

Looking for Efficiency and Effectiveness through a Public Sector Organizations: With Special Reference to the Exam Admission Card Process (EACP) in University of Kelaniya, Sri Lanka

Tharangani D.P¹, Karunaratne M.L.W.O.M.² Jayantha K³,

¹Assistant Registrar, Faculty of Social Sciences, University of Kelaniya, Sri Lanka

²Assistant Registrar, Faculty of Humanities, University of Kelaniya, Sri Lanka

³Senior Lecturer, Department of Sport and Physical Education, University of Kelaniya, Sri Lanka

Corresponding Author: Tarangani D.P

Abstract: Competition of modern workforce service organizations such as universities to seek the innovative option either increasing the productivity and efficiency or reducing the costs, in other words optimizing the operations enhancement. In this paper the definition of productivity, efficiency, and effectiveness will be reviewed and the necessity of paying attention to both side of productivity (i.e. effectiveness and efficiency) will be stressed. This Paper discusses the shortcomings in Exam Admission Card Process (EACP) of the University of Kelaniya, Sri Lanka. The Purpose of this study is to improve the efficiency by eliminating shortcomings and improving the productivity in the University Exam Admission card process. The key objective of this study is to explore the possibility of restructure the existing EACP that leading the reduce the process time and transportation time. There are Three specific objectives. 1. To restructure the existing IOBP 2. To identify ways and methods to overcome barriers leading to delays IOBP. 3. To Identify innovative options to issue the Admission Card. Sample data were collected from the existing exam admission cards process of the university for last three years and simple statistical tools such as mean values and percentage value were associated in the analyzing process of the study. Based on these finding, there were shortcomings due to unnecessary process and practices in the existing process that lead to inefficiency. The Proposed Map will improve the efficiency and productivity.

Keywords: Efficiency, Productivity, lead time, Value Stream Mapping, Public Sector, University of Kelaniya

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I. Introduction

Effectiveness is not a simple and clearly understandable term. Productivity is also not simple and it has different diversified definitions based on its place.

University system is considered as one of the biggest public organization which is consisted of 5669 teaching staff and 10646 non-teaching staff. Teaching staff is consisted of the lecturer and professors while non-teaching staff is consisted of included librarians, Medical Officers, Academic support and clerical and allied grades. (Sri Lanka University Statistic 2017). The Student count enrolled as internal students is 91063, whereas 354684 were enrolled as External, open & Distance learning students. More, local postgraduate student count 39972 and Foreign postgraduate student count is 665 (UGS Statistic 2017). The Statistic prove that the importance of the study and also its relevance to government.

The aim of the study is to improve efficiency of the IOBP by eliminating shortcomings in the process. The key objective of the study is to explore the possibilities of re organizing the existing IOBP that is leading to reduce the lead time (LT). There are four specific objectives namely; 1) to recognize the existing IOBP, 2) to understand the bottle necks of the existing IOBP; 3) to understand the existing rules and procedures which belong to the Issues order Book, 4) to identify ways and methods to overcome barriers that delaying IOBP

II. Literature Review

According to the Mahinda Chintana – A Brighter Future, the country's achievements are based on organizing its Manpower efficiently and effectively. Economic growth of a country basically depends on productivity improvement in all sectors. All Individuals and organizations should focus to enhance productivity in their working environment to sustain the economic growth. Basically concerning the change in the organizations and dedication will lead to identify innovative ways to conduct things better than the present situation. In this era, Good governance has drawn public awareness as it plays a major role and has a positive effect on the operations of public sector organizations. Bratton and Rothchild, 2012 had described that Good governance becomes a foremost factor in the deliberation of a nation's ability to cling to generally acceptable democratic standards. It ensures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources (World Bank, 2003). Good governance in the public sector aims to encourage better service delivery and improved accountability by establishing a standard for good governance in the public sector (IFA, 2013). It ensures that political, social and economic priorities square measure supported broad accord in society which the voices of the poorest and therefore the most vulnerable square measure detected in decision-making over the allocation of development resources (World Bank, 2003). Good governance in the public sector aims to encourage better service delivery and improved accountability by establishing a standard for good governance in the public sector (IFA, 2013). Mutahaba, 2012 states that most of the activities in public sector like nourishing accountability for the stewardship of resources, better decision making and efficient use of resources are encourage by effective governance. Rashid (2008) in concludes that the quality of customer service is lower in employees who work at Malaysian government agencies.

According to Fagerberg (2004) and Godin (2010) the innovation studies rapidly grew as an area of research over the last quarter of the twentieth century. The demarcation point of view centers on administrations' explicitness. Frequently inspired by contextual work in Operations management, service marketing, and in new service blossoming, it frequently claims to distinguish innovative work where the adjustment or technologist distinguishes nothing. It focuses on the various structures that innovation can take, and the typical organization of innovation procedure in service ventures.

III. Method of Materials

In the Process of Recognizing the existing Exam Admission Card Process (EACP) of Faculty of Social Sciences and Faculty of Humanities of the University of Kelaniya, data were gathered using observation and interview methods as required. The data about the number of admission cards, number of students, including first year, second year, third Year and special degree, different station in EACP, the waiting time at each station in minutes, transportation time in minutes and existing rules and procedures that belong to EACP were gathered and averaged. The number of students was taken from the records of the Inter Faculty Center for Coordination Modular System. A simple stop watch used to calculate time in each activity and 15 samples from each station was taken and averaged to understand the time taken per each units (Examination Admission form) In order to get real data, the data were collected in a natural setting. The respondents were not informed until they completed the task as the main aim of the study was to improve the efficiency and effectiveness in EACP.

Data Presentation

Data are presented in this paper based on the objective of the study.

1. To recognize the existing EACP of the Faculty of Social Sciences and Faculty of Humanities.

In order to understand this process, above both faculty exam admission card create by inter faculty center for coordinating modular system Unit. Table 01, shows the number of students who who sit for the exam and the number of admission card that the student have in 2015/ 2016, 2016/ 2017 and 2017/ 2018 academic year. Accordingly, the average number of admission card produced per year is 7400.

Table 01 – The Exam Admission Card produced by the ICCMS in 2015/ 2016 Academic Year to 2017/ 2018 Academic Year

Academic Year	Number of Exam Admission Card	Average (per year)
2015/ 2016	7200	7400
2016/ 2017	7600	
2017/ 2018	7400	

Source: Observation Data, 2019

*Every Academic Year included two semesters

Table 02 – The Time Taken in Each Station of the Existing EACP

Description	Academic Year			Total	Mean
	2015/ 2016	2016/ 2017	2017/ 2018		
Printing Admission	7200x2min ¹ 14400min 240 hours	7600x2min 15200min 253 hours	7400 x2min 14800min 247 hours	44400min 740 hours	14800min 247 hours
Checking Admission and which categories	7200x2min ² 14400min 240 hours	7600x2min 15200min 253 hours	7400 x2min 14800min 247 hours	44400min 740 hours	14800min 247 hours
	28800 min 480 hours	30400 min 507 hours	29600 min 493 hours	29600 min 493 hours	29600 min 493 hours

2min¹ - This time includes the printing admission by the ICCMS

2min²- All admissions are checked by the Examination Department before delivering to the Students and categorizes admissions according to the year viz.

3min³- All admissions are handed over to the students to using 03 staff persons and within 05 days

Table 03, shows the time taken for waiting and deliver the Exam Admission card in the existing EACP. There are two gaps, namely 1. ICCMS to Examination Department. It means ICCMS designs the exam admission card and then hands over to the Examination branch to deliver it to the certain faculty. 2. Examination branch handing over the admission to the students. The Average time taken off the waiting time for the transportation from ICCMS to examination branch is 20 hours, at the final step measure the time taken to deliver the exam admission card to certain faculty and handover them to the students 16670 hours.

Table 03 – The Exam Admission Card Waiting and Delivery Time

Description	Academic Year			Average Time
	2015/ 2016	2016/ 2017	2017/ 2018	
ICCMS to Examination Department (Waiting Time)	390 min 6.5 Hours	390 min 6.5 Hours	390 min 6.5 Hours	1170 min 20 Hours
Hand over the admission to the students (Delivery Time)	7200x3min ³ x3 Person x5 days 324000 min 5400 hours	7600x3min ³ x3 Person x5 days 342000 min 5700 hours	7400x3min ³ x3 Person x5 days 333000 min 5500 hours	999000 min 16650 hours
Total				1000170 min 16670 hours

Source: Observation Data, 2019

After the observation and the discussion held with employees and undergraduates, we carefully measured the time taken to carrying out each step using a stop watch. Transportation gaps were identified with the data collected. Time taken to carrying out whole process is averagely 324390 minutes (5407 hours). Time for each process is roughly 390 min for processing and 324000 minutes for transportation.

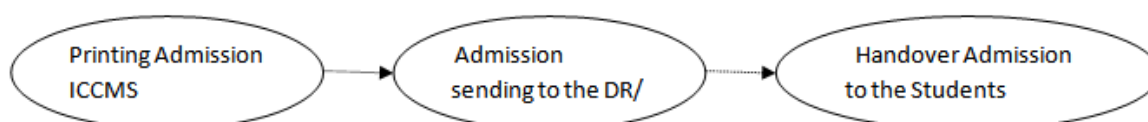


Figure 01: The Existing Exam Admission Card Process of the Faculty of Social Sciences and Faculty of Humanities

Source : Observation Data 2019

Figure 01 explain the Exam admission card process of existing one. According to the ICCMS unit, it handled all the the course units and prepared time table without difficulties. Because, Basically both faculties have 10800 combination of courses units and they prepared exam admission card without crash. At the end of the semester ICCMS units create and send to the Admission card to the examination branch for deliver to the students.

Analysis of Data

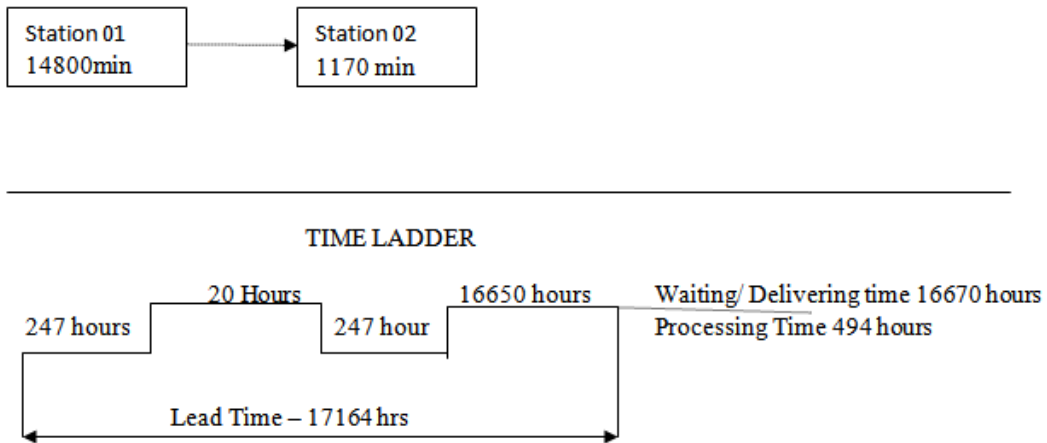
We analysed data according to the objective of the study. As per the shown below (Table 04), the average time taken for waiting and delivery time is 16670 hours. This creates a cost of 2833900 LKR per year. Tyecalulation wasade by the actual average rate of labour hours, which is of 170 LKR.

Table 04 – The total Average waiting and delivery Time and Cost

Cost Compoents	The average Measurement	Hours	Value (LKR)
Number of Exam Admission Card	7400	-	-
Printing Admission	14800min	247 hours	x170* = 41990.00
Checking Admission and categories in year viz.	14800min	247 hours	x170* = 41990.00
ICCMS to Examination Department (Waiting Time)	1170 min	20 Hours	x170* = 3400.00
Hand over the admission to the students (Delivery Time)	999000 min	16650 hours	x170* = 2830500.00

*Existing Rate of Labour Hour

Figure 02: Simplified Value Stream Map for existing exam admission card process of the Faculty of Social Sciences and Faculty of Humanities

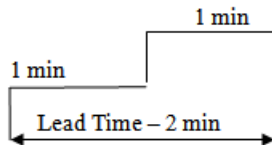
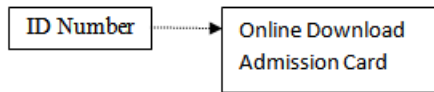


Simplified Value Stream Map Existing EACP of the Faculty of Social Sciences and Faculty of Humanities was indicated considering the table 02 and 03 and also the figure no 01 of this paper.

Proposed exam admission card process Map of the University of Kelaniya

Available Information and collaboration with Faculty of Information Technology new Management Information System could be developed a New Exam Admission Card process. This process can reduce non value added activities from the existing EACP and proposed following automated system to support Exam Admission Card process where waiting time could totally be eliminated from the proposed EACP. In this system E- exam admission card will be generated for each undergraduate according to their subjects and send to the each student via their E-account created at the beginning of the student registration. Therefore, each student can log in to their own account where they can get the admission card downloaded and at the same time it can be printed. In a situation where student misplaced the admission card student can make a request online, and duplicate examination admission card will be issued with a water mark of duplicate for the final time and thereafter student cannot request extra admission cards and window and download option will be blocked automatically.

Online Dissemination of Examination Admission Card



IV. Conclusion

Proposed EACP is an automated system which is controlled by the central data base. The existing process for delivery admission cards also can through proposed options and then the hidden and non-value added activities can be removed. It can be concluded that good governance and innovative methods contribute to quality service delivery while enhancing the effective and efficiency of the output.

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