

International Conference on Engineering and Technology Development



3rd ICETD 2014

28, 29 October 2014, Bandar Lampung, Indonesia

Hosted By :
Faculty of Engineering and Faculty of Computer Science
Bandar Lampung University, Indonesia



In cooperation
with :



THE UNIVERSITY OF KITAKYUSHU



الجامعة الإسلامية العالمية
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بوترا برني

3rd ICETD 2014

THE THIRD INTERNATIONAL CONFERENCE
ON ENGINEERING AND TECHNOLOGY DEVELOPMENT

28 -29 October 2014
Bandar Lampung University (UBL)
Lampung, Indonesia

PROCEEDINGS

Organized by:



Faculty of Computer Science and Faculty of Engineering
Bandar Lampung University (UBL)
Jl. Zainal Abidin Pagar Alam No.26 Labuhan Ratu, Bandar Lampung, Indonesia
Phone: +62 721 36 666 25, Fax: +62 721 701 467
website : www.ubl.ac.id

PREFACE

The Activities of the International Conference is in line and very appropriate with the vision and mission of Bandar Lampung University (UBL) to promote training and education as well as research in these areas.

On behalf of the Second International Conference on Engineering and Technology Development (3rd ICETD 2014) organizing committee, we are very pleased with the very good response especially from the keynote speaker and from the participants. It is noteworthy to point out that about 80 technical papers were received for this conference.

The participants of the conference come from many well known universities, among others : University Kebangsaan Malaysia – Malaysia, IEEE – Indonesia, Institut Teknologi sepuluh November – Indonesia, Surya Institute – Indonesia, International Islamic University – Malaysia, STMIK Mitra Lampung – Lampung, Bandung Institut of Technology – Bandung, Lecture of The Malahayati University, B2TP – BPPT Researcher – Lampung, University of Kitakyushu – Japan, Gadjah Mada University – Indonesia, Universitas Malahayati – Lampung, Lampung University – Lampung,

I would like to express my deepest gratitude to the International Advisory Board members, sponsor and also to all keynote speakers and all participants. I am also grateful to all organizing committee and all of the reviewers who contribute to the high standard of the conference. Also I would like to express my deepest gratitude to the Rector of Bandar Lampung University (UBL) who give us endless support to these activities, so that the conference can be administrated on time

Bandar Lampung, 22 October 2014

Mustofa Usman, Ph.D
3rd ICETD Chairman

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October2014

INTERNATIONAL ADVISORY BOARD

Y. M Barusman, Indonesia

Ahmad F. Ismail, Malaysia

Mustofa Usman, Indonesia

Moses L. Singgih, Indonesia

Andreas Dress, Germany

Faiz A.M Elfaki, Malaysia

Warsono, Indonesia

Raihan Othman, Malaysia

Zeng Bing Zen, China

Tjin Swee Chuan, Singapore

Khomsahrial R, Indonesia

Rony Purba, Indonesia

Hon Wei Leong, Singapore

Imad Khamis, USA

Rozlan Alias, Malaysia

Rudi Irawan, Indonesia

Gusri Ibrahim, Indonesia

Jamal I Daoud, Malaysia

Riza Muhida, Indonesia

Heri Riyanto, Indonesia

Agus Wahyudi, Indonesia

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October 2014

STEERING COMMITTEE

Executive Advisors

Dr. M. Yusuf S. Barusman
Andala R. P. Barusman, MA.Ec

Chairman

Mustofa Usman, Ph.D

Co-Chairman

Dr. Ir. Hery Riyanto, MT
Ahmad Cucus, S.Kom., M.Kom

Secretary

Yuthsi Aprilinda S.Kom., M.Kom
Marzuki, S.Kom., M.Kom
Maria Shusanti Febrianti, S.Kom., M.Kom

Technical Committee

Robby Yuli Endra, S.Kom., M.Kom
Sofiah Islamiah, ST, MT
Fenty Ariani, S.Kom., M.Kom
Taqwan Thamrin, ST., MSc
Dina Ika Wahyuningsih, S.Kom
Agus Sukoco, M.Kom
Hj. Susilowati, ST, MT
Haris Murwadi, ST, MT

Treasure

Samsul Bahri, SE
Dian Agustina, SE

PROCEEDINGS

3rd ICETD 2014

The Third International Conference
On Engineering And Technology Development

28 -29 October 2014

ORGANIZING COMMITTEE

Chair Person

Dr. Ir. Hery Riyanto, MT

Vice Chair Person

Ahmad Cucus, S.Kom., M.Kom

Treasure

Dian Agustina, S.E

Secretary

Robby Yuli Endra, S.Kom., M.Kom

Sofia Islamiah Izhar, S.T., M.T.

Taqwan Thamrin, ST., MSc

Erlangga, S.Kom., M.Kom

Iwan Purwanto S.Kom., MTI

Special Events

Agus Sukoco, M.Kom

Dra. Yulfriwini, M.T.

Ir. Juniardi, MT

Ir. Indra Surya, MT

Ir. Najamudin, MT

Kunarto, ST. MT

IB. Ilham Malik, ST. MT

Ir.A Ikhsan Karim, MT

Usman Rizal, ST., M.MSi

Ir. Sugito, MT

Berry Salatar, S.Pd

Ayu Kartika Puspa S.Kom., MTI.

Helta Anggia S.Pd., MA

Yanuaris Yanu Darmawan SS. M.Hum

Receptionist

Indyah Kumoro K.W., S.T., IAI.

Haris Murwadi, S.T., M.T.

Transportation and Acomodation

Irawati, SE
Desi Puspita Sari, S.E
Ifa Ditta, S.E., S.T.P
Riffandi Ritonga, S.H.

Publication and Documentation

Ir. Indriati Agustina Gultom, M.M
Noning Verawati, S.Sos
Hesti, S.H
Masitoh S.Sos

Cosumption

Susilowati, S.T., M.T
Yuthsi Aprilinda S.Kom., M.Kom
Maria Shusanti Febrianti, S.Kom., M.Kom
Fenty Ariani, S.Kom., M.Kom
Reni Nursyanti, S.Kom., M.Kom
Sundari, S.Kom

Facility and Decoration

Siti Rahma Wati, S.E.
Dina Ika Wahyuningsih, S.Kom.
Arnes Yuli Vandika, S.Kom, M.Kom.
Zainal Abidin, S.E.
Ahyar Saleh, S.E.
Eko Suhardiyanto
Wagino
Sugimin

Table Of Content

No	Title	Author	Page
1	The Influence Of Implementing Information Technology On Knowledge Management Toward Performance Evaluation Using Balanced Scorecard	Sarjito Surya	1-3
2	Implementation Of Customer Relationship Management (Crm) To Automate Logging Track Record Students And Alumni	Robby Yuli Endra ^{#1} Fenti Aryani ^{*2} Septiany Dian Puspita ^{#3} Ade Kurniawan ^{*4}	4-10
3	Prototype Model Classification System Level Internal Audit Findings Based On Case-Based Reasoning In Education Quality Management	Marzuki ^{#1} Maria Shusanti Febrianti ^{*2}	11-13
4	Implementation Case Based Reasoning In Determining The Rational Prescription Of Tb Drugs	Ahmad Cucus	14-19
5	Implementation Of Workflow Management System On E-Learning Platform For The Effectiveness Of Distance Learning	Yuthsi Aprilinda ^{#1} Agus Sukoco ^{*2} Ahmad Cucus ^{#3}	20-25
6	Thermal Bioclimate For Tourism: Case Study Of Kuta, Bali Province, Indonesia	Nyoman Sugiarta ^{#1} Andreas Matzarakis ^{#2}	26-32
7	Minimum System Design Of Android Based Pstn Phone	Deo Kiatama ^{#1} Fransiscus Ati Halim ^{*2} Arnold Aribowo ^{#3}	33-38
8	The Design Of Pressing Equipment For Banana Fruit	M.C. Tri Atmodjo	39-44
9	Modelling Supply Chain Management In B2b E-Commerce Systems	Idris Asmuni	45-51
10	Extreme Programming Study Method Case Study On Designing Of Accounting Term Dictionary	Usman Ependi ^{#1} Qoriani Widayati ^{*2}	52-55
11	Review On Economic Valuation Of Solid Waste Management In Bandar Lampung, Lampung	ling Lukman ^{#1} , Diah Ayu Wulandari Sulistyaningrum ^{*2} , Taqwan Thamrin ^{#3}	56-57

No	Title	Author	Page
12	Prototype Topology Sdn For Simple Network Campus	Arnesyulivandika	58-61
13	Tsunami Force On A Building With Sea Wall	Any Nurhasanah ^{#1} Nizam ^{*2} Radianta Triatmadja ^{#3}	62-64
14	Analysis The Quality Of Website Service Information System Academic Integrated (Siater) Bandar Lampung University Using Pieces Methods	Yusinta Ria Disanda	65-71
15	Organize Bad Manual Financial Database Of Educational Organization By Bank To Decrease Financial Criminalize	Ruri Koesliandana ^{#1} Eka Imama Novita Sari ^{*2} Arnes Yuli Vandika ^{#3}	72-74
16	Design Of Lampung Bay Waterfront Using Poetic Architecture Approach	Shofia Islamia Ishar, S.T.,M.T. Muhammad Syahroni, S.T.	75-83
17	Analysis Limiting Internet Sites With The Method Using Squid Proxy Server At Smkn 1 South Rawajitu	Reni Tri Astuti	83-88
18	Effect Of Grading On Differences Using Mixed Concrete Aggregate Rough And Fine Aggregate Concrete Compressive Strength Of Natural	Yulfriwini	89-97
19	Analysis Quality Dino Tour Travel Management Website Using Webqual 4.0	Rola Hengki	98-105
20	Holonic Manufacturing System: Current Development And Future Applications	Moses Laksono Singgih	106-113
21	An Analysis Perspective Implemented Text Mining Analytics Information Extraction For Impact Of Indonesian Social Media	Agus Suryana.Mti ^{#1} Sri Ipnuwati.M.Kom ^{*2}	114-123
22	Study Of Gold Mine Tailings Utilization As Fine Aggregate Material For Producing Shotcrete Based On Concept Of Green Technology	Lilies Widojoko ¹⁾ Harianto Hardjasaputra ²⁾ Susilowati ³⁾	124-133

No	Title	Author	Page
23	Decision Support System For Determined Recommendations Lecturer Teaching Handbook Using Fuzzy	Usman Rizal ^{#1} Fenti Aryani ^{*2}	134-140
24	The Expert System Software Application On Lecture Scheduling Based On Rule Based Reasoning	Taqwan Thamrin ^{#1} Ahmad Cucus ^{*2} Adi Wijaya ^{#3}	141-144
25	Portal Website Analysis Using Iso / lec 9126-4 Metric Effectiveness (Case Study Indonesia Wi-Fi Portal Website)	Refky Jumrotuhuda	145-149
26	Student Satisfaction Analysis Of Siater Using End User Computing Satisfaction (Eucs)	Erlangga, Jefri Krisna Putra	150-155
27	Urban Tourism Development Through Low Impact Development (Lid) Towards Green-Tourism	*Iir. Wiwik Setyaningsih, Mt *Ztri Yuni Iswati, St., Mt, *Zsri Yuliani, St., M.App.Sc.	156-161
28	Hawkers Empowerment Strategy To Promote Sustainable Economy In Surakarta	Murtantjanirahayu Rufiaandisetyanaputri	162-172
29	New Urbanism: A Comparative Analysis Between Traditional Village And Housing Estate	Bhakti Alamsyah	173-179
30	Traditional Market Revitalization As An Urban Catalyst In The City Of Surakarta	Istijabatul Aliyah #1, Bambang Setioko #2, Wisnu Pradoto #3	180-188
31	The Robinson Mall Impact On Fv And Ds In Zapa Street, Bandar Lampung City	Ida Bagus Ilham Malik Ilyas Sadad	189-195
32	Decision Support System For Mall Nutrition Using Simple Additive Weighting (Saw) Method	Reni Nursyanti Mujasih	196-200
33	Effect Of Cement Composition In Lampung On Concrete Strength	Heri Riyanto	201 – 204

No	Title	Author	Page
34	E-Archive digital storage media	Arnes yuli vandika, ade kurniawan, ari kurniawan	205 -207
35	Virtualization Technology for Optimizing Server Resource Usage	Edwar Ali, Didik Sudyana	208 – 212
36	Decision Support System (DSS) For The Determination Of Percentage Of Scholarship Quantity Based Fuzzy Tahani	Robby Yuli Endra #1, Agus Sukoco #2	213 -223
37	Evaluation of Pedestrian Way's Comfort Case Study: Jl. Z. A. Pagar Alam, Bandar Lampung	Haris Murwadi 1*, Fritz Akhmad Nuzir 2	224 - 228
38	Modification Effect Of Volume Cylinder Four Stroke Engine To Effective Power	Ir. Najamudin, MT	229-239
39	Impact Of Motor Vehicle Emissions On Air Quality In Urban And Sub Urban Area (Case Study: Bandarlampung City)	Ir. A. Ikhsan Karim, MT., Ir. Sugito, MT	240-249

Traditional Market Revitalization as an Urban Catalyst in the City of Surakarta

Istijabatul Aliyah ^{#1}, Bambang Setioko ^{#2}, Wisnu Pradoto ^{#3}

^{#1}Lecturer at Department of Urban and Regional Planning, Faculty of Engineering, Sebelas Maret University, Indonesia

A Ph.D. Student of Architecture and Urbanism, Diponegoro University, Indonesia

^{#2}Department of Architecture, Faculty of Engineering, Diponegoro University, Indonesia

^{#3}Department of Urban and Regional Planning, Faculty of Engineering, Diponegoro University, Indonesia

¹aliyahuns@gmail.com

istijabatul@ft.uns.ac.id

²keliek2000@yahoo.com

³wisnu.pradoto@gmail.com

Abstract— Current development in Surakarta downtown today indicates that traditional markets have improved themselves in both physical and non-physical aspects. Various revitalization efforts have been made by the government and traders community to improve services and comfort of traditional markets. The efforts start from the market façade revitalization, restoration and the overall development of market; up to social activities, competition between traders or large celebrations in the neighbourhood market. This research was conducted in Surakarta, which is aimed at: identifying the role of traditional market revitalization efforts in the development of a city. This study employs several methods of analysis, namely: 1) Spatial analysis for mapping the distribution of traditional markets in the city constellation, 2) Category-Based Analysis (CBA) to classify the revitalization of traditional markets that has an influence in the development of the city, and 3) Interactive Method of Analysis. The results of this study indicate that the presence of a constellation of traditional markets in Surakarta is dominated by the presence of Gede Market, not only as the oldest traditional market, but also as a center of economic and socio-cultural activities of the community. The role of traditional market revitalization in the development of a town is as an Urban Catalyst towards a MICE city in the sense that the revitalization effort, even done in a relatively short time and not yet covering the overall objects, is able to establish brand image of Surakarta as a city of culture which is friendly and ready to be MICE tourism city.

Keywords— traditional market, revitalization, urban catalyst

I. INTRODUCTION

Surakarta is one of the cities which are formed with the concept of Javanese cosmology. As a traditional town of Java, Surakarta is known as ‘the paradise’ of traditional markets. Since its establishment, Surakarta is formed with *Catur Gatra Tunggal* or Four Single-Slot concept (palace, square, mosques, and markets). A traditional market town is a part of the component structure formed by the Javanese cosmology. Determination of the role and functions of traditional markets

have been adapted to the character and scope of services of each traditional market.

At macro level, the traditional market is a part of the basic structure of a typical Java City. Some typical traditional Javanese traditional cities identify that the market is an ever-existing part of the spatial arrangement pattern of cities in Java. A typical structure of urban space in Java has been mentioned by Stutterheim, Maclaine Point, Palmier, Witkamp, Van Mook, and Santoso, showing that components and position of traditional markets occupy a core region of a kingdom called Great State or the city center [1].

However, within the course of time and the changing times, the traditional market has grown and developed without regarding the concept of Javanese cosmology that has been there before. Issues of philosophical conception and demands of society needs and the policies of Surakarta City Government have triggered the role transformation of the traditional market as a component of Traditional Javanese city space. Traditional markets in Surakarta now have grown to 43 markets, originally come from only 6 markets, which grew from both the existing and the addition or new construction.

In response to the issue, policy makers argue that the traditional market is one of the centers of economic, thus the planning or construction of the traditional market is more focused on the study of economic aspects and optimization of land use. New development or redevelopment (revitalization) carried out by the government has not shown any planning based on consideration of the characteristics of the traditional market role in the constellation of the city, the range of services and commodities that are accessible to consumers, both physical and non-physical.

Currently there have been numerous studies that discuss the revitalization of traditional markets. Existing studies can be divided into three main tendencies. First, the study which analyzes the tendencies of traditional market development from micro perspective that service quality factors, the increasing number of merchants and the identification of consumers play an important part to encourage the

development and improvement of the activity of shopping in traditional markets [2]. Second, the tendency of the role of traditional market from macro perspective within the scope of urban, stating that the construction or relocation of traditional markets is capable of changing land use, street pattern, movement and pattern or type of building, equalization in circulation path, and land use, which in turn affect changes in the form of urban space [3]. This is reinforced by the results of study which reveals that the traditional market as a node of the exchange of goods and services on a regional basis which then grow and develop evoking various activities in the city [4]. The third trend is the study that addresses the traditional market as part of a cultural product, where traditional market acts as urban public space, a place where urban community gather, and build social relations among them [5].

From the results of the existing research discussion, many approaches have been applied to examine the role of the traditional markets from micro and macro perspective, as well as traditional markets as one of the cultural product. The evidence generally does not appear much different, that traditional market is not merely a buying and selling place, but more than that, the market is related to the life conception and socio-cultural interaction, and at the same time, recreational facilities both within the region and the city.

As a matter of fact, the research related to revitalization of traditional markets as an urban catalyst in the structuring of urban space is still limited and not yet disclosed in detail. While research by Ramzi Farhat, 2012, reveal about the role of the cultural heritage of the city as a catalyst for the regeneration of cities in economic pressure, it has not yet focused on traditional markets. Scarcity of information about the role of the traditional market as an urban catalyst in the structuring of urban space to the users of traditional markets, of course, is very unfortunate. Moreover, the importance of the information can be a referral for consumers and traders to know traditional markets specifications in shopping and trading activities unhindered by the accessibility constraints, lack of parking areas, zoning conformance with the character of commodities and various support facilities [6].

Thus it can be seen that the research associated with the revitalization of traditional markets as an urban catalyst is still limited in number and not disclosed in detail. Similarly, related issues such as whether the role of the revitalization of traditional markets in the city spatial planning, particularly in relation to spatial planning premises as a tourism city.

It is therefore, this study is expected to produce findings about the appropriate model for positioning the revitalization of traditional market as an urban catalyst in Surakarta.

II. LITERATURE REVIEW

A. Traditional Market Revitalization

In a broad sense, according to W.J. Stanton, traditional market in the context of economy is defined as a group of people who have a desire to meet the needs, money for spending (income), as well as the willingness to spend it. This

is in line with the three patterns of buying and selling, namely the exchange returns-buying, redistribution, and market trading with the understanding that 1) exchange buying and selling is the interaction that occurs between individuals or groups of commensurate level; 2) redistribution occurs when multiple agents handle the sale; 3) while the sale occurs when the participants found the environment to make the interaction in the whole system [7].

In the main function of traditional market as a transaction place, the seller of a commodity item and the buyer meet at the specified places, at a time set within a certain interval, so it can be said that a traditional market is a particular area or land with or without building used as a place where the trading activities take place [8]. At first, the traditional markets emerge from opportunities available to the public subsistence farmers to offer their surplus crops to meet perceived needs. They grew out of the "... periodical meeting to distribute surplus of agricultural products" [9]. However, in addition to its primary function, the traditional markets also carry out a mission as shopping facilities for the service area, as well as act as a vehicle for social and recreational activities [10].

In Java alone, in line with the theory that the "market" gives accommodation to the "economy bazaar", Geertz assumes that the word 'market' is a local dialect of 'bazaar' (Geertz, 1968). It is not clear whether the concept of the traditional market brought into the region by foreign merchants, or as an institution has existed previously. Market or traditional markets as a noun also has the synonym "*peken*", the verb is "*mapeken*" which means to gather, in this case the market is a gathering place for buying and selling. A historical record of Java mentions that in 1830, the ground trade has grown well. At that time, there has been a broad network of traditional markets and large regional markets playing an important role in the trading traffic [11] (Bagoes Wiryomartono, 2000).

The traditional market is a subsystem of a larger economic system that generates the development of an area that forms a circuit round of trade. There are three main levels, namely: (1) local, which bridges trading activities of the intra-village or the neighboring villages; (2) regional, which distributes commodities to various places in a certain region and between districts within the region; and (3) national, which arises when national regional products are sufficient to fulfil the region [12].

B. Traditional Market as a Component of Urban Space

In determining the location, traditional markets did not neglect its physical form that requires ample land. That is because the traditional markets in Java are physically characterized by many *los* buildings and open land. The existence of traditional markets is characterized by strong links with the production activities in the community. [13]. The thing usually found in a traditional market is the form of selling activity that is developed in the open spaces and adjacent, field and road, and the situation is not far from the settlements [14].

The concept of traditional markets location in Java in the kingdom time refers to the concept of Four Single-Slot which is expressed by Mount Rajiman [12], which is a concept that sets four physical components within a philosophical node of the center of kingdom. The four components are: the palace, the square, the mosque and the market. Traditional markets in its position as a spatial element of the past, has a political function as an element of control over social mobility [15]

The strong social atmosphere in traditional markets makes the market have a very significant role as the source of information for a social condition within all of its conflicts which take place. Inside traditional markets, the comfort of the situation becomes a safety indicator of the area. According to Jo Santosa [1], the spatial planning of Javanese royal district always makes traditional market positioned as *negara agung* (a town center which is sacred in character) or *dalem* (the center). Traditional market has a location surrounded among *keraton* (a Javanese palace), *alun-alun* (a town square called in Javanese), and mosque. In general, Alexander and Jannifer [16] have delineated traditional markets as having wide reach in providing services from within urban to rural areas. In addition, it has an importance to regional development and a strategic role in maintaining the growth of the main structure. Consecutively, moving the location of the market can also make a change upon land use planning; road pattern, building's movement and pattern or type to be more developed, and circulation path distribution [3].

In recent development, traditional market is not only seen as a specific space for trading activity within a well-built spatial planning structure, but also becomes another function of a street. Or, on the other hands, traditional market exists within an elongated space acting as if a street or an area. Having relation with street as its element, it can refer to John Lauermaann's idea [17] proposing that *Street Markets* are the primary components to the formation and regulation of regional informal institution. They can be seen through 3 matters: 1) the micro politics of space allocation which regulate the interaction between traders and local government, and the enforcement of local standard for business etiquette, 2) the traders who build places for selling their products and placing them in the usual order of a market place, and 3) the forming of *Street Markets* network comes to be the central system of wholesales and labor forces in the area.

C. Urban Catalyst within Urban Space

Every city has a unique attribute as a main base or model for the urban development. Seeing to this developmental issue, someone can refer to the term called "urban catalyst". Urban catalyst is an effective medium to carry out urban revitalization. Based on its definition, catalyst is a substance or vehicle fastening a reaction. Within urban design area, a catalyst can be conceptualized as a project that will stimulate the future development. The concept of *urban catalyst* developed by Wayne Attoe [18] has a value to exceed metaphorical expression like "the heart of capital city", a term which is commonly used to illustrate some catalytic projects.

Many people think that a catalyst acts as the super developmental matter. This might happen in some cases in which there are strong financial and public supports. Nevertheless, this idea is more accurate to delineate an urban catalyst as a smaller or a group of surrounding elements, buildings, and spaces. For example, it can be referred to a case that will skyrocket positive economical and social developmental activity.

Urban catalyst has a bigger purpose than just being assumed to develop the presentation of certain area. To be a successful *urban catalyst*, it should not be an independent element. Instead, it is an element of working framework which leads to the future development [19]. The dynamic *urban catalyst* within the nature are those who act as the projects having effects towards their surroundings, having potency to solve every purpose of a revitalization depending on regional needs. First of all, a catalyst has to improve its surrounding urban fabric condition. This matter can be done by redesigning or renovating the fabrics to make them stronger than before. Secondly, a catalyst does not only improve the physical condition, but also has to discuss the social, political, and economical context of the project. Third, catalytic reactions should be limited in their scope, so that they do not break their context. The already existed quality and character of a city must not be threatened because of the development, so that a catalyst should provide a sense of place for a regional exhibition [18]. Urban catalyst has a potency to develop a city in several ways. It is not just limited in one vision, but not to also be understood in a holistic manner. Attoe's theory explains on how to get the visualization purpose for conducting the whole project. Catalytic theory, however, does not force a single plan implementation to all of urban areas. In contrast, it focuses on proper relational identification between the new and the already existed urban elements together with their effects upon urban layers.

Urban catalyst is a way to fasten a process of urban development through an activity or a use of area and policy, so that it can be able to give positive influence to certain region. Urban catalyst may contain continuous project influencing urban structure. According to Stenberg, the successful keys of urban catalyst are [19]:

- Capable to raise up economical and social activity
- Capable to become Central Business District (CBD) in both single and mixed function
- Having strategic plan about the entry and exit pathway in a city so that it can support and shape the pattern of human movement
- Capable to influence the development of its surroundings

Besides, there are five ways of *urban catalyst* to motivate the surrounding development, namely:

- It can happen as long as a catalyst acts as the main purpose for people to visit certain region and has its own appeal so that it is able to create activities which

one of them is the economical one (the availability of supply and demand)

- Needing a proper developmental design and having an appeal from its physical and visual attraction
- The conducted development is able to attract movement pattern through access supply
- The developmental character must be integrated with the needs of street users through *streetscape* supply
- The conducted development must concern with the location condition

III. RESEARCH METHOD

A. Research Object

This research was conducted in Surakarta. The research objects are traditional markets which have experienced physical and non-physical revitalization process. Traditional markets existing in Surakarta are 43 units. However, not all of them have received the program or done the revitalization attempt. There are 16 units of the already revitalized traditional market in physical aspect since 2006 to 2012. Meanwhile, almost all traditional markets in Surakarta have done non-physical revitalization. They include the management in the form of associated traders or sociocultural activities which are suitable for each market's character. There are 4 markets which actively carry out sociocultural activities. They are Gede Market, Windujenar Market, Legi Market, and Kembang Market.

B. Research Method

1) *Data Collection*: Data collection employed in the research of Traditional Market Revitalization as *Urban Catalyst* in Surakarta is conducted as follows:

TABLE I
TECHNIQUE OF DATA COLLECTION

No	Technique of Data Collection	Usage
1	Interview technique	Getting the information about the existence of traditional market in an urban space constellation in Surakarta and the revitalization effort which have been done
2	Observation	Recording the physical and non-physical places and events of traditional market revitalization in Surakarta. And, collecting data of the spread of location using GPS (<i>Global Positioning System</i>).
3	Content Analysis/ Observation Method	Examining secondary data (existing data) in the form of maps or other documents related to the existence and traditional market revitalization effort in Surakarta
4	FGD	Serving as the medium to check the

		validity of the data and take aspiration and information for the traditional market revitalization effort from the related sides by using the data Triangulation method
--	--	---

2) *Sources of Data*: The examined sources of data are in the form of informants, places and events as well as documents which exist there. In this matter, informants consist of privates, communities, and government, including the related functional officers in Local Market Management Agency of Surakarta, Local Space Planning Agency of Surakarta, and Local Development Planning Agency of Surakarta, which have the capacity in the revitalization of traditional market within urban space planning in Surakarta. They also include users' communities for both the sellers and buyers of traditional markets in Surakarta.

The sampling technique is based on particular purposes by considering the respondents' mastery and knowledge as informants towards the examined cases, including analyzing and clarifying the relation of traditional market revitalization in Surakarta. The determination of key informant is characterized as rolling like a snowball in which it is done by looking for the other key informants who master the examined cases through the first found key.

3) *Technique of Data Analysis*: Data analysis is carried out by using some analysis methods, namely: 1) Spatial Analysis, used for mapping the spread of traditional markets in the constellation of spatial planning in Surakarta. 2) Category Based Analysis (CBA), used for clarifying the revitalization of traditional markets in Surakarta City. 3) Interactive Analysis Method, used for having some important components, namely collecting data, reducing data, displaying data, and taking conclusion (verification). As the form of qualitative analysis, interactive analysis is conducted continually from the beginning process of collecting data to doing data verification or drawing a conclusion.

IV. RESULTS AND DISCUSSIONS

Traditional market is closely related to the stereotypical images of being dirty, muddy, not well-organized, less safe, less courteous in providing services upon buyers, even not honest in giving the information about commodities' quality and quantity. Those matters become the negative view upon traditional market as a space for the supporting economic and social activities.

The situation above can affect the existence, development, and sustainability of traditional markets. Thus, it is necessary to attempt a revitalization of traditional markets integratively to meet global competition. By taking a look at this condition, some steps as anticipation efforts in connecting the existence of each traditional market in constellation of Surakarta should be done immediately, so that there is no aggrieved party.

However, the fact today, especially in Surakarta, there is no comprehensive plan to respond the problems faced by

traditional market in terms of urban space. The authority (Surakarta government) should be proactive in regulating the presence of traditional markets in order not to adverse each other, and revitalizing traditional markets which has shrank and grown uncontrollably in economic activity. One of the efforts which can be done is by arranging comprehensive revitalization plan of traditional markets based on data and research regarding the presence of traditional markets in urban space constellation, revitalization effort which is suitable for the concept of spatial planning and by knowing the connection of traditional market revitalization in arrangement of urban space.

1) *The Presence of Traditional Markets in Surakarta Constellation:* The presence of traditional markets can be explained through identification. The spread of traditional market location has a significant role in determining the development of each kind of markets. Besides, it is necessary to know the scope of service which becomes a focus in each kind of markets to help creating a positive economic development situation. Therefore, market zonation is an important thing to create economic distribution so that there will be a more equal access for people to economic resources as a livelihood. The creation of zonation can be done by using mapping method. One of mapping methods which can be used is mapping based on Geographic Information System (GIS). By using geographic information system, it can create a spatial planning of traditional market which can optimize each kind of markets' role without adverting or even becoming a threat for each other.

The spread of traditional market in Surakarta is as follows:

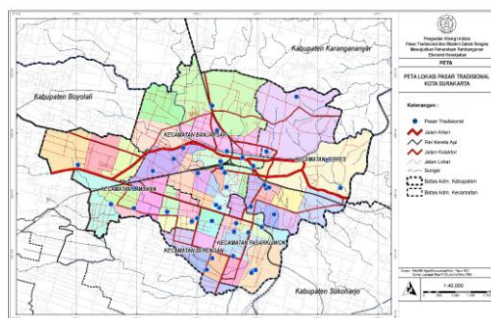


Fig. 1 The Spread of Traditional Markets in Surakarta Map

Based on the spread of traditional markets above, therefore, the structure of traditional markets' spread of each district in Surakarta is provided below:

TABLE II
THE STRUCTURE OF TRADITIONAL MARKET'S DIVERSION IN SURAKARTA

District	Traditional Market's Class						Total	Percent age
	I A	I B	II A	II B	III A	III B		
Laweyan	-	1	3	3	-	-	7	16%
Serengan	1	1	-	-	-	-	2	5%

Pasar Kliwon	1	1	1	3	3	1	10	23%
Jebres	-	1	4	3	3	1	12	28%
Banjarsari	1	2	1	3	2	3	12	28%
Total (%)	3 (7)	6 (1 4)	9 (2 1)	12 (2 8)	8 (1 8)	5 (1 2)	43 (100)	100%

Based on the result of field observation and research of secondary data, the oldest traditional market in Solo is Gede Market which was built in 1930, even before that, it had become an economic center in golden era of Keraton Surakarta Hadiningrat. In addition, even before the existence of Keraton, it had become the trading center of the popular chinese merchant named Babah Mayor. Meanwhile, the largest market is Notoharjo Market, 17.276 m² which was built in 2006. Notoharjo Market is provided for the informal sellers from Banjarsari. However, based on the amount of occupied stalls, Klewer Market is the most occupied, with 2.069 stalls. It shows that the sellers are highly interested in selling their goods at traditional markets which have been established and had a unique side as Klewer Market. Moreover, the 43 markets are classified based on Surakarta Mayor decree No. 511.2/085 A/I/2001 regarding The Determination of Market Class dan Basic Place Value Estimation. The existence of those markets hopefully can give maximal contribution to people and Surakarta government.

2) *Traditional Market Revitalization in Surakarta:* It is a nature for consumers who prefer to choose a more comfortable place, more complete goods and cheaper price which can be accommodated by modern market. Furthermore, the solution key is on government hand. The regulation of spatial planning which is implemented strictly can regulate traditional market placement. It is necessary to be done to anticipate the menace of insolvency of traditional markets due to the uncontrolled competency, and to give a facility for positive competition among markets. Another thing that is needed to be done is to change "the face" of traditional markets in order to be more comfortable and well-organized. Meanwhile, the revitalization of traditional markets often concerned to the investor's benefit rather than the sellers themselves. The uncompromised high price stall often makes the sellers "allergic" to hear the word "revitalization". This situation often causes a conflict between the old sellers and the investor appointed by the government to revitalize traditional markets.

The revitalization of traditional markets covers physical and non-physical revitalization. The physical revitalization covers the matters regarding the facility provided as a place for economic activity which is comfortable for the users in it. While the non-physical revitalization covers the software completion such as regulation betterment for orderliness of traditional markets. Thus, the result model always considers the balance of the two elements above. In revitalizing traditional markets, economic factor has an important role because without economic profit or benefit at all, the

businesses that have activity in traditional markets will not be motivated to take a role in realizing the succession of traditional market revitalization effort. Therefore, in order to reach the purposes, it needs efforts from related parties to guide the revitalization of traditional markets in order to realize Surakarta as tourist destination. Moreover, it is expected that it will give the real economic advantages and financial contribution to all elements of society of traditional markets, so that it can increase family income and their prosperity.

By knowing and believing that traditional markets can give contribution in developing local economy, they will be more motivated and eager to support the effort of traditional market revitalization. Besides, in the framework of doing the revitalization, from ecology perspective or environment insight side, traditional markets in terms of consumer services relies on its main capital on comfort, cleanliness, and safety environment. In other words, without those elements, traditional markets will not be revitalized well. Therefore, ecology elements which become capital in undertaking traditional market revitalization must be maintained and kept its sustainability in order to be able to serve continually and to be utilized by the current and future generation.

The revitalization efforts in conformance with the cultural perspective can be outlined that attempts to revitalize traditional markets can be grounded in the Surakarta's local culture, considering the traditional market is one of the products of Javanese culture. In micro context, it surely leads to the surrounding culture or environment of traditional markets location. It is because the formation of the market cannot be separated from habit or culture of the community in the process of formation of the traditional markets.

TABLE III
THE RESULT OF TRADITIONAL MARKET REVITALIZATION IN PHYSICAL ASPECT AS AN URBAN CATALYST IN SURAKARTA IN 2013

Market Revitalization	Urban Catalyst Elements			
	Economic Development	CBD Formation	Movement Patterns Formation	The Influence of the Surrounding
Nusukan in 2006	Economic improvement, 30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Klitikan Notoharjo in 2006	Economic improvement, building construction and new location, the	City scale CBD formation	City and suburban area scale movement generator	As the center of region, city, and regional scale service

	number of seller 100% new (former street vendors)			
Mojosongo in 2006	Economic improvement, 40% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Kembang in 2006	Economic improvement, 30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Sidodadi in 2007	30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Gading in 2008	Economic improvement, 30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Ngarsopuro in 2008	30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Triwindu in 2009	Economic improvement, 40% stalls addition	City scale CBD formation by unique commodities	Region scale movement generator	As the center of region, city, and regional scale service
Pucang Sawit in 2009	Economic improvement, A new market building, 80% new sellers addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Panggungrejo in 2009	Economic improvement, 30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Ayu in 2010, 2011	Economic improvement, 20% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service

Legi in 2010	Economic improvement, 20% stalls addition	City and regional scale CBD formation by spices and foodstuffs commodities	City and regional scale generator	As the center of region, city, and regional scale service
Bird Market Park in 2012	Economic improvement, 40% stalls addition	City and regional scale CBD formation by livestock commodities	Region scale movement generator	As the center of region, city, and regional scale service
Ornamental Fish Depok	Economic improvement, 40% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Nongko in 2012	Economic improvement, 30% stalls addition	Region scale CBD formation	Region scale movement generator	As the center of region scale service
Gede in 2012	Economic improvement, 30% stalls addition	City and regional scale CBD formation by fruits and foodstuffs commodities	City and regional scale movement generator	As the center of region, city, and regional scale service

According to the identification result and data categorization of traditional market revitalization in physical aspect, it can be pointed out that economic elements, CBD formation, movement patterns formation, and the influence of the surrounding have existed in revitalized traditional market buildings over the period 2000-2012, excluding Legi Market building which neither showed the culture elements of Javanese architecture nor local architecture. Meanwhile, in 2013, there were three markets being revitalised, namely Gilingan Market, Kliwon Market, and Elpabes (Electronic, Plastics, and Iron) Market which were still in constructing process. On the other hand, the non-physical revitalizations that have been executed in Surakarta's traditional markets are as follows:

TABLE IV
THE NON-PHYSICAL ASPECTS OF TRADITIONAL MARKET REVITALIZATION AS URBAN CATALYST IN SURAKARTA IN 2013

Traditional Market's Name	Revitalization Activities	Urban Catalyst Accordance
Gede Market, Kembang Market, Triwindu/Windujen Market, Legi Market	<i>Pasar Kumandang</i> Festival 2005	<ul style="list-style-type: none"> Cultural elements as the attractions forming CBD despite the contemporary characteristic affecting traffic movement pattern when events are held becoming a city scale entertainment center
Gede Market, Kembang Market, Triwindu/Windujen Market, Legi Market	<i>Pasar Kumandang</i> Festival 2006	<ul style="list-style-type: none"> Cultural elements as the attractions to improve market visitors and tourists' interest forming CBD despite the contemporary characteristic affecting traffic movement pattern when events are held becoming a city scale entertainment center
Gede Market, Kembang Market, Triwindu/Windujen Market, Legi Market	<i>Pasar Kumandang</i> Festival 2007	<ul style="list-style-type: none"> Cultural elements as the attractions forming CBD despite the contemporary characteristic affecting traffic movement pattern when events are held becoming a city scale entertainment center
Gede Market, Kembang Market, Triwindu/Windujen Market, Legi Market	<i>Pasar Kumandang</i> Festival 2008	<ul style="list-style-type: none"> Cultural elements as the attractions forming CBD despite the contemporary characteristic affecting traffic movement pattern when events are held becoming a city scale entertainment center

Gede Market, Kembang Market, Klewer Market, Windujenar Market	Carnival event with the theme <i>Vipassana Warna</i> 2012	<ul style="list-style-type: none"> • Cultural elements as the attractions • forming CBD despite the contemporary characteristic • affecting traffic movement pattern when events are held • becoming a city scale entertainment center
Gede Market	<i>Grebeg Sudiro</i> 2010	<ul style="list-style-type: none"> • Cultural elements as the attractions • forming CBD despite the contemporary characteristic • affecting traffic movement pattern when events are held • becoming a city scale entertainment center
Gede Market	<i>Grebeg Sudiro</i> 2011	<ul style="list-style-type: none"> • Cultural elements as the attractions • forming CBD despite the contemporary characteristic • affecting traffic movement pattern when events are held • becoming a city scale entertainment center
Gede Market	<i>Grebeg Sudiro</i> 2012	<ul style="list-style-type: none"> • Cultural elements as the attractions • forming CBD despite the contemporary characteristic • affecting traffic movement pattern when events are held • becoming a city scale entertainment center
Gede Market	<i>Grebeg Sudiro</i> 2013	<ul style="list-style-type: none"> • Cultural elements as the attractions • forming CBD despite the contemporary characteristic • affecting traffic movement pattern

		when events are held <ul style="list-style-type: none"> • becoming a city scale entertainment center
--	--	---

Referring to the analysis in Table III and IV, hence, it can be concluded that traditional market revitalization is a city component which advances urban space development. Therefore, it can be said that traditional market revitalization serves as an urban catalyst in Surakarta. This relationship is presented as follows:

- Traditional market revitalization serves as an attempt to accelerate Surakarta's image branding, both physically and non-physically.
- Traditional market revitalization can stimulate activities which influence the ordering and arrangement of other facilities.
- Traditional market revitalization orientates itself towards the local society culture to create economic and local culture's compatibility as the tourist attraction.
- Traditional market revitalization accelerates the realization of the need for a meeting place between sellers and buyers. It brings real implications for social network which plays a role as the media for having face-to-face communication, interacting, exchanging goods, selling-purchasing or bargaining, by a functional, technical, and aesthetic approach in a resort city space. These roles are indeed full of humane and meaningful values.

V. CONCLUSIONS

The constellation of the existence of traditional markets in Surakarta is dominated with the presence of Gede Market, which serves not only as the oldest traditional market, but also as a center of society's economic activities and social culture. By considering the accordance between the effort to implement traditional market revitalization and tourism city program, it can be pointed out that physically and non-physically, traditional market revitalization has a role as an urban catalyst. In other words, traditional market revitalization can be seen as an attempt to accelerate the image branding of Surakarta both physically and non-physically.

REFERENCES

- [1] Santoso, Jo., *Arsitektur-Kota Jawa, Kosmos, Kultur dan Kuasa*, Universitas Taruma Negara: Centropolis Press, 2008.
- [2] Rahadi, R, Aswin., *Factors Related to Repeat Consumption Behaviour: A Case Study in Traditional Market in Bandung and Surrounding Region*, Original Research Article *Procedia - Social and Behavioral Sciences*, Volume 36, 2012, pp. 529-539, 2012.

- [3] Karnajaya, S., *Pengaruh Pemandangan Lokasi Pasar Terhadap Morfologi Kota*. Semarang: Postgraduate School of Diponegoro University, 2002.
- [4] Sirait, Tanda S., *Identifikasi Karakteristik Pasar Tradisional Yang Menyebabkan Kemacetan Lalu-Lintas Di Kota Semarang*, Semarang: Department of Urban and Regional Planning, Faculty of Engineering, Diponegoro University, 2006.
- [5] Ekomadyo, Agus S., *Menelusuri Genius Loci Pasar Tradisional sebagai Ruang Sosial Urban di Nusantara*, 2007. Available: <http://www.ar.itb.ac.id/pa/wp-content/upload/2007/11/201212>
- [6] Farhat, Ramzi., *Urban Heritage As Catalyst For Regeneration: Is there a role for*, 2012.
- [7] Munoz, lucio, et.al., *The traditional market and the sustainability market: Is the perfect market sustainable?*, 2006.
- [8] Jano, Pilar., *Public and private roles in promoting small farmers access to traditional market*, Buenos Aires: IAMA, 2006.
- [9] Natawidjaja, Ronnie., *Modern market growth and changing map of retail food sector in Indonesia*, Bandung: Padjadjaran University, 2005.
- [10] Reardon, T, et.al., *The Rise of supermarket in Africa, Asia, and Latin America*, American Journal of Agricultural Economics 85(5), in Mainville, D., *The supermarket market – Who participates and how do they fare?* USA: Michigan State University, 2003.
- [11] Wiryomartono, Bagoes., *Seni Bangunan dan Seni Binakota di Indonesia*. Jakarta. Gramedia Pustaka Utama, 2000.
- [12] Sunoko, K., *Perkembangan Tata Ruang Pasar Tradisional (Kasus Kajian Pasar-pasar Tradisional di Bantul)*. Yogyakarta: Gadjah Mada Universitas, Thesis S-2, 2002.
- [13] Kusmawati, F.U., *Pola Hari Pasar di Kabupaten Gunungkidul*. Yogyakarta: Gadjah Mada University, 1996.
- [14] Werner Rutz., *Cities and Town in Indonesia*. Berlin: Gebruder Borntraeger, 1987.
- [15] Soemardjan, Selo., *Perubahan Sosial di Yogyakarta*. Yogyakarta: Gadjah Mada Press, 1991.
- [16] Alexander, Jennifer., *Trade, Trades and Trading in Rural Java*. Singapore: Oxford University Press, 1987.
- [17] Lauermann, John., *Practicing Space : Vending Practices and Street Markets in Sana'a Yemen*, Geoforum, Volume 47, June 2013, pp. 65-72, 2013.
- [18] Attoe, Wayne and Donn Logan., *American Urban Architecture: Catalysts in the Design of Cities*. Berkeley: University of California Press, 1989.
- [19] Sternberg, Ernest Spring., *What Makes Buildings Catalytic? How Cultural Facilities Can Be Designed To Spur Surrounding Developmen*. Journal of Architecture and Planning Research Chicago: Locke Science Publishing, pp. 30-42, 2002.

PROCEEDINGS

3rd ICETD 2014



Hosted By :
Faculty of Engineering and Faculty of Computer Science
Bandar Lampung University, Indonesia