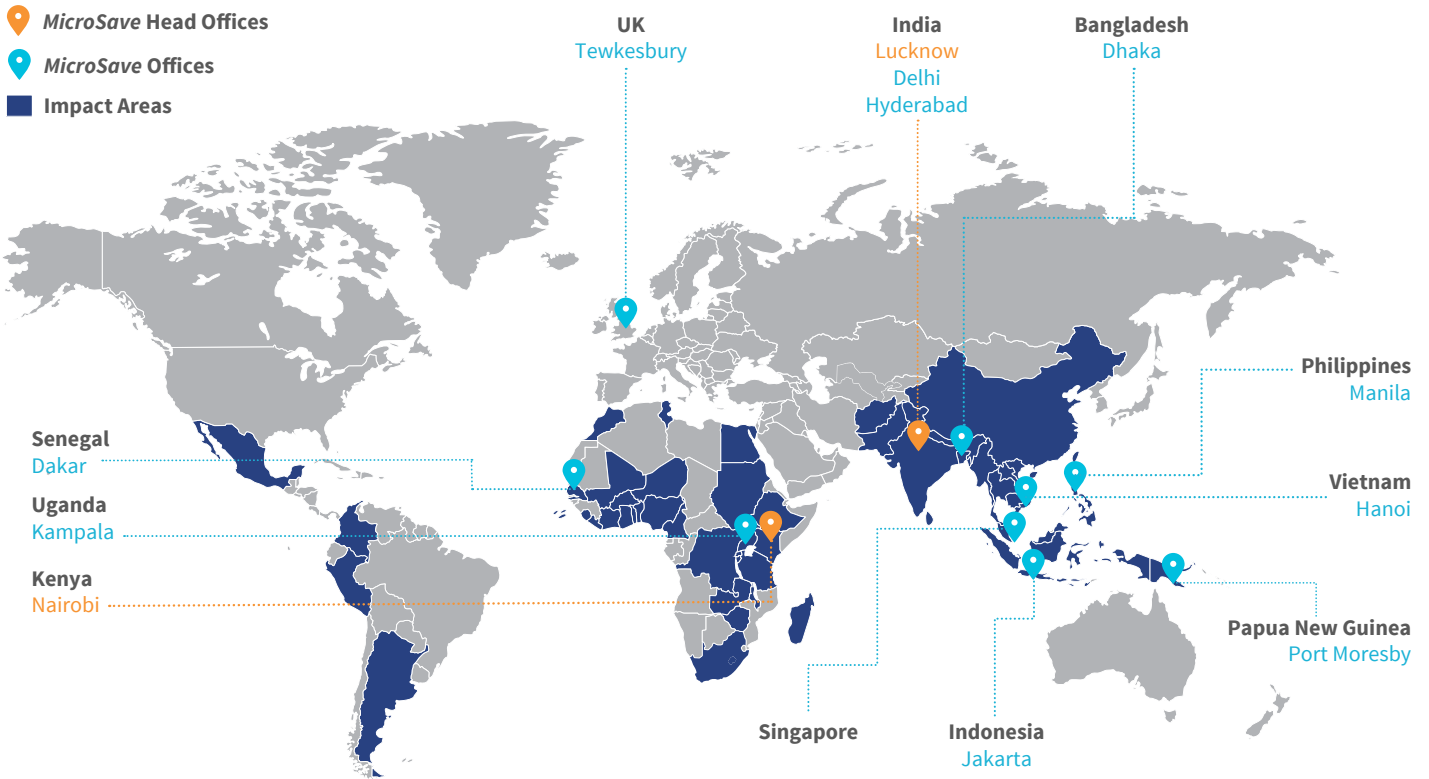
- Costs mentioned are calculated as per average rates in market. This costing is only for the distribution of one benefit.
- Electricity and other basic infrastructure is a pre-requisite before implementing any of the modes. Desktops and other infrastructure can be arranged from DoSE offices.
- Internet device here refers to a modem like setup or portable Wi-Fi device.
- Software required shall not be a new application, but a simple platform within exiting MIS, which can manage the authentication needs.
- Internet cost is assumed to be INR 500 per event.
- SMS gateway cost is for OTP. Pricing for such service is usually on per SMS/ OTP basis which has been taken as 20 paisa here. This cost will be incurred for every instance of distribution. Every time a new benefit distribution is planned, this will re-occur unlike other expenses.
- Cost has been calculated assuming 10 lakh (1 million) beneficiaries per year. This assumption is based on numbers quoted in benefit distribution for previous schemes in Uttar Pradesh.
- OTP mode will require active mobile numbers to be registered with MIS platform. If MIS platform is not modified DoSE will have to rely on Aadhaar seeded mobile numbers.
- The total cost here doesn't include the event expenses.

Uttar Pradesh DoBE data	
Districts	75
Blocks	822

Capital expenses			
Mode of authentication			OTP on registered mobile number: non-Aadhaar and non-biometric
Block-level	Infrastructure	Internet Device (Router/ Wi-Fi)	₹ 1,200
		Laptop/ Tablet	₹ 0
State-level		"Software cost/Adjustment to manage Authentication"	₹ 3,00,000
Total of all blocks			₹ 9,86,400
Total one-time cost			₹ 12,86,400
Operational expenses (annual)			
Per-school	Infrastructure	Internet	₹ 500
State Level		SMS Gateway	₹ 2,00,000
		Software maintenance lumpsum	₹ 25,000
Total of all blocks			₹ 4,11,000
Total state-level			₹ 2,25,000
Total recurring cost per year			₹ 6,36,000

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