PRE-TALENT MANAGEMENT FOR CONSTRUCTION INDUSTRY

SHARIFAH RAHIMATUL-HANA BT SYED ALI

A project report submitted in partial fulfillment of the requirements for the award of the Degree of Master of Science (Construction Management)

Faculty Of Civil Engineering Universiti Teknologi Malaysia

NOVEMBER, 2005

"To my dearest one,

beloved mother,

and last but not least to all my loving eight offspring ."

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my project supervisor, Associates Professor Dr. Abdul Kadir bin Marsono, for he has been very professional and exercising his duties ethically at all time throughout his role as a supervisor and lecturer.

Special thank to JPNJ and EPRD staffs, all teachers and school staffs in all schools that had been participated in this study. Special thanks also due to course mates and friends from SMKTUN who always motivate, giving moral support, ideas throughout the work.

Finally, I wish to thank all parties who have given cooperation and support directly or indirectly in order to make this project report successfully done.

ABSTRACT

Pre-talent management can be described as the ability to measure the human capital, who are still attending their education and define their performance through an assessment tool designed to quantify this intangible and valuable assets for the construction industry. The objectives of this study are to identify the main component of Personality and Self Direct Search test available in order to assess the actual personality and career interest of the students towards Engineering Code of Ethics. It also produces questionnaires and test questionnaires on samples. It will also analyze the questionnaires using Statistical Method. It is anticipated that the respondent could be placed or guided to choose the right course for their future career. The study shows that, only 10 out 100 respondents show interest in choosing construction engineering as their profession. Only four out of this 10 respondents having a tendency to work according to Engineering Code Of Ethics. The study shows this decision making system may be useful for youngsters in evaluating themselves to be 'a right person for the right job'.

ABSTRAK

Pengurusan awal bakat boleh dihuraikan sebagai keupayaan untuk mengukur sumber tenaga manusia, yang masih bersekolah dan menghuraikan pencapaian mereka melalui satu alat penilaian kerjaya yang direkabentuk untuk memperjelaskan aset ini yang tidak terkir nilainya kepada industri pembinaan. Objektif-objektif kajian ini ialah untuk mengenalpasti komponen utama dari Ujian Personaliti dan Ujian Minat Kerjaya yang ada kini untuk menilai personaliti sebenar dan minat kerjaya pelajar berteraskan kepada Kod Etika Kejuruteraan. Ia juga menghasilkan soal selidik dan menguji soalan-soalannya ke atas beberapa sampel, dan untuk menganalisis soal selidik menggunakan Kaedah Statistik. Adalah diharapkan dari analisis ini responden dapat dicadangkan dan dibantu dalam pemilihan kursus yang sesuai untuk masa depannya. Kajian ini mendapati, hanya 10 dari 100 responden menunjukkan minat untuk memilih kejuruteraan pembinaan sebagai profesyen masa depan, dan hanya 4 dari 10 responden ini mempunyai kecenderungan akan bekerja mengikut Kod Etika Kejuruteraan. Kajian ini juga menunjukkan sistem ini amat berguna jika dapat dimanafaatkan oleh golongan muda bagi menilai diri mereka dalam memenuhi keperluan 'orang yang tepat untuk kerja yang tepat'

TABLE OF CONTENTS

CHAPTER	ITEM	PAGE
	TITLE	i
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	V
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xii
	LIST OF FIGURES	xiv
	LIST OF APPENDICES	xvi
CHAPTER 1	INTRODUCTION	1
	1.1 Introduction	1
	1.1.1 Talent To Focus	3
	1.1.2 Engineering	3

		viii
	1.2 Problem Statement	4
	1.3 Aims of the Study	5
	1.4 Objectives	6
	1.5 Scope of Study	7
CHAPTER 2	LITERATURE REVIEW	8
	2.1 Talent Management	8
	2.1.1 Pre- Talent Management	10
	2.2 Engineering	11
	2.2.1 Overview	11
	2.2.1.1 Education	13
	2.2.1.2 Research and Development	14
	2.2.1.3 Design	14
	2.2.1.4 Construction	15
	2.2.1.5 Production	15
	2.2.1.6 Operation	16
	2.2.1.7 Management	16
	2.3 Main Engineering Branches	17
	2.4 Engineering Code Of Ethics	18
	2.4.1 Rules Of Practice	19
	2.4.2 Professional Obligations	23
	2.5 Civil Engineering	30

	2.6 Construction Management Engineering	32
	2.6.1 Nature of Work	32
	2.6.2 Illustrative Tasks	32
	2.6.3 Knowledge, Abilities and Skills	33
	2.6.4.Desirable Experience and Training	35
	2.7 Construction Engineer Responsibility	35
	2.8 Conclusion	37
CHAPTER 3	METHODOLOGY	38
	3.1 Research Methodology	38
	3.1.1 Preliminary Stage	38
	3.1.2.Pre- Survey	38
	3.1.3 Tests Available	39
	3.1.4 Developing Questionnaires	42
	3.1.5. Pilot Survey	45
	3.1.6 Test and analysis Pilot Survey	46
	Questionnaire	
	3.1.7 Fact Survey	47
	3.2 Result and Analysis	50

CHAPTER 4	RESULTS AND ANALYSIS	51
	4.1 Introduction	51
	4.1.1 Pre determined Interview for	51
	Problem Statement	
	4.1.2 Pilot Survey	52
	4.1.3 The Actual Survey	53
	4.2 Data Analysis and Results	55
	4.2.1 Section 1 Part 1	56
	4.2.2 Section 1 Part 2	58
	4.2.3 Section 1 Part 3	60
	4.2.4 Section 2	62
	4.2.5 Section 3	64
	4.3 Concluding Remarks	72
CHAPTER 5	DISCUSSION, CONCLUSION AND	73
	RECOMMENDATION	
	5.1 Introduction	73
	5.2 Objective 1	76
	5.3 Objective 2	77
	5.4 Objective 3	78
	5.5 Recommendation	81
	5.5.1 Questionnaires	81

		xi
	5.5.2 Guided Information	81
	5.5.3 Actual Working Environment	82
	5.6 Conclusion	83
REFERENCES		86
Appendices A-G		91

LIST OF TABLES

TABLE NO.	LE NO. TITLE	
3.1	Average Index	48
4.1	Type of Schools	54
4.2	Distribution of Respondents Towards Section 1 Part 1	56
4.3	Distribution of Respondents Towards Section 1 Part 2	58
4.4	Distribution of Respondents Towards Section 1 Part 3	60
4.5	Distribution of Respondents Towards Section 2	62
4.6	Distribution of Respondents Towards Section 3	64
4.7	Cross-tabulation Parent's Occupation, Household Income	
	and Question No 17 in Section 1 Part 3 of the	
	Questionnaires	68
4.8	Cross-tabulation Parent's Occupation, Type of Schools	
	and Question No 17 in Section 1 Part 3 of the	
	Questionnaires	70

4.9 Chi-Square Tests

71

LIST OF FIGURES

FIGURE NO.	TITLE	
2.1	Major Functions of Engineering	17
3.1	Flow Chart For Developing Questionnaires	44
3.2	Flow Chart Of Pilot Survey	46
3.3	Survey Flow Chart	49
4.1	Interview Result	52
4.2	Flow Chart Of Distribution of Respondents	53
4.3	Type Of Schools With Respect To The Number of	
	Respondents	54
4.4	Distribution of Respondents Towards Section 1 Part 1	57
4.5	Distribution of Respondents With Respect To Schools	57
4.6	Distribution of Respondents Towards Section 1 Part 2	59
4.7	Distribution of Respondents With Respect To Schools	59
4.8	Distribution of Respondents Towards Section 1 Part 3	61
4.9	Distribution of Respondents With Respect To Schools	61

4.10	Distribution of Respondents Towards Section 2	63
4.11	Distribution of Respondents With Respect To Schools	63
4.12	Distribution of Respondents Towards Section 3	65
4.13	Distribution of Respondents With Respect To Schools	65
4.14	Flow Chart Of Questionnaires Process	67

LIST OF APPENDICES

APPENDIX	TITLE	PAGE	
A	Research Schedule	91	
В	Methodology in Brief	92	
C	Questionnaires Form	93	
D	Technical Paper	110	
E	Walk-In Interview questionnaire	117	
F	Letter of Permit by - JPNJ	119	
G	Letter of Permit by – EPRD, KPM	120	

CHAPTER 1

INTRODUCTION

1.1 Introduction

"Talent management is the primary ingredient of organizational success, more than money, market share, or the track record of the management team. The value of an enterprise is directly related to its success in talent management and the growth of human capital as an asset. The more that organizations pay attention to the strategic importance of managing how the right talent flows through their company, the better off our entire society will be." (C. Pascal ,2004)

Talent management is the ability to expertly attract, recruit, motivate, develop and retain staff. The staff or employees are the important mechanism to generate a profitable organization or industry . Today, some organizations are able

to create private talent databases (searchable repositories of candidate records) using sophisticated extraction and database technology to mine information from resumes and job requirements. They are combining this information with other data to create candidate and workforce profiles. This data can be used to measure the depth of talent in a particular demographic region, for example, or to match staff and external candidates to the right assignments at the right time, in order to align the workforce with the objectives of the organization.

Talent has to be managed throughout the entire employee life cycle, as early as secondary schools educations. There is a need for *Pre-talent* management system which will be able to tell the hidden talent within a pupil. It can only be viewed after one has undergone assessment tool that exposed a true potential of a person in which later ready to be polished. Pre-talent management is the most vital element to be used as an effective talent management system by an organization.

1.1.1 Focus Of Study

Engineering may becoming a dreamed choice for most science students, while achieving their goal can be very subjective. Students may be confronted by unsuitability of courses enrolled only after a few years in universities. These phenomenon are most common while it is too late to return back once the incorrect choice has been made. This study is mainly focusing on talent for engineering.

1.1.2 Engineering

"Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for everyone. The services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare" (Daniel, 1979). These values are required for developing an ethical engineers as needed for the industry and make engineering as one of the respectable professions. In fulfilling these needs there should be a tool to evaluate the student's talent at the very early stage of education. These values are expected to produce an engineer not merely a knowledgeable engineer but also a talented engineer based on the academic achievements, as well as the value requirements with respect to the actual personality.

There should be a definite documentation of an engineering career and construction engineering career that can be used by students as a guidance through their study and guiding for their future career . The documentation may show them their hidden personality and interest that they never realize before. This type of tool also can be used to evaluate their potential and help in selecting the student for educational institution.

This objective is expected to be achieved by setting up a set of questionnaires consisting of the main components of Personality tests and other

tests relevant such as IQ (Intelligence Quotient), EQ (Emotional Intelligence Quotient), or Competency test, to follow the values contained in the Engineering Code of Ethics. Through the questionnaires, it is expected that this study would be able to extract the students' talent to become Construction Management Engineers.

1.2 Problem Statement

Students may be confronted by unsuitability of courses enrolled only after a few moments in universities. This can be seen in the relationship between their Cumulative Point Average (CPA) and their reasons of choosing the particular courses (result of interview in Chapter 4). While these phenomena's are common and it is too late to return back once the incorrect choice has been made.

This phenomena occurs as there is no definite tools available to asses their ability with respect to their personality. Student performance also relatively depend on the course selected prior to their enrolment as a students at the university. This phenomena can be said as 'the right person for the right course', furthermore it will not cater 'the right person for the right job'. Thus, to make the prescription better, it is suggested that one career tool has to be designed so that it can provide the relevant information on career selection relative to students personality.

There is also no definite documentation made by education institutions to enable for one to search information that relates to their interest for their future career systematically. Furthermore, there is no documentation that gives a comprehensive guidance towards Construction engineering especially Construction Management as one career to be pursued.

1.3 Aims of the Study

The main purpose of this study is to develop a set of questionnaires that consists of components from relevant tests which can be used as a tool to make a suggestion for the appropriate student when making a decision in choosing construction engineering as their future career. It is also a tool to support a decision making for a student's future career.

1.4 Objectives

The objectives of the study are:

- To identify the main component of Personality and Self Direct Search test in order to assess the actual personality and career interest of the students towards Engineering Code of Ethics
- To produce test questionnaires and fact questionnaires and also develop DBMS (Data Base Management System).
- To analyze the questionnaires for students' career placement using statistical approach.

1.5 SCOPE OF STUDY

The	scope	of the	study	covers:

- To carry out Personality and Career Interest Test for Construction engineers.
- To obtain data from respondents from secondary schools and university's engineering students.
- To produce career placement test for construction engineers.

References

- 1. Abdullah, Ahmad Baharuddin , "Kerjaya Dalam Bidang Kejuruteraan", : PTS Publication & Distributors Sdn Bhd, 2003
- Allan Schweyer," Talent Management System-Best Practices in Technology Solutions for Recruitment, Retention and Workforce Planning": John Wiley, Canada, Ltd, 2004
- 3. American's Career InfoNet, "Career Exploration": http://www.careeronestop.org/careerTools.
- 4. Berkley, George C, "Careers in Engineering and technology": Macmillan Publishing Co., Inc New York.
- 5. Daniel W. Kunz, Eddy, (JETS), "Careers in Engineering": VGM Career Horizons, A division of NTC Publishing Group Lincolnwood, Illinois USA.
- 6. David E. Goldberg, "Life Skills and Leadership for Engineers": McGraw-Hilling. Engineering, Concordia University, Quebec.
- Harmonics, The Engineering Explorations Newsletter, Vol 2, Issue 3, Jan 1999: Native Access to
- Nicholas Baste, "Opportunities in Engineering Careers." The McGraw-Hill companies, Inc. USA.
- 9. Paul P. Biemer, Lars E. Lyberg, "Introduction to Survey Quality": Wiley -Interscience, USA, 2003
- 10. Professional Engineer, "Choice of Career", :Her Majesty's Stationery Office, Scotland, 1970.11. Robert F. Morrison/Richard M. Vosburgh, "Career Development For Engineers and Scientists, Organizational Programs and Individual Choices": Van Nostrand Reihold Company, NY, 1987.
- 12. Susan Jones, " The Human Factor, (Maximising Team Efficiency Through Collaborative Leadership)": Kogan Page Ltd, 1992
- 13. William F. Glueck, "Cases and Exersices in Personnel": Business Publications, Inc, 1978
- 14. "Test Your Emotional Intelligence (EQ)-Work & Career": http://www.iVillage.co.uk
- 15. "My Career Path Civil Engineer": http://www.career.edu.my