

Model Design and Implementation of the “TomasDanance.com Application” for NGOs (Central Bandung and Bandung District of NGOs Studies Centre)

Selvia Lorena Br Ginting and Supriyati

Abstract—NGOs (Non-Governmental Organizations) play a very significant social role, especially as regards work that reflects culture and society. However, it is still rare to find NGOs, run by the creative young generations, which use information technology to produce accountable and transparent financial information or in presenting such information to stakeholders. NGOs in Indonesia, face obstacles concerning administration and financial management, rooted in problems of limited oversight and limitation regarding human resources, facilities, infrastructure and capital. There is strong need to develop and implement web-based NGOs Financial & Accounting Information Systems to improve the competency of human resources, especially within young NGOs. The research method applied in this paper is object-oriented, based on field, institutional and literature approaches. The results obtained are used to make a blue print output and applications that relate to Usecase TomasDanance.com, as well as E-Commerce, Investments, Financial Management, Product Creative Industries and NGO registration.

Keywords—Design, Implementation, Application model, Information system, Financial, NGOs.

I. INTRODUCTION

INDONESIA has a population of 230 million people with a gross domestic product (GDP) amounting to U.S. \$ 462 billion, where the GDP per capita was U.S. \$ 3,400 (PPP) for 2007, U.S. \$3,979 in 2008. The population distribution is uneven with many people (about 60%) are living in the island of Java [17:17]. Against a social background marked by a wide range of concerning issues such as the rise in fuel rates in 2012, the rise in electricity rates in 2013 and the 2014 elections the attention of the Indonesian government remains focused on poverty and unemployment [17].

The more people who have a higher education, the more people who are unemployment. This is a serious dilemma for the Indonesian Government, whose policies are contributing to a problem of joblessness that needs serious attention in

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S. L. Ginting is with the Department of Computer Engineering, Indonesia Computer University, Bandung-West Java, 40132, Indonesia (phone: +62-815-621-0204; e-mail: selvialorena@yahoo.com).

Supriyati is with the Department of Computerized Accounting, Indonesia Computer University, Bandung-West Java, 40132, Indonesia (e-mail: mandasupriyati@gmail.com).

Indonesia [16], [17].

In general, the available human resources do not meet the national required skills and competencies in the area of IT. This is causing the gaps in IT development and the IT market is still severely hampered by structural constraints and the poor of IT infrastructure. As a result, users can not reliably engage with the information system and that the resulting information is becoming increasingly deficient with respect to the criterion of quality of information that has a certain quality [8], [9].

To overcome this problem, in 2009, the Industry Minister, Fahmi Idris, announced that the government would to establish cooperation with foreign countries which were be willing to invest in Indonesia, not only in manufacturing and IT services, but also in improving the quality of human resources through education and training in an effort to catch up in areas where they were being left behind. However, according to data from the Information and Communications Ministry Indonesia still needed more than 300,000 IT experts in the industrial sector as of 2010. Data from the Associated College of Informatics and Computers (APTIKOM) showed that IT education only spawn about 20,000 graduates each year. Thus, there is still a dearth of IT experts, even while the IT labor market remains widely open [16], [17]. I Made Wiryana, an IT academies of Gunadarma University, has expressed regret that budget allocations remain slanted towards physical infrastructure, even as expenditure tends to increase annually. He noted that it should also be balanced with the other budget lines, such as those for organization, human resources standardization, as well as other non physical industrial priorities.

The principal problems occurring in public sector NGOs are [1], [8], [14]:

- 1) Differences of perception between user and system analysts about the requirements of information systems in order to make crucial decisions.
- 2) That communication is hampered between users and system analysts, causing “power” problems, because of either technological or bureaucratic factors.

Some fairly urgent obstacles currently being experienced by young NGOs in Indonesia are [6], [9], [14]:

- 1) The difficulty of financial management and administration due to limited insight into the nature of NGOs in Indonesia.
- 2) The difficulty of surviving and retaining a public profile. Compare to other countries, NGO success is not measured just by the quantity and quality of their services to members, but also by the level of public trust in their financial reporting and their degree of transparency and accountability.
- 3) The limitations in terms of human resources, facilities and infrastructure, as well as in capital.
- 4) The need to expand web-based NGOs, where this research shares a vision with the government, namely to create a good public institutions and promote transparency and accountability through transparency in financial reporting.
- 5) The need to promote integration among those systems which are currently being run via the web.
- 6) Where systems are employed that are not web-based, the members of the NGOs face difficulties in knowing about their performance. On the other hand, they also face reporting difficulties because of the difficulties in communicating with and accessing information from the central office.
- 7) To do transactions and to offer products more effectively and efficiently through online services.

Development and implementation of web-based NGO Finance and Accounting Information Systems is one effort that can be made to empower the community in improving the competence of human resources, especially among the young and notably in regard to the efforts to establish "TomasDanance.com" or to enhance the standing of Young Community Finance Leaders through furnishing them with web-based financial application models [2], [6], [14].

The establishment of "TomasDanance.com" is an effort to support sustainability and success in business development through addressing forms and behavior that encourage the establishment NGOs as community organizations employ creative, transparency and accountable methods and empower young people as a form of public community service. Particularly, in giving reports and information from the NGO or its Committee, therefore it should be made easy for the members of the NGOs to access and monitor the performance of NGOs to access and monitor the performance of NGOs the organization as well as to communicate with the public and so that can ultimately inspire public rooted in perception of their creativity transparency and accountability [4], [6], [14].

II. IDENTIFY THE PROBLEM

The problem in this research is how to apply the research methods that are used to examine NGOs in the Central Bandung and Bandung District (West Java-Indonesia). A second issue concern how to design the model and to implement the Applications of "TomasDanance.com" in NGOs both in Central Bandung and Bandung District [6], [9].

The purposes of this research include :

- 1) Apply object orientated research methods such as the

field approach an institutional approach and a literature survey to examine NGOs both in Central Bandung and Bandung District.

- 2) Design the model for and implement the application of "TomasDanance.com" for NGOs in Central Bandung and Bandung District.

The benefits of this research will be to provide insight and knowledge for researchers related to the study of NGOs and to provide input to bureaucratic structures in fostering transparency and accountability among Creative Youth NGOs [6], [9], [14].

III. LITERATURE REVIEW

A. Modelling System

The definition of a model according to [15:251] is "a semantic abstraction system representing a simplified version of the facts that is complete and consistent and is created in order to be able to understand the target system." The meaning of "system" according to [15:251] is "an organized group of subsystems for specific purposes and goals." [15:252] states that system modelling involves identifying the key entity within in entity-specific view. The entity then shapes the vocabulary of system.

Systems are thus designed to control the activity of the model, where "the system is collection/group of subsystems/parts/components of any physical or non physical from that interconnect with each other and work together in harmony to achieve a certain goal" [4:18].

According to [18:9], the "information system is a system that consists of a series information subsystems processing data to generate information that would be useful in making decisions."

Accounting is an information system which identifies records and communicates the economic events of an organization to interested users [19:4].

Based on the above definitions, the researchers conclude that the examination of accounting is an activity that concerns processing business transactions starting from the recording process to reporting the financial report.

The financial information system is the term used for a system that accumulate and analyze financial data in order to make financial management decisions.

Based on the above definitions, the researchers conclude that the financial information system that analyzes financial information within an enterprise.

B. Creative Industries

According to [7], "the creative economy is defined as any economic activity that engenders creativity (i.e. which issues in intellectual property), with respect to cultural and culture heritage and the environmental, thus laying the foundations of the future. The creative industry is based on creativity, skill and talent that has the potential to improve welfare and job creation by creating and exploiting intellectual property rights (IPR). As a helpful analogy, one may think of the creative

economy as a cage, and the creative industries as the animals” [3], [7], [8].

The concept of the Creative Economy has emerged as important in the new economic era that intensifies information and creativity by relying the ideas and on the stock of knowledge of Human Resources (HR) as a major factor in economic activities. The structure of the world economy is being rapidly transformed and economic growth which was based on Natural Resources (SDA) becomes increasingly human-based, as we pass from the agricultural era to the industrial and information era [3], [8]. Alvin Toffler (1980) divided history into three phases of economic civilization. The

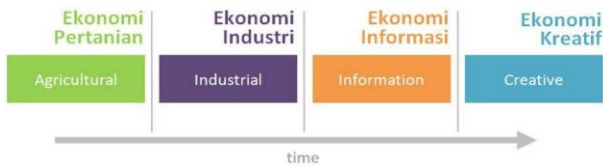


Fig. 1. Development of the Creative Industry

first phase is the agricultural economy. The second phase is the industrial economy. The third is the phase of the information economy. He predicted a fourth phase, this being an economy oriented towards creative ideas. (See figure 1).

In [7] hailed the emergence of the creative economy after realizing that in value of U.S. \$ 60.18 billion, which far exceeded the exports aircraft. According to Howkins, the new economy had emerged around the creative industries controlled by the law of intellectual property including patents, copyright, trademarks, royalties and design.

The creative economy is based on creative assets that have the potential to increase economic growth (Dos Santos, 2007). The creative economy has 15 sub-sectors, namely advertising, architecture, art and antiques crafts, design, fashion, video/film/animation/photography, gaming, music, performing (broadcasting) and research & development (R&D).

The world's creative industries have grown rapidly. The global creative economy is expected to grow 5% per year, from U.S. \$ 2.2 trillion in January 2000 to U.S. \$ 6.1 trillion in 2020 [7]. In Indonesia, the creative economy has a role in national economic development. However, it has not yet been touched by government intervention, because the government has not perceived it as an important factor [1], [4].

The government is still focused on the manufacturing, fiscal and agribusiness sectors. According to data from the Department of Commerce, the creative industries contributed Rp.104.4 trillion in 2006, or an average of 4.75% to national GDP during 2002-2006. This amount exceeds the contribution of electricity, gas and water. The three sub-sectors which contributed the greatest amounts were fashion (30%), handicrafts (23%) and advertising (18%). In addition, this sector was able to absorb 4.5 million workers with a growth rate of 17.6% in 2006 [4], [20].

This far exceeds the national employment growth rate of only 0.54%. However, in recent years it has contributed about

7% to exports, whereas in other countries, such as South Korea, the UK and Singapore, the average is above 30%. Data from Admob Mobile Metrics in February 2010 showed Indonesia ranking fourth after the U.S., India and the UK, in on-demand advertising through mobile advertising with a total demand of 520,476,525 and a share of 3.7 per cent, as compared to other countries around the world [4], [7], [20].

In summary, then the creative industries, having their origins in individual creativity, skill & talent, have a potential for wealth and job creation through the generation and exploitation of intellectual property. This includes: advertising, architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software, music, the performing arts, publishing, software and computer services, television & radio [3], [5], [7], [13].

C. NGO (Non Governmental Organizations)

A common definition of an NGO is an organization set up by an individual or group of people who volunteer to provide services to the public without the aim of profit its activities.

A non-governmental organization is not a part of the government or the state bureaucracy. In doing its activities, it does not aim to get a profit (thus, it is non-profit). The activities or NGOs are carried out for the benefit of the general public, not only for the benefit of the members as in cooperative of professional organizations [14].

There are many types of non-governmental organizations. A rough categorization is as follows [14]:

- **Donor Organization:** a non-governmental organization that provides financial support for the activities of other NGOs.
- **Governmental Partner Organizations:** a non-governmental organization which is in partnership with the governmental in carrying out its activities.
- **Professional Organization:** non-governmental organizations that perform certain activities based on professional skills such as education, legal aid, journalism, health or economics.
- **Opposition Organizations:** non-governmental organizations that act as a balance to government policy. Such NGOs act to criticize and supervise the government's activities from the point of view of sustainability.

IV. RESEARCH METHODS

A definition of object-oriented research is provided by [15], “object orientation is not just algorithm applied to the object-oriented language. Object orientation is away of thinking of everything as an object.”

A. Object-Oriented Approach

According to Coad-Yourdan in [17:77], “the object-oriented approach is an approach that combines all the best concepts that exist in the approaches to solving problems, namely: modeling information, object-oriented programming languages and knowledge-based systems and an object-

oriented is holistic concept that confers a strong base as a principle of processing complexity.

B. Criteria Object Approach

The criteria object approach is defined by Booch in [15:86], “The principles underlying object-oriented development are abstraction encapsulation, modularity, hierarchy, typing, concurrency and persistence.”

The methods in this research comprise the following approaches:

- *The field approach*, which was conducted to obtain primary information and data through observation/survey in the field, including direct interviews with Creative Youth NGOs.
- *The institutional approach*, to obtain secondary data and information followed by coordination and consultation as well as discussion with the relevant parties.
- *The literature approach*, comprising a literature review (desk study), which contains provisions for regulation and legislation, policies, research studies and related ideas/concepts.

The types of data collected for analysis consist of primary data and secondary data. Primary data were obtained from direct interviews with respondents using questionnaires and field observation. Secondary data were obtained from the literature, review documentaries and data from institutions, agencies and bureau associated with this research [18].

1. Primary Data

Primary data were collected in four ways: through the PRA approach (Participatory Rural Appraisal), Focus Group Discussion (FGD) and a survey via interviews, questionnaires and direct observation (observation).

- The PRA (Participatory Rural Appraisal) method is a study approach designed to enable active participation, especially by micro and small creative industries, in preparing studies related to the needs of business development both in terms of activity and in terms of funding.
- The FGD (Focus Group Discussion) is an approach which is useful for exploring the inputs from various element of the public to solve the problem and to enhance the research result.
- The interview method was addressed to younger community leaders. Interview were conducted by referring to the questionnaire or a list of questions already prepared.
- The observation method is direct observation based on the main points or identification, including the activities and work conditions of the NGOs in question.

2. Secondary Data

Secondary data was gathered from the literature and from previous study result.

V. RESULTS

The following are the model of the design stages for the “TomasDanance.com” application undertaken by the researchers.

A. Planning Stage

The planning stage addresses the introduction of the topics to be covered. The team of researchers coordinated the delegation of task and finalized the research plan, while also needs as well as making a schedule for the research activities [10].

B. Modelling System

This stage consists of several parts [10], [11], [12]:

1. **Survey Stage (Investigation System)**. This stage is done to observe the relevant phenomenon so that the team can determine the title and define the problem in accordance with the purposes to be achieved. Data was collected by a literature survey and by observing the phenomenon in the field. We thereby came to understand the problems that occur in the field, as framing limit concerning the scope of the study. This also affords us a view of the operational feasibility and of technical and economic aspects.
2. **Analysis Stage**. In the analysis stage, the research team sought to understand the problems of the existing system run by a number of NGOs.
3. **Design Stage**. Based on the analysis of problems and information obtained as well as the purpose and needs to be achieved, the research team determined the specifications of the prototype to be designed according to the need of various NGOs. At this stage the design is framed in general terms.
4. **Construction Stage**. Referring to the general picture of the design established in the construction stage, technological specifications and included that have been used in the business model and the hardware and software as well as the applications created in the integrated system. Up to this point, the team has remained at the stage of completion of construction.
5. **Implementation Stage**. At this stage, the “TomasDanance.com” software applications has been tested and installed by NGOs and some business units, these now became the sample for maintenance.

C. System Evaluation Stage

At this stage, the researcher team test user satisfaction as regards the software applications that have been created, with respect to the objective to be achieved and the framing of the final report about the program that has been built. The team then turns to the **Blue Print Work**.

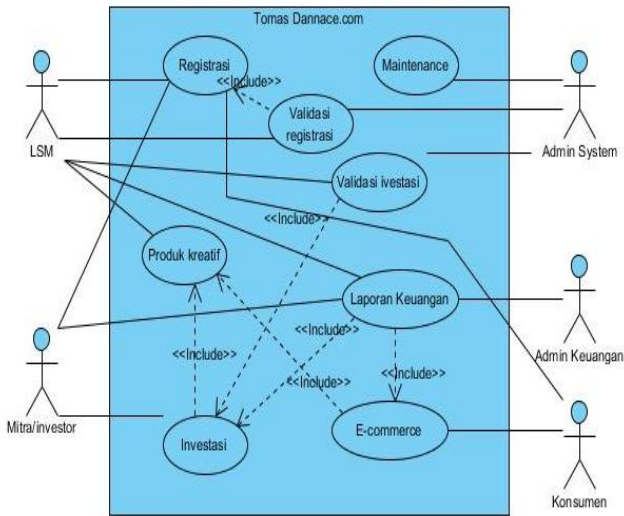


Fig. 2. Blue Print Usecase TomasDanance.

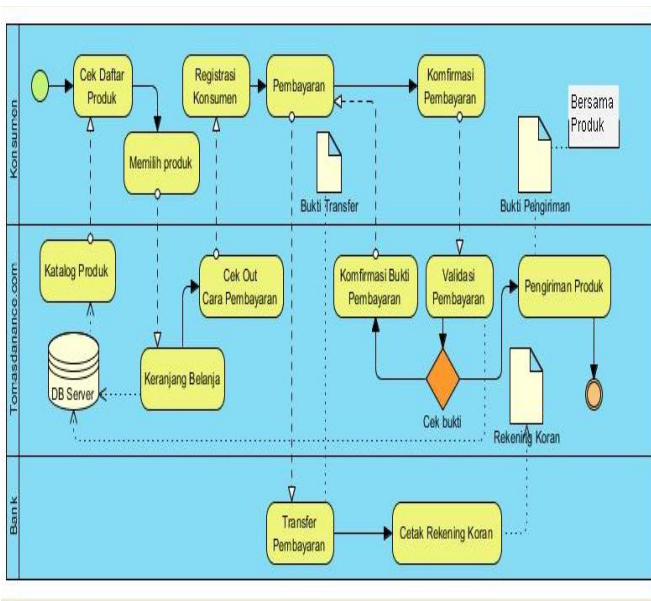
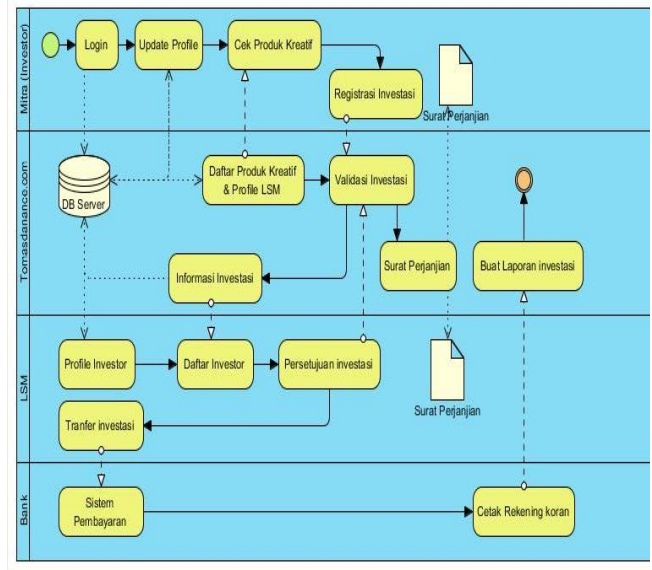


Fig. 3. Blue Print E-Commerce of NGOs

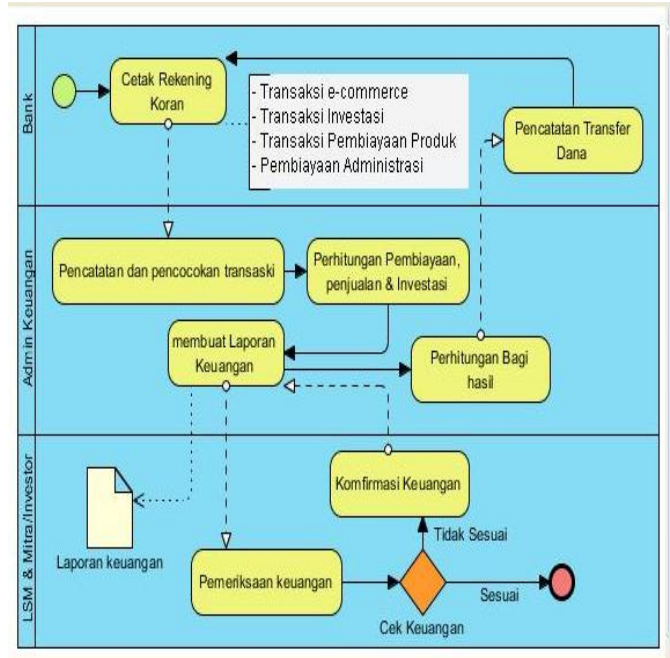


Fig. 5. Financial Management Blue Print of NGOs

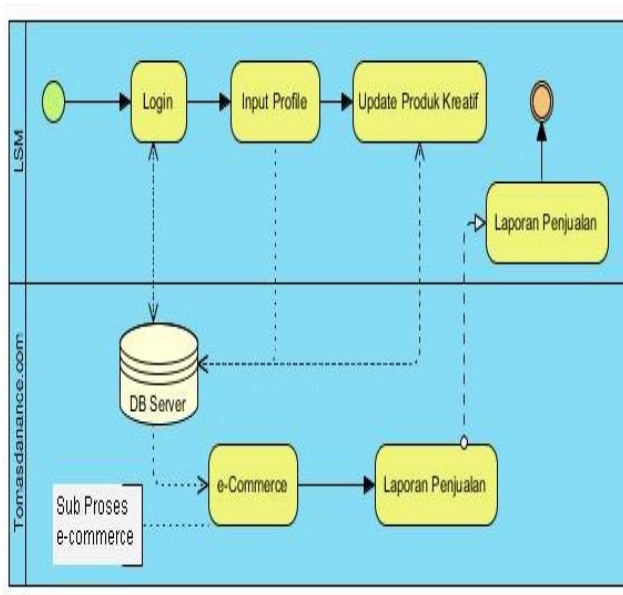


Fig. 6. Creative Industry Product Blue Print of NGOs

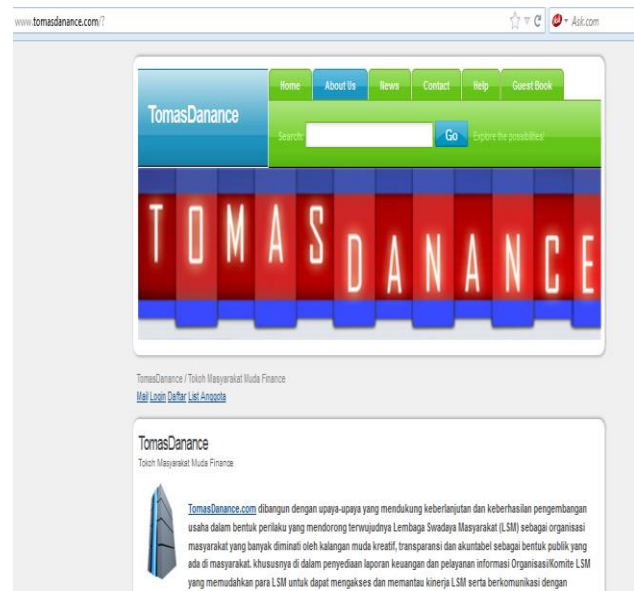


Fig. 8. TomasDanance.com Website

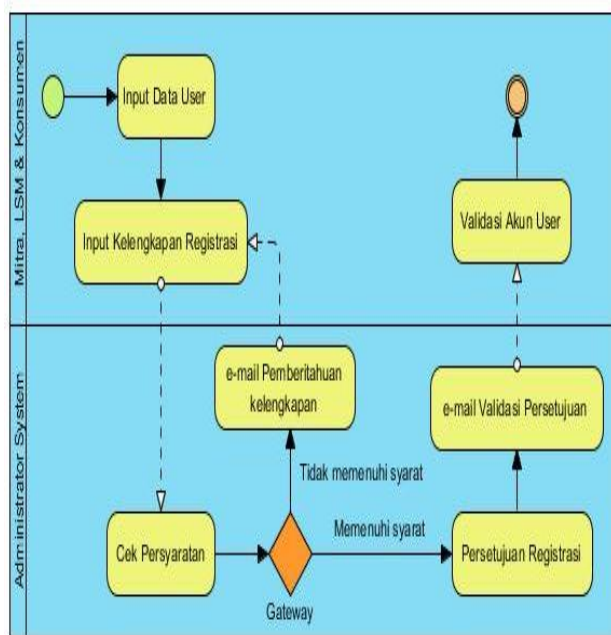


Fig. 7. Registration Blue Print of NGOs

The design picture above can be found at the website: <http://www.tomasdanance.com>

Some of the solutions offered to the young Indonesian NGOs through the construction of “TomasDanance.com” are as follows:

1. Repair the financial management administration of NGOs.
2. Increase profitability and welfare of NGO members through a web-based application. This has to address transparency of financial reporting in accordance with NGO accounting standards and the supply of information as required by the NGO’s member and the public.
3. Human Resources competency training for the officers and the members of NGOs within the sample.
4. Equipping NGOs with Communication Media and Online Reporting tools, so that the members of NGOs can access them anywhere, so assisting in the efficiency and effectiveness of operational activities.
5. Product offers programs, transactions, new member registration and participation as an investor/donor can now all be done online.

VI. CONCLUSIONS AND SUGGESTIONS

A. Conclusions

Based on the above research, the researchers have reached certain conclusions, listed as follow:

- That in carrying out the research, the researchers employed object-oriented research methods involving various approaches to collecting the data (the field approach, institutional approach and the literature approach).
- The model design and the implementation of the “TomasDanance.com” application consist of several blue print stages, namely: Usecase TomasDanance.com, E-Commerce, Investments, Financial Management, Product

B. Conclusions

The researchers suggestions for further development are addressed to NGOs in the relevant area of research, specifically that further research is needed to develop an enterprise-based information system and process data which is able to produce information relating to the performance of the information in a manner that is faster and more accurate as well as being optimal for the procedures in question.

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Selvia Lorena Br Ginting is a Lecturer for 11 years at the Department of Computer Engineering, Engineering and Computer Science Faculty, Indonesia Computer University, Bandung, Indonesia. She also work as a Business Process Analysis at Aplysit IT Solution Center, Bandung, Indonesia. Her areas of interest are Data Mining, Software Engineering and Information Systems and she has many published in the abovementioned topics.



Supriyati is a Lecturer at Department of Computerized Accounting, Engineering and Computer Science Faculty, Indonesia Computer University, Bandung, Indonesia. Her areas of interest are Engineering Accounting, Financial Information System, Audit System and she has many publications in these research areas.