Partial Business Process Re-engineering in New Generation Cooperatives Enterprise Architecture Implementation

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Abstract. Every enterprise have Business Process Re-engineering (BPR) phase in their Enterprise Architecture implementation transitions. One of best practices in BPR is to have not more then 5 years for transitions phase. Enterprise that in transitions phase condition would experience gradual change in BPR, from partial unit change, until it has fully structural and functional change. But there was one successful New Generation Cooperatives Enterprise, that has experiencing more than 5 years time for Partial BPR phase. This research problem is about a case of successful Malaysian Collective Investment Cooperatives, that implemented SAP information systems and technology, but not change their business structure and only partially change their business strategies, for more than 5 years time. Enterprise historical data and annual reports were used for quantitative research data collections, to be analyzed in this research. Enterprise Architecture Planning framework approach were used as qualitative research method to describe and analyzed the New Generation Cooperatives Enterprise Architectures and the implementation process. This research found that Partial BPR in New Generation Cooperatives Enterprise Architecture were proven successful, because of the business profit were substantial, and the cooperatives enterprise still has the same expenditures for their remaining unchanged business structure. This Research concluded that Partial BPR could be noneffective successful, depends on how high the profit that been generated from the business process.

1. Introduction

Every enterprise have Business Process Re-engineering (BPR) phase in their Enterprise Architecture implementation transitions. One of best practices in BPR is to have not more then 5 years for transitions phase. Enterprise that in transitions phase condition would experience gradual change in BPR, from partial unit change, until it has fully structural and functional change.

There was one successful New Generation Cooperatives Enterprise, that has experiencing more than 5 years time for Partial BPR phase. This research problem is about a case of successful Malaysian Collective Investment Cooperatives, that implemented SAP information systems and technology, but not change their business structure and only partially change their business strategies, for more than 5 years time. Many cooperatives have sustained more than 5 years presumed has overcome the problem of their members, and allegedly put into practice the basic principles of NGC. Case study for this

research will be the successful business cooperative that already sustain for more than 5 years in Malaysia, and give their member above 10% dividend.

The research would analyzed how the business structure became not effective, but the expenses still remain the same. The cooperatives has been successful in implementing SAP technologies since 2007, until they reach their peak in 2013. In 2012 the cooperatives split into 2 enterprises, to distinct members between big shareholder and small shareholder. In 2013 one of their investment has problem, but the cooperatives did not take them off. So in 2014, the cooperatives has to cover the investment loss, and the cooperatives member gain less dividends than before. The problem statement is showed as Figure 1. This figure showed the Group and Cooperatives Net Profit and Dividend movement, using financial annual report data, from 2010 to 2015.

Group Cash Flow

	2010	2011	2012	2013	2014	2015
Net Profit	552,472	783,307	784,591	176,071	-208,539	134,152

KPF Cash Flow

	2010	2011	2012	2013	2014	2015
Net Profit	256,004	356,136	351,695	1,765,783	-235,257	80,023

	2010	2011	2012	2013	2014	2015
Dividen	255,950	358,240	302,848	389,529	260,904	250,873

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Dividen	255,950	358,240	302,848	389,529	260,904	250,873
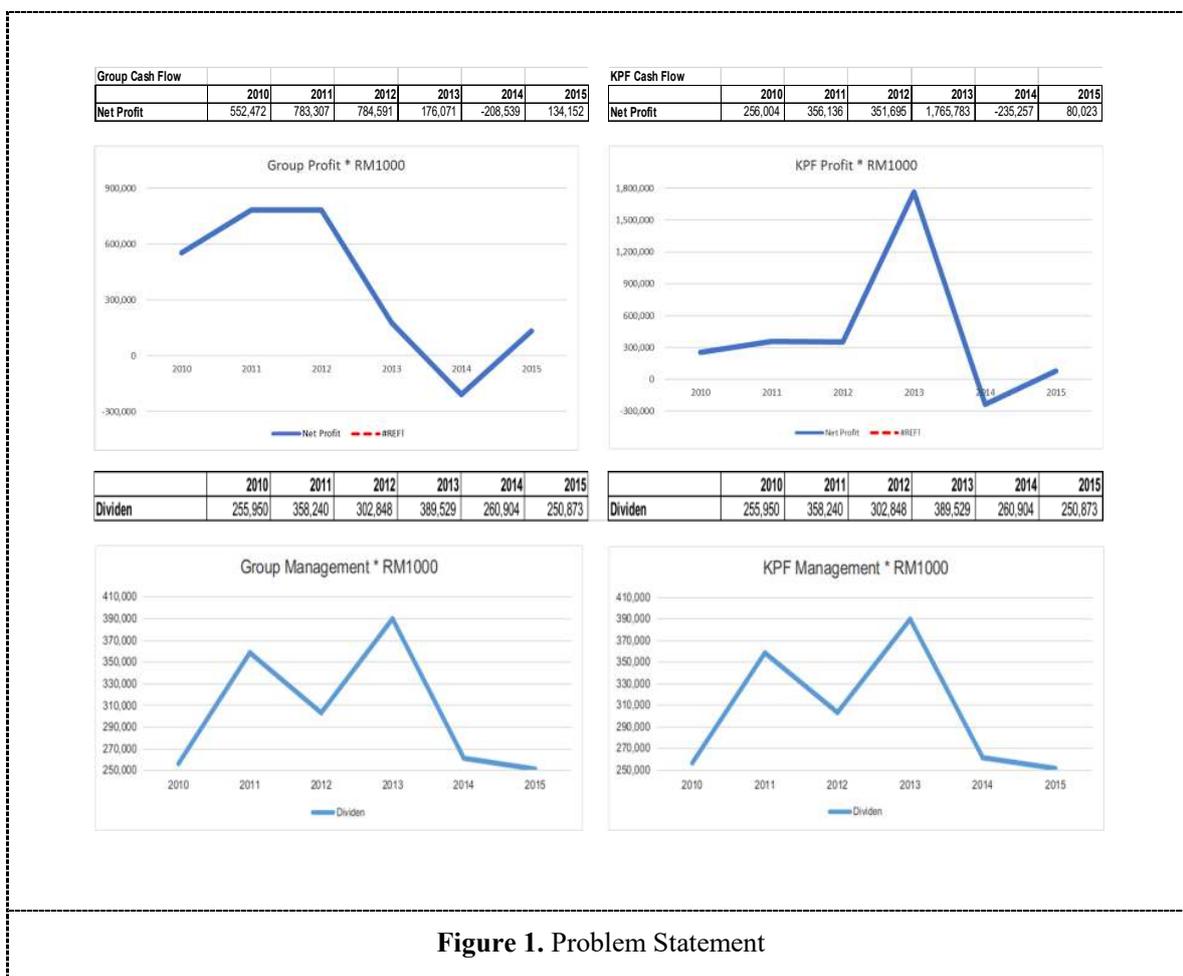
Figure 1. Problem Statement

2. Literature review

Literature Review would explained about Business Process Re-engineering, New Generation Cooperatives, and Enterprise Architecture Planning.

2.1. Business Process Re-engineering (BPR)

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Business process re-engineering (BPR) is a process to redesigning of business processes to enable improvement in system effectiveness [1]. The development of the Information system is one part of business process re-engineering practice [2]. BPR can be done successfully, if it considers the success factors, organization processes and its knowledge around the processes [2].

2.2. New Generation Cooperatives (NGC)
Cooperative is a business arrangement that collectively owned by its member and focus on member needs [3]. New Generation Cooperative is a kind of cooperative that secured their membership and give value in service. New Generation Cooperatives is cooperative that has a new character [4]. New Generation Cooperatives encourage business loyalty and provide a vertical integration [3]. New Generation Cooperatives still cover financial business and agricultural product business scope [4].

2.3. Enterprise Architecture Planning (EAP)
Enterprise Architecture is the comprehensive conceptual design of company and organization. Enterprise Architecture describes it's the structures, function, and operations [5]. Enterprise Architecture is one of technology approach for structure and function of enterprise [5]. Enterprise Architecture Planning will provides Enterprise Architecture Design as foundation for Technology Strategy of the New Generation Cooperative [6]. Enterprise Architecture Planning framework would be the qualitative method approach for the research [7]. Enterprise Architecture Planning procedure can be done by partitioning and iteration to: (1) accommodate the agility of development, and (2) achieve shorter time to develop enterprise architecture [5].

3. Research methods
Research methods used in the research is sequential exploratory mixed method, by using Qualitative Research Method for qualitative framework, and Quantitative Research Method to compare the historical data.

3.1. Qualitative research method
Enterprise Architecture Planning framework approach were used as qualitative research method to describe and analyzed the New Generation Cooperatives Enterprise Architectures and the implementation process [6].

There are 2 conditions found in the Cooperatives Business Structures Analysis. There are: (1) the remaining Fat Traditional Business Structure, and (2) the Lean Business Structure Architecture. The Cooperatives already used SAP information systems since 2007. They supposed to change their business structure in 2012, to complete their Business Process Re-engineering. But, they still left out the remaining traditional Business Structure. They pointed out that they still has the same expenses as before they used SAP. Comparison between the remaining Business Structure and the Business Structure Architecture are shown in Figure 2 and Figure 3.
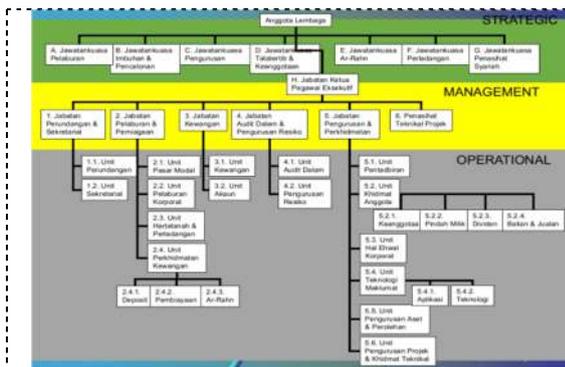
Figure 2. The fat coop traditional business structure.
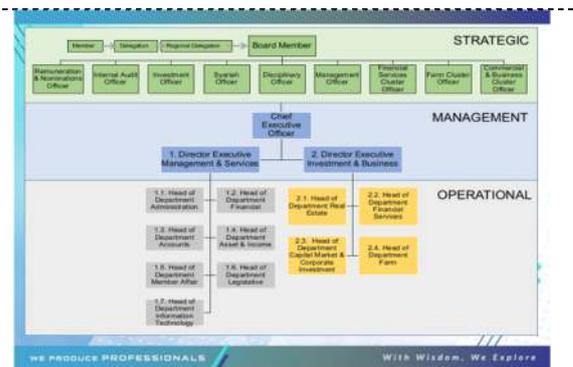
Figure 3. The lean coop business structure architecture.

The expenses difference between Traditional and the Architecture Business Structure are 31%. Detail Comparison of Business Structures between the Traditional and the Architecture are shown in Figure 4.

Figure 4. Comparison of business structures, between the traditional and the architecture

3.2. Quantitative research method

Enterprise historical data and annual reports were used for quantitative research data collections, to be analyzed in this research. Table 1 shows the Group Operation Expenses from 2010 to 2015 Financial Annual Report. Simulation 3 shows if the Cooperatives done the full Business Process Re-engineering in 2012. Profit are deviation between Operational Expenses and Simulation 3. Profit happened from 2012 to 2015 are from 20014000, to 29299000. In average profit happened from 2012 to 2015 are 50747500.

Table 1. Group Operational Expenses* RM1000

Group	2010	2011	2012	2013	2014	2015
Operational Expenses	-85,268	-72,075	-133,426	-456,723	-567,792	-195,325
Simulation 3	-85,268	-72,075	-113,412	-388,215	-482,623	-166,026
Profit	0	0	20,014	68,508	85,169	29,299

Table 1 shows the Cooperatives Operation Expenses from 2010 to 2015 Financial Annual Report. Simulation 3 shows if the Cooperatives done the full Business Process Re-engineering in 2012. Profit are deviation between Operational Expenses and Simulation 3. Profit happened from 2012 to 2015 are from 8633000, to 29236000. In average profit happened from 2012 to 2015 are 29236000.

Table 2. Coop Operation Expenses* RM1000

Coop	2010	2011	2012	2013	2014	2015
Operational Expenses	-40,458	-40,632	-57,551	-309,137	-568,004	-194,908
Simulation 3	-40,458	-40,632	-48,918	-262,766	-482,803	-165,672
Profit	0	0	8,633	46,371	85,201	29,236

Figure 5 simulates Table 1 as Group Operation Expenses from 2010 to 2015 Financial Annual Report.. Figure 6 simulates Table 2 as Cooperatives Operation Expenses from 2010 to 2015 Financial Annual Report.

Figure 5. Group Operation Expenses * RM1000

Figure 6. Coop Operation Expenses * RM1000
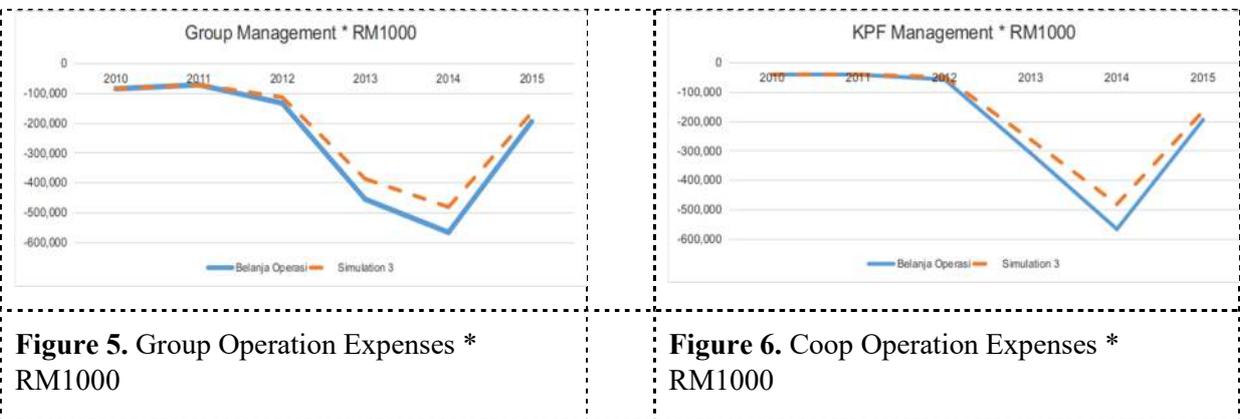
Table 3 shows the Group Net Profit from 2010 to 2015 Financial Annual Report. Simulation 3 shows if the Cooperatives done the full Business Process Re-engineering in 2012. Percentage are deviation between Operational Expenses and Simulation 3. Percent Profit happened from 2012 to 2015 are from 3%, to 41%. In average profit happened from 2012 to 2015 are 26.25%.

Table 3. Group Net Provit* RM1000

	2010	2011	2012	2013	2014	2015

Net Profit	552,472	783,307	784,591	176,071	-208,539	134,152
Simulation 3	552,472	783,307	804,605	244,579	-123,370	163,451
%	0%	0%	3%	39%	41%	22%

Table 4 shows the Cooperatives Net Profit from 2010 to 2015 Financial Annual Report. Simulation 3 shows if the Cooperatives done the full Business Process Re-engineering in 2012. Percentage are deviation between Operational Expenses and Simulation 3. Percent Profit happened from 2012 to 2015 are from 2%, to 37%. In average profit happened from 2012 to 2015 are 19.5%.

Table 4. Coop Net Provit * RM1000

	2010	**2011**	**2012**	**2013**	**2014**	**2015**
Net Profit	256,004	356,136	351,695	1,765,783	-235,257	80,023
Simulation 3	256,004	356,136	360,328	1,812,154	-150,056	109,259
%	0%	0%	2%	3%	36%	37%

Figure 7 simulates Table 3 as Group Net Profit from 2010 to 2015 Financial Annual Report. Figure 8 simulates Table 4 as Cooperatives Net Profit from 2010 to 2015 Financial Annual Report.

Figure 7. Group Profit * RM1000	**Figure 8.** Coop Profit * RM1000
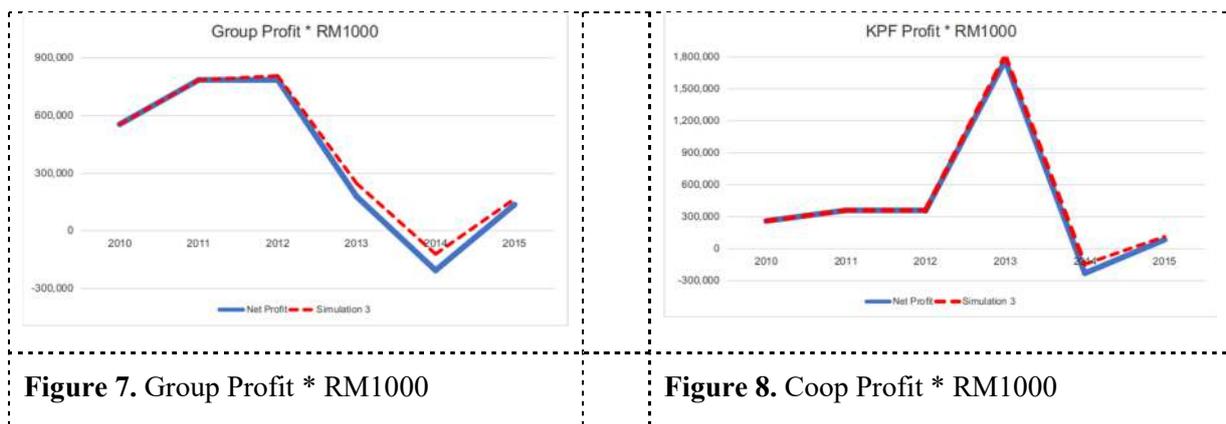
4. Research finding and discussion

This Simulation shows the comparison between: the Real Net Profit and the Net Profit using SAP Business Structures. Profit data came from Operational Expenses Simulation. The Real Net Profit is using the Traditional Business Structures, that has potential loss in human resource. SAP Business Structures has about 3% - 41% advantage than the Traditional Business Structures.

This research found that Partial BPR in New Generation Cooperatives Enterprise Architecture were proven successful, because of the business profit were substantial, and the cooperatives enterprise still has the same expenditures for their remaining unchanged business structure. Simulation 3 shows if the Cooperatives done the full Business Process Re-engineering in 2012. In average profit happened from 2012 to 2015 are above 10%, and that is significant.

5. Conclusion

The Research concluded that Partial Business Process Re-engineering could be noneffective successful, depends on how high the profit that been generated from the business process. This research found that Partial BPR in New Generation Cooperatives Enterprise Architecture were proven successful, because of the business profit were substantial, and the cooperatives enterprise still has the

same expenditures for their remaining unchanged business structure. SAP Business Structures has about 3% - 41% advantage than the Traditional Business Structures. In average profit happened from 2012 to 2015 are above 10%, and that is significant.

References

[1]   Vaez-Alaei, M., Baboli, A., & Tavakkoli-Moghaddam, R. (2018, December). A New Approach to Integrate Resilience Engineering and Business Process Re-engineering Design. In 2018 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) (pp. 778-782). IEEE.

[2]   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.

[3]   Coltrain,D, D.Barton, M.Boland (2000) "Differences Between New Generation Cooperatives and Traditional Cooperatives." Arthur Capper Cooperative Center, Kansas State University. May 2000

[4]   Schank,M. , J.Fulton (2002), "New Generation Cooperatives: What, Why, Where, and How , An Internet Guide" ID-315 , Purdue University, Department of Agricultural Economics, Indiana USA

[5]   Ramos, H., & Vasconcelos, A. (2014). eXtreme enterprise architecture planning. In Proceedings of the 29th Annual ACM Symposium on Applied Computing (pp. 1417-1419). ACM.

[6]   Dwipriyoko, E., Bon, A. T. B., Sukono, F., (2018), Literature Review on New Generation Cooperative Enterprise Architecture, Jurnal Tiarsie, 14(2), 51-56.

[7]   Dwipriyoko, E., Bon, A. T. B., Sukono, F., (2019), Enterprise Architecture Planning as New Generation Cooperatives Research Methods, In Journal of Physics: Conference Series (Vol. 1179, No. 1, p. 012094), IOP Publishing.