

PAPER • OPEN ACCESS

Digital Branch: Banking Innovation in Indonesia to Face 4.0 Industry Challenges

To cite this article: A Riyanto *et al* 2019 *IOP Conf. Ser.: Mater. Sci. Eng.* **662** 072002

View the [article online](#) for updates and enhancements.

Digital Branch: Banking Innovation in Indonesia to Face 4.0 Industry Challenges

A Riyanto^{1,2*}, I Primiana¹, Yunizar¹, Y Azis¹

¹Faculty of Economic and Business, Universitas Padjadjaran, Indonesia
Jl. Dipatiukur No. 44, 40132, Bandung, Indonesia.

²Departement of Engineering, Universitas Komputer Indonesia.
Jl. Dipatiukur No. 102-118, 40132. Bandung, Indonesia.

Email : agus.riyanto@email.unikom.ac.id

Abstract. The purpose of this research is to see the change in operational services of credit submission from conventional to digital through the digital branch. This research used qualitative methods with the development through the IDEF0 framework model. Conventionally, the customers when served by a customer service bank to make a credit submission transaction must take around 2-3 weeks. Banking in Indonesia is currently making a new breakthrough by innovating in its operational service sector. The innovation is through the digital branch. Banking in Indonesia through the digital branch has been able to shorten the operational service time for digital credit submission to be only 5-7 days. Innovation in operational service of credit submission makes it become the superiority for the banks in Indonesia to be able compete with the other existing banks and improve services to customers who currently prefer the fast services. The operational service system through digital branch is an innovation that is become an advantage for banks in Indonesia to be able to compete in 4.0 era.

1. Introduction

Banking in Indonesia is currently faced by a considerable challenge. Changes in the world, especially for the millennial generation who always use technology as its activities demand banking to be able to offset such a desire. Changes to the digital economy have brought the world to the business transformation through the industrial revolution, which is currently at 4.0 stage era (an era of the internet) by using digital technology. Internet banking provides benefits as its impact on banking especially in term of service [1] and mobile banking [2]. For this reason, the strategy undertaken by the Indonesian government regarding financial inclusion is digital financial services (DFS) in the form of digital branches that continue to use internet banking facilities.

The competitive advantage between banks in Indonesia in developing funds for the development of digital technology ranges from 20 billion rupiah - 2.4 trillion rupiahs. Banking in Indonesia must prepare a large number of funds for the development of digital technology. This indicates that the seriousness of banking in developing digital technology in Indonesia. Another competitive advantage among banking in Indonesia is also seen from the operational costs against operational income (BOPO) as shown in Figure 1. A decrease in the BOPO ratio will occur if the bank can increase its income and at the same time is capable of reducing its operating costs. Operational costs can be lowered through the optimization of the role of information technology, the network of



the branchless banking, e-banking and other cost reduction. Information technology makes banking activities cheaper and more efficient [3].

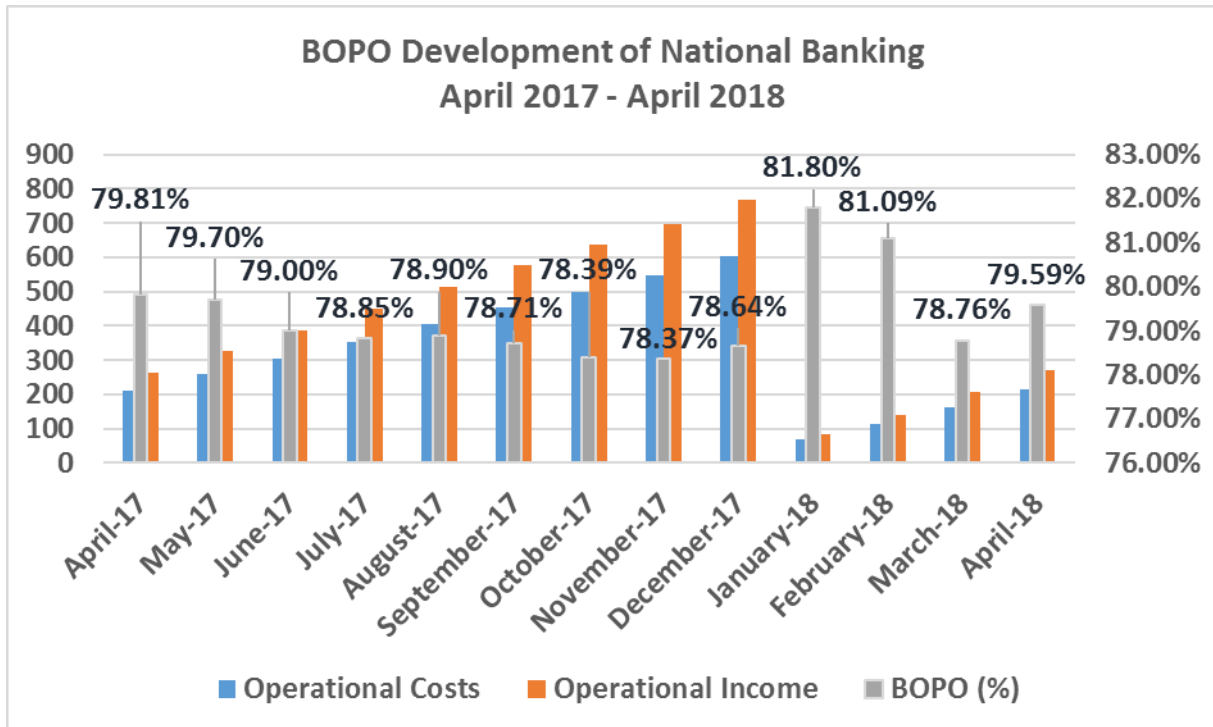


Figure 1. BOPO Development of National Banking [4]

BOPO on banking in Indonesia is said to be good if it is below 75%, and generally the percentage of BOPO for banks in BOOK 3 (banks with capital asset of 5-30 Trillion Rupiah) and 4 (banks with asset capital asset of more than 30 Trillion Rupiah) which has improved, especially banks in BOOK 4 are all under 75%. However, banks in BOOK 1 (banks with capital asset below 1 Trillion Rupiah) and 2 (banks with the capital asset of 1-5 Trillion Rupiah) are still not in good condition. Large operational costs can cause a decline in Indonesia's banking income.

The phenomenon in the implementation of digital branch in banking sector in Indonesia is shows that only 8 banks (9.64%) in Indonesia that have implemented the digital branch implementation policy, Those 8 banks are 4 banks in BOOK 4 namely BRI, BNI, BCA and CIMB Niaga banks, 2 banks in BOOK 3 namely BTN and Danamon banks, and 2 banks in BOOK 2 namely Sinarmas and Commonwealth banks, while 75 banks (90.36%) have not yet run the digital branch but have implemented digital banking. With the existence of the digital branch, banks will be able to increase profits because the number of branch offices will be reduced so that operational costs will also decrease. This is contrary, which stated that banking performance comes from profits due to a large number of branch offices [5].

Changes in business processes in the bank from conventional to digital are carried out through business process reengineering [6]. The Business Process Reengineering is the aspect that leads to a change and introduces new processes and new working style so that certain elements needed to make a change [7]. Business process reengineering can be developed and supported by using the IDEF0 framework model [8] and also supported [9]. The Model created can be developed with the IDEF0 framework model because this model can be easily read in the model [10]. The outcome in this research is to see model in operational services of credit submission in the digital branch.

2. Method

This research used qualitative methods with the development and support through the IDEF0 framework model. Qualitative data was sourced from 5 banks in Indonesia and has implemented a digital branch in its operational services. Questions were made in a questionnaire that describes the process of IDEF0 framework model process against digital branch services to be clarified with banks that have used digital branch services. Questionnaire questions were given to the leaders or operational managers of banks that have implemented digital branch services.

3. Results and Discussion

Operational service of conventional credit submission appears to require more time in filling out the form and transfer funds which takes time of 2-3 weeks as can be seen in Figure 2 below.

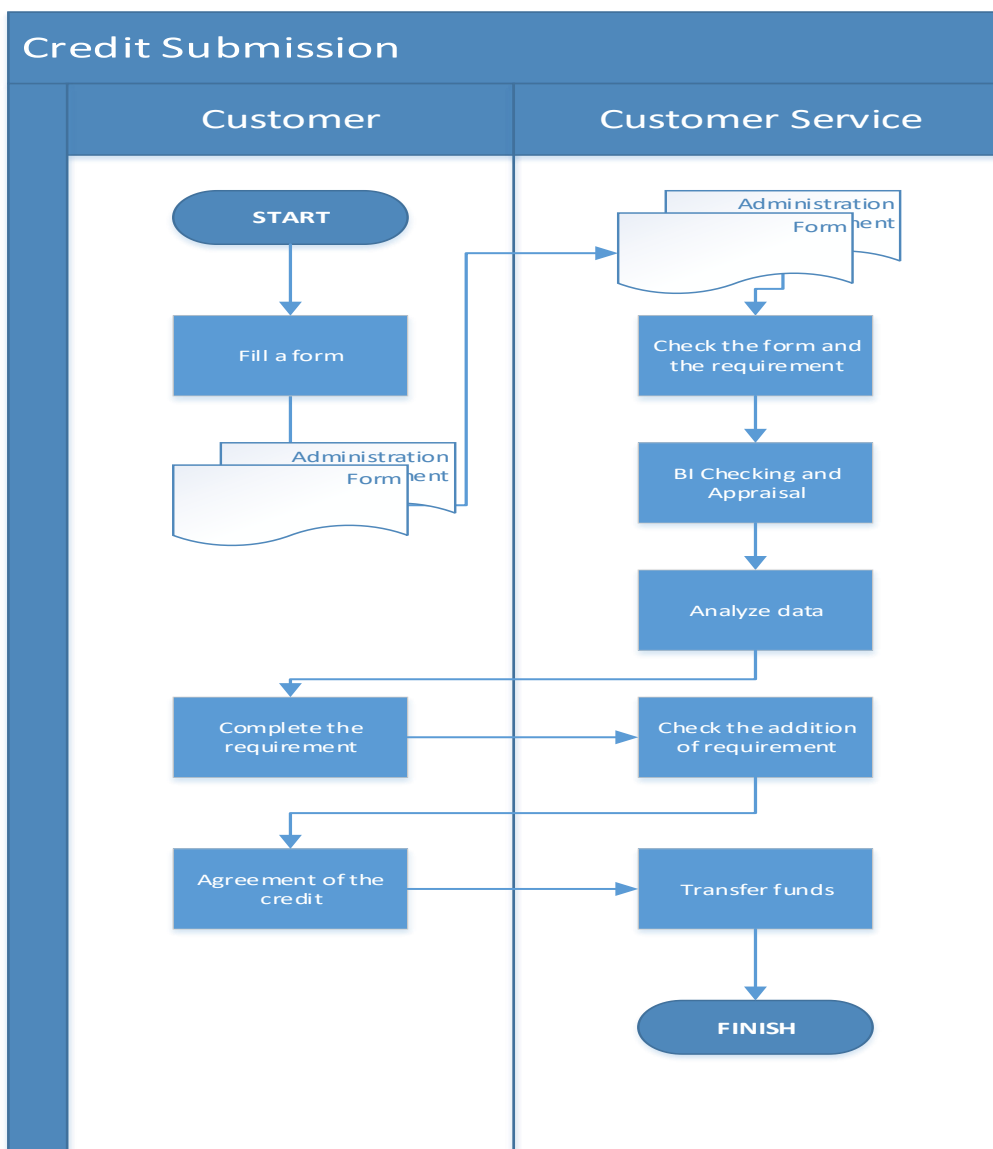


Figure 2. Credit Submission with a Conventional System

Changes made to the business process of the operational service system for credit submission so that it can be done in a digital system. IDEF0 framework model is used to change the business process. Figure 3 shows the parent diagram of digital branch system at banking in Indonesia.

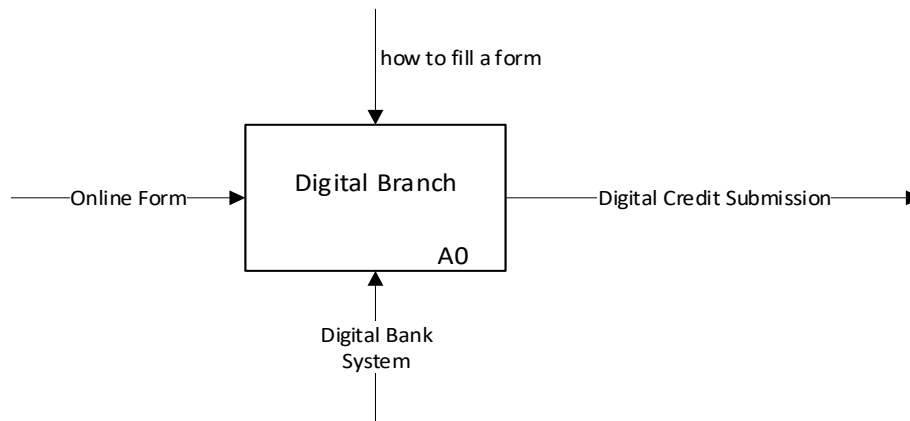


Figure 3. Parent Diagram (A0) Digital Branch

The following Figure 4 describes the activities of the digital credit submission process at commercial banks in Indonesia. A1 process (digital credit submission) consists of 7 sub-processes, namely A11 (Input data of the credit submission), A12 (Upload the requirement), A13 (Data Verification), A14 (BI Checking and Appraisal), A15 (Analyze data), A16 (Agreement of the credit engagement contract) and A17 (Transfer the credit funds). Input from A11 (Input data of the credit submission) is the online form Of Digital Credit Submission. Control on A11 process (Input data of the credit submission) is Procedure of Data input. Output on A11 process (Input data of the credit submission) is Credit data. The mechanism on A11 process (Input data of the credit submission) is a digital system conducted by commercial bank. Output on A11 process (Input data of the credit submission) becomes input on A12 process (Upload the requirement). Control on A12 process (Upload the requirement) is manual banking system. Output on A12 process (Upload the requirement) is Form and requirement. The mechanism on A12 process (Upload the requirement) is digital system conducted by commercial bank. Output on A12 process (Upload the requirement) becomes input on A13 process (Data Verification). Control on A13 process (Data Verification) is Verification data procedure. Output on A13 process (Data Verification) Credit data verified by bank. The mechanism on A13 process (Data Verification) is digital system conducted by commercial bank. Output on A13 process (Data Verification) becomes input on A14 process (BI Checking and Appraisal). Control on A14 process (BI Checking and Appraisal) is Checking data. Output on A14 process (BI Checking and Appraisal) is History data. The mechanism on A14 process (BI Checking and Appraisal) is digital system conducted by commercial bank. Output on A14 process (BI Checking and Appraisal) becomes input on A15 process (Analyze data). Control on A15 process (Analyze data) is Analyze data procedure. Output on A15 process (Analyze data) is Data pass the requirement. The mechanism on A15 process (Analyze data) is digital system conducted by commercial bank. Output on A15 process (Analyze data) becomes input on A16 process (Agreement of the credit engagement contract). Control on A16 process (Agreement of the credit engagement contract) is manual bank system. Output on A16 process (Agreement of the credit engagement contract) is Engagement Agreed. The mechanism on A16 process (Agreement of the credit engagement contract) is digital system conducted by commercial bank. Output on A16 process (Agreement of the credit engagement contract) becomes input on A17 process (Transfer the credit funds). Control on A17 process (Transfer the credit funds) is Transfer of

Credit funds procedure. Output on A17 process (Transfer the credit funds) is credit funds. The mechanism on A17 process (Transfer the credit funds kredit) is digital system conducted by commercial bank in Indonesia (See Figure 4).

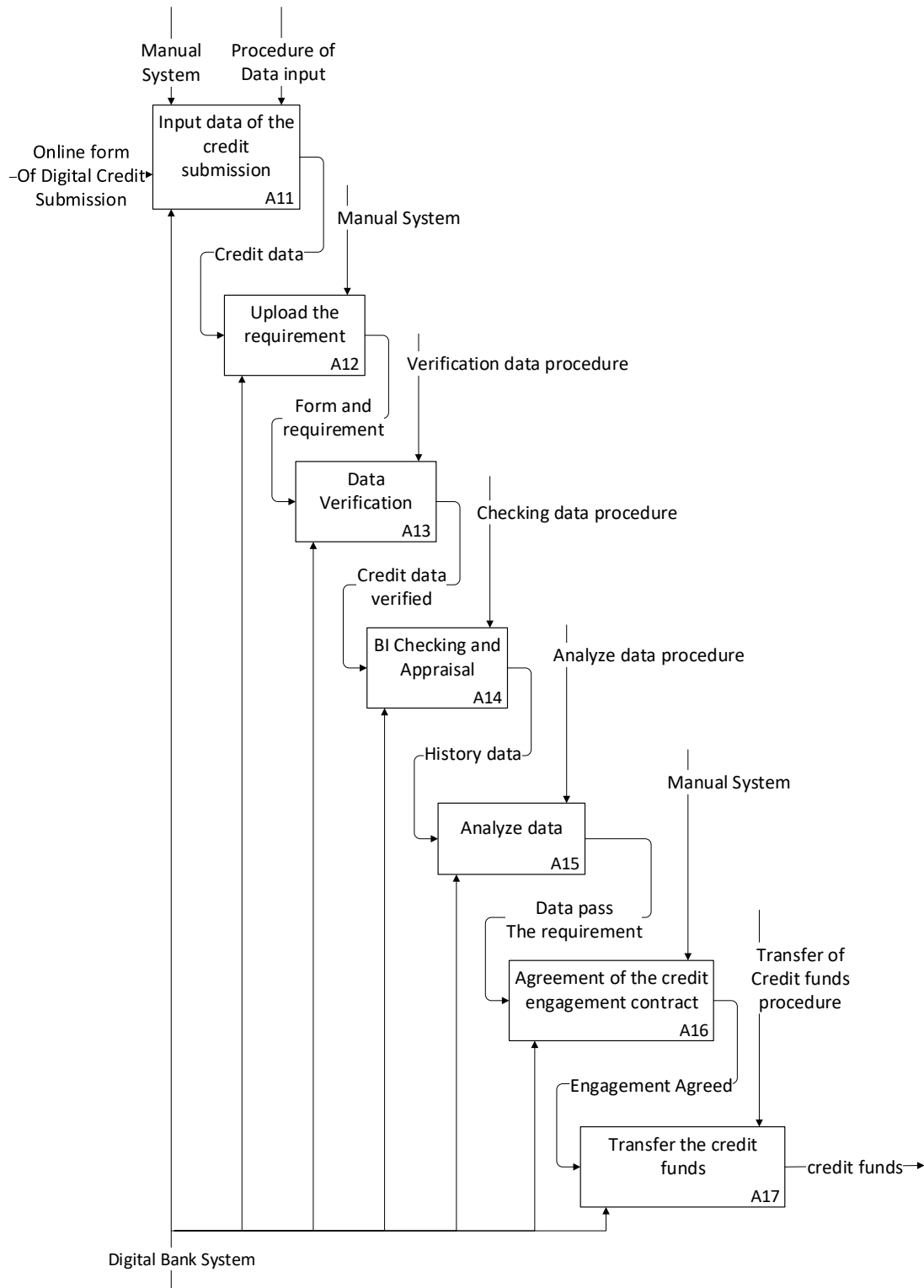


Figure 4. Child Diagram for Credit Submission with Digital System

Input data can be done by registering the name and identity card; the bank will get the require full biodata by matching the name and identity card data with the data from the national population. The verification process by bank in BI checking and appraisal will be more simple and faster so that the service process of digital credit submission through the digital branch will take time 5 – 7 days.

The display of the digital branch at banking in Indonesia is made as comfortable as possible so that the customers can feel at ease when the service process is in progress. One of the locations of digital branch services in Indonesia, as shown in Figure 5. IDEF0 framework model is able to support the implementation of business process reengineering in companies in manufacturing and services [11].



(a)



(b)

Figure 5. Digital Branch Lounge at Commercial Banks in Indonesia

4. Conclusion

Business process reengineering in banking in Indonesia can change the model of conventional operational service to digital operational service through the IDEF0 framework model. This is the same as stated who said that the implementation of business process reengineering was able to provide added value in the form of competitive advantage [12]. Digital operational services can speed up the service time around 1-2 weeks compared to the conventional one so that it becomes an innovation in the field of technology. Through a digital branch, banks no longer need to open many branch offices. Because with the presence of digital services customers can conduct financial transactions whenever and wherever. This is contrary to the results which are more likely to increase branch offices will improve banking performance [5]. The addition of a branch office will only increase the operational costs of a bank. The operational service system through the digital branch is an innovation that is become an advantage for banks in Indonesia to be able to compete in 4.0 era (internet era).

References

- [1] Van Dinh, Uyen Le and Phuong Le. (2015). Measuring The Impacts of Internet Banking to Bank Performance : Evidence from Vietnam. *Journal of Internet Banking and Commerce*. Vol 20. No 2
- [2] Okiro Kennedy and Ndungu Jacky. (2013). The Impact of Mobile and Internet Banking on Performance of Financial Institutions in Kenya. *European Scientific Journal*. Edition vol 9, no 13. ISSN : 1857-7881. E-ISSN : 1857-7431.

- [3] Saeid D Karimzadeh, Mostafa Emadzadeh, and Javad Shateri. (2014). The effects of Electronic Banking Expansion on Profitability of Commercial Bank. *Indian Journal of Scientific Research*. Vol 4. No. 6. P 305-312.
- [4] Otoritas Jasa Keuangan. (2016). *Master Plan Finance Sector in Indonesia 2015-2019 Spur Growth and Respond to the Challenges of the Financial Services Sector Now and Later*. Markplus Inc.
- [5] Ilyas Akhisar, K. Batu Tunay, and Necla Tunay. (2015). The Effects of Innovations on Bank Performance : The Case of Electronic Banking Service. *Procedia-Social and Behavioral Sciences*. P 369-375.
- [6] Hammer, M., & Champy, J. (1993). *Reengineering the Corporation : A Manifesto For Business Revolution*. USA. Harper Collins Publishers. ISBN 0-88730-640-3.
- [7] Osano M. Hezron and Okwena David. (2015). Factors Influencing Performance of Business of Business Process Reengineering Projects in Bank in Kenya : Case of Kenya Comercial Bank, *Journal of US-China Public Administration*, Vol 12. No. 11.
- [8] Clarence G. Feldmann. (1998). *The Practical Guide to BPR Using IDEFO*. Dorset House Publisher. ISBN 0-932633-37-4
- [9] Dachyar M and Novita G. (2016). Business Process Reengineering of Logistics System in Pharmaceutical Company. *ARPJ Journal of Engineering and Applied Sciences*. Vol 11. No7. ISSN 1819-6608.
- [10] Tsironis Loukas, Gentsos Andreas and Moustakis Vassilis. (2008). Empowerment The IDEFO Modeling Language. *International Journal of Business and Management*. Vol 3. No.5.
- [11] Agus Riyanto, Ina Primiana, Yunizar and Yudi Azis. (2019). Digital Branch : A Business Process Reengineering in Indonesian Banking. *Journal of Engineering Science and technology*. Special Issue on AASEC2018. School of Engineering. Taylor's University. P. 82-91.
- [12] Magutu Peterson, Stephen Onserio, & Godwin Kiplmo. (2010). Business Process Reengineering for Competitive Advantage : Key Factors That May Lead to Success or Failure of The BPR Implementation (The Wrigley Company). *African Journal of Business & Management (AJBUMA)*. Vol 1. AJBUMA Publishing.