ISSN 2356-4407

www.STIKI.ac.id

Bersama memajukan ICT Indonesia

PROCEEDING

IC - ITECHS 2014

The 1st International Conference on Information Technology and Security

Malang, November 27, 2014

Published by:

Lembaga Penelitian dan Pengabdian pada Masyarakat

Sekolah Tinggi Informatika dan Komputer Indonesia

PROCEEDING

The 1st International Conference on Information Technology and Security (IC-ITechs) November 27, 2014

Editors & Reviewers:

Tri Y. Evelina, SE, MM Daniel
Rudiaman, S.T, M.Kom Jozua
F. Palandi, M.Kom

Layout Editor:

Eka Widya Sari

LEMBAGA PENELITIAN & PENGABDIAN KEPADA MASYARAKAT
Sekolah Tinggi Informatika & Komputer Indonesia (STIKI) – Malang
Website: itechs.stiki.ac.id E-mail: itechs@stiki.ac.id

PROCEEDING

The 1st International Conference on Information Technology and Security (IC-ITechs) November 27, 2014

ISSN 2356 - 4407

viii + 276 hlm; 21 X 29,7 cm

Reviewers & Editors:

Tri Y. Evelina, SE, MM
Daniel Rudiaman, S.T, M.Kom
Jozua F. Palandi, M.Kom

Layout Editor:

Eka Widya Sari

Published by:
LEMBAGA PENELITIAN & PENGABDIAN KEPADA MASYARAKAT
Sekolah Tinggi Informatika & Komputer Indonesia (STIKI) – Malang
Jl. Raya Tidar 100 Malang 65146, Tel. +62-341 560823, Fax. +62-341 562525
Website: itechs.stiki.ac.id E-mail: itechs@stiki.ac.id

GREETINGS

Head of Committee IC-Itechs

For all delegation participants and invited guest, welcome to International Conference on Information Technology and Security (IC-Itechs) 2014 in Malang, Indonesia.

This conference is part of the framework of ICT development and security system that became one of the activities in STIKI and STTAR. this forum resulted in some references on the application of ICT. This activity is related to the movement of ICT development for Indonesia.

IC-Itechs aims to be a forum for communication between researchers, activists, system developers, industrial players and all communications ICT Indonesia and abroad.

The forum is expected to continue to be held continuously and periodically, so we hope this conference give real contribution and direct impact for ICT development.

Finally, we would like to say thanks for all participant and event organizer who involved in the held of the IC-Itechs 2014. We hope all participant and keynote speakers got benefit from this conference.

ISSN 2356 - 4407
The 1st International Conference
on Information Technology and Security

LIST OF CONTENT

Implementation, Challenges, and Cost Model for Calculating Investment Solutions of Business Process Intelligence ..... 1 – 8
Arta M. Sundjaja

Bisecting Divisive Clustering Algorithm Based On Forest Graph ..... 9 – 14
Achmad Maududie, Wahyu Catur Wibowo

3D Interaction in Augmented Reality Environment With Reprojection Improvement on Active and Passive Stereo ..... 15 – 23
Eko Budi Cahyono, Ilyas Nuryasin, Aminudin

Traditional Exercises as a Practical Solution in Health Problems For Computer Users ..... 24 -29
Laurentius Noer Andoyo, Jozua Palandi, Zusana Pudyastuti

Baum-Welch Algorithm Implementation For Knowing Data Characteristics Related Attacks on Web Server Log ..... 25 -36
Triawan Adi Cahyanto

Lighting System with Hybrid Energy Supply for Energy Efficiency and Security Feature Of The Building ..... 37 – 44
Renny Rakhmawati, Safira Nur Hanifah

Interviewer BOT Design to Help Student Learning English for Job Interview ..... 45 – 50
M. Junus, M. Sarosa, Martin Fatnuriyah, Mariana Ulfah Hoesny, Zamah Sari

Design and Development of Sight-Reading Application for Kids ..... 51 -55
Christina Theodora Loman, Trianggoro Wiradinata

Pembuatan Sistem E-Commerce Produk Meubel Berbasis Komponen ..... 66 – 74
Sandy Kosasi

Crowd sourcing Web Model of Product Review and Rating Based on Consumer Behaviour Model Using Mixed Service-Oriented System Design ..... 75 – 80
Yuli Adam Prasetyo

Predict Of Lost Time at Traffic Lights Intersection Road Using Image Processing ..... 81 – 88
Yoyok Heru Prasetyo Isnomo

Questions Classification Software Based on Bloom's Cognitive Levels Using Naive Bayes Classifier Method ..... 89 – 96
M. Fachrurrozi, Lidya Irfiyani Silaban, Novi Yusliani

A Robust Metahuiristic-Based Feature Selection Approach for Classification ..... 97 – 102
Alna Musdholifah, Erick

Building a Spatio-Temporal Ontology for Artifacts Knowledge Management ..... 103 - 110
Nurul Fajrin Ariyani, Daniel Oranova Siahaan

Decision Support on Supply Chain Management System using Apriori Data Mining Algorithm 111-117
Eka Widya Sari, Ahmad Rianto, Siska Diatinari Andarawarih

Object Recognation Based on Genetic Algorithm With Color Segmentation 118-128
Evy Poerbaningtyas, Zusana E. Pudyastuti

Developing Computer-Based Educational Game to Support Cooperative Learning Strategy 129-133
Eva Handriyantini

The Use of Smartphone to Process Personal Medical Record by using Geographical Information System Technology 134-142
Subari, Go Frendi Gunawan

Implementasi Metode Integer Programming untuk Penjadualan Tenaga Medis Pada Situasi Darurat Berbasis Aplikasi Mobile 143-148
Ahmad Saikhu, Laili Rochmah

News Sentiment Analysis Using Naive Bayes and Adaboost 149-158
Erna Daniati

Penerapan Sistem Informasi Akutansi pada Toko Panca Jaya Menggunakan *Integrated System* 159-163
Michael Andrianto T, Rinabi Tanamal, B.Bus, M.Com

Implementation of Accurate Accounting Information Systems To Mid-Scale Wholesale Company 164-168
Aloysius A. P. Putra, Adi Suryaputra P.

Conceptual Methodology for Requirement Engineering based on GORE and BPM 169-174
Ahmad Nurulfajar, Imam M Shofi

Pengolahan Data Indeks Kepuasan Masyarakat (IKM) Pada Balai Besar Pengembangan Budidaya Air Tawar (BBPBAT) Sukabumi dengan Metode Weight Average Index (WAI) 175-182
Iwan Rizal Setiawan, Yanti Nurkhalifah

Perangkat Lunak Keamanan Informasi pada Mobile Menggunakan Metode Stream dan Generator Cipher 183-189
Asep Budiman Kusdinar, Mohamad Ridwan

Analisys Design Intrusion Prevention System (IPS) Based Suricata ... 190-193
Dwi Kuswanto

Sistem Monitoring dan Pengendalian Kinerja Dosen Pada Proses Perkuliahan Berbasis *Radio Frequency Identification (RFID)* Di Lingkungan Universitas Kanjuruhan Malang 194-205
Moh.Sulhan

Multiple And Single Haar Classifier For Face Recognition 206-213
Go Frendi Gunawan, Subari

Sistem Penunjang Keputusan Untuk Menentukan Rangking Taraf Hidup Masyarakat Dengan Metode Simple Additive Weighting 214-224
Anita, Daniel Rudiaman Sijabat

Optical Character Recognition for Indonesian Electronic Id-Card Image 225-232
Sugeng Widodo

Active Noise Cancellation for Underwater Environment using Raspberry PI 233-239
Nanang syahroni, Widya Andi P., Hariwahjuningrat S, R. Henggar B

Implementasi Content Based Image Retrieval untuk Menganalisa Kemiripan Bakteri Yoghurt Menggunakan Metode Latent Semantic Indexing 240-245
Meivi Kartikasari, Chaulina Alfianti Oktavia

Software Requirements Specification of Database Roads and Bridges in East Java Province Based on Geographic Information System 246-255
Yoyok Seby Dwanoko

Functional Model of RFID-Based Students Attendance Management System in Higher Education Institution 256-262
Koko Wahyu Prasetyo, Setiabudi Sakaria

Assessment of Implementation Health Center Management Information System with Technology Acceptance Model (TAM) Method And Spearman Rank Test in Jember Regional Health 263-267
Sustin Farlinda

Relay Node Candidate Selection to Forwarding Emergency Message In Vehicular Ad Hoc Network 268-273
Johan Ericka

Defining Influencing Success Factors In Global Software Development (GSD) Projects 274-276
Anna Yuliarti Khodijah, Dr. Andreas Drechsler

Defining Influencing Success Factors In Global Software Development (GSD) Projects

Anna Yuliarti Khodijah, Dr. Andreas Drechsler
Deloitte Consulting South East Asia , University of Duisburg-Essen
annayuliartikh@gmail.com , andreas.drechsler@uni-due.de

Abstract

Context: Global Software Development (GSD) continues to experience substantial growth of trend concerning the development of software virtually distributed throughout different countries. GSD has several advantages as opposed to the collocated development, but there are also a number of challenges. As a project manager, we should know these and find ways to successfully manage the project virtual team. Objective: This paper is to delineate the study to define which factors influence the success of GSD projects. Method: Using the literature review method, 5 GSD success factors-related literature were selected and reviewed to distinguish the relevant success factors as being reported in the literature. Results: The study indicated that there are different opinions in considering which factors are most important to GSD project success. Some experts see the "people" side of the team would contribute most, but others still think that the "geographical" sides (language barriers, culture, distance, time difference) are the most dominant factors. Conclusion: The results obtained in this paper addressed two aspects; one showing that the challenges of GSD is changing, thus making the influencing factors changing too. Second, this paper can serve as a guide and insight for project managers to better understand how to manage and coordinate a virtual talented team across different countries.

Keywords *: global software development, virtual team, project management, literature review, project success factors*

INTRODUCTION

In recent years, to cope with the increasing demand of globalization of business, a number of companies have undertaken the Global Software Development (GSD) as their preferred methodology in software development practices. Team members of GSD project are located in dispersed area, making it not feasible to have them working within the same site, or so called collocation. The team will collaborate virtually instead.

The underlying reasons why many companies adopted this new methodology is for the facts that it is not just only cost effective, but also reduced time to market due to faster development, increased flexibility, access to skilled manpower from global resources, and close proximity to customers (Bird et al. 2009; Carmel and Agarwal 2001; Herbsleb and Moitra 2001) GSD (also termed distributed software development (DSD), distributed software engineering (DSE) and global software engineering (GSE)).

Working on a software development practice in the global context has benefits and also drawbacks. The benefits would be time zone effectiveness and reduced cost. While the drawbacks are poor communication, lack of trust and coordination. Therefore it is essential to determine which key factors which contribute significantly to the GSD project success. The main objective of this paper is to delineate the influencing key success factor of GSD projects by using literature review approach.

RESEARCH METHOD

Due to the high interest in GSD, a number of systematic literature reviews (SLRs) have attempted to aggregate information from a large number of papers reporting on GSD. An SLR is a way of synthesizing existing research by following a rigorous, pre-defined procedure aimed at reducing bias. They are based on aggregating the research undertaken in other studies. The aggregated studies are referred to as primary studies. Since it summarizes the research undertaken in primary studies, a SLR is referred to as a secondary study. A systematic mapping study, or mapping study, is a form of SLR that aims to address a broader set of research questions in order to provide a 'map' of a particular topic area by investigating, for example, the number of papers published on the topic per year and where the papers are most frequently published (B. Kitchenham, 2007). The search for the appropriate literature on the influencing factors of global software development project began with the various literature databases, such as Google Scholar, and Science Direct – this was carried out by using a relevant set of keywords and phrases such as global software development, virtual team, project management, literature review, project success factors.

RESULT AND DISCUSSION

The study indicated that there are different opinions in considering which factors are most important to GSD project success. Some experts see the "people" side of the team would contribute most, but others still think that the "geographical" sides (language barriers, culture, distance, time difference) are the most dominant factors. Geographical distance, different time zones, and differences of national cultures are the characteristics of global software development project teams according to Camel (1999). He also emphasized that language differences are part of the national culture.

However other studies stated that languages are as a separate aspect (Rosenkranz et al. 2013; Sosa et al. 2002). So based on the "geographical" sides, there are at least four factors identified by these studies: geographical distance, time zone, cultural and language differences. Meanwhile, recent studies indicated different results. Since the "geographical" factor-related issues have been mitigated by the presence of the more advance communication technology thus improving the process of knowledge transfer, the GSD project team is now facing new challenges, in which the initial critical issues that were related to geographical sides, were shifted to different areas of concern, more on to the "people" side, such as team member performance and skills. There are many other factors such as the learning curve (people are not familiar with new technology and tend to resist when they need to learn a new means of working), poor interoperability between tools, responsibilities and roles are not properly defined, lack of knowledge and the high cost of investment for companies (J. Eskeli, J. Maurolagoitia, 2011)

This finding was a major breakthrough, as most literatures related to GSD in the past years indicated that language, cultural differences and geographical distance as key influence factors in GSD.

CONCLUSION

The purpose of this paper was to carry out a comprehensive and systematic review of the literature of the influencing success factors to global software development project. The results obtained in this paper addressed two aspects; one showing that the challenges of GSD is changing, thus making the influencing factors changing too. Second, this paper can serve as a guide and insight for project managers to better understand how to manage and coordinate a virtual talented team across different countries. This paper is also a pioneering step to

undertake a more comprehensive literature review in order to develop conceptual model to structure and outline the influence factors for global software development success, by developing the integrated research model and using meta-analysis of existing findings.

References

[1] Bird, C., Nagappan, N., Devanbu, P., Gall, H., and Murphy, B. 2009. "Does distributed development affect software quality? An empirical case study of Windows Vista," *Communications of the ACM* (52:8), pp. 85–93.

[2] Carmel, E. 1999. *Global software teams: collaborating across borders and time zones*, Upper Saddle River, NJ: Prentice Hall.

[3] Carmel, E., and Agarwal, R. 2001. "Tactical approaches for alleviating distance in global software development," *IEEE Software* (18:2), pp. 22–29.

[4] Cooper, H. M. 2010. *Research synthesis and meta-analysis: a step-by-step approach*, (4th ed.) Los Angeles: Sage.

[5] Cooper, H. M., Hedges, L. V., and Valentine, J. C. 2009. *The handbook of research synthesis and metaanalysis*, (2nd ed.) New York: Russell Sage Foundation.

[6] Global Software Development, ICSE Edinburgh, Scotland, 2004, pp. 756–757.

[7] Development (DiSD 2005), Presented at the 13th IEEE Requirements

[8] Engineering Conference Paris, France, 2005, pp. 32–48.

[9] Zones, Prentice Hall PTR, Upper Saddle River, NJ, USA, 1999.

[10] Espinosa, J., Slaughter, S., Kraut, R., and Herbsleb, J. 2007. "Team Knowledge and Coordination in Geographically Distributed Software Development," *Journal of Management Information Systems* (24:1), pp. 135–169.

[11] Herbsleb, J. D., and Mockus, A. 2003. "An empirical study of speed and communication in globally distributed software development," *IEEE Transactions on Software Engineering* (29:6), pp. 481–494.

[12] Herbsleb, J. D., and Moitra, D. 2001. "Global software development," *IEEE Software* (18:2), pp. 16–20.

[13] Hsieh, Y. 2006. "Culture and Shared Understanding in Distributed Requirements Engineering," , October, pp. 101–108.

[14] J.D. Herbsleb, Global software engineering: the future of socio-technical

[15] coordination, Presented at the International Conference on Software

[16] Engineering: Future of Software Engineering (FOSE'07), Minneapolis, MN,

[17] USA, 2007, pp. 188–198.

[18] J. Eskeli, J. Maurolagoitia, Global software development: current challenges and solutions, in: 6th International Conference on Software and Data Technologies (ICSOFT), Seville, Spain, 2011, pp. 29–34.

[19] Jehn, K. A., Northcraft, G. B., and Neale, M. A. 1999. "Why Differences Make a Difference: A Field Study of Diversity, Conflict, and Performance in Workgroups," *Administrative Science Quarterly* (44:4), pp. 741–763.

[20] Nonaka, I., and Takeuchi, H. 1995. *The knowledge-creating company: how Japanese companies create the dynamics of innovation*, New York: Oxford University Press.

[21] Prikladnicki, R., Nicolas Audy, J. L., and Evaristo, R. 2003. "Global software development in practice lessons learned," *Software Process: Improvement and Practice* (8:4), pp. 267–281.