The Rector's Greeting

Greetings and a warm welcome to the all academic researchers, practitioners, industry and business person as well as policy makers. Thank you for attended this 4rd international conference on Information Technology and Engineering Application 2016 (ICIBA 2016).

ICIBA is an annual event focusing on state of the art technologies pertaining to digital information and communications and its application in business and industry as well as government. The applications of advanced information technology to such domains as networking, security, engineering, education, finance, geosciences, health, transportation, supply chain management and logistics are among topics of relevance to ICIBA. The conference features keynote speakers, the best student award, poster award, technical open panel, and workshops/exhibits from industry, government and academia as well postgraduate student colloquium.

All papers for the ICIBA 2016 on this Conference Proceeding (ISBN) was indexed by EBSCO, Google Scholar, and sent to be reviewed by EiCompendex and ISI Proceedings.

Our gratitude to all the participants who has take a part in this conference, I hope we can take the advantage of academic research findings, to have better insight about the importance of IT and business application, to the country's economic development

Sincerely yours,
Prof. Ir. H. Bochari Rahman, M.Sc

RECTOR of BINA DARMA UNIVERSITY

PROCEEDING

INTERNATIONAL CONFERENCE ON INFORMATION TECHNOLOGY AND ENGINEERING APPLICATION 2015

IT and Engineering for Better life

Penerbit :
PPP-UBD Press
Published by:
Pusat Penerbitan dan Percetakan Universitas Bina Darma Press (PPP-UBD Press) Palembang

Proceeding International Conference on Information Technology and Engineering Application

Published by:
Penerbit :
PPP-UBD Press

CONFERENCE COMMITTEE

REVIEWER & EDITOR

Support by. Bina Darma University
Steering Committee ICIBA
Cover Design by. Deni Erlansyah
Printed in Palembang, Indonesia, Febuari 2016

CONTENTS

No	Titel	Page
	INFORMATION TECHNOLOGY	
1.	Application of 36 Cell Zachman Framework for Integrated Spatial Planning Tax On Dinas Pendapatan Daerah Kota Palembang **Paisal, M. Izman Herdiansyah, Afriyudi**	1 - 5
2.	Design of Security Systems Cabin Car From Danger Gas CO (Carbon Monoxide) With SMS Gateway Information and Data Logger **Slamet Widodo, Ahyar Supani**	6 - 14
3.	Implementation Felder Silverman Learning Style Model for Content Support based on Ontology in Indonesia Learning Management System **Bernard R. Suteja**	15 - 21
4.	Steganography Application Bitwise Method of Encrypted Message with Vigenere Cipher **Nazori Agani, Charles Victor B. Saragih, Chris Simon**	22 - 31
5.	Vector Machine Learning Method for Text Mining Indonesian Social Media Named Entity Recognition **Agus Suryana, Sri Ipnuwati**	32 - 37
6.	Software Quality Assurance of Learning Game Using Deutsch and Willis Method **Jumdapiokta, Sunda Ariana, Alex Wijaya**	38 - 45
7.	Implementation Felder Silverman Learning Style Model for Content Support based on Ontology in Indonesia Learning Management System **Adelin, Muhammad Izman Herdiansyah, Afriyudi**	46 - 54
8.	Characteristics of Users Website Kopertis II Palembang **Eka Hartati, Lin Yan Syah, Linda Atika**	55 - 60
9.	Analysis of Factors Affecting the Use of Google Classroom to Support Lectures **Andri Wijaya**	61 - 68

10. Enterprise Architecture Planning Design of Information Systems Technology at PT Kreasi Utama Mandiri Using Zachman Framework — 69 - 73
Surahmat, Bochari Rahman, Yesi Novaria Kunang

11. Determining The Quality of Lecturer using Fuzzy Simple Additive Weighting (SAW) — 74 - 79
Satria Abadi, Sri Hartati, A. Humaidi

12. Application Location Based Service (LBS) Location Search Palembang Nature-Based Android — 80 - 85
Intan Okta Sari, Leon Andretti Abdillah, Kiky Rizky Nova Wardhani

13. Extracted Social Network Mining — 86 - 91
Mahyuddin K. M. Nasution

14. Information Systems Architecture Online Learning in School with the Zachman Framework — 92 - 98
Hatta Wijaya, M. Izman Herdiansyah, A. Haidar Mirza

15. Improved Models of Wireless Pricing Scheme in Multiple Class QoS Networks by Determining the Base Price Value — 99 - 104
Fitri Maya Puspita, Irmeilyana, Iffah Husniah

16. Diabetic Retinopathy Stages Classiffcation Using 3D-GLCM — 105 - 112
Rocky Yefrenes Dillak, Sri Andayani

17. Comparison Route Redistribution on Dynamic Routing Protocol (EIGRP into OSPF and EIGRP into IS-IS) — 113 - 119
Chairul Mukmin, Darius Antoni, Edi Surya Negara

18. Nonlinear Programming Problem of Bandwidth Based and VolumeBased Call Pricing Scheme in Wireless Networks — 120 - 126
Fitri Maya Puspita, Kamaruzzaman Seman, Bachok M. Taib, Ismail Abdullah

19. Survey Application for Telkomsel Customer Satisfaction — 127 - 134
Lukman Sunardi, Nta Rosa Damayanti

20. Genetic Algorithms Method On Street Lighting Energy Saving — 135 - 140
Jefri Lianda, Hikmatul Amri

21. The Implementation of Knowledge Management Systems in Assets Reconciliation — 141 - 147
Meiliya Fitriyani, Leon Andretti Abdillah, Andri

22. Performance Analysis for Migration Method IPv4 to IPv6 Using Dual-Stack Technique
Aan Restu Mukti, Zainuddin Ismail, Edi Surya Negara 148 - 154

23. Implementation of Business Intelligence Dashboard In Research, Service / Dedication To Society And Cooperation
Ahmad Kurniawan, Yesi Novaria Kunang, Susan Dian Purnamasari 155 - 161

24. Web Application Content News Aggregator on Communication Devices Based On Android
Merry Agustina, Usman Ependi 162 - 167

25. Design and Development of a CAD Tool With Real Time Analysis for Dreadful Diseases
Dr.S.Asif Hussain, S.Jakeer Hussain, Edi Surya Negara 168 - 174

26. Evaluation of Governance Maturity Level Sistem Pembelajaran Online Dan Interaktif by Using Cobit 5 Framework
Okti Firnawati, Darius Antoni, Diana 175 - 181

27. Personal Financial Management Application Design
Rusdiyanto 182 - 189

28. Link Aggregation Analysis on MikroTik to Increase Throughput Bandwidth of Point to point Network
M. Agus Syamsul Arifin 190 - 197

29. Analysis of Transfer Rate Node Addition on Mobile Ad Hoc Network (MANET) Infrastructure for File Server
Rudi Kurniawan 198 - 204

30. Analysis of Effects of Application of E -learning activeness Against Students In Learning Activity Using teaching Technology Acceptance Model (TAM)
(Studi Kasus : Sekolah Tinggi Teknologi Pagar Alam)
Sasmita 205 - 209

31. Conceptual Framework Evaluation of Information Systems Badan Penyelenggara Jaminan Sosial (BPJS) Health In Palembang
Febriyanti Darnis, Darius Antoni, Linda Atika 210 - 216

32. Efektivitas Penerapan Penerimaan Peserta Didik Baru (PPDB) *Online* Pada Dinas Pendidikan Pemuda Dan Olahraga Kota Palembang
Ahmad Rivai 217 - 221

33. Development of Strategy Plan IS/IT In Urban Planning And Development Board of Palembang City : Literature Review 222 - 228
Serry Davizan, Zainuddin Ismail, Yesi Kunang

34. Identifying The Influencial Success Factors of E-Government in Indonesia by Using Systematic Review 229 - 234
Alan Saputro, Darius Antoni, Muhamad Akbar

35. Relationship Between The Application of Information Technology (IT) And Its Effect On The Implementation of National Exam Success Computer-Based (UNBK) (A Conceptual Framework) 235 - 241
Supriyadi, Darius Antoni, A. Haidar Mirza

36. Evaluation of Application Of Information Technology Using Cobit Framework Model (Case Study Pt Bni Life Palembang) 242 - 251
Fahmi Ajismanto, Zainuddin Ismail, Widya Cholil

37. Implementing IT Balanced Scorecard in Measuring System Performance : PT. Indah Logistic Cargo 252 - 257
Mardiana, Lin Yan Syah, Yesi Novaria Kunang

ENGINEERING APPLICATION

23. Design of Plastic Mulch Hole Maker to Decrease Work Load and Increase Work Speed Strawberry Farmer in Bali 258 - 263
M. Yusuf, Nyoman Adiputra, I Dewa Putu Sutjana, Ketut Tirtayasa

24. Design of Baby Walking Assistant (AB3) by Using Axiomatic Design Method 264 - 272
Dian Janari

25. Design Push Up DetectorUsing Quality Function Deployment Method and Anthropometry 273 - 278
Ch Desi Kusmindari, Yanti Pasmawati, Ari Muzakir

26. Flow Pattern in the Estuary of Musi River Using MIKE-21 Flow Model 279 - 283
Achmad Syarifudin, Eka Puji Agustini

The 5th ICIBA 2016, International Conference on
Information Technology and Engineering Application
Palembang-Indonesia, 19-20 February 2016

Implementation of Business Intelligence Dashboard In Research, Service / Dedication To Society And Cooperation

Ahmad Kurniawan, Yesi Novaria Kunang, Susan Dian Purnamasari

Ilmu Komputer, Universitas Bina Darma
Jalan Ahmad Yani No.3, Plaju, Palembang
e-mail: dolorkito1945@gmail.com, yesinovariakunang@binadarma.ac.id, susandian@binadarma.ac.id

Abstract

Accreditation of department is an education quality measuring standard, such as recognition ondepartment in university for showing about department in university has fulfilled standard or requirement which is assigned by Badan Akreditasi Nasional Perguruan TInggi (BAN-PT). Accreditation of department has seven standards which one of standard is research, service / dedication to society and cooperation by lecturer and student. Those reasons make University of Bina Darma evaluate, monitor, and fulfill requirement on 7thstandard. One of solution which can be implemented is business intelligence dashboard.Business intelligence dashboard is an application which has function for collecting, analyzing, saving, and providing required data in organization or company into knowledge, then be used for supporting decision and planning. Business intelligence dashboard is going to be implemented to report of accreditation of department in the University of Bina Darma in accordance with 7thstandard. On these business intelligence dashboards, University of Bina Darmacan fill 7thstandard efficiently and correctly.

Keywords : *Accreditation of department, BAN-PT, Dashboard, Business intelligence and7th standard*

1 INTRODUCTION

So rapidly development ofuniversity in Indonesia, make government set a university education quality standard, where kind of universities are state university, official university, religious university and private university. These standards become reference and benchmark of quality of university education, called accreditation.

Accreditation is an education quality standard, form recognition of university or department for showing about a university or department has fulfilled standard or requirement that is assigned by BAN-PT. Implementation of accreditation by BAN-PT is done with evaluating

a process,performance and correlation with goal, input, process and output from university or department, that are responsible with each university and department. That accreditation is accreditation of department that always do every 5 years.

Research and service / dedication to society, and cooperation is seventh item that is evaluated by BAN-PT. This standard is a reference of education quality, service / dedication to society and cooperation that is organized and related to develop department. University of Bina Darma has borang team that has job for fulfilling criteria that is set on 7thstandard. Items that are evaluated on 7thstandard are department, lecturer, source of research fund and dedication fund, research and dedication of lecturer in the last three years.

After all of items were getting, team started to do data collecting process. Those data are collected in excel form. Team started to do selecting process, evaluating, and calculating that based onstandard 7th and is set on BAN-PT. Amount of big data that are processed, can be able error in arranging 7thstandard. This condition always held up performance of team. Whereas those activities are carried out periodically every five years. Therefore, it needed a technology that can help team correctly and efficiently, then reduce error in arranging accreditation.

One of technology can be used for helping those problems is business intelligence. Business intelligence is a system that has function for collecting, analyzing, saving and facilitating data that are needed an organization or company in knowledge form, then are used for supporting decision and planning. With those power, business intelligence can help borang team.

2 RESEARCH METHODOLOGY

Methods are used in this research is business intelligence roadmap[3]. According to Larisa T.Mosss book, business intelligence is divided into analysis method and design method [3].

2.1 Analysis Method

Analysis method that is used consist of seven steps, among others

1. Justification

   Business Case Assessment For designing a business intelligence application, first step that must be done is determine, check or evaluate and collect needed information, such as goal, strategic and aim an organization.

2. Planning

   This step has two main activities that are done, they are enterprise infrastructure evaluation and project planning.

   (a) Enterprise Infrastructure

   Evaluation Infrastructure Design that is done is for BI application can run well. This step consists of Technical Infrastructure and non-technical infrastructure.

   (b) Project Planning

   This step is created for design of application that can finish on time.

3. Business Analysis

This step has four main activities, they are project requirement definition, data analysis, application prototyping and metadata repository analysis.

(a) Project Requirement Definition

This step is evaluating of available infrastructure, what they are appropriate with needed infrastructure or not.

(b) Data analysis

This step is evaluating of quality of data, what they are good quality or not.

(c) Application Prototyping

This created feature designs that base on needed company, then application is created appropriately with features that are agreed or negotiated in prototype form

(d) Metadata Repository Analysis

Metadata is designed for saving company contextual information.

2.2 Design Method

According to Larissa T.Mosss book, design method that was used, consisted of seven steps, among others[3] :

1. Design

   (a) Database design

   Database design is done for supporting application that is built with creating star schema or snowflake schema.

   (b) ETL design

   This step is done if those data are bad quality. Yet, if data are good quality, so this step does not need to be done.

   (c) Metadata repository design

   This step is done for designing of repository metadata. This is for showing source of database that are used.

2. Construction

   (a) ETL Development

   This step described about process of drawing ETLthat was done in creating business intelligence dashboard. This step will do if data are bad quality, and this step wont do if data are good quality.

   (b) Application Development

   This step is creating business intelligence dashboard and result of output or display from that application.

   (c) Data Mining

   It is carried out with clustering technique. If data dont need to cluster, so this this step doesnt need to be carried out.

(d) Metadata Repository Development This step showed display from each metadata repository that were created before in project that based on result of information. Metadata repository consists of OLAPs data.

3 THEORETICAL BASIC

3.1 Dashboard

There are several kind of dashboard, according to Rasmussen, Bansal and Chen put forward three types of dashboard[4], among others :

1. Strategic Dashboard

   Strategic dashboard is used for supporting management of strategic level that give information and make business decision, predict chance and give guidance of achievement of strategic goal.

2. Tactical Dashboard

   This dashboard focus on analysis process for determining factor that caused a condition or event.

3. Operational Dashboard

   Operational dashboard has function as supporting and monitoring activities of specific business process.This focus on monitoring activities.

4 RESULT

Explainning from result of dashboards that are created, among others:

1. Data were taken from sources where data were saved in MySQL database. Those data consisted of 3 tables, factPenelitian table, factPengabdian table and dimSDM table. FactPenelitian table consisted of 1662 data, factPengabdian consisted of 1321 data and dimSDM table consisted of 275 data. Those tables were imported to SQL Server database with using SQL Server Integration Service (SSIS). In SSIS, this also created dimAsalBiaya table from factPenelitian or factPengabdian table, and dimProgramStudi table was from dimSDM. dimAsalBiaya consisted of 8 data and dimProgramStudi consist of 19 data.

2. Those tables were cleaned in SQL Server Integration Service (SSIS).

3. Then those tables were analyzed in SSAS (SQL Server AnalysisService). This step had goal for creating OLAP (Online Analytical Processing). In this step, it consisted of cube and dimension. Cubes consisted of two cubes, penelitian cube and pengabdian cube, whereas dimensions consisted of AsalBiaya, SDM, Penelitian and Pengabdian dimension. If there was attribute that was showed, so it can be added that attribute in data source view to available dimension. it can be seen at picture 1.

4. Then creating dashboard in SSRS (SQL Server ReportAnalysis). This step created dashboards that were designed before with using data source from SSAS that were created before. Display of those dashboard consisted of penelitian table, pengabdian table,

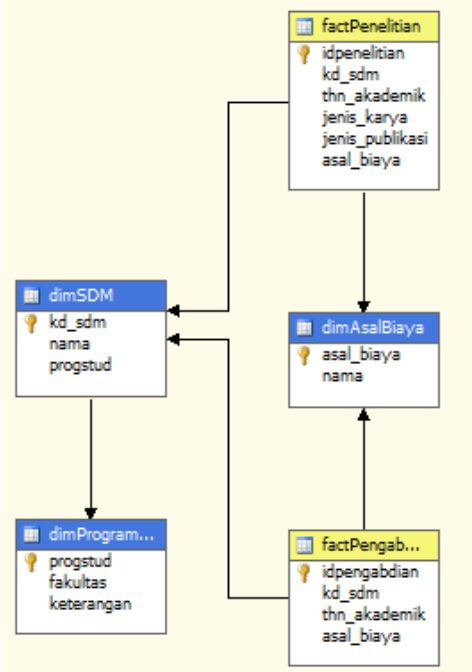
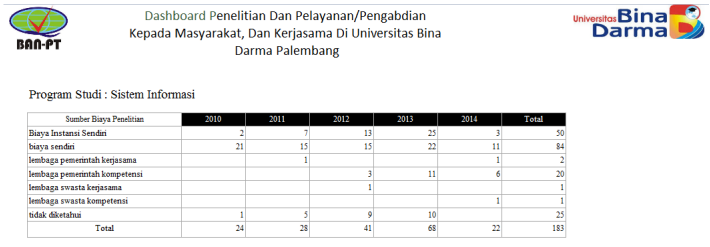


Figure 1: Display Cube

penelitian dashboard and pengabdian dashboard.As for result of dashboard display, it can be seen at picture 2,3,4 and 5:

5. Result of dashboards that were created, were deployed to reporting server with submitting target of server url. This target was http://localhost/ReportServer. Url was run on Internet Explorer.



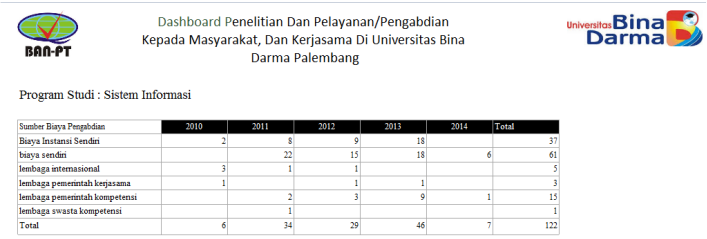
Sumber Biaya Penelitian	2010	2011	2012	2013	2014	Total
Biaya Instansi Sendiri	2	7	13	25	3	50
biaya sendiri	21	15	15	22	11	84
lembaga pemerintah kerjasama		1			1	2
lembaga pemerintah kompetensi			3	11	6	20
lembaga swasta kerjasama			1			1
lembaga swasta kompetensi					1	1
tidak diketahui	1	5	9	10		25
Total	24	28	41	68	22	183

Figure 2: Display Research Table

5 CONCLUSION

Conclusion that can be got from this research, among others:

1. Designing of business intelligence dashboard followed steps or rules on business intelligence roadmap[3]. Business intelligence dashboard can produce informations that con-



Dashboard Penelitian Dan Pelayanan/Pengabdian Kepada Masyarakat, Dan Kerjasama Di Universitas Bina Darma Palembang

Program Studi : Sistem Informasi

Sumber Biaya Pengabdian	2010	2011	2012	2013	2014	Total
Biaya Instansi Sendiri	2	8	9	18		37
biaya sendiri		22	15	18	6	61
lembaga internasional	3	1	1			5
lembaga pemerintah kerjasama	1		1	1		3
lembaga pemerintah kompetensi		2	3	9	1	15
lembaga swasta kompetensi		1				1
Total	6	34	29	46	7	122

Figure 3: Display Dedication Table

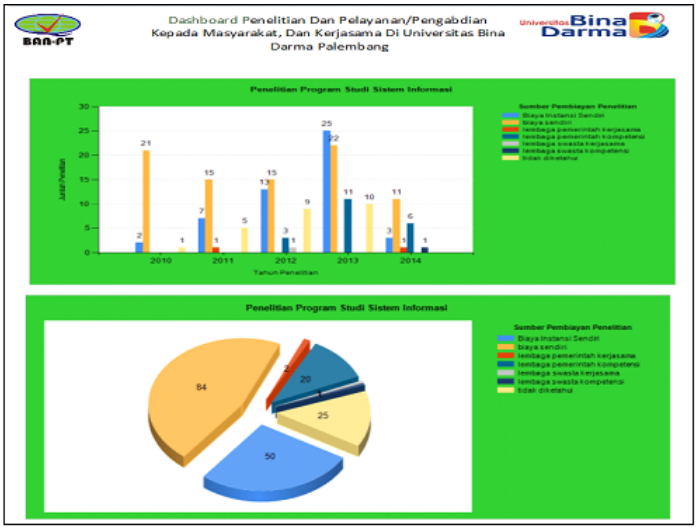


Figure 4: Display penelitian Dashboard

tain matrix and table that can help borang team in monitoring research and dedication of lecturer, and giving informations accurately to borang team about lecturer research data and lecturer dedication data in the last five years, accordance with 7thstandard, that eased teams job and efficiently time.

2. Business intelligencedashboard that were created, consisted of penelitian table, pengabdian table, penelitian dashboard and pengabdiandashboardeach department in University of Bina Darma.

3. Business intelligence dashboard in research, service or dedication and cooperation with lecturer and student of University of Bina Darma, gave information about mount of research and dedication of lecturer department during the last five years.

4. Business intelligence dashboardthat were created were appropriate with goal and advantage, so that borang team easily filled accreditation of department and chief of department could see result of research or dedication on every department.

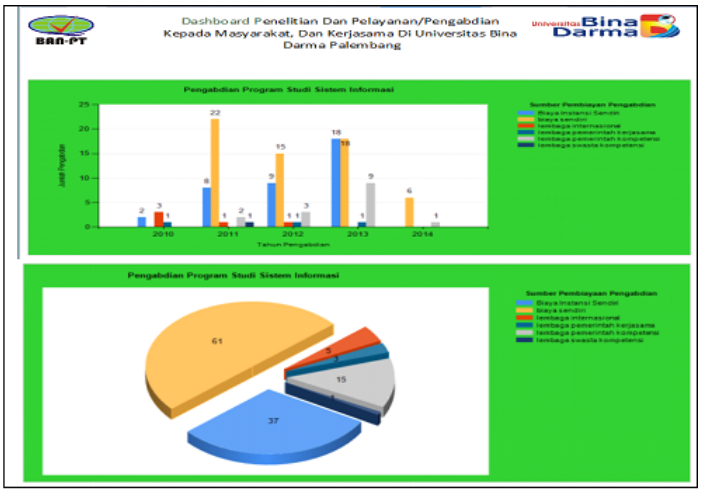


Figure 5: Display Pengabdian Dashboard

References

[2] Badan Akreditasi Nasional Perguruan Tinggi (2009), *Buku I Naskah Akademik Akreditasi Program Studi Sarjana*, BAN-PT: Jakarta.

[2] Badan Akreditasi Nasional Perguruan Tinggi (2009), *Buku II Standar dan Prosedur Akreditasi Program Studi Sarjana*, BAN-PT: Jakarta.

[3] Larissa T.Moss, Shaku Atre (2008). *Business Intelligence Roadmap-The Complete project lifecycle for Decision-Support Applications.*

[4] Rasmussen, Bansal, Chen (2009), *Business Dashboards: A Visual Catalog for Design and Development*, John Wiley & Sons: New Jersey.

[]