



Kardan Journal of Economics and Management Sciences (KJEMS)

ISSN: 2616-3950 (Print and Online), Journal homepage: kjems.kardan.edu.af

Exploring Business Process Re-Engineering (BPR) Efforts in Afghanistan's Public Sector -A Case Study of the National Examination Authority (NExA)

Jawed Mansoor, Muhammad Shahid Shams, and G. Farooq Mansoor

To cite this article: Mansoor, J, Shams, M.S, and Mansoor, G.F. (2022), Exploring Business Process Re-Engineering (BPR) Efforts in Afghanistan's Public Sector-A Case Study of the National Examination Authority (NExA), *Kardan Journal of Economics and Management Sciences*, 5 (2), 1-20. DOI: [10.31841/KJEMS.2022.119](https://doi.org/10.31841/KJEMS.2022.119)

To link to this article: <http://dx.doi.org/10.31841/KJEMS.2022.119>



© 2022 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.



Published online: 25 June 2022.



Submit your article to this journal

Exploring Business Process Re-Engineering (BPR) Efforts in Afghanistan's Public Sector -A Case Study of the National Examination Authority (NExA)

Jawed Mansoor
Muhammad Shahid Shams
G. Farooq Mansoor

Received: 02 Nov 21

Revised: 12 Mar 22

Accepted: 20 Jun 22

Abstract

Recently the public sector of Afghanistan made a series of reforms to improve its service delivery and eliminate widespread corruption. The National Examination Authority (NExA) being one of them has made dramatic reforms aiming for a corruption-free and transparent process. The main purpose of this study is to explore the efforts of Business Process Re-engineering (BPR) in the public sector using NExA as a case study. The study adopted a qualitative methodology, with an inductive approach, while the philosophy of the study is interpretivism and organization as the unit of analysis. Based on the in-depth interviews, this study found that as a result of the business process reforms, the examination process has improved vastly in terms of transparency, cost, efficiency, and citizen happiness. This study also, found that Information Technology (IT) played the main enabler role in the process. Other enablers were sound leadership, teamwork, political and financial support, commitment to change, and merit-based recruitment. Resistance, bureaucracy and insecurity were the constraints for BPR implementation. This study further provides recommendations for the policymakers in terms of smooth implementation of the business process re-engineering in the public sector organization. Limitations and future implications are also discussed.

Keywords: Afghanistan public sector transformation, Business Process Re-engineering (BPR), Efficiency, Service Delivery, Transparency, Corruption, Enablers and constraints of BPR.

Introduction

No matter what size or type of business an organization is, some processes and operations could be carried out better than they are being performed now; in today's competitive market to stay ahead of competitors, there is a dire need for improving and managing the business processes (Bhaskar, 2018). BPR has recently become the most important and popular change management technique; attracting tremendous attention from manufacturers, practitioners, and academicians in the world (Erim and Vayvay, 2010; Goksoy et al., 2012; Razalli et al., 2015; Bhaskar, 2016). Since 1990 BPR is being used on a large scale and proved to have achieved tremendous benefits, for instance, cost reduction and increase and improvement in production as well as in customer satisfaction (AbdEllatif, Farhan, et al., 2018). BPR is a successful tool for both the public and private sectors (Habib & Jamal, 2013). Public institutions exploit BPR as a reform tool so that resources are used efficiently, processes are automated, bureaucracy is reduced, and the services are improved so they are accessible for and usable by citizens (Swartz, 2018). In 2016 developing countries spent around USD25 billion on implementing BPR in various sectors (RDS/OECD, 2016).

Afghanistan, an underdeveloped country, is plunged into poverty, insecurity, inability to deliver services, political uncertainty, and economic difficulties. It is dependent on foreign aid while as per Asian Development Bank (ADB) 47.3 per cent of the population lives below the poverty line in 2020. Legatum Prosperity Index 2020 ranked Afghanistan 162nd out of 180 countries. There is widespread corruption in the governance and according to Transparency International's 2020 Corruption Perception Index, Afghanistan ranked 165th, some progress compared to the year 2019, which was 173. Since 2002, the international community has contributed tens of billions of dollars to support Afghanistan's development to help the government improve its overall governance and its service delivery competencies. However, the public sector of Afghanistan failed in effectively deliver vital services to the public (Democracy Int'l, 2016). The many complex and unnecessary lengthy administrative processes made it a difficult business environment. The World Bank ranked it 173rd in 2020 in terms of ease of doing business. Afghanistan's governance pillar of Legatum Prosperity index 2020 scored it 142nd, which over the last 10 years improved by only 7 steps from 149. This indicates that efforts are being made to bring improvement in delivering services to the citizens.

Over the last 7 years, the policymakers showed eagerness toward e-governance and business process reforms in its service delivery. For example, during 2018-19, the Independent Administrative Reform and Civil Service (IARCSC) simplified 52 complex and unnecessary lengthy processes in ministries (IARCSC, 2018-19). *Asan Khedmat* is another initiative acting as an on-shop for various public services (Democracy Int'l, 2016). Furthermore, NExA has earned the trust of its citizens in terms of providing efficient and transparent examination services. However, it has not been explored whether these reforms used scientific tools such as BPR as there is a lack of information on BPR in Afghanistan, no research has been done on BPR; the role of IT in BPR, as well as the enablers and constraints of BPR in Afghanistan. This study explored the efforts that have been put into implementing BPR. Resource-Based View Theory supports this study. Afghanistan has a unique context which is 40 years of conflict and a window of substantial donor funding opportunities for the development of the country. NExA, which conducts various exams such as Kankor and national recruitment across Afghanistan, was selected as a case to study, as it has gone through a series of reforms as a result it has established the integrity of the national Kankor process, where around 170,000 students participate annually. This study's finding has policy implications; providing evidence on BPR implementation and its integration with IT in the public sector of the country. The study intends to understand how and why the business reengineering process is approached and how it can affect the services rendered by an organization; understand the role of IT in implementing Business Process Re-engineering; and further, understand the enablers and constraints of Business Process Re-engineering.

The rest of the study is organized in four sections with section 2 focusing on the literature review, section 3 discusses the methodology employed, section 4 outlines and presents the findings along with discussions, and section 5 concludes the study along with policy recommendations.

Literature Review

The literature review defines and explains BPR, how BPR impacts organization performance and lists the success and failure factors of BPR implementation. It likewise, puts light on BPR in the public sector. The literature review also, concludes that there is a lack of information on BPR in Afghanistan and there is no research done.

Business Process Re-engineering (BPR)

Hammer and Champy (1993) introduced BPR and defined it as 'fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical measures of performance, such as cost, quality, service and speed'; three kinds of organizations implement BPR: first, that in deep crises; second that see trouble is coming; third, that though in their best position, but are ambitious to lead over their competitors. BPR examines and changes the five major components of each business: strategy, process, enabling tool, organization, and culture (Davenport, 1995; Mavetera, Huisman, Mavetera, & Lubbe, 2015; Bhaskar, 2018). Many methodologies and frameworks have been developed (Bhaskar, 2018); Davenport and the Hammer and Champy methodologies are the most used (Madushela & Pretorius, 2015).

Through BPR organizations can achieve long-term growth and breakthrough performance (Bako, Yusuf, et al., 2019) and can gain a competitive advantage (Ikon Michael, Onwuchekwa faith et al., 2018; Riyanto, Primiana, et al., 2018). It is believed that BPR is a panacea for reducing operational costs in service organizations (Sungau, Ndunguru et al., 2015). Therefore, many renowned companies around the world implemented BPR to improve quality, and reduce cost and cycle time; the restocking time of Wal-Mart, for instance, reduced by 96.42 percent (from six weeks to thirty-six hours) (Bhaskar, 2014, 2018). Motorola company struggled with longer cycle time, defect rates and the production cost reduced by \$1billion per year when implemented BPR; Halkmark achieved a 75 percent reduction in production cost (Ranganathan and Jasbir, 2001; Arwa and Rizwan, 2016).

It is believed that BPR has a positive impact on the performance of employees. (Iqbal, Nadeem, et al., 2015). It improves employees' satisfaction, teamwork, cooperation, and quality of service delivery (Akam et al., 2018). According to Mukwakungu et al. (2018), customers are more inclined towards organizational processes compared to suppliers and service agents. BPR ensures that time is diverted to satisfy the customer (Nkomo, Aphelele, et al., 2021).

The failure rate of the BPR project is estimated between 50% to 80% (Darmani et al., 2013). Yet organizations implement BPR (Dell'Aquila, 2017). Many studies found various factors for successful BPR implementation. For instance, Hashem, (2019) lists management commitment, IT infrastructure, people management, change readiness, centralization, and formalization with a low degree of success in BPR. Whereas, Zahoor et al., (2015), consider management system strategy and top management support as key factors for BPR success. In the meantime, findings of another study show that institutional leadership and adaptability were the stimulating factors of BPR (Nkuruziza, Gideon, et al., 2018). Process analysis and process optimization are the key skills for BPR initiatives (Nkomo, Aphelele, et al., 2021). IT acts as a lifeline for business sustainability; a recursive relationship exists between BPR and IT (Bako 2019).

BPR in Public Sector

Implementing BPR in the public sector is similarly applicable and successful in comparison to BPR implementation in the private sector (Habib, 2015). However, they implement BPR with different aims, the public sector to bring reform while the latter to gain competitive advantage Swartz (2018) and Jurisch et al., (2012). According to McAdam et al. (1999), many of the critical success factors for BPR in the private sector can be equally important for BPR in public sector. Various studies have been conducted on BPR in the public sector of Malaysia, Singapore, Bangladesh and Pakistan, and the results are significant

(Siddiquee, 2006, Siddiquee, 2007, Ahmad et al., 2003, Samaratunge et al., 2008, Sarker, 2005, Habib, 2015).

The researcher through the literature review found that in many developing and developed countries this business improvement technique has been implemented using information technology, and the literature provided a positive result on the implementation of BPR through IT. However, in the context of Afghanistan, there is an insufficiency of empirical studies on Business Process Re-engineering implementation in Afghanistan furthermore there is limited information regarding the IT integration with BPR. The researcher's aim, therefore, was to find out the contextual research gap regarding the information about BPR, its integration with IT as well as enablers and facilitators of BPR in the public sector of Afghanistan.

Research Design

A qualitative method with phenomenology was used for this study. The research philosophy of this study is interpretivism dealing with the subjectivity of reality. Since theories and research on BPR and its integration with IT have already been studied in other countries, using the inductive knowledge from previous research, the study selected the inductive approach. The organization-level of analysis is used as a unit of analysis. The population of the study is governmental organizations adopting non-probability sampling. Used purposive sampling in selecting the NExA, and included key authorities of NExA while for including past students, who attempted the Kankor exam at different times, used convenience sampling. The resource-Based View theory supports this study.

Data Collection Method

Primary data and secondary data were collected for this study. For secondary data conducted a desk review of the contents published on the official websites and YouTube channels of NExA, MoHE and local TVs. While the primary data was collected in three stages: first conducted formative research a two-hour session of a face-to-face interview with NExA's top management staff followed by several follow-up short interviews through phone calls. Thenceforth, the face-to-face interview questions were developed and translated into the local language for more staff of NExA's top management. For this to take place, first sent a request email to the NExA top management; upon approval, sent the questions in a file. Before the interview, obtained verbal consent for recording the interview. This was followed by short interviews with other key informants i.e., students who experienced the exams at different intervals. Organized the collected data by primary and secondary data sub-folders, the primary data then was organized by formative research and face-to-face interview data sub-folders. While the other key informants were past students of both gender who attempted the Kankor exam at different times (table 2). The respondents' information (NExA's high-level authorities, who participated in the face-to-face interview, with information about the secondary) is presented in table 1.

Table 1 : Characteristics of the key informants (KI) and of the secondary data

No	Title	Gender	Age	Experience (Years)	Education Level	Organization
Characteristics of the key informants (NExA's high-level authorities)						
1	General Director of NExA	Male	48	8	Masters in Literature	NExA

2	Operational and Technical Director	Male	34	7	M.Sc. Chemistry	NExA
3	Technical Director	Male	30	4	M.Sc. (CS)	NExA
4	Information System Director	Male	43	14	MBA	NExA
5	Biometric Data Collection Officer	Male	30	3	B.Sc. (CS)	NExA

Characteristics of the Secondary data

1	General Director of NED	Male	N/A	N/A	M.Sc. (CS)	NED
---	-------------------------	------	-----	-----	------------	-----

Source: Primary data

Table 2: Information of students who attempted the Kankor exam at different times.

No.	Title	Gender	Year Attended Kankor Exam
1	Participant of Kankor Exam	Male	2003
2	Participant of Kankor Exam	Female	2005
3	Participant of Kankor Exam	Male	2011
4	Participant of Kankor Exam	Female	2015
5	Participant of Kankor Exam	Female	2017
6	Participant of Kankor Exam	Male	2020

Source: Primary data

Analysis and Findings

Data Analysis

Both primary and secondary data have been analyzed using the thematic analysis method. From the secondary data, noted the key issues NExA was facing, changes they brought, and how those were accomplished. The data were transcribed and organized into the formative research data. Then produced a schematic process map (placed in Annexure 1) of different processes conducted in NExA. Then the data was compared with the information with the literature review and the definition of BPR by Hammer and Champy (1993), verifying these changes were indeed BPR.

The presented data of the student informants' data to show how certain processes would be performed in a specific period and how much time would it take. This enriched the schematic process maps. The data were transcribed and organized the data from key informants. Furthermore, sub-themes were developed, and then grouped under the relevant themes; this way the themes responded to the relevant research questions, as shown in Table 2.

Findings

The findings of the study are represented beneath the research questions of the study. Contents under each research question are organized based on themes.

Research Question 1: How and why BPR is approached in Afghanistan, and how it can affect the services rendered by the organization? Contents under this research question are organized based on the following themes:

Motive for BPR

NExA's motive for BPR was to improve transparency and efficiency in its service delivery, to replace the manual system with an electronic system, to tackle the corruption in the Kankor examination, and to improve its performance in terms of speed, quality and to earn citizen-customer trust. More specifically, the organization initiated the reform to prevent irresponsible people from intrusion during the exams as they would manipulate the examination process and get political advantage out of students' good performance, to stop widespread cheating during exams using electronic devices, to utilize technology in bringing efficiency, transparency and quality, to improve technical capacity, to change exams timing to warmer months of the year so that it is easily conducted across the country and all students can take part without any geographical and seasonal constraints.

"... One of the serious issues was the usage of an electronic device during the examination... another serious issue was the interference of irresponsible people to manipulate the exam process and get an advantage... two more serious issues... student attending exam on other students' behalf... the seasonality of exam... not conducive for students to attend. We are facing with the concurrence of occasions in some part the exam would be simultaneous with 12th-grade final exam, ... 12th-grade curriculum would not be finished... faced with the closure of roads due to harsh wintry weather..."

NED GD Speech video at a formal occasion:

"The questions bank database of our organization had only 20,000 questions..."

KII NExA GD :

"... the printing and OMR machines were outdated... it was functioning very slow..."

KII Operational and Technical Director: In NExA, the lengthy and manual processes, as well as some unnecessary processes were the motives for the incremental changes, as highlighted by the key informants.

"... would print the answer sheets... outside the country... had to print 180,000 fields code booklets every year ... 8 pages each... with manual organizing and stapling..."

KII Technical Director

"The results announcement process was time-consuming too, we would outsource it... this made the process lengthy and at the same time costly."

KII NExA GD

"... we would enter duplicate information of the students into the biometric kits... taking 4 minutes extra time for each..."

KII Biometric Data Collection Officer

"... we would be quarantined for 12 days as many of the processes should be performed manually. This was vulnerable for cheating too."

How BPR is Approached

NExA made four radical changes in two years. The radical changes were jumbling of the test questions booklets with renewing the printing press and scan machinery, putting a stop

to the intrusion of irresponsible individuals, introducing a multi-level verification process through a biometric system, and well-timing of the Kankor. These changes were reactive. To implement those radical reforms NExA did not follow any specific methodology or framework, as there was no evidence that a proper theory or framework had been followed. Five steps were common in all radical changes, first critically studying the whole Kankor process, finding fundamental issues, coming up with solutions, selecting the best solution and then implementing it.

“...first, we critically reviewed the whole process of Kankor exam...discovered two very critical issues during the Kankor exam.... came up with different solutions, selected the solution for the first issue... and then implemented the solution. Next year when we completed the Kankor exam after the first reform... we repeated the same process....”

NED GD Speech video at a formal occasion

The jumbling of test questions booklets was implemented in one additional step, which was pilot testing. Furthermore, the solution was devised by an outside consultant.

“...one of the solutions was to print one unique test question booklet for each individual (jumbling test questions booklet) ... selected this option... spent three months on planning...took us three more months to develop the feature... first we piloted it in a small-scale exam ... then implemented in Kankor exam.”

KII NExA GD

NExA implemented a biometric enrolment system with changes in resources, in the first and second year and trained staff on how the biometric enrollment worked.

“...implemented biometric at once... the first year of implementation, sought help from fourth-year students...first trained them...next year hired 12 permanent staffs for biometric collection...temporarily hire 120 additional biometric data collectors each year.”

KII Operational and Technical Director

The BPR was followed by incremental changes on top of the radical reforms, for example, NExA made incremental changes in the biometric enrollment, jumbling system, Kankor database, and usage of IT to bring further improvements in its performance. As shown below, the key informants highlight the continuous changes.

“...after we implemented the biometric enrollment system...We found that our biometric data collectors enter duplicate information...removed the duplicate information entry process...”

KII Operational and Technical Director

“... based on the need we upgrade our hardware and software systems ... last year we improved the Kankor system to bring speed in the generating process of test questions booklets, exam cards, answer sheets, attendance”

KII IS Director

“The answer sheets preparation and the Kankor exam result announcement processes were lengthy and costly...brought improvement in both ...”

KII NExA GD

“... removed printing fields code booklets, and launched mobile app which has options for downloading fields code booklet....”

Results of the BPR Initiatives

The performance of the NExA improved dramatically in terms of speed, cost, transparency, incorruptibility, citizen-customers trust, quality, service and efficiency. A historic achievement of the NExA's reform according to many of the key informants was a corruption-free, systematic and transparent Kankor exam process.

“... we were able to crack down on the intrusion of irresponsible individuals during the Kankor exam process and solved 80 percent of the issue.”

NED GD Speech video at a formal occasion

“The jumbling system resolved 99 percent issues of electronic device usage...Our questions bank database enriched with new questions... bought modern OMR machines... processing almost six times faster ... NExA has become an organization that old, young and child believe in its transparency across the nation...”

KII NExA GD

“...implemented the biometric enrollment...this enhanced the transparency... improved the biometric enrollment process in terms of speed... the process speeded up approximately eight times... we would conduct the exam in three months...now that has decreased to one month... we started printing the answer sheets inside the country...”

KII Operational and Technical Director

“... The generating process of exam cards, answer sheets, test question booklets, and attendance sheets are improved in terms of speed...Since we brought improvements in Kankor database and press machinery, our quarantined time is decreased to three to four days...”

KII IS Director

“...installed modern printing machines...many of manual tasks are now computerized... improved the process eight times faster...The manual seats allocation process changed...it is automated... made the process 10 times faster...we announce the Kankor exam results using the commercial cloud services... instead of printing fields code booklets...developed mobile app...”

KII Technical Director

Research Question 2: What is the role of IT in implementing BPR? Contents under this research question are organized based on the following theme:

Role of IT in BPR

The role of IT in BBR was substantial. IT being the central element of NExA's BPR, has improved the transparency of the exam, rooted out the corruption, shortened the processes, enhanced the communication with citizen-customers, and reduced cost. NExA considers IT as a source of innovation improvement of the Kankor exam process and other exams.

"...Integration of IT with the changes...contributed...most in the re-engineering... played a critical role in removing corruption, bringing transparency... quickening the process..."

KII NExA GD

"IT helped us to be innovative in conducting the Kankor exam..."

KII Technical Director

"... deployed an online complaints registration form on our website ... use verified social media...this has enhanced the communication of our students with us..."

KII IS Director

Research Question 3: What are the enablers and constraints of BPR? Contents under this research question are organized based on the following themes:

Enablers and Constraints of BPR

Enablers of BPR

Leadership and teamwork, commitment to change, strong support from government high-level authorities, risk-taking, financial resources and commitment to merit-based recruitment enabled the radical changes in NExA:

"... ex-general director of NED (now known as NExA) had a charismatic leadership... spearheaded the whole process of change from conceiving the change to getting buying from the high-level authorities...along with his committee dedicated most of their time to the change...would travel to provinces to observe Kankor examination... also observe who were capable and passionate examiners controller...then invite them to join the NED... Going to insecure provinces and dealing with intervention... entailed potential risks to us... but we took that risk..."

KII Operational and Technical Director

"After radical reform...changes should be maintained and improved further...due to the general director leadership...reforms were maintained...kept improving...USAID financial support...upgraded printing press...OMR...got biometric kits and laptops..."

KII Technical Director

“We have a good team working culture...plays important role in speeding the process...”

KII IS Director

“Resolving intrusion of irresponsible people was not possible without the government support...hired competent staffs...able to bring more innovation... helped the reforms...”

KII NExA GD

Constraints of BPR

Resistance to change, insecurity, and bureaucracy were the constraints for the BPR of NExA. The resistance was in different forms from internal and external players, former was less intense while the latter was intense resistance. It was employees’ reaction to the radical change; staff defending the status quo or not having confidence in the change:

“...we encountered huge political resistance from members of provincial councils and other mafia-type people across the country, it was strong resistance...”

KII NExA GD

“...to implement the biometric some staffs thought...make the process lengthier...when decided to print unique test question booklets, some staffs were asking how it is possible to prepare 170,000 different...”

KII Operational and Technical Director

“...Some staff was not happy about changing the exam timing...say that... it is not practical...we used to take the exam in this timing since very long...”

KII Technical Director

Table 2 - Summary and Hierarchical Presentation of Research Questions, Themes And Sub-Themes

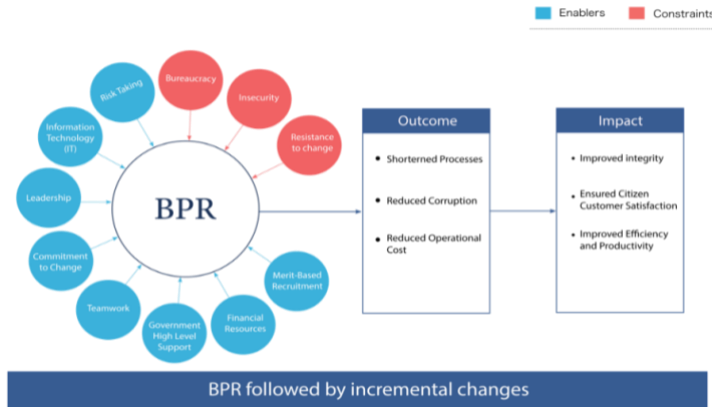
No	Themes	Sub-themes
RQ1	1	Motive for BPR
	2	How BPR is approached

			<ul style="list-style-type: none"> • Time took • Nature of each • Changes implemented at once • Changes implemented after radical changes • approached reactive
			<ul style="list-style-type: none"> • Jumbling • Biometric • Cracking down the intrusions • Transparency • Trust of public • Better timing of the exam • Low cost • Improvement in process • Shortened processes • Eliminating non-added value processes • Use of IT
		Results of the BPR Initiatives	<ul style="list-style-type: none"> • Shortened Processes • Reduced Corruption • Reduced Operational Cost
			<ul style="list-style-type: none"> • Improved Integrity • Enhanced Citizen Customer Satisfaction • Improved Efficiency and productivity
RQ2	4	Role of IT in BPR	<ul style="list-style-type: none"> • Changes that were enabled through IT
			<ul style="list-style-type: none"> • Leadership • Team • Commitment to change • Support from top-level authorities (government) • Taking risk • Financial support • How resistance was dealt with • Resistance of public (Mafia type people) • Employees' Lack of faith in change • Employees defending status quo • lengthy procedures for getting approval to get new approval for purchase order • unavailability of the development budget for NExA • The difficulty of traveling to remote areas due to the insecurity
		Enablers	
		Constraints	
RQ3	5	Enablers and constraints of BPR	
			<ul style="list-style-type: none"> • Things that should have been done • Possible improvement • Things that did not go well
	6	Lesson Learned	

Source: Finding of the study

The following conceptual framework was developed using the knowledge gained from primary and secondary data. The enabling factors, as well as the constraints of BPR, are shown in blue and red circles respectively. The outcome and impact are shown in two boxes.

Fig: 1 BPR followed by Incremental Changes



Source: Finding of the study

Discussions of the Results

Motive for BPR

NExA launched the re-engineering efforts, to improve transparency and efficiency in its service delivery, to replace the manual system with an electronic system, to tackle the corruption in the Kankor examination, and improve its performance in terms of speed, quality and to earn citizen-customer trust. This is in line with the studies of Habib, Muhammad (2015) and Thong et al., (2000), who stated that Governments in developed and underdeveloped countries implement BPR to bring reforms so that efficiency, effectiveness and transparency in service delivery are assured. Furthermore, the lengthy and manual processes, as well as some unnecessary processes were among the other reasons for NExA's reforms, this is supported by the studies of Khodambashi, (2013) and Zaini et.al, (2019) who stated that BPR is used for changing or eliminating processes that do not add value. *How BPR is Approached*

NExA to implement those radical reforms did not follow any specific methodology or framework. Five steps were common in all reforms, but the jumbling of the test questions booklets was implemented with one additional step. This is in line with Habib's (2015) findings that in developing countries BPR theory is not implemented in its entirety. NExA after the radical reforms continued improving the process, for instance, NExA made incremental changes in the biometric enrollment, jumbling system, Kankor database, and usage of IT. This is supported by the findings of Mmereki & Moruisi 2013, and Nkomo, Aphelele, et al., 2021; that the processes on which BPR is implemented should be continuously monitored and improved, or else its values will decline.

Results of BPR Initiatives

An organization's performance will be improved in terms of efficiency, effectiveness, and cost reduction, and there will be an increase in production, provided that the implementation of BPR is successful (Hammer and Champy, 1993). Malaysia, Singapore, Bangladesh and Pakistan implemented BPR; as a result Singapore, Bangladesh and Pakistan improved transparency and reduced corruption, while the government of Malaysia brought improvements in the efficient customer service, productivity, quality of service, financial management, personnel and communication (Siddiquee, 2006, Siddiquee, 2007, Ahmad et

al., 2003, Samaratunge et al., 2008, Sarker, 2005, Habib, 2015). In the case of NExA, the corruption-free, systematic and transparent Kankor exam process was a historic achievement as a result of BPR. The performance of the organization has drastically improved in terms of speed, efficiency, quality, cost, and service improvement. Furthermore, gaining the trust of the citizen-customers was another achievement.

Role of IT in BPR

IT is the central element of NExA's BPR, improved the transparency of the exam, roots out the corruption, shortened the processes, enhanced the communication with citizen-customers, and reduced cost. Furthermore, it was discovered that the NEXA considers IT as a source of innovation, and improvement of the Kankor process and other exams. Previous researches describe the importance of IT in BPR implementation. According to Hammer (1990), organizations that wish to see radical changes in their operation should consider IT as the key factor in BPR. Weerakkody et al., (2021) agree with Bannister and Connolly (2011) that the public sector organization transformation is the result of the combination of IT, BPR and revaluation of business scope.

Enablers of BPR

Sound leadership and strong support from the government's high-level authorities played a vital role in the successful implementation of BPR in NExA. The studies of McAdam, & Donaghy, 1999, Selladurai, 2002, and Mmereki & Moruisi 2013, stated that BPR requires continual top management commitment, leadership, and support. In speeding up the Kankor exam process, teamwork played an important role. Herzog et al., (2007) and Habib, (2013) listed teamwork among the success factors of BPR implementation. This study revealed risk-taking as another enabler of BPR in NExA. Habib, & Shah, (2013) stated that BPR implementation entails high risk. While lack of risk-taking, according to, Schwertner (2017), is among the main issues that put obstacles in the way of organizations to transform. Another major enabling factor for NExA's reform was the availability of financial resources. Hasnan, Ringim, et al., 2017 stated that implementing BPR is expensive. Without adequate financial resources, BPR implementation is impossible (Jamali et al., 2011). Commitment to merit-based recruitment was the other enabling factor for NExA's BPR, this is backed by Al-Mashari and Zairi (1999) who listed management competency as a success factor of BPR.

Constraints of BPR

One of the constraints in the way of NExA implements BPR was resistance to the change from internal and external players. Weraniyagoda, (2018) describes when implementing BPR, resistance from employees is expected. Similarly, Swartz, (2018) cited, Harrington et al., (1998), who stated that resistance is one of the challenges faced during the implementation of BPR. Bureaucracy was another constraint in NExA's BPR, especially in bringing incremental changes. This is while Fatile et al., (2020) found that to fully re-engineer processes in the public sector, the excessive bureaucracy should be cut down. Insecurity was the other constraint. One thing that is unique about BPR implementation in Afghanistan is that there is insecurity among the constraints which is not supported by the literature.

Conclusion

This study explored the BPR efforts in the public sector of Afghanistan. NExA was selected as a case study. NExA brought reforms during 2016-2020 to root out widespread corruption, establish a transparent Kankor exam process and bring efficiency. No specific methodology or framework of BPR was utilized for the reforms. Also, it was found that the radical changes were followed by incremental changes. Leadership and teamwork, support

from high-level government authorities, risk-taking, commitment to change, and commitment to merit-based recruitment were found as enabling factors of BPR in the public sector. Furthermore, resistance to change, bureaucracy, and insecurity were among the major challenges faced during the implementation of BPR. Resistance to the reform was encountered from external and internal players, the former with strong resistance while the latter with little resistance. IT was found to be the main enabler of the reform, playing an integral part in it. This validates the important role of IT in the organizational changes of Afghanistan's public sector. Continued dependence on companies abroad and not ensuring mechanisms such as financing to sustain the momentum were among the key hinderers to the sustainability of the reforms. We can conclude that BPR is applied in the public sector of Afghanistan, even though the theory was not implemented in its true spirit in this specific case. Implementation of BPR contributes to transparent, corruption-free, efficient and fast service delivery to the citizens with low operational cost. This manifests that the public sector of Afghanistan puts into practice the up-to-date management tools in bringing improvement in its service delivery to citizens.

Limitations of Study

Usually, each research study faces limitations, this study is no exception. This study due to lack of resources and time could only explore one case of the public sector, the information could have been richer if more cases of the public sector had been studied. Further research could explore BPR implementation in other cases of public sectors; BPR in the private sectors could also be studied so that a general picture of BPR implementation in Afghanistan with success and failure factors, is established.

Implications of Study

In light of the findings, the study has the following implications:

- The public sector to remove corruption should implement BPR
- For organizations to successfully implement BPR should implement it with the integral role of IT.
- It is important to take into account that re-engineering is a continuous process, so the public organizations should establish a unit that identifies problems in the processes, finds solutions for the identified issues and implements the solutions with continued evaluation of the processes.
- It is important to communicate the reason and benefits of reform to employees so that they can also take part in change instead of resistance to it.
- When implementing BPR, scientific methodologies, suggested from the experiences from other contexts should be applied.
- Aim for reduction of dependence on technical assistance from international companies, by building local capacities.
-

References

- AbdEllatif, M., Farhan, M. S., & Shehata, N. S. (2018). Overcoming business process reengineering obstacles using ontology-based knowledge map methodology. *Future Computing and Informatics Journal*, 3(1), 7-28.
- Ahmad, S. A., Mansoor, N. & Ahmad, K. A. 2003. *The Malaysian bureaucracy: Four decades of development*, Malaysia, Pearson Malaysia.
- Al-Mashari, M., & Zairi, M. (1999). BPR implementation process: an analysis of key success and failure factors. *Business Process Management Journal*.
-

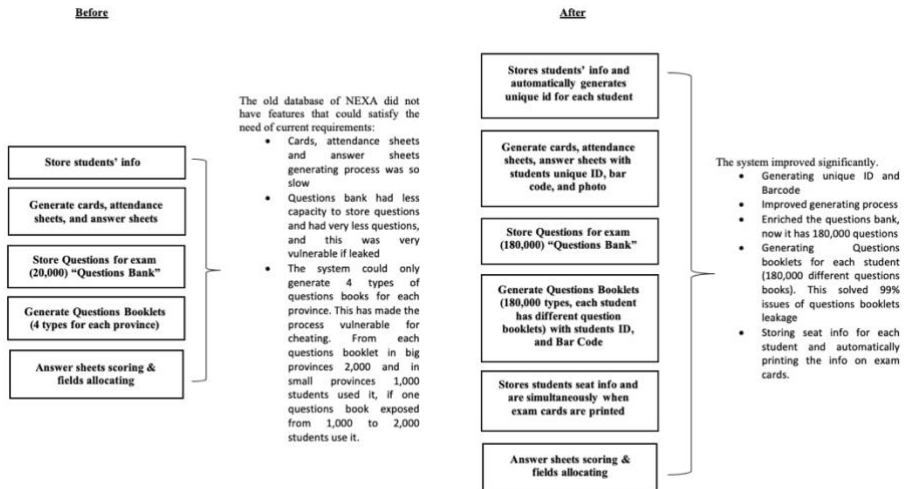
- Bannister F, Connolly R (2011) Trust and transformational government: a proposed framework for research. *Gov Inf Q* 28(2):137-147
- Bhaskar, L. H. (2018). Business process reengineering: A process-based management tool. *Serbian Journal of Management*, 13(1), 63-87.
- Bhaskar, H. L. (2016). A critical analysis of information technology and business process reengineering. *International Journal of Productivity and Quality Management*, 19(1), 98-115.
- Bhaskar, H. L. (2014). BPR as a quality improvement tool. *Handbook of Management, Technology and Social Sciences, Handbook*, 2.
- Bako, Yusuf & Banmeke, M. (2019). The Impact of Business Process Re-Engineering on Organizational Performance. *Journal of Management and Technology*. 5. 1-14.
- Darmani, A., & Hanafizadeh, P. (2013). Business process portfolio selection in re-engineering projects. *Business Process Management Journal*.
- Davenport, T. H. (1995). Will participative makeovers of business processes succeed where reengineering failed? *Planning Review*, 23(1), 24-29.
- Dell'Aquila, M. E. (2017). Factors contributing to business process reengineering implementation success.
- Fatile, J. O., Sybert, M., & Etim, E. (2020). Process Reengineering in African Public Sector: Lessons from the Private Sector. *Journal of Public Administration and Governance*, 10(3), 262-287.
- Hammer, M. 1990. Reengineering Work: Don't automate, elaborate. HBR, July-August, 104-112.
- Hammer, M., & Champy, J. (1993). Reengineering the corporation: A manifesto for business revolution. *Business horizons*, 36 (5), 90-91.
- Habib, M. N., & Shah, A. (2013). Business process reengineering: Literature review of approaches and applications. In *Proceedings of 3rd Asia-Pacific Business Research Conference* (pp. 25-26).
- Habib, M., & Jamal, W. (2013). Business process reengineering (BPR) initiatives in public sector of Pakistan. *Business & Economic Review*, 5(01), 89-121.
- Habib, Muhammad. (2015). Business Process Reengineering (BPR) Initiatives in Public Sector of Pakistan. *Journal of Business and Economic Perspectives*. 05. 86-121.
- Herzog, N. V., Polajnar, A., & Tonchia, S. (2007). Development and validation of business process reengineering (BPR) variables: survey research in Slovenian companies. *International Journal of Production Research*, 45(24), 5811-5834.
- Habib, M. N. (2013). Understanding critical success and failure factors of business process reengineering. *International Review of Management and Business Research*, 2(1), 1-10.
- Harrington, B., McLoughlin, K., & Riddell, D. (1998). Business process re-engineering in the public sector: a case study of the contributions agency. *New Technology, Work and Employment*, 13(1), 43-50.
- Hashem, G. (2019). Organizational enablers of business process reengineering implementation. *International Journal of Productivity and Performance Management*.
- Hasnan, N., Ringim, K. J., & Razalli, M. R. (2017). Assessing the implementation level of business process reengineering factors in Malaysian Islamic banks. *Journal of Advanced Research in Business and Management Studies*, 7(1), 1-12.
- Iqbal, N., Nadeem, W., & Zaheer, A. (2015). Impact of BPR critical success factors on inter-organizational functions: an empirical study. *The Business & Management Review*, 6(1), 152.
- Ikon Michael, A., Onwuchekwa Faith, C., & Nwoye Christina, O. (2018). Business process reengineering (BPR) and competitive advantage in a recessed economy. a study of selected brewing firms in Anambra State, Nigeria. *International Journal of Management*, 5(2), 1-15.
- Jamali, G., Abbaszadeh, M. A., Ebrahimi, M., & Maleki, T. (2011). Business process reengineering implementation: developing a causal model of critical success factors. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 1(5), 354-359.
- Khodambashi, S. (2013). Business Process Reengineering in Application Healthcare in a relation to Health Information System.
- Mukwakungu, S. C., Mabasa, M. D., Mamela, T. L., & Mabuza, S. (2018). The Effect of Business Processes Re-engineering on Improving Customer Satisfaction & Retention in the Manufacturing Industry.
- Mmereké, R. N., & Moruisi, K. G. (2013). Challenges in implementation of business process re-engineering in Botswana public hospitals. *International Journal on Customer Relations*, 1(1), 31.
- McAdam, R., & Donaghy, J. (1999). Business process re-engineering in the public sector: a study of staff perceptions and critical success factors. *Business Process Management Journal*.
- Mavetera, C. G., Huisman, M., Mavetera, N., & Lubbe, S. (2015). An investigation of a specific system development methodology for business process reengineering.

- Madushela, N. (2015). An integrated approach to business process reengineering management. University of Johannesburg (South Africa).
- Nkomo, A., & Marnewick, C. (2021). Improving the success rate of business process re-engineering projects: A business process re-engineering framework. *South African Journal of Information Management*, 23(1), 1-11.
- Nkuruziza, Gideon & Ntayi, Joseph & Kaberuka, Will & Munene, John. (2018). Does Business Process Reengineering Perform in a Third World Setting? A Qualitative Perspective.
- OECD (2016), "Health expenditure and financing: Health expenditure indicators", OECD Health Statistics (database).
- Ranganathan, C., & Dhaliwal, J. S. (2001). A survey of business process reengineering practices in Singapore. *Information & Management*, 39(2), 125-134.
- Riyanto, A., Primiana, I., Yunizar, Y., & Azis, Y. (2018). Reengineering support for competitive advantage through organizational basis, information and communication technology: a literature review. *Problems and Perspectives in Management*, (16, Iss. 3), 464-476.
- Siddiquee, N. A. (2007). Public service innovations policy transfer and governance in the Asia-Pacific region: The Malaysian Experience. *JOAAG*, 2(1), 81-91.
- Siddiquee, N. A. (2006). Public management reform in Malaysia: Recent initiatives and experiences. *International Journal of Public Sector Management*.
- Sarker, A. E. (2006). New public management in developing countries: An analysis of success and failure with particular reference to Singapore and Bangladesh. *International Journal of Public Sector Management*.
- Sarker, A. E. (2005). New public management, service provision and non-governmental organizations in Bangladesh. *Public Organization Review*, 5(3), 249-271.
- Samaratunge, R., Alam, Q., & Teicher, J. (2008). The new public management reforms in Asia: A comparison of South and Southeast Asian countries. *International Review of Administrative Sciences*, 74(1), 25-46.
- Schwertner, K. (2017). Digital transformation of business. *Trakia Journal of Sciences*, 15(1), 388-393.
- Swartz, E. M. J. (2018). Challenges to the implementation of business process re-engineering of the recruitment process in the Ministry of Fisheries and Marine Resources, Namibia (Doctoral dissertation, Stellenbosch: Stellenbosch University).
- Sungau, J. J., & Ndunguru, P. C. (2015). Business process re-engineering: a panacea for reducing operational cost in service organizations. *Independent Journal of Management & Production*, 6(1), 141-168.
- Selladurai, R. (2002). An Organizational Profitability, Productivity, Performance (PPP) Model: Going Beyond TQM and BPR. *Total Quality Management*, 13(5), pp.613-619.
- Salimifard, K., Abbaszadeh, M. A., & Ghorbanpur, A. (2010). Interpretive structural modelling of critical success factors in banking process re-engineering. *International Review of Business Research Papers*, 6(2), 95-103.
- Thong, James & Yap, Chee-Sing & Seah, Kin-Lee. (2000). Business Process Reengineering in the Public Sector: The Case of the Housing Development Board in Singapore. *Journal of Management Information Systems*. 17 (1), 245-270
- U, Akam & Okeke, Margaret-Mary & E, Kekeocha & N, Onuorah. (2018). Business Process Reengineering Resources and the Performance of Quoted Brewing Firms in Nigeria. *Asian Business Research Journal*. 3. 15-25.
- Weraniyagoda, W. Y. C. (2018). Importance of change management for a successful BPR implementation a case study conducted on a company transitioning from a project-based to product-based solutions.
- Weerakkody, V., Janssen, M., & El-Haddadeh, R. (2021). The resurgence of business process re-engineering in public sector transformation efforts: exploring the systemic challenges and unintended consequences. *Information Systems and e-Business Management*, 1-22.
- Zaini, Z., & Saad, A. (2019). Business Process Reengineering as the Current Best Methodology for Improving the Business Process. *Journal of ICT in Education*, 6, 66-85.
- Zahoor, A., Ijaz, S., & Muzammil, T. (2015). Effective management system: a key to BPR success. *European Journal of Business and Management*, 7(25), 41-48.

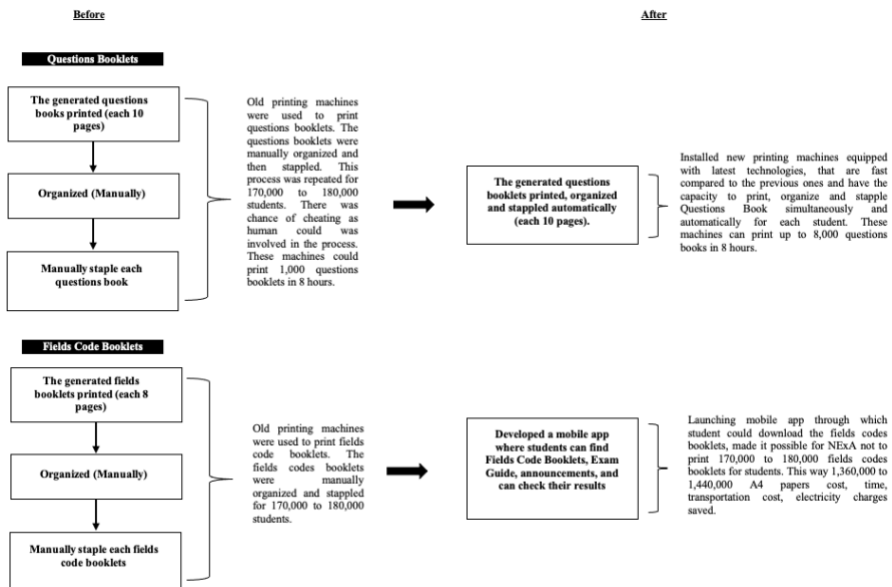
Annexure 1:

NExA's Database

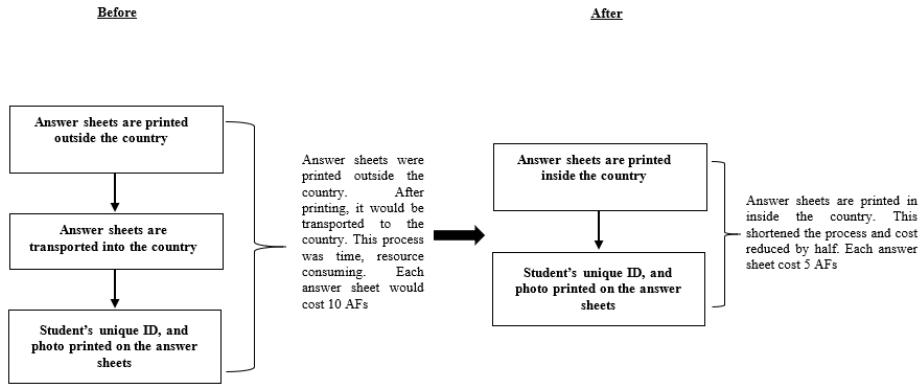
Since 2016 NExA's database went through significant changes that resulted from dramatic improvements in its features.



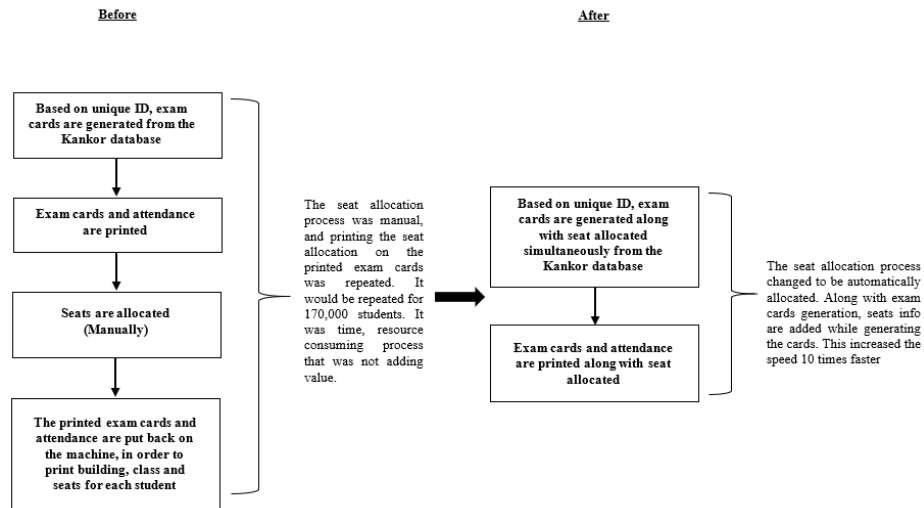
Printing Questions Booklets and Fields Code Booklets Process



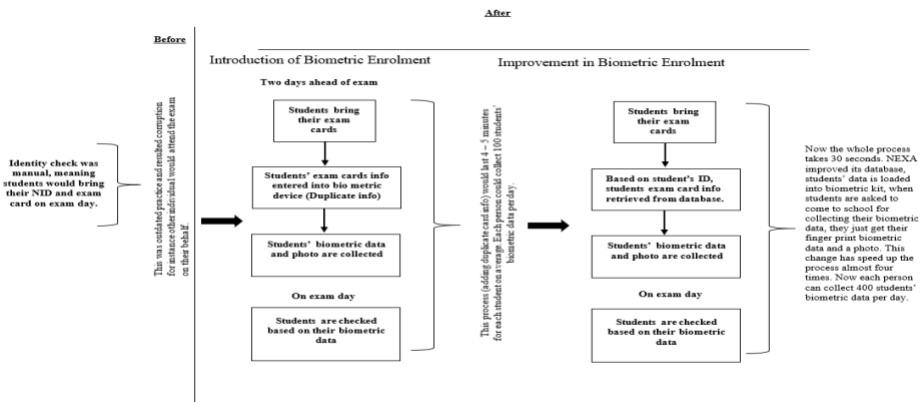
Answer sheets Preparation



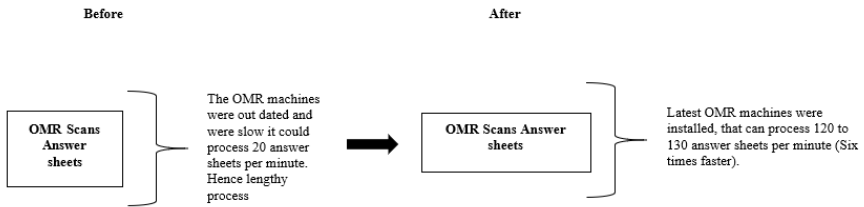
Exam Cards and Attendance:



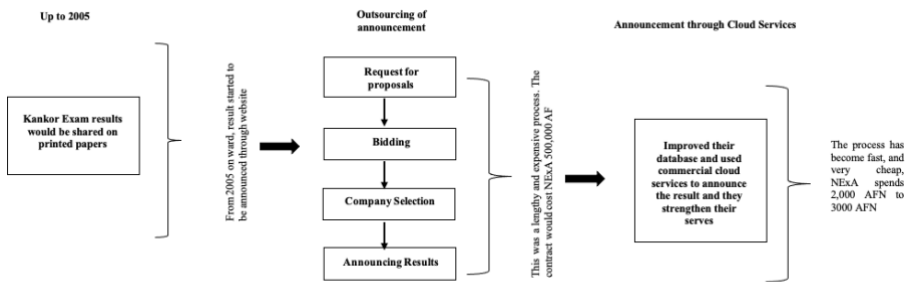
Identity Check Process



Optical Mark Reader (OMR) – Scanning Answer sheets Process



Result Announcing Process



About the Authors

Mr. Jawed Mansoor, School of Graduate Studies, MBA Department, Kardan University, Kabul Afghanistan, <jawed.mw@gmail.com>.

Dr. Muhammad Shahid Shams, Assistant Professor, School of Graduate Studies, MBA Department, Kardan University, Kabul Afghanistan, mshahidshams@gmail.com ORCID ID: 0000-0003-2956-2464

Dr. Ghulam Farooq Mansoor, Executive Director, Health Protection and Research Organization (HPRO), Kabul Afghanistan, <farooqmansoor@gmail.com>