

RETAINING SAP (ERP SYSTEM) KNOWLEDGE AMONG SAP EXPERT
IN FGV PRODATA SYSTEMS SDN BHD

SHAMSURI JASRI BIN ABDUL RAHMAN

UNIVERSITI TEKNOLOGI MALAYSIA

RETAINING SAP (ERP SYSTEM) KNOWLEDGE AMONG SAP EXPERT
IN FGV PRODATA SYSTEMS SDN BHD

SHAMSURI JASRI BIN ABDUL RAHMAN

A thesis submitted in partial fulfilment of the
requirements for the award of the degree of
Master of Business Admin

AZMAN HASHIM INTERNATIONAL BUSINESS SCHOOL
Azman Hashim International Business School
Universiti Teknologi Malaysia

January 15, 2022

DEDICATION

Alhamdulillah, very grateful to Allah the almighty for giving me opportunities to complete this study. Thank you Allah for the guidance, strength, power of mind, protection and skills, and for giving me a healthy life.

This study is wholeheartedly dedicated to my beloved parents, Abah & Mama, who have been my source of inspiration and gave me strength when thought of giving up, who continually provide their moral, spiritual, emotional, and financial support. I will always love both of you till Jannah.

To all my family members (Hasniza, Sazarina, Azleen, Afif, Izatti, Misya, Aiman, Aniq, Aisyah, Zaq, Ameer, Iris, Adelia and Amjad), who sacrifice time and effort for my success, shared their words of advice and encouragement to finish this study. I love you all.

ACKNOWLEDGEMENT

In preparing this thesis, I would like to thank my supervisor, Dr. Nazmona Bt Md Ali, for your patience, guidance, and support. I have benefited greatly from your wealth of knowledge and meticulous editing. I am extremely grateful that you accepted me as your student and continued to have faith in me over the years.

Thank you to my team members in FGV Prodata's FELDA Business Operation, the head of unit and SAP support team. All of their contribution in participating in my research and making my thesis a success, encouraging words and thoughtful, detailed feedback have been very important to me. Not forgotten to my FELDA Business Operation coordinator, thank you so much for gathering all knowledge materials and developing knowledge video contents.

Thank you to the interviewees, who so generously took time out of their schedules to participate in my research and make this project possible.

Thank you to my parents, Hj Abdul Rahman and Hajjah Norolin, for your endless support. You have always stood beside me, and this was no exception. Abah and Mama, thank you for praying for my success and for calming me down. Thank you also for all of your love and for always reminding me of the end goal.

Thank you to all my family members for always being there for me and very understanding on my daily tight time schedule. I couldn't reach this level now without all of their support.

Special thanks to Dato Seri Idris Jusoh, FELDA's Chairman, for giving me permission to do research on FELDA's IT support environment and to all FELDA's management for supporting my study and providing me so much useful information and encouragement.

ABSTRACT

The study is to investigate and to develop a knowledge retention plan of SAP talents drain out in FGV Prodata. The purpose is to reduce the loss of Prodata's Intellectual Capital (IC) when every time SAP expert attrition happens. FGV Prodata has lost SAP experts due to a few factors, uncompetitive salary scale, heavy job tasks, and better career development. This SAP experts' turnover happens every year and FGV Prodata suffers from getting the replacement through either lengthy HR process or Prodata can't afford to pay high salary to the same level of an expert replacement candidate. The best way to resolve this issue is to hire fresh graduates and train them, but the cycle to reach the expert level is a long process. These actually give a great impact on the quality of SAP customer support, especially in FELDA and FGV Group of Companies. It is an accumulative issue for Prodata, in which the replacement of the SAP expert is not resolved, and the remaining SAP expert is burdened with abandoned tasks. Therefore, this action research to focuses on how could Prodata cut the Intellectual Capital (IC) losses by implementing SAP knowledge retention (documented knowledge) and officiate mentoring program to shorten the learning curve of Prodata's newly hired staff, literally fresh graduates. Knowledge management theory and mentoring models are used as guidelines of this study. Surveys before and after the intervention are required to measure the effectiveness of the intervention. The analysis is pursued through survey data and comparative assessment with the identified previous study.

ABSTRAK

Kajian ini adalah untuk menyiasat dan membangunkan rancangan penyimpanan pengetahuan mengenai bakat SAP yang dikeluarkan di FGV Prodata. Tujuannya adalah untuk mengurangkan kehilangan Modal Intelektual (IC) Prodata apabila setiap kali berlaku perletakan jawatan pakar SAP. FGV Prodata telah kehilangan pakar-pakar SAP kerana beberapa faktor, skala gaji yang tidak kompetitif, tugas pekerjaan yang berat, dan untuk pengembangan kerjaya yang lebih baik. Perletakan jawatan pakar SAP ini berlaku setiap tahun dan FGV Prodata menderita untuk mendapatkan penggantian sama ada proses HR yang panjang atau Prodata tidak mampu membayar gaji yang tinggi ke tahap yang sama dengan calon pakar yang diperlukan. Cara terbaik untuk menyelesaikan masalah ini adalah dengan mengambil lulusan baru dan melatih mereka, tetapi kitaran untuk mencapai tahap pakar akan memerlukan satu proses yang panjang. Ini benar-benar memberi kesan yang besar terhadap kualiti sokongan pelanggan SAP terutama di FELDA dan kumpulan syarikat FGV. Ini adalah masalah terkumpul bagi Prodata, di mana penggantian ahli SAP tidak dapat diselesaikan, dan pakar SAP yang tersisa dibebani dengan tugas-tugas yang ditinggalkan. Oleh itu, penyelidikan tindakan ini untuk memberi tumpuan kepada bagaimana Prodata dapat mengurangkan kerugian Modal Intelektual (IC) dengan melaksanakan pengekalan pengetahuan SAP (pengetahuan yang didokumentasikan) dan melaksanakan program mentor untuk memendekkan keluk pembelajaran bagi staf Prodata yang baru diambil, yakni lulusan baru. Teori pengurusan pengetahuan dan model bimbingan digunakan sebagai garis panduan kajian ini. Tinjauan sebelum dan selepas intervensi diperlukan untuk mengukur keberkesanan intervensi. Analisis akan dilakukan melalui data tinjauan dan penilaian perbandingan dengan kajian sebelumnya yang dikenalpasti.

TABLE OF CONTENTS

	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xii
	LIST OF ABBREVIATIONS	xiii
	LIST OF APPENDICES	xiv
	CHAPTER 1 INTRODUCTION	1
	1.1 Information about the case company	1
	1.2 Problem Statement	2
	1.2.1 Problem formulation	3
	1.2.2 SWOT Analysis and Fishbone Technique	4
	1.2.3 Fishbone Technique	5
	1.3 Research questions	8
	1.4 Researchers Role	9
	1.5 Research Objectives	9
	1.6 Significance/Importance of the proposed research	10
	1.7 Definition of term	10
	CHAPTER 2 LITERATURE REVIEW AND ACTION RESEARCH	
	PLANNING	11
	2.1 Introduction	11
	2.2 Relevant Theory and Models	11
	2.2.1 Knowledge Management (KM)	11

2.2.2	Tacit and Explicit Knowledge	12
2.2.3	Knowledge Impact of Workers Attrition	13
2.2.4	ERP Knowledge Retention	13
2.2.5	Formal Mentoring	16
2.2.6	Knowledge Management Model - SECI	16
2.3	Previous and contemporary studies	18
2.4	Interventions planned and implication	21
2.5	Cycles of Action Research	22
2.6	Summary of the Chapter	22
2.7	Conclusion	22
CHAPTER 3 METHODOLOGY		23
3.1	Introduction	23
3.2	Philosophy of Research (Pragmatism)	23
3.3	Research Design	24
3.3.1	Time Horizon	24
3.3.2	Unit of analysis	24
3.3.3	Degree of involvement	25
3.3.4	Population and sampling	25
3.3.5	Data collection method	26
3.3.6	Quantitative (Questionnaire and reporting)	26
3.4	Validity	26
3.4.1	Expert Opinion Analysis (EOA) (Three experts related to the topic)	26
3.5	Reliability (Pilot Test)	27
3.6	Data Analysis Method	27
3.6.1	Descriptive analysis	27
3.6.2	Non-Parametric Wilcoxon Test	27
3.6.3	Data analysis tools and techniques	28
CHAPTER 4 DATA ANALYSIS		29

4.1	Introduction	29
4.2	Fieldwork	30
4.2.1	Pre-Intervention	30
4.2.2	Intervention	31
4.2.3	Post-Intervention	32
4.3	Mixed-Method Data Analysis	33
4.4	Qualitative Analysis	33
4.4.1	Pre Intervention Interview Findings	33
4.4.2	Post Intervention Interview Findings	38
4.5	Quantitative Analysis	42
4.5.1	Pre-Survey Vs Post-Survey	42
4.5.2	Background of the Respondents	43
4.5.3	Pre and Post Intervention Descriptive Analysis	45
4.5.4	Non-Parametric (Wilcoxon Signed-Rank Test) Analysis	49
4.6	Summary	55
CHAPTER 5 REFLECTION		57
5.1	Introduction	57
5.2	Research Objective No. 1	57
5.3	Research Objective No. 2	59
5.4	Research Objective No. 3	60
5.5	Reflection for Intervention Cycle One	61
5.6	Conclusion	62
5.7	Recommendations	64
CHAPTER 6 CYCLE TWO DATA ANALYSIS		65
6.1	Introduction	65
6.2	Fieldwork	65
6.2.1	Intervention Cycle 2	66
6.2.2	Post-Intervention	68

6.3	Quantitative Analysis	68
6.4	Post Intervention Cycle Two Descriptive Analysis	69
6.4.1	Knowledge Sharing Intention	71
6.4.2	Knowledge Sharing Enjoyment	71
6.4.3	Knowledge Collection	72
6.4.4	Company	72
6.4.5	Technology	72
6.4.6	Employee Attitude	73
6.5	Cycle Two Intervention Non-Parametric (Wilcoxon Signed-Rank Test) Analysis	73
6.6	Summary	78
CHAPTER 7 REFLECTION CYCLE TWO		81
7.1	Introduction	81
7.2	Reporting On Overall Findings	81
7.2.1	Objective 1	81
7.2.2	Objective 2	82
7.2.3	Objective 3	83
7.3	Contribution	85
7.3.1	Theoretical Contribution	85
7.3.2	Practical Contribution	87
7.4	Action Research Reflection	88
7.4.1	Research Process Reflection	88
7.4.2	Research Reporting Effectiveness	89
7.5	Conclusion	89
7.6	Action Research Overall Reflection	90
7.7	Limitation	91
7.8	Recommendations for Future	92
REFERENCES		93
APPENDICES		98

LIST OF TABLES

TABLE NO.	TITLE	PAGE
Table 2.1	Use of The Explicit And Tacit Knowledge in The Workplace	12
Table 3.1	List of Respondents	25
Table 4.1	Interviews Finding for Question 1	34
Table 4.2	Interviews Finding for Question 2	34
Table 4.3	Interviews Finding for Question 2	35
Table 4.4	Interviews Finding for Question 4	36
Table 4.5	Interviews Finding for Question 5	37
Table 4.6	Interviews Finding for Question 1	38
Table 4.7	Interviews Finding for Question 2	39
Table 4.8	Interviews Finding for Question 3	40
Table 4.9	Interviews Finding for Question 4	40
Table 4.10	Interviews Finding for Question 5	41
Table 4.11	Frequency and percentage of respondents by SAP Unit Support	44
Table 4.12	Pre and Post Intervention Descriptive Analysis	45
Table 4.13	Result On Ranks Pre and Post Intervention Data	50
Table 4.14	Wilcoxon Signed Ranks Test Result On Pre and Post Intervention Data	53
Table 6.1	Cycle Two Pre and Post Intervention Descriptive Analysis	70
Table 6.2	Ranks	74
Table 6.3	Wilcoxon Signed Ranks Test Result On Cycle Two and Cycle One Intervention Data	77
Table 6.4	Hypothesis Test Summary	78

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
Figure 1.1	FGV Prodata System Sdn. Bhd Organization Chart	1
Figure 1.2	FGV Prodata's Felda Business Operation Department Organization Chart	3
Figure 1.3	FGV Prodata's SWOT analysis	4
Figure 1.4	FGV Prodata's Fishbone Technique Analysis	7
Figure 2.1	ERP Knowledge Retention Model	14
Figure 2.2	Empirical Evidence Identifying ERP Package Retention Practices	15
Figure 2.3	SECI Model (1991 and expanded by Nonaka and Takeuchi, 1995)	17
Figure 2.4	IT Service Organization Knowledge Retention Model	19
Figure 6.1	Sample of SAP's support video content front page	68

LIST OF ABBREVIATIONS

PRODATA	-	FGV PRODATA SYSTEMS SDN BHD
FBO	-	FELDA BUSINESS OPERATION
KM	-	KNOWLEDGE MANAGEMENT
IC	-	INTELLECTUAL CAPITAL
SAP	-	SAP ERP SYSTEM
SLP	-	FELDA'S SAP CUSTOMISED MODULE (Settlers, Land & Plantation Module)
FI	-	FINANCE MODULE
MM	-	MATERIAL MANAGEMENT MODULE
SD	-	SALES DISTRIBUTION MODULE
HR	-	HUMAN RESOURCE MODULE

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
Appendix A	Qualitative Pre and Post Intervention Interviews	109
Appendix B	Quantitative Analysis Survey Questions	119
Appendix C	Pre Intervention, Post intervention Cycle One and Post	132
Appendix D	Supervisor Consent Letter	139
Appendix E	Turnitin Report	140
Appendix F	Action Research Impact Report	141
Appendix G	Company Letter of Intent	142
Appendix H	Presentation Consent Form	143
Appendix I	Record of Supervision Meeting	144

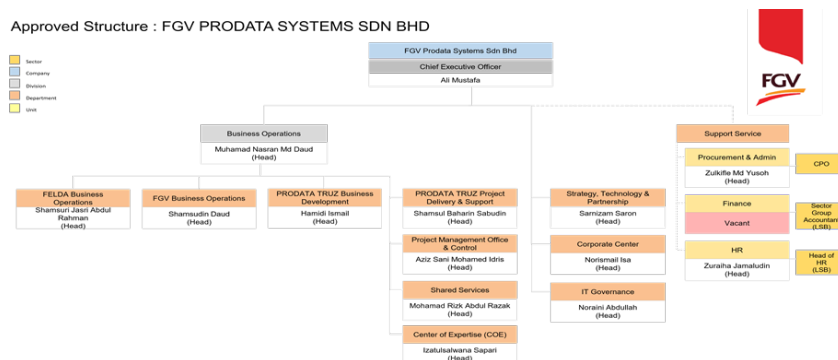
CHAPTER 1

INTRODUCTION

1.1 Information about the case company

FGV Prodata Systems Sdn Bhd Is an IT company of FGV Holdings Berhad (FGV), Malaysia’s leading global agriculture business and among the largest crude palm oil (CPO) producer in the world. Starting with the main focus providing ICT solutions and supports for FELDA and FGV group of companies in 1970’s & 1980’s. The organization chart of FGV Prodata Systems Sdn Bhd is shown in Figure 1. PRODATA has successfully expanding their business to become one of the leading Malaysia-based IT integrators-servicing in Government Agencies, GLCs, Financial Sector and Education Sectors since its establishment as Public Company limited by shares in 1995. FGV Prodata is certified SAP implementation partners and has 20 years of credentials in implementing and supporting SAP projects and other applications internally, which built internal capabilities and grown to leverage resources to implement the same externally.

Figure 1.1 FGV Prodata System Sdn. Bhd Organization Chart



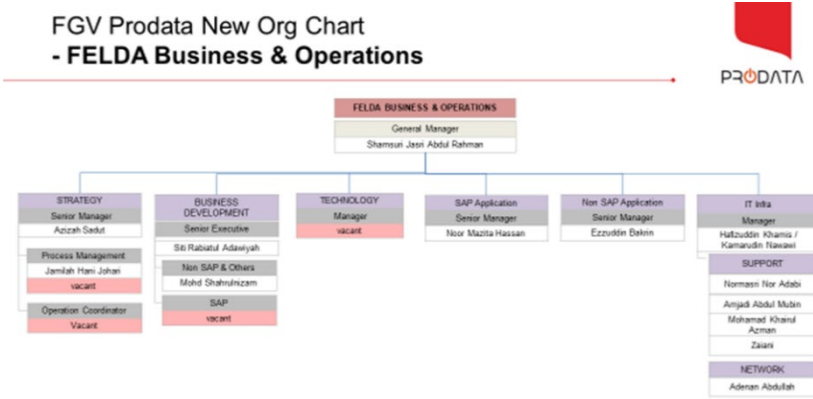
1.2 Problem Statement

FGV Prodata has implemented SAP ERP system for FELDA in year 2000. Modules involved in that implementation were Finance, Material Management, HR and special customized SAP modules call SLP (Settlers, Land and Plantation). During that implementation period, Prodata has recruited huge number of fresh graduates for that particular project. FGV Prodata faced hard time to retain SAP talent or skillset. This is due to highly demand of SAP expertise in domestic and international market. Starting with almost 100 talents in year 2000, FGV Prodata lost their SAP talent every year and now left around 32 people to support SAP system in FELDA, 30 FGV companies and external business. FGV Prodata has to recruit fresh graduate and train them from zero every year in order to fill the gap. Recruiting fresh graduate is the only source to fill the gap. Anyway after these people gained some knowledge for few years, they will be offered by many other companies with a much higher salary packages.

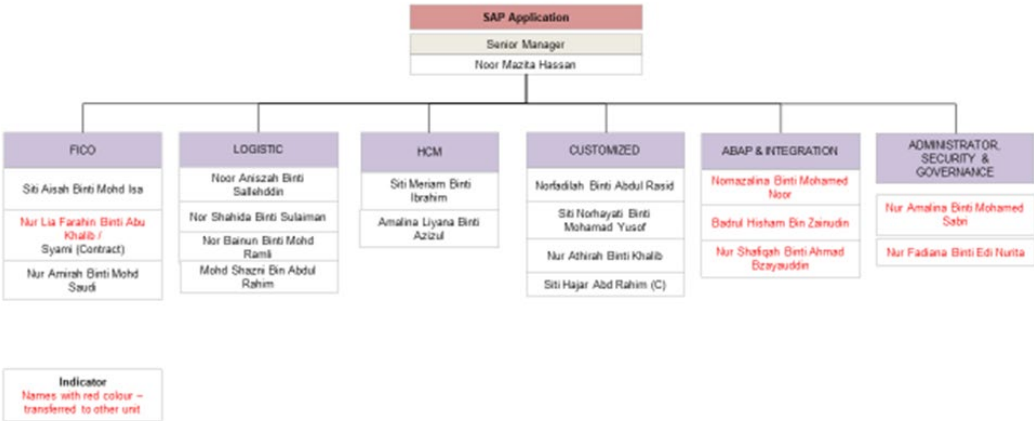
FGV Prodata has lost a lots of their investment on developing SAP talents. These talents left FGV Prodata and brought with them all the knowledge they gained in FGV Prodata. It is a detrimental skills and knowledge drain out and put FGV Prodata in a very difficult situation to support FELDA's SAP environment especially customized module which is SLP (Settlers, Land and Plantation). This situation is impacting FELDA Business Operation Department specifically and FGV Prodata generally. FELDA Business Operation Department organization structure is shown in Figure 2.

The SAP talents turnover made FGV Prodata have to do new recruitment to ensure the continuity of the IT outsourcing support services. Hiring experience SAP talent is costly and very difficult to match ICT industry salary scale due to FGV Group salary policy. The only option FGV Prodata has is hiring new graduated candidate and retrain them in SAP environment. It is a long cycle for them to get familiar with SAP and to become expert. FGV Prodata is well known in the market as SAP training ground, SAP talents producer. FGV Prodata SAP's talent is overloaded with multiple task and impacted the quality of jobs deliveries and timelines (Projects schedule and Service Level Agreement).

Figure 1.2 FGV Prodata’s Felda Business Operation Department Organization Chart



Felda Business & Operations - SAP Application



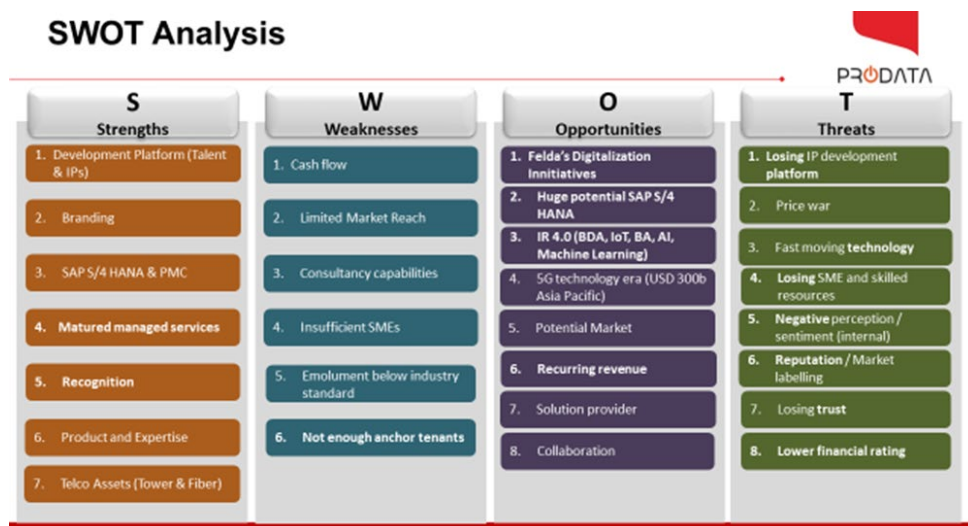
1.2.1 Problem formulation

The researcher chooses two business framework or method in formulating and identifying problem statement in this business research, SWOT analysis and Fishbone technic. SWOT analysis is illustrated in Figure 3.

1.2.2 SWOT Analysis and Fishbone Technique

In the SWOT analysis the researcher has identify the key weaknesses of FGV Prodata related to this business research is insufficient SMEs. This is due to high turnover of SMEs in Prodata including SAP talents and the cycle of building up the talent will take a long period to have the equivalent knowledge as per the lost talent. The fastest way of resolving the issue is by getting experience SAP talent from open market in the IT industry, but it is an expensive approached because Prodata has pay three or four time of standard salary in Prodata. Furthermore, Prodata is tightened up with FGV’s group HR salary scale policy, which followed Plantation Industry as their guideline, which means it is lower than salary scale of IT industry. This scenario is identified will point to a treat to Prodata which the researcher found out from the SWOT analysis. Losing SMEs and skilled resources is becoming Prodata’s major treat which is very crucial because it will affect the Prodata’s project implementation and services support quality in a long run. Prodata also losing a lots of money in recruiting process and retrained the replacement employees.

Figure 1.3 FGV Prodata’s SWOT analysis



1.2.3 Fishbone Technique

The researcher also used Fishbone Technique in identifying and formulation problem in this business research. The Fishbone diagram is illustrated as in Figure 4.

Based on the Fishbone Technique, the researcher has categorized main issue into four core segment, which are management, people, method and environment, which lead to the main issue of losing SAP skillset and knowledge. In the management segment, these are the issues identify:

- a. The first issue arise is the stringent employment policy by FGV Group HR. The employment of the whole of FGV group companies is control by FGV Group HR. Every new recruitment required every company to go through few process. Priority is given to FGV core companies which is plantation business. Prodata is a non-core business to FGV, therefore Prodata's new recruitment will be a less priority to FGV. Due to that, Prodata will face a delay to do staff replacement if staff turnover happens.
- b. The next issue in management segment is insufficient retention strategy. FGV Prodata never had any retention strategy but only reacted based on as and when required basis such as if there is any core talent wanted to resign, then FGV Prodata will reacted with necessary action to counter him/her. Again, Prodata needs to go through a lengthy FGV's Group HR process and it will take some time to get approval. Due to this lengthy process, it is a bit too late to counter offer the that employee.
- c. Insufficient training activities. Due to insufficient staff and heavy loaded with tasks, training or talent development program cannot be plan properly for employees.
- d. FGV Holdings salary scale is below ICT Industry Standard. FGV Prodata needs to follow FGV Holdings (Plantation Industry) salary scale which is not similar compare to ICT industry salary standard.

The researcher also has stated a few sub issues in the people segment in the Fishbone technic. There are;

- a. Difficult to get affordable SAP talent for replacement. Due to lower salary scale compare to ICT industry standard FGV Prodata is having difficulty to get good talent in the market especially SAP expertise.
- b. Insufficient skill talent. Prodata keep losing good SAP talents due to SAP market demands. This situation is very crucial especially for Felda's SAP customized modules which is SLP. The Talents left after they've gained some experiences in FGV Prodata. They left for better salary offered.
- c. Insufficient number of staff. Due to FGV Group HR stringent process, replacement for resigned staff cannot be done smoothly. The available SAP vacancies cannot be filled for many years. It's become more crucial now because the number vacancies getting bigger.
- d. Rely on new graduate and junior talent for new recruitment. FGV Prodata has to rely on new graduated and junior talent for new recruitment due to high salary demand by experienced SAP talents in the market.

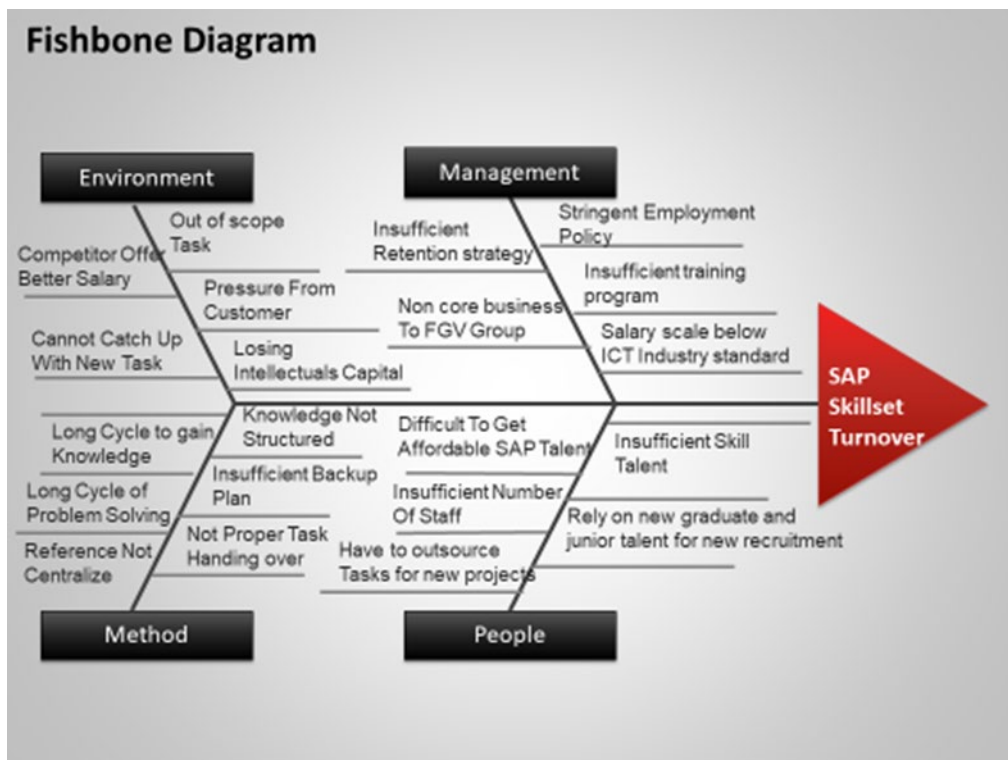
The next segment which the researcher identify as major element in Fishbone technic is environment. The researcher also identifies few sub issues in this environment segment which are:

- a. Competitor offer better salary. Most of good SAP talents in FGV Prodata are pinched by competitor. They have been offered three or four times better salary by competitors.
- b. Losing intellectual capital. FGV Prodata has lost a lots of intellectual capital (IC) when experienced SAP talents left. All the IC drained out together with these talented people.

Last segment which the researcher identify from Fishbone technic is method segment, and the sub issues under this segment are:

- a. Most of knowledge are not properly structured. Most of the knowledge are kept by all SAP talents on their own and it is not properly translated in written.
- b. Long cycle of problem solving. Due to so many SAP support tasks and most of the issues attended by less experienced talents, the cycle of problem solving take longer time.
- c. Insufficient backup plan. Proper staff backup plan cannot be done due to everybody is overloaded with tasks.
- d. References and knowledge are not centralized kept. There is no centralized repository to keep all the SAP knowledge and intellectual capital for references. Most of the knowledge gained through conventional way which is peer-peer basis and through hands-on experiences.

Figure 1.4 FGV Prodata's Fishbone Technique Analysis



Based on SWOT analysis and Fishbone technic finding, the researcher can conclude that the SAP skill set turnover is going to be a crucial issue to Prodata overtime. The researcher anticipated this issue can reach to a situation where Prodata SAP service operation halted and jeopardized Prodata SLA with customers which can

lead to a big lost to Prodata if customers start shying away. The researcher also identified if Prodata resolve this staff turnover issue by replacing the resigned employees with the same or better quality, Prodata will have to spent a lots more cost and keep increasing their operation cost. Not only that, Prodata will also have to face a lengthy process and waste some more cost on hiring activities. The researcher realized, based on above problem formulation process, Prodata keep losing their intellectual capital whenever staff turnover happens. Prodata actually has to do knowledge retention plan and process in order for them not to keep losing their intellectual capital. Therefore, the researcher decided to focus his business research on how to resolve Prodata's SAP talents turnover issues in cost effective way, shorten knowledge transfer process and expertise development cycle, and avoiding lengthy bureaucracy process which delay the talents replacement process.

1.3 Research questions

The researcher has developed a few questions in the process of developing the business research case study. The questions have been distributed to Felda's Business Operation SAP Unit Manager and Team Leader, for them to give their feedbacks and opinions. All the basic problem identification question is specified below:

- a. How frequent FGV Prodata's SAP talent resigned and how crucial it is?
- b. What are the impact to FGV Prodata generally and SAP support unit specifically if they resign?
- c. How FGV Prodata response to that impacts when resignation of SAP talents happened?
- d. How FGV Prodata expedite the training and knowledge transfer to new SAP support staff?
- e. How could FGV Prodata salvage the knowledge capital if SAP's talents resign?

1.4 Researchers Role

In this business research, the researcher is responsible to find methods on how to retain crucial valuable knowledge and intellectual capital in Felda's SAP standard and customize (SLP) modules, implement it through a structured process using the best affordable effective method.

The researcher also hopes with this business research process, the researcher is able to create multiple core expertise in Felda's standard SAP and customized modules (SLP) through structured and formal mentoring programs, in order for Prodata to have more SAP expertise.

1.5 Research Objectives

In this research, the researcher has two main objectives to achieve at the end of this research paper, which are:

- a. To identify and understand the current scenario of knowledge retention in FGV Prodata Felda's SAP support team.
- b. To retain valuable SAP knowledge and intellectual capital in Felda's SAP standard and SAP customize module (SLP) through mentor-mentee pairing.
- c. To develop and measure the process of knowledge keeping in FGV Prodata, reactivate or reuse FGV Prodata's existing knowledge management tool in retaining some SAP knowledge. (Externalization Tacit-Explicit Knowledge Sharing and Combination Explicit-Explicit knowledge sharing) (Saito, Umemoto, & Ikeda, 2007) (SECI Model for Knowledge Creation - Teacher Knowledge Exchange, 2011)

1.6 Significance/Importance of the proposed research

Based on this business research, the researcher is expected FGV Prodata to:

- a. Reduce the knowledge or intellectual capital loss in SAP whenever there is any SAP talent turnover happen.
- b. Shorten the cycle of training and knowledge transfer for new recruitment employees to become SAP expert.
- c. Reduce the overloading task for the current SAP talents especially SAP customize module (SLP) in Felda's SAP support team.
- d. Reduce the turnover intention of FGV Prodata SAP talents by having a structured SAP talents backup strategy and knowledge retention strategy that leads to effective working culture.
- e. Not effected by high SAP talents turnover by having a proper SAP knowledge management strategy and receptive with the market labelling on Prodata, as an SAP training ground or SAP expertise producer.
- f. Create more SMEs and SAP core expertise by having structured mentoring program.

1.7 Definition of term

- a. FGV Prodata Systems Sdn Bhd – Prodata
- b. Knowledge Management – KM
- c. SAP ERP systems – SAP
- d. FELDA's SAP customized module - SLP
- e. Intellectual Capital – IC

REFERENCES

1. Alferaih, A., Sarwar, S., & Eid, A. (2018). Talent turnover and retention research. *Evidence-Based HRM: A Global Forum for Empirical Scholarship*, 6(2), 166–186. <https://doi.org/10.1108/ebhrm-06-2017-0035>
2. Bairi, J., Murali Manohar, B., & Kundu, G. K. (2011). Knowledge retention in the IT service industry. *Journal of Systems and Information Technology*, 13(1), 43–65. <https://doi.org/10.1108/13287261111118340>
3. Bauer, T. N., Truxillo, D. M., Mansfield, L. R., & Erdogan, B. (2012). Contingent Workers: Who Are They and How Can We Select Them for Success? In *Oxford Handbooks Online*. <https://doi.org/10.1093/oxfordhb/9780199732579.013.0038>
4. Bennett Thatcher, J., P. Stepina, L., & J. Boyle, R. (2002). Turnover of Information Technology Workers: Examining Empirically the Influence of Attitudes, Job Characteristics, and External Markets. *Journal of Management Information Systems*, 19(3), 231–261. <https://doi.org/10.1080/07421222.2002.11045736>
5. Bozeman, B., & Feeney, M. K. (2007). Toward a Useful Theory of Mentoring. *Administration & Society*, 39(6), 719–739. <https://doi.org/10.1177/0095399707304119>
6. Cha, H. S., & Quan, J. (2011). A Global Perspective on Information Systems Personnel Turnover. *Journal of Global Information Technology Management*, 14(4), 4–27. <https://doi.org/10.1080/1097198x.2011.10856547>
7. Cotton, J., & Adya, M. (2018). The Impact of E-Mentoring on Information Technology Professionals. *Proceedings of the 2018 ACM SIGMIS Conference on Computers and People Research*. <https://doi.org/10.1145/3209626.3209715>
8. Daghfous, A., Belkhodja, O., & C. Angell, L. (2013). Understanding and managing knowledge loss. *Journal of Knowledge Management*, 17(5), 639–660. <https://doi.org/10.1108/jkm-12-2012-0394>
9. Drahos, P. (2016). *A philosophy of intellectual property*. London Routledge.
10. Driscoll, D. L., Afua Appiah-Yeboah, Salib, P., & Rupert, D. J. (2020). Merging Qualitative and Quantitative Data in Mixed Methods Research: How To and Why

Not. Retrieved from DigitalCommons@University of Nebraska - Lincoln website:
<https://digitalcommons.unl.edu/icwdmeea/18>

11. Garvey, R., Strokes, P., & Megginson, D. (2010). Coaching and Mentoring: Theory and Practice. *NHRD Network Journal*, 3(2), 79–81. <https://doi.org/10.1177/0974173920100214>
12. Geisler, E., & Nilimi Wickramasighe. (2009). *Principles of knowledge management: theory, practice and cases*. Armonk: M.E. Sharpe.
13. Gonzalez, R. V. D. (2016). Knowledge Retention in the Service Industry. *International Journal of Knowledge Management*, 12(1), 45–59. <https://doi.org/10.4018/ijkm.2016010104>
14. Hawking, P., Foster, S., Ding, H., & Zhu, C. (2008). ERP Education in China: The Tale of Two Paths. *IFIP International Federation for Information Processing*, 893–905. https://doi.org/10.1007/978-0-387-76312-5_12
15. Hudson, P. (2016). Forming the Mentor-Mentee Relationship. *Mentoring & Tutoring: Partnership in Learning*, 24(1), 30–43. <https://doi.org/10.1080/13611267.2016.1163637>
16. Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. (2017). Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual Capital*, 18(4), 904–922. <https://doi.org/10.1108/jic-11-2016-0116>
17. Ibrahim, Z., Abdul Rahman, N. R., & Md Johar, M. G. M. J. (2019). A Job Satisfaction of Emotional Intelligence, Leadership, Employee Performance with Information Technology. *International Journal of Recent Technology and Engineering*, 8(2S9), 712–718. <https://doi.org/10.35940/ijrte.b1148.0982s919>
18. Inc, Hcmw. (2020). HCMWorks | Contingent Workforce Solution Specialists & Advisors. Retrieved December 21, 2020, from www.hcmworks.com website: <http://www.hcmworks.com>
19. Janes, J. (2001). Survey research design. *Library Hi Tech*, 19(4), 419–421. <https://doi.org/10.1108/eum0000000006543>
20. Jayawickrama, U., Liu, S., Hudson Smith, M., Akhtar, P., & Al Bashir, M. (2019). Knowledge retention in ERP implementations: the context of UK SMEs.

- Production Planning & Control*, 30(10–12), 1032–1047.
<https://doi.org/10.1080/09537287.2019.1582107>
21. Jick, T. D. (1979). Mixing Qualitative and Quantitative Methods: Triangulation in Action. *Administrative Science Quarterly*, 24(4), 602.
<https://doi.org/10.2307/2392366>
 22. Kimiz Dalkir. (2017). *Knowledge management in theory and practice*. Cambridge, Ma: Mit Press.
 23. Lee, Z., & Lee, J. (2000). An ERP implementation case study from a knowledge transfer perspective. *Journal of Information Technology*, 15(4), 281–288.
<https://doi.org/10.1080/02683960010009060>
 24. Levy, M. (2011). Knowledge retention: minimizing organizational business loss. *Journal of Knowledge Management*, 15(4), 582–600.
<https://doi.org/10.1108/13673271111151974>
 25. Liebowitz, J. (2009). *Knowledge Retention: Strategies and Solutions*. Boca Raton, Fla.: Crc Press.
 26. Manistitya, M., & Fongsuwan, W. (2015). Human Resource Management, Job Satisfaction and Employee Commitment Affecting Information Technology Staff Turnover Intention: A Structural Equation Model. *Research Journal of Business Management*, 9(1), 157–172. <https://doi.org/10.3923/rjbm.2015.157.172>
 27. Manu Bhatia. (2019, July 12). Your Guide to Qualitative and Quantitative Data Analysis Methods - Atlan | Humans of Data. Retrieved from Atlan | Humans of Data website: <https://humansofdata.atlan.com/2018/09/qualitative-quantitative-data-analysis-methods/>
 28. Markus, L. M. (2001). Toward a Theory of Knowledge Reuse: Types of Knowledge Reuse Situations and Factors in Reuse Success. *Journal of Management Information Systems*, 18(1), 57–93.
<https://doi.org/10.1080/07421222.2001.11045671>
 29. Pee, L. G., Kankanhalli, A., Tan, G. W., & Tham, G. Z. (2014). Mitigating the Impact of Member Turnover in Information Systems Development Projects. *IEEE Transactions on Engineering Management*, 61(4), 702–716.
<https://doi.org/10.1109/tem.2014.2332339>

30. Petty, R., & Guthrie, J. (2000). Intellectual capital literature review. *Journal of Intellectual Capital*, 1(2), 155–176. <https://doi.org/10.1108/14691930010348731>
31. Ragins, B. R., Cotton, J. L., & Miller, J. S. (2000). MARGINAL MENTORING: THE EFFECTS OF TYPE OF MENTOR, QUALITY OF RELATIONSHIP, AND PROGRAM DESIGN ON WORK AND CAREER ATTITUDES. *Academy of Management Journal*, 43(6), 1177–1194. <https://doi.org/10.2307/1556344>
32. Rassuli, A. (2005). Evolution of the professional contingent workforce. *Journal of Labor Research*, 26(4), 689–710. <https://doi.org/10.1007/s12122-005-1006-4>
33. Reitman, A., & American Society for Training and Development. (2007). *Talent retention*. Alexandria, Va: American Society for Training and Development.
34. Roberts, A., Storm, M., & Flynn, S. (2019). Workplace mentoring of degree apprentices: developing principles for practice. *Higher Education, Skills and Work-Based Learning*, 9(2), 211–224. <https://doi.org/10.1108/heswbl-10-2018-0108>
35. Schweyer, A. (2004). *Talent management systems: best practices in technology solutions for recruitment, retention, and workforce planning*. Toronto, Ont.: Wiley.
36. Shang, S. S. C., Lin, S., & Wu, Y. (2009). Service innovation through dynamic knowledge management. *Industrial Management & Data Systems*, 109(3), 322–337. <https://doi.org/10.1108/02635570910939362>
37. Smith, A. D., & Rupp, W. T. (2002). Communication and loyalty among knowledge workers: a resource of the firm theory view. *Journal of Knowledge Management*, 6(3), 250–261. <https://doi.org/10.1108/13673270210434359>
38. Smith, E. A. (2001). The role of tacit and explicit knowledge in the workplace. *Journal of Knowledge Management*, 5(4), 311–321. <https://doi.org/10.1108/13673270110411733>
39. Spiegel, O. (2012). How employee turnover impacts social capital and performance of companies. *Proceedings of the 50th Annual Conference on Computers and People Research - SIGMIS-CPR '12*. <https://doi.org/10.1145/2214091.2214120>

40. Tzortzaki, A. M., & Mihiotis, A. (2014). A Review of Knowledge Management Theory and Future Directions. *Knowledge and Process Management*, 21(1), 29–41. <https://doi.org/10.1002/kpm.1429>
41. Veloso, E. F. R., Da Silva, R. C., Dutra, J. S., Fischer, A. L., & Trevisan, L. N. (2014). Talent Retention Strategies in Different Organizational Contexts and Intention of Talents to Remain in the Company. *Journal on Innovation and Sustainability. RISUS ISSN 2179-3565*, 5(1), 49. <https://doi.org/10.24212/2179-3565.2014v5i1p49-61>
42. Wang, Z., Wang, N., Cao, J., & Ye, X. (2016). The impact of intellectual capital – knowledge management strategy fit on firm performance. *Management Decision*, 54(8), 1861–1885. <https://doi.org/10.1108/md-06-2015-0231>
43. Wei Choo, C. (2000). Working with knowledge: how information professionals help organisations manage what they know. *Library Management*, 21(8), 395–403. <https://doi.org/10.1108/01435120010342770>
44. William Short, T. (2013). Workplace mentoring: an old idea with new meaning (part 1). *Development and Learning in Organizations: An International Journal*, 28(1), 8–11. <https://doi.org/10.1108/dlo-09-2013-0077>
45. William Short, T. (2014). Workplace mentoring: an old idea with new meaning (part 2). *Development and Learning in Organizations: An International Journal*, 28(2), 3–6. <https://doi.org/10.1108/dlo-11-2013-0086>
46. Xu, Q., & Ma, Q. (2008). Determinants of ERP implementation knowledge transfer. *Information & Management*, 45(8), 528–539. <https://doi.org/10.1016/j.im.2008.08.004>