100% STUDENT ENROLMENT EFFICIENCY PROGRAM

FINAL YEAR PROJECT UG 2014

By

Leader – 33838 Zainab Nawaz

Member 1 - 34007 Noor Imran Haq

Member 2 -35369 Haider Ahmed

NUST Business School

National University of Sciences and Technology, Islamabad, Pakistan

2014

This is to certify that the

Final Year Project Titled

100% STUDENT ENROLMENT EFFICIENCY PROGRAM

submitted by

(Leader – 33838 Zainab Nawaz)
(Member 1 - 34007 Noor Imran Haq)
(Member 2 -35369 Haider Ahmed)

has been accepted towards the
requirements for the undergraduate degree

in

BS Accounting and Finance

Advisor Name

Designation (Prof/Assoc Prof/Assit Prof/Lec)

NUST Business School
National University of Sciences and Technology,
Islamabad, Pakistan

TITLE: 100% ENROLMENT EFFICIENCY PROGRAM

ABSTRACT

The report explains in detail the project Khyber Pakhtunkhwa 100% Enrollment Program. It begins with the identification of the purpose of such an initiative and its long term contribution towards the improvement of school management as well as student enrollment rate in elementary level schools in Khyber Pakhtunkhwa. Improvement in education system brings about an inevitable change in the socio economic environment of any nation and helps in the eradication of poverty and crime. The report constitutes information regarding the development and beta testing of software Education 2.0, market analysis and the benefit of converging the KPEMIS database with the real time data of private schools. Market analysis helps us identify the needs and wants and the most desired values to the customer. Hence, surveys were conducted in schools with branches ranging 1-4. The report contains a comprehensive financial plan projecting future cash flows and detailed costing elements in developing the software as well as the training, implementation and the maintenance of the software. It further presents the growth rate at which student enrollment will improve in the province of Khyber Pakhtunkhwa and concludes with challenges and proposed solutions in implementing the project in the province.

ACKNOWLEDGEMENTS

With thanks to Almighty Allah who gave us the strength and determination to work on this project and successfully complete it.

To our supervisor, Mr. Yaruq Nadeem

Thank you Sir, for always being available to assist us with questions and for suggesting better alternatives to the problems we encountered throughout the project. For letting us take our direction on this, trusting us throughout and mentoring us till the very end.

To our industry representative, Mr. Abdullah Tariq

We are highly indebted for your guidance and constant supervision as well as for providing us with your precious time to test and debug our software, Education 2.0. Your expertise in the field of software development has helped us improve the design of the school management software.

To Provincial Minister Higher Education KPK Assembly, Mr. Mushtaq Ahmed Ghani

We would like to extend our sincere gratification for inspiring us into taking such an initiative. Thank you for motivating us to the highest peak and to provide us the opportunity to prepare a project of such kind.

To our friend, Mr. Abdullah Etizaz

We are immensely thankful to you for your elevating inspiration, kind help and persistent backing in the completion of our project.

LIST OF FIGURES

Contents

1.1 Literature Review

“Primary Education: Progress and Constraints” by V. Ratna Reddy and R. Nageswara Rao looks at various aspects of education in an effort to pinpoint the reasons for the poor performance of the sector. The paper stresses on the fact that education is one of the most important social indicators that is directly linked with economic development. Level of literacy or education is directly associated with gross domestic product, indirectly with poverty, population growth, health and crime rate. Despite its importance, education continues to be a neglected area at the policy level. Education is recognized as a basic input for empowerment of individuals and overall development of the society. Expenditure on education and its intra-sectoral allocation, in general, appears to be the main factor influencing literacy levels [Sharif and Ghosh 200]. The paper makes an attempt to examine various aspects of education in the state of Andhra Pradesh at a disaggregate level with a view to pinpoint the causes for its poor performance in primary education. Some of the important issues that need attention in this regard include: a) trends in the status of primary education and public expenditure on primary education in a regional context, b) factors (demographic, socio-economic, etc) influencing literacy levels in a regional context, and c) constraints (economic, institutional and policy) on achieving total literacy in the state. The intention here is to examine the problem of schooling (primary) at the district level and also between rural and urban situation.

The paper “A New Perspective on Violent Crime Burden Index: Evidence from Indian Districts” by Kausik Chaudhuri, Payel Chowdhury and Kevin Reilly, provides a complete understanding of the various indicators of violent crime the determinants of these crimes in India using district level data for three census years. namely, 1981. 1991 and 2001. The estimation shows that variables like urbanization, work force

participation rate, literacy rates, sex-ratio voter turnout in state election are important explanatory variables for crime incidences in India. Higher literacy rate is seen to decrease incidences of violent crime. The "civilization effect of education on crime" in Usher (1997) and "increasing opportunity cost of illegal activities from higher levels of education" can explain the negative relationship between education and crime.

The paper by Madiha Shah “Impact of management information systems (MIS) on school administration: What the literature says” highlights the importance and the rewarding impact of the utilization of technology in the school management. The use of information technology in educational management has rapidly increased due to its efficiency and effectiveness. In the initial stages of its development, management information systems (MIS) main purpose and usage was to improve the efficiency of school office activities. It was used to store student and personnel data. The most concern was being focused on data entry and collation, rather than upon data transfer or analysis. The value of management information was recognized during its integration stages. Overall review of literature highlighted positive impact of MIS on school administration and management including better accessibility to information, more efficient administration, higher utilization of school resources, reduction in workload, better time management, and improvement in the quality of reports. A number of inhibitors to MIS use are evident in the literature; foremost among these are lack of time, lack of confidence or skills, lack of training, lack of senior management support, and lack of technical support. MIS can provide administrators and teachers with the information required for informed planning, policy-making, and evaluation. MIS have changed school management in the areas of leadership, decision making, workload, human resource management, communication, responsibility, and planning. These systems can assist the school manager in determining the aims of the school,

formulating strategic plans, distributing resources, and evaluating staff performance as well as organizational success.

1.2 Problem Statement

In today's era of technological advancement, development of nations is linked largely with the education of their citizens and availability of trained human resources for the economy. Education not only nurtures talent and personality of children from the beginning of their childhood, it also prepares them for their role as a responsible and productive citizen. Education enables nations and local communities to gradually evolve and strengthen their systems of social justice, democratic institutions, and foster values of peace, harmony, tolerance, and mutual respect among the new generation. Education is the fundamental right of all human beings, and an unequivocal path to sustainable socio-economic development. Constitution of Pakistan states,

"The state shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law"

(Article 25-A, Chapter No 1: Fundamental Rights)

The Khyber Pakhtunkhwa assembly passed a law binding the government to provide Free Compulsory Primary and Secondary Education to the children up to 16 years of age. Under the law, the government would constitute a school attendance authority for each school having mandatory representation of the parent teacher council to ensure every child shall attend a school under its jurisdiction and take such steps as it may consider necessary or as specified by the government. The parents failing to enroll their children in school without proper reasons shall be punishable with imprisonment, which may extend to one month or fine which may extend up to Rs100 for every day after the conviction for which the failure continues or with both. The KPK assembly has passed a law to regulate the functioning of private schools in the whole province. The Private School Regulatory Authority is responsible for formulating policy, guiding principles

and criteria which shall be met in order to establish and register a private school in the province.

The Pakistan Education Statistics (PES) 2014-15, launched by the Academy of Educational Planning and Management, provides an overview of the state of education across all provinces and regions. The Elementary and Secondary Education Department of the K-P government, focused on improving the enrolment and retention of the students in government schools by improving quality of teaching and creating a better environment for learning. Analysis shows that K-P is the best performing province/region after Islamabad Capital Territory (ICT), with only 35.9 per cent of children of this age bracket being out of school. With tremendous efforts put by the government the rate is still alarming.

“If it is illegal to not study in KPK why is the enrollment rate so low?”

We believe that the root of this problem is of information inefficiency. If somehow the police, area education office and public have the data of the children in their area that are not currently enrolled only then they can take proper action which will increase the enrolment rate and literacy rate by many folds.

1.3 Vision

Using ICT to raise primary and secondary education statistics and standards of Province Khyber Pakhtunkhwa and develop 100% transparent corruption free modern education system equal for all.

1.4 Mission

To facilitate every educational institute affiliated with elementary and secondary education department with customized Enterprise Resource Management System.

Attempt to ensure that School Attendance Authority has adequate, authentic and real-time data to take or propose action for students with little or no school attendance as per bill on free and compulsory education 2017.

To devise a system to integrate real-time data from private schools in central KPEMIS database.

To strengthen control of private school regulatory Authority as per public private regulatory authority bill 2017.

To produce most authentic and real-time dataset of out of school children on district, tehsil, union councils and ward level as per bill on free and compulsory education 2017.

To provide adequate technology to local representatives to monitor out of school in their respective area and target students on individual basis.

1.5 Scope

The scope of this project, not limited to, but defined specifically for the province of Khyber Pakhtunkhwa for two main reason mentioned below:

1. The Current Government of Khyber Pakhtunkhwa has shown an immense interest in the matter and thus a possibility of favourable political conditions exists for execution of this project in the province.
2. The solution proposed has most favourable policies in Khyber Pakhtunkhwa.
3. The IT infrastructure required for the implementation of the proposed solution can be integrated into the currently used Khyber Pakhtunkhwa Education Management Information System (KPEMIS).

1.6 Objectives

To design a customized school management software for all private and Non-Government (NG) schools of KPK to make a real-time total in-school children database in private and NG schools.

Implement the software, run a demo test in a controlled environment and gain feedback regarding the efficiency of the software.

Training of school administration to use school management software to computerize their records. Alongside, providing video tutorials as a constant guide of the working of the software to the user.

Upon receiving the approval from the Education Ministry of KPK, and generation of positive results of the software, it will be implemented in all the private and NG schools of the province. But this objective is contingent upon the approval of the government of KPK.

1.7 Methodology

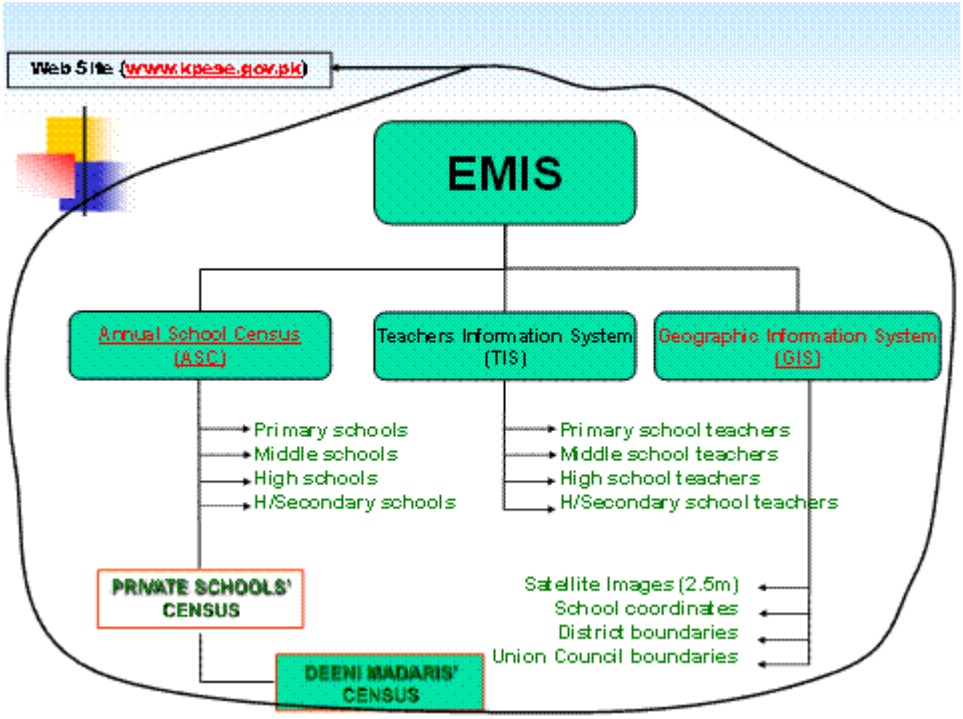
1.7.1 Design

Data of public schools is already being synced to Khyber Pakhtunkhwa Education Management Information System (KPEMIS) central database through a software called School Management and Information System (SMISS).

By merging the database of KPEMIS with the central database of Private schools we can get an aggregate database containing records of all students of KPK currently studying in any school.

Aggregate central database can then be matched to NADRA's Database programmatically to store the records of children that are not studying in any school in another central database.

A software will then be made on this database for relevant users of the information.



Present Status of Data Collection (EMIS)

Present Data Collection System is Annual Based and the chain is

Figure 1: Current Communication Structure

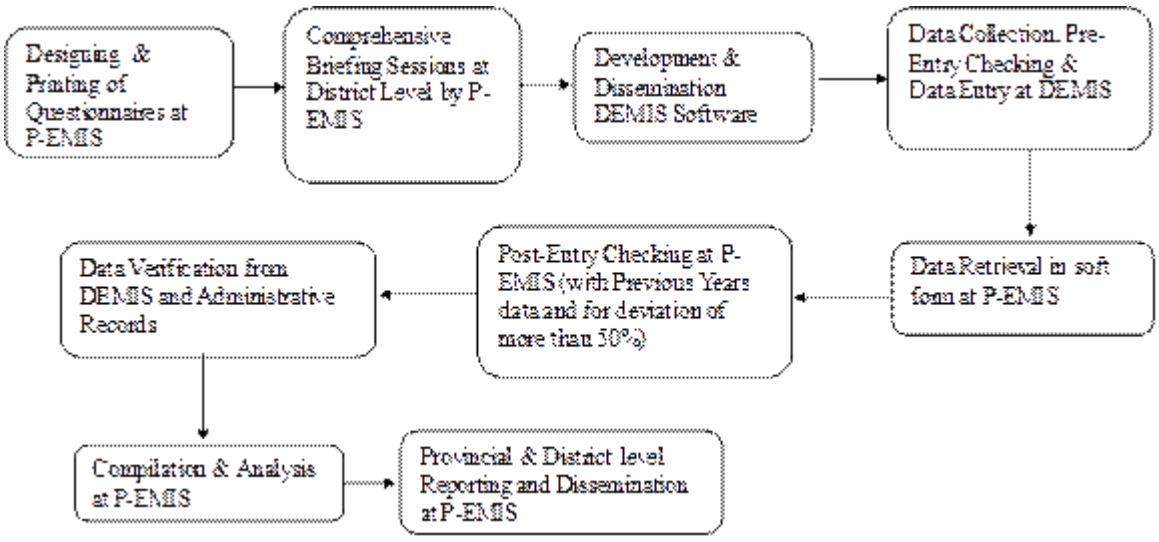
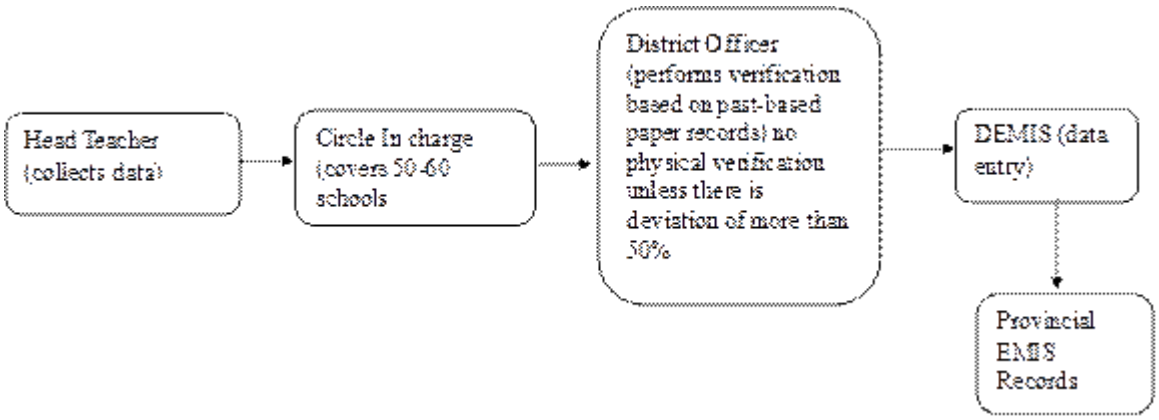


Figure 2: Detailed Data Transmission Network

Present Status of Data Collection (EMIS)

Present Data Collection Chain in the districts is



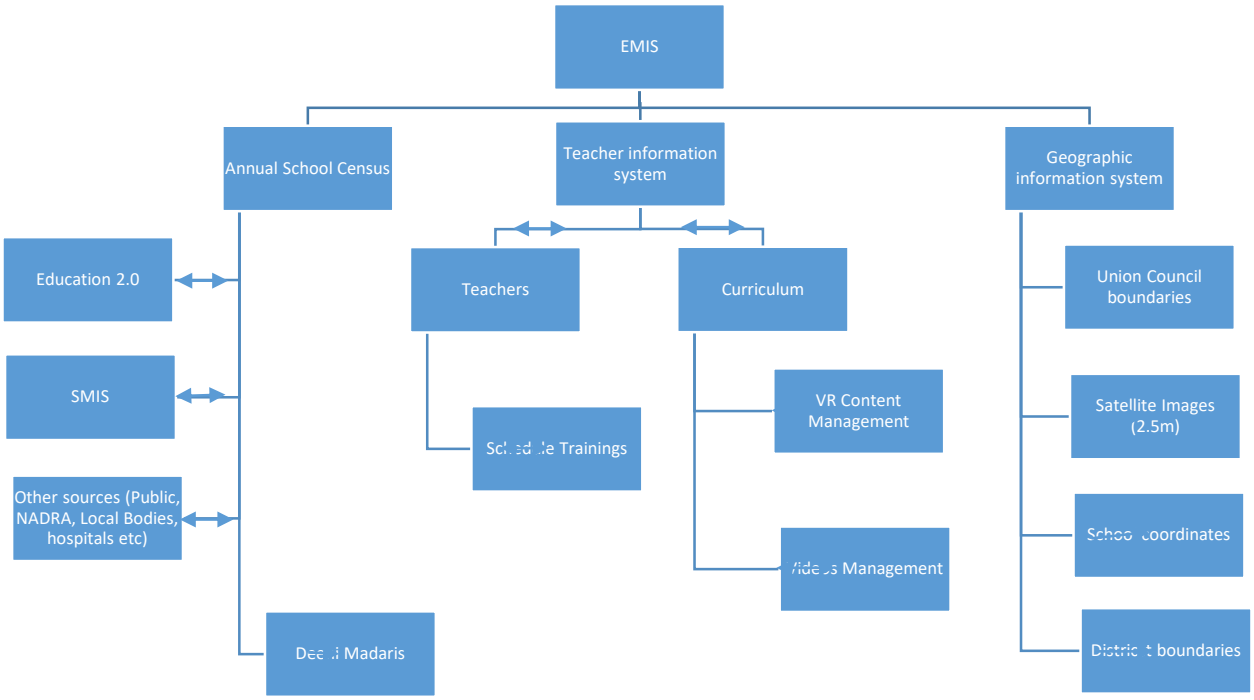


Figure 3: Proposed Communication Structure

→	Manual Data Transmission
↔	Real Time Dualway Data Sharing

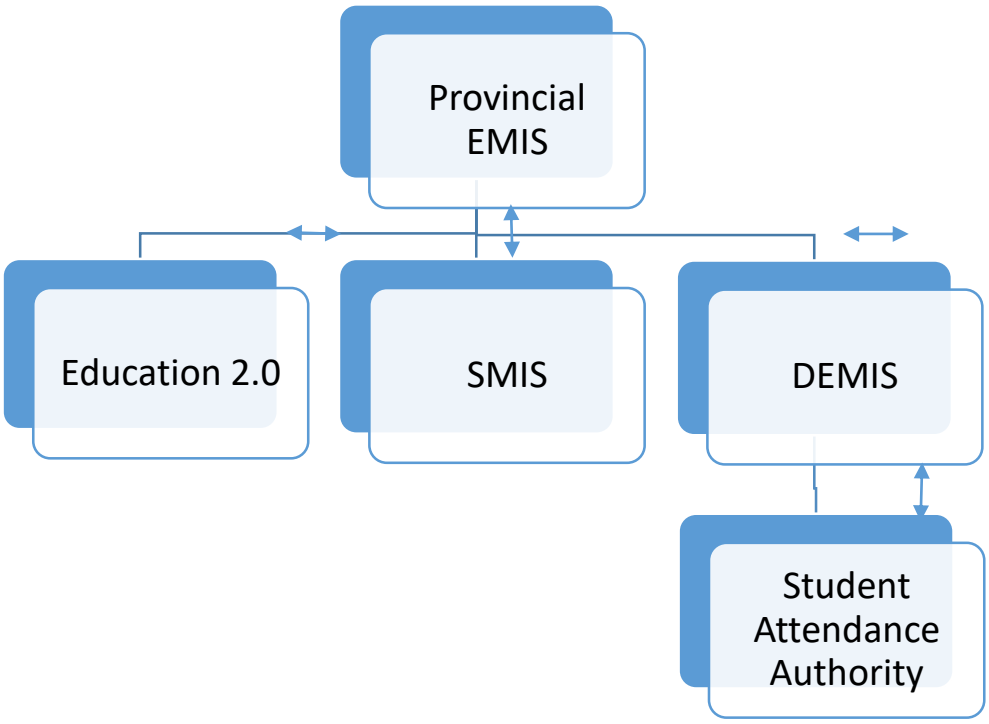


Figure 4: Continuation of Structure

The flowcharts above replace the old communication structure with a new one. Double arrows represent real time dual way data sharing. Changes involve transferring of private school data through internet real time transmission rather than surveys. Education 2.0 is the name of the management information system which connects private schools with Khyber Pakhtunkhwa Education Management Information System(KPEMIS). Under the new revised structure, Annual Student Census (ASC) will now obtain data from NADRA, local bodies and hospitals in real time. It will compare the data of private and public schools altogether with NADRA/Census headcount in real time. Furthermore, it will also allow teacher's registration network to be computerized in real time.

1.7.2 Implementation

The implementation is a multi-tier process in which several organisations contributed in running the demo test of the software in a controlled environment. Development of

the software was followed by beta testing which involved passing dummy entries into the software. 500 dummy entries were generated under the field names first, middle and last name, gender, father's name, CNIC and occupation, contact, postal address, permanent address, kin, nationality, religion, current class, admission date, and date of birth. These entries confirmed the efficient working of the software. The next phase of the implementation included demo run in a school, "The Learner's Preparatory School" located in Phase 2, Hayatabad Peshawar. A visit to the school was followed by an approval for appointment with the Principal. It was a medium sized school comprising of a total strength of 286 students from Play Group to Grade 7 and a total faculty strength of 23. The school was initially briefed on the idea of the 100% Student Enrollment Efficiency Program in KPK along with a detailed visit of the components of the software. Information regarding their current information management system included details of the students as well as automated generation of the fee challan forms. However, it lacked efficiency and the components regarding payrolls, accounts, expenses and revenues associated with the school. The Learner's Preparatory School looked forward to implementing Education 2.0 as their default management information system provided it was mandated by the government. The demo test involved feeding the current student data into Education 2.0 and making the IT department familiar and comfortable with the working of the software. Collectively the aforementioned processes are termed as implementation.

At current, the final year project proposes software development, and demo run in a controlled area to evaluate the feasibility of the system.

1.8 Project Deliverables

The major deliverables are specified below:

Market Research and Environmental Analysis.

Development of Software Requirements.

Beta Testing of Standalone Software Modules.

Debugging and Feedback Customization.

Financial and Capital Requirements associated with the development of the software.

Working Capital/Cash Flow Projections

Training of users.

Demo test in controlled environment tests in one particular region of KPK.

Estimated of the total cost of implementation throughout KPK.

Presenting feasibility of project derived from Beta testing, to the government.

1.9 Software

The software is primarily built on VB.net. Database DBMS and MS SQL 2013 were used in the construction of the database attached. Graphics and synchronizing class were outsourced by the company “fiber”. The software’s unique selling proposition stands on the point that it can be run on low internet bandwidth. The size of the software is 800MBs which is massive but is justified by the prerequisites involved with the running of the software. For example, .netframework 4.5, Windows 10, Microsoft SQL Server local db 2013 and Microsoft report framework. Exclusion of these prerequisites will result in minimizing the size to 5MBs. The software specializes in the online upgradation of the system each time an update is launched. The logo is designed on

Adobe Illustrator and the software is owned by the software house named Vignette. Copyrights have been obtained and request for patent registration has been filed.

The lift-off objective is to ensure that a customized school management system is designed for every elementary institute of Khyber Pakhtunkhwa that does not already have such a system. If an organization has already implemented any management system, then design the structure of data integration with Education 2.0 and KPESE department. Ideally the proposed management system should be able to streamline and speed up the following:

Human Resource Management

- Staff Attendance Management
- Staff Payroll
- Hiring and Attrition of Staff

Records Management

- Processing Student Records
- Student Attendance Management
- Processing Teacher Records
- Processing Staff Records
- Processing Class Records
- Processing Fee Records

Curriculum Management

- Curriculum Scheduling
- Tests scheduling
- Paper preparation and scheduling

- Term Scheduling and management

Accounts management

- Revenue Management
- Expenses Management
- Assets Management
- Liabilities Management
- Capital Management

1.10 Market Analysis/Feasibility Study

1.10.1 Feasibility Study (SWOT)

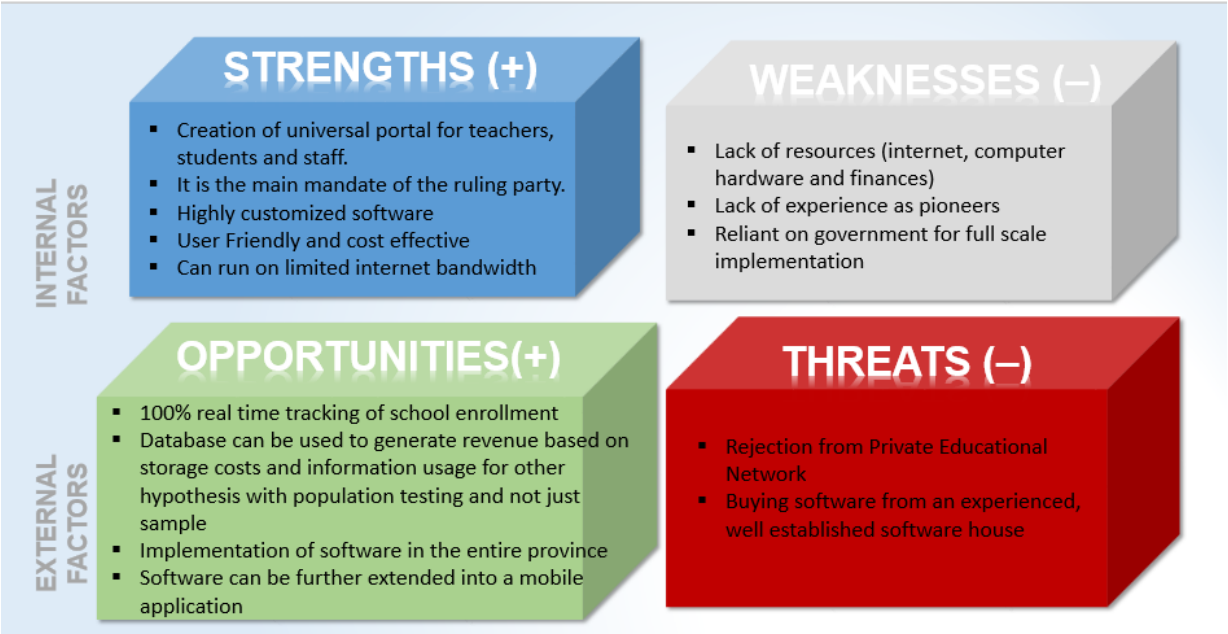


Figure 5: SWOT Analysis

1.10.2 Surveys

Before the implementation of an MIS in a school, it is necessary to have the following information available. Thus, to streamline the communication gap throughout the project, an important deliverable of this objective is to develop long term

communication channel between Education 2.0 team and the schools where implementation is required. Thus, surveys were conducted to identify the demand of such a system in private schools in KPK. The market analysis was conducted in Abbottabad in Jinnahbad and Habibullah colonies. Collecting primary data helps eradicate any irrational assumptions one might have during the project. The surveys also helped sifting the major variables that influence schools' decision of investing in an MIS system. Some of the primary factors include number of students, number of branches, and funds available to invest in such a system. It seems logical to assume that small sized schools will be less willing to invest in a customized MIS due to the fewer number of students and staff. It seems rather fruitless to spend on a system when operations are of limited complexity. Moreover, one might think that small schools have limited funds available to install such a system and the cost of continual maintenance will also be a financial burden. However, market analysis shows that this is not the case. Large schools such as Roots Millennium Schools and Bright Hall Education System already have well established and performing information management systems. Whereas the small sized schools looked forward to implementing a software with several customized features. For the purpose of this project, we have defined small sized schools on the basis of number of branches not exceeding 3, number of students not exceeding 250 and faculty members limited to 20. Number of branches are defined as nil if there is one building in a single location and 1 or more if there are other campuses as well solely in the city of Abbottabad. These schools are willing to invest a minimum of 10,000 with a maximum of 50,000 PKR annually to purchase such a system. The information collected focused on:

Size of school in terms of area and students

Already available ICT facilities, if any

Availability of internet in or near the campus

The customized features schools were most interested in.

According to the survey results, fees, payroll and utilities' record keeping were the features required by the majority of the schools. Stationary came next in priority followed by rent, infrastructural maintenance and external funding. Canteen management was required by only one school. There was only one school which did not have an already operational internet connection. Keeping in mind the dynamically changing technological expansion and the world becoming a global village, most schools have already adhered to the demand of internet in their school systems to keep up with modern education.

In-depth market analysis also indicates that a significant amount of time and resources are consumed by these institutes for the following aspects, limited to the cases where the management identifies these aspects as important contributors towards their organizational success:

- Human Resource Management
- Curriculum Scheduling and Management
- Financial management
- Internal Control Management

Nevertheless, surveys are limited in their capacity in representing true information. Due to constraints of time and resources, the market analysis was based entirely on surveys. In ideal circumstances, one could have collaborated structured interviews in their research method. There is a high probability that people fill out survey forms without giving much thought to the purpose and question asked. They are not interested in the

objective and have no personal gains. Hence, the results cannot be said to reflect 100% accuracy.

Market study indicates that more than 90% small schools are interested in implementing ICT solutions on every level if made cost effective, affordable and adequate training is provided to them with the rest being illiterate about benefits of doing so.

However, if the government passes a law whereby all schools are obligated to install Education 2.0 in their system and automate their operations, 100% of all schools will be implementing ICT solutions proposed in this project.

1.11 Milestones/Work Plan

We have used the simple Payback Period as our method of deciding the profitability of our project. Though as we didn't incur any actual cost because of in-house software production. We have taken the opportunity cost of a comparable software given that many hours and complexity specific to the project. Future inflows are marked against the comparable cost we could have earned by just selling the software. The variation which we brought is through tying the cash flows with the Real GDP growth of Pakistan as well as accounting for inflation. Another dimension on which we forecasted the cash flow is the growth of population. Only the growth of the age group of 5 years old to 14 years old of the population is used to come up with a more specific estimation of growth for the very group we are targeting in our quest to help increases the literacy rate.

1.12 Financial Analysis

There are a number of school management information softwares in the market but there is no software currently in market capable of synchronizing the attendance register for a number of schools and reporting them at a single terminal. This feature is

specifically designed for targeting the information inefficiency existing in the country. Now as the scope of our final year project is limited to devising a plan for the government, we will shed light on the financial plan only of the provincial level implementation.

Now the base case of cash flows is taken from the surveys that we held. Based on the results we got on the surveys, the schools were willing to pay a minimum sum of approximately Rs.12000 (Rs.1000/month) annually to avail the services of the management information system. The usage of the software program can be extended to the masses via three mediums as we shown in the tables below.

One thing is common to all three variants. That is the revenue we generate is from the cloud server that we are providing and only the initial cost though same, varies in regard of the service being provided to the different sources of funding. Furthermore, in all the cases, the software itself is not sold but instead we provide an ongoing service which is similar to an after-sale service in terms of regularly updating the software and dealing with any surprise hiccups that may surface pertaining to the mechanism of the software program during the course of subscription.

Firstly, in case of direct marketing. The schools will be dealt as separate bodies with just the provision of the management information system and only the cloud storage of real time attendance will be provided as far as network services are concerned. They will have to pay the installation charges as the cost for physical installation of the whole computer system and then an ongoing subscription charge.

The approach to NGOs is similar to gaining funding from government. An NGO will be able to fund the project for welfare of the society as told by an official at GTTN, an office at NUST. We will be syncing the attendance information of the schools that come

under NGO funding, and all the schools will be counted as a part of the group and separate accounts will be maintained for each school with the entire data being backed up and run by our team on our servers.

As a part of the Team to carry the implementation for our desired contract with the government, we will not be charging installation fee but will get subscription charges and given the scale of provincial implementation, the margin even if small, will give us a huge sum of revenue. The figures calculated for all three approaches carry a separate Given the power of bargaining for the government, we have decided to keep the subscription charge fixed. The population growth figures depict the increase in no. of schools that may add to the revenue stream. Startup IT services are exempted for three years of taxation and we have incorporated that into our model. At some point in time given the amount of cash flow generation, we will fall under taxable income but eeven that will put us into a small business that bears a 25% tax rate.

1.13 Costing

As mentioned above, to meet the objectives of the project, investment is required for development of customized software, installation of hardware required in schools, implementation of software at schools in KPK, and provision of training to the administration. As far as the dynamics of our group works are concerned. Our time and effort was put in but no such substantial cost was incurred to be capitalized for the product. Hence, the costing in our report is limited in scope as the financial plan to be presented to the government for the provincial level implementation.

That involves stationery items and bags to uplift the children and motivate them to develop a sense of appreciation for education. Below is the costing of a single school

treated as a unit cost to be extrapolated to as many schools which can be catered in the 14 Billion Budget allocated by the Khyber Pakhtunkhwa Government for Education under Additional Development Programs. There are 4000 private schools in KP and approximately 28000 public schools. We are assuming the volume based allocation of funds which is 14% of the 14 Billlion Rupees, amounting to broadly 196 Million Rupees. According to our estimations, the government can easily fund the entire program as this will cater more than 24000 schools.

This provision doesn't include the hardware cost. If the government provides to the schools which do not have adequate equipment and neither the funds to afford that setup, they can still cater around 12000 schools. This shows that the project is quite feasible given the limitations of our assumptions.

Goodie pack	
Authorized School Shield	200
Survey Form	20
tutorial guidebook	200
packing	100
CD	50
Transportation	
transportation cost	2-3000/trip
TADA	2k/person
Implementation of SMSS	
Database setup costs	1500
Security Costs (firewall)	1000
Patents, Ips, Copyrights	500
	8070
Allocated budget	196 Mil
No. of schools	**24,287**

Additional Hardware costs	
computer system	8000
Allocated budget	196 Mil
No. of schools	**12,197**

1.15 Forecasting

Below are the figures on which the cashflows were increased.

	2018	2019	2020	2021	2022	2023
Population increase age group 5-14	2.29%	2.17%	1.92%	1.82%	1.51%	1.19%
GDP	6%	5%	5%	5%	5%	5%
Inflation	5%	5%	5%	5%	5%	5%
GDP and Inflation	11%	10%	10%	10%	10%	10%

Direct Marketing

	2018	2019	2020	2021	2022	2023
Yearly Service Charges		12000	12000	12000	12000	12000
Software Installation Charges	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	12000	12000	12000	9000	9000
5-year Return						**59,000.00**

Inflation incorporated	2018	2019	2020	2021	2022	2023
Yearly Service Charges		12624	13255.2	13917.96	14613.86	15344.5509
Software Installation Charges	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	12624	13255.2	13917.96	10960.39	11508.41318
5-year Return						**67,265.97**

inflation and GDP incorporated	2018	2019	2020	2021	2022	2023
Yearly Service Charges		13217.33	14558.23	16050.44	17695.61	19509.4151
Software Installation Charges	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	13217.33	14558.23	16050.44	13271.71	14632.06132
5-year Return						**76,729.77**

NGO Funding

	2018	2019	2020	2021	2022	2023
Yearly Service Charges		12000	12000	12000	12000	12000
Subscription Cost	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	12000	12000	12000	9000	9000
5-year Return						**59,000.00**

Inflation incorporated	2018	2019	2020	2021	2022	2023
Yearly Service Charges		12624	13255.2	13917.96	14613.86	15344.5509
Subscription Cost	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	12624	13255.2	13917.96	10960.39	11508.41318
5-year Return						**67,265.97**

inflation and GDP incorporate	2018	2019	2020	2021	2022	2023
Yearly Service Charges		13217.33	14558.23	16050.44	17695.61	19509.4151
Subscription Cost	5000					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	5000	13217.33	14558.23	16050.44	13271.71	14632.06132
5-year Return						**76,729.77**

Government Funding

	2018	2019	2020	2021	2022	2023
Yearly Service Charges		12000	12000	12000	12000	12000
Implementation Cost	0					
Taxation	0%	0%	0%	0%	25%	25%
Net Cashflow	0	12000	12000	12000	9000	9000
5-year Return						**54,000.00**

1.16 Future Outlook

When a law is passed, it is obeyed by many. But some do not adhere to the law. Therefore, penalties are drawn in order to make sure that everyone complies. The system proposed, once implemented, will not only help enforce the law more widely regarding education but also identify the people responsible for not sending their children to school. These people will then be held accountable for not following the government regulations.

The benefits of this project will extend to several generations. Education being a primary factor in improving the socio-economic condition, crime rate and health of citizens of a nation, serves as a stepping stone to the development of Khyber Pakhtunkhwa. This project has a limited scope which can be extended to the entire province with the assistance of Global Think Tank Network, Non-Governmental Organisations, Ministry of Education and several other stakeholders. It will benefit the government in the enforcement of the law providing free and compulsory education to children in Khyber Pakhtunkhwa. Improvement in the student enrollment rate will indirectly bring positive influence through reduction in unemployment, eradication of poverty and decreasing the crime rate in the long run. Moreover, a real time dual way tracking management information system will not only improve the standard of education but also standardize these facilities. Competent environment of schools will encourage more parents to send their children to schools to learn skills. Eventually the improved literacy rate will fulfill the long term mission of the government of achieving economic welfare.

1.17 Challenges and Recommendations

Challenges of this project are associated with the development of software, beta testing, demo run as well as brief description of problems that can be encountered while implementing it on a large scale are mentioned below.

Each educational institute is a different one with varying facilities and operations on the basis of the size of the school and its branch network. Therefore, individually taught private schools have specific needs which cannot be met by a standardized software. Hence, a uniform software will not be sufficient.

For this purpose, a customized software has been developed to cater to the needs of majority of the schools. As projected in the surveys, different features will be available and schools can choose the ones they require.

The market cost of developing such a software can be as high as 60,000-80,000PKR. Many private schools in Khyber Pakhtunkhwa are operating on a small scale and have limited funds available. These schools cannot afford the cost of purchasing a customized software from well-known developers.

The software is developed by a collective effort of students rather than a software house. This has significantly reduced development costs. The cost-effective element of the software makes it an attractive one especially for small schools with limited amount of funds available which makes it financially feasible for schools to implement and install this software.

The software will be available online and automatically updated when connected to an internet connection. This implies that schools require an operational internet connection at all times. Not all private schools have this facility.

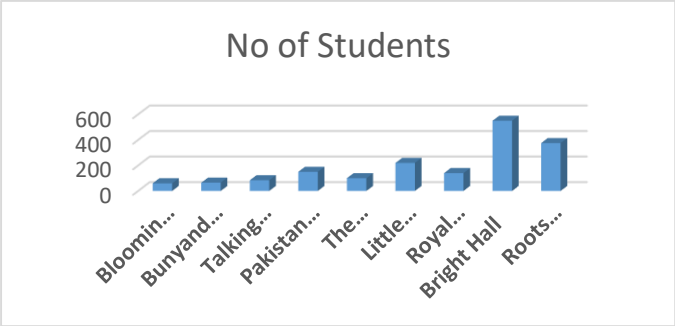
This major issue can be solved by ordering PTCL Broadband for schools in areas where it is available. The project does not include provision of this facility but making the resources available for the schools in case they are required. In places where PTCL network is unavailable, 3G mobile broadband can be used as an alternative. As mentioned previously, the software size is approximately 5MBs excluding the prerequisites which allows it to run on low speed internet where broadband and 3G/4G mobile services are unavailable. In case no internet facility is available in the area, the schools will be provided with software that will make backups on USB device, the USB could then be used to sync data from any computer which has internet access. Preferably local police stations and District Education offices will be used for this purpose.

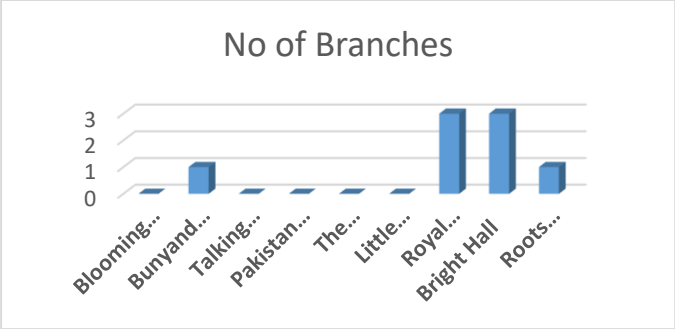
Another challenge encountered during the project was the collection of student information from schools for demo run. Schools are concerned about keeping the data of their students and faculty members confidential. They are quite unwilling to disclose information to outside parties even for the purpose of research. It was a challenging task to approach these people and convince them in order to gather data. One such school was IIUI located in Peshawar. It was clearly communicated that had the government mandated this project, the school administration would have felt obligated to comply.

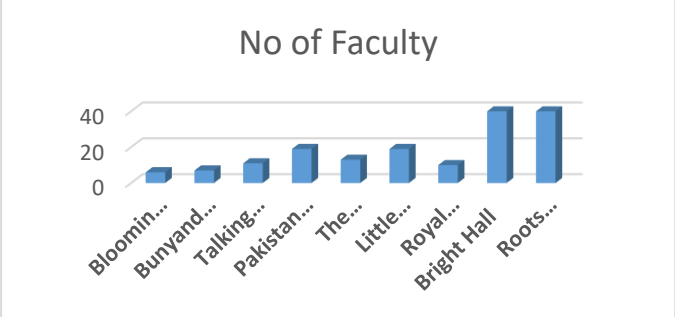
Many unpredictable events effect the course of the project and influence the timeline of activities. Due to the loss of a member from the group in the middle of the project due to unfortunate circumstances, the workload had to be divided into three members. This became the major bottleneck. Increased individual tasks influenced the deadlines and tasks were delayed. However, attempts were made to complete the objectives regardless of the time constraint.

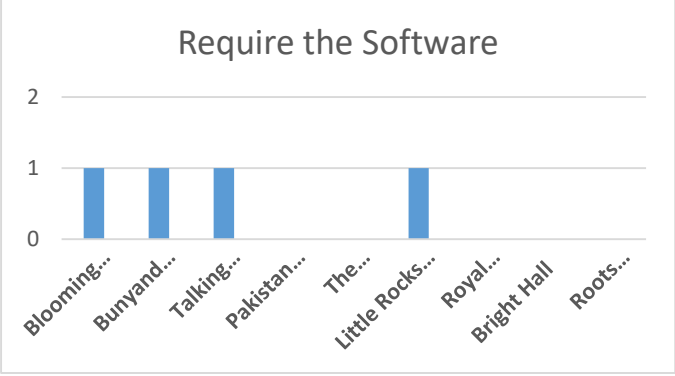
The major challenge encountered is getting the approval of the government. Proposal form is drafted to present it to the government. Letters and emails are sent in order to gain their attention. Meeting with the relevant personnel is in process. Approval from the government is essential in order to implement the 100% Student Enrolment program in Khyber Pakhtunkhwa.

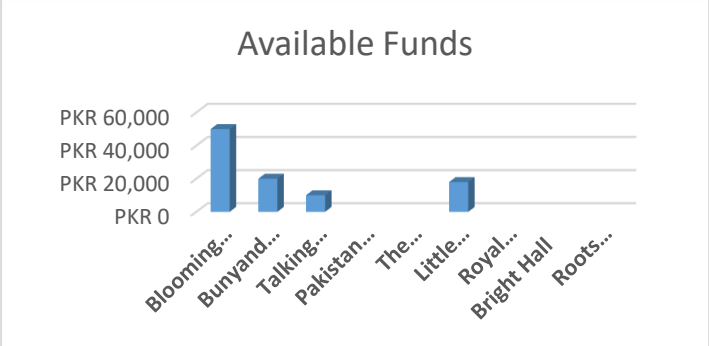
1.18 APPENDIX

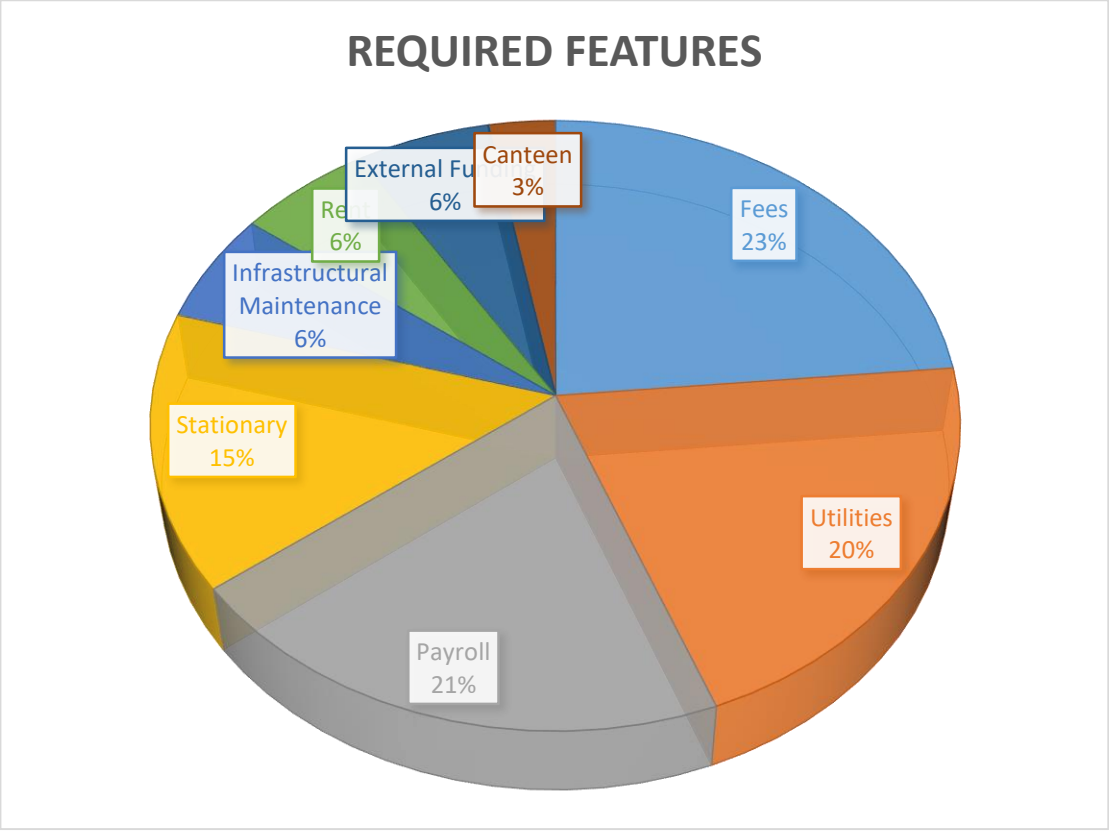

No of Students
600
400
200
0
Bloomin...
Bunyand...
Talking...
Pakistan...
The...
Little...
Royal...
Bright Hall
Roots...


No of Branches
3
2
1
0
Blooming...
Bunyand...
Talking...
Pakistan...
The...
Little...
Royal...
Bright Hall
Roots...


No of Faculty
40
20
0
Bloomin...
Bunyand...
Talking...
Pakistan...
The...
Little...
Royal...
Bright Hall
Roots...


Require the Software
2
1
0
Blooming...
Bunyand...
Talking...
Pakistan...
The...
Little Rocks...
Royal...
Bright Hall
Roots...


Available Funds
PKR 60,000
PKR 40,000
PKR 20,000
PKR 0
Blooming...
Bunyand...
Talking...
Pakistan...
The...
Little...
Royal...
Bright Hall
Roots...


REQUIRED FEATURES
Canteen 3%
6%
6%
Infrastructural Maintenance 6%
Fees 23%
Stationary 15%
Utilities 20%
Payroll 21%

National University of Sciences and Technology

NUST Business School

Consent Form for Interview: A Qualitative Study

If you are willing to participate then please complete and sign the form below.

I……. voluntarily agree to participate in this research conducted by students of Accounting and Finance 2k14.

I understand that I have the liberty to withdraw from this research project any time and in such case will not be penalized as my participation is totally voluntary and not paid for.

I have the right to not answer any question which I don't feel comfortable in the survey form as per my ease.

I am fully aware that the following means of data recording shall be used by the researcher.

- Survey Form

I am assured that my true identity will not be revealed under any circumstances and my reference in the research report will be anonymous.

Faculty and the administrators from my NUST other than the group members and supervisor mentioned will neither be present nor have access to any data. This is because I don't want any repercussions against the data for which I am a source.

I will receive a copy of this consent form.

I have read and understood the explanation provided to me. I hereby with the provision of the above declarations, agree to participate voluntarily in this study.

Participant's Signature _____ Date _____

Researcher's Signature _____ Date _____

NUST Business School

Survey Analysis

Final Year Project

We as our Final Year Project (FYP) are working to develop an automated, advanced technological system to improve student enrollment rate by filling the information inefficiency gap. To better understand the market dynamics, this study is conducted to be only used as a part of project.

Group Members

Zainab Nawaz

Noor Imran

Haider Ahmed

Project Supervisor

Yaruq Nadeem

Yaruq.nadeem@nbs.edu.pk

100% Student Enrollment Efficiency Program

KHYBER PAKHTUNKHWA

Survey Form for Schools

Name of School:
_____

Postal Address:
_____

Email Address (if any): _____

# of Branches: _____

# of grade levels taught at this particular school: _____

# of Students: _____

# of Faculty Members: _____

Do you have an Internet Connection? _____

If yes, which one? _____

Do you have a well-maintained computer system installed? _____

If No, do you have the funds required to set one up? _____

Is record management and data processing computerized? E.g. Database
_____

Are you already using an MIS to record data? _____

If No, then would you want a customized software to record the data of your school?
_____

If yes, then do you have the resources to pay for such a system? _____

How much are you willing to spend for the installation of such a system?
_____

How many users will be using that system? _____

Will you require training of users to use the software? _____

Would you like an accounts management system as well in the software? (Yes/No)

If yes, which components would you like it to include?

- Fees
- Utilities
- Payroll
- Infrastructural Maintenance
- Rent, if any
- Canteen

- External funding, if any
- Stationary
- Any Other

What are your expectations from the software?

_____
_____

_____
_____

Would you like to have a smart phone application replicating the software for your school in future? _____

NUST BUSINESS SCHOOL
NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY (NUST)

The Education Ministry,

Khyber Pakhtunkhwa,

Pakistan.

Dated: 11/24/2017

SUBJECT: **REQUEST FOR MEETING**

In light of Article 25A, we appreciate the efforts made by current government of Khyber Pakhtunkhwa to improve the rate of enrollment in schools across the province. Implementation of this clause will have a significant impact on the socio-economic situation in Pakistan.

To ensure enforcement of the above stated law, we as students of National University of Sciences and Technology Business School (NBS), have developed, tested and thus propose the implementation of an automated, advanced technological system across private and non-government schools in Khyber Pakhtunkhwa. This system will improve student enrollment rate across the province by filling the information inefficiency gap and ensuring the implementation of Article 25A.

We would request you to kindly suggest a suitable date and time for a meeting so that we can put forward our proposal and demonstrate our idea.

Best Regards,

Students of NBS

Student Team Lead
Zainab Nawaz Khan
0336-9915610

Faculty Advisor (NBS)
Yaruq Nadeem
0331-2025000

Sector H-12, Islamabad, Pakistan. Tele: +92-51-90853001, +92-51-90853008. E-mail: nbs@nbs.edu.pk

NUST
NATIONAL UNIVERSITY
OF SCIENCES & TECHNOLOGY

Addressed to,

Ministry of Elementary and Secondary Education Khyber Pakhtunkhwa

Under Article 25-A, government has passed a law making education free and compulsory for children in Khyber Pakhtunkhwa. In order to ensure the implementation of this law the students of NUST have developed a solution to improve the student enrolment rate at schools in KPK.

In order to ensure that the means of communication is official, this letter has been approved particularly by the Supervisor, Mr Yaruq Nadeem currently serving as Professor Entrepreneurship at NUST Business School.

Additional information can be provided upon request. Please feel free to contact Zainab Nawaz in case of any queries.

On behalf of NUST Business School, I would like to extend an invite to the Representative of the Education Cabinet of Khyber Pakhtunkhwa to visit the campus and meet with the students.

Looking forward to your positive response.

Thank You

Regards,

Zainab Nawaz Khan

+92-336-9915610
Supervisor:

Mr Yaruq Nadeem

+92-331-2025000

1.19 Bibliography

https://www.un.org/development/desa/dpad/document_gem/wess-report/

Primary Education: Progress and Constraints Author(s): V. Ratna Reddy and R. Nageswara Rao http://www.jstor.org/stable/4413375

A New Perspective on Violent Crime Burden Index: Evidence from Indian Districts

Author(s): Kausik Chaudhuri, Payel Chowdhury and Kevin Reilly http://www.jstor.org/stable/24718734

Impact of management information systems (MIS) on school administration: What the literature says www.sciencedirect.com

http://www.pakp.gov.pk/2013/acts/the-khyber-pakhtunkhwa-public-private-schools-regulatory-authority-act2017/