Challenges of Introducing Innovation in Public Sector - A Case Study of Upgrading Pakistan Customs Risk Management System

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Curtain Raiser

It was 8pm on 24th November, 2017 and Mr. Abdullah, the Director of Directorate of Risk Management (RM), was pacing back and forth in his office at Custom House, Karachi. He had just returned after a three hours long meeting with the members of the RMS Committee and despite his best efforts and answering all the technical queries, explaining the results of simulations and referring to international best practices, he could not convince the members to endorse the idea of implementing a new model of Risk Management System in Pakistan Customs. He could still feel the sheer disappointment on faces of his IT team who had worked with him for almost one year in developing, testing and perfecting this model. He could also feel the embarrassment that he was going to face when he would update his technical support in UK-Customs who, being a Pakistani by origin, was as enthusiastic in bringing this innovative idea to Pakistan Customs as the Director himself. Realizing that there was no use of thinking over this situation at that hour, he decided to call it a night and go home to sleep over it and think afresh the next morning.

Intent of the Study

The existing automated Risk Management System (RMS) was referring too many consignments of imported cargo for physical examination resulting in undue delay in their clearance, choking of ports and additional costs to the business (in shape of demurrage/port charges), and to the government (wastage of man-hours and scarce resources). Besides, the ratio of detections of misdeclarations to the number of containers marked for examination, was very low. There was, therefore, a need to address this issue. The existing RMS, based upon an automated selectivity criterion relying upon manual risks updation, had reached its saturation limit and was found to be unable to further address this problem. The idea of using *Predictive Analytics Model*, a Data Science tool, was new to Pakistan Customs.

The Committee of senior officers responsible for managing RMS had reservation on approving the adoption of this model. The background of these reservations was rooted into an organizational culture of risk-aversion (*fear of NAB*), lack of capacity (no understanding of how Data Sciences work) and indifference. Without the support and endorsement of RMS Committee, Director RM could not implement the new model. The intent of this Study is to show how the Director RM succeeded in introducing an innovative idea by overcoming the organizational hurdles of fear of unknown, indifference and lack of capacity, and implemented an innovative idea in Pakistan Customs' RMS.

Introduction

Mr. Abdullah was working as Collector of Customs Karachi, for almost one year when he was assigned the look-after charge of the Director, Directorate of Risk Management, on 3rd March, 2017. The Collectorate itself was a very hectic and sensitive assignment as one-fourth of Pakistan's total import cargo was cleared through this Collectorate. Although, as a tradition, Collectors heading main Collectorates, were not assigned additional or look-after charges but Mr. Abdullah was of the view that it was probably due to his past association with automation and Business Process Reengineering (BPR) in Customs that he was given this additional assignment.

Basic Concept and Importance of RMS

There has been an exponential growth in international trade since 1990's. In 1990, the world exports were US$ 3.5 trillion which arose to more than US$ 19 trillion in 2018.[1] It was not possible for customs administrations to process such a huge volume of trade using traditional methods which were based upon manual controls. One of the best international practice which was adopted by modern customs administrations was the use of Risk Management Systems in customs clearance processes. Standards 6.3, 6.4 and 6.5 of the Revised Kyoto Convention (RKC) specifically recommend use of RMS as a customs control measure.[2]

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[1] Trends in global export volume of trade in goods from 1950 to 2018. UNTAD data as quoted at STATISTICA website https://www.statista.com/statistics/264682/worldwide-export-volume-in-the-trade-since-1950/ (accessed on September 26, 2019).

[2] World Customs Organization, Guide lines on General Annexures to Kyoto Convention, Ch 6, http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/wto-atf/dev/rkc-guidelines-ch-6.pdf (accessed on September 26, 2019).

Briefly explained, RMS requires Customs administrations to concentrate their energies on high risk transactions/traders/passengers through strict controls and facilitate low risk transactions/traders/passengers by processing them through simple and expedient control measures. In an automated system, comprehensive selectivity criteria are designed, consisting of multiple variables. These criteria are based upon the internationally identified risk factors as well as professional experiences of the specific customs administration, designing that criteria. Once the criteria are developed and implemented, it starts building a profile of the traders/passengers, processed through these criteria. Good profiles are facilitated while weak profiles are treated as risky and are subjected to strict controls. Modern customs administrations that use automated clearance systems, use a color code to identify the outcomes of the selectivity criteria. It's generally GREEN for low / no risk, RED for high risk and YELLOW for intermediate risk. Control measures are then accordingly designed to address the cargos assigned to each color channel according to its risk level.

Assignment as Director of RMS:

Mr. Abdullah was aware of the irony associated with the position of the Director of Directorate of RM. It was one of the most important positions in terms of the sensitivity of its nature of job but since its creation in 2014, it has always been assigned as a *look-after* charge to a BS-20 officer posted at some other assignment. There was, therefore, no physical infrastructure like office or logistics for this Directorate; there was no support staff; there was no separate IT team and it was always just a Director of Directorate of RM who, in that capacity, headed a Committee, consisting of six BS-20 officers including Collectors of four major clearance Collectorates (import & export) of Karachi, Director of Intelligence & Investigation (I&I), Karachi and Director of Post Clearance Audit (PCA), Karachi.

Being a member of the RMS Committee in his capacity as Collector of Customs Appraisement, he knew that decision making process in the Committee even to make a single change in risk-criteria, was painstakingly slow. The reason was simple; changing any risk criteria was extremely complex as well as sensitive and any future negative implication like loss of revenue, tracing its origin back to the decision of the RM Committee, could land them in serious trouble.

Besides, most of them lacked the IT systems background required to fully understand the complex architecture of RMS. Fear of the unknown due to lack of understanding was, therefore, another reason making them wary of finalizing any decision. Since the responsibility of getting a consensus / majority decision was that of the Director RM, they were indifferent to the urgency or importance of making any risk-criteria change needed to improve the performance of RMS. The Director also did not have any hierarchical leverage as most of the members were either equal to or higher to him in seniority.

Need of a New Model for RMS

The only leverage that Mr. Abdullah had as Director RM was his firsthand knowledge of the outcomes of current RMS, being Collector of one of Pakistan's main cargo clearance Collectorates. Although, according to his views, there were multiple areas where RMS needed improvement, it was the high number of consignments marked for RED channel that was becoming a major concern, not only for him but also for the senior management. There were multiple reasons for this concern; cargo marked to RED channel took 3 to 4 more days for clearance against the cargo referred to YELLOW or GREEN channels. This not only caused financial losses to the importers in shape of demurrage and port charges but also caused port congestion resulting in disruption to trade and engagement of customs limited manpower in fruitless physical examinations.

In order to find a solution to this problem, Mr. Abdullah personally engaged with the two data analysts who were hired through PRAL (Pakistan Revenue Automation Pvt Ltd) almost six months ago for the RMS Directorate but their services were not being utilized as they lacked domain knowledge and there were no established SOPs for domain training of such incumbents in the an organization (Directorate of RMS) which was being run on *ad hoc* basis from its very inception. Mr. Abdullah started regular brainstorming sessions with them on different issues facing the RMS and, at the same time, updating their domain knowledge which ultimately helped in transforming them into valuable assets for the technical side of RMS Directorate.

Conception of the New Idea

In December, 2016, Mr. Abdullah had attended a workshop at Islamabad, arranged by the FBR in cooperation with the UK customs i.e. Her Majesty's Royal Customs (HMRC) and Department for International Development (DFID). The purpose of this capacity building workshop was to introduce the top management of FBR, both Customs and Inland Revenue, to the use of Big Data and Data Sciences concepts in tax management. At the end of workshop, Mr. Qaim, a Pakistan origin UK citizen working as a data scientist with HMRC, had informed that as a part of capacity building support for FBR, PRAL has entered into a one year contract with HMRC and DFID whereupon he will be associated with FBR to design and run three pilot projects based on Data Science for FBR's three main tax heads i.e. Customs, Income Tax and Sales Tax.

This was three months ago and Mr. Abdullah had forgotten about that workshop. However, during one of their brainstorming sessions, Mr, Murad, the data analyst, inquired, "*Sir, have you heard about the use of Artificial Intelligence (AI) and Predictive Analytics (PA) Models in banking sector of Pakistan?*" Mr. Abdullah immediately recalled the proceedings of that workshop and wondered if he could make use of technical support of Mr. Qaim in improving RMS. He could propose the issue of high marking of imported cargo to RED channel as a pilot project, seeking a solution through use of AI or PA model. When he contacted Mr. Qaim, he was more than happy to come onboard as he had past experience of creating and implementing data science-based models of RMS in HMRC also. After multiple discussions between the two of them and convincing the IT Wing of FBR about the potential worth of this project, the proposal was approved and it was decided that in addition to Mr. Qaim, a local data science expert will also be hired who will be associated with Mr. Qaim during the project and subsequently become a dedicated resource in PRAL on data science related projects of Customs. Through personal efforts of Director RM and enthusiasm of Team Leader of WeBOC system Mr. Azeem, the hiring process was completed within one month and Mr. Zamir, a data scientist, started working with Mr. Qaim on the project.

Predictive analytics (PA) uses historical clearance data to predict future behavior of the trader. Historical data is used to build a mathematical model that captures important past filing trends. This predictive model is then used on current data to predict the behavior of fresh GD to suggest actions for best outcomes.

Multiple meetings were held between Mr. Abdullah and the project team. The two data analysts working with the RMS Directorate were also associated with the project team. Visits of the team to different clearance Collectorates of the country were arranged to familiarize them with the nitty-gritty of customs clearance system, the risks involved, the physical examination procedures and different categories of misdeclaration detected during these examinations. The purpose was to give them a clear idea of what type of difference between declared and found details of imported goods created what level of severity of misdeclaration so as to enable them to develop a suitable machine learning algorithm for their Predictive Analytics (PA) Model. The first presentation on the Model was made to Director RM on 6th October, 2017 and, after multiple changes in light of inputs from Mr. Abdullah and different customs officers with hands-on examination and assessment experience, the model was finalized by the 4rth week of October, 2017 and Mr. Abdullah was excitedly looking forward to present the same to the RMS Committee in its next meeting due in the 1st week of November, 2017. But then a series of unfortunate events started to unfold.

The Mobile Misdeclaration Case

Around 4 AM in the morning of 1st of November, 2017, incharge of intelligence branch of Mr. Abdullah's Appraisement Collectorate informed that the Anti-Smuggling Organization (ASO) of Preventive Collectorate had seized a container load of mobile phones which were misdeclared by the importer, as LED lights and were cleared by the WeBOC system through GREEN channel on 31st October, 2017, through another Collectorate. He further informed that four containers of same company, with same declaration of LED lights, already cleared by the system, were pending removal from a port under the control of Appraisement. Mr. Abdullah ordered immediate HOLD and physical examination of the containers under his jurisdiction and directed concerned officers to get complete details of the incidence by the end of day.

While no misdeclaration was found in the containers cleared through Mr. Abdullah's Collectorate, a huge media frenzy continued for next few weeks due to the amount of revenue involved in the mobiles seized by the ASO of Preventive Collectorate (around Rs. 80 million) and subsequent raids of Directorate of Intelligence & Investigation on a number of warehouses of the importer in Lahore and Karachi, recovering more mobile sets, claimed to be cleared through GREEN channel, earlier using same method. Multiple news items pointed figures at the Directorate of RMS as most of the past consignments of this company were cleared through GREEN channel. Due to its circumstantial nature, the case of Directorate of Intelligence & Investigations was weak from very inception and could not stand scrutiny of initial judicial process. However, the case of mobiles seized by the Preventive Collectorate was strong and the company had to pay huge amount on account of duty/taxes and penalties. Payments of these amounts were made promptly by the company as the Director of importing company was the son of a very influential businessman who did not want the case to linger on for long which could have damaged the reputation of other concerns of his group of companies, resulting in further losses.

The cause of concern for Mr. Abdullah was not the amount of revenue or the influential people involved in this case. The cause of concern was that as Director RM, his confidence level on the existing RMS was badly shaken. Past 5 years RMS profile of this importer was very strong. The company registered with customs in 2012 and for first 2 years, out of 670 Goods Declarations (GDs), no GD was cleared through GREEN channel, as the company had no past profile. Subsequently, as its profile improved, the RMS started increasing the GREEN GDs which became over 80% during 2017. During this period, the trader self-assessed and filed over 6,000 GDs, paying over Rs. 24 billion as duties/taxes. Value addition during this period on account of any physical examination, of randomly or otherwise selected GDs, was only 0.37%. No major discrepancy was observed even in those declarations of this importer which have been assessed by assessing officers and have also been physically examined. As such, this importer did not hit any criteria during last 5 years to be considered by the system as a high-risk trader.

Mr. Abdullah's dilemma was not limited to his personal confidence level on RMS. He was unable to contemplate that in the fresh background of this case, how could he convince the RMS Committee members to reduce volume of cargo clearance through RED channel (physical examinations) while the clearance through GREEN channel was demonstrated to be susceptible to gross misuse in the instant case. In an ideal scenario, this incident could have been used as an opportunity to plead the case of replacing the existing RMS with an entirely new model. But Mr. Abdullah knew this was not an ideal situation. This was an environment where Committee members would see everything through an opaque lens tainted with *fear of NAB*. Instead of endorsing a new system that would reduce physical examinations, they would go for further increasing the existing examinations by putting more checks on GREEN channel, diverting those GDs to RED channel. And that's what exactly happened in the meeting of RMS Committee held in the last week of November, 2017.

RMS Committee Meeting

The dreaded meeting was held on 24th November, 2018. Three main characters linked with the misdeclaration case were members of the RMS Committee; Collector of Appraisement (West) from whose jurisdiction the consignment was cleared in GREEN channel, Collector of Preventive, whose ASO initiated the case by seizing that cleared consignment and Director of Intelligence Karachi, who made subsequent raids on various warehouses of the company, recovering other mobile sets purportedly cleared through GREEN channel in past. Director RM invited these three members to share their updated information on the case and other inputs in the context of RMS role in this case. Both the investigating agencies (I&I and ASO) informed that no link was found by their investigators which would indicate any involvement of RMS or WeBOC technical staff in the case. A detailed briefing was also made by the team leader of WeBOC, technically explaining how each of the risk criteria worked properly as per system design on the specific GD of that importer filed on 31-10-2017 with fraudulent declaration. Each member raised multiple queries during this briefing but was fittingly responded to by the team leader. In the end, though the members agreed that the RMS worked as designed in this case.

At this point, the Director RM proposed the new model for RMS based on Predictive Analytics and shared the details of the interaction with HMRC and efforts made during last six months in developing and evaluating the new system. However, none of the members showed any interest in introducing any new idea or a major change at this point in time and desired to address the immediate shortcoming of the RMS identified during the technical evaluations made in light of the misdeclaration case. The analysts informed that the issue identified during this evaluation can be addressed but it would increase the overall physical examinations by at least 6%. None of the members was concerned about that increase and the Committee decided to update RMS accordingly. As for the new model, the members desired that more manual safety measures be included in the model to avoid shifting of GDs from RED to GREEN channel to avoid any misuse by importers. Mr. Abdullah knew that in official parlance this meant an indefinite pending of the new model as no manual intervention was possible to maneuver the percentage of GDs through different channels in the proposed PA model. He knew that the decision of this three hours long meeting could act as a final seal on the fate of introduction of data science tools in Pakistan Customs' RMS. He knew he had to do something about it, but what, was not clear to him that late at night so he decided to go and think with a fresh mind the next day.

Tactical Use of the World Bank Group

The next day, Mr. Abdullah did not have to think on this issue. The very first letter in his *dak-pad* from previous day was a meeting notice from headquarters regarding findings of the ongoing World Bank Mission on Functional Review and BPM of Pakistan Customs. Mr. Abdullah immediately knew what he needs to do next to convince the RMS Committee to implement the PA model.

FBR, in coordination with the World Bank and DFID, had initiated a Multi-Donor Trust Fund for Accelerating Growth and Reforms (TAGR)-2015-19. Mr. Abdullah became associated with this program in his capacity as Director, RMS in late August 2017 when the World Bank team started Functional Review of Pakistan Customs which was followed by a Business Process Mapping (BPM) exercise. The objective of BPM was to map core business processes of Pakistan Customs and the working of RMS was one of those processes.

Till that dreaded meeting on 24th November, Mr. Abdullah's only objective throughout his association with the TAGR program was to highlight the practical insignificance of the Directorate of RMS in the overall organizational setup of Pakistan Customs and to get some sort of recommendation in the Mission's final report for its establishment as an independent department of Customs Wing, having its own infrastructure, manpower and technical support. But now he had another objective to use this forum and that was to get a recommendation from the Mission for a fundamental change in the existing model of RMS.

During his research on the use of PA and AI models in other Customs Administrations, Mr. Abdullah had learnt that Chile, Panama and Uruguay ranked as the top three countries in South America for having most efficient customs clearance processes[3] and all of these countries were using PA or AI in some form. The team leader of the World Bank Group (WBG) on Customs matters under TAGR was an ex-customs officer from El Salvador, a South American country. During his previous engagements with the WBG, Mr. Abdullah had tried to convince their team leader to associate a Customs RMS expert, preferably from some developed country like Singapore, Germany or Netherlands, however, he was informed that due to the sensitivity of RMS in terms of national security, none of the developed countries would share their actual RMS model with any other country or the World Bank. He, however, promised to look for some similar resource within the World Bank with hands-on experience in RMS.

During the meeting held in 2nd week of December, 2017, the WBG presented its findings on the Functional Review and BMP of Pakistan Customs. As expected, reform of RMS was mentioned as the top priority agenda item for Pakistan Customs. Following is the excerpt from World Bank's Policy Note[4] in this regard:

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[3] World Bank, Logistics performance index: Efficiency of customs clearance process. https://data.worldbank.org/indicator/LP.LPI.CUST.XQ?end=2016&most_recent_value_desc=true&start=2007 (accessed on September 26, 2019).

[4] World Bank Policy Note: The Role of Pakistan Customs in Domestic Revenue Mobilization, December, 2017. [This document is not publicly available. However, a copy can be presented for reference purpose if desired by the assessing faculty of this case study]

"Way forward

In order to advance the trade facilitation agenda, and keeping in mind the need to protect revenues, the following re forms may be pursued:

Sequencing of major customs administration reform priorities		
First priority	**Second priority**	**Third priority**
Improve the RMS to effectively manage risk	Strengthen audit and enforcement capabilities of both Customs and IRS	Reduce physical inspection of cargo and documentary checks at the borders by use of automation and improved PCA

The first reform priority is to improve the RMS. A RMS focused on risk profiles of authorized operators (carriers, brokers and traders) will over time allow Customs to ensure only those GDs effectively posing risk in terms of revenue control or safety and security of international supply chain management to be selected for physical examination. It will also facilitate effective PCA, the second refor m priority, by shifting information flows being

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During this meeting, Mr. Abdullah discussed with the WBG team leader in detail the new RMS model developed in coordination with HMRC and re-emphasized the need of associating some international RMS expert having relevant experience. To his great pleasure, Mr. John (the WBG team leader for Customs reforms) informed that he has already identified such a resource who will be shortly associated with his team as a lead on further engagements with Pakistan Customs in the process of RMS reforms.

A New Setback – A New Opportunity

On January 22, 2018, Mr. Abdullah was transferred from Appraisement Collectorate to Appraisement Collectorate (West). At the same time, the charge of the Director RM was also assigned to the officer who was transferred out of Appraisement Collectorate (West). Though Mr. Abdullah, having served as Collector Appraisement for almost 2 years, was expecting to be moved out, he was expecting to be posted as full time Director of RMS on account of his recent proactive engagements with HMRC & World Bank on this subject and his multiple recommendations to the headquarters for assigning a full time Director RM if the Board really intends to improve RMS performance. Mr. Abdullah knew this was a setback to his efforts to implement PA model in Pakistan Customs as he, in his capacity as Collector Appraisement (West),

while remaining a member of the RMS Committee, would not be able to push for the new model as forcefully as he would have in his capacity as Director of RM.

The new Director RM had no interest to take any proactive measures to improve RMS. This was primarily for two reasons; she was posted from one of the most important field postings in Pakistan Customs to a post which had no office, no staff and no logistical infrastructure so her natural perception was that she was posted there as a punishment, draining out all initiative (if any, to begin with) while serving at this assignment. Secondly, she had no background or understanding of the existing algorithms of RMS despite being a member of the RMS Committee for almost one year which was mainly due to lack of interest and not being individually responsible for the decisions of the Committee. The fear of unknown was, therefore, a major factor restraining her from taking any proactive reform initiatives in RMS. Mr. Abdullah realized this fact during their charge handing over briefings. "*I will not make any change unless it is proved to be 100% secure*" was her categorical response. Mr. Abdullah was not a stranger to such delusion of the concept of RMS where most of the people could not differentiate between *Risk-Management* and *Risk-Eradication*. Realizing there was no use in making any effort to convince the new Director, he decided to bring the matter in knowledge of senior management, including the then Member Customs. The Member personally knew both Mr. Abdullah and the new Director RM and it did not take long for him to make sense of what Mr. Abdullah was trying to communicate. The Member was, however, reluctant to officially ask current Director RM to pursue PA model as he himself had the same fear of unknown as others and did not want to be part of a decision for making major changes in the existing RMS. He being one of those senior officers who themselves were not IT savvy but fortunately understood its potential in improving the existing systems, agreed to keep Mr. Abdullah as a part of the teams working with the World Bank TAGR and HMRC programs. This provided Mr. Abdullah the opportunity to continue his efforts to tweak the PA model in consultation with the new expert of World Bank, making it more acceptable to the RMS Committee.

Utilizing International Experience to Improve PA Model

As expected by Mr. Abdullah, not a single meeting of the RMS Committee was called during next six months by the new Director. During these six months, Mr. Abdullah remained engaged with the World Bank team which had hired the services of a customs officer from Uruguay Customs Service, who was heading the RMS unit of Uruguay customs which employed PA model as one of the selectivity criteria in its automated customs clearance system.

Multiple interactions with the WBG, particularly with the RMS expert, proved more beneficial than Mr. Abdullah expected. The expert shared in-depth details of the Uruguay RMS with different selectivity criteria and how different criteria worked at different levels. This gave Mr. Abdullah and his technical team a new possible dimension for implementing PA model. Instead of replacing the existing RMS altogether with PA model, the new model could be used as an independent criterion. This would provide the flexibility of routing all those GDs cleared by the PA model to the second layer of an existing channel, for instance YELLOW channel, instead of letting the system decide to route it to any channel, including GREEN. Based on this new dimension, the PA model and its implementation in the existing RMS was redesigned so that the GDs routed out of the RED channel by PA model will go to the YELLOW channel where the assessing officer will make an informed decision whether to clear the consignment without examination or mark it for physical verification. This will not only achieve the intended purpose of the pilot project, i.e. reduce number of GDs being marked to RED channel by the RMS but will also give an assurance to the RMS Committee that no GD would be cleared through GREEN channel on account of their decision of implementing the new model.

Another major benefit of interactions with the Uruguayan expert, was the restoration of Mr. Abdullah's confidence in basic design of Pakistan Customs existing RMS and the capability and skill level of his technical team, particularly the newly hired data scientist who had developed the PA model. The mobiles misdeclaration case which shook Mr. Abdullah's confidence level on existing RMS was discussed in detail with the WB expert who quoted a number of similar incidences happening in most advanced customs administrations (USA, Singapore, Germany) where a trusted economic operator suddenly turned *rogue* or made an unintentional error,

and the automated RMS could detect the misdeclaration at the time of clearance of consignment. They were, however, able to apprehend the culprit during post clearance audit stage as those administrations had very strong PCA setups. Mr. Abdullah's confidence level on PA model was also strengthened when the basic design and functionality of this model was authenticated by the expert to be comparable with that of Uruguay and some other modern customs administrations, she came across during her consultancy with the World Bank.

This was the first opportunity for Mr. Abdullah, or for that matter, for any Pakistan customs officer, to have an in-depth exposure to another country's RMS. Before their interactions with the World Bank's expert, they had no benchmark to compare with and judge the functional strength of their indigenously developed RMS and PA model. Exposure to Uruguayan RMS model and illustration of basic working of RMS models of developed countries by the WB expert, boosted the confidence levels of M. Abdullah and his team in their existing RMS and the new PA model.

A Devine Help Bringing Things Together

In August, 2018, the then Director RM left for a four months long training course and the charge of Director RM was assigned to Collector (Exports), again on *look-after* basis. Collector Exports and Mr. Abdullah had good working relationship in past. In November, 2018, Member Customs was also changed. The incumbent Member had himself looked after the charge of Director RM for almost a year and, therefore, had sufficient background knowledge and understanding of the working of existing RMS.

Mr. Abdullah knew he would not get such an opportunity again. He briefed the new Director RM on PA model and convinced him to accompany him to brief the new Member before his official visit to Karachi in the second week of December, 2018. Mr. Abdullah had worked with the new Member twice before and knew that he was IT savvy and, having managed the existing RMS in past, would have a relatively higher comfort level in making a decision for a major change in RMS, provided he is convinced of the utility of that change.

Meeting with the new Member was short. One of his key priorities as Member Customs was to improve the working of existing RMS. He immediately understood the potential of PA model for this agenda item.

He gave go-ahead to Mr. Abdullah's team to prepare for its implementation and asked the new Director RM to make a presentation on PA model to the top customs management, including members of RMS Committee, during his first official visit to Karachi. The presentation went successfully. The top management also gave go-ahead to the new model with few minor changes. These changes were incorporated by end of January, 2019 and the RMS Committee, now having the backing of the Member Customs as well as the top leadership of Pakistan Customs, also formally approved the implementation of new model. The PA model was implemented in March 2019 on test basis for limited consignments and after its successful test run, was fully implemented in June, 2019.

Mr. Abdullah was transferred to the FBR at Islamabad in February, 2019 but he knew that he had achieved his objective of implementing the new concept in Pakistan Custom's RMS and it would be lot easier from here on to expand the scope and level of this model and upgrade Pakistan Customs RMS to an AI based system over next few years.

Impact Analysis:

Implementation of PA model in RMS had two objectives; to decrease the number of consignments being marked to RED channel and to increase the rate of detections of misdeclarations in those consignments which are referred for physical examination by the system. Following is a comparison of these two factors before and after PA model implementation:

Table: Impact Analysis [5]

Period	%age of Consignments Marked to RED Channel	%age of Detections in Consignments Marked to RED Channel
July -Sept 2018	51.29%	37%
July -Sept 2019	35.9%	70%

The above data indicate that workload of physical examinations decreased by almost 15 percentage points whereas the rate of detections increased by 33 percentage points. It was, no doubt, a huge achievement in itself but Mr. Abdullah was hopeful that evolution of PA model to an AI based RMS would revolutionize the customs clearance

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[5] Directorate of RMS / PRAL, Karachi.

processes which will not only facilitate trade, creating ease of doing business in Pakistan but will also enable customs administration to focus on control measures resulting in higher voluntary compliance from trade.

Epilogue – Analysis and Policy Lessons

The joining period availed by Mr. Abdullah to his new assignment at headquarters in Islamabad gave him some time to ponder over what went good & bad, and why, during his association with the RMS since 2017.

He knew what he was trying to do was to address a chronic problem in customs clearance process by using a new idea, not even heard of by most of his colleagues in Pakistan Customs administration. When he did some research, he realized that hurdles and problems he faced during last two years, were not something new when it comes to introduction of innovation in public sector.

The dictionary meaning of innovation is the "*process of translating an idea or invention into a good or service that creates value or for which customers will pay. In business, innovation often results when ideas are applied by the company in order to further satisfy the needs and expectations of the customers*". [6]

Innovation economics is a growing area of economic theory and one of its basic propositions is that public policy should stimulate higher growth through innovation.[7] While innovation has become a norm in private business, its application in public sector is still facing resistance on account of risk-aversion, lack of capacity, indifference and insufficient planning on part of the public sector, even in the developed world.[8]

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[6] BusinessDictionary. *Innovation*. [Sited 30th August 2019] Available from http://www.businessdictionary.com/definition/innovation.html

[7] Musleh Ud Din, Inayat Ullah Mangla, Muhammad Jamil. Public Policy, Innovation and Economic Growth: An Economic and Technological Perspective on Pakistan's Telecom Industry. *The Lahore Journal of Economics* 21 : SE (September 2016): 370

[8] Peter Shergold, Public sector innovation: why it's so difficult, why it's so important, The Mandarin, 15 April 2019. [Available at https://www.themandarin.com.au/107178-public-sector-innovation-why-its-so-difficult-why-its-so-important/. Accessed on 30 August 2019]

Mr. Abdullah could very well associate the dilemmas he faced during past two years with the research findings of the literature he studied. What he was trying to do was to introduce an **innovative idea** (use of PA model) in a **public sector organization** (Pakistan Customs) with the hope that this idea would translate into a *product* (a new method of Risk Management in Customs) which will created *value* (ease of doing business) for both the traders and Customs.

He could now summarize the lessons learnt during this journey as below:

Overcome Personal Fears

During the whole process of introducing the new idea, the most important, and probably the hardest, challenge for Mr. Abdullah was to overcome his own fears. Despite being one of the more IT savvy officers in Pakistan Customs and having an advanced level of understanding of the RMS algorithms, his confidence was badly shaken by the mobiles misdeclaration case episode. The only tool he used to address his own fears was to use this fear in perfecting his model. He and his technical team practically ran more than 200 simulations, evaluating results and making changes / tweaking the model, to ensure that none of the hundreds of variables is ignored or left unanalyzed.

Innovation in public sector cannot be successfully implemented unless the idea is fully researched in the local context and the implementer himself is confident of all the possible outcomes / side effects.

Tactically Handle Donor Agencies

Donor agencies like the World Bank and DFID, have a habit of dictating their own terms when dealing with government departments of developing countries like Pakistan. However, Mr. Abdullah had seen during his past association with PaCCS project that if a well-researched and logical case is made before them, they usually accept the department's view. In the instant case, Mr. Abdullah succeeded in convincing the WBG that unless an expert with hands-on experience in RMS is brought onboard, the reform project will not take off. Without inputs and international experience shared by the WB expert, it would not have been possible for Mr. Abdullah's team to tweak the PA model and make it acceptable to the senior management.

Keep the Stakeholders on Board

Mr. Abdullah did not bring the members of RMS Committee onboard the new idea from its inception. That proved to be a mistake as none of the Committee members shared the ownership of the new idea with Mr. Abdullah when the PA model was presented before them as a finished product, just needing their nod of approval.

Good Timing

There is always a right time to do the right thing. Mr. Abdullah made a mistake when he introduced the new idea to the RMS Committee immediately after the mobile misdeclaration case. He, however, managed good timing when the new Member Customs stepped in who was actively looking for new initiatives at the start of his stint under new political administration.

Right Person for the Right Job

Members of the RMS Committee were selected on the basis of their relevance to the operational side of their assignments and not on the basis of their background in RMS structure or its operational functioning. Similarly, the only officer appointed as a dedicated Director RM, had no RMS background.

Create Innovation Hubs

Creativity and innovation do not happen across the organization. In private sector, where innovation is promoted, there are specialized units established for this specific purpose. In public sector there is more focus on day to day operations rather than on research on developing new ideas. The requirement, therefore, is to create innovation hubs in public sector organizations and make the organization realize their importance so that these hubs become its integral part.

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