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Universitas Internasional Batam (UIB), Indonesia

Nanyang Technological University (NTU), Singapore

The Society of Project Management
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Mr. Sabariman, Universitas Internasional Batam, Indonesia
Dr. Rina Shahriyani Shahrullah, Universitas Internasional Batam, Indonesia
Dr. Yeo Khim Teck, Nanyang Technological University, Singapore

Keynote 1

Improving the Island's Investment Climate for the Future :
Based on Problems in Operation in an Industrial Estate in Batam

Dr. Johannes Sulistijawan Surjaatmadja
General Manager (Corporate) of PT

Abstract:

There were a number of problems in operating an industrial estate in the industrial area. The way it is handled will influence the investment climate. Batam as one of the destination of industrial investment in Malacca strait region need to improve its attractiveness since it is pointed out that 90 percent of industries operating in Batam were "footloose" and thus could move to other countries at any time when they find the investment climate there more favourable than Batam's. Batam should upgrade its physical infrastructure since land and sea transport are paramount facility to be improved as many industries usually rely on the "just-in- time delivery system". Cumbersome customs clearance and documentation in importing and exporting goods also have to be improved through the introduction of new regulations. At the session, several challenges, key learning points, and demands from the experience will be discussed.

Biography:

DR. Johannes Sulistijawan Surjaatmadja, EC., MBA is the General Manager (Corporate) of PT. Batamindo Investment Cakrawala (BIC) and is responsible for overseeing the operation of the General Administration Division, Finance Division General Affairs and Human Resource Division of PT BIC. Mr Surjaatmadja has been seconded by SembPark to the Group since 1990.

Prior to 1990, Mr Surjaatmadja was the General Manager of PT Inti Salim Perkasa from 1984 to 1990. From 1974 to 1984, he was the Manager of Finance and Control in Freeport Indonesia Incorporated and prior to that, was a lecturer at the Universitas Negeri Diponegoro in Indonesia from 1970 to 1974.

Mr Surjaatmadja graduated with a Bachelor of Economics from Universitas Diponegoro in 1970 and obtained a Master of Economics from Universitas Negeri Diponegoro in 1973. He obtained a Doctor of Economics from the University of Airlangga in 2005 and also holds a Master of Business Administration from the University of South Australia.

Keynote 2

Implementation of business application systems in heterogeneous environment

Mr. Masa Kunimaru
Regional Vice President, Application Services FUJITSU ASIA PTE LTD.

Abstract:

Implementation of Business Application Systems is fundamentally translation work from business world to IT world. Management expects, as consequences of the translation work, to operate their business with more streamlined business processes and organization structure to improve business efficiency. Reflecting globalization, many companies are encompassing to standardize IT and business processes by implementing standard business application systems globally or regionally. Projects are accordingly put in heterogeneous environment in many aspects.

Challenges that the project in heterogeneous environment face are;

>Culture embedded in local / regional operations varies.

>Governance style from headquarters to regional or local operations varies. It may come from the way the companies to expand their business through acquisition. It may come from nature of businesses, manufacturing or sales orientated organization. Or it related corporate culture itself.

>Organizational readiness varies to accept new initiatives into the organization and operations.

There is no panacea to solve the problems described above, but I would like to share my experiences of business application implementation projects in heterogeneous environment with audience.

Biography:

Name: Masa Kunimaru
Birth: December 21, 1956
Education: BA, Commerce , Waseda University (March, 1980)
Present Position: Fujitsu Asia Group
Regional Application, Senior Vice President
Professional Career:

Apr. 1980	Joined Fujitsu Limited
May 1990	MIS Manager - Fujitsu Network Solutions, Richardson TX
June 1992	Director Application Solutions, Fujitsu Systems Business of America, Santa Clara, CA
Feb. 1996	General Manager Application Solutions, Fujitsu Consulting UK, London
June 2006	General Manger Global Business, Fujitsu Automotive Business Unit
Dec. 2008	Senior Vice President, Regional Application Services Fujitsu Asia Group

Keynote 3

Visions and Activities of the Energy Harvesting Consortium

Mr. Keiji Takeuchi
Senior Specialist, Socio & Eco Strategic Consulting Sector,
NTT Data Institute of Management Consulting, Inc.

Abstract:

Energy harvesting is a technology in which ambient energies including light, wind, vibrations, heat, and radio waves are harvested to power small electronic devices e.g., wireless autonomous devices such as those used in wearable electronics and wireless sensor networks.

On May 14, 2010, we established the Energy Harvesting Consortium in Japan with 12 member companies. As of June 2011, the number of members has reached over 40, and we are continuously receiving inquiries from interested companies and organizations throughout Japan as well as overseas.

In an effort to boost Japan’s international competitiveness in the field of energy harvesting, we founded this consortium with the aim of providing a collaborating platform for Japanese companies. We aim to incubate and accelerate new ventures embarked upon by our members as well as stimulate relevant markets in collaboration with the government of Japan.

In this presentation, the activities of the consortium as well as issues and efforts in managing it will be described, along with the latest trends and future visions of energy harvesting technologies.

Biography:

Mr. Takeuchi has more than 20 years of experience in managing research, consulting, and system integration projects mainly in the field of telecommunications and energy.

He is a leading expert in the field of energy harvesting and a secretariat of the Energy Harvesting Consortium in Japan.

Prior to joining NTT Data Institute of Management Consulting, Inc. in 2010, he served as a senior analyst at Data Resources, Inc. and was known as a leading expert of municipal wireless broadband.

Previously, he was a senior researcher at Mitsubishi Research Institute, one of the largest think-tanks in Japan, and was known as a leading expert of long-run incremental cost model in the field of telecommunications regulations in Japan. He graduated from Kyoto University Graduate School of Engineering, majoring in nuclear engineering.

Keynote 4

Improving the Quality of Regional Financial Report toward Good Governance

Dr. Handoko Karjantoro
Professor and Rector, Universitas Internasional Batam

Abstract:

Financial information delivered by government must have high level in accuracy, relevancy, timely, and trustworthy. High quality information can only be resulting from reliable accounting information system . In managing governmental finance, we need a government accounting standard that can be a guideline in constructing financial report.

This accounting standard will assure the consistancy of financial report and in order to improve the reliability and the objectivity of the information to be delivered. Good governance can be formed by involving 3 parties, namely government, business, and society.

Government should conduct reformation in its entire processes managed to support the implementation of good governance. In the world of business, the effort toward this is earlier initiated since the crisis knocking over the countries including Indonesia. This implementation known as Good Corporate Governance (CGC) and this can only be working if supported by good governance in govermental sectors. The society can take role as the controller of the processes. At the session, several efforts in carrying out reformation toward transparancy and accountable governmental accounting system will be discussed.

Biography:

2002---sekarang	Universitas Internasional Batam, Rektor
1994---2002	STIE Trisakti, Ketua
1979---1994	Dow Chemical Indonesia, Financial Controllers
1976---2002	STIE Trisakti, Dosen
1976---1994	Universitas Trisakti, Dosen
1976---1985	Universitas Tarumanegara, Dosen
1975---1985	Sekolah Tinggi Akuntan Negara, Dosen
1971---1979	Akuntan Negara

Keynote 5

Some Project Management Perspectives in establishing Interdisciplinary Research

Dr. Chee-Yoon Yue
Professor, Nanyang Technological University

Abstract:

The Singapore-MIT Alliance (SMA) program, a large scale international collaboration in graduate education and research between the National University of Singapore (NUS), the Nanyang Technological University (NTU), Singapore and the Massachusetts Institute of Technology (MIT) USA, has been in operation for the past 10 years. Started with ambitious goals at a time when global academic and research collaboration was beginning to be recognized to be important, it adopted a novel approach in interdisciplinary research and education across traditional disciplines that was unprecedented in form and scope.

This presentation traces the challenges faced and steps and initiatives that were undertaken in order to make the interdisciplinary research collaboration a success, based on experiences in the SMA Manufacturing Systems and Technology (MST) program. The key learning points, benefits and achievements as well as new developments in interdisciplinary research will be discussed briefly.

Biography:

Professor Chee-Yoon Yue, who obtained his PhD from Monash University Australia, is Dean of the newly established Interdisciplinary Graduate School (IGS), Nanyang Technological University (NTU), Singapore. He is concurrently, Director of the Institute for Sports Research NTU. He has been Program Chair, Singapore-MIT Alliance program in Manufacturing Systems and Technology since 1999. At NTU, he has previously served in various capacities including Dean, School of Mechanical and Aerospace Engineering (1999 - 2005), Head of Division of Manufacturing Engineering (1996 to 1999) and Assistant Director of Research (1997-1999). He is an active member of review panels and expert committees of several overseas research funding agencies.

He is a Fellow of the Institution of Engineers, Singapore and a Chartered Engineer (C.Eng) and Member of the Institution of Materials, Minerals and Mining, UK. He is an evaluator and assessor for the Singapore Manufacturing Excellence Award (MAXA).

ProMAC Symposium 2011

Symposium Program

Tuesday, November 29, 2011

14:00-17:00		Fact-finding-tour in Batam Island
18:00-20:00	2F Registration Desk	Registration
18:30-21:00	2F HALIA	Welcome Reception

Wednesday, November 30, 2011

8:00-17:00	2F Registration Desk	Registration
9:00-10:10	2F HALIA	Opening Ceremony

Dr. Shinichiro Yokoyama, Vice President of SPM, Tokyo City University
Dr. Handoko Karjantoro, Professor, Rector of Universitas Internasional Batam
Prof. Ali Jaafari, President of Asia Pacific International College
Chang W. Kang, Professor, Dept. of Industrial and Management Engineering, Hanyang University President, The Korean Society of Project Management

10:10-10:30 **Coffee Break**

10:30-11:50 **2F HALIA, BASIL1-4** — **Breakout Session 1**

Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Government, Social, and Economic Transformation I**	**Development of PM Training and Education I**	**New Challenges of Projects and Organizations I**	**Business and Industry Application Areas I**	**PM Knowledge Areas I**
chair	Dr. Shinichiro Yokoyama	Dr. Rina Shahriyani Shahrullah	Dr. Emerson Gonzales Cabudol	Mr. Ootsuru Eisuke	Prof. Ali Jaafari
1030-1050	A01 Mr. Shoji Tajima	B01 Dr. Taichi Nakamura	C01 Mr. Fumihiro Odaka	D01 Mr. Norihiro Kambara	E01 Mr. Toru Yamaguchi
1050-1110	A02 Mr. Kazuhiro Itoh	B02 Mr. Yuji Tsuchiya	C02 Mr. Yoshinobu Sawano	D02 Mr. Kousuke Mitsuo	E02 -- Withdrawal --
1110-1130	A03 Dr. Akira Yamazaki	B03 Prof. Chang Yuan-Tsung	C03 -- Withdrawal --	D03 Mr. Liu Gongyi	E03 Mr. Yoshinobu Uchida
1130-1150	A04 Mr. Koichi Ueda	B04 Ms. Alfonsa Dian Sumarna	C04 Mr. Osamu Kikuchi	D04 Ms. Tomko Kaneko	E04 Mr. Takuji Fujimoto

12:00-13:00 **Lunch**

13:00-14:00 **2F HALIA** — **Keynote 1**

Improving the Island's Investment Climate for the Future : Based on Problems in Operation in an Industrial Estate in Batam

Dr. Johannes Sulistijawan Surjaatmadja

General Manager (Corporate) of PT

14:00-14:30 **Coffee Break**

14:30-15:50 **2F HALIA, BASIL1-4** — **Breakout Session 2**

Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Regional/International Collaborations in PM I**	**Development of PM Training and Education II**	**New Challenges of Projects and Organizations II**	**Business and Industry Application Areas II**	**Special Session I**
chair	Ms. Chayamarnie Bhiriyawanit	Ms. Rie Oishi	Prof. Toshihisa Honma	Mr. Kazuo Yamamoto	Prof. Ali Jaafari
1430-1450	A05 Mr. Kensei Yoshida	B05 Mr. Yuhji Akutagawa	C05 Mr. Hiroshi Yoshikane	D05 Mr. Tomoya Saito	Session 1: The Anatomy of Project-based Organisations
1450-1510	A06 Dr. Syamsul Bahrum	B06 Mr. Tomoji Takehisa	C06 Mr. Tomoyuki Aoki	D06 Mr. Yuya Nakajima	
1510-1530	A07 Ms. Indrastuti	B07 Mr. Kazuhito Watanabe	C07 Mr. Masaki Kigure	D07 Ms. Xiangxiang Xiang	
1530-1550	A08 Mr. Yasushi Togo	B08 Ms. Yoriko Inoguchi	C08 Mr. Ataru Sakabe	D08 Mr. Hitoshi Uzawa	

16:00-17:00 **2F HALIA** — **Keynote 2**

Implementation of Business Application Systems in Heterogeneous Environment

Mr. Masa Kunimaru

Regional Vice President, Application Services
FUJITSU ASIA PTE LTD.

ProMAC Symposium 2011

Symposium Program

Thursday, December 01, 2011

8:00-17:00	2F Registration Desk	Registration			
9:00-10:00	2F HALIA	**Keynote 3** Visions and Activities of the Energy Harvesting Consortium **Mr. Keiji Takeuchi** Senior Specialist, Socio & Eco Strategic Consulting Sector, NTT Data Institute of Management Consulting, Inc.			
10:00-10:30	Coffee Break				
10:30-11:50	2F HALIA, BASIL1-4	**Breakout Session 3**			
Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Regional/International Collaborations in PM II**	**Development of PM Training and Education III**	**New Challenges of Projects and Organizations III**	**Business and Industry Application Areas III**	**Special Session II**
chair	Dr. Tor Shu Beng	Mr. Masaki Kigure	Ms. Hiroko Nagaya	Mr. Liu Gongyi	Prof. Ali Jaafari
1030-1050	A09 Mr. Deepak Kumar Gupta	B09 Mr. Naoki Tsujikawa	C09 Prof. Toshihisa Honma	D09 Mr. Mitsuru Takamori	Session 2: The Role of PMO in a Project-based Organisation
1050-1110	A10 Mr. Yoshiyuki Kobayashi	B10 Mr. Masaaki Nakagawa	C10 Ms. Isnaini Nuzula Agustin	D10 Mr. Takamitsu Abe	
1110-1130	A11 Ms. Yanisa Rianrungroj	B11 Mr. Takashi Mizobuchi	C11 Ms. Yayuk Setyaning Astutik	D11 Mr. Yasuyuki Tanaka	
1130-1150	A12 Mr. Hiroaki Sano	B12 Ms. Masako Ichiyanagi	C12 Ms. Lola Wagner		
12:00-13:00	Lunch				
13:00-14:00	2F HALIA	**Keynote 4** Improving the Quality of Regional Financial Report toward Good Governance **Dr. Handoko Karjantoro** Professor Rector of Universitas Internasional Batam, Indonesia			
14:00-14:30	Coffee Break				
14:30-15:50	2F HALIA, BASIL1-4	**Breakout Session 4**			
Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Regional/International Collaborations in PM III**	**Development of PM Training and Education IV**	**PM Knowledge Areas II**	**Business and Industry Application Areas IV**	**PM Knowledge Areas III**
chair	Mr. Tetsuo Maekita	Prof. Chang Yuan-Tsung	Mr. Ryohei Iritani	Mr. Shoji Tajima	Mr. Yuhji Akutagawa
1430-1450	A13 Mr. Anurag Jain	B13 Mr. Takeshi Hojo	C13 Dr. Yuji Nagamatsu	D13 Mr. Kohichiroh Tago	E13 Ms. Yoko Kimura
1450-1510	A14 Mr. Imron Rosadi	B14 Mr. Tasuku Hori	C14 Ms. Miwa Kaneko	D14 Ms. Akiko Yogai	E14 Ms. Hiroko Nagaya
1510-1530	A15 Mr. Yasuyuki Nozaki	B15 Mr. Makoto Ishii	C15 Ms. Chayamarnie Bhiriyawanit	D15 Ms. Kaoru Kumashiro	E15 Ms. Chiyomi Konishi
1530-1550	A16 Mr. Toshiharu Arai	B16 Mr. Keisuke Saito	C16 Mr. Satoshi Urata	D16 Mr. Chihiro Kawamata	E16 Mr. Kazuo Yamamoto
16:00-17:30	Move to GALA Dinner				
17:30-20:30	Nongsa Point Marina & Resort	ProMAC Symposium Gala Dinner			

Friday, December 02, 2011

8:00-9:00	2F Registration Desk	Registration			
9:00-10:20	2F HALIA, BASIL1-4	**Breakout Session 5**			
Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Government, Social, and Economic Transformation II**	**Development of PM Training and Education V**	**New Challenges of Projects and Organizations IV**	**Business and Industry Application Areas V**	**PM Knowledge Areas IV**
chair	Mr. Jun Watanabe	Mr. Koichi Ueda	Dr. Akira Yamazaki	Mr. Daisei Isomura	Ms. Masako Ichiyanagi
0900-0920	A17 Dr. Rina Shahriyani Shahrullah	B17 Mr. Kazutoshi Shimanaka	C17 Mr. Isao Nakae	D17 Mr. Tsunefumi Watanabe	E17 Mr. Masaya Mori
0920-0940	A18 Mr. Daisuke Akatsuka	B18 Mr. Takeshi Iwao	C18 Mr. Fuji Foo	D18 Mr. Islam Ehsanul	E18 Mr. Hiromasa Tashiro
0940-1000	A19 Ms. Agustina Fitrianingrum	B19 Mr. Kazuo Yamamoto	C19 Mr. Stewart Baden	D19 Mr. Ichiroh Tonegawa	E19 Mr. Satoshi Aoki
1000-1020	A20 Mr. Shinichiro Matsuo	B20 Mr. Sabariman	C20 Ms. Ni'Matul Ma'Muriyah	D20 Mr. Daniel Cassa Augustinus	E20 Mr. Seiji Doi
10:20-10:50	Coffee Break				
10:50-11:40	2F HALIA	**Keynote 5** Some Project Management Perspectives in establishing Interdisciplinary Research **Dr. Chee-Yoon Yue** Professor Nanyang Technological University, Singapore			
11:40-12:20	2F HALIA	**Farewell & Closing Ceremony** **Mr. Satoshi Kurishima**, President of SPM, NTT DATA CORPORATION **Dr. Handoko Karjantoro**, Professor, Rector of Universitas Internasional Batam, Indonesia **Dr. Chee-Yoon Yue**, Professor, Nanyang Technological University, Singapore			
12:30-13:30	Lunch				

(as of Nov 24th, 2011)

ProMAC Symposium 2011

Symposium Program

Tuesday, November 29, 2011

14:00-17:00		Fact-finding-tour in Batam Island
18:00-20:00	2F Registration Desk	Registration
18:30-21:00	2F HALIA	Welcome Reception

Wednesday, November 30, 2011

8:00-17:00	2F Registration Desk	Registration
9:00-10:10	2F HALIA	Opening Ceremony
10:10-10:30		Coffee Break
10:30-11:50	2F HALIA, BASIL1-4	Breakout Session 1

Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Government, Social, and Economic Transformation I**	**Development of PM Training and Education I**	**New Challenges of Projects and Organizations I**	**Business and Industry Application Areas I**	**PM Knowledge Areas I**
chair	Dr. Shinichiro Yokoyama	Dr. Rina Shahriyani Shahrullah	Dr. Emerson Gonzales Cabudol	Mr. Ootsuru Eisuke	Prof. Ali Jaafari
1030-1050	A01 Five Questions Preparing Project Portfolio Management for New Business Development Mr. Shoji Tajima NEC Corporation	B01 The use of System Development Projects as part of Undergraduate Computer Science Studies Dr. Taichi Nakamura Tokyo University of Technology	C01 Impacts of the Organizational Body on Project Strategies Mr. Fumihiro Odaka NTT DATA INTELLILINK CORPORATION	D01 Effective Scope Management to Succeed IT Project Mr. Norihiro Kambara IBM Japan, Ltd.	E01 Research on the risk management with utilizing scenarios considered factor analysis results Mr. Toru Yamaguchi Chiba Institute of Technology
1050-1110	A02 Study of Identifying Benefits for Applicable BSC on IT Service Providers Mr. Kazuhiro Itoh IBM Japan, Ltd.	B02 Well-Established Security Knowledge and Basic Activities in a Large-Scale Project Mr. Yuji Tsuchiya NTT DATA CORPORATION	C02 Decentralized Management Methodology for Highly Specialized Projects: Project Management by Specialists and Generalists Mr. Yoshinobu Sawano FUJITSU LIMITED	D02 Analysis Method for Extraction and Adjustment of Customer Demand Mr. Kousuke Mitsuo Tokyo City University	E02 -- Withdrawal --
1110-1130	A03 Study of the Management for Successful R&D Projects Supported by Public Funds Dr. Akira Yamazaki Chiba Institute of Technology	B03 A System for Improving Academic Ability - Quality Education at Mejiro University Prof. Chang Yuan-Tsung Mejiro University	C03 -- Withdrawal --	D03 Study of the Consensus Visualization Method of Stakeholder Management Mr. Liu Gongyi IBM Japan, Ltd.	E03 Development of the Risk Management System for Construction Projects Mr. Yoshinobu Uchida Hitachi, Ltd.
1130-1150	A04 Key Factors in Cloud Service Business Development Project Mr. Koichi Ueda NEC Corporation	B04 The Effects of Participatory Budgeting on the Management Performance: the Use of Reinforcement Contingency and Leadership Style as Moderating Variable Ms. Alfonsa Dian Sumarna Universitas Internasional Batam	C04 A Study of the Cost Structure Quantification with the Organization Formation in CSIRT Mr. Osamu Kikuchi Chiba Institute of Technology	D04 Specification of Whole Steps for the Security Requirements Analysis Method (SARM) - From Requirement Analysis to Countermeasure Decision - Ms. Tomko Kaneko NTTDATA CORPORATION	E04 Finding and Managing Potential Risks in Offshore Development Mr. Takuji Fujimoto IBM Japan, Ltd.

12:00-13:00		Lunch
13:00-14:00	2F HALIA	Keynote 1
14:00-14:30		Coffee Break
14:30-15:50	2F HALIA, BASIL1-4	Breakout Session 2

Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Regional/International Collaborations in PM I**	**Development of PM Training and Education II**	**New Challenges of Projects and Organizations II**	**Business and Industry Application Areas II**	**Special Session I**
chair	Ms. Chayamarnie Bhiriyawanit	Ms. Rie Oishi	Prof. Toshihisa Honma	Mr. Kazuo Yamamoto	Prof. Ali Jaafari
1430-1450	A05 A Study on the Problems and Their Countermeasures of the Local e-Government Development Project Management in Japan Mr. Kensei Yoshida NTT DATA CUSTOMER SERVICE CORPORATION	B05 A Quantitative Approach in Mentoring to Improve Personal Competence Mr. Yuhji Akutagawa IBM Japan, Ltd.	C05 Study on Evaluation of Project Management Measure Mr. Hiroshi Yoshikane Hitachi, Ltd.	D05 Stochastic Interpretation of Software Development Costs Mr. Tomoya Saito Fujitsu Applications, Ltd.	Session 1:
1450-1510	A06 The Urban Development Strategy and Its Regional Implications : "Batam's Case" Dr. Syamsul Bahrum City Government of Batam	B06 Examination of PM Competency in Complexity Management Mr. Tomoji Takehisa NTT DATA INTELLILINK CORPORATION	C06 Development of Project Management System in Hitachi Power Systems Company Mr. Tomoyuki Aoki Hitachi, Ltd.	D06 Proposal for Forecasting Method of Total Cost Estimate at Completion Mr. Yuya Nakajima Chiba Institute of Technology	The Anatomy of Project-based Organisations
1510-1530	A07 Low Cost Housing Development in Batam as an Impact of FTZ Establishment Ms. Indrastuti Universitas Internasional Batam	B07 An Optimal Scheme for Route Determination for Long-distance Swimming Mr. Kazuhito Watanabe Keio University	C07 Practical Cases and Effects of Quantitative Project Management Based on CMMI Mr. Masaki Kigure NTT DATA CORPORATION	D07 A Model of Cost Prediction Based on Support Vector Machine Ms. Xiangxiang Xiang Chiba Institute of Technology	
1530-1550	A08 Issues of the Recognition System in the Project of Local Food Branding Mr. Yasushi Togo Kyushu University	B08 The Three-step-approach to Solve the Common Issues of Project Managers Ms. Yoriko Inoguchi IBM Japan, Ltd.	C08 An Approach to Criteria for Process Management by using EVM Mr. Ataru Sakabe Hitachi, Ltd.	D08 Reduction of Workload in Function Point Measurement Mr. Hitoshi Uzawa NTT DATA CORPORATION	

16:00-17:00		Keynote 2

ProMAC Symposium 2011

Symposium Program

Thursday, December 01, 2011

8:00-17:00	2F Registration Desk	Registration			
9:00-10:00	2F HALIA	Keynote 3			
10:00-10:30	Coffee Break				
10:30-11:50	2F HALIA, BASIL1-4	Breakout Session 3			
Room	Room A (at HALIA)	Room B (at BASIL 1)	Room C (at BASIL 2)	Room D (at BASIL 3)	Room E (at BASIL 4)
Topics	**Regional/International Collaborations in PM II**	**Development of PM Training and Education III**	**New Challenges of Projects and Organizations III**	**Business and Industry Application Areas III**	**Special Session II**
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ProMAC Symposium 2011

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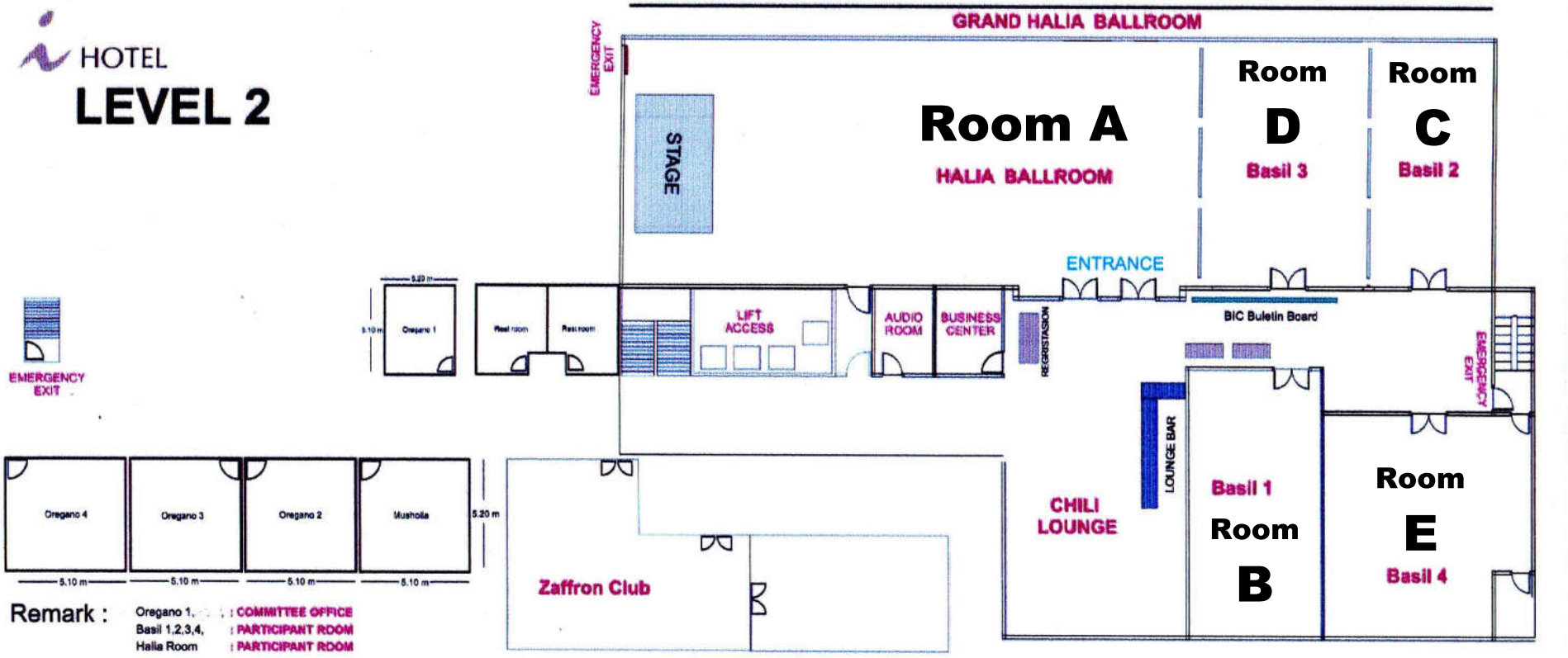

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The Approach on Outlier Assessment to Support A Decision Making of Bank Loan Distribution

Isnaini Nuzula Agustin, Staff of Quality Assurance Center, Universitas Internasional Batam
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Abstract

An ordinary method commonly used to estimate the regression coefficients in Multiple Linear Regression is Ordinary Least Squares (OLS). However, the disadvantage of this method emerges on the presence of outliers. Outliers that is present in the analysis could affect OLS model to which the decision taken based on this method tend to be biased. There is other method which will be discussed in this research defined as Robust Regression. It is designed to be not overly affected by outliers. These two different methods will be discussed in the case of taking decision on the risk management analysis related to the bank loan distribution. By applying Robust Regression in analysis, the risk of misconclusion can be minimized. This paper will simulate data analyzing of Bank Loan Distribution which hypothesized to be affected by Third Party Fund (TPF), Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), and Interest Rate of Bank Indonesia Certificates.
Keywords and Phrases : Multiple Regression Analysis, Ordinary Least Square, Robust Regression, Bank Loan Distribution

1. Introduction

Bank is financial institution which functions as financial intermediary between the surplus unit and the deficit unit. The bank loan distribution which is undertaken by the Bank allows the people to make investment, distribution, and consumption of the goods and services in view that all distributive, investment, and consumptive activities always have to do with money spending. The smoothness of the investment, distributive, consumptive activities is not other than the activities in public economic development. Therefore, we can say that Economic Development of a state depends a lot on the dynamic development and the real contribution of the banking sector. When banking sector goes down, the national economy does too. Otherwise, when the economy is stagnant, the banking sector will get its impact, where the intermediary function does not work well. Hence, in bank loan distribution management we need a good risk management, because the mistakes in decision making on bank loan distribution will have a very bad impact on state's economic growth globally.

Because of its complexity, there have been many statistical model used as the basic for bank loan distribution decision making. One method of statistical modeling commonly used is multiple linear regressions in estimating method of Ordinary Least Squares. The weakness of this method is that this method is very sensitive to the existence of outlier; it is the observation which has much more residuals than other one. On the other side, the financial data hardly separates from the existence of the outliers. The outlier inclusion in Ordinary least Squares method is not a good act as it will create invalid conclusion. Nevertheless, deleting the outlier is not a wise action because the data was taken based on the unignorable real condition. This will have bad impact on the risk management accuracy applied on the bank loan distribution policy making, where this is very important in case of project management.

This paper will discuss the statistical modeling method in bank loan distribution which will accommodate the existence of the outlier, which is called S-Robust regression.

2. Bank Loan Distribution

Bank loan distribution plays an important role in a state's economic growth. In every decision making related to the bank loan distribution, high accuracy is needed, because the mistakes in decision making will create a very fatal impact. Although bank loan distribution plays very important role in a state's economic

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growth, the bank loan distributed by the banks are not optimum yet. We can see it in *Loan to Deposit Ratio* (LDR) of Public Bank during 2005-2009, the rate of which was still at 59.66% - 74.58%. The rate is still below that which Bank Indonesia expects. Based on the provisions of Bank Indonesia, the rate of LDR should reach about 85% - 110%. LDR is indicator to measure banking intermediary function in Indonesia. To be able to reach LDR in accordance with the expectation of Bank Indonesia, Bank needs to determine bank loan distribution rates target in every pre-determined period. The target determination is aimed to avoid the excessive or deficient distributed bank loan. However, the determination of the target rate will also be influenced by many things, either internal or external factors of the bank. Dendawijaya stated that the factors which influence the credit distribution are as follows [1]:

Third Party Funds : The fund collected from the public

CAR : Capital Adequacy Ratio, Capital Ratio which shows the bank capability of availing fund for the needs of business developing and loading the risk of fund loss caused by bank's operational activities.

NPL : Non Performing Loan is the ratio used to measure the bank's ability to cover the failure risk of credit returning.

CBI : Sertifikat Bank Indonesia (Certificate of Bank Indonesia) is obligations using Rupiah which are issued by Bank Indonesia as short-term debt admission.

3. Statistical Modeling : Multiple Linear Regression

Many researches have been taken to find the best modeling which functions to analyze the influence of those four factors to the bank loan distribution. The modeling will have functions either to predict or to see the contribution of the factors influencing the Bank Loan Distribution itself. The statistical modeling which is commonly applied to search for the influence of some predictor variables on the response variables is multiple linear regression analysis. While, the functions of the regression analysis are [2]:

1. To describe the linear relationship between the predictor variables and response ones
2. To show the contribution of the predictor variables to the response ones
3. To predict the value of response variables when the values of the predictor variables is known.

By optimizing the regression analysis functions, so those can be used as foundation for decision making related to the involved variables.

The common equation for multiple linear regressions is [3]:

$$Yi = \beta 0 + \beta_1 Xi1 + \beta_2 X_{i2} + \ldots + \beta_p X_{ip} + \varepsilon_i$$

where
- i = 1,2,…,n
- Y_i = i-th response variable
- β_0 = Intercept point against Y- Axis
- $\beta_1, \beta_2, \ldots \beta_p$ = partial regression coefficient
- $Xi1, Xi2, \ldots, Xip$ = predictor variables
- ε_i = i-th residual
- n = number of observation
- p = number of predictor variables

Generally, in the method of coefficient prediction model, the regression used is Ordinary Least Squares estimation method. The statistical modeling estimates the coefficient model by minimizing the total squared of residual. Residual is the range between the predicted value and the real data. The less total squared of residual, the better the produced model.

Coefficient estimation of model on OLS is based on the following equation:

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$$min \sum_{i=1}^{n} e_i^2$$

Where e_i is residual in model, it is the range between the predicted value $(\hat{y})$ and the real data (y_i).

$$e_i = y_i - \hat{y}$$

4. S-Robust Regression

According to Montgomery and Peck [4], OLS is very sensitive on the existence of the outlier so to apply the OLS method, outlier tends to be uncalculated or to be wasted. It is not a good act as the outlier is the observation which is resulted on basis of the real data. This paper will introduce a regression model which calculates the existence of outlier so that it will deliver the better method in describing the influences between TPF, CAR, NPL dan CBI on the bank loan distribution. The method is Robust Regression with S estimation method. S-Robust Regression presume regression coefficient also by minimizing the total squared of residual. However, to accommodate the outlier, S-Robust Regression gives weight to each residual by involving its deviation standard, which is undertaken iteratively until reaching the convergence, or the so-called Iteratively Reweighted Least Squares.

Completion of S-Robust Regression is based on the following equation [5]:

$$min \sum_{i}^{n} \omega(u_i) x_i$$

where $u_i = \frac{e_i}{cS}$. According to Salibian [5], the used constant c is of c = 9

The steps for regression coefficient estimation on S-Robust regression are as follows:

1. The initial estimator vector that is resulted, b_0, b_1, …b_p from regression model with least squares method, the error resulted is e_i
2. From the initial residual, counted $S_M = median\,|e_i|$ to find the value of $u_i = \frac{e_i}{cS}$.
3. Doing Iteratively Reweighted Least Squares to find the reweighted least squares estimators so that we will find the new residual
4. From the residual which has been found using the step 3, counted $s_s = \sqrt{\frac{n\sum_{i=1}^{n}(e_i^M)^2 - \left(\sum_{i=1}^{n} e_i^M\right)^2}{n(n-1)}}$
5. Robust Ss is counted in accordance with equation $min \sum_i^n \omega(u_i) x_i$
6. Weighted OLS is used to find the reweighted least squares estimators
7. Iterating is repeated until we find convergence so that we will find robust S regression coefficients.

5. Model Accuracy

Goodness of fit of a model can be measured based on the following criteria[3]:

1. Determinative Coefficient R^2, shows percentage of model compatibility. The higher the value of determinative coefficient, the better the used model.
2. Standard error of residual. According to the data characteristics of the data, standard deviation shows the data variation. The lower the standard deviation, the more homogenous or the better the model.

These two criteria will be used to compare goodness of fit between Ordinary Least Squares and S-Robust Regression. Therefore it will be shown which method can produce the best model.

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6. Statistical modeling of Bank Loan Distribution: Ordinary Least Squares vs S-Robust Regression

Types of the data used in the research is the secondary ones of Public Bank in Indonesia which cover Third Party Fund (TPF), *Capital Adequacy Ratio* (CAR), *Non Performing Loan* (NPL), Bank Loan and secondary data of interest rate of Certificate of Bank Indonesia (CBI), which we got from Statistik Perbankan Indonesia (Statistics of Indonesian Banking) and Statistik Ekonomi Moneter Indonesia (Economic Statistics of Indonesia Monetary) during 2005 - 2009 (monthly) [6]. Detection of outlier was made to show that the data of Bank loan distribution cannot be separated from the existence of the outlier. Detection outlier made by using Studentized Deleted Residual (SDR) Method, describes on the table 1.

Table 1 : Outlier Detection

Periode	Nilai Kredit Bank	Nilai SDR
Januari 2005	555.596	-1.95457
Januari 2008	987.404	-3.96709
Agustus 2008	1205.846	0.07414
Januari 2009	1289.839	-.53642

Based on the results of outlier detection by using studentized deleted residual we found four periods which is called outlier (Table 1). Throwing away those four observations is not good actions because the four data were got based on the bank's real condition during the period. It means it is true that during the period, bank loan distribution has different combination from the previous ones so that it resulted in the residual which tends to be much more than the other ones.

On the outlier-detected data, subsequently S-Robust Regression is used to model the influence of Third Party Fund (TPF), NPL (Non Performing Loan), *Capital Adequacy Ratio* (CAR) and interest rates of Bank Indonesia Certificate (CBI) on the amount of bank loan distribution in Indonesia. The results are as the following table:

Table 2: Modelling Results

Method	Regression Coefficients										R^2	Std Error of Res.
	Intercept		TPF		CAR		NPL		SBI			
	Unstd	Std	Unstd	Std	Unstd	Std	Unstd	Std	Unstd	Std		
OLS (without Outliers)	901.608 (a)		0.618 (a)	0.621	-32.745 (a)	-0.284	-25.642 (a)	-0.178	-1.518	-0.015	89.20%	89.8233
OLS (with outliers)	928.279 (a)	-	0.567 (a)	0.592	-30.488 (a)	-0.270	-33.382 (a)	-0.242	1.590	0.015	86.10%	102.258
S-Robust Regression	132.145 (a)		0.7799 (a)	0.8139	-9.6358 (a)	-0.0853	-19.5342 (a)	-0.1416	-3.451 (a)	0.033	94.25%	31.9392

Notes:
Unstd : Unstandardized coefficients
Std : Standardized coefficients
(a) significance at 5% level

The conclusions resulted on the method OLS and S-Robust Regression are contradicted with the theory stating that interest rates of Bank Indonesia is predicted to have negative and significant impact as the too high interest rates of CBI have made the bank prefer their fund in CBI to distributing bank loan [1]. When viewed from the criteria for the goodness of fit model, it was shown that S-Robust Regression method showed the highest value

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of R^2, it was 94.25%, 8.15% higher if compared to OLS method (with outlier) and 5.05% higher if compared to OLS method (without outlier).

It will be similar if they are compared based on the resulted residual standard deviation value, S-Robust Regression resulted in the lowest value, so we can conclude that if on the data the existence of outlier is detected, so we would better to use S-Robust Regression. Method 1 is obviously not recommended because it does not only ignore the data that is the result of real observation, but also it is even produce the lower value of R^2 and the higher residual deviation standard if compared to S-Robust regression's model

7. Decision making in Bank Loan Distribution

Statistical model resulted through S-Robust regression is:

$Y = 132.1452 + 0.7799\ TPF - 9.6358\ CAR - 19.5342\ NPL - 3.4512\ CBI + e_i$

Furthermore, the resulted statistical model can be used to base the decision making regarding the Policy on Bank Loan Distribution, consistent with the influence and contribution of each variable on Bank Loan distribution.

a. Third Party Fund
   The modeling product shows that Third Party Fund has positive and significant impact on Bank Loan distribution for 0.7799. It means the higher TPF successfully collected by the bank, total distributed bank loan will be encouraged to raise, so is otherwise. Bank loan distribution becomes bank's main priority in allocating its fund. That is because the bank's fund sources are the people's money so that it must redistribute the successfully collected TPF to the people. TPF is the variable which has the most significant impact on the bank loan distribution. This is shown in the value of TPF standardized coefficient about 0.8139, it is the highest variables. Hence, in running the financial intermediary function, TPF is the main funding resource. The funds collected from the people will reach 80% - 90% of the whole fund managed by the bank. The bank needs to take tight control concerning the TPF, so the higher the TPF value, the much more the bank loan needing to be distributed. In addition, Public Bank must run the TPF collection in optimum way. This can be done for example through appealing rewarding programs, the qualified sales people and service people, the desirable deposit interest rates, and wide and accessible service networks to attract the people to save their money in bank. On the other side, the tight rivalry to collect money/fund (either with other banks or the other non-bank financial institutions) and the needs as business entity to increase the profit income encourage the Public Bank to spend the successfully collected TPF optimally. The bank loan distribution is the primary TPF allocation in bringing about profit as well as model of moral responsibility of the banking sector to the TPF successfully collected from the people.

b. Capital Adequacy Ratio (CAR)
   The outcome of the research indicates that the raise or the decline of CAR during the research period influences the bank loan distribution significantly. The lower the CAR rate, the more the bank loans distributed. The high CAR indicates the idle availability of financial (capital) sources. The quite high CAR that is far above the minimum rates conditioned by Bank Indonesia obliges the Public Bank to more optimally spend the possessed financial (capital) sources through bank loan distribution (in productive sector). The gradually recovering economy and banking sector have driven optimization of benefits of financial (capital) sources through bank loan distribution. The Public Bank loan distribution experiences the augmentation in line with the decline of CAR.

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c. Non Performing Loan (NPL)
The research outcomes indicate that the raise or the decline of NPL during the research period influence the bank loan distribution significantly. The increasing NPL will push the declining number of distributed bank loans, otherwise does too. The Public Banks are compelled to have a good loans management, in order that the NPL rate remains at the highest limit preconditioned by Bank Indonesia amount of 5%. Thus, the Public Bank can distribute the loans optimally.

d. Interest Rates of Certificate of Bank Indonesia (CBI)
Modeling by using OLS and S-Robust regression give the different outcomes on the variable of Interest Rates of Certificate of Bank Indonesia (CBI). OLS model indicates that interest rates of Certificate of Bank Indonesia (CBI) influence positively and insignificantly, while S-Robust Regression model indicates that Interest Rates of CBI has negative and significant impact. On the other side, interest rates of CBI surely influence the bank loans interest rates. CBI is issued by Bank Indonesia as one tool for Open Market Operation, transactional activities in financial market done between BI and other banks or parties for monetary control. The interest rates are determined through market mechanisms based on the bidding system. CBI is the instrument which offers a quite competitive as well as paying failure risk free return. The fact discloses that today many financial institutions regard CBI as one of the attractive instrument of investment [1]. The excessively high interest rates of CBI make the banks prefer saving the fund in CBI to distributing the loans. It can be concluded that S-Robust Regression can prove the existing theory which states that interest rates of CBI has negative and significant effects on Bank Loan distribution.

8. Conclusion

On statistical modeling which analyzes the influences among some predictor variables on the response variables, it needs to make outlier assessment, because the existence of the outlier may influence the resulted model. On the modeling, analyzing the influences of Third Party Fund, Capital Adequacy Ratio, Non Performing Loan and interest rate of Bank Indonesia Certificates on Bank Loan Distribution we have identified some outliers. Subsequently it is shown that modeling that uses OLS and S-Robust Regression provide the different outcomes. The difference lies on impact values of each predictor variables on the response variable, as well as its significance. Based on the value of Goodness of fit, S-Robust Regression Model is the best one. This is shown by the value of R^2 which is 8.15% higher than OLS, as well as the much lower standard error of residual value than OLS. Thus, we can make conclusion that if on the data identified outlier, it will be better to apply S-Robust Regression method. The produced model is expected to be key for bank's policy making in bank loan distributive activities.

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